Nikon

DIGITAL CAMERA

# D750

# User's Manual

Nikon Manual Viewer 2
Use the Nikon Manual Viewer 2 app to view manuals anytime, anywhere on your smartphone or tablet.

En

**D750**
**Model Name: N1404**

To get the most from your camera, please be sure to read all instructions thoroughly and keep them where they will be read by all who use the product.

**Symbols and Conventions**
To make it easier to find the information you need, the following symbols and conventions are used:

| | |
|---|---|
| | This icon marks cautions; information that should be read before use to prevent damage to the camera. |
| | This icon marks notes; information that should be read before using the camera. |
| | This icon marks references to other pages in this manual. |

Menu items, options, and messages displayed in the camera monitor are shown in **bold**.

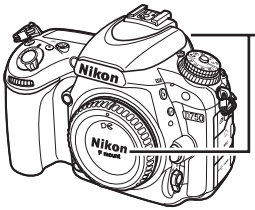
**Camera Settings**
The explanations in this manual assume that default settings are used.

**Nikon Manual Viewer 2**
Install the Nikon Manual Viewer 2 app on your smartphone or tablet to view Nikon digital camera manuals, anytime, anywhere. Nikon Manual Viewer 2 can be downloaded free of charge from the App Store and Google Play. Download of the app and any product manuals requires an Internet connection, for which fees may be levied by your phone or Internet service provider.

**⚠ For Your Safety**
Before using the camera for the first time, read the safety instructions in "For Your Safety" (🕮 xiii–xvi).

# Package Contents

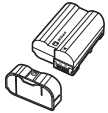
Be sure all items listed here were included with your camera.



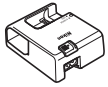
☐ *DK-21 rubber eyecup (🕮 107)*

☐ *BF-1B body cap (🕮 27, 442)*

☐ *D750 camera (🕮 1)*



☐ *EN-EL15 rechargeable Li-ion battery with terminal cover (🕮 25, 26)*



☐ *MH-25a battery charger (comes with either an AC wall adapter or power cable of a type and shape that varies with the country or region of sale; 🕮 25)*

☐ *DK-5 eyepiece cap (🕮 107)*

☐ *UC-E17 USB cable (🕮 266, 271)*
☐ *AN-DC14 strap (🕮 24)*
☐ *Warranty*
☐ *User's Manual (this guide)*
☐ *ViewNX 2 installer CD (🕮 262)*

*Memory cards are sold separately.* Cameras purchased in Japan display menus and messages in English and Japanese only; other languages are not supported. We apologize for any inconvenience this may cause.

# Table of Contents

**Package Contents** ..... **i**
**For Your Safety** ..... **xiii**
**Notices** ..... **xvii**
**Wireless** ..... **xxiv**

**Introduction** **1**

**Getting to Know the Camera** ..... **1**
The Camera Body ..... 1
The Mode Dial ..... 6
The Release-Mode Dial ..... 7
The Control Panel ..... 8
The Viewfinder ..... 10
The Information Display ..... 12
The *i* button ..... 16
Using the Tilting Monitor ..... 17
The Multi Selector ..... 19
**Camera Menus** ..... **20**
Using Camera Menus ..... 21
**First Steps** ..... **24**

**Basic Photography and Playback** **34**

**"Point-and-Shoot" Photography (AUTO and Modes)** ..... **34**
**Basic Playback** ..... **37**
Deleting Unwanted Photographs ..... 38

**Matching Settings to the Subject or Situation (Scene Mode)** **41**

Portrait ..... 42
Landscape ..... 42
Child ..... 42
Sports ..... 42

Close Up ..... 43
Night Portrait ..... 43
Night Landscape ..... 43
Party/Indoor ..... 43
Beach/Snow ..... 44
Sunset ..... 44
Dusk/Dawn ..... 44
Pet Portrait ..... 44
Candlelight ..... 45
Blossom ..... 45
Autumn Colors ..... 45
Food ..... 45

**Special Effects** **46**

Night Vision ..... 47
Color Sketch ..... 47
Miniature Effect ..... 48
Selective Color ..... 48
Silhouette ..... 48
High Key ..... 49
Low Key ..... 49
Options Available in Live View ..... 50

**Live View Photography** **54**

Focus ..... 57
Manual Focus ..... 60
Using the *i* Button ..... 61
The Live View Display: Live View Photography ..... 63
The Information Display: Live View Photography ..... 64

**Movie Live View** **66**

Indices ..... 70
Using the *i* Button ..... 71
The Live View Display: Movie Live View ..... 74

The Information Display: Movie Live View ..... 75
Image Area ..... 76
Taking Photos During Movie Live View ..... 77
**Viewing Movies ..... 79**
**Editing Movies ..... 81**
Trimming Movies ..... 81
Saving Selected Frames ..... 86

**P, S, A, and M Modes** **88**

**P**: Programmed Auto ..... 89
**S**: Shutter-Priority Auto ..... 90
**A**: Aperture-Priority Auto ..... 91
**M**: Manual ..... 93
Long Time-Exposures (**M** Mode Only) ..... 95

**User Settings: U1 and U2 Modes** **99**

Saving User Settings ..... 99
Recalling User Settings ..... 101
Resetting User Settings ..... 101

**Release Mode** **103**

**Choosing a Release Mode ..... 103**
**Self-Timer Mode (⏲) ..... 106**
**Mirror up Mode (MUP) ..... 109**

**Image Recording Options** **110**

**Image Area ..... 110**
**Image Quality and Size ..... 115**
Image Quality ..... 115
Image Size ..... 118
**Using Two Memory Cards ..... 119**

**Focus** **120**

**Autofocus** ..... **120**
Autofocus Mode ..... 121
AF-Area Mode ..... 123
Focus Point Selection ..... 127
Focus Lock ..... 129
**Manual Focus** ..... **132**

**ISO Sensitivity** **134**

**Auto ISO Sensitivity Control** ..... **136**

**Exposure** **139**

**Metering** ..... **139**
**Autoexposure Lock** ..... **141**
**Exposure Compensation** ..... **143**

**White Balance** **145**

**Fine-Tuning White Balance** ..... **149**
**Choosing a Color Temperature** ..... **152**
**Preset Manual** ..... **155**
Viewfinder Photography ..... 155
Live View (Spot White Balance) ..... 159
Managing Presets ..... 162

**Image Enhancement** **165**

**Picture Controls** ..... **165**
Selecting a Picture Control ..... 165
Modifying Picture Controls ..... 167
Creating Custom Picture Controls ..... 170
Sharing Custom Picture Controls ..... 173
**Preserving Detail in Highlights and Shadows** ..... **175**
Active D-Lighting ..... 175
High Dynamic Range (HDR) ..... 177

**Flash Photography** **180**

**Using the Built-in Flash** ..... **180**
Auto Pop-up Modes ..... 180
Manual Pop-up Modes ..... 182
**Flash Compensation** ..... **188**
**FV Lock** ..... **190**

**Remote Control Photography** **193**

**Using an Optional ML-L3 Remote Control** ..... **193**
**Wireless Remote Controllers** ..... **197**
WR-1 Wireless Remote Controllers ..... 197
WR-R10/WR-T10 Wireless Remote Controllers ..... 197

**Other Shooting Options** **198**

**Viewfinder Photography: The *i* Button** ..... **198**
**Two-Button Reset: Restoring Default Settings** ..... **199**
**Bracketing** ..... **202**
**Multiple Exposure** ..... **216**
**Interval Timer Photography** ..... **222**
**Time-Lapse Photography** ..... **229**
**Non-CPU Lenses** ..... **235**
**Location Data** ..... **239**

**More on Playback** **241**

**Viewing Pictures** ..... **241**
Full-Frame Playback ..... 241
Thumbnail Playback ..... 243
Calendar Playback ..... 244
The *i* Button ..... 245
**Photo Information** ..... **246**
**Taking a Closer Look: Playback Zoom** ..... **255**
**Protecting Photographs from Deletion** ..... **257**

**Deleting Photographs** ..... **258**
Full-Frame, Thumbnail, and Calendar Playback ..... 258
The Playback Menu ..... 260

**Connections** **262**

**Installing ViewNX 2** ..... **262**
**Using ViewNX 2** ..... **266**
Copy Pictures to the Computer ..... 266
Ethernet and Wireless Networks ..... 269
**Printing Photographs** ..... **271**
Connecting the Printer ..... 271
Printing Pictures One at a Time ..... 272
Printing Multiple Pictures ..... 274
Creating a DPOF Print Order: Print Set ..... 275
**Viewing Photographs on TV** ..... **277**
HDMI Options ..... 278

**Wi-Fi** **281**

**What Wi-Fi Can Do for You** ..... **281**
**Accessing the Camera** ..... **282**
WPS (Android Only) ..... 284
PIN Entry (Android Only) ..... 285
SSID (Android and iOS) ..... 286
**Selecting Pictures for Upload** ..... **289**
Selecting Individual Pictures for Upload ..... 289
Selecting Multiple Pictures for Upload ..... 291

**Menu Guide** **292**

**Defaults** ..... **292**
**▶ The Playback Menu: Managing Images** ..... **300**
Playback Menu Options ..... 300
Playback Folder ..... 300
Hide Image ..... 301
Playback Display Options ..... 302

Copy Image(s) ..... 303
Image Review ..... 307
After Delete ..... 307
Rotate Tall ..... 308
Slide Show ..... 308
**The Photo Shooting Menu: Photo Shooting Options ..... 310**
Photo Shooting Menu Options ..... 310
Reset Photo Shooting Menu ..... 311
Storage Folder ..... 311
File Naming ..... 313
Color Space ..... 314
Vignette Control ..... 315
Auto Distortion Control ..... 316
Long Exposure NR (Long Exposure Noise Reduction) ..... 317
High ISO NR ..... 317
**The Movie Shooting Menu: Movie Shooting Options ..... 318**
Movie Shooting Menu Options ..... 318
Reset Movie Shooting Menu ..... 318
Destination ..... 319
Frame Size/Frame Rate ..... 319
Movie Quality ..... 320
Microphone Sensitivity ..... 320
Frequency Response ..... 320
Wind Noise Reduction ..... 321
White Balance ..... 321
Set Picture Control ..... 321
Movie ISO Sensitivity Settings ..... 322
**Custom Settings: Fine-Tuning Camera Settings ..... 323**
Custom Settings ..... 324
Reset Custom Settings ..... 326

a: Autofocus ..... 326
a1: AF-C Priority Selection ..... 326
a2: AF-S Priority Selection ..... 327
a3: Focus Tracking with Lock-On ..... 328
a4: Focus Point Illumination ..... 329
a5: AF Point Illumination ..... 329
a6: Focus Point Wrap-Around ..... 330
a7: Number of Focus Points ..... 330
a8: Store Points by Orientation ..... 331
a9: Built-in AF-assist Illuminator ..... 332
b: Metering/Exposure ..... 333
b1: ISO Sensitivity Step Value ..... 333
b2: EV Steps for Exposure Cntrl ..... 333
b3: Easy Exposure Compensation ..... 334
b4: Matrix Metering ..... 335
b5: Center-Weighted Area ..... 335
b6: Fine-tune Optimal Exposure ..... 336
c: Timers/AE Lock ..... 336
c1: Shutter-Release Button AE-L ..... 336
c2: Standby timer ..... 336
c3: Self-Timer ..... 337
c4: Monitor off Delay ..... 337
c5: Remote on Duration (ML-L3) ..... 337
d: Shooting/Display ..... 338
d1: Beep ..... 338
d2: Continuous Low-Speed ..... 338
d3: Max. Continuous Release ..... 339
d4: Exposure Delay Mode ..... 339
d5: Flash Warning ..... 339
d6: File Number Sequence ..... 340
d7: Viewfinder Grid Display ..... 341
d8: Easy ISO ..... 341
d9: Information Display ..... 341
d10: LCD Illumination ..... 342

d11: MB-D16 Battery Type ..... 343
d12: Battery Order ..... 344
e: Bracketing/Flash ..... 345
e1: Flash Sync Speed ..... 345
e2: Flash Shutter Speed ..... 346
e3: Flash Cntrl for Built-in Flash ..... 347
e4: Exposure Comp. for Flash ..... 353
e5: Modeling Flash ..... 353
e6: Auto Bracketing Set ..... 353
e7: Bracketing Order ..... 354
f: Controls ..... 354
f1: OK Button ..... 354
f2: Assign Fn Button ..... 356
f3: Assign Preview Button ..... 361
f4: Assign AE-L/AF-L Button ..... 361
f5: Customize Command Dials ..... 363
f6: Release Button to Use Dial ..... 365
f7: Slot Empty Release Lock ..... 365
f8: Reverse Indicators ..... 366
f9: Assign Movie Record Button ..... 366
f10: Assign MB-D16 AE-L/AF-L Button ..... 367
f11: Assign Remote (WR) Fn Button ..... 368
g: Movie ..... 370
g1: Assign Fn Button ..... 370
g2: Assign Preview Button ..... 372
g3: Assign AE-L/AF-L Button ..... 373
g4: Assign Shutter Button ..... 373
**The Setup Menu: Camera Setup ..... 374**
Setup Menu Options ..... 374
Format Memory Card ..... 375
Monitor Brightness ..... 376
Monitor Color Balance ..... 377
Image Dust Off Ref Photo ..... 378
Flicker Reduction ..... 380

Time Zone and Date ..... 381
Language ..... 381
Auto Image Rotation ..... 382
Battery Info ..... 383
Image Comment ..... 384
Copyright Information ..... 385
Save/Load Settings ..... 386
Virtual Horizon ..... 388
AF Fine-tune ..... 389
Eye-Fi Upload ..... 391
Conformity Marking ..... 392
Firmware Version ..... 392
**The Retouch Menu: Creating Retouched Copies ..... 393**
Retouch Menu Options ..... 393
Creating Retouched Copies ..... 395
D-Lighting ..... 397
Red-Eye Correction ..... 398
Trim ..... 399
Monochrome ..... 400
Filter Effects ..... 401
Color Balance ..... 402
Image Overlay ..... 403
NEF (RAW) Processing ..... 406
Resize ..... 408
Quick Retouch ..... 411
Straighten ..... 411
Distortion Control ..... 412
Fisheye ..... 413
Color Outline ..... 413
Color Sketch ..... 414
Perspective Control ..... 415
Miniature Effect ..... 416
Selective Color ..... 417
Side-by-side Comparison ..... 419

**My Menu/Recent Settings** ..... **421**
Recent Settings ..... 425

**Technical Notes** **426**

**Compatible Lenses** ..... **426**
**Optional Flash Units (Speedlights)** ..... **433**
The Nikon Creative Lighting System (CLS) ..... 433
**Other Accessories** ..... **441**
Attaching a Power Connector and AC Adapter ..... 445
**Caring for the Camera** ..... **447**
Storage ..... 447
Cleaning ..... 447
The Low-Pass Filter ..... 448
**Caring for the Camera and Battery: Cautions** ..... **455**
**Available Settings** ..... **460**
**Exposure Program (Mode P)** ..... **462**
**Troubleshooting** ..... **463**
Battery/Display ..... 463
Shooting (All Modes) ..... 464
Shooting (**P, S, A, M**) ..... 467
Playback ..... 468
Wi-Fi (Wireless Networks) ..... 469
Miscellaneous ..... 469
**Error Messages** ..... **470**
**Specifications** ..... **477**
**Approved Memory Cards** ..... **491**
**Memory Card Capacity** ..... **492**
**Battery Life** ..... **494**
**Lenses That May Block the Built-in Flash and AF-Assist Illuminator** ..... **496**
**Index** ..... **501**

# For Your Safety

To prevent damage to your Nikon product or injury to yourself or to others, read the following safety precautions in their entirety before using this equipment. Keep these safety instructions where all those who use the product will read them.

The consequences that could result from failure to observe the precautions listed in this section are indicated by the following symbol:

> ⚠ This icon marks warnings. To prevent possible injury, read all warnings before using this Nikon product.

## ■■ *WARNINGS*

**⚠ Keep the sun out of the frame**
Keep the sun well out of the frame when shooting backlit subjects. Sunlight focused into the camera when the sun is in or close to the frame could cause a fire.

**⚠ Do not look at the sun through the viewfinder**
Viewing the sun or other strong light source through the viewfinder could cause permanent visual impairment.

**⚠ Using the viewfinder diopter adjustment control**
When operating the viewfinder diopter adjustment control with your eye to the viewfinder, care should be taken not to put your finger in your eye accidentally.

**⚠ Turn off immediately in the event of malfunction**
Should you notice smoke or an unusual smell coming from the equipment or AC adapter (available separately), unplug the AC adapter and remove the battery immediately, taking care to avoid burns. Continued operation could result in injury. After removing the battery, take the equipment to a Nikon-authorized service center for inspection.

**⚠ Do not use in the presence of flammable gas**
Do not use electronic equipment in the presence of flammable gas, as this could result in explosion or fire.

**⚠ Keep out of reach of children**
Failure to observe this precaution could result in injury. In addition, note that small parts constitute a choking hazard. Should a child swallow any part of this equipment, consult a physician immediately.

**⚠ Do not disassemble**
Touching the product's internal parts could result in injury. In the event of malfunction, the product should be repaired only by a qualified technician. Should the product break open as the result of a fall or other accident, remove the battery and/or AC adapter and then take the product to a Nikon-authorized service center for inspection.

**⚠ Do not place the strap around the neck of an infant or child**
Placing the camera strap around the neck of an infant or child could result in strangulation.

**⚠ Do not remain in contact with the camera, battery, or charger for extended periods while the devices are on or in use**
Parts of the device become hot. Leaving the device in direct contact with the skin for extended periods may result in low-temperature burns.

**⚠ Do not leave the product where it will be exposed to extremely high temperatures, such as in an enclosed automobile or in direct sunlight**
Failure to observe this precaution could cause damage or fire.

**⚠ Do not aim a flash at the operator of a motor vehicle**
Failure to observe this precaution could result in accidents.

**⚠ Observe caution when using the flash**
- Using the camera with the flash in close contact with the skin or other objects could cause burns.
- Using the flash close to the subject's eyes could cause temporary visual impairment. The flash should be no less than one meter (3 ft 4 in.) from the subject. Particular care should be observed when photographing infants.

**⚠ Avoid contact with liquid crystal**
Should the monitor break, care should be taken to avoid injury due to broken glass and to prevent the liquid crystal from the monitor touching the skin or entering the eyes or mouth.

**⚠ Do not carry tripods with a lens or camera attached**
You could trip or accidentally strike others, resulting in injury.

**⚠ Observe proper precautions when handling batteries**

Batteries may leak, overheat, rupture, or catch fire if improperly handled. Observe the following precautions when handling batteries for use in this product:

- Use only batteries approved for use in this equipment.
- Do not short or disassemble the battery.
- Do not expose the battery or the camera in which it is inserted to powerful physical shocks.
- Be sure the product is off before replacing the battery. If you are using an AC adapter, be sure it is unplugged.
- Do not attempt to insert the battery upside down or backwards.
- Do not expose the battery to flame or to excessive heat.
- Do not immerse in or expose to water.
- Replace the terminal cover when transporting the battery. Do not transport or store the battery with metal objects such as necklaces or hairpins.
- Batteries are prone to leakage when fully discharged. To avoid damage to the product, be sure to remove the battery when no charge remains.
- When the battery is not in use, attach the terminal cover and store in a cool, dry place.
- The battery may be hot immediately after use or when the product has been used on battery power for an extended period. Before removing the battery turn the camera off and allow the battery to cool.
- Discontinue use immediately should you notice any changes in the battery, such as discoloration or deformation.

**⚠ Observe proper precautions when handling the charger**

- Keep dry. Failure to observe this precaution could result in injury or product malfunction due to fire or electric shock.
- Do not short the charger terminals. Failure to observe this precaution could result in overheating and damage to the charger.
- Dust on or near the metal parts of the plug should be removed with a dry cloth. Continued use could result in fire.

- Do not handle the power cable or go near the charger during thunderstorms. Failure to observe this precaution could result in electric shock.
- Do not damage, modify, or forcibly tug or bend the power cable. Do not place it under heavy objects or expose it to heat or flame. Should the insulation be damaged and the wires become exposed, take the power cable to a Nikon-authorized service representative for inspection. Failure to observe this precaution could result in fire or electric shock.
- Do not handle the plug or charger with wet hands. Failure to observe this precaution could result in injury or product malfunction due to fire or electric shock.
- Do not use with travel converters or adapters designed to convert from one voltage to another or with DC-to-AC inverters. Failure to observe this precaution could damage the product or cause overheating or fire.

**⚠ Use appropriate cables**

When connecting cables to the input and output jacks, use only the cables provided or sold by Nikon for the purpose to maintain compliance with product regulations.

**⚠ CD-ROMs**

CD-ROMs containing software or manuals should not be played back on audio CD equipment. Playing CD-ROMs on an audio CD player could cause hearing loss or damage the equipment.

**⚠ Follow the directions of airline and hospital personnel**

This camera transmits radio frequencies that could interfere with medical equipment or aircraft navigation. Disable the wireless network feature and remove all wireless accessories from the camera before boarding an aircraft, and turn the camera off during take off and landing. In medical facilities, follow staff instructions regarding the use of wireless devices.

# Notices

- No part of the manuals included with this product may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form, by any means, without Nikon's prior written permission.
- Nikon reserves the right to change the appearance and specifications of the hardware and software described in these manuals at any time and without prior notice.
- Nikon will not be held liable for any damages resulting from the use of this product.
- While every effort has been made to ensure that the information in these manuals is accurate and complete, we would appreciate it were you to bring any errors or omissions to the attention of the Nikon representative in your area (address provided separately).

***Notice for Customers in Canada***

CAN ICES-3 B / NMB-3 B

***Notices for Customers in Europe***

**CAUTION**: RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

This symbol indicates that electrical and electronic equipment is to be collected separately.

The following apply only to users in European countries:

- This product is designated for separate collection at an appropriate collection point. Do not dispose of as household waste.
- Separate collection and recycling helps conserve natural resources and prevent negative consequences for human health and the environment that might result from incorrect disposal.
- For more information, contact the retailer or the local authorities in charge of waste management.

This symbol on the battery indicates that the battery is to be collected separately.

The following apply only to users in European countries:

- All batteries, whether marked with this symbol or not, are designated for separate collection at an appropriate collection point. Do not dispose of as household waste.
- For more information, contact the retailer or the local authorities in charge of waste management.

## *Notices for Customers in the U.S.A.*

### Power Cable

**At voltages over AC 125 V (U.S.A. only)**: The power cable must be rated for the voltage in use, be at least AWG no. 18 gauge, and have SVG insulation or better with a NEMA 6P-15 plug rated for AC 250 V 15 A.

### Federal Communications Commission (FCC) Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

### CAUTIONS

*Modifications*

The FCC requires the user be notified that any changes or modifications made to this device that are not expressly approved by Nikon Corporation may void the user's authority to operate the equipment.

*Interface Cables*

Use the interface cables sold or provided by Nikon for your equipment. Using other interface cables may exceed the limits of Class B Part 15 of the FCC rules.

*Notice for Customers in the State of California*

**WARNING**: Handling the cord on this product may expose you to lead, a chemical known to the State of California to cause birth defects or other reproductive harm. *Wash hands after handling.*

Nikon Inc., 1300 Walt Whitman Road, Melville, New York 11747-3064, U.S.A.
Tel.: 631-547-4200

### *Notice Concerning Prohibition of Copying or Reproduction*

Note that simply being in possession of material that has been digitally copied or reproduced by means of a scanner, digital camera, or other device may be punishable by law.

- **Items prohibited by law from being copied or reproduced**

  Do not copy or reproduce paper money, coins, securities, government bonds, or local government bonds, even if such copies or reproductions are stamped "Sample."

  The copying or reproduction of paper money, coins, or securities which are circulated in a foreign country is prohibited.

  Unless the prior permission of the government has been obtained, the copying or reproduction of unused postage stamps or post cards issued by the government is prohibited.

  The copying or reproduction of stamps issued by the government and of certified documents stipulated by law is prohibited.

- **Cautions on certain copies and reproductions**

  The government has issued cautions on copies or reproductions of securities issued by private companies (shares, bills, checks, gift certificates, etc.), commuter passes, or coupon tickets, except when a minimum of necessary copies are to be provided for business use by a company. Also, do not copy or reproduce passports issued by the government, licenses issued by public agencies and private groups, ID cards, and tickets, such as passes and meal coupons.

- **Comply with copyright notices**

  The copying or reproduction of copyrighted creative works such as books, music, paintings, woodcuts, prints, maps, drawings, movies, and photographs is governed by national and international copyright laws. Do not use this product for the purpose of making illegal copies or to infringe copyright laws.

### *Disposing of Data Storage Devices*

Please note that deleting images or formatting memory cards or other data storage devices does not completely erase the original image data. Deleted files can sometimes be recovered from discarded storage devices using commercially available software, potentially resulting in the malicious use of personal image data. Ensuring the privacy of such data is the user's responsibility.

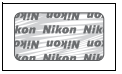
Before discarding a data storage device or transferring ownership to another person, erase all data using commercial deletion software, or format the device and then completely refill it with images containing no private information (for example, pictures of empty sky). Be sure to also replace any pictures selected for preset manual (🕮 162). Before discarding the camera or transferring ownership to another person, you should also use the **Wi-Fi** > **Network settings** > **Reset network settings** (🕮 288) and **Network** > **Network settings** options in the camera setup menu to delete any personal network information. For more information on the **Network** menu, see the documentation provided with the optional communication unit. Care should be taken to avoid injury when physically destroying data storage devices.

### *AVC Patent Portfolio License*

THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE *http://www.mpegla.com*

### *Use Only Nikon Brand Electronic Accessories*

Nikon cameras are designed to the highest standards and include complex electronic circuitry. Only Nikon brand electronic accessories (including chargers, batteries, AC adapters, and flash accessories) certified by Nikon specifically for use with this Nikon digital camera are engineered and proven to operate within the operational and safety requirements of this electronic circuitry.



The use of non-Nikon electronic accessories could damage the camera and may void your Nikon warranty. The use of third-party rechargeable Li-ion batteries not bearing the Nikon holographic seal shown at right could interfere with normal operation of the camera or result in the batteries overheating, igniting, rupturing, or leaking.

For more information about Nikon brand accessories, contact a local authorized Nikon dealer.

**Use Only Nikon Brand Accessories**

Only Nikon brand accessories certified by Nikon specifically for use with your Nikon digital camera are engineered and proven to operate within its operational and safety requirements. THE USE OF NON-NIKON ACCESSORIES COULD DAMAGE YOUR CAMERA AND MAY VOID YOUR NIKON WARRANTY.

**Before Taking Important Pictures**

Before taking pictures on important occasions (such as at weddings or before taking the camera on a trip), take a test shot to ensure that the camera is functioning normally. Nikon will not be held liable for damages or lost profits that may result from product malfunction.

**Life-Long Learning**

As part of Nikon's "Life-Long Learning" commitment to ongoing product support and education, continually-updated information is available on-line at the following sites:

- **For users in the U.S.A.**: *http://www.nikonusa.com/*
- **For users in Europe and Africa**: *http://www.europe-nikon.com/support/*
- **For users in Asia, Oceania, and the Middle East**: *http://www.nikon-asia.com/*

Visit these sites to keep up-to-date with the latest product information, tips, answers to frequently-asked questions (FAQs), and general advice on digital imaging and photography. Additional information may be available from the Nikon representative in your area. See the following URL for contact information: *http://imaging.nikon.com/*

# Wireless

This product, which contains encryption software developed in the United States, is controlled by the United States Export Administration Regulations and may not be exported or re-exported to any country to which the United States embargoes goods. The following countries are currently subject to embargo: Cuba, Iran, North Korea, Sudan, and Syria.

The use of wireless devices may be prohibited in some countries or regions. Contact a Nikon-authorized service representative before using the wireless features of this product outside the country of purchase.

### *Notices for Customers in the U. S. A.*

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### FCC WARNING

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Nikon Corporation may void the user's authority to operate the equipment.

#### FCC Radio Frequency Interference Statement

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

#### Co-location

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Nikon Inc., 1300 Walt Whitman Road, Melville, New York 11747-3064, U.S.A.
Tel.: 631-547-4200

### *Notices for Customers in Canada*

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

#### FCC/IC RF Exposure Statement

The available scientific evidence does not show that any health problems are associated with using low power wireless devices. There is no proof, however, that these low power wireless devices are absolutely safe. Low power Wireless devices emit low levels of radio frequency energy (RF) in the microwave range while being used. Whereas high levels of RF can produce health effects (by heating tissue), exposure of low-level RF that does not produce heating effects causes no known adverse health effects. Many studies of low-level RF exposures have not found any biological effects. Some studies have suggested that some biological effects might occur, but such findings have not been confirmed by additional research. The D750, which is equipped with a LBWA1U5YR1 (FCC ID:VPYLBYR650 / IC ID:772C-LBYR650) wireless LAN module, has been tested and found to comply with FCC/IC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines in Supplement C to OET65 and RSS-102 of the IC radio frequency (RF) Exposure rules. Please refer to the SAR test report that was uploaded to FCC website.

### *Notices for Customers in Europe*

Hereby, Nikon Corporation, declares that the D750 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. The declaration of conformity may be consulted at *http://imaging.nikon.com/support/pdf/DoC_D750.pdf*

### *Notice for Customers in Singapore*

Trade Name: Nikon
Model: D750

This device complies with radio-frequency regulations. The content of certification labels not affixed to the device is given below.

**Complies with IDA Standards DA104328**

### *Security*

Although one of the benefits of this product is that it allows others to freely connect for the wireless exchange of data anywhere within its range, the following may occur if security is not enabled:

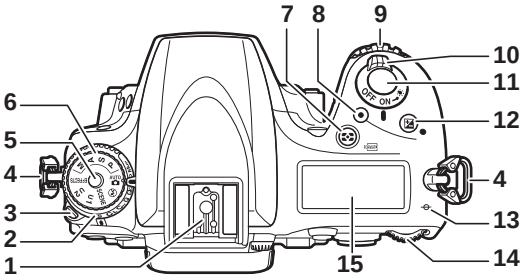
- Data theft: Malicious third-parties may intercept wireless transmissions to steal user IDs, passwords, and other personal information.
- Unauthorized access: Unauthorized users may gain access to the network and alter data or perform other malicious actions. Note that due to the design of wireless networks, specialized attacks may allow unauthorized access even when security is enabled.

# Introduction

## Getting to Know the Camera

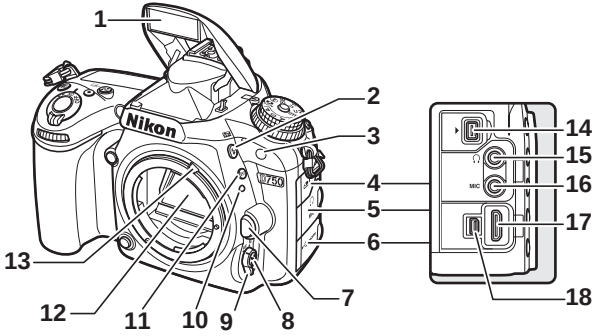
Take a few moments to familiarize yourself with camera controls and displays. You may find it helpful to bookmark this section and refer to it as you read through the rest of the manual.

### The Camera Body




| | | | |
|---|---|---|---|
| 1 | Accessory shoe (for optional flash unit) | 433 | |
| 2 | Release mode dial | 7, 103 | |
| 3 | Release mode dial lock release | 7, 103 | |
| 4 | Eyelet for camera strap | | |
| 5 | Mode dial lock release | 6, 34 | |
| 6 | Mode dial | 6, 34 | |
| 7 | ⊡/FORMAT button | | |
| | Metering | 140 | |
| | Formatting memory cards | 375 | |
| 8 | Movie-record button | 68 | |
| 9 | Sub-command dial | 363 | |
| 10 | Power switch | 5, 28 | |
| 11 | Shutter-release button | 36, 373 | |
| 12 | ⊠ button | | |
| | Exposure compensation | 143 | |
| | Two-button reset | 199 | |
| 13 | Focal plane mark (⊖) | 133 | |
| 14 | Main command dial | 363 | |
| 15 | Control panel | 8 | |

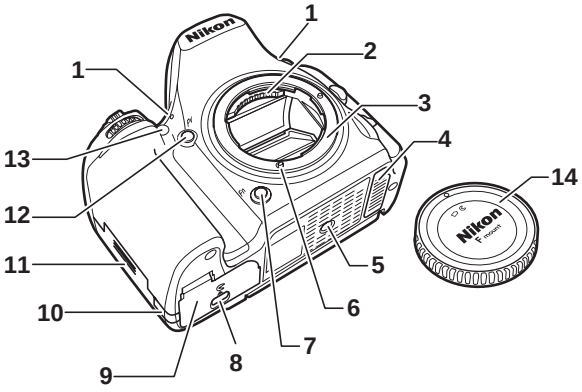
## The Camera Body (Continued)




| | |
|---|---|
| 1 | Built-in flash ..... 180 |
| 2 | ⚡/⚡BKT button<br>Flash mode ..... 180, 182<br>Flash compensation ..... 188 |
| 3 | Infrared receiver (front) ..... 194 |
| 4 | Cover for accessory terminal ... 443 |
| 5 | Audio connector cover .....73, 443 |
| 6 | HDMI/USB connector cover ..... 266, 271, 277 |
| 7 | Lens release button .....33 |
| 8 | AF-mode button ...57, 59, 121, 125 |
| 9 | Focus-mode selector ...57, 120, 132 |
| 10 | Lens mounting mark .....27 |
| 11 | **BKT** button<br>Bracketing ..... 203, 208, 212 |
| 12 | Mirror ..... 109, 451 |
| 13 | Meter coupling lever ..... 480 |
| 14 | Accessory terminal ..... 443 |
| 15 | Headphone connector .....73 |
| 16 | Connector for external microphone .....73, 443 |
| 17 | HDMI connector ..... 277 |
| 18 | USB connector<br>Connecting to a computer ..... 266<br>Connecting to a printer ..... 271 |

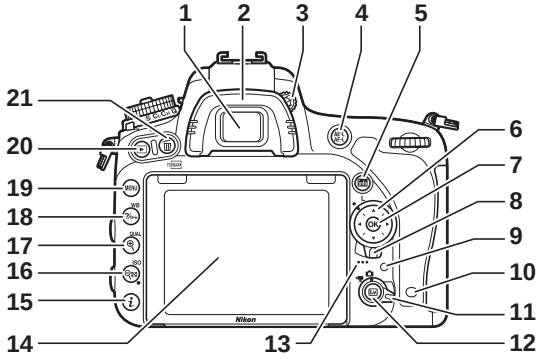
**Close the Connector Cover**

Close the connector cover when the connectors are not in use. Foreign matter in the connectors can interfere with data transfer.




| | | | |
|---|---|---|---|
| 1 | Stereo microphone.....68, 71, 320 | 9 | Battery-chamber cover ..... 26 |
| 2 | CPU contacts | 10 | Power connector cover ..... 445 |
| 3 | Lens mount ..... 27, 133 | 11 | Memory card slot cover ..... 26 |
| 4 | Contact cover for optional MB-D16 battery pack.....441 | 12 | **Pv** button .....70, 92, 361, 372 |
| 5 | Tripod socket | 13 | AF-assist illuminator ..... 332<br>Self-timer lamp ..... 107<br>Red-eye reduction lamp ... 181, 183 |
| 6 | AF coupling | 14 | Body cap ..... i, 442 |
| 7 | **Fn** button.....114, 356, 370 | | |
| 8 | Battery-chamber cover latch ..... 26 | | |

## The Camera Body (Continued)





**1** Viewfinder eyepiece ..... 10, 29
**2** Rubber eyecup ..... 107
**3** Diopter adjustment control ..... 29
**4** AE-L/AF-L button
Using the AE/AF lock button ..... 129, 141, 361, 373
**5** Info (info) button ..... 12, 64, 75
**6** Multi selector ..... 19, 21
**7** OK (OK) button ..... 19, 21, 354
**8** Focus selector lock ..... 127
**9** Memory card access lamp .. 36, 225
**10** Infrared receiver (rear) ..... 194
**11** Live view selector
Live view photography ..... 54
Movie live view ..... 66
**12** Lv button ..... 54, 66
**13** Speaker ..... 80
**14** Tilting monitor ..... 17
Viewing settings ..... 12
Live view ..... 54, 66
Viewing pictures ..... 37
Full-frame playback ..... 241
**15** *i* button
Changing shooting settings ..... 198
Changing settings during live view/movie recording ... 61, 71
Retouching pictures ..... 396
**16** Q/ISO button
Playback zoom out/thumbnails ..... 243, 244
ISO sensitivity ..... 134
Auto ISO sensitivity control ..... 136
Two-button reset ..... 199

**17** ⊕/**QUAL** button
- Playback zoom in.....255
- Image quality/size.....116, 118

**18** ?/⊶/**WB** button
- Help.....21
- Protect.....257
- White balance .....146, 149, 154, 156

**19** **MENU** button
- Menu ..... 20, 300

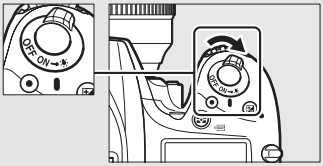
**20** ▶ button
- Playback..... 37, 241

**21** 🗑/FORMAT button
- Delete..... 38, 258
- Formatting memory cards.... 375

### LCD Illuminators

Rotating the power switch toward ☀ activates the standby timer and control panel backlight (LCD illuminator), allowing the display to be read in the dark. After the power switch is released and returns to the **ON** position, the illuminators will remain lit for six seconds while the standby timer is active or until the shutter is released or the power switch is rotated toward ☀ again.

*Power switch*



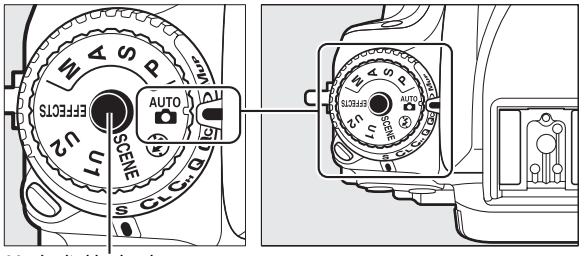

### The Speaker

Do not place the speaker in close proximity to magnetic devices. Failure to observe this precaution could affect the data recorded on the magnetic devices.

## The Mode Dial

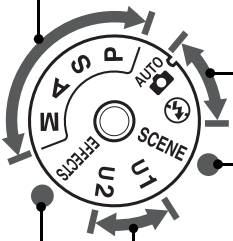
The camera offers the modes listed below. To choose a mode, press the mode dial lock release and rotate the mode dial.

*Mode dial*




*Mode dial lock release*

**P, S, A, and M modes:**
- **P — Programmed auto** (🕮 89)
- **S — Shutter-priority auto** (🕮 90)
- **A — Aperture-priority auto** (🕮 91)
- **M — Manual** (🕮 93)




**Auto modes:**
- **AUTO Auto** (🕮 34)
- **Auto (flash off)** (🕮 34)

**Scene modes (🕮 41)**

**U1 and U2 modes (🕮 99)**

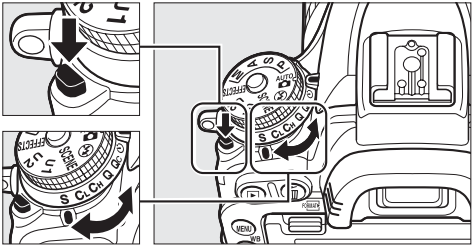
**Special effects modes (🕮 46)**

**Non-CPU Lenses**
Non-CPU (📖 427) lenses can be used only in modes **A** and **M**. Selecting another mode when a non-CPU lens is attached disables the shutter release.

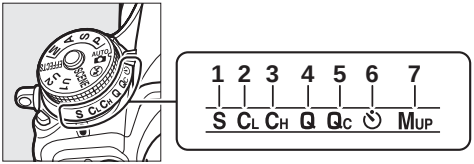
## The Release-Mode Dial

To choose a release mode, press the release mode dial lock release and turn the release mode dial to the desired setting (📖 103).

*Release mode dial lock release*

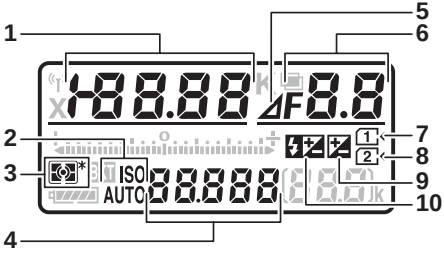


*Release mode dial*




**1** **S** Single frame ..... 103
**2** **CL** Continuous low speed ..... 103
**3** **CH** Continuous high speed ..... 103
**4** **Q** Quiet shutter-release ..... 103
**5** **QC** Qc (quiet continuous shutter-release ..... 103
**6** ⏲ Self-timer ..... 103, 106
**7** **MUP** Mirror up ..... 104, 109

# The Control Panel




**1** Shutter speed ..... 90, 93
Exposure compensation value ..... 143
Flash compensation value ..... 188
White balance fine-tuning ..... 150
Color temperature ..... 145, 154
White balance preset number ..... 155
Number of shots in exposure and flash bracketing sequence ..... 203
Number of shots in WB bracketing sequence ..... 208
Number of intervals for interval timer photography ..... 225
Focal length (non-CPU lenses) ..... 238

**2** ISO sensitivity indicator ..... 134
Auto ISO sensitivity indicator ..... 137

**3** Metering ..... 140

**4** ISO sensitivity ..... 134
Autofocus mode ..... 121

**5** Aperture stop indicator ..... 92, 431

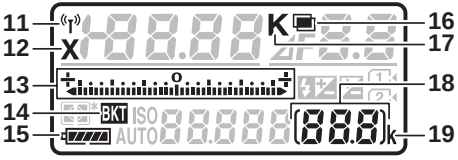
**6** Aperture (f-number) ..... 91, 93
Aperture (number of stops) ..... 92, 431
Bracketing increment ..... 204, 209
Number of shots in ADL bracketing sequence ..... 212
Number of shots per interval ..... 225
Maximum aperture (non-CPU lenses) ..... 238
PC mode indicator ..... 444

**7** Memory card indicator (Slot 1) ..... 31, 376

**8** Memory card indicator (Slot 2) ..... 31, 376

**9** Exposure compensation indicator ..... 144

**10** Flash compensation indicator ..... 189




**11** Wi-Fi indicator ..... 288

**12** Flash sync indicator ..... 345

**13** Exposure/bracketing indicator
- Exposure ..... 94
- Exposure compensation ..... 143
- Exposure/flash bracketing ... 203
- White balance bracketing ... 208
- ADL bracketing ..... 212

**14** Exposure/flash bracketing indicator ..... 203
WB bracketing indicator ..... 208
ADL bracketing indicator ..... 212

**15** Battery indicator ..... 30

**16** Multiple exposure indicator ..... 217

**17** Color temperature indicator .... 152

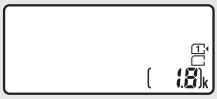
**18** Number of exposures remaining ..... 31
Number of shots remaining before memory buffer fills ..... 105, 492
AF-area mode indicator ..... 126
Preset manual white balance recording indicator ..... 157
Time-lapse recording indicator ..... 233
Manual lens number ..... 238
Capture mode indicator ..... 444
HDMI-CEC connection indicator ..... 280

**19** "k" (appears when memory remains for over 1000 exposures) ..... 31

**Note**: Display shown with all indicators lit for illustrative purposes.

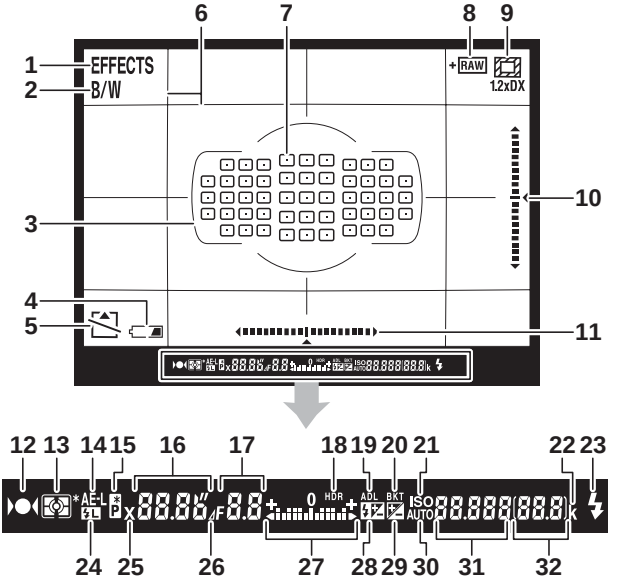
**Camera Off Display**

If the camera is turned off with a battery and memory card inserted, the memory card icon and number of exposures remaining will be displayed (some memory cards may in rare cases only display this information when the camera is on).



*Control panel*

## The Viewfinder




| | |
|---|---|
| 1 | Special effects mode indicator ..... 46 |
| 2 | Monochrome indicator (displayed in mode or when the **Monochrome** Picture Control or a Picture Control based on **Monochrome** is selected) ..... 47, 165 |
| 3 | AF area brackets ..... 29, 35, 247 |
| 4 | Low battery warning ..... 30 |
| 5 | "No memory card" indicator ..... 33 |
| 6 | Framing grid (displayed when **On** is selected for Custom Setting d7, **Viewfinder grid display**) ... 341 |
| 7 | Focus points ..... 36, 127, 329, 330<br>AF-area mode ..... 126 |
| 8 | + NEF (RAW) indicator ..... 357 |
| 9 | 1.2× DX crop ..... 111 |
| 10 | Roll indicator (portrait orientation) ..... 359 |
| 11 | Roll indicator (landscape orientation) ..... 359 |

**12** Focus indicator ..... 36, 129, 133
**13** Metering ..... 139, 140
**14** Autoexposure (AE) lock ..... 141
**15** Flexible program indicator ..... 89
**16** Shutter speed ..... 90, 93
Autofocus mode ..... 120, 121
**17** Aperture (f-number) ..... 91, 93
Aperture (number of stops) ..... 92, 431
**18** HDR indicator ..... 178
**19** ADL indicator ..... 176
**20** Exposure/flash bracketing indicator ..... 203
WB bracketing indicator ..... 208
ADL bracketing indicator ..... 212
**21** ISO sensitivity indicator ..... 134
**22** "k" (appears when memory remains for over 1000 exposures) ..... 31
**23** Flash-ready indicator ..... 40, 339
**24** FV lock indicator ..... 191
**25** Flash sync indicator ..... 345
**26** Aperture stop indicator ..... 92, 431
**27** Exposure indicator ..... 94
Exposure compensation display ..... 143
**28** Flash compensation indicator ..... 188
**29** Exposure compensation indicator ..... 144
**30** Auto ISO sensitivity indicator ..... 137
**31** ISO sensitivity ..... 134
AF-area mode ..... 123, 125
**32** Number of exposures remaining ..... 31
Number of shots remaining before memory buffer fills ..... 105, 492
Preset manual white balance recording indicator ..... 157
Exposure compensation value ..... 143
Flash compensation value ..... 188

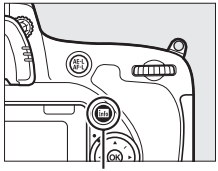
**Note**: Display shown with all indicators lit for illustrative purposes.

**☑ No Battery**
When the battery is totally exhausted or no battery is inserted, the display in the viewfinder will dim. This is normal and does not indicate a malfunction. The viewfinder display will return to normal when a fully-charged battery is inserted.

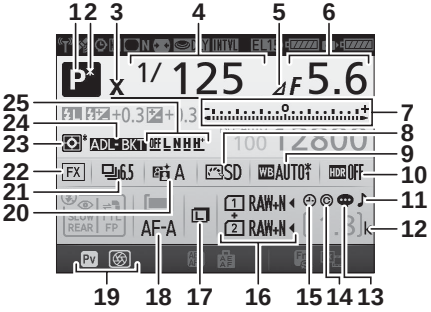
**☑ The Control Panel and Viewfinder Displays**
The brightness of the control panel and viewfinder displays varies with temperature, and the response times of the displays may drop at low temperatures. This is normal and does not indicate a malfunction.

## The Information Display

Press the i button to display shutter speed, aperture, the number of exposures remaining, AF-area mode, and other shooting information in the monitor.



i button




**1** Shooting mode ..... 6, 34, 41, 46, 88

**2** Flexible program indicator.....89

**3** Flash sync indicator..... 345

**4** Shutter speed .....90, 93
Number of shots in exposure and flash bracketing sequence ..... 203
Number of shots in WB bracketing sequence ..... 208
Focal length (non-CPU lenses) ..... 235

**5** Aperture stop indicator .....92, 431

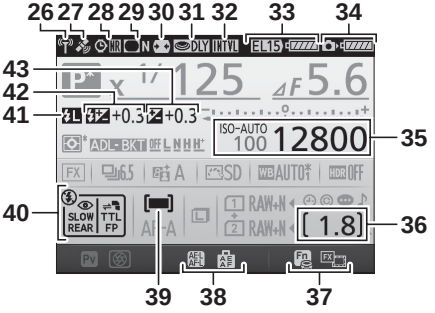
**6** Aperture (f-number).....91, 93
Aperture (number of stops).....92, 431
Bracketing increment..... 204, 209
Number of shots in ADL bracketing sequence..... 212
Maximum aperture (non-CPU lenses) ..... 238

7 Exposure indicator ..... 94
Exposure compensation display ..... 143
Bracketing progress indicator
Exposure and flash bracketing ..... 203
WB bracketing ..... 208
8 Picture Control indicator ..... 166
9 White balance ..... 146
White balance fine-tuning indicator ..... 150
10 HDR indicator ..... 178
HDR strength ..... 178
Multiple exposure indicator ..... 219
11 "Beep" indicator ..... 338
12 "k" (appears when memory remains for over 1000 exposures) ..... 31
13 Image comment indicator ..... 384
14 Copyright information ..... 385
15 "Clock not set" indicator ..... 15, 381
16 Image quality ..... 116
Role played by card in slot 2 ..... 119
17 Image size ..... 118
18 Autofocus mode ..... 121
19 **Pv** button assignment ..... 361
20 Active D-Lighting indicator ..... 176
21 Release mode ..... 7, 103
Continuous shooting speed ..... 338
22 Image area indicator ..... 112
23 Metering ..... 139
24 Exposure and flash bracketing indicator ..... 203
WB bracketing indicator ..... 208
ADL bracketing indicator ..... 212
25 ADL bracketing amount ..... 213

**Turning the Monitor Off**

To clear shooting information from the monitor, press the **info** button again or press the shutter-release button halfway. The monitor will turn off automatically if no operations are performed for about 10 seconds.

## The Information Display (Continued)




**26** Wi-Fi connection indicator ..... 288
Eye-Fi connection indicator ..... 392
**27** Satellite signal indicator ..... 240
**28** Long exposure noise reduction indicator ..... 317
**29** Vignette control indicator ..... 315
**30** Auto distortion control ..... 316
**31** Exposure delay mode ..... 339
**32** Interval timer indicator ..... 222
Time-lapse indicator ..... 229
Remote control mode (ML-L3) ..... 193
**33** MB-D16 battery type display ... 344
MB-D16 battery indicator ..... 343
**34** Camera battery indicator ..... 30
**35** ISO sensitivity indicator ..... 134
ISO sensitivity ..... 134
Auto ISO sensitivity indicator ..... 137
**36** Number of exposures remaining ..... 31
Time-lapse recording indicator ..... 233
**37** **Fn** button assignment ..... 356
**38** **AE-L/AF-L** button assignment ... 361
**39** AF-area mode indicator ..... 126
**40** Flash mode ..... 180, 182
**41** FV lock indicator ..... 191
**42** Flash compensation indicator ..... 188
Flash compensation value ..... 188
**43** Exposure compensation indicator ..... 144
Exposure compensation value ..... 143

**Note**: Display shown with all indicators lit for illustrative purposes.

**See Also**

For information on choosing how long the monitor stays on, see Custom Setting c4 (**Monitor off delay**, 337). For information on changing the color of the lettering in the information display, see Custom Setting d9 (**Information display**, 341).

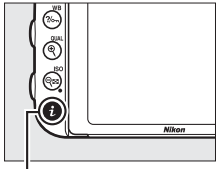
**The ("Clock Not Set") Icon**

The camera clock is powered by an independent, rechargeable power source, which is charged as necessary when the main battery is installed or the camera is powered by an optional power connector and AC adapter (441). Two days of charging will power the clock for about three months. If the camera displays a warning stating that the clock is reset and a icon flashes in the information display, the clock has been reset and the date and time recorded with new photographs will not be correct. Use the **Time zone and date** > **Date and time** option in the setup menu to set the clock to the correct time and date (28, 381).

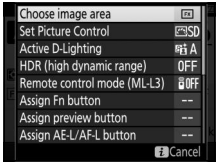
The camera clock is less accurate than most watches and household clocks. Check the clock regularly against more accurate time pieces and reset as necessary.

## The *i* button

Use the *i* button for quick access to frequently-used settings in playback mode (🕮 245) and during viewfinder (🕮 198) and live view photography (🕮 61) and movie live view (🕮 71).




*i* button




*Viewfinder photography*

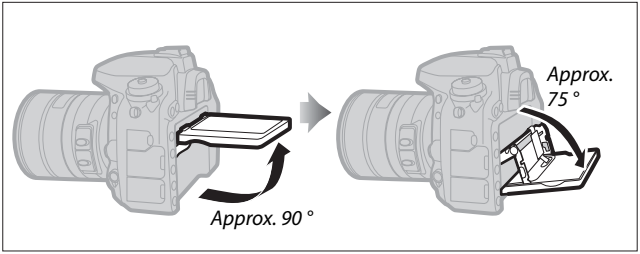
*Playback*

*Live view photography*

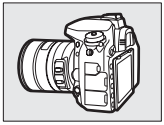
*Movie live view*

## Using the Tilting Monitor

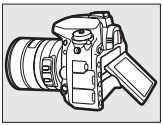
The monitor can be angled and rotated as shown below.



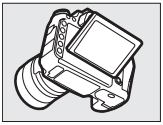

**Normal use**: The monitor is normally used in storage position.



**Low-angle shots**: Take shots with the camera held low.



**High-angle shots**: Take shots with the camera held high.

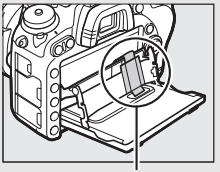


**Using the Monitor**

Rotate the monitor gently within the limits shown on page 17. *Do not use force.* Failure to observe these precautions could damage the camera or monitor. If the camera is mounted on a tripod, care should be taken to ensure that the monitor does not contact the tripod.

Do not lift or carry the camera by the monitor. Failure to observe this precaution could damage the camera. If the monitor is not being used to take photographs, return it to the storage position.

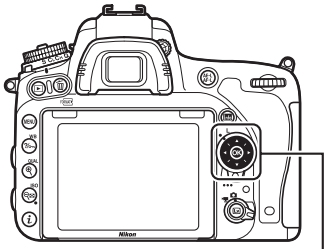
Do not touch the area to the rear of the monitor or allow liquid to contact the inner surface. Failure to observe these precautions could cause product malfunction.

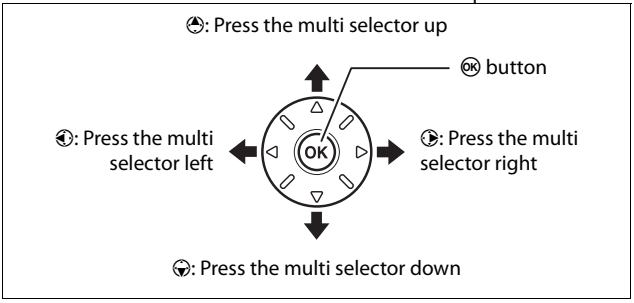


*Be particularly careful not to touch this area.*

## The Multi Selector

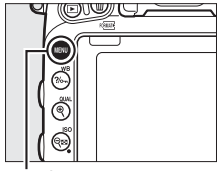
In this manual, operations using the multi selector are represented by ▲, ▼, ◀, and ▶ icons.





# Camera Menus

Most shooting, playback, and setup options can be accessed from the camera menus. To view the menus, press the **MENU** button.

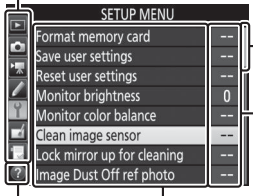



**MENU** *button*

***Tabs***

Choose from the following menus:

- ▶: **Playback** (🕮 300)
- 📷: **Photo Shooting** (🕮 310)
- 🎥: **Movie Shooting** (🕮 318)
- ✏: **Custom Settings** (🕮 323)
- 🔧: **Setup** (🕮 374)
- 🖌: **Retouch** (🕮 393)
- ☰/☰: **MY MENU** or **RECENT SETTINGS** (defaults to **MY MENU**; 🕮 421)




Slider shows position in current menu.

Current settings are shown by icons.

***Menu options***

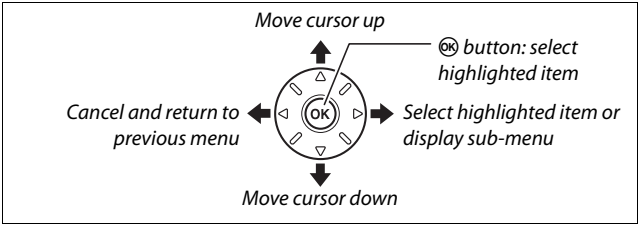
Options in current menu.

***Help icon (🕮 21)***

## Using Camera Menus

### ■■ *Menu Controls*

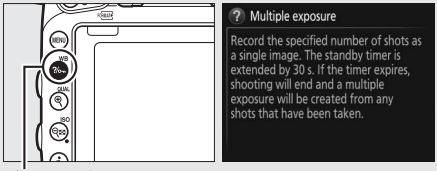
The multi selector and ⊛ button are used to navigate the camera menus.




**The ⍰ (Help) Icon**

If a ⍰ icon is displayed at the bottom left corner of the monitor, help can be displayed by pressing the ?/🔑 (**WB**) button.

A description of the currently selected option or menu will be displayed while the button is pressed. Press ▲ or ▼ to scroll through the display.



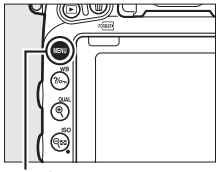

?/🔑 (**WB**) *button*

## ■■ *Navigating the Menus*

Follow the steps below to navigate the menus.

### 1 Display the menus.

Press the **MENU** button to display the menus.




**MENU** *button*

### 2 Highlight the icon for the current menu.

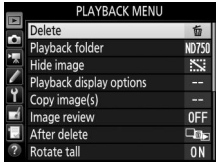
Press ◀ to highlight the icon for the current menu.

### 3 Select a menu.

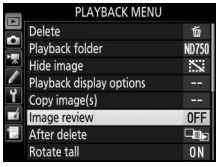
Press ▲ or ▼ to select the desired menu.

### 4 Position the cursor in the selected menu.

Press ▶ to position the cursor in the selected menu.



**5** **Highlight a menu item.**
Press ▲ or ▼ to highlight a menu item.




**6** **Display options.**
Press ▶ to display options for the selected menu item.

**7** **Highlight an option.**
Press ▲ or ▼ to highlight an option.

**8** **Select the highlighted item.**
Press OK to select the highlighted item. To exit without making a selection, press the MENU button.

Note the following:

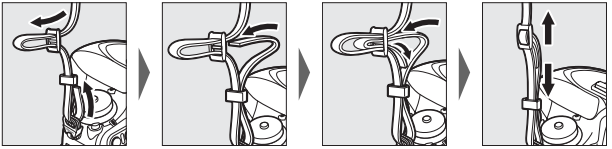
- Menu items that are displayed in gray are not currently available.
- While pressing ▶ generally has the same effect as pressing OK, there are some cases in which selection can only be made by pressing OK.
- To exit the menus and return to shooting mode, press the shutter-release button halfway.

## First Steps

Follow the seven steps below to ready the camera for use.

**1 Attach the strap.**

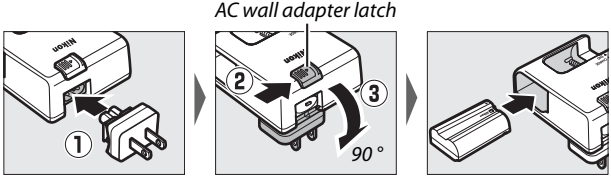
Attach the strap as shown. Repeat for the second eyelet.



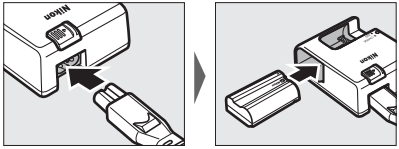
## 2 Charge the battery.

Insert the battery and plug the charger in (depending on the country or region, the charger comes with either an AC wall adapter or a power cable). An exhausted battery will fully charge in about two hours and 35 minutes.

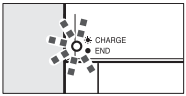
- **AC wall adapter**: Insert the AC wall adapter into the charger AC inlet (①). Slide the AC wall adapter latch as shown (②) and rotate the adapter 90 ° to fix it in place (③). Insert the battery and plug the charger in.



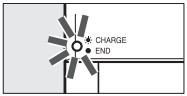

- **Power cable**: After connecting the power cable with the plug in the orientation shown, insert the battery and plug the cable in.



The **CHARGE** lamp will flash while the battery charges.



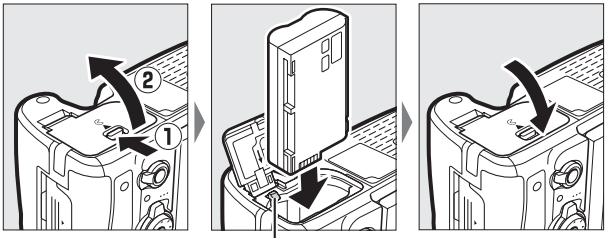

*Battery charging*




*Charging complete*

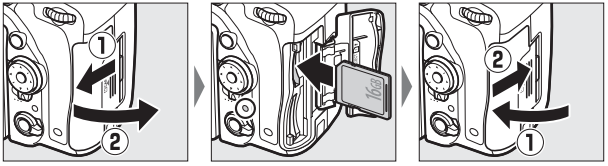
## 3 Insert the battery and memory card.

Before inserting or removing the battery or memory cards, confirm that power switch is in the **OFF** position. Insert the battery in the orientation shown, using the battery to keep the orange battery latch pressed to one side. The latch locks the battery in place when the battery is fully inserted.




*Battery latch*

If you are using only one memory card, insert it into slot 1 (🕮 31). Slide the memory card in until it clicks into place.

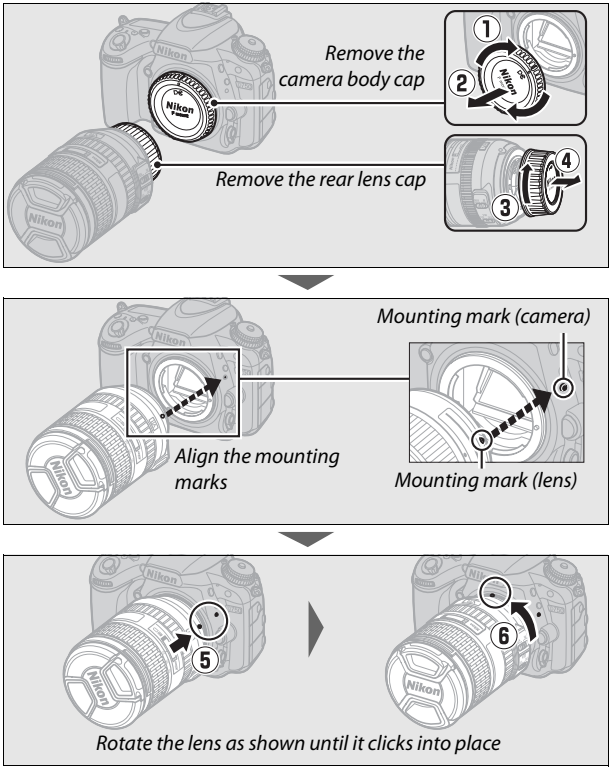



**The Battery and Charger**

*Read and follow the warnings and cautions on pages xiii–xvi and 457–459 of this manual.*

## 4 Attach a lens.

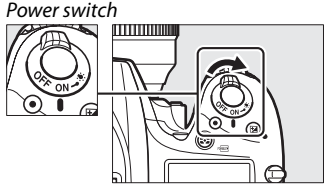
Be careful to prevent dust from entering the camera when the lens or body cap is removed. The lens generally used in this manual for illustrative purposes is an AF-S NIKKOR 24–85mm f/3.5–4.5G ED VR.

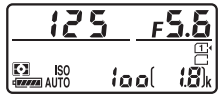



Be sure to remove the lens cap before taking pictures.

## 5 Turn the camera on.

The control panel will light. If this is the first time the camera has been turned on, a language-selection dialog will be displayed.



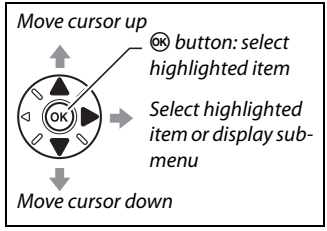

*Control panel*

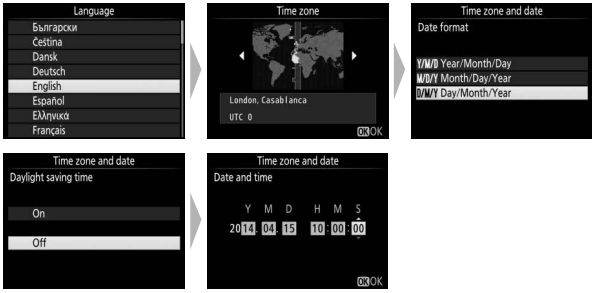
**Image Sensor Cleaning**

The camera vibrates the low-pass filter covering the image sensor to remove dust when the camera is turned on or off (🕮 448).

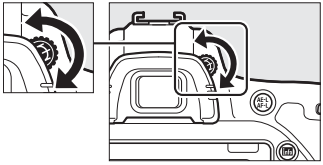
## 6 Choose a language and set the camera clock.

Use the multi selector and ⓞⓚ button to select a language and set the camera clock. When setting the camera clock, you will be prompted to choose a time zone, date format, and daylight saving time option before setting the time and date; note that the camera uses a 24-hour clock. Language and date/time settings can be changed at any time using the **Language** (🕮 381) and **Time zone and date** (🕮 381) options in the setup menu.

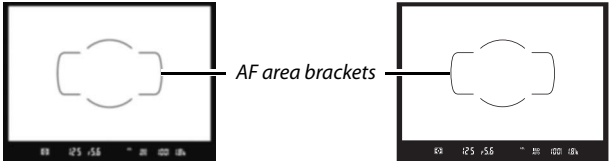





## 7 Focus the viewfinder.



Rotate the diopter adjustment control until the AF area brackets are in sharp focus. When operating the control with your eye to the viewfinder, be careful not to put your fingers or fingernails in your eye.

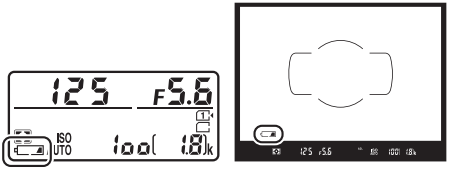



*Viewfinder not in focus* *Viewfinder in focus*

The camera is now ready for use. Proceed to page 34 for information on taking photographs.

### ■■ *Battery Level*

The battery level is shown in the control panel and viewfinder.

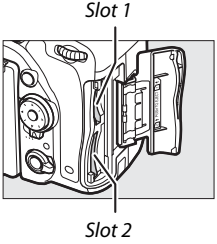



*Control panel* *Viewfinder*

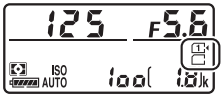
| Control panel | Viewfinder | Description |
|---|---|---|
| | — | Battery fully charged. |
| | — | Battery partially discharged. |
| | — | |
| | — | |
| | | Low battery. Charge battery or ready spare battery. |
| (flashes) | (flashes) | Shutter release disabled. Charge or exchange battery. |

### ■■ *Number of Exposures Remaining*

The camera has two memory card slots: slot 1 and slot 2. Slot 1 is for the main card; the card in slot 2 plays a backup or secondary role. If the default setting of **Overflow** is selected for **Role played by card in Slot 2** (🕮 119) when two memory cards are inserted, the card in slot 2 will only be used when the card in slot 1 is full.




The control panel shows the slot or slots that currently hold a memory card (the example at right shows the icons displayed when a card is inserted in each slot). If the memory card is full or locked or an error has occurred, the icon for the affected card will flash (🕮 473).



*Control panel*

The control panel and viewfinder show the number of photographs that can be taken at current settings (values over 1000 are rounded down to the nearest hundred; e.g., values between 1800 and 1899 are shown as 1.8 k). If two memory cards are inserted, the displays show the space available on the card in Slot 1.

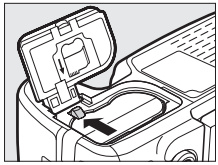
*Control panel*

*Viewfinder*

## ■■ *Removing the Battery and Memory Cards*

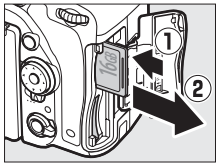
### Removing the Battery

Turn the camera off and open the battery-chamber cover. Press the battery latch in the direction shown by the arrow to release the battery and then remove the battery by hand.



### Removing Memory Cards

After confirming that the memory card access lamp is off, turn the camera off, open the memory card slot cover, and press the card in and then release it (❶). The card can then be removed by hand (❷).

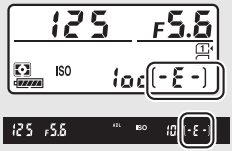



**Memory Cards**

- Memory cards may be hot after use. Observe due caution when removing memory cards from the camera.
- Turn the power off before inserting or removing memory cards. Do not remove memory cards from the camera, turn the camera off, or remove or disconnect the power source during formatting or while data are being recorded, deleted, or copied to a computer. Failure to observe these precautions could result in loss of data or in damage to the camera or card.
- Do not touch the card terminals with your fingers or metal objects.
- Do not bend, drop, or subject to strong physical shocks.
- Do not apply force to the card casing. Failure to observe this precaution could damage the card.
- Do not expose to water, heat, high levels of humidity, or direct sunlight.
- Do not format memory cards in a computer.

**No Memory Card**

If no memory card is inserted, the control panel and viewfinder will show [- E -]. If the camera is turned off with a charged battery and no memory card inserted, [- E -] will be displayed in the control panel.



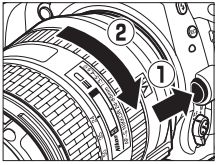

**The Write Protect Switch**

SD memory cards are equipped with a write protect switch to prevent accidental loss of data. When this switch is in the "lock" position, the memory card can not be formatted and photos can not be deleted or recorded (a warning will be displayed in the monitor if you attempt to release the shutter). To unlock the memory card, slide the switch to the "write" position.

*Write-protect switch*

## ■■ *Detaching the Lens*

Be sure the camera is off when removing or exchanging lenses. To remove the lens, press and hold the lens release button (①) while turning the lens clockwise (②). After removing the lens, replace the lens caps and camera body cap.




**CPU Lenses with Aperture Rings**

In the case of CPU lenses equipped with an aperture ring (📖 429), lock aperture at the minimum setting (highest f-number).

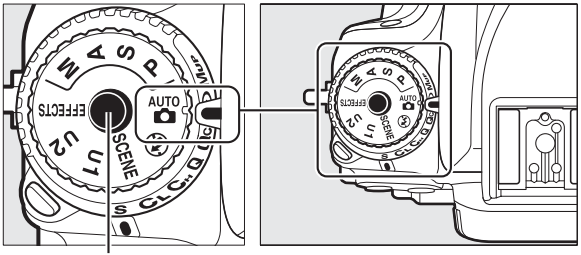
# Basic Photography and Playback

## "Point-and-Shoot" Photography (AUTO and Modes)

This section describes how to take photographs in AUTO and modes. AUTO and are automatic "point-and-shoot" modes in which the majority of settings are controlled by the camera in response to shooting conditions.

Before proceeding, turn the camera on and select the desired mode by pressing the mode dial lock release and rotating the mode dial to AUTO or (the only difference between these two modes is that the flash will not fire in mode).

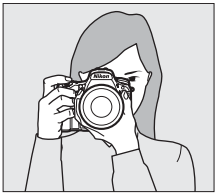
*Mode dial*



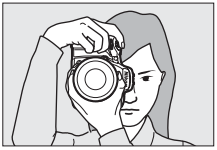

*Mode dial lock release*

## 1 Ready the camera.

When framing photographs in the viewfinder, hold the handgrip in your right hand and cradle the camera body or lens with your left.



When framing photographs in portrait (tall) orientation, hold the camera as shown at right.



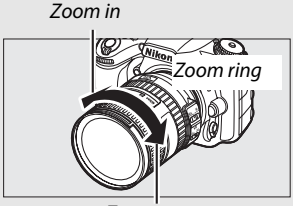
## 2 Frame the photograph.

Frame a photograph in the viewfinder with the main subject in the AF area brackets.

*AF area brackets*

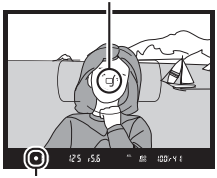
**Using a Zoom Lens**

Use the zoom ring to zoom in on the subject so that it fills a larger area of the frame, or zoom out to increase the area visible in the final photograph (select longer focal lengths on the lens focal length scale to zoom in, shorter focal lengths to zoom out).



## 3 Press the shutter-release button halfway.

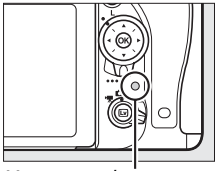
Press the shutter-release button halfway to focus (if the subject is poorly lit, the flash may pop up and the AF-assist illuminator may light). When the focus operation is complete, the active focus point and in-focus indicator (●) will appear in the viewfinder.




| In-focus indicator | Description |
|---|---|
| ● | Subject in focus. |
| ▶ | Focus point is between camera and subject. |
| ◀ | Focus point is behind subject. |
| ▶ ◀ (flashes) | Camera unable to focus using autofocus. See page 131. |

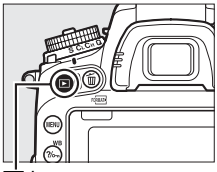
## 4 Shoot.

Smoothly press the shutter-release button the rest of the way down to take the photograph. The memory card access lamp will light and the photograph will be displayed in the monitor for a few seconds. *Do not eject the memory card or remove or disconnect the power source until the lamp has gone out and recording is complete.*



## Basic Playback

**1 Press the ▶ button.**
A photograph will be displayed in the monitor. The memory card containing the picture currently displayed is shown by an icon.



▶ *button*

**2 View additional pictures.**
Additional pictures can be displayed by pressing ◀ or ▶.

To end playback and return to shooting mode, press the shutter-release button halfway.

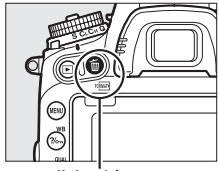
**Image Review**
When **On** is selected for **Image review** in the playback menu (🕮 307), photographs are automatically displayed in the monitor for a few seconds after shooting.

## Deleting Unwanted Photographs

To delete the photograph currently displayed in the monitor, press the 🗑 (FORMAT) button. *Note that photographs can not be recovered once deleted.*

**1 Display the photograph.**
Display the photograph you wish to delete as described on the preceding page. The location of the current image is shown by an icon at the bottom left corner of the display.

**2 Delete the photograph.**
Press the 🗑 (FORMAT) button. A confirmation dialog will be displayed; press the 🗑 (FORMAT) button again to delete the image and return to playback. To exit without deleting the picture, press ▶.




🗑 (FORMAT) *button*

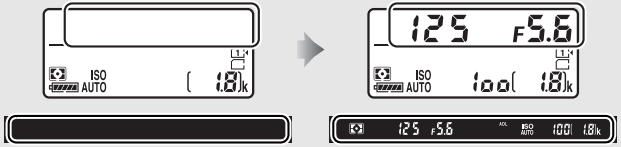
**See Also**
See page 245 for information on choosing a memory card slot.

### Delete

To delete selected images (🕮 260), all images taken on a selected date (🕮 261), or all images in a chosen location on a selected memory card (🕮 260), use the **Delete** option in the playback menu.

### The Standby Timer (Viewfinder Photography)

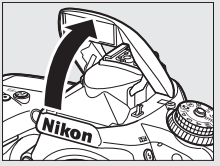
The viewfinder indicator display and control panel shutter speed and aperture display will turn off if no operations are performed for about six seconds, reducing the drain on the battery. Press the shutter-release button halfway to reactivate the display. The length of time before the standby timer expires automatically can be selected using Custom Setting c2 (**Standby timer**, 🕮 336).



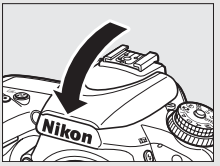

*Exposure meters off* *Exposure meters on*

### The Built-in Flash

If additional lighting is required for correct exposure in AUTO mode, the built-in flash will pop up automatically when the shutter-release button is pressed halfway. If the flash is raised, photographs can only be taken when the flash-ready indicator (⚡) is displayed. If the flash-ready indicator is not displayed, the flash is charging; remove your finger briefly from the shutter-release button and try again.



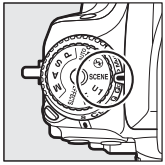
To save power when the flash is not in use, press it gently downward until the latch clicks into place.



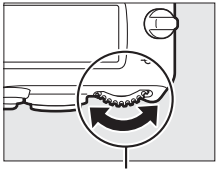
# Matching Settings to the Subject or Situation (Scene Mode)

The camera offers a choice of "scene" modes. Choosing a scene mode automatically optimizes settings to suit the selected scene, making creative photography as simple as selecting a mode, framing a picture, and shooting as described on pages 34–36.

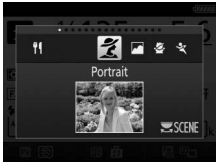
The following scenes can be selected by rotating the mode dial to **SCENE** and rotating the main command dial until the desired scene appears in the monitor. To view the currently selected scene, press **info**.




*Mode dial*



*Main command dial*




*Monitor*

| | | | |
|---|---|---|---|
| | Portrait | | Beach/snow |
| | Landscape | | Sunset |
| | Child | | Dusk/dawn |
| | Sports | | Pet portrait |
| | Close up | | Candlelight |
| | Night portrait | | Blossom |
| | Night landscape | | Autumn colors |
| | Party/indoor | | Food |

### Portrait

Use for portraits with soft, natural-looking skin tones. If the subject is far from the background or a telephoto lens is used, background details will be softened to lend the composition a sense of depth.

### Landscape

Use for vivid landscape shots in daylight.

**Note**
The built-in flash and AF-assist illuminator turn off.

### Child

Use for snapshots of children. Clothing and background details are vividly rendered, while skin tones remain soft and natural.

### Sports

Fast shutter speeds freeze motion for dynamic sports shots in which the main subject stands out clearly.

**Note**
The built-in flash and AF-assist illuminator turn off.

### Close Up

Use for close-up shots of flowers, insects, and other small objects (a macro lens can be used to focus at very close ranges).

### Night Portrait

Use for a natural balance between the main subject and the background in portraits taken under low light.

### Night Landscape

Reduce noise and unnatural colors when photographing night landscapes, including street lighting and neon signs.

**Note**
The built-in flash and AF-assist illuminator turn off.

### Party/Indoor

Capture the effects of indoor background lighting. Use for parties and other indoor scenes.

### Beach/Snow

Capture the brightness of sunlight expanses of water, snow, or sand.

**Note**
The built-in flash and AF-assist illuminator turn off.

### Sunset

Preserves the deep hues seen in sunsets and sunrises.

**Note**
The built-in flash and AF-assist illuminator turn off.

### Dusk/Dawn

Preserves the colors seen in the weak natural light before dawn or after sunset.

**Note**
The built-in flash and AF-assist illuminator turn off.

### Pet Portrait

Use for portraits of active pets.

**Note**
The AF-assist illuminator turns off.

### Candlelight

For photographs taken by candlelight.

**Note**
The built-in flash turns off.

### Blossom

Use for fields of flowers, orchards in bloom, and other landscapes featuring expanses of blossoms.

**Note**
The built-in flash turns off.

### Autumn Colors

Captures the brilliant reds and yellows in autumn leaves.

**Note**
The built-in flash turns off.

### Food

Use for vivid photographs of food.

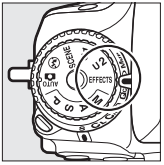
**Note**
For flash photography, press the ϟ (⚡) button to raise the flash (🕮 182).

**Preventing Blur**
Use a tripod to prevent blur caused by camera shake at slow shutter speeds.

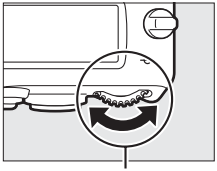
# Special Effects

Special effects can be used when taking photographs and shooting movies.

The following effects can be selected by rotating the mode dial to **EFFECTS** and rotating the main command dial until the desired scene appears in the monitor. To view the currently selected effect, press **info**.




*Mode dial*

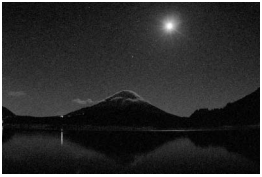


*Main command dial*

*Monitor*

| | |
|---|---|
| Night vision | Silhouette |
| Color sketch | High key |
| Miniature effect | Low key |
| Selective color | |

## Night Vision



Use under conditions of darkness to record monochrome images at high ISO sensitivities.

**Note**

Pictures may be affected by noise in the form of randomly-spaced bright pixels, fog, or lines. Manual focus can be used if the camera is unable to focus. The built-in flash turns off.

## Color Sketch

The camera detects and colors outlines for a color sketch effect. The effect can be adjusted in live view (🕮 50).

**Note**

Movies shot in this mode play back like a slide show made up of a series of stills.

### *Miniature Effect*

Create photos that appear to be pictures of dioramas. Works best when shooting from a high vantage point. Miniature effect movies play back at high speed, compressing about 45 minutes of footage shot at 1920 × 1080/30p into a movie that plays back in about three minutes. The effect can be adjusted in live view (🕮 51).

**Note**
Sound is not recorded with movies. The built-in flash and AF-assist illuminator turn off.

### *Selective Color*

All colors other than the selected colors are recorded in black and white. The effect can be adjusted in live view (🕮 52).

**Note**
The built-in flash turns off.

### *Silhouette*

Silhouette subjects against bright backgrounds.

**Note**
The built-in flash turns off.

## Hi *High Key*

Use when shooting bright scenes to create bright images that seem filled with light.

**Note**
The built-in flash turns off.

## Lo *Low Key*

Use when shooting dark scenes to create dark, low-key images with prominent highlights.

**Note**
The built-in flash turns off.

**Preventing Blur**
Use a tripod to prevent blur caused by camera shake at slow shutter speeds.

**NEF (RAW)**
NEF (RAW) recording is not available in , , , and  modes. Pictures taken when an NEF (RAW) or NEF (RAW) + JPEG option is selected in these modes will be recorded as JPEG images. JPEG images created at settings of NEF (RAW)+JPEG will be recorded at the selected JPEG quality, while images recorded at a setting of NEF (RAW) will be recorded as fine-quality images.

**and Modes**
Autofocus is not available during movie recording. The live view refresh rate will drop, together with the frame rate for continuous release mode; using autofocus during live view photography will disrupt the preview.

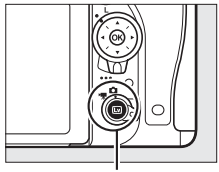
## Options Available in Live View

Settings for the selected effect are adjusted in the live view display but apply during live view and viewfinder photography and movie recording.

### ■■ *Color Sketch*

**1 Select live view.**

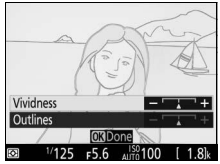
Press the Lv button. The view through the lens will be displayed in the monitor.



Lv *button*

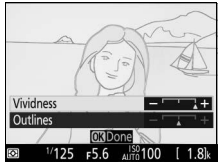
**2 Adjust options.**

Press OK to display the options shown at right. Press ▲ or ▼ to highlight **Vividness** or **Outlines** and press ◀ or ▶ to change. Vividness can be increased to make colors more saturated, or decreased for a washed-out, monochromatic effect, while outlines can be made thicker or thinner. Increasing the thickness of the lines also makes colors more saturated.

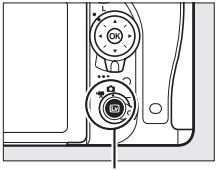



**3 Press OK.**

Press OK to exit when settings are complete. To resume viewfinder photography, press the Lv button. The selected settings will continue in effect and will apply to photographs and movies recorded in live view or using the viewfinder.

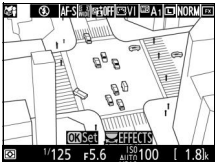


**1 Select live view.**
Press the Lv button. The view through the lens will be displayed in the monitor.

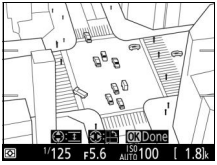


Lv *button*

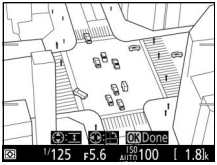
**2 Position the focus point.**
Use the multi selector to position the focus point in the area that will be in focus and then press the shutter-release button halfway to check focus. To temporarily clear miniature effect options from the display and enlarge the view in the monitor for precise focus, press ⊕ (**QUAL**). Press ⊖ (**ISO**) to restore the miniature effect display.




**3 Display options.**
Press OK to display miniature effect options.



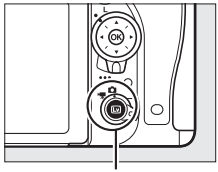

**4 Adjust options.**
Press ◀ or ▶ to choose the orientation of the area that will be in focus and press ▲ or ▼ to adjust its width.



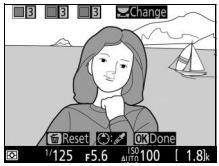
**5 Press ⓚ.**
Press ⓚ to exit when settings are complete. To resume viewfinder photography, press the Ⓛv button. The selected settings will continue in effect and will apply to photographs and movies recorded in live view or using the viewfinder.

### ■ *Selective Color*

**1 Select live view.**
Press the Ⓛv button. The view through the lens will be displayed in the monitor.

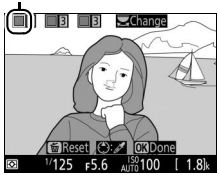

Ⓛv *button*

**2 Display options.**
Press ⓚ to display selective color options.




**3 Select a color.**
Frame an object in the white square in the center of the display and press ⊕ to choose the color of the object as one that will remain in the final image (the camera may have difficulty detecting unsaturated colors; choose a saturated color). To zoom in on the center of the display for more precise color selection, press ⊕ (**QUAL**). Press ⊖ (**ISO**) to zoom out.

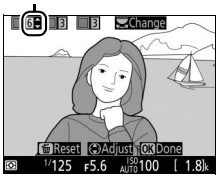
*Selected color*



## 4 Choose the color range.

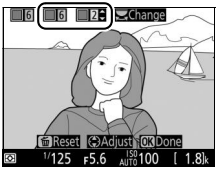
Press ◆ or ◆ to increase or decrease the range of similar hues that will be included in the final image. Choose from values between 1 and 7; note that higher values may include hues from other colors.

*Color range*




## 5 Select additional colors.

To select additional colors, rotate the main command dial to highlight another of the three color boxes at the top of the display and repeat Steps 3 and 4 to select another color. Repeat for a third color if desired. To deselect the highlighted color, press 🗑 (FORMAT). To remove all colors, press and hold 🗑 (FORMAT). A confirmation dialog will be displayed; select **Yes**.



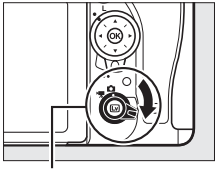

## 6 Press OK.

Press OK to exit when settings are complete. During shooting, only objects of the selected hues will be recorded in color; all others will be recorded in black-and-white. To resume viewfinder photography, press the Lv button. The selected settings will continue in effect and will apply to photographs and movies recorded in live view or using the viewfinder.

# Live View Photography

Follow the steps below to take photographs in live view.

**1 Rotate the live view selector to 📷 (live view photography).**



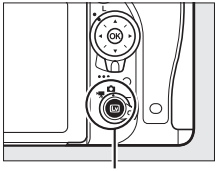
*Live view selector*

**☑ Cover the Viewfinder**

To prevent light entering via the viewfinder from interfering with photographs and exposure, remove the rubber eyecup and cover the viewfinder with the supplied eyepiece cap before shooting (🕮 107).

**2 Press the Lv button.**

The mirror will be raised and the view through the lens will be displayed in the camera monitor. The subject will no longer be visible in the viewfinder.



*Lv button*

**3 Position the focus point.**

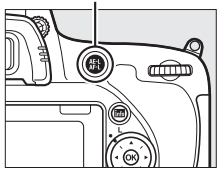
Position the focus point over your subject as described on page 57.

## 4 Focus.

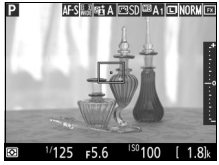
Press the shutter-release button halfway to focus.

The focus point will flash green while the camera focuses. If the camera is able to focus, the focus point will be displayed in green; if the camera is unable to focus, the focus point will flash red (note that pictures can be taken even when the focus point flashes red; check focus in the monitor before shooting). Exposure can be locked by pressing the AE-L/AF-L **AE-L/AF-L** button (🕮 141); focus locks while the shutter-release button is pressed halfway.

AE-L/AF-L **AE-L/AF-L** *button*



If exposure preview is enabled, the effects of shutter speed, aperture, ISO sensitivity, and exposure compensation (🕮 143) can be previewed in the monitor as shown at right (note that although exposure can be adjusted by ±5 EV, only values between −3 and +3 EV will be reflected in the preview display). To enable exposure preview, press the ***i*** button and select **On** for **Exposure preview** (🕮 62).

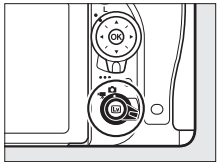



## 5 Take the picture.

Press the shutter-release button the rest of the way down to shoot. The monitor will turn off.

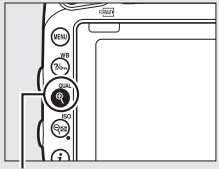
## 6 Exit live view mode.

Press the Lv button to exit live view mode.

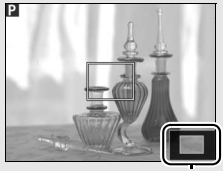


**Live View Zoom Preview**

Press the 🔍 (**QUAL**) button to magnify the view in the monitor up to a maximum of about 19 ×. A navigation window will appear in a gray frame at the bottom right corner of the display. Use the multi selector to scroll to areas of the frame not visible in the monitor or press ⊖ (**ISO**) to zoom out.



🔍 (**QUAL**) *button*



*Navigation window*

**The Standby Timer**

Regardless of the setting selected for Custom Setting c2 (**Standby timer**, 🕮 336), the standby timer will not expire during live view photography.

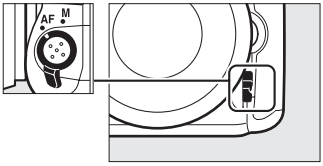
**Previewing Focus During Live View Photography (P, S, A, and M Modes Only)**

To temporarily select maximum aperture for an improved focus preview during live view photography, press the **Pv** button. To return aperture to its original value, press the button again or focus using autofocus. If the shutter-release button is pressed all the way down to take a picture during focus preview, aperture will return to the original value before the photo is taken.

## Focus

To focus using autofocus, rotate the focus-mode selector to **AF** and follow the steps below to choose autofocus and AF-area modes. For information on focusing manually, see page 60.

*Focus-mode selector*

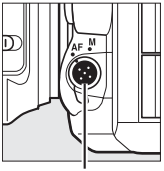



### ■■ *Choosing a Focus Mode*

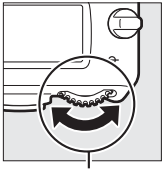
The following autofocus modes are available during live view photography and movie live view:

| Mode | Description |
|---|---|
| **AF-S** | **Single-servo AF**: For stationary subjects. Focus locks when shutter-release button is pressed halfway. |
| **AF-F** | **Full-time servo AF**: For moving subjects. Camera focuses continuously until shutter-release button is pressed. Focus locks when shutter-release button is pressed halfway. |

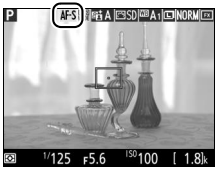
To choose an autofocus mode, press the AF-mode button and rotate the main command dial until the desired mode is displayed in the monitor.




*AF-mode button*



*Main command dial*



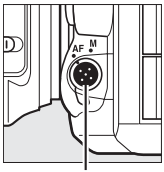

*Monitor*

### ■■ *Choosing an AF-Area Mode*

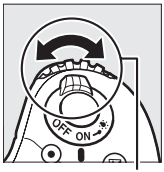
The following AF-area modes can be selected during live view photography and movie live view:

| Mode | Description |
|---|---|
| | **Face-priority AF**: Use for portraits. The camera automatically detects and focuses on portrait subjects; the selected subject is indicated by a double yellow border (if multiple faces are detected, the camera will focus on the closest subject; to choose a different subject, use the multi selector). If the camera can no longer detect the subject (because, for example, the subject has turned to face away from the camera), the border will no longer be displayed. |
| WIDE | **Wide-area AF**: Use for hand-held shots of landscapes and other non-portrait subjects. Use the multi selector to move the focus point anywhere in the frame, or press ⊛ to position the focus point in the center of the frame. |
| NORM | **Normal-area AF**: Use for pin-point focus on a selected spot in the frame. Use the multi selector to move the focus point anywhere in the frame, or press ⊛ to position the focus point in the center of the frame. A tripod is recommended. |
| | **Subject-tracking AF**: Use the multi selector to position the focus point over your subject and press ⊛ to start tracking. The focus point will track the selected subject as it moves through the frame. To end tracking, press ⊛ again. Note that the camera may be unable to track subjects if they move quickly, leave the frame or are obscured by other objects, change visibly in size, color, or brightness, or are too small, too large, too bright, too dark, or similar in color or brightness to the background. |

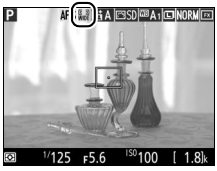
To choose an AF-area mode, press the AF-mode button and rotate the sub-command dial until the desired mode is displayed in the monitor.




*AF-mode button*




*Sub-command dial*




*Monitor*

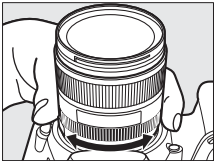
**Using Autofocus in Live View Photography and Movie Live View**

Use an AF-S lens. The desired results may not be achieved with other lenses or teleconverters. Note that in live view, autofocus is slower and the monitor may brighten or darken while the camera focuses. The focus point may sometimes be displayed in green when the camera is unable to focus. The camera may be unable to focus in the following situations:

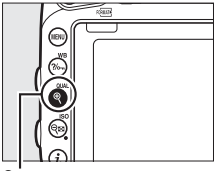
- The subject contains lines parallel to the long edge of the frame
- The subject lacks contrast
- The subject in the focus point contains areas of sharply contrasting brightness, or includes spot lighting or a neon sign or other light source that changes in brightness
- Flicker or banding appears under fluorescent, mercury-vapor, sodium-vapor, or similar lighting
- A cross (star) filter or other special filter is used
- The subject appears smaller than the focus point
- The subject is dominated by regular geometric patterns (e.g., blinds or a row of windows in a skyscraper)
- The subject is moving

## Manual Focus

To focus in manual focus mode (🕮 132), rotate the lens focus ring until the subject is in focus.



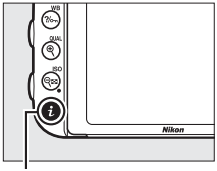
To magnify the view in the monitor for precise focus, press the 🔍 (**QUAL**) button.




🔍 (**QUAL**) *button*

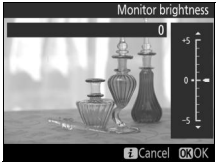
## Using the i Button

The options listed below can be accessed by pressing the i button during live view photography. Highlight items using the multi selector and press ▶ to view options for the highlighted item. After choosing the desired setting, press OK to return to the i-button menu. Press the i button again to exit to the shooting display.




*i button*

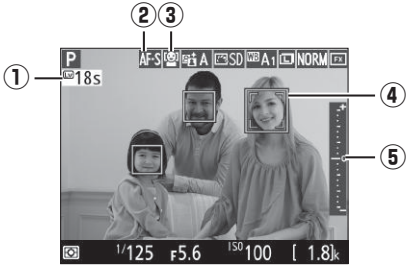
| Option | Description |
|---|---|
| **Choose image area** | Choose an image area for live view photography (🕮 111). |
| **Image quality** | Choose image quality (🕮 115). |
| **Image size** | Choose image size (🕮 118). |
| **Set Picture Control** | Choose a Picture Control (🕮 165). |
| **Active D-Lighting** | Adjust Active D-Lighting (🕮 175). |
| **Remote control mode (ML-L3)** | Choose a remote control mode (🕮 193). |

| Option | Description |
|---|---|
| **Monitor brightness** | Press ⊕ or ⊖ to adjust monitor brightness for live view photography (note that this affects live view only and has no effect on photographs or movies or on the brightness of the monitor for menus or playback; to adjust the brightness of the monitor for menus and playback without affecting live view photography or movie live view, use the **Monitor brightness** option in the setup menu as described on page 376).   |
| **Exposure preview** | Enable or disable exposure preview. If exposure preview is enabled, the effects of shutter speed, aperture, and ISO sensitivity on exposure can be previewed during live view photography. |

### Exposure Preview

When exposure preview is enabled, exposure can be adjusted by ±5 EV (📖 143), although only values between –3 and +3 EV are reflected in the preview display. Note that the preview may not accurately reflect the final results when flash lighting is used, Active D-Lighting (📖 175), High Dynamic Range (HDR; 📖 177), or bracketing is in effect, **A** (auto) is selected for the Picture Control **Contrast** parameter (📖 168), or a value other than **0** is selected for **Clarity** (📖 168), or x 2oo is selected for shutter speed. If the subject is very bright or very dark, the exposure indicators will flash to warn that the preview may not accurately reflect exposure. Exposure preview is not available in special effect modes or when bulb or - - is selected for shutter speed.

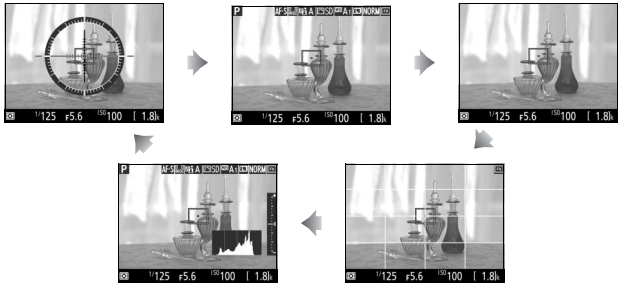
## The Live View Display: Live View Photography




| Item | Description | 🕮 |
|---|---|---|
| ① **Time remaining** | The amount of time remaining before live view ends automatically. Displayed if shooting will end in 30 s or less. | 65 |
| ② **Autofocus mode** | The current autofocus mode. | 57 |
| ③ **AF-area mode** | The current AF-area mode. | 58 |
| ④ **Focus point** | The current focus point. The display varies with the option selected for AF-area mode. | 54 |
| ⑤ **Exposure indicator** | When **On** is selected for **Exposure preview**, the exposure indicator shows the difference between the metered exposure and the exposure that will be achieved at current settings. | 94 |

## The Information Display: Live View Photography

To hide or display indicators in the monitor during live view photography, press the **info** button.



**Shooting in Live View Mode**

Although they will not appear in the final picture, jagged edges, color fringing, moiré, and bright spots may appear in the monitor, while bright bands may appear in some areas with flashing signs and other intermittent light sources or if the subject is briefly illuminated by a strobe or other bright, momentary light source. In addition, distortion may occur if the camera is panned horizontally or an object moves at high speed through the frame. Flicker and banding visible in the monitor under fluorescent, mercury vapor, or sodium lamps can be reduced using **Flicker reduction** (🕮 380), although they may still be visible in the final photograph at some shutter speeds. When shooting in live view mode, avoid pointing the camera at the sun or other strong light sources. Failure to observe this precaution could result in damage to the camera's internal circuitry.

Movie recording is not available during live view photography and pressing the movie-record button has no effect. Select movie live view (🕮 66) to shoot movies.

**The Count Down Display**

A count down will be displayed 30 s before live view ends automatically (🕮 63; the timer turns red if live view is about to end to protect the internal circuits or, if an option other than **No limit** is selected for Custom Setting c4—**Monitor off delay** > **Live view**; 🕮 337—5 s before the monitor is due to turn off automatically). Depending on shooting conditions, the timer may appear immediately when live view is selected.

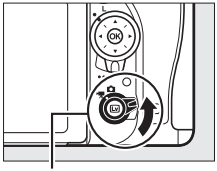
**HDMI**

If the camera is attached to an HDMI video device during live view photography, the camera monitor will remain on and the video device will display the view through the lens.

# Movie Live View

Movies can be recorded in live view.

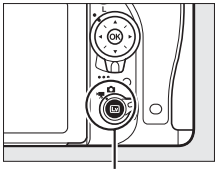
**1 Rotate the live view selector to 🎥 (movie live view).**



*Live view selector*

**2 Press the Lv button.**

The mirror will be raised and the view through the lens will be displayed in the camera monitor as it would appear in the actual movie, modified for the effects of exposure. The subject will no longer be visible in the viewfinder.



*Lv button*

**The NET Icon**

A NET icon (🕮 74) indicates that movies can not be recorded.

**3 Choose a focus mode (🕮 57).**

## 4 Choose an AF-area mode (📖 58).

## 5 Focus.

Frame the opening shot and focus as described in Steps 3 and 4 on pages 54 and 55 (for more information on focusing in movie live view, see page 59). Note that the number of subjects that can be detected in face-priority AF drops during movie recording.

**Exposure**

The following settings can be adjusted in movie live view:

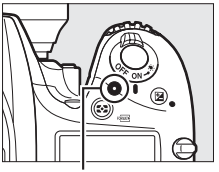
| | Aperture | Shutter speed | ISO sensitivity (📖 322) | Exposure compensation | Metering |
|---|---|---|---|---|---|
| **P**, **S** | — | — | — | ✔ | ✔ |
| **A** | ✔ | — | — | ✔ | ✔ |
| **M** | ✔ | ✔ | ✔ | — | ✔ |
| **SCENE**, 🖼 | — | — | — | ✔ | — |
| Other shooting modes | — | — | — | — | — |

In mode **M**, shutter speed can be set to values between 1/25 s and 1/4000 s (the slowest available shutter speed varies with the frame rate; 📖 319). Spot metering is not available during movie live view. If the result is over- or under-exposed, exit and restart movie live view.

**White Balance**
In modes **P**, **S**, **A**, and **M**, white balance can be set at any time by pressing the **?** (**WB**) button and rotating the main command dial (🕮 145).

## 6 Start recording.

Press the movie-record button to start recording. A recording indicator and the time available are displayed in the monitor. Exposure can be locked by pressing the **AE-L/AF-L** button (🕮 141) or altered by up to ±3 EV in steps of ⅓ EV using exposure compensation (🕮 143). In autofocus mode, the camera can be refocused by pressing the shutter-release button halfway.



*Movie-record button*

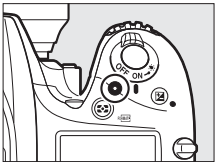
*Recording indicator*

*Time remaining*

**Audio**
The camera can record both video and sound; do not cover the microphone on the front of the camera during movie recording (🕮 3). Note that the built-in microphone may record sounds made by the camera or lens during autofocus, vibration reduction, or changes to aperture.

## 7 End recording.

Press the movie-record button again to end recording. Recording will end automatically when the maximum length is reached, or the memory card is full.




**Maximum Length**

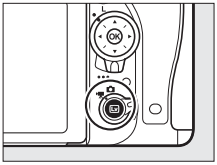
The maximum length for individual movie files is 4 GB (for maximum recording times, see page 319); note that depending on memory card write speed, shooting may end before this length is reached (🕮 491).

**The Count-Down Display**

A count down will be displayed 30 s before movie recording ends automatically (🕮 63). Depending on shooting conditions, the timer may appear immediately when movie recording begins. Note that regardless of the amount of recording time available, live view will still end automatically when the timer expires. Wait for the internal circuits to cool before resuming movie recording.

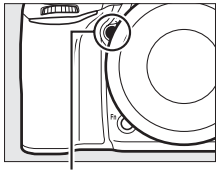
## 8 Exit movie live view.

Press the Lv button to exit movie live view.



## Indices

If **Index marking** is selected as the "press" option for Custom Setting g1 (**Assign Fn button**, 🕮 370), g2 (**Assign preview button**, 🕮 372), or g3 (**Assign AE-L/AF-L button**, 🕮 373), you can press the selected button during recording to add indices that can be used to locate frames during editing and playback (🕮 80; note that indices can not be added in 🎬 mode). Up to 20 indices can be added to each movie.



**Pv** *button*

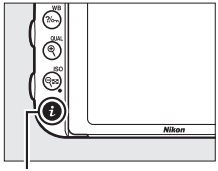
*Index*

**See Also**

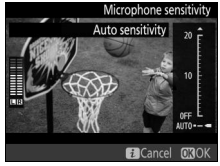
Frame size, frame rate, microphone sensitivity, card slot, and ISO sensitivity options are available in the movie shooting menu (🕮 318). Focus can be adjusted manually as described on page 60. The roles played by the ⓚ, **Fn**, **Pv**, and **AE-L/AF-L** buttons can be chosen using Custom Settings f1 (**OK button**; 🕮 354), g1 (**Assign Fn button**; 🕮 370), g2 (**Assign preview button**; 🕮 372), and g3 (**Assign AE-L/AF-L button**, 🕮 373), respectively (the last three options also allow you to lock exposure without having to keep a button pressed). Custom Setting g4 (**Assign shutter button**; 🕮 373) controls whether the shutter-release button can be used to start movie live view or to start and end movie recording.

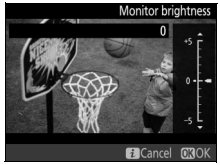
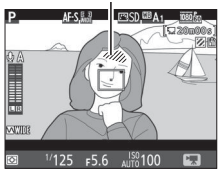
## Using the i Button

The options listed below can be accessed by pressing the i button in movie live view (**Microphone sensitivity**, **Frequency response**, **Wind noise reduction**, **Multi-selector power aperture**, and **Highlight display** can be adjusted while recording is in progress). Highlight items using the multi selector and press ▶ to view options for the highlighted item. After choosing the desired setting, press OK to return to the i-button menu. Press the i button again to exit to the shooting display.



*i button*

| Option | Description |
|---|---|
| **Choose image area** | Choose image area for movie live view (📖 76). |
| **Frame size/ frame rate** | Select a frame size and rate (📖 319). |
| **Movie quality** | Choose movie quality (📖 320). |
| **Microphone sensitivity** | Press ▲ or ▼ to adjust microphone sensitivity (📖 320). Both the built-in and optional stereo microphones are affected.   |
| **Frequency response** | Control the frequency response of the built-in microphone or optional stereo microphones (📖 320). |

| Option | Description |
|---|---|
| **Wind noise reduction** | Enable or disable wind noise reduction using the built-in microphone's low-cut filter (🕮 321). |
| **Set Picture Control** | Choose a Picture Control (🕮 321). The **Clarity** parameter does not apply to movies. |
| **Destination** | When two memory cards are inserted, you can choose the card to which movies are recorded (🕮 319). |
| **Monitor brightness** | Press ▲ or ▼ to adjust monitor brightness for movie live view (note that this affects live view only and has no effect on photographs or movies or on the brightness of the monitor for menus or playback; 🕮 62).   |
| **Multi-selector power aperture** | Select **Enable** to enable power aperture (**P**, **S**, **A**, and **M** modes only). Press ▲ to narrow the aperture, ▼ to widen the aperture. |
| **Highlight display** | Choose whether the brightest areas of the frame (highlights) are shown by slanting lines in the display during movie live view. To access this option, select mode **P**, **S**, **A**, or **M**.   |
| **Headphone volume** | Press ▲ or ▼ to adjust headphone volume (🕮 73). |

**Power Aperture**

Power aperture is not available with some lenses. Power aperture is available only in modes **A** and **M** and can not be used while photo shooting info is displayed (a icon indicates that power aperture can not be used). Turning the camera off or exiting movie live view disables power aperture (note that in the latter case power aperture will remain available until the standby timer has expired).

**Using an External Microphone**

The optional stereo microphone can be used to record sound in stereo or to avoid recording focus noise and other sounds made by the lens (🕮 443).

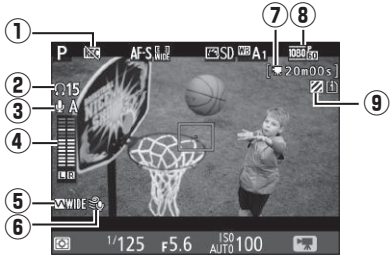
**Headphones**

Third-party headphones can be used. Note that high sound levels may result in high volume; particular care should be taken when headphones are used.

**See Also**

For information on assigning power aperture to the **Fn** and **Pv** buttons, see Custom Settings g1 (**Assign Fn button**, 🕮 370) and g2 (**Assign preview button**, 🕮 372). The **Fn** button can be used to widen the aperture, the **Pv** button to narrow the aperture.

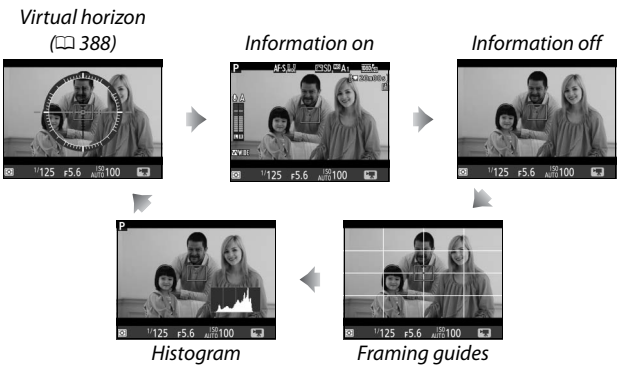
## The Live View Display: Movie Live View




| Item | Description | 🕮 |
|---|---|---|
| ① **"No movie" icon** | Indicates that movies can not be recorded. | — |
| ② **Headphone volume** | Volume of audio output to headphones. Displayed when third-party headphones are connected. | 72 |
| ③ **Microphone sensitivity** | Microphone sensitivity. | 71, 320 |
| ④ **Sound level** | Sound level for audio recording. Displayed in red if level is too high; adjust microphone sensitivity accordingly. | 71 |
| ⑤ **Frequency response** | The current frequency response. | 71, 320 |
| ⑥ **Wind noise reduction** | Displayed when wind noise reduction is on. | 72, 321 |
| ⑦ **Time remaining (movie live view)** | The recording time available for movies. | 68 |
| ⑧ **Movie frame size** | The frame size for movie recording. | 71, 319 |
| ⑨ **Highlight display indicator** | Appears when highlight display is enabled. | 72 |

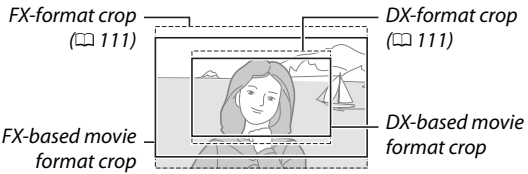
## The Information Display: Movie Live View

To hide or display indicators in the monitor during movie live view, press the **info** button.



## Image Area

Movies and photographs recorded in movie live view (🕮 66) have an aspect ratio of 16 : 9.



DX icon

Images recorded with **On** selected for **Image area** > **Auto DX crop** in the movie shooting menu (🕮 318) and a DX lens attached use a DX-based movie format, as do images recorded with **DX (24×16)** selected for **Image area** > **Choose image area**. Other images use an FX-based movie format. A DX icon is displayed when the DX-based movie format is selected. The approximate size of the area at the center of the image sensor used to record photographs taken in movie live view is 35.9 × 20.2 mm when the FX-based movie format is selected and 23.5 × 13.2 mm when the DX-based movie format is selected.

## Taking Photos During Movie Live View

If **Take photos** is selected for Custom Setting g4 (**Assign shutter button**, 🕮 373), photographs can be taken at any time during movie live view by pressing the shutter-release button all the way down. If movie recording is in progress, recording will end and the footage recorded to that point will be saved. The photograph will be recorded at the current image area setting using a crop with an aspect ratio of 16 : 9. Image quality is determined by the option selected for **Image quality** in the photo shooting menu (🕮 115). Note that the exposure for photographs can not be previewed during movie live view. For accurate results when shooting in mode **M**, adjust exposure in live view photography (🕮 93), then start movie live view and check the image area before beginning recording.

**Image Size**

The following table shows the size of photographs taken in movie live view:

| Image area | Option | Size (pixels) | Print size (cm/in.)* |
|---|---|---|---|
| FX-based movie format | Large | 6016 × 3376 | 50.9 × 28.6/20.1 × 11.3 |
| | Medium | 4512 × 2528 | 38.2 × 21.4/15.0 × 8.4 |
| | Small | 3008 × 1688 | 25.5 × 14.3/10.0 × 5.6 |
| DX-based movie format | Large | 3936 × 2224 | 33.3 × 18.8/13.1 × 7.4 |
| | Medium | 2944 × 1664 | 24.9 × 14.1/ 9.8 × 5.5 |
| | Small | 1968 × 1112 | 16.7 × 9.4/ 6.6 × 3.7 |

* Approximate size when printed at 300 dpi. Print size in inches equals image size in pixels divided by printer resolution in **d**ots **p**er **i**nch (dpi; 1 inch = approximately 2.54 cm).

### HDMI

If the camera is connected to an HDMI device (🕮 277), the view through the lens will appear both in the camera monitor and on the HDMI device. To use live view when the camera is connected to an HDMI-CEC device, select **Off** for **HDMI** > **Device control** in the setup menu (🕮 278).

### Wireless Remote Controllers and Remote Cords

If **Record movies** is selected for Custom Setting g4 (**Assign shutter button**, 🕮 373), the shutter-release buttons on optional wireless remote controllers (🕮 197, 444) and remote cords (🕮 443) can be used to start movie live view and to start and end movie recording.

### Recording Movies

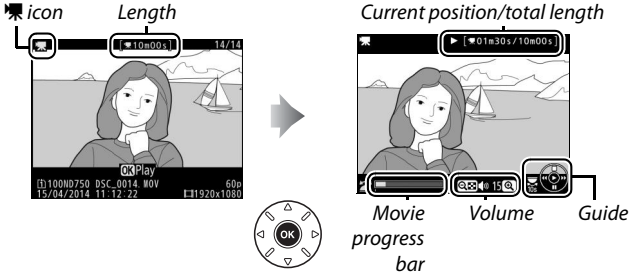
Movies are recorded in the sRGB color space. Flicker, banding, or distortion may be visible in the monitor and in the final movie under fluorescent, mercury vapor, or sodium lamps or if the camera is panned horizontally or an object moves at high speed through frame (for information on reducing flicker and banding, see **Flicker reduction**, 🕮 380). Flicker may also appear while power aperture is in use. Jagged edges, color fringing, moiré, and bright spots may also appear. Bright bands may appear in some areas of the frame with flashing signs and other intermittent light sources or if the subject is briefly illuminated by a strobe or other bright, momentary light source. When recording movies, avoid pointing the camera at the sun or other strong light sources. Failure to observe this precaution could result in damage to the camera's internal circuitry. Note that noise (randomly-spaced bright pixels, fog, or lines) and unexpected colors may appear if you zoom in on the view through the lens (🕮 56) during movie live view.

Flash lighting can not be used during movie live view.

Recording ends automatically if the mode dial is rotated.

## Viewing Movies

Movies are indicated by a 🎥 icon in full-frame playback (🕮 241). Press ⓚ to start playback; your current position is indicated by the movie progress bar.




The following operations can be performed:

| To | Use | Description |
|---|---|---|
| Pause | | Pause playback. |
| Play | ⓚ | Resume playback when movie is paused or during rewind/advance. |
| Rewind/ advance | | Speed increases with each press, from 2× to 4× to 8× to 16×; keep pressed to skip to beginning or end of movie (first frame is indicated by ⏵ in top right corner of monitor, last frame by ⏭). If playback is paused, movie rewinds or advances one frame at a time; keep pressed for continuous rewind or advance. |

| To | Use | Description |
|---|---|---|
| Skip 10 s | | Rotate the main command dial one stop to skip ahead or back 10 s. |
| Skip ahead/ back | | Rotate the sub-command dial to skip to next or previous index, or to skip to the last or first frame if the movie contains no indices. |
| Adjust volume | ⊕ (**QUAL**)/ ⊖ (**ISO**) | Press ⊕ (**QUAL**) to increase volume, ⊖ (**ISO**) to decrease. |
| Trim movie | *i* | See page 81 for more information. |
| Exit | | Exit to full-frame playback. |
| Return to shooting mode | | Press the shutter-release button halfway to exit to shooting mode. |

**The Icon**

Movies with indices (🕮 70) are indicated by a icon in full-frame playback.

# Editing Movies

Trim footage to create edited copies of movies or save selected frames as JPEG stills.

| Option | Description |
|---|---|
| **Choose start/end point** | Create a copy from which the opening or closing footage has been removed. |
| **Save selected frame** | Save a selected frame as a JPEG still. |

## Trimming Movies

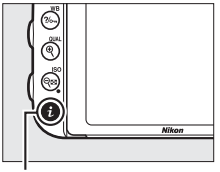
To create trimmed copies of movies:

**1** **Display a movie full frame (🕮 241).**

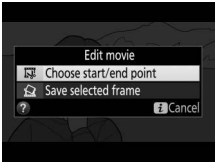
**2** **Pause the movie on the new opening or closing frame.**
Play the movie back as described on page 79, pressing ⓚ to start and resume playback and ▽ to pause and pressing ◁ or ▷ or rotating the main or sub-command dial to locate the desired frame. Your approximate position in the movie can be ascertained from the movie progress bar. Pause playback when you reach the new opening or closing frame.

*Movie progress bar*

**3** Select **Choose start/end point.** Press the **i** button, then highlight **Choose start/end point** and press ⓞⓚ.

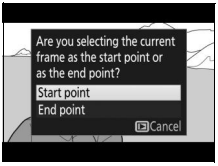


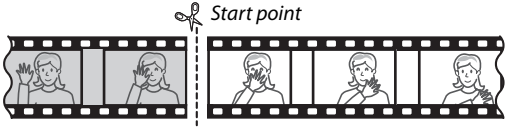

**i** *button*



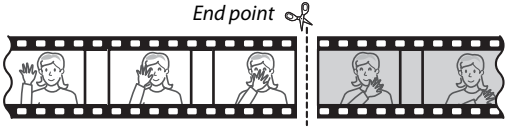
## 4 Choose the current frame as the new start or end point.

To create a copy that begins from the current frame, highlight **Start point** and press ⓚ. The frames before the current frame will be removed when you save the copy.




To create a copy that ends at the current frame, highlight **End point** and press ⓚ. The frames after the current frame will be removed when you save the copy.



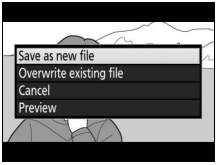

## 5 Confirm the new start or end point.

If the desired frame is not currently displayed, press ◀ or ▶ to advance or rewind (to skip to 10 s ahead or back, rotate the main command dial one stop; to skip to an index, or to the first or last frame if the movie contains no indices, rotate the sub-command dial).

**6 Create the copy.**
Once the desired frame is displayed, press ⊛.

**7 Preview the movie.**
To preview the copy, highlight **Preview** and press ⓞ (to interrupt the preview and return to the save options menu, press ⊛). To abandon the current copy and return to Step 5, highlight **Cancel** and press ⓞ; to save the copy, proceed to Step 8.

**8 Save the copy.**
Highlight **Save as new file** and press ⓞ to save the copy to a new file. To replace the original movie file with the edited copy, highlight **Overwrite existing file** and press ⓞ.



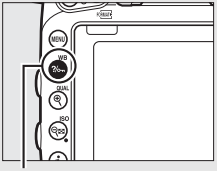
### Trimming Movies

Movies must be at least two seconds long. The copy will not be saved if there is insufficient space available on the memory card.

Copies have the same time and date of creation as the original.

### Choosing the Role of the Current Frame

To make the frame displayed in Step 5 the new end point (▼) instead of the new start point (▲) or vice versa, press the **?/🔑** (**WB**) button.



***?/🔑* (WB) *button***

### The Retouch Menu

Movies can also be edited using the **Edit movie** option in the retouch menu (🕮 393).

## Saving Selected Frames

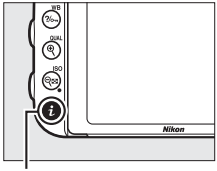
To save a copy of a selected frame as a JPEG still:

**1 Pause the movie on the desired frame.**

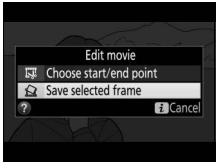
Play the movie back as described on page 79, pressing OK to start and resume playback and ▼ to pause. Pause the movie at the frame you intend to copy.

**2 Choose Save selected frame.**

Press the *i* button, then highlight **Save selected frame** and press OK.

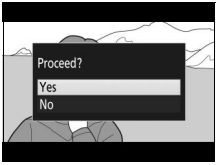



*i* button



**3** **Create a still copy.**
Press ⊛ to create a still copy of the current frame.

**4** **Save the copy.**
Highlight **Yes** and press OK to create a fine-quality (🕮 115) JPEG copy of the selected frame.




**Save Selected Frame**
JPEG movie stills created with the **Save selected frame** option can not be retouched. JPEG movie stills lack some categories of photo information (🕮 246).

# P, S, A, and M Modes

**P**, **S**, **A**, and **M** modes offer different degrees of control over shutter speed and aperture.

| Mode | Description |
|---|---|
| **P** | **Programmed auto** (🕮 89): Camera sets shutter speed and aperture for optimal exposure. Recommended for snapshots and in other situations in which there is little time to adjust camera settings. |
| **S** | **Shutter-priority auto** (🕮 90): User chooses shutter speed; camera selects aperture for best results. Use to freeze or blur motion. |
| **A** | **Aperture-priority auto** (🕮 91): User chooses aperture; camera selects shutter speed for best results. Use to blur background or bring both foreground and background into focus. |
| **M** | **Manual** (🕮 93): User controls both shutter speed and aperture. Set shutter speed to Bulb (bulb) or Time (- -) for long time-exposures. |

**Lens Types**

When using a CPU lens equipped with an aperture ring (🕮 429), lock the aperture ring at the minimum aperture (highest f-number). Type G and E lenses are not equipped with an aperture ring.

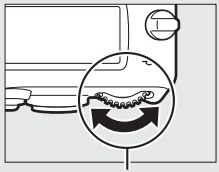
Non-CPU lenses can only be used in modes **A** (aperture-priority auto) and **M** (manual), when aperture can only be adjusted using the lens aperture ring. Selecting any other mode disables the shutter release. For more information, see "Compatible Lenses" (🕮 426).

## P: Programmed Auto

In this mode, the camera automatically adjusts shutter speed and aperture according to a built-in program to ensure optimal exposure in most situations.

### Flexible Program

In mode **P**, different combinations of shutter speed and aperture can be selected by rotating the main command dial while the exposure meters are on ("flexible program"). Rotate the dial to the right for large apertures (low f-numbers) that blur background details or fast shutter speeds that "freeze" motion. Rotate the dial to the left for small apertures (high f-numbers) that increase depth of field or slow shutter speeds that blur motion. All combinations produce the same exposure. While flexible program is in effect, a **P** indicator appears in the viewfinder. To restore default shutter speed and aperture settings, rotate the main command dial until the indicator is no longer displayed, choose another mode, or turn the camera off.



*Main command dial*

*Viewfinder*

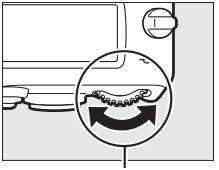
### See Also

See page 462 for information on the built-in exposure program. For information on activating the exposure meters, see "The Standby Timer (Viewfinder Photography)" on page 39.

## S: Shutter-Priority Auto

In shutter-priority auto, you choose the shutter speed while the camera automatically selects the aperture that will produce the optimal exposure.

To choose a shutter speed, rotate the main command dial while the exposure meters are on. Shutter speed can be set to "x 200" or to values between 30 s and 1/4000 s.



*Main command dial*

*Control panel*

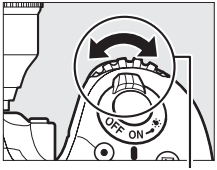
**See Also**

See page 472 for information on what to do if flashing "bulb" or "- -" indicator appears in the shutter-speed displays.

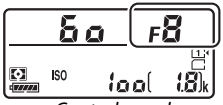
## A: Aperture-Priority Auto

In aperture-priority auto, you choose the aperture while the camera automatically selects the shutter speed that will produce the optimal exposure.

To choose an aperture between the minimum and maximum values for the lens, rotate the sub-command dial while the exposure meters are on.



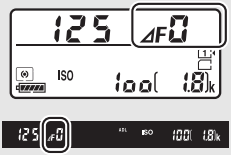

*Sub-command dial*




*Control panel*

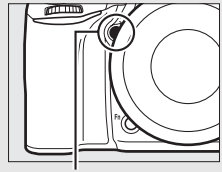
**Non-CPU Lenses (📖 427)**

Use the lens aperture ring to adjust aperture. If the maximum aperture of the lens has been specified using the **Non-CPU lens data** item in setup menu (📖 235) when a non-CPU lens is attached, the current f-number will be displayed in the viewfinder and control panel, rounded to the nearest full stop. Otherwise the aperture displays will show only the number of stops (**A**, with maximum aperture displayed as **AF0**) and the f-number must be read from the lens aperture ring.




**Depth-of-Field Preview**

To preview the effects of aperture, press and hold the **Pv** button. The lens will be stopped down to the aperture value selected by the camera (modes **P** and **S**) or the value chosen by the user (modes **A** and **M**), allowing depth of field to be previewed in the viewfinder.



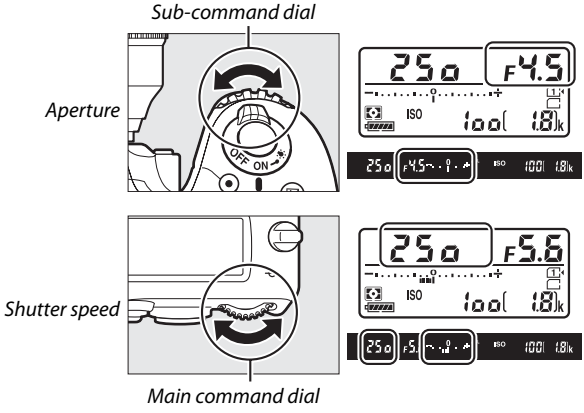
**Pv** *button*

**Custom Setting e5—Modeling Flash**

This setting controls whether the built-in flash and optional flash units that support the Nikon Creative Lighting System (CLS; 📖 433) will emit a modeling flash when the **Pv** button is pressed. See page 353 for more information.

## M: Manual

In manual exposure mode, you control both shutter speed and aperture. While the exposure meters are on, rotate the main command dial to choose a shutter speed, and the sub-command dial to set aperture. Shutter speed can be set to "x 200" or to values between 30 s and 1/4000 s, or the shutter can be held open indefinitely for a long time-exposure (bulb or - -, 🕮 95). Aperture can be set to values between the minimum and maximum values for the lens. Use the exposure indicators to check exposure.

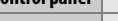
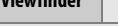
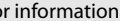
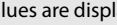
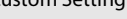


**AF Micro NIKKOR Lenses**

*Provided that an external exposure meter is used*, the exposure ratio need only be taken into account when the lens aperture ring is used to set aperture.

**The Exposure Indicators**

If a shutter speed other than "bulb" or "time" is selected, the exposure indicators in the viewfinder and control panel show whether the photograph would be under- or over-exposed at current settings. Depending on the option chosen for Custom Setting b2 (**EV steps for exposure cntrl**, 🕮 333), the amount of under- or over-exposure is shown in increments of ⅓ EV or ½ EV. If the limits of the exposure metering system are exceeded, the displays will flash.

| | Custom Setting b2 set to ⅓ step | | |
|---|---|---|---|
| | Optimal exposure | Underexposed by ⅓ EV | Overexposed by 2 EV |
| Control panel |  |  | |
| Viewfinder |  |  |  |

**See Also**

For information on reversing the exposure indicators so that negative values are displayed on the right and positive values on the left, see Custom Setting f8 (**Reverse indicators**, 🕮 366).

***Long Time-Exposures (M Mode Only)***

Select the following shutter speeds for long time-exposures of moving lights, the stars, night scenery, or fireworks.

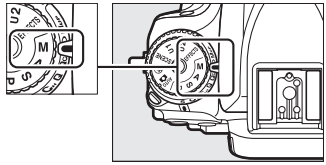
*Length of exposure: 35 s*
*Aperture: f/25*

- **Bulb (bulb)**: The shutter remains open while the shutter-release button is held down. To prevent blur, use a tripod or an optional wireless remote controller (🕮 197, 444) or remote cord (🕮 443).
- **Time (- -)**: Start the exposure using the shutter-release button on the camera or on an optional remote control, remote cord, or wireless remote controller. The shutter remains open for thirty minutes or until the button is pressed a second time.

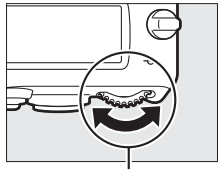
Before proceeding, mount the camera on a tripod or place it on a stable, level surface. To prevent light entering via the viewfinder from appearing in the photograph or interfering with exposure, remove the rubber eyecup and cover the viewfinder with the supplied eyepiece cap (🕮 107). Nikon recommends using a fully charged battery or an optional AC adapter and power connector to prevent loss of power while the shutter is open. Note that noise (bright spots, randomly-spaced bright pixels, or fog) may be present in long exposures; before shooting, choose **On** for **Long exposure NR** in the photo shooting menu (🕮 317).

**1** **Rotate the mode dial to M.**

*Mode dial*



**2** **Choose a shutter speed.**
While the exposure meters are on, rotate the main command dial to choose a shutter speed of "Bulb" (bulb).



*Main command dial*

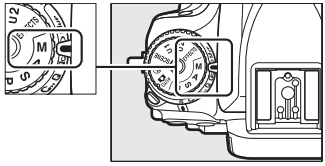
*Control panel*

**3** **Take the photograph.**
After focusing, press the shutter-release button on the camera, optional wireless remote controller or remote cord all the way down. Remove your finger from the shutter-release button when the exposure is complete.

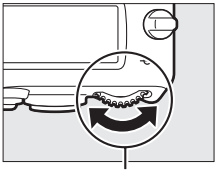
## ■ *Time*

**1** **Rotate the mode dial to M.**

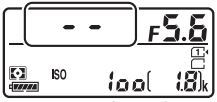
*Mode dial*



**2** **Choose a shutter speed.**
While the exposure meters are on, rotate the main command dial left to choose a shutter speed of "Time" (**- -**).



*Main command dial*




*Control panel*

**3** **Open the shutter.**
After focusing, press the shutter-release button on the camera or optional remote control, remote cord, or wireless remote controller all the way down.

**4** **Close the shutter.**
Repeat the operation performed in Step 3 (shooting ends automatically if the button is not pressed after 30 minutes).

**ML-L3 Remote Controls**

If you will be using an ML-L3 remote control, select a remote control mode (**Delayed remote**, **Quick-response remote**, or **Remote mirror-up**) using the **Remote control mode (ML-L3)** option in the photo shooting menu (🕮 193). Note that if you are using an ML-L3 remote control, pictures will be taken in "Time" mode even when "Bulb"/"bulb" is selected for shutter speed.

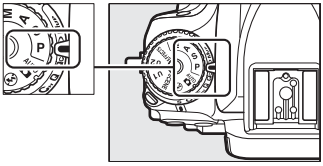
# User Settings: U1 and U2 Modes

Assign frequently-used settings to the **U1** and **U2** positions on the mode dial.

## Saving User Settings

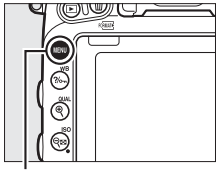
**1 Select a mode.**
Rotate the mode dial to the desired mode.

*Mode dial*

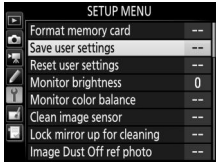


**2 Adjust settings.**
Make the desired adjustments to flexible program (mode **P**), shutter speed (modes **S** and **M**), aperture (modes **A** and **M**), exposure and flash compensation, flash mode, focus point, metering, autofocus and AF-area modes, bracketing, and settings in the shooting (🕮 310, 318) and Custom Settings (🕮 323) menus.

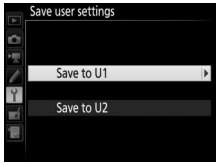
**3** **Select Save user settings.**
Press the MENU button to display the menus. Highlight **Save user settings** in the setup menu and press ▶.



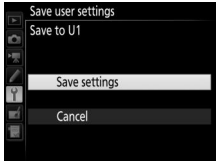
MENU *button*




**4** **Select Save to U1 or Save to U2.**
Highlight **Save to U1** or **Save to U2** and press ▶.




**5** **Save user settings.**
Highlight **Save settings** and press OK to assign the settings selected in Steps 1 and 2 to the mode dial position selected in Step 4.

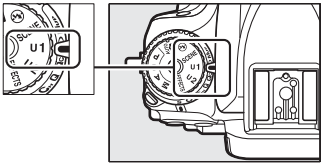



**Saved Settings**
Some photo and movie shooting menu settings are not stored. See pages 310 and 318 for more information.

## Recalling User Settings

Simply rotate the mode dial to **U1** to recall the settings assigned to **Save to U1**, or to **U2** to recall the settings assigned to **Save to U2**.

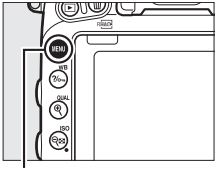
*Mode dial*



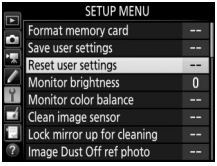

## Resetting User Settings

To reset settings for **U1** or **U2** to default values:

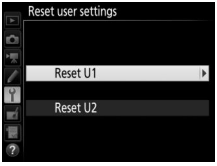
**1** **Select Reset user settings.**
Press the MENU button to display the menus. Highlight **Reset user settings** in the setup menu and press ⊛.



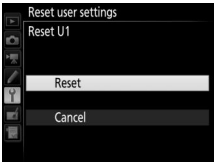
MENU *button*




**2** **Select Reset U1 or Reset U2.**
Highlight **Reset U1** or **Reset U2** and press ⊛.



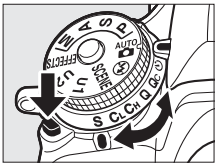
**3** **Reset user settings.**
Highlight **Reset** and press ⓚ.



# Release Mode

## Choosing a Release Mode

To choose a release mode, press the release mode dial lock release and turn the release mode dial to the desired setting.




| Mode | Description |
|---|---|
| **S** | **Single frame**: Camera takes one photograph each time shutter-release button is pressed. |
| **CL** | **Continuous low speed**: While shutter-release button is held down, camera records 1–6 frames per second. * Frame rate can be chosen using Custom Setting d2 (**Continuous low-speed**, 🕮 338). Note that only one picture will be taken if the flash fires. |
| **CH** | **Continuous high speed**: While shutter-release button is held down, camera records up to 6.5 frames per second. * Use for active subjects. Note that only one picture will be taken if the flash fires. |
| **Q** | **Quiet shutter-release**: As for single frame, except that mirror does not click back into place while shutter-release button is fully pressed, allowing user to control timing of click made by mirror, which is also quieter than in single frame mode. In addition, beep does not sound regardless of setting selected for Custom Setting d1 (**Beep**; 🕮 338). |
| **QC** | **Qc (quiet continuous) shutter-release**: While shutter-release button is held down, camera records up to 3 frames per second. * Camera noise is reduced. Note that only one picture will be taken if the flash fires. |
| ⏲ | **Self-timer**: Take pictures with the self-timer (🕮 106). |

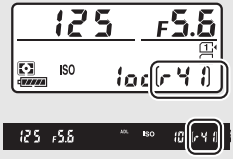
| Mode | Description |
|---|---|
| **MUP** | **Mirror up**: Choose this mode to minimize camera shake in telephoto or close-up photography or in other situations in which the slightest camera movement can result in blurred photographs (🕮 109). |

* Average frame rate with an EN-EL15 battery, continuous-servo AF, manual or shutter-priority auto exposure, a shutter speed of 1/200 s or faster, remaining settings (or in the case of **CL**, remaining settings other than Custom Setting d2) at default values, and memory remaining in memory buffer. The stated rates may not be available under some conditions. Frame rates may drop at extremely small apertures (high f-numbers) or slow shutter speeds, when vibration reduction (available with VR lenses) or auto ISO sensitivity control (🕮 136) is on, or when the battery is low, a non-CPU lens is attached, or **Aperture ring** is selected for Custom Setting f5 (**Customize command dials**) > **Aperture setting** (🕮 364).

### The Memory Buffer

The camera is equipped with a memory buffer for temporary storage, allowing shooting to continue while photographs are being saved to the memory card. Up to 100 photographs can be taken in succession; note, however, that the frame rate will drop when the buffer is full (r00).

The approximate number of images that can be stored in the buffer at current settings is shown in the exposure-count displays in the viewfinder and control panel while the shutter-release button is pressed. The illustration at right shows the display when space remains in the buffer for about 41 pictures.




While photographs are being recorded to the memory card, the memory card access lamp will light. Depending on shooting conditions and memory card performance, recording may take from a few seconds to a few minutes. *Do not remove the memory card or remove or disconnect the power source until the access lamp has gone out*. If the camera is switched off while data remain in the buffer, the power will not turn off until all images in the buffer have been recorded. If the battery is exhausted while images remain in the buffer, the shutter release will be disabled and the images transferred to the memory card.

### Live View

If a continuous release mode is used during live view photography (🕮 54) or in movie live view (🕮 66), photographs will be displayed in place of the view through the lens while the shutter-release button is pressed.

### See Also

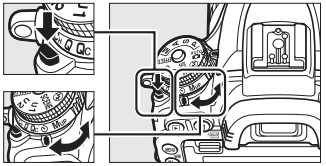
For information on choosing the maximum number of photographs that can be taken in a single burst, see Custom Setting d3 (**Max. continuous release**, 🕮 339). For information on the number of pictures that can be taken in a single burst, see page 492.

## Self-Timer Mode (⏲)

The self-timer can be used to reduce camera shake or for self-portraits.

**1** **Mount the camera on a tripod.**
Mount the camera on a tripod or place the camera on a stable, level surface.

**2** **Select self-timer mode.**
Press the release mode dial lock release and turn the release mode dial to ⏲.



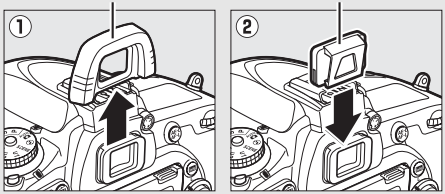
*Release mode dial*

## 3 Frame the photograph and focus.

In single-servo AF (🕮 121), photographs can only be taken if the in-focus (●) indicator appears in the viewfinder.

**Cover the Viewfinder**

When taking photos without your eye to the viewfinder, remove the rubber eyecup (①) and insert the supplied eyepiece cap as shown (②). This prevents light entering via the viewfinder from appearing in photographs or interfering with exposure. Hold the camera firmly when removing the rubber eyecup.




## 4 Start the timer.

Press the shutter-release button all the way down to start the timer. The self-timer lamp will start to flash. Two seconds before the photograph is taken, the self-timer lamp will stop flashing. The shutter will be released about ten seconds after the timer starts.

To turn the self-timer off before a photograph is taken, turn the release mode dial to another setting.

**Using the Built-in Flash**

Before taking a photograph with the flash in modes that require the flash to be raised manually, press the ⚡ (⚡/SZ) button to raise the flash and wait for the ⚡ indicator to be displayed in the viewfinder (🕮 182). Shooting will be interrupted if the flash is raised after the self-timer has started. Note that only one photograph will be taken when the flash fires, regardless of the number of exposures selected for Custom Setting c3 (**Self-timer**; 🕮 337).

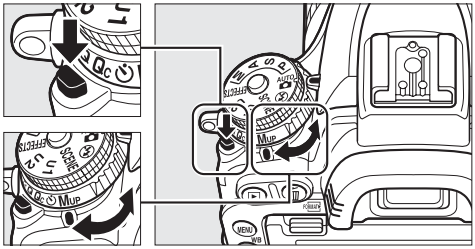
**See Also**

For information on choosing the duration of the self-timer, the number of shots taken, and the interval between shots, see Custom Setting c3 (**Self-timer**; 🕮 337). For information on controlling the beeps that sound when the self-timer is used, see Custom Setting d1 (**Beep**; 🕮 338).

## Mirror up Mode (MUP)

Choose this mode to minimize blurring caused by camera movement when the mirror is raised. To use mirror-up mode, press the release mode dial lock release and rotate the release mode dial to **MUP** (mirror up).

*Release mode dial lock release*




*Release mode dial*

After pressing the shutter-release button halfway to set focus and exposure, press the shutter-release button the rest of the way down to raise the mirror and then press the shutter-release button all the way down again to take the picture. The mirror lowers when shooting ends.

**Mirror Up**
While the mirror is raised, photos can not be framed in the viewfinder and autofocus and metering will not be performed.

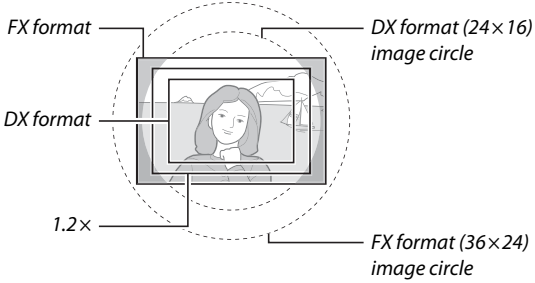
**Mirror up Mode**
A picture will be taken automatically if no operations are performed for about 30 s with the mirror raised.

**Preventing Blur**
To prevent blurring caused by camera movement, press the shutter-release button smoothly, or use an optional remote cord (🕮 443). For information on using the optional ML-L3 remote control for mirror-up photography, see page 193. Use of a tripod is recommended.

# Image Recording Options

## Image Area

Choose from image areas of **FX (36 × 24) 1.0×** (FX format), **DX (24 × 16) 1.5×** (DX format), and **1.2× (30 × 20) 1.2×**. See page 492 for information on the number of pictures that can be stored at different image area settings.



### ■■ *Image Area Options*

The camera offers a choice of the following image areas:

| Option | Description |
|---|---|
| **FX (36×24) 1.0×** (FX format) | Images are recorded in FX format using the full area of the image sensor (35.9 × 24.0 mm), producing an angle of view equivalent to a NIKKOR lens on a 35mm format camera. |
| **1.2× (30×20) 1.2×** | A 29.9 × 19.9 mm area at the center of the image sensor is used to record photographs. To calculate the approximate focal length of the lens in 35mm format, multiply by 1.2. This option is not available in movie shooting menu. |
| **DX (24×16) 1.5×** (DX format) | An area at the center of the image sensor 23.5 × 15.7 mm is used to record pictures in DX format. To calculate the approximate focal length of the lens in 35mm format, multiply by 1.5. |

### ■■ *Automatic Crop Selection*

To automatically select a DX crop when a DX lens is attached, select **On** for **Image area** > **Auto DX crop** in the shooting menus (🕮 310, 318). The image area selected in the shooting menus or with the camera controls will be used only when a non-DX lens is attached. Select **Off** to use the currently-selected image area with all lenses.

**☑ Auto DX Crop**

The controls listed on page 114 can not be used to select image area when a DX lens is attached and **Auto DX crop** is on.

**Image Area**

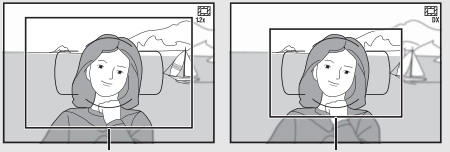
The selected option is shown in the information display.

**DX Lenses**

DX lenses are designed for use with DX format cameras and have a smaller angle of view than lenses for 35mm format cameras. If **Auto DX crop** is off and an option other than **DX (24×16)** (DX format) is selected for **Choose image area** when a DX lens is attached, the edges of the image may be eclipsed. This may not be apparent in the viewfinder, but when the images are played back you may notice a drop in resolution or that the edges of the picture are blacked out.

**The Viewfinder Display**

The 1.2 × and DX format crops are shown below.



*1.2×* *DX format*

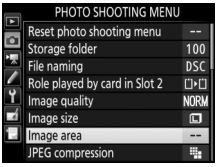
**See Also**

See page 76 for information on the crops available in movie live view.

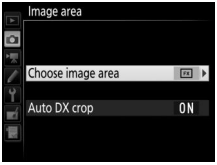
The image area can be selected using the **Image area** > **Choose image area** option in the shooting menus or by pressing a control and rotating a command dial.

### ■ *The Image Area Menu*

**1 Select Image area.**
Highlight **Image area** in either of the shooting menus and press ▶.




**2 Select Choose image area.**
Highlight **Choose image area** and press ▶.




**3 Adjust settings.**
Choose an option and press ⊛. The selected crop is displayed in the viewfinder (🕮 112).

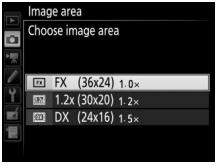
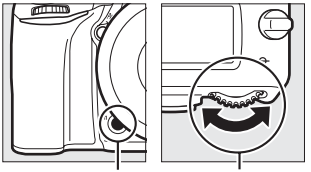



**Image Size**
Image size varies with the option selected for image area (🕮 118).

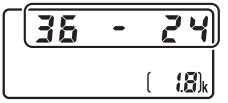
**1 Assign image area selection to a camera control.**
Select **Choose image area** as the "press + command dials" option for a camera control in the Custom Settings menu (🕮 323). Image area selection can be assigned to the **Fn** button (Custom Setting f2, **Assign Fn button**, 🕮 356), the **Pv** button (Custom Setting f3, **Assign preview button**, 🕮 361), or the **AE-L/AF-L** button (Custom Setting f4, **Assign AE-L/AF-L button**, 🕮 361).

**2 Use the selected control to choose an image area.**
The image area can be selected by pressing the selected button and rotating the main or sub-command dial until the desired crop is displayed in the viewfinder (🕮 112).



**Fn** *button* *Main command dial*

The option currently selected for image area can be viewed by pressing the button to display the image area in the control panel, viewfinder, or information display. FX format is displayed as "36 – 24", 1.2 × as "30 – 20", and DX format as "24 – 16".



## Image Quality and Size

Together, image quality and size determine how much space each photograph occupies on the memory card. Larger, higher quality images can be printed at larger sizes but also require more memory, meaning that fewer such images can be stored on the memory card (🕮 492).

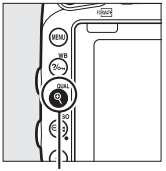
### Image Quality

Choose a file format and compression ratio (image quality).

| Option | File type | Description |
|---|---|---|
| NEF (RAW) | NEF | Raw data from the image sensor are saved without additional processing. Settings such as white balance and contrast can be adjusted after shooting. |
| JPEG fine | JPEG | Record JPEG images at a compression ratio of roughly 1:4 (fine quality).* |
| JPEG normal | | Record JPEG images at a compression ratio of roughly 1:8 (normal quality).* |
| JPEG basic | | Record JPEG images at a compression ratio of roughly 1:16 (basic quality).* |
| NEF (RAW)+ JPEG fine | NEF/ JPEG | Two images are recorded, one NEF (RAW) image and one fine-quality JPEG image. |
| NEF (RAW)+ JPEG normal | | Two images are recorded, one NEF (RAW) image and one normal-quality JPEG image. |
| NEF (RAW)+ JPEG basic | | Two images are recorded, one NEF (RAW) image and one basic-quality JPEG image. |

* **Size priority** selected for **JPEG compression**. The compression ratio is an approximation only; the actual ratio varies with ISO sensitivity and the scene recorded.

Image quality can be set by pressing the ⊕ (**QUAL**) button and rotating the main command dial until the desired setting is displayed in the information display.



⊕ (**QUAL**) *button*

*Main command dial*

*Information display*

**NEF (RAW) Images**

NEF (RAW) images can be viewed on the camera or using software such as ViewNX 2 or Capture NX-D (ViewNX 2 can be installed from the supplied installer CD, while Capture NX-D can be downloaded from a link in the ViewNX 2 installer; 🕮 262, 268). Note that the option selected for image size does not affect the size of NEF (RAW) images; when viewed on a computer, NEF (RAW) images have the dimensions given for large (L-size) images in the table on page 118. JPEG copies of NEF (RAW) images can be created using the **NEF (RAW) processing** option in the retouch menu (🕮 406).

**NEF+JPEG**

When photographs taken at settings of NEF (RAW) + JPEG are viewed on the camera with only one memory card inserted, only the JPEG image will be displayed. If both copies are recorded to the same memory card, both copies will be erased when the photo is deleted. If the JPEG copy is recorded to a separate memory card using the **Role played by card in Slot 2** > **RAW Slot 1—JPEG Slot 2** option, deleting the JPEG copy will not delete the NEF (RAW) image.

**The Photo Shooting Menu**

Image quality can also be adjusted using the **Image quality** option in the photo shooting menu (🕮 310).

### ■■ *JPEG Compression*

To choose the type of compression for JPEG images, highlight **JPEG compression** in the photo shooting menu and press ⊛.

| Option | Description |
|---|---|
| **Size priority** | Images are compressed to produce relatively uniform file size. |
| **Optimal quality** | Optimal image quality. File size varies with scene recorded. |

### ■■ *Type*

To choose the type of compression for NEF (RAW) images, highlight **NEF (RAW) recording** > **Type** in the photo shooting menu and press ⊛.

| Option | Description |
|---|---|
| **Lossless compressed** | NEF images are compressed using a reversible algorithm, reducing file size by about 20–40% with no effect on image quality. |
| **Compressed** | NEF images are compressed using a non-reversible algorithm, reducing file size by about 35–55% with almost no effect on image quality. |

### ■■ *NEF (RAW) Bit Depth*

To choose a bit depth for NEF (RAW) images, highlight **NEF (RAW) recording** > **NEF (RAW) bit depth** in the photo shooting menu and press ⊛.

| Option | Description |
|---|---|
| **12-bit** | NEF (RAW) images are recorded at a bit-depth of 12 bits. |
| **14-bit** | NEF (RAW) images are recorded at a bit depth of 14 bits, producing files larger than those with a bit depth of 12 bits but increasing the color data recorded. |

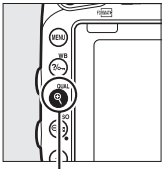
## Image Size

Image size is measured in pixels. Choose from **L Large**, **M Medium**, or **S Small** (note that image size varies depending on the option selected for **Image area**, 🕮 110):

| Image area | Option | Size (pixels) | Print size (cm/in.)* |
|---|---|---|---|
| FX (36×24) (FX format) | Large | 6016 × 4016 | 50.9 × 34.0/20.1 × 13.4 |
| | Medium | 4512 × 3008 | 38.2 × 25.5/15.0 × 10.0 |
| | Small | 3008 × 2008 | 25.5 × 17.0/10.0 × 6.7 |
| 1.2× (30×20) | Large | 5008 × 3336 | 42.4 × 28.2/16.7 × 11.1 |
| | Medium | 3752 × 2504 | 31.8 × 21.2/12.5 × 8.3 |
| | Small | 2504 × 1664 | 21.2 × 14.1/ 8.3 × 5.5 |
| DX (24×16) (DX format) | Large | 3936 × 2624 | 33.3 × 22.2/13.1 × 8.7 |
| | Medium | 2944 × 1968 | 24.9 × 16.7/ 9.8 × 6.6 |
| | Small | 1968 × 1312 | 16.7 × 11.1/ 6.6 × 4.4 |

* Approximate size when printed at 300 dpi. Print size in inches equals image size in pixels divided by printer resolution in **d**ots **p**er **i**nch (dpi; 1 inch = approximately 2.54 cm).

Image size can be set by pressing the ⊕ (**QUAL**) button and rotating the sub-command dial until the desired setting is displayed in the information display.




⊕ (**QUAL**) *button*

*Sub command dial*

*Information display*

**The Photo Shooting Menu**

Image size can also be adjusted using the **Image size** option in the photo shooting menu (🕮 310).

## Using Two Memory Cards

When two memory cards are inserted in the camera, you can use the **Role played by card in Slot 2** item in the photo shooting menu to choose the role played by the card in Slot 2. Choose from **Overflow** (the card in Slot 2 is used only when the card in Slot 1 is full), **Backup** (each picture is recorded twice, once to the card in Slot 1 and again to the card in Slot 2), and **RAW Slot 1—JPEG Slot 2** (as for **Backup**, except that the NEF/RAW copies of photos recorded at settings of NEF/RAW + JPEG are recorded only to the card in Slot 1 and the JPEG copies only to the card in Slot 2).

**"Backup" and "RAW Slot 1—JPEG Slot 2"**

The camera shows the number of exposures remaining on the card with the least amount of memory. Shutter release will be disabled when either card is full.

**Recording Movies**

When two memory cards are inserted in the camera, the slot used to record movies can be selected using the **Destination** option in the movie shooting menu (🕮 319).

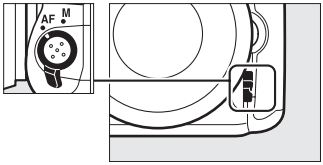
# Focus

This section describes the focus options available when photographs are framed in the viewfinder. Focus can be adjusted automatically (see below) or manually (🕮 132). The user can also select the focus point for automatic or manual focus (🕮 127) or use focus lock to focus to recompose photographs after focusing (🕮 129).

## Autofocus

To use autofocus, rotate the focus-mode selector to **AF**.

*Focus-mode selector*

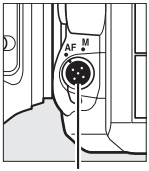


## Autofocus Mode

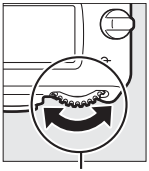
The following autofocus modes can be selected during viewfinder photography:

| Mode | Description |
|---|---|
| **AF-A** | **Auto-servo AF**: Camera automatically selects single-servo autofocus if subject is stationary, continuous-servo autofocus if subject is moving. |
| **AF-S** | **Single-servo AF**: For stationary subjects. Focus locks when shutter-release button is pressed halfway. At default settings, shutter can only be released when in-focus indicator (●) is displayed (*focus priority*; 🕮 327). |
| **AF-C** | **Continuous-servo AF**: For moving subjects. Camera focuses continuously while shutter-release button is pressed halfway; if subject moves, camera will engage *predictive focus tracking* (🕮 122) to predict final distance to subject and adjust focus as necessary. At default settings, shutter can be released whether or not subject is in focus (*release priority*; 🕮 326). |

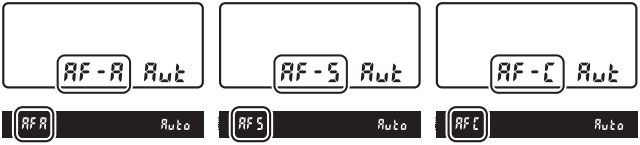
Autofocus mode can be selected by pressing the AF-mode button and rotating the main command dial until the desired setting is displayed in the viewfinder or control panel.




*AF-mode button*



*Main command dial*




**AF-A** **AF-S** **AF-C**

**Predictive Focus Tracking**

In **AF-C** mode or when continuous-servo autofocus is selected in **AF-A** mode, the camera will initiate predictive focus tracking if the subject moves toward or away from the camera while the shutter-release button is pressed halfway. This allows the camera to track focus while attempting to predict where the subject will be when the shutter is released.

**See Also**

For information on using focus priority in continuous-servo AF, see Custom Setting a1 (**AF-C priority selection**, 🕮 326). For information on using release priority in single-servo AF, see Custom Setting a2 (**AF-S priority selection**, 🕮 327). See Custom Setting f5 (**Customize command dials**) > **Change main/sub** (🕮 363) for information on using the sub-command dial to choose the focus mode. See page 57 for information on the autofocus options available in live view or during movie recording.

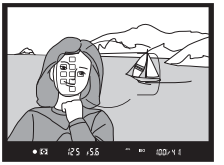
## AF-Area Mode

Choose how the focus point is selected during viewfinder photography.

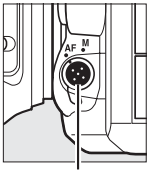
- **Single-point AF**: Select the focus point as described on page 127; the camera will focus on the subject in the selected focus point only. Use with stationary subjects.
- **Dynamic-area AF**: Select the focus point as described on page 127. In **AF-A** and **AF-C** focus modes, the camera will focus based on information from surrounding focus points if the subject briefly leaves the selected point. The number of focus points varies with the mode selected:
  - **9-point dynamic-area AF**: Choose when there is time to compose the photograph or when photographing subjects that are moving predictably (e.g., runners or race cars on a track).
  - **21-point dynamic-area AF**: Choose when photographing subjects that are moving unpredictably (e.g., players at a football game).
  - **51-point dynamic-area AF**: Choose when photographing subjects that are moving quickly and can not be easily framed in the viewfinder (e.g., birds).

- **3D-tracking**: Select the focus point as described on page 127. In **AF-A** and **AF-C** focus modes, the camera will track subjects that leave the selected focus point and select new focus points as required. Use to quickly compose pictures with subjects that are moving erratically from side to side (e.g., tennis players). If the subject leaves viewfinder, remove your finger from the shutter-release button and recompose the photograph with the subject in the selected focus point.

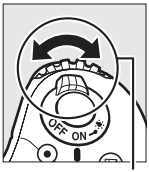
- **Group-area AF**: The camera focuses using a group of focus points selected by the user, reducing the risk of the camera focusing on the background instead of on the main subject. Choose for subjects that are difficult to photograph using a single focus point. If faces are detected in **AF-S** focus mode, the camera will give priority to portrait subjects.
- **Auto-area AF**: The camera automatically detects the subject and selects the focus point; if a face is detected, the camera will give priority to the portrait subject. The active focus points are highlighted briefly after the camera focuses; in **AF-C** mode or when continuous-servo autofocus is selected in **AF-A** mode, the main focus point remains highlighted after the other focus points have turned off.



AF-area mode can be selected by pressing the AF-mode button and rotating the sub-command dial until the desired setting is displayed in the viewfinder or control panel.

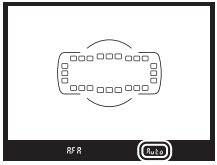


*AF-mode button*



*Sub-command dial*

*Control panel*



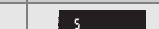
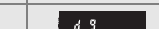
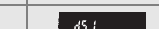
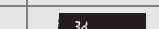
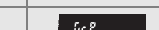
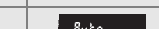
*Viewfinder*

**3D-tracking**

When the shutter-release button is pressed halfway, the colors in the area surrounding the focus point are stored in the camera. Consequently 3D-tracking may not produce the desired results with subjects that are similar in color to the background or that occupy a very small area of the frame.

**AF-Area Mode**

AF-area mode is shown in the control panel and viewfinder.

| AF-area mode | Control panel | Viewfinder |
|---|---|---|
| Single-point AF | |  |
| 9-point dynamic-area AF * | |  |
| 21-point dynamic-area AF * | | |
| 51-point dynamic-area AF * | |  |
| 3D-tracking | |  |
| Group-area AF | |  |
| Auto-area AF | |  |

* Only active focus point is displayed in the viewfinder. Remaining focus points provide information to assist focus operation.

**Manual Focus**

Single-point AF is automatically selected when manual focus is used.

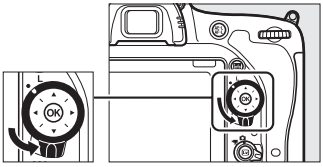
**See Also**

For information on adjusting how long the camera waits before refocusing when an object moves in front of the camera, see Custom Setting a3 (**Focus tracking with lock-on**, 🕮 328). See Custom Setting a4 (**Focus point illumination**, 🕮 329) for information on choosing how the focus point is displayed in dynamic-area and group-area AF. See Custom Setting f5 (**Customize command dials**) > **Change main/sub** (🕮 363) for information on using the main command dial to choose the AF-area mode. See page 58 for information on the autofocus options available in live view or during movie recording.

## Focus Point Selection

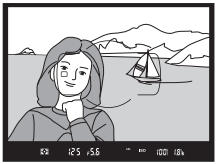
The camera offers a choice of 51 focus points that can be used to compose photographs with the main subject positioned almost anywhere in the frame. Follow the steps below to choose the focus point (in group-area AF, you can follow these steps to choose a group of focus points).

**1** **Rotate the focus selector lock to ●.**
This allows the multi selector to be used to select the focus point.

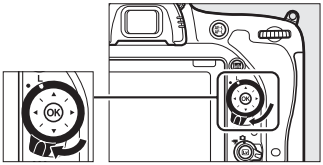


*Focus selector lock*

**2** **Select the focus point.**
Use the multi selector to select the focus point in the viewfinder while the exposure meters are on. Press ⊛ to select the center focus point.



The focus selector lock can be rotated to the locked (**L**) position following selection to prevent the selected focus point from changing when the multi selector is pressed.



**Auto-area AF**

The focus point for auto-area AF is selected automatically; manual focus-point selection is not available.

**See Also**

For information on choosing when the focus point is illuminated, see Custom Setting a5 (**AF point illumination**, 🕮 329). For information on setting focus-point selection to "wrap around," see Custom Setting a6 (**Focus point wrap-around**, 🕮 330). For information on choosing the number of focus points that can be selected using the multi selector, see Custom Setting a7 (**Number of focus points**, 🕮 330). For information on choosing separate focus points for vertical and horizontal orientations, see Custom Setting a8 (**Store points by orientation**, 🕮 331). For information on changing the role of the OK button, see Custom Setting f1 (**OK button**, 🕮 354).

## Focus Lock

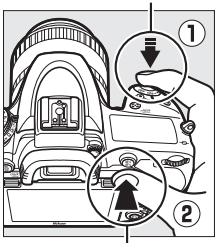
Focus lock can be used to change the composition after focusing, making it possible to focus on a subject that will not be in a focus point in the final composition. If the camera is unable to focus using autofocus (🕮 131), focus lock can also be used to recompose the photograph after focusing on another object at the same distance as your original subject. Focus lock is most effective when an option other than auto-area AF is selected for AF-area mode (🕮 123).

**1** **Focus.**

Position the subject in the selected focus point and press the shutter-release button halfway to initiate focus. Check that the in-focus indicator (●) appears in the viewfinder.

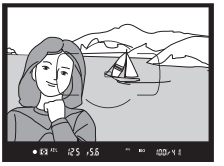
**2** **Lock focus.**

**AF-A and AF-C focus modes**: With the shutter-release button pressed halfway (①), press the AE-L/AF-L **AE-L/AF-L** button (②) to lock both focus and exposure (an **AE-L** icon will be displayed in the viewfinder). Focus will remain locked while the AE-L/AF-L **AE-L/AF-L** button is pressed, even if you later remove your finger from the shutter-release button.



**AF-S focus mode**: Focus locks automatically when the in-focus indicator (●) appears, and remain locked until you remove your finger from the shutter-release button. Focus can also be locked by pressing the AE-L/AF-L **AE-L/AF-L** button (see above).

**3** **Recompose the photograph and shoot.** Focus will remain locked between shots if you keep the shutter-release button pressed halfway (**AF-S**) or keep the AE-L/AF-L **AE-L/AF-L** button pressed, allowing several photographs in succession to be taken at the same focus setting.



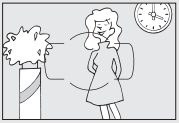
Do not change the distance between the camera and the subject while focus lock is in effect. If the subject moves, focus again at the new distance.

**See Also**

See Custom setting c1 (**Shutter-release button AE-L**, 336) for information on using the shutter-release button to lock exposure, Custom Setting f4 (**Assign AE-L/AF-L button**, 361) for information on choosing the role played by the AE-L/AF-L **AE-L/AF-L** button.

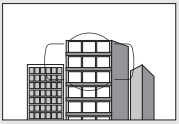
### Getting Good Results with Autofocus

Autofocus does not perform well under the conditions listed below. The shutter release may be disabled if the camera is unable to focus under these conditions, or the in-focus indicator (●) may be displayed and the camera may sound a beep, allowing the shutter to be released even when the subject is not in focus. In these cases, focus manually (🕮 132) or use focus lock (🕮 129) to focus on another subject at the same distance and then recompose the photograph.

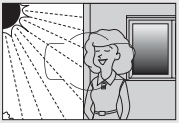


*There is little or no contrast between the subject and the background.*
**Example**: Subject is the same color as the background.

*The focus point contains objects at different distances from the camera.*
**Example**: Subject is inside a cage.

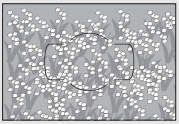


*The subject is dominated by regular geometric patterns.*
**Example**: Blinds or a row of windows in a skyscraper.



*The focus point contains areas of sharply contrasting brightness.*
**Example**: Subject is half in the shade.

*Background objects appear larger than the subject.*
**Example**: A building is in the frame behind the subject.



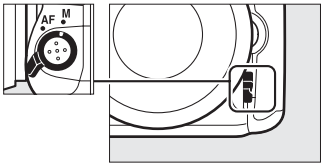
*The subject contains many fine details.*
**Example**: A field of flowers or other subjects that are small or lack variation in brightness.

## Manual Focus

Manual focus is available for lenses that do not support autofocus (non-AF NIKKOR lenses) or when the autofocus does not produce the desired results (🕮 131).

- **AF lenses**: Set the lens focus mode switch (if present) and camera focus-mode selector to **M**.

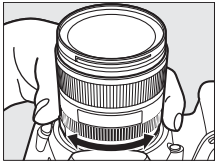
*Focus-mode selector*




> **☑ AF Lenses**
> Do not use AF lenses with the lens focus mode switch set to **M** and the camera focus-mode selector set to **AF**. Failure to observe this precaution could damage the camera or lens. This does not apply to AF-S lenses, which can be used in **M** mode without setting the camera focus-mode selector to **M**.

- **Manual focus lenses**: Focus manually.

To focus manually, adjust the lens focus ring until the image displayed on the clear matte field in the viewfinder is in focus. Photographs can be taken at any time, even when the image is not in focus.

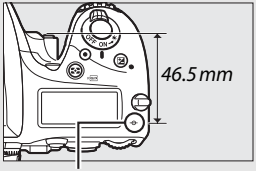


### ■■ *The Electronic Rangefinder*

The viewfinder focus indicator can be used to confirm whether the subject in the selected focus point is in focus (the focus point can be selected from any of the 51 focus points). After positioning the subject in the selected focus point, press the shutter-release button halfway and rotate the lens focus ring until the in-focus indicator (●) is displayed. Note that with the subjects listed on page 131, the in-focus indicator may sometimes be displayed when the subject is not in focus; confirm focus in the viewfinder before shooting. For information on using the electronic rangefinder with optional AF-S/AF-I teleconverters, see page 430.

**Focal Plane Position**

To determine the distance between your subject and the camera, measure from the focal plane mark (⊖) on the camera body. The distance between the lens mounting flange and the focal plane is 46.5 mm (1.83 in.).



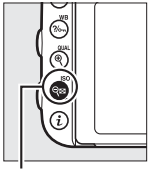

*Focal plane mark*

# ISO Sensitivity

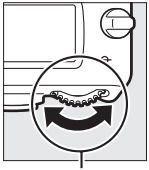
The camera's sensitivity to light can be adjusted according to the amount of light available. Choose from settings that range from ISO 100 to ISO 12800 in steps equivalent to 1/3 EV. Settings of from about 0.3 to 1 EV below ISO 100 and 0.3 to 2 EV above ISO 12800 are also available for special situations. Auto, scene, and special effect modes also offer an **AUTO** option, which allows the camera to set ISO sensitivity automatically in response to lighting conditions. The higher the ISO sensitivity, the less light needed to make an exposure, allowing higher shutter speeds or smaller apertures.

| Modes | Options |
|---|---|
| **P, S, A, M** | Lo 1–Lo 0.3; 100–12800 in steps of 1/3 EV; Hi 0.3–Hi 2 |
| | Auto |
| **Other shooting modes** | Auto; Lo 1–Lo 0.3; 100–12800 in steps of 1/3 EV; Hi 0.3–Hi 2 |

ISO sensitivity can be adjusted by pressing the (**ISO**) button and rotating the main command dial until the desired setting is displayed in the control panel, viewfinder or information display.



(**ISO**) button



Main command dial

Control panel

Viewfinder

Information display

### ISO Sensitivity

The higher the ISO sensitivity, the less light needed to make an exposure, allowing faster shutter speeds or smaller apertures, but the more likely the image is to be affected by noise (randomly-spaced bright pixels, fog, or lines). Noise is particularly likely at settings between **Hi 0.3** and **Hi 2**.

### AUTO

If the mode dial is rotated to **P**, **S**, **A**, or **M** after **AUTO** is selected for ISO sensitivity in another mode, the ISO sensitivity last selected in **P**, **S**, **A**, or **M** mode will be restored.

### Hi 0.3–Hi 2

The settings **Hi 0.3** through **Hi 2** correspond to ISO sensitivities 0.3–2 EV over ISO 12800 (ISO 16000–51200 equivalent).

### Lo 0.3–Lo 1

The settings **Lo 0.3** through **Lo 1** correspond to ISO sensitivities 0.3–1 EV below ISO 100 (ISO 80–50 equivalent). Use for larger apertures when lighting is bright. Contrast is slightly higher than normal; in most cases, ISO sensitivities of ISO 100 or above are recommended.

### The Shooting Menus

ISO sensitivity can also be adjusted from the photo and movie shooting menus. Choose **ISO sensitivity settings** in photo shooting menu to adjust settings for viewfinder and live view photography (🕮 310) and **Movie ISO sensitivity settings** in the movie shooting menu to adjust settings for movie live view (🕮 322).

### See Also

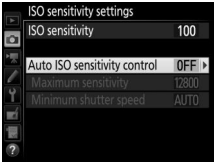
For information on choosing the ISO sensitivity step size, see Custom Setting b1 (**ISO sensitivity step value**; 🕮 333). For information on adjusting ISO sensitivity without using the ⍰ (**ISO**) button, see Custom Setting d8 (**Easy ISO**; 🕮 341). For information on using the **High ISO NR** option in the shooting menus to reduce noise at high ISO sensitivities, see page 317.

## Auto ISO Sensitivity Control

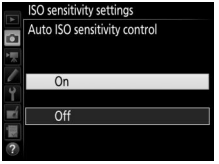
***(P, S, A, and M Modes Only)***

If **On** is selected for **ISO sensitivity settings** > **Auto ISO sensitivity control** in the photo shooting menu, ISO sensitivity will automatically be adjusted if optimal exposure can not be achieved at the value selected by the user (ISO sensitivity is adjusted appropriately when the flash is used).

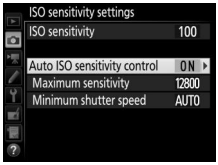
**1** **Select Auto ISO sensitivity control.**
Select **ISO sensitivity settings** in the photo shooting menu, highlight **Auto ISO sensitivity control** and press ▶.




**2** **Select On.**
Highlight **On** and press OK (if **Off** is selected, ISO sensitivity will remain fixed at the value selected by the user).

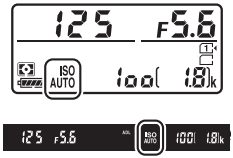


**3** **Adjust settings.**




The maximum value for auto ISO sensitivity can be selected using **Maximum sensitivity** (note that if the ISO sensitivity selected by the user is higher than that chosen for **Maximum sensitivity**, the value selected by the user will be used instead). In modes **P** and **A**, sensitivity will only be adjusted if underexposure would result at the shutter speed selected for **Minimum shutter speed** (1/2000–30 s, or **Auto**; in modes **S** and **M**, ISO sensitivity will be adjusted for optimal exposure at the shutter speed selected by the user). If **Auto** is selected, the camera will choose the minimum shutter speed based on the focal length of the lens. Press ⊛ to exit when settings are complete.

When **On** is selected, the viewfinder and control panel show **ISO AUTO**. When sensitivity is altered from the value selected by the user, these indicators flash and the altered value is shown in viewfinder.



**Minimum Shutter Speed**

Auto shutter-speed selection can be fine-tuned by highlighting **Auto** and pressing ⊕: for example, values faster than those usually selected automatically can be used with telephoto lenses to reduce blur. Note, however, that **Auto** functions only with CPU lenses; if a non-CPU lens is used without lens data, minimum shutter speed is fixed at 1/30 s. Shutter speeds may drop below the selected minimum if optimum exposure can not be achieved at the ISO sensitivity chosen for **Maximum sensitivity**.

**Auto ISO Sensitivity Control**

Noise (randomly-spaced bright pixels, fog, or lines) is more likely at higher sensitivities. Use the **High ISO NR** option in the shooting menus to reduce noise (see page 317). When a flash is used, minimum shutter speed will be set to the value selected for **Minimum shutter speed** unless this value is faster than Custom Setting e1 (**Flash sync speed**, 🕮 345) or slower than Custom Setting e2 (**Flash shutter speed**, 🕮 346), in which case the value selected for Custom Setting e2 will be used instead. Note that ISO sensitivity may be raised automatically when auto ISO sensitivity control is used in combination with slow sync flash modes (available with the built-in flash and the optional flash units listed on page 433), possibly preventing the camera from selecting slow shutter speeds.

**Enabling and Disabling Auto ISO Senstivity Control**

You can turn auto ISO sensitivity control on or off by pressing the ⊖⊠ (**ISO**) button and rotating the sub-command dial. **ISO AUTO** is displayed when auto ISO sensitivity control is on.

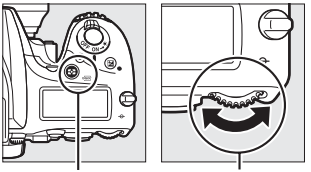
# Exposure

## Metering *(P, S, A, and M Modes Only)*

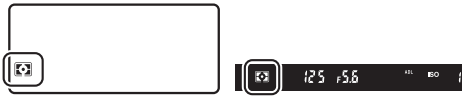
Choose how the camera sets exposure in **P**, **S**, **A**, and **M** modes (in other modes, the camera selects the metering method automatically).

| Option | Description |
|---|---|
| | **Matrix**: Produces natural results in most situations. Camera meters a wide area of the frame and set exposure according to tone distribution, color, composition, and, with type G, E, or D lenses (🕮 429), distance information (3D color matrix metering III; with other CPU lenses, camera uses color matrix metering III, which does not include 3D distance information). |
| | **Center-weighted**: Camera meters entire frame but assigns greatest weight to center area (if CPU lens is attached, size of area can be selected using Custom Setting b5, **Center-weighted area**, 🕮 335; if non-CPU lens is attached, area is equivalent to circle 12 mm in diameter). Classic meter for portraits; recommended when using filters with an exposure factor (filter factor) over 1×. |
| | **Spot**: Camera meters circle 4 mm (0.16 in.) in diameter (approximately 1.5% of frame). Circle is centered on current focus point, making it possible to meter off-center subjects (if non-CPU lens is used or if auto-area AF is in effect, camera will meter center focus point). Ensures that subject will be correctly exposed, even when background is much brighter or darker. |
| | **Highlight-weighted**: Camera assigns greatest weight to highlights. Use to reduce loss of detail in highlights, for example when photographing spotlit performers on a stage. |

To choose a metering option, press the ⬙ (FORMAT) button and rotate the main command dial until the desired setting is displayed in the viewfinder and control panel.



⬙ (FORMAT) button  Main command dial



Control panel  Viewfinder

**Non-CPU Lens Data**

Specifying the focal length and maximum aperture of non-CPU lenses using the **Non-CPU lens data** option in the setup menu (🕮 236) allows the camera to use color matrix metering when matrix is selected and improves the accuracy of center-weighted and spot metering. Center-weighted metering will be used if highlight-weighted metering is selected with non-CPU lenses or if matrix metering is selected with non-CPU lenses for which lens data have not been supplied. Note that center-weighted metering may also be used if highlight-weighted metering is selected with certain CPU lenses (AI-P NIKKOR lenses and AF lenses that are not of type G, E, or D).

**See Also**

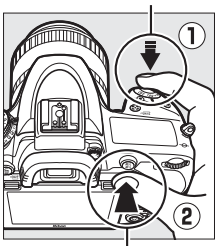
See Custom Setting b4 (**Matrix metering**, 🕮 335) for information on choosing whether matrix metering uses face detection. For information on making separate adjustments to optimal exposure for each metering method, see Custom Setting b6 (**Fine-tune optimal exposure**, 🕮 336).

## Autoexposure Lock

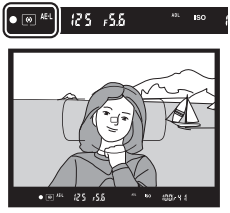
Use autoexposure lock to recompose photographs after using center-weighted metering and spot metering (🕮 139) to meter exposure.

**1 Lock exposure.**

Position the subject in the selected focus point and press the shutter-release button halfway. With the shutter-release button pressed halfway and the subject positioned in the focus point, press the AE-L/AF-L **AE-L/AF-L** button to lock focus and exposure (if you are using autofocus, confirm that the in-focus indicator (●) appears in the viewfinder).




While exposure lock is in effect, an **AE-L** indicator will appear in the viewfinder.




**2 Recompose the photograph.**

Keeping the AE-L/AF-L **AE-L/AF-L** button pressed, recompose the photograph and shoot.

**Metered Area**

In spot metering, exposure will be locked at the value metered in a 4-mm (0.16 in.) circle centered on the selected focus point. In center-weighted metering, exposure will be locked at the value metered in a 12-mm circle in the center of the viewfinder.

**Adjusting Shutter Speed and Aperture**

While exposure lock is in effect, the following settings can be adjusted without altering the metered value for exposure:

| Mode | Setting |
|---|---|
| **P** | Shutter speed and aperture (flexible program; 🕮 89) |
| **S** | Shutter speed |
| **A** | Aperture |

The new values can be confirmed in the viewfinder and control panel. Note that metering can not be changed while exposure lock is in effect.

**See Also**

If **On** is selected for Custom Setting c1 (**Shutter-release button AE-L**, 🕮 336), exposure will lock when the shutter-release button is pressed halfway. For information on changing the role of the AE-L/AF-L **AE-L/AF-L** button, see Custom Setting f4 (**Assign AE-L/AF-L button**, 🕮 361).

## Exposure Compensation

***(P, S, A, M,* SCENE*, and ◪ Modes Only)***

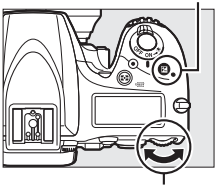
Exposure compensation is used to alter exposure from the value suggested by the camera, making pictures brighter or darker. It is most effective when used with center-weighted or spot metering (🕮 139). Choose from values between –5 EV (underexposure) and +5 EV (overexposure) in increments of ⅓ EV. In general, positive values make the subject brighter while negative values make it darker.

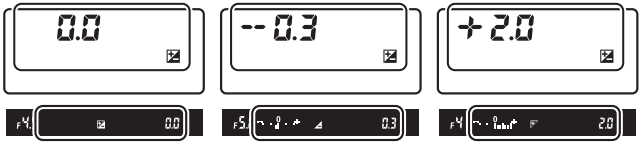
*–1 EV*

*No exposure compensation*

*+1 EV*

To choose a value for exposure compensation, press the ◪ button and rotate the main command dial until the desired value is displayed in the control panel or viewfinder.



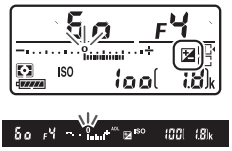




*±0 EV (◪ button pressed)*

*–0.3 (–⅓) EV*

*+2.0 EV*

At values other than ±0.0, the 0 at the center of the exposure indicators will flash (modes **P**, **S**, **A**, **SCENE**, and ) and a  icon will be displayed in the control panel and viewfinder after you release the  button. The current value for exposure compensation can be confirmed in the exposure indicator by pressing the  button.



Normal exposure can be restored by setting exposure compensation to ±0 (adjustments to exposure compensation in **SCENE** and  modes will be reset when another mode is selected). Exposure compensation is not reset when the camera is turned off.

**Mode M**

In mode **M**, exposure compensation affects only the exposure indicator; shutter speed and aperture do not change.

**See Also**

For information on choosing the size of the increments available for exposure compensation, see Custom Setting b2 (**EV steps for exposure cntrl**, 333). For information on making adjustments to exposure compensation without pressing the  button, see Custom Setting b3 (**Easy exposure compensation**, 334). For information on restricting the effects of exposure compensation to the background when using a flash for foreground lighting, see Custom Setting e4 (**Exposure comp. for flash**, 353). For information on automatically varying exposure, flash level, white balance, or Active D-Lighting, see page 202.

# White Balance

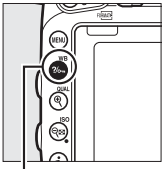
***(P, S, A, and M Modes Only)***

White balance ensures that colors are unaffected by the color of the light source. In modes other than **P**, **S**, **A**, and **M**, white balance is set automatically by the camera. Auto white balance is recommended for most light sources in **P**, **S**, **A**, and **M** modes, but other values can be selected if necessary according to the type of source:

| Option | | Color temp.* |
|---|---|---|
| AUTO | **Auto** | 3500–8000 K |
| | **Normal** | |
| | **Keep warm lighting colors** | |
| | **Incandescent** | 3000 K |
| | **Fluorescent** | |
| | **Sodium-vapor lamps** | 2700 K |
| | **Warm-white fluorescent** | 3000 K |
| | **White fluorescent** | 3700 K |
| | **Cool-white fluorescent** | 4200 K |
| | **Day white fluorescent** | 5000 K |
| | **Daylight fluorescent** | 6500 K |
| | **High temp. mercury-vapor** | 7200 K |
| | **Direct sunlight** | 5200 K |
| | **Flash** | 5400 K |
| | **Cloudy** | 6000 K |
| | **Shade** | 8000 K |
| K | **Choose color temp.** (🕮 152) | 2500–10,000 K |
| PRE | **Preset manual** (🕮 155) | — |

* All values are approximate and do not reflect fine-tuning (if applicable).

White balance is set by pressing the ?/🔑 (**WB**) button and rotating the main command dial until the desired setting is displayed in the information display.



?/🔑 (**WB**) *button*

*Main command dial*

*Information display*

**The Shooting Menus**

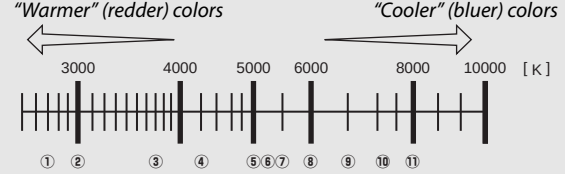
White balance can also be adjusted using the **White balance** option in either of the shooting menus (🕮 310, 321), which also can be used to fine-tune white balance (🕮 149) or measure a value for preset manual white balance (🕮 155). The **Auto** option in the **White balance** menu offers a choice of **Normal** and **Keep warm lighting colors**, which preserves the warm colors produced by incandescent lighting, while the **Fluorescent** option can be used to select the light source from the bulb types. The item in the movie shooting menu offers a **Same as photo settings** option that sets the white balance for movies to the same as that used for photographs.

**Studio Flash Lighting**

Auto white balance may not produce the desired results with large studio flash units. Use preset manual white balance or set white balance to **Flash** and use fine tuning to adjust white balance.

**Color Temperature**

The perceived color of a light source varies with the viewer and other conditions. Color temperature is an objective measure of the color of a light source, defined with reference to the temperature to which an object would have to be heated to radiate light in the same wavelengths. While light sources with a color temperature in the neighborhood of 5000–5500 K appear white, light sources with a lower color temperature, such as incandescent light bulbs, appear slightly yellow or red. Light sources with a higher color temperature appear tinged with blue.




| | |
|---|---|
| ① | (sodium-vapor lamps): 2700 K |
| ② | (incandescent)/(warm-white fluorescent.): 3000 K |
| ③ | (white fluorescent): 3700 K |
| ④ | (cool-white fluorescent): 4200 K |
| ⑤ | (day white fluorescent): 5000 K |
| ⑥ | (direct sunlight): 5200 K |
| ⑦ | (flash): 5400 K |
| ⑧ | (cloudy): 6000 K |
| ⑨ | (daylight fluorescent): 6500 K |
| ⑩ | (high temp. mercury-vapor): 7200 K |
| ⑪ | (shade): 8000 K |

**Note**: All figures are approximate.

**See Also**

When **WB bracketing** is selected for Custom Setting e6 (**Auto bracketing set**, 353), the camera will create several images each time the shutter is released. White balance will be varied with each image, "bracketing" the value currently selected for white balance (208).

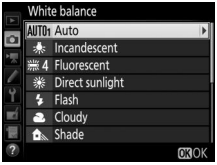
## Fine-Tuning White Balance

At settings other than K (**Choose color temp.**), white balance can be "fine-tuned" to compensate for variations in the color of the light source or to introduce a deliberate color cast into an image.

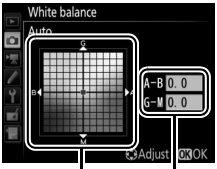
### ■ *The White Balance Menu*

To fine-tune white balance from the shooting menus, select **White balance** and follow the steps below.

**1** **Display fine-tuning options.**
Highlight a white balance option and press ▶ (if a sub-menu is displayed, select the desired option and press ▶ again to display fine-tuning options; for information on fine-tuning preset manual white balance, see page 164).




**2** **Fine tune white balance.**
Use the multi selector to fine-tune white balance. White balance can be fine-tuned on the amber (A)–blue (B) axis in steps of 0.5 and the green (G)–magenta (M) axis in steps of 0.25. The horizontal (amber-blue) axis corresponds to color temperature, while the vertical (green-magenta) axis has the similar effects to the corresponding **c**olor **c**ompensation (CC) filters. The horizontal axis is ruled in increments equivalent to about 5 mired, the vertical axis in increments of about 0.05 diffuse density units.




*Coordinates*

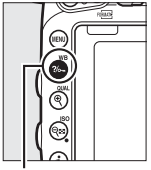
*Adjustment*

**3** **Press OK.**

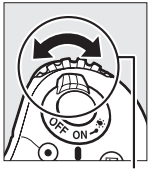
Press OK to save settings and return to the shooting menus.

### ■ *The ?/🔑 (WB) Button*

At settings other than K (**Choose color temp.**) and PRE (**Preset manual**), the **?/🔑** (**WB**) button can be used to fine-tune white balance on the amber (A)–blue (B) axis (📖 149; to fine-tune white balance when **PRE** is selected, use the shooting menus as described on page 164). Press the **?/🔑** (**WB**) button and rotate the sub-command dial to fine-tune white balance in steps of 0.5 (with each full increment equivalent to about 5 mired) until the desired value is displayed in the control panel and information display. Rotating the sub-command dial to the left increases the amount of amber (A). Rotating the sub-command dial to the right increases the amount of blue (B).

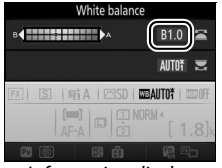


***?/🔑 (WB) button***




*Sub-command dial*

*Control panel*




*Information display*

### White Balance Fine-Tuning

If white balance has been fine-tuned, an asterisk ("✱") will be displayed in the information display. Note that the colors on the fine-tuning axes are relative, not absolute. For example, moving the cursor to **B** (blue) when a "warm" setting such as ☀ (incandescent) is selected for white balance will make photographs slightly "colder" but will not actually make them blue.

*Information display*

### "Mired"

Any given change in color temperature produces a greater difference in color at low color temperatures than it would at higher color temperatures. For example, a change of 1000 K produces a much greater change in color at 3000 K than at 6000 K. Mired, calculated by multiplying the inverse of the color temperature by $10^6$, is a measure of color temperature that takes such variation into account, and as such is the unit used in color-temperature compensation filters. E.g.:

- 4000 K–3000 K (a difference of 1000 K)=83 mired
- 7000 K–6000 K (a difference of 1000 K)=24 mired

## Choosing a Color Temperature

Follow the steps below to choose a color temperature when K (**Choose color temp.**) is selected for white balance.

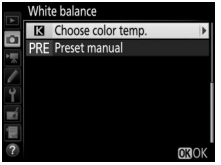
**Choose Color Temperature**

Note that the desired results will not be obtained with flash or fluorescent lighting. Choose ⚡ (**Flash**) or ▦ (**Fluorescent**) for these sources. With other light sources, take a test shot to determine if the selected value is appropriate.

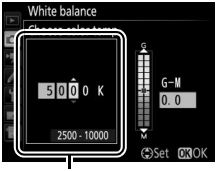
### *The White Balance Menu*

Color temperature can be selected using the **White balance** options in the shooting menus. Enter values for the amber–blue and green–magenta axes (📖 149) as described below.

**1** **Select Choose color temp.**
Select **White balance** in either of the shooting menus, then highlight **Choose color temp.** and press ▶.

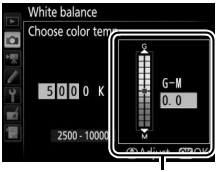



**2** **Select a value for amber-blue.**
Press ◀ or ▶ to highlight digits and press ▲ or ▼ to change.



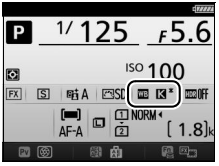

*Value for amber (A)-blue (B) axis*

**3** **Select a value for green-magenta.**
Press ◀ or ▶ to highlight the G (green) or M (magenta) axis and press ▲ or ▼ to select a value.



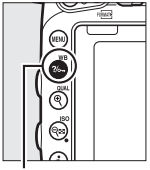

*Value for green (G)-magenta (M) axis*

**4** **Press ⊛.**
Press ⊛ to save changes and return to the shooting menus. If a value other than 0 is selected for the green (G)–magenta (M) axis, an asterisk ("✱") will be displayed in the information display.

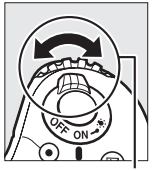


### ■■ *The ?/🔑 (WB) Button*

When **K** (**Choose color temp.**) is selected, the **?/🔑** (**WB**) button can be used to select the color temperature, although only for the amber (A)–blue (B) axis. Press the **?/🔑** (**WB**) button and rotate the sub-command dial until the desired value is displayed in the control panel and information display (adjustments are made in mireds; 🕮 151). To enter a color temperature directly, press the **?/🔑** (**WB**) button and press ◀ or ▶ to highlight a digit and press ▲ or ▼ to change.

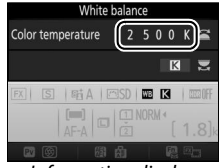


**?/🔑** (**WB**) *button*




*Sub-command dial*

*Control panel*




*Information display*

## Preset Manual

Preset manual is used to record and recall custom white balance settings for shooting under mixed lighting or to compensate for light sources with a strong color cast. The camera can store up to six values for preset manual white balance in presets d-1 through d-6. Two methods are available for setting preset manual white balance:

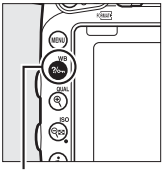
| Method | Description |
|---|---|
| **Direct measurement** | Neutral gray or white object is placed under lighting that will be used in final photo and white balance measured by camera (🕮 155). In live view photography and movie live view (🕮 54, 66), white balance can be measured in a selected area of the frame (spot white balance, 🕮 159). |
| **Copy from existing photograph** | White balance is copied from photo on memory card (🕮 162). |

### Viewfinder Photography

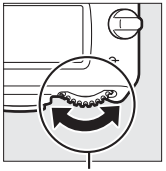
**1 Light a reference object.**
Place a neutral gray or white object under the lighting that will be used in the final photograph. In studio settings, a standard gray panel can be used as a reference object. Note that exposure is automatically increased by 1 EV when measuring white balance; in mode **M**, adjust exposure so that the exposure indicator shows ±0 (🕮 94).

## 2 Set white balance to PRE (Preset manual).

Press the ?/🔑 (**WB**) button and rotate the main command dial until **PRE** is displayed in the information display.



?/🔑 (**WB**) button

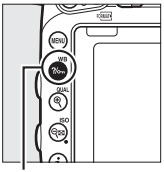


Main command dial

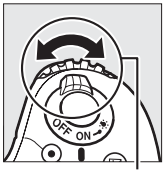
Information display

## 3 Select a preset.

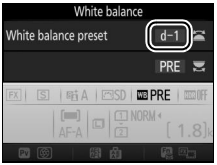
Press the ?/🔑 (**WB**) button and rotate the sub-command dial until the desired white balance preset (d-1 to d-6) is displayed in the information display.



?/🔑 (**WB**) button




Sub-command dial

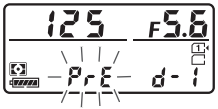



Information display

**Measuring Preset Manual White Balance (Viewfinder Photography)**

Preset manual white balance can not be measured while you are shooting an HDR photograph (🕮 177) or multiple exposure (🕮 216), or when **Record movies** is selected for Custom Setting g4 (**Assign shutter button**, 🕮 373) and the live view selector is rotated to 🎥.

**4 Select direct measurement mode.**
Release the ?/⊶ (**WB**) button briefly and then press the button until PrE starts to flash in the control panel and viewfinder. The displays will flash for about six seconds.



*Control panel*

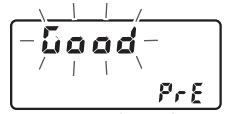
*Viewfinder*

**5 Measure white balance.**
Before the indicators stop flashing, frame the reference object so that it fills the viewfinder and press the shutter-release button all the way down. The camera will measure a value for white balance and store it in the preset selected in Step 3. No photograph will be recorded; white balance can be measured accurately even when the camera is not in focus.

**Protected Presets**
If the current preset is protected (📖 164), Prt or **Prt** will flash in the control panel, viewfinder, and information display if you attempt to measure a new value.

## 6 Check the results.

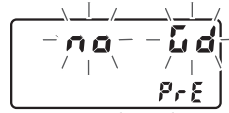
If the camera was able to measure a value for white balance, **Good** will flash in the control panel for about six seconds, while the viewfinder will show a flashing **Gd**.




*Control panel*

*Viewfinder*

If lighting is too dark or too bright, the camera may be unable to measure white balance. A flashing **no Gd** will appear in the control panel and viewfinder for about six seconds. Press the shutter-release button halfway to return to Step 5 and measure white balance again.




*Control panel*

*Viewfinder*

**Direct Measurement Mode**

If no operations are performed during viewfinder photography while the displays are flashing, direct measurement mode will end in the time selected for Custom Setting c2 (**Standby timer**, 🕮 336).

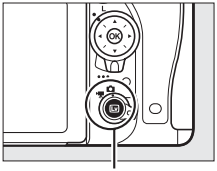
**Selecting a Preset**

Selecting **Preset manual** for the **White balance** option in either of the shooting menus displays the dialog shown at right; highlight a preset and press OK. If no value currently exists for the selected preset, white balance will be set to 5200 K, the same as **Direct sunlight**.

## Live View (Spot White Balance)

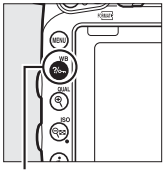
In live view photography and movie live view (🕮 54, 66), white balance can be measured in a selected area of the frame, eliminating the need to prepare a reference object or change lenses during telephoto photography.

**1** **Press the Lv button.**
The mirror will be raised and the view through the lens will be displayed in the camera monitor.

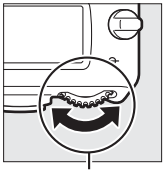


*Lv button*

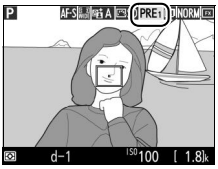
**2** **Set white balance to PRE (Preset manual).**
Press the ?/🔑 (**WB**) button and rotate the main command dial until **PRE** is displayed in the monitor.



*?/🔑 (**WB**) button*



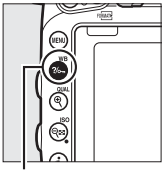
*Main command dial*




*Monitor*

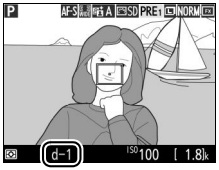
## 3 Select a preset.

Press the ?/🔑 (**WB**) button and rotate the sub-command dial until the desired white balance preset (d-1 to d-6) is displayed in the monitor.




?/🔑 (**WB**) button

Sub-command dial




Monitor

## 4 Select direct measurement mode.

Release the ?/🔑 (**WB**) button briefly and then press the button until the **PRE** icon in the monitor starts to flash. A spot white balance target (□) will be displayed at the selected focus point.

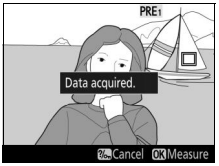
Monitor

## 5 Position the target over a white or grey area.

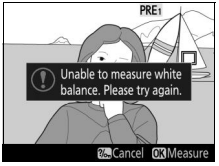
While **PRE** flashes in the display, use the multi selector to position the □ over a white or grey area of the subject. To zoom the area around the target in for more precise positioning, press the 🔍 (**QUAL**) button.

## 6 Measure white balance.

Press ⊛ or press the shutter-release button all the way down to measure white balance. The time available to measure white balance is that selected for Custom Setting c4 (**Monitor off delay**) > **Live view** (🕮 337).




If the camera is unable to measure white balance, the message shown at right will be displayed. Choose a new white balance target and repeat the process from Step 5.




## 7 Exit direct measurement mode.

Press the **?** (**WB**) button to exit direct measurement mode.

When **Preset manual** is selected for **White balance** in either of the shooting menus, the position of the target used to measure preset manual white balance will be displayed on presets recorded during live view photography and movie live view.

**Measuring Preset Manual White Balance (Live View)**

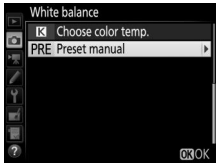
Preset manual white balance can not be measured when **Record movies** is selected for Custom Setting g4 (**Assign shutter button**, 🕮 373) and the live view selector is rotated to 🎥. Preset manual white balance can not be set while an HDR exposure is in progress (🕮 177).

## Managing Presets

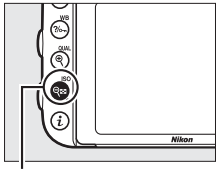
### ■■ *Copying White Balance from a Photograph*

Follow the steps below to copy a value for white balance from an existing photograph to a selected preset.

**1** **Select Preset manual.**
Select **White balance** in either of the shooting menus, then highlight **Preset manual** and press ▶.

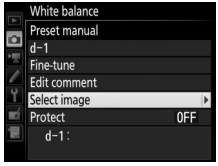



**2** **Select a destination.**
Highlight the destination preset (d-1 to d-6) and press ⊖ (**ISO**).

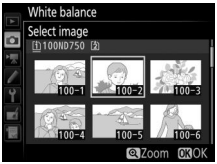



⊖ (**ISO**) *button*

**3** **Choose Select image.**
Highlight **Select image** and press ▶.

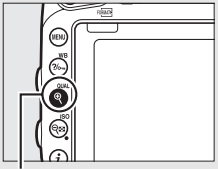


**4** **Highlight a source image.**
Highlight the source image.




**5** **Copy white balance.**
Press ⊛ to copy the white balance value for the highlighted photograph to the selected preset. If the highlighted photograph has a comment (🕮 384), the comment will be copied to the comment for the selected preset.

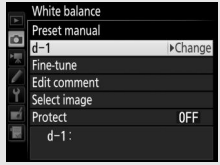
**Choosing a Source Image**
To view the image highlighted in Step 4 full frame, press and hold the ⊕ (**QUAL**) button.




⊕ (**QUAL**) *button*

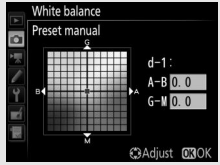
### Choosing a White Balance Preset

Press ◆ to highlight the current white balance preset (d-1 – d-6) and press ▶ to select another preset.



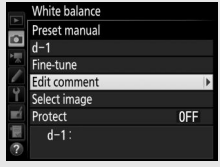

### Fine-Tuning Preset Manual White Balance

The selected preset can be fine-tuned by selecting **Fine-tune** and adjusting white balance as described on page 149.



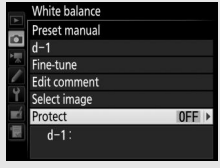

### Edit Comment

To enter a descriptive comment of up to 36 characters for the current white-balance preset, select **Edit comment** in the preset manual white balance menu and enter a comment as described on page 171.




### Protect

To protect the current white-balance preset, select **Protect** in the preset manual white balance menu, then highlight **On** and press OK. Protected presets can not be modified and the **Fine-tune** and **Edit comment** options can not be used.



# Image Enhancement

## Picture Controls *(P, S, A, and M Modes Only)*

In **P**, **S**, **A**, and **M** modes, your choice of Picture Control determines how pictures are processed (in other modes, the camera selects a Picture Control automatically).

### Selecting a Picture Control

Choose a Picture Control according to the subject or type of scene.

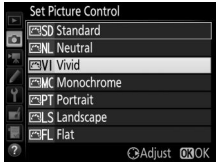
| Option | Description |
|---|---|
| SD **Standard** | Standard processing for balanced results. Recommended for most situations. |
| NL **Neutral** | Minimal processing for natural results. Choose for photographs that will later be processed or retouched. |
| VI **Vivid** | Pictures are enhanced for a vivid, photoprint effect. Choose for photographs that emphasize primary colors. |
| MC **Monochrome** | Take monochrome photographs. |
| PT **Portrait** | Process portraits for skin with natural texture and a rounded feel. |
| LS **Landscape** | Produces vibrant landscapes and cityscapes. |
| FL **Flat** | Details are preserved over a wide tone range, from highlights to shadows. Choose for photographs that will later be extensively processed or retouched. |

**The Movie Shooting Menu**

The **Set Picture Control** option in the movie shooting menu also offers a **Same as photo settings** option that sets the Picture Control for movies to the same as that used for photographs.

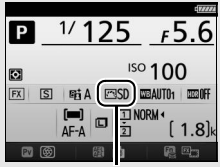
**1** **Select Set Picture Control.**
Highlight **Set Picture Control** in either of the shooting menus and press ▶.

**2** **Select a Picture Control.**
Highlight a Picture Control and press OK.




**Custom Picture Controls**
*Custom Picture Controls* are created through modifications to existing Picture Controls using the **Manage Picture Control** option in the shooting menus (🕮 170). Custom Picture Controls can be saved to a memory card for sharing among other cameras of the same model and compatible software (🕮 173).

**The Picture Control Indicator**
The current Picture Control is shown in the information display when the Info button is pressed.

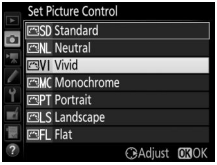


*Picture Control indicator*

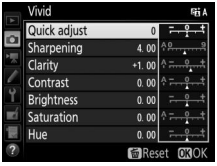
## Modifying Picture Controls

Existing preset or custom Picture Controls (🕮 170) can be modified to suit the scene or the user's creative intent. Choose a balanced combination of settings using **Quick adjust**, or make manual adjustments to individual settings.

**1 Select a Picture Control.**
Highlight the desired Picture Control in the Picture Control list (🕮 165) and press ▶.

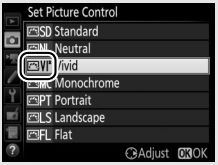



**2 Adjust settings.**
Press ▲ or ▼ to highlight the desired setting and press ◀ or ▶ to choose a value in increments of 1, or rotate the sub-command dial to choose a value in increments of 0.25 (🕮 168). Repeat this step until all settings have been adjusted, or select a preset combination of settings by using the multi selector to choose **Quick adjust**. Default settings can be restored by pressing the 🗑 (FORMAT) button.




**3 Press OK.**

**Modifications to Original Picture Controls**
Picture Controls that have been modified from default settings are indicated by an asterisk ("✱").



## ■■ *Picture Control Settings*

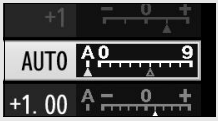
| Option | | Description |
|---|---|---|
| **Quick adjust** | | Mute or heighten the effect of the selected Picture Control (note that this resets all manual adjustments). Not available with **Neutral**, **Monochrome**, **Flat**, or custom Picture Controls (🕮 170). |
| **Manual adjustments (all Picture Controls)** | **Sharpening** | Control the sharpness of outlines. Select **A** to adjust sharpening automatically according to the type of scene. |
| | **Clarity** | Adjust clarity manually or select **A** to let the camera adjust clarity automatically. Depending on the scene, shadows may appear around bright objects or halos may appear around dark objects at some settings. Clarity is not applied to movies. |
| | **Contrast** | Adjust contrast manually or select **A** to let the camera adjust contrast automatically. |
| | **Brightness** | Raise or lower brightness without loss of detail in highlights or shadows. |
| **Manual adjustments (non-monochrome only)** | **Saturation** | Control the vividness of colors. Select **A** to adjust saturation automatically according to the type of scene. |
| | **Hue** | Adjust hue. |
| **Manual adjustments (monochrome only)** | **Filter effects** | Simulate the effect of color filters on monochrome photographs (🕮 169). |
| | **Toning** | Choose the tint used in monochrome photographs (🕮 170). |

**"A" (Auto)**

Results for auto sharpening, clarity, contrast, and saturation vary with exposure and the position of the subject in the frame. Use a type G, E, or D lens for best results.

**Switching Between Manual and Auto**

Press the ⊛ (**QUAL**) button to switch back and forth between manual and auto (**A**) settings for sharpening, clarity, contrast, and saturation.




**Custom Picture Controls**

The options available with custom Picture Controls are the same as those on which the custom Picture Control was based.

**Previous Settings**

The △ indicator under the value display in the Picture Control setting menu indicates the previous value for the setting. Use this as a reference when adjusting settings.

**Filter Effects (Monochrome Only)**

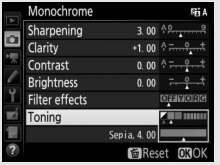
The options in this menu simulate the effect of color filters on monochrome photographs. The following filter effects are available:

| Option | | Description |
|---|---|---|
| **Y** | Yellow | Enhances contrast. Can be used to tone down the brightness of the sky in landscape photographs. Orange produces more contrast than yellow, red more contrast than orange. |
| **O** | Orange | |
| **R** | Red | |
| **G** | Green | Softens skin tones. Can be used for portraits. |

Note that the effects achieved with **Filter effects** are more pronounced than those produced by physical glass filters.

**Toning (Monochrome Only)**

Pressing ⊛ when **Toning** is selected displays saturation options. Press ◀ or ▶ to adjust saturation in increments of 1, or rotate the sub-command dial to choose a value in increments of 0.25. Saturation control is not available when **B&W** (black-and-white) is selected.

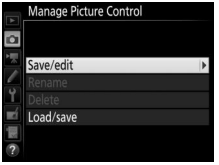



## Creating Custom Picture Controls

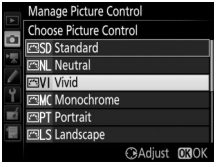
The Picture Controls supplied with the camera can be modified and saved as custom Picture Controls.

**1** **Select Manage Picture Control.**
Highlight **Manage Picture Control** in either of the shooting menus and press ▶.

**2** **Select Save/edit.**
Highlight **Save/edit** and press ▶.

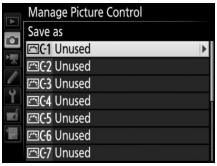



**3** **Select a Picture Control.**
Highlight an existing Picture Control and press ▶, or press OK to proceed to Step 5 to save a copy of the highlighted Picture Control without further modification.



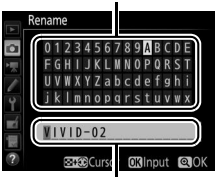
**4 Edit the selected Picture Control.**
See page 168 for more information.
To abandon any changes and start over from default settings, press the 🗑 (FORMAT) button. Press OK when settings are complete.

**5 Select a destination.**
Choose a destination for the custom Picture Control (C-1 through C-9) and press ▶.




**6 Name the Picture Control.**
The text-entry dialog shown at right will be displayed. By default, new Picture Controls are named by adding a two-digit number (assigned automatically) to the name of the existing Picture Control; to use the default name, proceed to Step 7. To move the cursor in the name area, hold the ⊖ (**ISO**) button and press ◀ or ▶. To enter a new letter at the current cursor position, use the multi selector to highlight the desired character in the keyboard area and press OK. To delete the character at the current cursor position, press the 🗑 (FORMAT) button.

*Keyboard area*

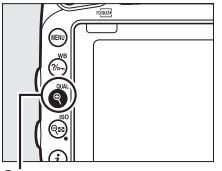



*Name area*

Custom Picture Control names can be up to nineteen characters long. Any characters after the nineteenth will be deleted.

## 7 Press ⊕ (QUAL).

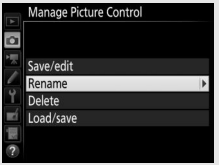
Press the ⊕ (**QUAL**) button to save changes and exit. The new Picture Control will appear in the Picture Control list.



⊕ (**QUAL**) *button*

### Manage Picture Control > Rename

Custom Picture Controls can be renamed at any time using the **Rename** option in the **Manage Picture Control** menu.




### Manage Picture Control > Delete

The **Delete** option in the **Manage Picture Control** menu can be used to delete selected custom Picture Controls when they are no longer needed.

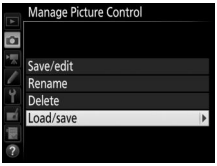
### The Original Picture Control Icon

The original preset Picture Control on which the custom Picture Control is based is indicated by an icon in the top right corner of the edit display.

*Original Picture Control icon*

## Sharing Custom Picture Controls

Use the **Load/save** option in the **Manage Picture Control** menu to copy custom Picture Controls to and from memory cards. Custom Picture Controls can be created on a computer using Picture Control Utility 2, a utility launched from ViewNX 2 (supplied) or Capture NX-D (🕮 268), then saved to a memory card and copied to the camera. Custom Picture Controls created on the camera can be copied to a memory card for use in other D750s. Once the copies are no longer needed, they can be deleted using the **Delete from card** option.




To copy custom Picture Controls to or from the memory card, or to delete custom Picture Controls from the memory card, highlight **Load/save** in the **Manage Picture Control** menu and press ▶. The following options will be displayed:

- **Copy to camera**: Copy custom Picture Controls from the memory card to custom Picture Controls C-1 through C-9 on the camera and name them as desired.
- **Delete from card**: Delete selected custom Picture Controls from the memory card. The confirmation dialog shown at right will be displayed before a Picture Control is deleted; to delete the selected Picture Control, highlight **Yes** and press OK.

- **Copy to card**: Copy a custom Picture Control (C-1 through C-9) from the camera to a selected destination (1 through 99) on the memory card.

**Saving Custom Picture Controls**

Up to 99 custom Picture Controls can be stored on the memory card at any one time. The memory card can only be used to store user-created custom Picture Controls. The preset Picture Controls supplied with the camera (🕮 165) can not be copied to the memory card, renamed, or deleted.

The options in the **Manage Picture Control** menu apply only to the memory card in Slot 1. Custom Picture Controls can not be deleted from or copied to or from the card in Slot 2.

# Preserving Detail in Highlights and Shadows

## Active D-Lighting *(P, S, A, and M Modes Only)*

Active D-Lighting preserves details in highlights and shadows, creating photographs with natural contrast. Use for high contrast scenes, for example when photographing brightly lit outdoor scenery through a door or window or taking pictures of shaded subjects on a sunny day. It is most effective when used with matrix metering (🕮 139).

*Active D-Lighting off*

*Active D-Lighting: Auto*

**"Active D-Lighting" Versus "D-Lighting"**

The **Active D-Lighting** option in the photo shooting menu adjusts exposure before shooting to optimize the dynamic range, while the **D-Lighting** option in the retouch menu (🕮 397) brightens shadows in images after shooting.

To use Active D-Lighting:

**1** **Select Active D-Lighting.**
Highlight **Active D-Lighting** in the photo shooting menu and press ▶.

**2** **Choose an option.**
Highlight the desired option and press OK. If **A Auto** is selected, the camera will automatically adjust Active D-Lighting according to shooting conditions (in mode **M**, however, **A Auto** is equivalent to **N Normal**).

**Active D-Lighting**
Noise (randomly-spaced bright pixels, fog, or lines) may appear in photographs taken with Active D-Lighting. With some subjects, you may notice uneven shading, shadows around bright objects, or halos around dark objects. Active D-Lighting can not be used at ISO sensitivities of Hi 0.3 or above.

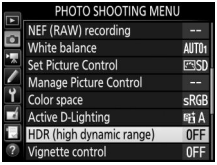
**See Also**
When **ADL bracketing** is selected for Custom Setting e6 (**Auto bracketing set**, 📖 353), the camera varies Active D-Lighting over a series of shots (📖 212). For information on using the **Fn** button and main command dial to select an Active D-Lighting option, see page 360.

## High Dynamic Range (HDR)

Used with high-contrast subjects, **H**igh **D**ynamic **R**ange (HDR) preserves details in highlights and shadows by combining two shots taken at different exposures. HDR is most effective when used with matrix metering (🕮 139; with spot or center-weighted metering and a non-CPU lens, a strength of **Auto** is equivalent to **Normal**). It can not be used to record NEF (RAW) images. Flash lighting, bracketing (🕮 202), multiple exposure (🕮 216), and time-lapse photography (🕮 229) can not be used while HDR is in effect and shutter speeds of **bulb** and **- -** are not available.

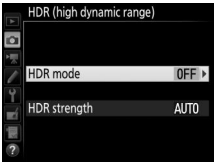
*First exposure (darker)* *Second exposure (brighter)* *Combined HDR image*

**1** **Select HDR (high dynamic range).** Highlight **HDR (high dynamic range)** in the photo shooting menu and press ⊛.

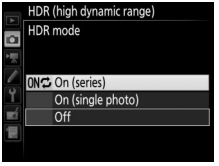


## 2 Select a mode.

Highlight **HDR mode** and press ▶.




Highlight one of the following and press OK.



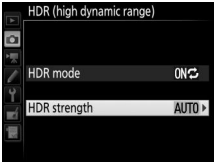

- **To take a series of HDR photographs**, select **ON On (series)**. HDR shooting will continue until you select **Off** for **HDR mode**.
- **To take one HDR photograph**, select **On (single photo)**. Normal shooting will resume automatically after you have created a single HDR photograph.
- **To exit without creating additional HDR photographs**, select **Off**.

If **On (series)** or **On (single photo)** is selected, a **HDR** icon will be displayed in the viewfinder.

*Viewfinder*

## 3 Choose the HDR strength.

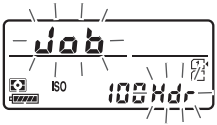
To choose the difference in exposure between the two shots (HDR strength), highlight **HDR strength** and press ▶.




Highlight the desired option and press OK. If **Auto** is selected, the camera will automatically adjust HDR strength to suit the scene.

**4 Frame a photograph, focus, and shoot.**

The camera takes two exposures when the shutter-release button is pressed all the way down. JobHdr will flash in the control panel and **HDR** Job in the viewfinder while the images are combined; no photographs can be taken until recording is complete. Regardless of the option currently selected for release mode, only one photograph will be taken each time the shutter-release button is pressed.




*Control panel*

*Viewfinder*

If **On (series)** is selected, HDR will only turn off when **Off** is selected for **HDR mode**; if **On (single photo)** is selected, HDR turns off automatically after the photograph is taken. The **HDR** icon clears from the display when HDR shooting ends.

**Framing HDR Photographs**

The edges of the image will be cropped out. The desired results may not be achieved if the camera or subject moves during shooting. Use of a tripod is recommended. Depending on the scene, the effect may not be visible, shadows may appear around bright objects, or halos may appear around dark objects. Uneven shading may be visible with some subjects.

**Interval Timer Photography**

If **On (series)** is selected for **HDR mode** before interval timer shooting begins, the camera will continue to shoot HDR photographs at the selected interval (if **On (single photo)** is selected, interval timer shooting will end after a single shot).

# Flash Photography

## Using the Built-in Flash

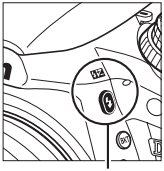
The built-in flash can be used not only when natural lighting is inadequate but to fill in shadows and backlit subjects or to add a catch light to the subject's eyes.

### Auto Pop-up Modes

In AUTO, , , , , , , and modes, the built-in flash automatically pops up and fires as required.

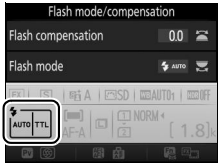
**1 Choose a flash mode.**

Keeping the ⚡ (⚡±) button pressed, rotate the main command dial until the desired flash mode appears in the information display.



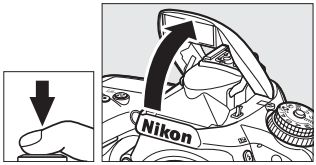
*⚡ (⚡±) button*

*Main command dial*




*Information display*

**2 Take pictures.**
The flash will pop up as required when the shutter-release button is pressed halfway and fire when a photograph is taken. *If the flash does not pop up automatically, DO NOT attempt to raise it by hand. Failure to observe this precaution could damage the flash.*




### ■■ *Flash Modes*

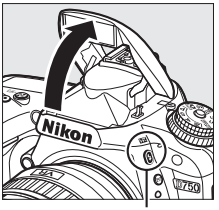
The following flash modes are available:

| | |
|---|---|
| AUTO | **Auto flash**: When lighting is poor or the subject is backlit, the flash pops up automatically when the shutter-release button is pressed halfway and fires as required. Not available in mode. |
| AUTO | **Auto with red-eye reduction**: Use for portraits. The flash pops up and fires as required, but before it fires the red-eye reduction lamp lights to help reduce "red-eye." Not available in mode. |
| AUTO SLOW | **Auto slow sync with red-eye reduction**: As for auto with red-eye reduction, except that slow shutter speeds are used to capture background lighting. Use for portraits taken at night or under low light. Available in mode. |
| AUTO SLOW | **Auto slow sync**: Slow shutter speeds are used to capture background lighting in shots taken at night or under low light. Available in mode. |
| | **Off**: The flash does not fire. |

## Manual Pop-up Modes

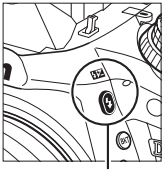
In **P**, **S**, **A**, **M**, and modes, the flash must be raised manually. The flash will not fire if it is not raised.

**1** **Raise the flash.**
Press the ϟ (⚡) button to raise the flash. Note that if the flash is off or an optional external flash unit is attached, the built-in flash will not pop up; proceed to Step 2.

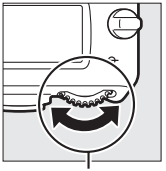



ϟ (⚡) button

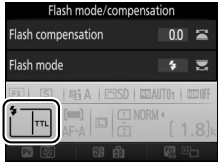
**2** **Choose a flash mode (P, S, A, and M modes only).**
Keeping the ϟ (⚡) button pressed, rotate the main command dial until the desired flash mode appears in the information display.



ϟ (⚡) button



Main command dial




Information display

**3** **Take pictures.**
If an option other than ⊗ is selected, the flash will fire whenever a picture is taken.

### ■■ *Flash Modes*

The following flash modes are available:

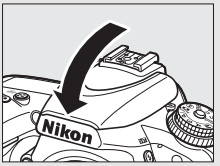
| | |
|---|---|
| | **Fill flash**: The flash fires with every shot. |
| | **Red-eye reduction**: Use for portraits. The flash fires with every shot, but before it fires, the red-eye reduction lamp lights to help reduce "red-eye." Not available in 🍴 mode. |
| SLOW | **Red-eye reduction with slow sync**: As for "red-eye reduction", above, except that shutter speed slows automatically to capture background lighting at night or under low light. Use when you want to include background lighting in portraits. Not available in modes **S**, **M**, and 🍴. |
| SLOW | **Slow sync**: As for "fill flash", above, except that shutter speed slows automatically to capture background lighting at night or under low light. Use when you want to capture both subject and background. Not available in modes **S**, **M**, and 🍴. |
| REAR | **Slow rear-curtain sync**: As for "rear-curtain sync", below, except that shutter speed slows automatically to capture background lighting at night or under low light. Use when you want to capture both subject and background. Not available in modes **S**, **M**, and 🍴. **SLOW** is displayed when setting is complete. |
| REAR | **Rear-curtain sync**: The flash fires just before the shutter closes, creating a stream of light behind moving light sources as shown below at right. Not available in modes **P**, **A**, and 🍴. *Front-curtain sync* *Rear-curtain sync* |
| | **Off**: The flash does not fire. Not available in 🍴 mode. |

### Metering

Select matrix, center-weighted, or highlight-weighted metering to activate i-TTL balanced fill-flash for digital SLR. Standard i-TTL flash for digital SLR is activated automatically when spot metering is selected.

### Lowering the Built-in Flash

To save power when the flash is not in use, press it gently downward until the latch clicks into place.




### The Built-in Flash

Remove lens hoods to prevent shadows. The flash has a minimum range of 0.6 m (2 ft) and can not be used in the macro range of zoom lenses with a macro function. i-TTL flash control is available at ISO sensitivities between 100 and 12800; at other sensitivities, the desired results may not be achieved at some ranges or aperture values.

If the flash fires in continuous release modes (🕮 103), only one picture will be taken each time the shutter-release button is pressed.

The shutter release may be briefly disabled to protect the flash after it has been used for several consecutive shots. The flash can be used again after a short pause.

### Shutter Speeds Available with the Built-in Flash

The following shutter speeds are available with the built-in flash.

| Mode | Shutter speed |
|---|---|
| AUTO, , , , , , , | 1/200–1/60 s |
| | 1/200–1 s |
| **P***, **A*** | 1/250–1/60 s |
| **S*** | 1/250–30 s |
| **M*** | 1/250–30 s, bulb, - - |

* Speeds as fast as 1/4000 s are available with optional flash units that support auto FP high-speed sync (□ 436) when **1/250 s (Auto FP)** or **1/200 s (Auto FP)** is selected for Custom Setting e1 (**Flash sync speed**, □ 345). When **1/250 s (Auto FP)** is selected, shutter speeds as fast as 1/250 s are available with the built-in flash.

### Flash Control Mode

The camera supports the following i-TTL flash control modes:

- **i-TTL balanced fill-flash for digital SLR**: Flash emits series of nearly invisible preflashes (monitor preflashes) immediately before main flash. Preflashes reflected from objects in all areas of frame are picked up by RGB sensor with approximately 91K (91,000) pixels and are analyzed in combination with range information from matrix metering system to adjust flash output for natural balance between main subject and ambient background lighting. If type G, E, or D lens is used, distance information is included when calculating flash output. Precision of calculation can be increased for non-CPU lenses by providing lens data (focal length and maximum aperture; see □ 235). Not available when spot metering is used.
- **Standard i-TTL flash for digital SLR**: Flash output adjusted to bring lighting in frame to standard level; brightness of background is not taken into account. Recommended for shots in which main subject is emphasized at expense of background details, or when exposure compensation is used. Standard i-TTL flash for digital SLR is activated automatically when spot metering is selected.

The flash control mode for the built-in flash can be selected using Custom Setting e3 (**Flash cntrl for built-in flash**, 🕮 347). The information display shows the flash control mode for the built-in flash as follows:

| | Flash sync | Auto FP (🕮 345) |
|---|---|---|
| **i-TTL** | | — |
| **Manual** | | — |
| **Repeating flash** | | — |
| **Commander mode** | | |

**Aperture, Sensitivity, and Flash Range**

Flash range varies with sensitivity (ISO equivalency) and aperture.

| Aperture at ISO equivalent of | | | | | | | | Range | |
|---|---|---|---|---|---|---|---|---|---|
| 100 | 200 | 400 | 800 | 1600 | 3200 | 6400 | 12800 | m | ft |
| 1.4 | 2 | 2.8 | 4 | 5.6 | 8 | 11 | 16 | 0.7–8.5 | 2 ft 4 in.–27 ft 10 in. |
| 2 | 2.8 | 4 | 5.6 | 8 | 11 | 16 | 22 | 0.6–6.0 | 2 ft–19 ft 8 in. |
| 2.8 | 4 | 5.6 | 8 | 11 | 16 | 22 | 32 | 0.6–4.2 | 2 ft–13 ft 9 in. |
| 4 | 5.6 | 8 | 11 | 16 | 22 | 32 | — | 0.6–3.0 | 2 ft–9 ft 10 in. |
| 5.6 | 8 | 11 | 16 | 22 | 32 | — | — | 0.6–2.1 | 2 ft–6 ft 10 in. |
| 8 | 11 | 16 | 22 | 32 | — | — | — | 0.6–1.5 | 2 ft–4 ft 11 in. |
| 11 | 16 | 22 | 32 | — | — | — | — | 0.6–1.1 | 2 ft–3 ft 7 in. |
| 16 | 22 | 32 | — | — | — | — | — | 0.6–0.8 | 2 ft–2 ft 7 in. |

The built-in flash has a minimum range of 0.6 m (2 ft).

In mode **P**, the maximum aperture (minimum f-number) is limited according to ISO sensitivity, as shown below:

| Maximum aperture at ISO equivalent of: | | | | | | | |
|---|---|---|---|---|---|---|---|
| 100 | 200 | 400 | 800 | 1600 | 3200 | 6400 | 12800 |
| 2.8 | 3.5 | 4 | 5 | 5.6 | 7.1 | 8 | 10 |

If the maximum aperture of the lens is smaller than given above, the maximum value for aperture will be the maximum aperture of the lens.

**See Also**

See page 190 for information on locking flash value (FV) for a metered subject before recomposing a photograph.

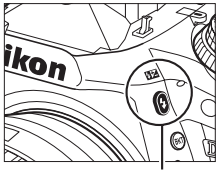
For information on auto FP high-speed sync and choosing a flash sync speed, see Custom Setting e1 (**Flash sync speed**, 🕮 345). For information on choosing the slowest shutter speed available when using the flash, see Custom Setting e2 (**Flash shutter speed**, 🕮 346). For information on flash control and using the built-in flash in commander mode, see Custom Setting e3 (**Flash cntrl for built-in flash**, 🕮 347).

See page 433 for information on using optional flash units.

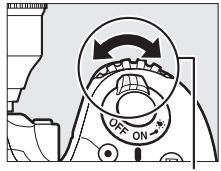
## Flash Compensation *(P, S, A, M, and* SCENE *Modes Only)*

Flash compensation is used to alter flash output by from –3 EV to +1 EV in increments of ⅓ EV, changing the brightness of the main subject relative to the background. Flash output can be increased to make the main subject appear brighter, or reduced to prevent unwanted highlights or reflections.

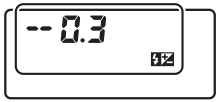
Press the ϟ (ϟ/▦) button and rotate the sub-command dial until the desired value is displayed in the control panel, viewfinder, or information display. In general, choose positive values to make the main subject brighter, negative values to make it darker.



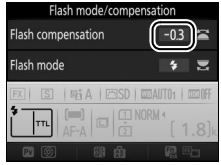

ϟ (ϟ/▦) button




Sub-command dial




Control panel




Information display

±0 EV

–0.3 (–⅓) EV

+1.0 EV

(ϟ (ϟ/▦) button pressed)

At values other than ±0.0, a ⚡ icon will be displayed in the control panel and viewfinder after you release the ⚡ (⚡) button. The current value for flash compensation can be confirmed by pressing the ⚡ (⚡) button.

Normal flash output can be restored by setting flash compensation to ±0.0. Flash compensation is not reset when the camera is turned off.

**Optional Flash Units**

The flash compensation selected with the optional flash unit is added to the flash compensation selected with the camera.

**See Also**

For information on choosing the size of the increments available for flash compensation, see Custom Setting b2 (**EV steps for exposure cntrl**, 🕮 333). For information on choosing how flash and exposure compensation combine, see Custom Setting e4 (**Exposure comp. for flash**, 🕮 353). For information on automatically varying flash level over a series of shots, see page 202.

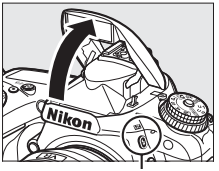
# FV Lock

This feature is used to lock flash output, allowing photographs to be recomposed without changing the flash level and ensuring that flash output is appropriate to the subject even when the subject is not positioned in the center of the frame. Flash output is adjusted automatically for any changes in ISO sensitivity and aperture.

To use FV lock:

**1 Assign FV lock to a camera control.**
Select **FV lock** as the "press" option for Custom Setting f2 (**Assign Fn button**, 356), f3 (**Assign preview button**, 361), or f4 (**Assign AE-L/AF-L button**, 361).

**2 Raise the flash.**
In **P**, **S**, **A**, **M**, and modes, the flash can be raised by pressing the () button. In AUTO, , , , , , , and modes, the flash will pop up automatically when required.



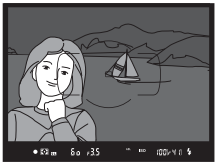

*() button*

**3 Focus.**
Position the subject in the center of the frame and press the shutter-release button halfway to focus.

**4 Lock flash level.**

After confirming that the flash ready indicator (⚡) is displayed in the viewfinder, press the button selected in Step 1. The flash will emit a monitor preflash to determine the appropriate flash level. Flash output will be locked at this level and FV lock icons (FL) will appear in the viewfinder.

**5 Recompose the photograph.**



**6 Take the photograph.**

Press the shutter-release button the rest of the way down to shoot. If desired, additional pictures can be taken without releasing FV lock.

**7 Release FV lock.**

Press the button selected in Step 1 to release FV lock. Confirm that the FV lock icon (FL) is no longer displayed in the viewfinder.

**Using FV Lock with the Built-in Flash**

FV lock is only available with the built-in flash when **TTL** is selected for Custom Setting e3 (**Flash cntrl for built-in flash**, 🕮 347).

**Using FV Lock with Optional Flash Units**

FV lock is also available with optional flash units in TTL and (where supported) monitor pre-flash AA and monitor pre-flash A flash control modes. Note that when commander mode is selected for Custom Setting e3 (**Flash cntrl for built-in flash**, 🕮 347), you will need to set the flash control mode for the master or at least one remote group to TTL or AA.

**Metering**

The metering areas for FV lock when using optional flash unit are as follows:

| Flash unit | Flash mode | Metered area |
|---|---|---|
| Stand-alone flash unit | i-TTL | 5-mm circle in center of frame |
| | AA | Area metered by flash exposure meter |
| Used with other flash units (Advanced Wireless Lighting) | i-TTL | Entire frame |
| | AA | Area metered by flash exposure meter |
| | A (master flash) | |

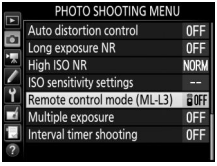
# Remote Control Photography

## Using an Optional ML-L3 Remote Control

The optional ML-L3 remote control (🕮 444) can be used to reduce camera shake or for self-portraits.

### 1 Select **Remote control mode (ML-L3).**

Highlight **Remote control mode (ML-L3)** in the photo shooting menu and press ▶.




### 2 Choose a remote control mode.

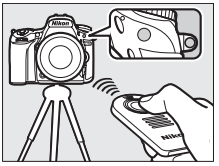
Highlight one of the following options and press OK.

| Option | Description |
|---|---|
| **Delayed remote** | Shutter is released 2 s after ML-L3 shutter-release button is pressed. |
| **Quick-response remote** | Shutter is released when ML-L3 shutter-release button is pressed. |
| **Remote mirror-up** | Press ML-L3 shutter-release button once to raise mirror, again to release shutter and take photograph. Prevents blur caused by camera moving when mirror is raised. |
| **Off** | The shutter can not be released using the ML-L3. |

### 3 Frame the photograph.

Mount the camera on a tripod or place the camera on a stable, level surface.

**4 Take the photograph.**



From a distance of 5 m (16 ft) or less, aim the transmitter on the ML-L3 at either of the infrared receivers on the camera (🕮 2, 4) and press the ML-L3 shutter-release button. *In delayed remote mode*, the self-timer lamp will light for about two seconds before the shutter is released. *In quick-response remote mode*, the self-timer lamp will flash after the shutter has been released. *In remote mirror-up mode*, pressing the ML-L3 shutter-release button once raises the mirror; the shutter will be released and the self-timer lamp will flash after 30 s or when the button is pressed a second time.

**Release Mode**

When an optional ML-L3 remote control is used, the release mode selected with the release mode dial (🕮 103) is ignored in favor of the option selected for **Remote control mode (ML-L3)** in the shooting menu.

**Before Using Optional ML-L3 Remote Controls**

Before using the remote control for the first time, remove the clear plastic battery-insulator sheet.

### Using the Built-in Flash

Before taking a photograph with the flash in manual pop-up modes (🕮 182), press the ⚡ (WB) button to raise the flash and wait for the ⚡ indicator to be displayed in the viewfinder (🕮 11). Shooting will be interrupted if the flash is raised while remote control mode is in effect. If the flash is required, the camera will only respond to the ML-L3 shutter-release button once the flash has charged. In auto pop-up modes (🕮 180), the flash will begin charging when remote control mode is selected; once the flash is charged, it will automatically pop up and fire when required.

In flash modes that support red-eye reduction, the red-eye reduction lamp will light for about one second before the shutter is released. In delayed remote mode, the self-timer lamp will light for two seconds, followed by the red-eye reduction lamp which lights for one second before the shutter is released.

### Focusing in Remote Control Mode

The camera will not adjust focus continuously when continuous-servo autofocus is selected; note however that regardless of the autofocus mode selected, you can focus by pressing the camera shutter-release button halfway before shooting. If auto- or single-servo autofocus is selected or the camera is in live view in delayed or quick-response remote mode, the camera will automatically adjust focus before shooting; if the camera is unable to focus in viewfinder photography, it will return to stand-by without releasing the shutter.

### Remote Mirror-up Mode

While the mirror is raised, photos can not be framed in the viewfinder and autofocus and metering will not be performed.

### Exiting Remote Control Mode

Remote control is cancelled automatically if no photograph is taken before the time selected for Custom Setting c5 (**Remote on duration (ML-L3)**, 🕮 337), **Off** is selected for **Remote control mode (ML-L3)**, a two-button reset is performed (🕮 199), or shooting options are reset using **Reset photo shooting menu** (🕮 311).

**Assign Shutter Button**

If **Record movies** is selected for Custom Setting g4 (**Assign shutter button**, 🕮 373), the ML-L3 can not be used when the live view selector is rotated to 🎥.

**Cover the Viewfinder**

To prevent light entering via the viewfinder from appearing in photographs or interfering with exposure, remove the rubber eyecup and cover the viewfinder with the supplied eyepiece cap (🕮 107).

**See Also**

For information on choosing the length of time the camera will remain in stand-by mode waiting for a signal from the remote control, see Custom Setting c5 (**Remote on duration (ML-L3)**; 🕮 337). For information on controlling the beeps that sound when the remote control is used, see Custom Setting d1 (**Beep**; 🕮 338).

## Wireless Remote Controllers

When the camera is used with optional WR-1 (🕮 444) and WR-R10/WR-T10 (🕮 444) wireless remote controllers, the shutter-release buttons on the WR-1 and WR-T10 perform the same functions as the camera shutter-release button, allowing remote continuous and self-timer photography.

### WR-1 Wireless Remote Controllers

The WR-1 can function as either a transmitter or a receiver and is used in combination either with another WR-1 or a WR-R10 or WR-T10 wireless remote controller. For example, a WR-1 can be connected to the accessory terminal for use as a receiver, allowing camera settings to be changed or the shutter to be released remotely by another WR-1 acting as a transmitter.

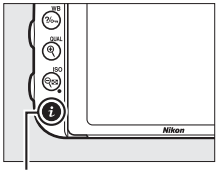
### WR-R10/WR-T10 Wireless Remote Controllers

When a WR-R10 (transceiver) is connected to the camera, the shutter can be released using a WR-T10 (transmitter).

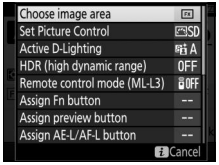
# Other Shooting Options

## Viewfinder Photography: The i Button

Pressing the i button during viewfinder photography displays a menu with the following options:




*i* button



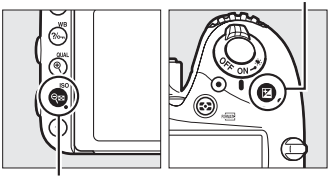

| Option | 🕮 |
|---|---|
| **Choose image area** | 110 |
| **Set Picture Control** | 165 |
| **Active D-Lighting** | 175 |
| **HDR (high dynamic range)** | 177 |
| **Remote control mode (ML-L3)** | 193 |

| Option | 🕮 |
|---|---|
| **Assign Fn button** | 356 |
| **Assign preview button** | 361 |
| **Assign AE-L/AF-L button** | 361 |
| **Long exposure NR** | 317 |
| **High ISO NR** | 317 |

To exit the i-button menu and return to the shooting display, press the i button again.

## Two-Button Reset: Restoring Default Settings

The camera settings listed below can be restored to default values by holding the (**ISO**) and buttons down together for more than two seconds (these buttons are marked by a green dot). The control panel turns off briefly while settings are reset.




| Option | Default | 🕮 |
|---|---|---|
| Image quality | JPEG normal | 115 |
| Image size | Large | 118 |
| White balance | Auto > Normal | 145 |
| Fine tuning | A-B: 0, G-M: 0 | 149 |
| Picture Control settings [1] | Unmodified | 165 |
| HDR (high dynamic range) | Off [2] | 177 |
| ISO sensitivity settings | | |
| ISO sensitivity | | |
| **P**, **S**, **A**, **M** | 100 | 134 |
| Other modes | Auto | |
| Auto ISO sensitivity control | Off | 136 |
| Remote control mode (ML-L3) | Off | 193 |
| Interval timer shooting | Off [3] | 222 |

| Option | Default | 📖 |
|---|---|---|
| Autofocus (viewfinder) | | |
| Autofocus mode | | |
| | AF-S | 121 |
| Other modes | AF-A | |
| AF-area mode | | |
| , , , , Hi, Lo | Single-point AF | 123 |
| , | 51-point dynamic-area AF | |
| AUTO, , , , , , , , , , , , , , , **P**, **S**, **A**, **M** | Auto-area AF | |
| Autofocus (live view/movie) | | |
| Autofocus mode | AF-S | 57 |
| AF-area mode | | |
| , , , , , , Hi, Lo, **P**, **S**, **A**, **M** | Wide-area AF | 58 |
| , | Normal-area AF | |
| AUTO, , , , , , , , , , , , | Face-priority AF | |
| Focus point [4] | Center | 127 |
| Exposure preview | Off | 62 |
| Multi-selector power aperture | Disable | 72 |
| Highlight display | Off | 72 |
| Headphone volume | 15 | 72 |
| Metering | Matrix | 139 |
| AE lock hold | Off | 129, 141 |
| Bracketing | Off [5] | 202 |
| Flash compensation | Off | 188 |
| Exposure compensation | Off | 143 |
| Exposure delay mode | Off | 339 |

| Option | Default | 📖 |
|---|---|---|
| Flash mode | | |
| AUTO, , , , , | Auto | 181, 183 |
| | Auto+red-eye reduction | |
| | Auto+slow sync | |
| , **P**, **S**, **A**, **M** | Fill flash | |
| FV lock | Off | 190 |
| Multiple exposure | Off[6] | 216 |
| Flexible program | Off | 89 |
| + NEF (RAW) | Off | 357 |

1 Current Picture Control only.
2 HDR strength is not reset.
3 If interval timer shooting is currently in progress, shooting will end. Starting time, shooting interval, number of intervals and shots, and exposure smoothing are not reset.
4 Focus point not displayed if auto-area AF is selected for AF-area mode.
5 Number of shots is reset to zero. Bracketing increment is reset to 1 EV (exposure/flash bracketing) or 1 (white balance bracketing). **Auto** is selected for the second shot of two-shot ADL bracketing programs.
6 If multiple exposure is currently in progress, shooting will end and multiple exposure will be created from exposures recorded to that point. Gain and number of shots are not reset.

## Bracketing *(P, S, A, and M Modes Only)*

Bracketing automatically varies exposure, flash level, **A**ctive **D**-**L**ighting (ADL), or white balance slightly with each shot, "bracketing" the current value. Choose in situations in which it is difficult to set exposure, flash level (i-TTL and, where supported, auto aperture flash control modes only; see pages 185, 347, and 435), white balance, or Active D-Lighting and there is not time to check results and adjust settings with each shot, or to experiment with different settings for the same subject.

### ■■ *Exposure and Flash Bracketing*

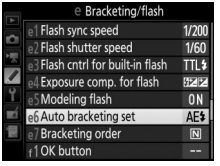
Vary exposure and/or flash level over a series of photographs.

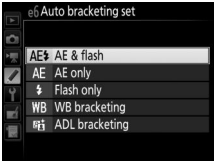
*Exposure modified by: 0 EV*

*Exposure modified by: –1 EV*

*Exposure modified by: +1 EV*

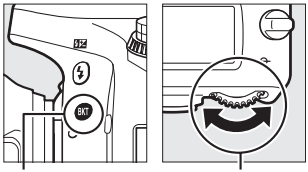
**1 Select flash or exposure bracketing.** Select Custom Setting e6 (**Auto bracketing set**) in the Custom Settings menu, highlight an option, and press OK. Choose **AE & flash** to vary both exposure and flash level, **AE only** to vary only exposure, or **Flash only** to vary only flash level.



## 2 Choose the number of shots.

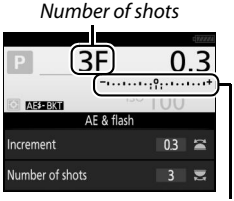
Pressing the **BKT** button, rotate the main command dial to choose the number of shots in the bracketing sequence. The number of shots is shown in the information display and control panel.




**BKT** *button*



*Main command dial*




*Exposure and flash bracketing indicator*

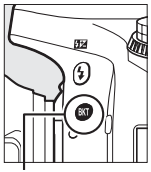
*Information display*

At settings other than zero, a BKT icon is displayed in the control panel.

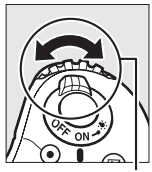
**BKT** appears in the viewfinder, while the information display provides a bracketing indicator and an icon showing the type of bracketing: AE·BKT (exposure and flash bracketing), AE·BKT (exposure bracketing only), or ⚡BKT (flash bracketing only).

## 3 Select an exposure increment.

Pressing the **BKT** button and rotate the sub-command dial to choose the exposure increment.

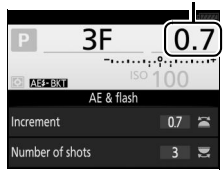



**BKT** *button*




*Sub-command dial*

*Exposure increment*




*Information display*

At default settings, the size of the increment can be chosen from 0.3 (⅓), 0.7 (⅔), 1, 2, and 3 EV. The bracketing programs with an increment of 0.3 (⅓) EV are listed below.

| Information display | No. of shots | Bracketing order (EVs) |
|---|---|---|
| 0F 0.3 | 0 | 0 |
| +3F 0.3 | 3 | 0/+0.3/+0.7 |
| −3F 0.3 | 3 | 0/−0.7/−0.3 |
| +2F 0.3 | 2 | 0/+0.3 |
| −2F 0.3 | 2 | 0/−0.3 |
| 3F 0.3 | 3 | 0/−0.3/+0.3 |
| 5F 0.3 | 5 | 0/−0.7/−0.3/+0.3/+0.7 |
| 7F 0.3 | 7 | 0/−1.0/−0.7/−0.3/+0.3/+0.7/+1.0 |
| 9F 0.3 | 9 | 0/−1.3/−1.0/−0.7/−0.3/+0.3/+0.7/+1.0/+1.3 |

Note that for exposure increments of 2 EV or more, the maximum number of shots is 5; if a higher value was selected in Step 2, the number of shots will automatically be set to 5.

**4 Frame a photograph, focus, and shoot.**

The camera will vary exposure and/or flash level shot-by-shot according to the bracketing program selected. Modifications to exposure are added to those made with exposure compensation (see page 143).

A bracketing progress indicator is displayed while bracketing is in effect. A segment will disappear from the indicator after each shot.

*No. shots: 3; increment: 0.7* *Display after first shot*

**See Also**

For information on choosing the size of the increment, see Custom Setting b2 (**EV steps for exposure cntrl**, 333). For information on choosing the order in which bracketing is performed, see Custom Setting e7 (**Bracketing order**, 354).

### ■■ *Canceling Bracketing*

To cancel bracketing, press the **BKT** button and rotate the main command dial until the number of shots in the bracketing sequence is zero (**0F**/**0F**) and the exposure/flash bracketing indicators are no longer displayed. The program last in effect will be restored the next time bracketing is activated. Bracketing can also be cancelled by performing a two-button reset (🕮 199), although in this case the bracketing program will not be restored the next time bracketing is activated.

**Exposure and Flash Bracketing**

In continuous release modes (🕮 103), shooting will pause after the number of shots specified in the bracketing program have been taken. Shooting will resume the next time the shutter-release button is pressed. In self-timer mode, the camera will take the number of shots selected in Step 2 on page 203 each time the shutter-release button is pressed, regardless of the option selected for Custom Setting c3 (**Self-timer**) > **Number of shots** (🕮 337); the interval between shots is however controlled by Custom Setting c3 (**Self-timer**) > **Interval between shots**. In other modes, one shot will be taken each time the shutter-release button is pressed.

If the memory card fills before all shots in the sequence have been taken, shooting can be resumed from the next shot in the sequence after the memory card has been replaced or shots have been deleted to make room on the memory card. If the camera is turned off before all shots in the sequence have been taken, bracketing will resume from the next shot in the sequence when the camera is turned on.

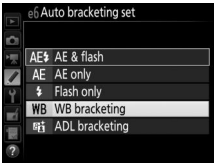
**Exposure Bracketing**

The camera modifies exposure by varying shutter speed and aperture (mode **P**), aperture (mode **S**), or shutter speed (modes **A** and **M**). If **On** is selected for **ISO sensitivity settings** > **Auto ISO sensitivity control** (🕮 136) in modes **P**, **S**, and **A**, the camera will automatically vary ISO sensitivity for optimum exposure when the limits of the camera exposure system are exceeded; in mode **M**, the camera will first use auto ISO sensitivity control to bring exposure as close as possible to the optimum and then bracket this exposure by varying shutter speed.

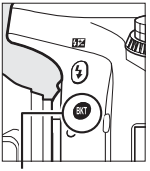
### ■■ *White Balance Bracketing*

The camera creates multiple copies of each photograph, each with a different white balance. For more information on white balance, see page 145.

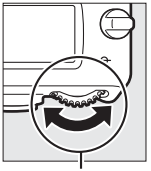
**1 Select white balance bracketing.**
Choose **WB bracketing** for Custom Setting e6 **Auto bracketing set**.




**2 Choose the number of shots.**
Pressing the **BKT** button, rotate the main command dial to choose the number of shots in the bracketing sequence. The number of shots is shown in the information display and control panel.

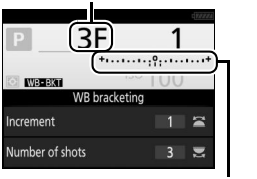



**BKT** *button*



*Main command dial*

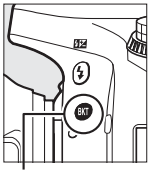
*Number of shots*



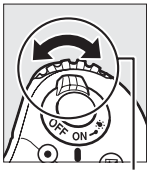

*WB bracketing indicator*
*Information display*

At settings other than zero, **BKT** and **BKT** are displayed respectively in the control panel and viewfinder; a **WB-BKT** icon and a bracketing indicator appear in the information display.

**3** **Select a white balance increment.**
Pressing the **BKT** button, rotate the sub-command dial to choose from increments of 1 (5 mired; 🕮 151), 2 (10 mired), or 3 (15 mired). The **B** value indicates the amount of blue, the **A** value the amount of amber (🕮 149).

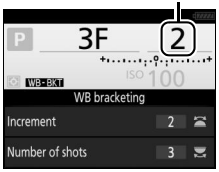



**BKT** *button*




*Sub-command dial*

*White balance increment*




*Information display*

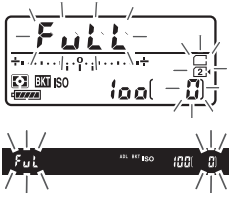
The bracketing programs with an increment of 1 are listed below.

| Information display | No. of shots | White balance increment | Bracketing order |
|---|---|---|---|
| B2F 1 | 2 | 1 B | 0/1 B |
| A2F 1 | 2 | 1 A | 0/1 A |
| 3F 1 | 3 | 1 A, 1 B | 0/1 A/1 B |

**4 Frame a photograph, focus, and shoot.**

Each shot will be processed to create the number of copies specified in the bracketing program, and each copy will have a different white balance. Modifications to white balance are added to the white balance adjustment made with white balance fine-tuning.

If the number of shots in the bracketing program is greater than the number of exposures remaining, FULL and the icon for the affected card will flash in the control panel, a flashing FUL icon will appear in the viewfinder as shown at right, and the shutter release will be disabled. Shooting can begin when a new memory card is inserted.



### ■■ *Canceling Bracketing*

To cancel bracketing, press the **BKT** button and rotate the main command dial until the number of shots in the bracketing sequence is zero (**0F**/**0F**) and the white balance bracketing indicators are no longer displayed. The program last in effect will be restored the next time bracketing is activated. Bracketing can also be cancelled by performing a two-button reset (🕮 199), although in this case the bracketing program will not be restored the next time bracketing is activated.

**White Balance Bracketing**

White balance bracketing is not available at an image quality of NEF (RAW). Selecting **NEF (RAW)**, **NEF (RAW)+JPEG fine**, **NEF (RAW)+JPEG normal**, or **NEF (RAW)+JPEG basic** cancels white balance bracketing.

White balance bracketing affects only color temperature (the amber-blue axis in the white balance fine-tuning display, 🕮 149). No adjustments are made on the green-magenta axis.

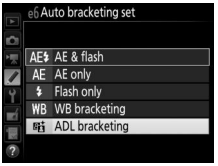
In self-timer mode (🕮 106), the number of copies specified in the white-balance program will be created each time the shutter is released, regardless of the option selected for Custom Setting c3 (**Self-timer**) > **Number of shots** (🕮 337).

If the camera is turned off while the memory card access lamp is lit, the camera will power off only after all photographs in the sequence have been recorded.

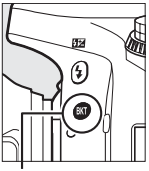
### ■■ *ADL Bracketing*

The camera varies Active D-Lighting over a series of exposures. For more information on Active D-Lighting, see page 175.

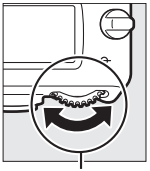
**1 Select ADL bracketing.**
Choose **ADL bracketing** for Custom Setting e6 **Auto bracketing set**.




**2 Choose the number of shots.**
Pressing the **BKT** button, rotate the main command dial to choose the number of shots in the bracketing sequence. The number of shots is shown in the information display and control panel.




**BKT** *button*



*Main command dial*

*Number of shots*

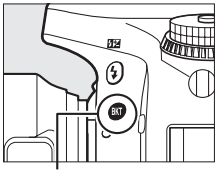
*ADL bracketing amount*
*Information display*

At settings other than zero, BKT and **BKT** are displayed respectively in the control panel and viewfinder; a ADL BKT icon and the bracketing amount appear in the information display.

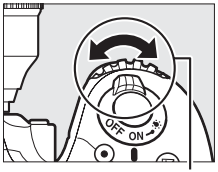
Choose two shots to take one photograph with Active D-Lighting off and another at a selected value. Choose three to five shots to take a series of photographs with Active D-Lighting set to **Off**, **Low**, and **Normal** (three shots), **Off**, **Low**, **Normal**, and **High** (four shots), or **Off**, **Low**, **Normal**, **High**, and **Extra high** (five shots). If you choose more than two shots, proceed to Step 4.

## 3 Select Active D-Lighting.

Pressing the **BKT** button, rotate the sub-command dial to choose Active D-Lighting.




**BKT** *button*



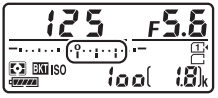

*Sub-command dial*

Active D-Lighting is shown in the information display and control panel.

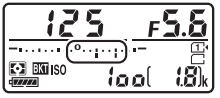
| Active D-Lighting | Information display | Control panel display |
|---|---|---|
| **Auto** | OFF AUTO | BKT Auto |
| **Low** | OFF L | BKT L |
| **Normal** | OFF N | BKT N |
| **High** | OFF H | BKT H |
| **Extra high** | OFF H+ | BKT H+ |

**4 Frame a photograph, focus, and shoot.**

The camera will vary Active D-Lighting shot-by-shot according to the bracketing program selected. A bracketing progress indicator is displayed while bracketing is in effect. A segment will disappear from the indicator after each shot.




*No. shots: 3*




*Display after first shot*

### ■■ *Canceling Bracketing*

To cancel bracketing, press the **BKT** button and rotate the main command dial until the number of shots in the bracketing sequence is zero (**0F**/**0F**) and the ADL bracketing indicators are no longer displayed. The program last in effect will be restored the next time bracketing is activated. Bracketing can also be cancelled by performing a two-button reset (📖 199), although in this case the bracketing program will not be restored the next time bracketing is activated.

**ADL Bracketing**

In continuous release modes (📖 103), shooting will pause after the number of shots specified in the bracketing program have been taken. Shooting will resume the next time the shutter-release button is pressed. In self-timer mode, the camera will take the number of shots selected in Step 2 on page 212 each time the shutter-release button is pressed, regardless of the option selected for Custom Setting c3 (**Self-timer**) > **Number of shots** (📖 337); the interval between shots is however controlled by Custom Setting c3 (**Self-timer**) > **Interval between shots**. In other modes, one shot will be taken each time the shutter-release button is pressed.

If the memory card fills before all shots in the sequence have been taken, shooting can be resumed from the next shot in the sequence after the memory card has been replaced or shots have been deleted to make room on the memory card. If the camera is turned off before all shots in the sequence have been taken, bracketing will resume from the next shot in the sequence when the camera is turned on.

## Multiple Exposure *(P, S, A, and M Modes Only)*

Follow the steps below to record a series of two or three exposures in a single photograph. Multiple exposures can make use of RAW data from the camera image sensor to produce colors noticeably superior to those in software-generated photographic overlays.

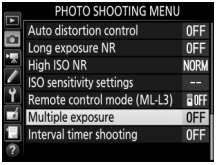
### ■ *Creating a Multiple Exposure*

Multiple exposures can not be recorded in live view. Exit live view before proceeding.

**Extended Recording Times**

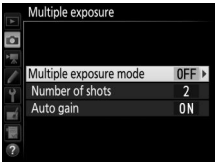
If the monitor turns off during playback or menu operations and no operations are performed for about 30 s, shooting will end and a multiple exposure will be created from the exposures that have been recorded to that point. The time available to record the next exposure can be extended by choosing longer times for Custom Setting c2 (**Standby timer**, 🕮 336).

**1** **Select Multiple exposure.**
Highlight **Multiple exposure** in the photo shooting menu and press ⊛.

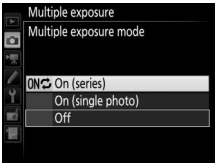


## 2 Select a mode.

Highlight **Multiple exposure mode** and press ▶.

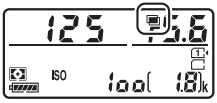



Highlight one of the following and press OK.

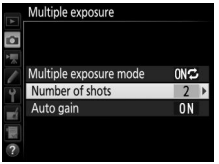



- **To take a series of multiple exposures**, select **ON On (series)**. Multiple exposure shooting will continue until you select **Off** for **Multiple exposure mode**.
- **To take one multiple exposure**, select **On (single photo)**. Normal shooting will resume automatically after you have created a single multiple exposure.
- **To exit without creating additional multiple exposures**, select **Off**.

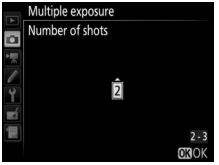
If **On (series)** or **On (single photo)** is selected, a ▣ icon will be displayed in the control panel.



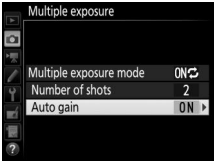
**3 Choose the number of shots.**
Highlight **Number of shots** and press ▶.



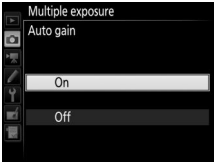

Press ▲ or ▼ to choose the number of exposures that will be combined to form a single photograph and press OK.




**4 Choose the amount of gain.**
Highlight **Auto gain** and press ▶.



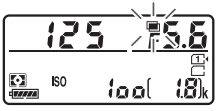

The following options will be displayed. Highlight an option and press OK.




- **On**: Gain is adjusted according to number of exposures actually recorded (gain for each exposure is set to ½ for 2 exposures, ⅓ for 3 exposures, etc.).
- **Off**: Gain is not adjusted when recording multiple exposure. Note that photographs may be affected by noise (randomly-spaced bright pixels, fog, or lines).

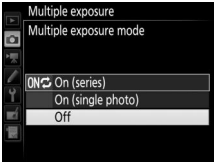
**5** **Frame a photograph, focus, and shoot.**

In continuous release modes (📖 103), the camera records all exposures in a single burst. If **On (series)** is selected, the camera will continue to record multiple exposures while the shutter-release button is pressed; if **On (single photo)** is selected, multiple exposure shooting will end after the first photograph. In self-timer mode, the camera will automatically record the number of exposures selected in Step 3 on page 218, regardless of the option selected for Custom Setting c3 (**Self-timer**) > **Number of shots** (📖 337); the interval between shots is however controlled by Custom Setting c3 (**Self-timer**) > **Interval between shots**. In other release modes, one photograph will be taken each time the shutter-release button is pressed; continue shooting until all exposures have been recorded (for information on interrupting a multiple exposure before all photographs are recorded, see page 220).




The ▬ icon will flash until shooting ends. If **On (series)** is selected, multiple exposure shooting will only end when **Off** is selected for multiple exposure mode; if **On (single photo)** is selected, multiple exposure shooting ends automatically when the multiple exposure is complete. The ▬ icon clears from the display when multiple exposure shooting ends.

### ■■ *Interrupting Multiple Exposures*




To interrupt a multiple exposure before the specified number of exposures have been taken, select **Off** for multiple exposure mode. If shooting ends before the specified number of exposures have been taken, a multiple exposure will be created from the exposures that have been recorded to that point. If **Auto gain** is on, gain will be adjusted to reflect the number of exposures actually recorded. Note that shooting will end automatically if:

- A two-button reset is performed (🕮 199)
- The camera is turned off
- The battery is exhausted
- Pictures are deleted

**Multiple Exposures**
Do not remove or replace the memory card while recording a multiple exposure.

Multiple exposures can not be recorded in live view. Taking photographs in live view resets **Multiple exposure mode** to **Off**.

The shooting information listed in the playback photo information display (including metering, exposure, shooting mode, focal length, date of recording and camera orientation) is for the first shot in the multiple exposure.

**Interval Timer Photography**
If interval timer photography is activated before the first exposure is taken, the camera will record exposures at the selected interval until the number of exposures specified in the multiple exposure menu have been taken (the number of shots listed in the interval timer shooting menu is ignored). These exposures will then be recorded as a single photograph and interval timer shooting will end (if **On (single photo)** is selected for multiple exposure mode, multiple exposure shooting will also end automatically).

**Other Settings**
While a multiple exposure is being shot, memory cards can not be formatted and some menu items are grayed out and can not be changed.

# Interval Timer Photography

The camera is equipped to take photographs automatically at preset intervals.

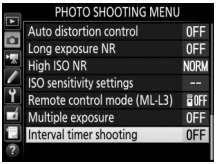
**Before Shooting**

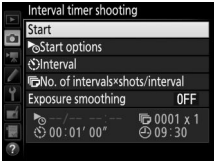
Select a release mode other than self-timer (⏲) and **MUP** when using the interval timer. Before beginning interval timer photography, take a test shot at current settings and view the results in the monitor. Once settings have been adjusted to your satisfaction, remove the rubber eyecup and cover the viewfinder with the supplied eyepiece cap to prevent light entering via the viewfinder interfering with photographs and exposure (🕮 107).

Before choosing a starting time, select **Time zone and date** in the setup menu and make sure that the camera clock is set to the correct time and date (🕮 381).

Use of a tripod is recommended. Mount the camera on a tripod before shooting begins. To ensure that shooting is not interrupted, be sure the camera battery is fully charged. If in doubt, charge the battery before use or use an AC adapter and power connector (available separately).

**1** **Select Interval timer shooting.**
Highlight **Interval timer shooting** in the photo shooting menu and press ▶ to display interval timer settings.



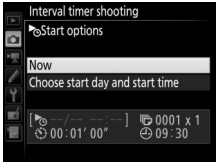



## 2 Adjust interval timer settings.

Choose a start option, interval, number of shots per interval, and exposure smoothing option.

- **To choose a start option**:

*Highlight **Start options** and press ▶.*




*Highlight an option and press OK.*

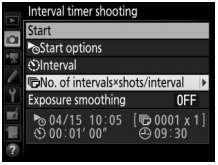
To start shooting immediately, select **Now**. To start shooting at a chosen date and time, select **Choose start day and start time**, then choose the date and time and press OK.

- **To choose the interval between shots**:

*Highlight **Interval** and press ▶.*

*Choose an interval (hours, minutes, and seconds) and press OK.*

- **To choose the number of shots per interval:**

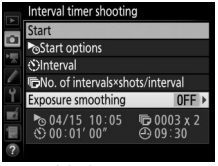



*Highlight **No. of intervals** × **shots/interval** and press ▶.*

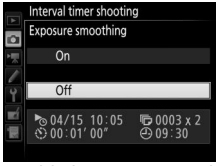
*Choose the number of intervals and the number of shots per interval and press ⊛.*

In **S** (single frame) mode, the photographs for each interval will be taken at the rate chosen for Custom Setting d2 (**Continuous low-speed**, 🕮 338).

- **To enable or disable exposure smoothing:**



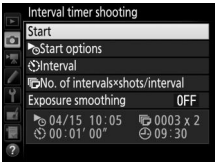

*Highlight **Exposure smoothing** and press ▶.*



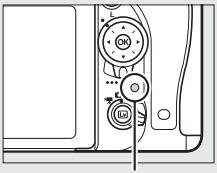

*Highlight an option and press ⊛.*

Selecting **On** allows the camera to adjust exposure to match previous shot in modes other than **M** (note that exposure smoothing only takes effect in mode **M** if auto ISO sensitivity control is on).

**3** **Start shooting.**
Highlight **Start** and press ⓚ. The first series of shots will be taken at the specified starting time, or after about 3 s if **Now** was selected for **Start options** in Step 2. Shooting will continue at the selected interval until all shots have been taken.




**During Shooting**


*Memory card access lamp*

During interval timer photography, the memory card access lamp will flash. Immediately before the next shooting interval begins, the shutter speed display will show the number of intervals remaining, and the aperture display will show the number of shots remaining in the current interval. At other times, the number of intervals remaining and the number of shots in each interval can be viewed by pressing the shutter-release button halfway (once the button is released, the shutter speed and aperture will be displayed until the standby timer expires).

Pictures can be played back while interval timer photography is in progress. The monitor will turn off automatically about four seconds before each interval. Note that changing camera settings while the interval timer is active may cause shooting to end.

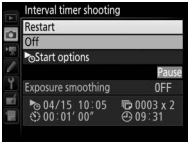
### ■■ *Pausing Interval Timer Photography*

Interval timer photography can be paused between intervals by pressing ⓚ or selecting **Pause** in the interval timer menu.

### ■■ *Resuming Interval Timer Shooting*

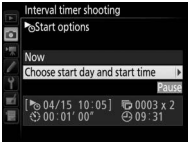
To resume shooting:

#### Starting Now

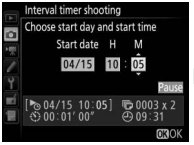



*Highlight **Restart** and press ⓚ.*

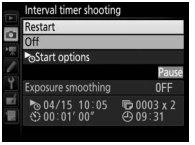
#### Starting at a Specified Time




*For **Start options**, highlight **Choose start day and start time** and press ⓑ.*




*Choose a starting date and time and press ⓚ.*




*Highlight **Restart** and press ⓚ.*

### ■■ *Ending Interval Timer Shooting*

To end interval timer photography and resume normal shooting before all the photos are taken, select **Off** in the interval timer menu.

### ■■ *No Photograph*

The camera will skip the current interval if any of the following situations persist for eight seconds or more after the interval was due to start: the photograph or photographs for the previous interval have yet to be taken, the memory card is full, or the camera is unable to focus in **AF-S** or when single-servo AF is selected in **AF-A** (note that the camera focuses again before each shot). Shooting will resume with the next interval.

**☑ Out of Memory**

If the memory card is full, the interval timer will remain active but no pictures will be taken. Resume shooting (🕮 226) after deleting some pictures or turning the camera off and inserting another memory card.

**✎ Interval Timer Photography**

Choose an interval longer than the time needed to take the selected number of shots. If the interval is too short, the number of photos taken may be less than the total listed in Step 2 (the number of intervals multiplied by the number of shots per interval). Interval timer photography can not be combined with long time-exposures (bulb or time photography, 🕮 95) or live view or time-lapse photography (🕮 54, 229) and is not available in movie live view (🕮 66) or when **Record movies** is selected for Custom Setting g4 (**Assign shutter button**, 🕮 373). Note that because the shutter speed, frame rate, and time needed to record images may vary from one interval to the next, the time between the end of one interval and the beginning of the next may vary. If shooting can not proceed at current settings (for example, if a shutter speed of **bulb** or **- -** is currently selected in manual exposure mode, the interval is zero, or the start time is in less than a minute), a warning will be displayed in the monitor.

Interval timer shooting will pause when ⏲ (self-timer) or **MUP** mode is selected or if the camera is turned off and then on again (when the camera is off, batteries and memory cards can be replaced without ending interval timer photography). Pausing shooting does not affect interval timer settings.

**Release Mode**
Regardless of the release mode selected, the camera will take the specified number of shots at each interval.

**Bracketing**
Adjust bracketing settings before starting interval timer photography. If exposure, flash, or ADL bracketing is active while interval timer photography is in effect, the camera will take the number of shots in the bracketing program at each interval, regardless of the number of shots specified in the interval timer menu. If white balance bracketing is active while interval timer photography is in effect, the camera will take one shot at each interval and process it to create the number of copies specified in the bracketing program.

## Time-Lapse Photography
### (AUTO, P, S, A, M, and SCENE Modes Only)

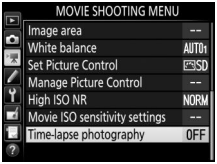
The camera automatically takes photos at selected intervals to create a silent time-lapse movie at the frame size and rate currently selected in the movie shooting menu (🕮 318). For information on the image area used for time-lapse movies, see page 76.

**Before Shooting**

Before beginning time-lapse photography, take a test shot at current settings (framing the photo in the viewfinder for an accurate exposure preview) and view the results in the monitor. For consistent coloration, choose a white balance setting other than auto (🕮 145). Once settings have been adjusted to your satisfaction, remove the rubber eyecup and cover the viewfinder with the supplied eyepiece cap to prevent light entering via the viewfinder interfering with photographs and exposure (🕮 107).

Use of a tripod is recommended. Mount the camera on a tripod before shooting begins. To ensure that shooting is not interrupted, use an optional AC adapter and power connector or a fully-charged battery.

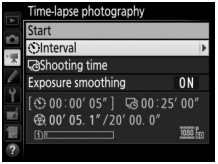
**1** **Select Time-lapse photography.** Highlight **Time-lapse photography** in the movie shooting menu and press ▶ to display time-lapse photography settings.



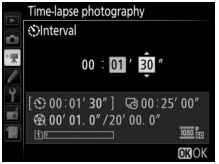
## 2 Adjust time-lapse photography settings.

Choose an interval, total shooting time, and exposure smoothing option.

- **To choose the interval between frames**:




*Highlight **Interval** and press ▶.*




*Choose an interval longer than the slowest anticipated shutter speed (minutes and seconds) and press ⊛.*

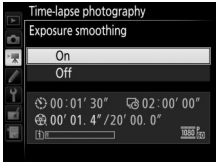
- **To choose the total shooting time**:

*Highlight **Shooting time** and press ▶.*

*Choose shooting time (up to 7 hours 59 minutes) and press ⊛.*

• **To enable or disable exposure smoothing**:

*Highlight **Exposure smoothing** and press ▶.*




*Highlight an option and press ⊛.*

Selecting **On** smooths abrupt changes in exposure in modes other than **M** (note that exposure smoothing only takes effect in mode **M** if auto ISO sensitivity control is on).

## 3 Start shooting.

Highlight **Start** and press ⊛. Time-lapse photography starts after about 3 s. The camera takes photographs at the selected interval for the selected shooting time. When complete, time-lapse movies are recorded to the memory card selected for **Destination** in movie shooting menu (🕮 319).

### ■■ *Ending Time-Lapse Photography*

To end time-lapse photography before all the photos are taken, highlight **Off** in the time-lapse photography menu and press ⓚ, or press ⓚ between frames or immediately after a frame is recorded. A movie will be created from the frames shot to the point where time-lapse photography ended. Note that time-lapse photography will end and no movie will be recorded if the power source is removed or disconnected or the destination memory card is ejected.

### ■■ *No Photograph*

The camera will skip the current frame if it is unable to focus using single-servo autofocus (**AF-S** or single-servo autofocus selected for **AF-A**; note that the camera focuses again before each shot). Shooting will resume with the next frame.

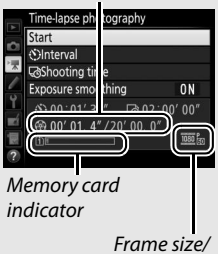
**☑ Time-Lapse Photography**

Time-lapse is not available in live view (🕮 54, 66), at a shutter speed of **bulb** or **- -** (🕮 95), when bracketing (🕮 202), High Dynamic Range (HDR, 🕮 177), multiple exposure (🕮 216), or interval timer photography (🕮 222) is active. Note that because shutter speed and the time needed to record the image to the memory card may vary from shot to shot, the interval between a shot being recorded and the start of the next shot may vary. Shooting will not begin if a time-lapse movie can not be recorded at current settings (for example, if the memory card is full, the interval or shooting time is zero, or the interval is longer than the shooting time).

Time-lapse photography may end if camera controls are used or settings are changed or HDMI cable is connected. A movie will be created from the frames shot to the point where time-lapse photography ended.

### Calculating the Length of the Final Movie

The total number of frames in the final movie can be approximated by dividing the shooting time by the interval and rounding up. The length of the final movie can then be calculated by dividing the number of shots by the frame rate selected for **Frame size/frame rate** in movie shooting menu (🕮 319). A 48 frame movie recorded at **1920 × 1080; 24p**, for example, will be about two seconds long. The maximum length for movies recorded using time-lapse photography is 20 minutes.




### During Shooting

During time-lapse photography, the memory card access lamp will flash and the time-lapse recording indicator will be displayed in the control panel. The time remaining (in hours and minutes) appears in the shutter-speed display immediately before each frame is recorded. At other times, the time remaining can be viewed by pressing the shutter-release button halfway. Regardless of the option selected for Custom Setting c2 (**Standby timer**, 🕮 336), the standby timer will not expire during shooting.

To view current time-lapse photography settings or end time-lapse photography, press the **MENU** button between shots.

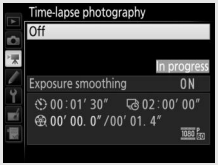


**Image Review**

The ▶ button can not be used to view pictures while time-lapse photography is in progress, but the current frame will be displayed for a few seconds after each shot if **On** is selected for **Image review** in the playback menu (🕮 307). Other playback operations can not be performed while the frame is displayed.

**Flash Photography**

To use the flash during time-lapse photography, select mode **P**, **S**, **A**, or **M** and press the ϟ (ϟ) button to raise the flash before shooting begins.

**Release Mode**

Regardless of the release mode selected, the camera will take one shot at each interval. The self-timer can not be used.

**See Also**

For information on setting a beep to sound when time-lapse photography is complete, see Custom Setting d1 (**Beep**, 🕮 338).

## Non-CPU Lenses

Non-CPU lenses can be used in modes **A** and **M**, with aperture set using the lens aperture ring. By specifying lens data (lens focal length and maximum aperture), the user can gain access to the following CPU lens functions.

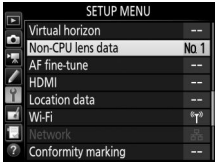
*If the focal length of the lens is known*:
- Power zoom can be used with optional flash units (🕮 433)
- Lens focal length is listed (with an asterisk) in the playback photo info display

*If the maximum aperture of the lens is known*:
- The aperture value is displayed in the control panel and viewfinder
- Flash level is adjusted for changes in aperture if the flash unit supports AA (auto aperture) mode
- Aperture is listed (with an asterisk) in the playback photo info display

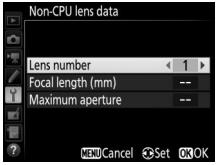
*Specifying both the focal length and maximum aperture of the lens*:
- Enables color matrix metering (note that it may be necessary to use center-weighted or spot metering to achieve accurate results with some lenses, including Reflex-NIKKOR lenses)
- Improves the precision of center-weighted and spot metering and i-TTL balanced fill-flash for digital SLR

The camera can store data for up to nine non-CPU lenses. To enter or edit data for a non-CPU lens:

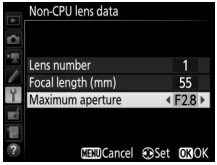
**1** **Select Non-CPU lens data.**
Highlight **Non-CPU lens data** in the setup menu and press ▶.




**2** **Choose a lens number.**
Highlight **Lens number** and press ◀ or ▶ to choose a lens number.




**3** **Enter the focal length and aperture.**
Highlight **Focal length (mm)** or **Maximum aperture** and press ◀ or ▶ to edit the highlighted item.




**4** **Save settings and exit.**
Press OK. The specified focal length and aperture will be stored under the chosen lens number.

**Focal Length Not Listed**

If the correct focal length is not listed, choose the closest value greater than the actual focal length of the lens.

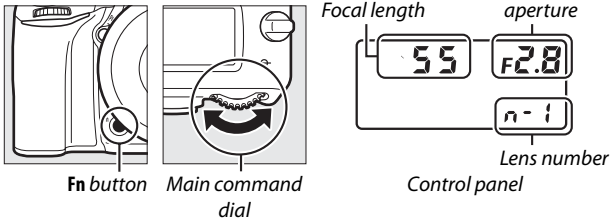
**Teleconverters and Zoom Lenses**

The maximum aperture for teleconverters is the combined maximum aperture of the teleconverter and the lens. Note that lens data are not adjusted when non-CPU lenses are zoomed in or out. The data for different focal lengths can be entered as separate lens numbers, or the data for the lens can be edited to reflect the new values for lens focal length and maximum aperture each time zoom is adjusted.

To recall lens data when using a non-CPU lens:

**1 Assign non-CPU lens number selection to a camera control.**
Select **Choose non-CPU lens number** as the "Press + command dials" option for a camera control in the Custom Settings menu (🕮 323). Non-CPU lens number selection can be assigned to the **Fn** button (Custom Setting f2, **Assign Fn button**, 🕮 356), the **Pv** button (Custom Setting f3, **Assign preview button**, 🕮 361), or the **AE-L/AF-L** button (Custom Setting f4, **Assign AE-L/AF-L button**, 🕮 361).

**2 Use the selected control to choose the lens number.**
Press the selected button and rotate the main command dial until the desired lens number is displayed in the control panel.



## Location Data

The GP-1/GP-1A GPS unit (available separately) can be connected to the camera's accessory terminal (🕮 443) using the cable supplied with the GP-1/GP-1A, allowing information on the camera's current position to be recorded when photographs are taken. Turn the camera off before connecting the GP-1/GP-1A; for more information, see the GP-1/GP-1A manual.

### ■■ *Setup Menu Options*

The **Location data** item in the setup menu contains the options listed below.

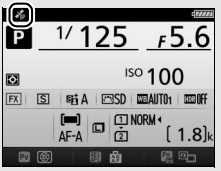
- **Standby timer**: Choose whether the exposure meters turn off automatically when the GP-1/GP-1A is attached.

| Option | Description |
|---|---|
| **Enable** | Exposure meters turn off automatically if no operations are performed for the period specified in Custom Setting c2 (**Standby timer**, 🕮 336; to allow the camera time to acquire location data, the delay is extended by up to one minute after the exposure meters are activated or the camera is turned on). This reduces the drain on the battery. |
| **Disable** | Exposure meters do not turn off while the GP-1/GP-1A is connected. |

- **Position**: This item is only available if the GP-1/GP-1A is connected, when it displays the current latitude, longitude, altitude, and Coordinated Universal Time (UTC) as reported by the GP-1/GP-1A.
- **Set clock from satellite**: Select **Yes** to synchronize the camera clock with the time reported by the GPS device.

**Coordinated Universal Time (UTC)**
UTC data is provided by the GPS device and is independent of the camera clock.

**The Icon**
Connection status is shown by the icon:



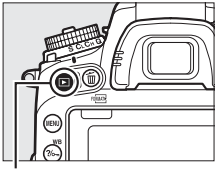

- **(static)**: The camera has established communication with GP-1/GP-1A. Photo information for pictures taken while this icon is displayed includes an additional page of location data (🕮 253).
- **(flashing)**: The GP-1/GP-1A is searching for a signal. Pictures taken while the icon is flashing do not include location data.
- **No icon**: No new location data have been received from the GP-1/GP-1A for at least two seconds. Pictures taken when the icon is not displayed do not include location data.

# More on Playback

## Viewing Pictures

### Full-Frame Playback

To play photographs back, press the ▶ button. The most recent photograph will be displayed in the monitor.



▶ *button*

| To | Use | Description |
|---|---|---|
| View additional photographs | | Press ▶ to view photographs in order recorded, ◀ to view photographs in reverse order. |
| View photo information | | Press ▲ or ▼ to view information about current photograph (🕮 246). |
| Return to shooting mode | / ▶ | Press the shutter-release button halfway or press the ▶ button to exit to shooting mode. |
| Play movie | OK | If current picture is marked with 🎥 icon to show that it is a movie, pressing OK starts movie playback (🕮 79). |

### Rotate Tall

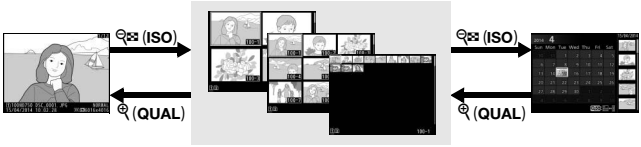
To display "tall" (portrait-orientation) photographs in tall orientation, select **On** for the **Rotate tall** option in the playback menu (🕮 308).

### Image Review

When **On** is selected for **Image review** in the playback menu (🕮 307), photographs are automatically displayed in the monitor after shooting (because the camera is already in the correct orientation, images are not rotated automatically during image review). In continuous release modes, display begins when shooting ends, with the first photograph in the current series displayed.

## Thumbnail Playback

To display images in “contact sheets” of four, nine, or 72 images, press the (**ISO**) button.




*Full-frame playback* | ***Thumbnail playback*** | *Calendar playback*

| To | Use | Description |
|---|---|---|
| Highlight images | | Use multi selector to highlight images for full-frame playback, playback zoom (🕮 255), deletion (🕮 258), or protection (🕮 257). |
| View highlighted image | | Press  to display the highlighted image full frame. |
| Return to shooting mode | | Press the shutter-release button halfway or press the ▶ button to exit to shooting mode. |

## Calendar Playback

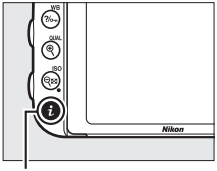
To view images taken on a selected date, press the ⊖ (**ISO**) button when 72 images are displayed.

*Full-frame playback* | *Thumbnail playback* | ***Calendar playback***

The operations that can be performed depend on whether the cursor is in the date list or the thumbnail list:

| To | Use | Description |
|---|---|---|
| Toggle between date list and thumbnail list | ⊖ (**ISO**)/OK | Press ⊖ (**ISO**) or OK button in date list to place cursor in thumbnail list. Press ⊖ (**ISO**) again to return to date list. |
| Exit to thumbnail playback/Zoom in on highlighted photo | ⊕ (**QUAL**) | • **Date list**: Exit to 72-frame playback.<br>• **Thumbnail list**: Press and hold ⊕ (**QUAL**) button to zoom in on highlighted picture. |
| Highlight dates/ Highlight images | | • **Date list**: Highlight date.<br>• **Thumbnail list**: Highlight picture. |
| Toggle full frame playback | OK | **Thumbnail list**: View highlighted picture. |
| Return to shooting mode | / ▶ | Press the shutter-release button halfway or press the ▶ button to exit to shooting mode. |

## The i Button



*i* button

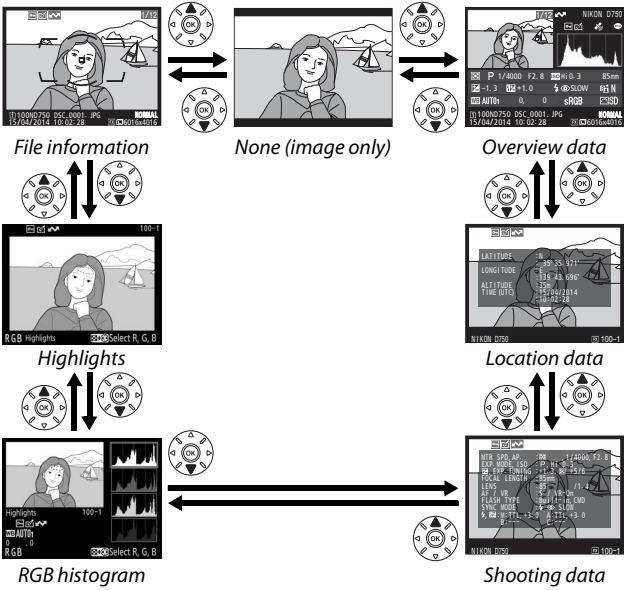
Pressing the *i* button during full-frame or thumbnail playback displays the options listed below.

- **Playback slot and folder**: Choose a folder for playback. Highlight a slot and press ▶ to list the folders on the selected card, then highlight a folder and press OK to view the pictures in the highlighted folder.
- **Retouch (photographs only)**: Use the options in the retouch menu (🕮 393) to create a retouched copy of the current photograph.
- **Edit movie (movies only)**: Edit movies using the options in the edit movie menu (🕮 81). Movies can also be edited by pressing the *i* button when movie playback is paused.
- **Select to send to smart device/deselect**: Select photos for upload to a smart device (🕮 289).

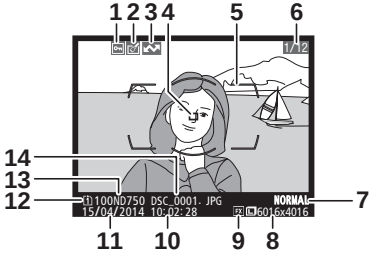
To exit the *i*-button menu and return to playback, press the *i* button again.

# Photo Information

Photo information is superimposed on images displayed in full-frame playback. Press ▲ or ▼ to cycle through photo information as shown below. Note that "image only", shooting data, RGB histograms, highlights, and overview data are only displayed if corresponding option is selected for **Playback display options** (🕮 302). Location data are only displayed if a GP-1/GP-1A was used when the photo was taken (🕮 239).



## ■■ File Information

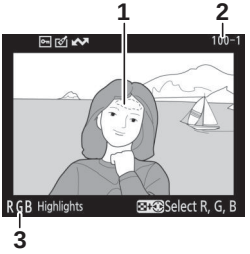



| | | | |
|---|---|---|---|
| **1** | Protect status ..... 257 | **8** | Image size ..... 118 |
| **2** | Retouch indicator ..... 393 | **9** | Image area ..... 110 |
| **3** | Upload marking ..... 290 | **10** | Time of recording ..... 28, 381 |
| **4** | Focus point [1, 2] ..... 127 | **11** | Date of recording ..... 28, 381 |
| **5** | AF area brackets [1] ..... 35 | **12** | Current card slot ..... 119 |
| **6** | Frame number/total number of frames | **13** | Folder name ..... 311 |
| **7** | Image quality ..... 115 | **14** | File name ..... 313 |

1 Displayed only if **Focus point** is selected for **Playback display options** (□ 302).

2 If photograph was taken using **AF-S** or with single-servo autofocus selected during **AF-A**, display shows point where focus first locked. If photograph was taken using **AF-C** or with continuous-servo autofocus selected during **AF-A**, focus point is only displayed if option other than auto-area AF was selected for AF-area mode and camera was able to focus.

## ■■ *Highlights*

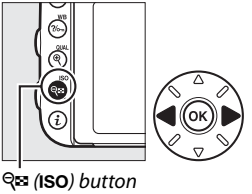



**1** Image highlights*

**2** Folder number—frame number ..... 311

**3** Current channel*

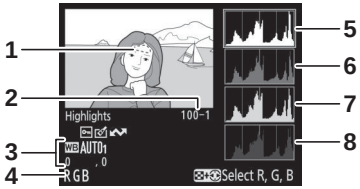
*Flashing areas indicate highlights (areas that may be overexposed) for the current channel. Hold (**ISO**) button and press ◀ or ▶ to cycle through channels as follows:




(**ISO**) *button*

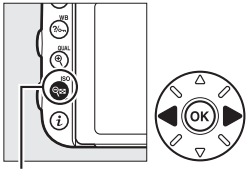
RGB (all channels) ⟷ R (red) ⟷ G (green) ⟷ B (blue)

## ■■ *RGB Histogram*

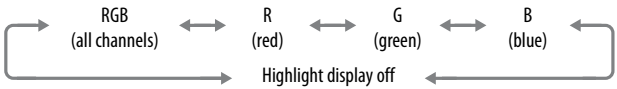



| | |
|---|---|
| **1** | Image highlights * |
| **2** | Folder number—frame number ..... 311 |
| **3** | White balance ..... 145<br>Color temperature ..... 152<br>White balance fine-tuning ..... 149<br>Preset manual ..... 155 |
| **4** | Current channel * |
| **5** | Histogram (RGB channel). In all histograms, horizontal axis gives pixel brightness, vertical axis number of pixels. |
| **6** | Histogram (red channel) |
| **7** | Histogram (green channel) |
| **8** | Histogram (blue channel) |

* Flashing areas indicate highlights (areas that may be overexposed) for the current channel. Hold (**ISO**) button and press ◀ or ▶ to cycle through channels as follows:




(**ISO**) *button*



### Playback Zoom

To zoom in on the photograph when the histogram is displayed, press ⊕ (**QUAL**). Use the ⊕ (**QUAL**) and ⊖ (**ISO**) buttons to zoom in and out and scroll the image with the multi selector. The histogram will be updated to show only the data for the portion of the image visible in the monitor.

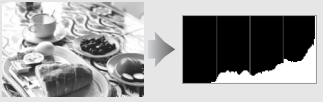
### Histograms

Camera histograms are intended as a guide only and may differ from those displayed in imaging applications. Some sample histograms are shown below:

If the image contains objects with a wide range of brightnesses, the distribution of tones will be relatively even.

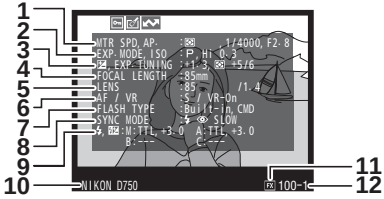
If the image is dark, tone distribution will be shifted to the left.

If the image is bright, tone distribution will be shifted to the right.

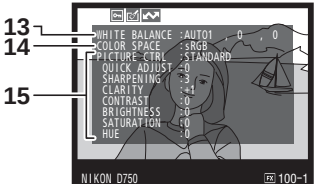


Increasing exposure compensation shifts the distribution of tones to the right, while decreasing exposure compensation shifts the distribution to the left. Histograms can provide a rough idea of overall exposure when bright ambient lighting makes it difficult to see photographs in the monitor.

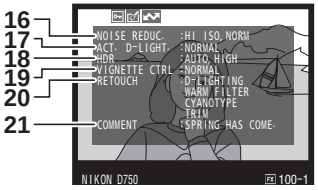
## ■■ *Shooting Data*



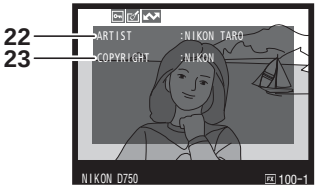

| | | | |
|---|---|---|---|
| **1** | Metering ..... 139<br>Shutter speed ..... 90, 93<br>Aperture ..... 91, 93 | **7** | Flash type ..... 180, 433<br>Commander mode ..... 348 |
| **2** | Shooting mode ..... 6<br>ISO sensitivity [1] ..... 134 | **8** | Flash mode ..... 181, 183 |
| **3** | Exposure compensation ..... 143<br>Optimal exposure tuning [2] ..... 336 | **9** | Flash control ..... 347, 435, 437<br>Flash compensation ..... 188 |
| **4** | Focal length ..... 235, 432 | **10** | Camera name |
| **5** | Lens data ..... 235 | **11** | Image area ..... 110 |
| **6** | Focus mode ..... 57, 121, 132<br>Lens VR (vibration reduction) [3] | **12** | Folder number—frame number ..... 311 |




| | | | |
|---|---|---|---|
| **13** | White balance ..... 145<br>Color temperature ..... 152<br>White balance fine-tuning ..... 149<br>Preset manual ..... 155 | **14** | Color space ..... 314 |
| | | **15** | Picture Control [4] ..... 165 |



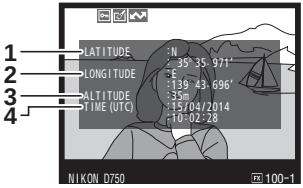

**16** High ISO noise reduction ..... 317
Long exposure noise reduction ..... 317
**17** Active D-Lighting ..... 175
**18** HDR strength ..... 177
**19** Vignette control ..... 315
**20** Retouch history ..... 393
**21** Image comment ..... 384




**22** Name of photographer[5] ..... 385 **23** Copyright holder[5] ..... 385

1 Displayed in red if photo was taken with auto ISO sensitivity control on.
2 Displayed if Custom Setting b6 (**Fine-tune optimal exposure**, 🕮 336) has been set to a value other than zero for any metering method.
3 Displayed only if VR lens is attached.
4 Items displayed vary with Picture Control selected.
5 The fourth page of the shooting data is only displayed if copyright information was recorded with the photograph as described on page 385.

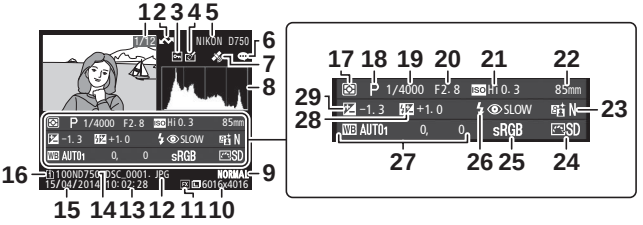
## ■■ *Location Data*[*] *(□ 239)*




**1** Latitude
**2** Longitude
**3** Altitude
**4** Coordinated Universal Time (UTC)

* Data for movies are for start of recording.

## Overview Data

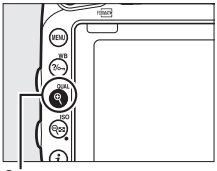



| | | |
|---|---|---|
| 1 | Frame number/total number of images | |
| 2 | Upload marking | 290 |
| 3 | Protect status | 257 |
| 4 | Retouch indicator | 393 |
| 5 | Camera name | |
| 6 | Image comment indicator | 384 |
| 7 | Location data indicator | 239 |
| 8 | Histogram showing the distribution of tones in the image (🕮 250). | |
| 9 | Image quality | 115 |
| 10 | Image size | 118 |
| 11 | Image area | 110 |
| 12 | File name | 313 |
| 13 | Time of recording | 28, 381 |
| 14 | Folder name | 311 |
| 15 | Date of recording | 28, 381 |
| 16 | Current card slot | 119 |
| 17 | Metering | 139 |
| 18 | Shooting mode | 6 |
| 19 | Shutter speed | 90, 93 |
| 20 | Aperture | 91, 93 |
| 21 | ISO sensitivity* | 134 |
| 22 | Focal length | 235, 432 |
| 23 | Active D-Lighting | 175 |
| 24 | Picture Control | 165 |
| 25 | Color space | 314 |
| 26 | Flash mode | 181, 183 |
| 27 | White balance | 145 |
| | Color temperature | 152 |
| | White balance fine-tuning | 149 |
| | Preset manual | 155 |
| 28 | Flash compensation | 188 |
| | Commander mode | 348 |
| 29 | Exposure compensation | 143 |

* Displayed in red if photo was taken with auto ISO sensitivity control on.

# Taking a Closer Look: Playback Zoom

Press the ⊕ (**QUAL**) button to zoom in on the image displayed in full-frame playback. The following operations can be performed while zoom is in effect:



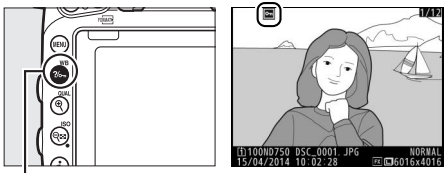
⊕ (**QUAL**) *button*

| To | Use | Description |
|---|---|---|
| Zoom in or out | ⊕ (**QUAL**)/ ⊖ (**ISO**) | Press ⊕ (**QUAL**) to zoom 36 × 24 (3 : 2) format images in to maximum of approximately 38 × (large images), 28 × (medium images) or 19 × (small images). Press ⊖ (**ISO**) to zoom out. While photo is zoomed in, use multi selector to view areas of image not visible in monitor. Keep multi selector pressed to scroll rapidly to other areas of frame. Navigation window is displayed when zoom ratio is altered; area currently visible in monitor is indicated by yellow border. Bar under navigation window shows zoom ratio; turns green at ratio of 1 : 1. |
| View other areas of image | | |

| To | Use | Description |
|---|---|---|
| Select faces | | Faces detected during zoom are indicated by white borders in navigation window. Rotate sub-command dial to view other faces. |
| View other images | | Rotate main command dial to view same location in other photos at current zoom ratio. Playback zoom is cancelled when a movie is displayed. |
| Return to shooting mode | / ▶ | Press the shutter-release button halfway or press the ▶ button to exit to shooting mode. |

## Protecting Photographs from Deletion

In full-frame, zoom, thumbnail, and calendar playback, press the **?/🔑** (**WB**) button to protect the current picture from accidental deletion. Protected files are marked with a 🔑 icon and can not be deleted using the 🗑 (FORMAT) button or the **Delete** option in the playback menu. Note that protected images *will* be deleted when the memory card is formatted (📖 375). To remove protection from a picture so that it can be deleted, display or highlight it and press the **?/🔑** (**WB**) button.




**?/🔑** *(***WB***) button*

**Removing Protection from All Images**

To remove protection from all images in the folder or folders currently selected in the **Playback folder** menu, press the **?/🔑** (**WB**) and 🗑 (FORMAT) buttons together for about two seconds during playback.

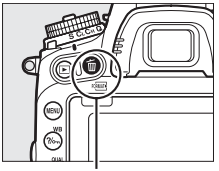
# Deleting Photographs

To delete the photograph displayed in full-frame playback or highlighted in the thumbnail list, press the 🗑 (FORMAT) button. To delete multiple selected photographs, all photographs taken on a selected date, or all photographs in the current playback folder, use the **Delete** option in the playback menu. Once deleted, photographs can not be recovered. Note that pictures that are protected or hidden can not be deleted.

## Full-Frame, Thumbnail, and Calendar Playback

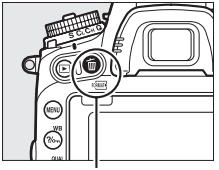
Press the 🗑 (FORMAT) button to delete the current photograph.

**1** **Press the 🗑 (FORMAT) button.**
A confirmation dialog will be displayed.



*🗑 (FORMAT) button*

**2** **Press the 🗑 (FORMAT) button again.**
To delete the photograph, press the 🗑 (FORMAT) button. To exit without deleting the photograph, press the ▶ button.



*🗑 (FORMAT) button*

**Calendar Playback**

During calendar playback, you can delete all photographs taken on a selected date by highlighting the date in the date list and pressing the 🗑 (FORMAT) button (🕮 244).

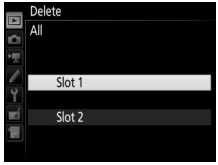
**See Also**

The **After delete** option in the playback menu determines whether the next image or the previous image is displayed after an image is deleted (🕮 307).

## The Playback Menu

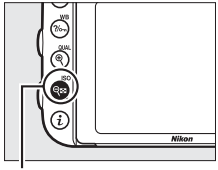
The **Delete** option in the playback menu contains the following options. Note that depending on the number of images, some time may be required for deletion.

| Option | Description |
|---|---|
| **Selected** | Delete selected pictures. |
| **Select date** | Delete all pictures taken on a selected date (🕮 261). |
| **All** | Delete all pictures in the folder currently selected for playback (🕮 300). If two cards are inserted, you can select the card from which pictures will be deleted. |

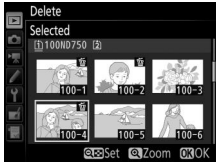



### ■■ *Selected: Deleting Selected Photographs*

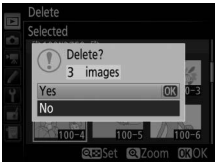
**1** **Select pictures.**
Use the multi selector to highlight a picture and press the ⊖/▪ (**ISO**) button to select or deselect. Selected pictures are marked by a 🗑 icon. Repeat as desired to select additional pictures.




⊖/▪ (**ISO**) *button*

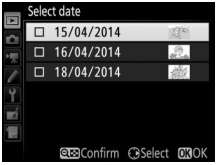


**2 Delete the selected pictures.**
Press ⓚ. A confirmation dialog will be displayed; highlight **Yes** and press ⓚ.




### ■ *Select Date: Deleting Photographs Taken on a Selected Date*

**1 Select dates.**
Highlight a date and press ⓑ to select all pictures taken on the highlighted date. Selected dates are marked with a ☑ icon. Repeat as desired to select additional dates; to deselect a date, highlight it and press ⓑ.




**2 Delete the selected pictures.**
Press ⓚ. A confirmation dialog will be displayed; highlight **Yes** and press ⓚ.

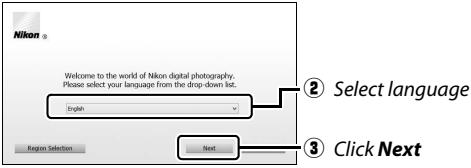
# Connections

## Installing ViewNX 2

Install the supplied software to display and edit photographs and movies that have been copied to your computer. Before installing ViewNX 2, confirm that your computer meets the system requirements on page 264. Be sure to use the latest version of ViewNX 2, which is available for download from the websites listed on page xxiii, as earlier versions that do not support the D750 may fail to transfer NEF (RAW) images correctly.

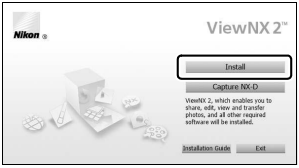
### 1 Launch the installer.

Start the computer, insert the installer CD, and launch the installer. A language selection dialog will be displayed. If the desired language is not available, click **Region Selection** to choose a different region (region selection is not available in the European release).



## 2 Start the installer.

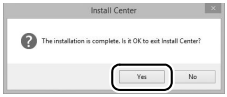
Click **Install** and follow the on-screen instructions.




*Click **Install***

## 3 Exit the installer.

**Windows**




*Click **Yes***

**Mac**

*Click **OK***

## 4 Remove the installer CD from the CD-ROM drive.

**Viewing the Nikon Website**

To visit the Nikon website after installing ViewNX 2, select **All Programs** > **Link to Nikon** from the Windows start menu (Internet connection required).

**System Requirements**

| Windows | |
|---|---|
| CPU | • **Photos**: Intel Celeron, Pentium 4, or Core series, 1.6 GHz or better<br>• **Movies (playback)**: Pentium D 3.0 GHz or better; Intel Core i5 or better recommended when viewing movies with a frame size of 1280 × 720 or more at a frame rate of 30 fps or above or movies with a frame size of 1920 × 1080 or more<br>• **Movies (editing)**: Intel Core i5 or better |
| OS* | Pre-installed versions of Windows 8.1, Windows 7, and Windows Vista |
| Memory (RAM) | • **32-bit Windows 8.1, Windows 7, or Windows Vista**: 1 GB or more (2 GB or more recommended)<br>• **64-bit Windows 8.1, Windows 7, or Windows Vista**: 2 GB or more (4 GB or more recommended) |
| Hard disk space | A minimum of 1 GB available on the startup disk (3 GB or more recommended) |
| Graphics | • **Resolution**: 1024 × 768 pixels (XGA) or more (1280 × 1024 pixels or more recommended)<br>• **Color**: 24-bit color (True Color) or more |
| Interface | Built-in USB port required. Software may not function as expected if camera is connected via USB hub. |

* See the websites listed on page xxiii for the latest information on supported operating systems.

| Mac | |
|---|---|
| CPU | • **Photos**: Intel Core or Xeon series<br>• **Movies (playback)**: Core Duo 2 GHz or better; Intel Core i5 or better recommended when viewing movies with a frame size of 1280 × 720 or more at a frame rate of 30 fps or above or movies with a frame size of 1920 × 1080 or more<br>• **Movies (editing)**: Intel Core i5 or better |
| OS * | OS X 10.9, 10.8, or 10.7 |
| Memory (RAM) | 2 GB or more (4 GB or more recommended) |
| Hard disk space | A minimum of 1 GB available on the startup disk (3 GB or more recommended) |
| Graphics | • **Resolution**: 1024 × 768 pixels (XGA) or more (1280 × 1024 pixels or more recommended)<br>• **Color**: 24-bit color (millions of colors) or more |
| Interface | Built-in USB port required. Software may not function as expected if camera is connected via USB hub. |

* See the websites listed on page xxiii for the latest information on supported operating systems.

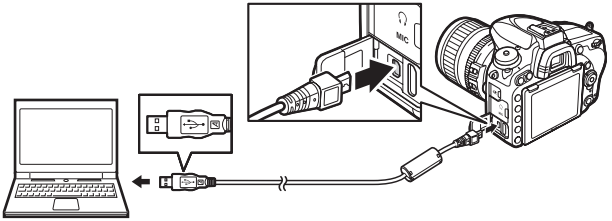
# Using ViewNX 2

## Copy Pictures to the Computer

Before proceeding, be sure you have installed the software on the supplied ViewNX 2 CD (🕮 262).

### 1 Connect the USB cable.

After turning the camera off and ensuring that a memory card is inserted, connect the supplied USB cable as shown and then turn the camera on.




**Use a Reliable Power Source**

To ensure that data transfer is not interrupted, be sure the camera battery is fully charged.

**Connecting Cables**

Be sure the camera is off when connecting or disconnecting interface cables. Do not use force or attempt to insert the connectors at an angle.

**During Transfer**

Do not turn the camera off or disconnect the USB cable while transfer is in progress.

**USB Hubs**

Connect the camera directly to the computer; do not connect the cable via a USB hub or keyboard.

## 2 Start Nikon Transfer 2 component of ViewNX 2.

If a message is displayed prompting you to choose a program, select Nikon Transfer 2.

### Windows 7

If the following dialog is displayed, select Nikon Transfer 2 as described below.

1. Under **Import pictures and videos**, click **Change program**. A program selection dialog will be displayed; select **Import File using Nikon Transfer 2** and click **OK**.
2. Double-click **Import File**.

### Windows 8.1

Windows 8.1 may display an AutoPlay prompt when the camera is connected. Tap or click the dialog and then tap or click **Import File/Nikon Transfer 2** to select Nikon Transfer 2.

## 3 Click **Start Transfer.**

At default settings, pictures on the memory card will be copied to the computer.

*Start Transfer*

## 4 Terminate the connection.

When transfer is complete, turn the camera off and disconnect the USB cable.

**Starting ViewNX 2 Manually**

- Windows: Double-click the ViewNX 2 shortcut on the desktop.
- Mac: Click the ViewNX 2 icon in the Dock.

**For More Information**

Consult online help for more information on using ViewNX 2.

**Capture NX-D**

Use Nikon's Capture NX-D software to retouch photos or to change settings for NEF (RAW) pictures and save them in other formats. Capture NX-D also offers an Image Dust Off feature that removes image artifacts caused by dust inside the camera. Capture NX-D is available for download from a link in the ViewNX 2 installer (🕮 262).

## Ethernet and Wireless Networks

The optional UT-1 communication unit (🕮 442) can be used to upload photographs to a computer or ftp server. The camera connects to the UT-1 using the USB cable supplied with the camera, while the UT-1 in turn connects to the network via an Ethernet cable or an optional WT-5 wireless transmitter (🕮 442). The optional communication units and wireless transmitters support the following modes:

| Mode | Function |
|---|---|
| **FTP upload** | Upload existing photos and movies to a computer or ftp server, or upload new photos as they are taken. |
| **Image transfer** | |
| **Camera control** | Control the camera using optional Camera Control Pro 2 software and save new photos and movies directly to the computer. |
| **HTTP server** | View and take pictures remotely using a browser equipped computer or iPhone. |

For information on using optional communication units or wireless transmitters, refer to the manuals provided with the device. Be sure to update to the latest versions of the device firmware and related software.

**Image Upload**

Once a connection has been established to the UT-1, the **i** button functions during playback to select pictures for upload in ftp and image transfer modes (upload only takes place when the UT-1 is connected). Other playback operations that use the **i** button, such as **Side-by-side comparison** (📖 419), can not be performed. To restore normal operation, delete the network profile as described in the UT-1 manual.

**During Transfer**

Movies can not be recorded or played back when the UT-1 is connected and there are either images remaining to be sent or images currently being transferred via an Ethernet or wireless network.

**Movies**

Movies can be uploaded over Ethernet and wireless networks in transfer mode. Note, however, that movies can not be uploaded using the **Auto send** or **Send folder** features in the **Options** menu.

**HTTP Server Mode**

The camera can not be used to record or view movies in HTTP server mode.

**WT-5 Wireless Transmitters**

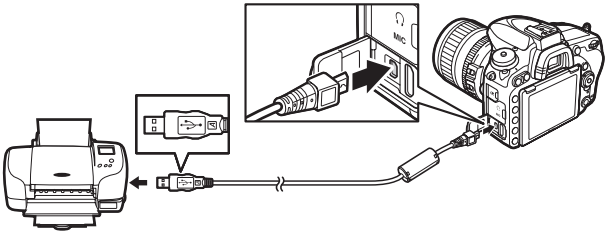
The principal differences between the WT-5 and WT-5A/B/C/D/E is in the number of channels supported; unless otherwise stated, all references to the the WT-5 also apply to the WT-5A/B/C/D/E.

# Printing Photographs

Selected JPEG images can be printed on a PictBridge printer (🕮 488) connected directly to the camera.

## Connecting the Printer

Connect the camera using the supplied USB cable. Do not use force or attempt to insert the connectors at an angle.



When the camera and printer are turned on, a welcome screen will be displayed in the monitor, followed by a PictBridge playback display.

**☑ USB Hubs**
Connect the camera directly to the printer; do not connect the cable via a USB hub.

**☑ Selecting Photographs for Printing**
NEF (RAW) photographs (🕮 115) can not be selected for printing. JPEG copies of NEF (RAW) images can be created using the **NEF (RAW) processing** option in the retouch menu (🕮 406).

**✎ Printing Via Direct USB Connection**
Be sure the battery is fully charged or use an optional AC adapter and power connector. When taking photographs to be printed via direct USB connection, set **Color space** to **sRGB** (🕮 314).

## Printing Pictures One at a Time

**1 Display the desired picture.**
Press ◀ or ▶ to view additional pictures. Press the ⊕ (**QUAL**) button to zoom in on the current frame (press ▶ to exit zoom). To view thumbnails, press the ⊖ (**ISO**) button. Use the multi selector to highlight pictures, or press ⊖ (**ISO**) again to display the highlighted picture full frame.

**2 Adjust printing options.**
Press ⊛ to display the following items, then press ▲ or ▼ to highlight an item and press ▶ to view options (only options supported by the current printer are listed; to use the default option, select **Printer default**). After selecting an option, press ⊛ to return to the printer settings menu.

| Option | Description |
|---|---|
| **Page size** | Choose a page size. |
| **No. of copies** | This option is listed only when pictures are printed one at a time. Press ▲ or ▼ to choose number of copies (maximum 99). |
| **Border** | Choose whether to frame photos in white borders. |
| **Time stamp** | Choose whether to print the times and dates of recordings on photos. |
| **Cropping** | This option is listed only when pictures are printed one at a time. To exit without cropping, highlight **No cropping** and press ⊛. To crop the current picture, highlight **Crop** and press ▶. A crop selection dialog will be displayed; press ⊕ (**QUAL**) to increase the size of the crop, ⊖ (**ISO**) to decrease, and use the multi selector to position the crop. Note that print quality may drop if small crops are printed at large sizes. |

**3** **Start printing.**
Select **Start printing** and press ⓚ to start printing. To cancel before all copies have been printed, press ⓚ.

**See Also**
See page 476 for information on what to do if an error occurs during printing.

## Printing Multiple Pictures

**1 Display the PictBridge menu.**
Press the **MENU** button in the PictBridge playback display.

**2 Choose an option.**
Highlight one of the following options and press ▶.

- **Print select**: Select pictures for printing. Use the multi selector to highlight pictures (to display the current picture full screen, press and hold the 🔍/**QUAL** button) and, keeping the ⚙ (**ISO**) button pressed, press ▲ or ▼ to choose the number of prints (maximum 99). To deselect a picture, set the number of prints to zero.
- **Select date**: Print one copy of all the pictures taken on selected dates. Press ▲ or ▼ to highlight dates and press ▶ to select or deselect. To view the pictures taken on the selected date, press ⚙ (**ISO**). Use the multi selector to scroll through the pictures, or press and hold 🔍 (**QUAL**) to view the current picture full screen. Press ⚙ (**ISO**) again to return to the date selection dialog.
- **Print (DPOF)**: Print the current DPOF print order (📖 275). The order can be viewed and modified before printing as described in the description for **Print select**, above.
- **Index print**: To create an index print of all JPEG pictures on the memory card, proceed to Step 3. Note that if the memory card contains more than 256 pictures, only the first 256 images will be printed. A warning will be displayed if the page size selected in Step 3 is too small for an index print.

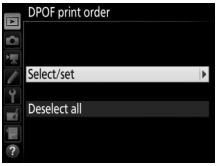
**3** **Adjust printing options.**
Adjust printer settings as described in Step 2 on page 272.

**4** **Start printing.**
Select **Start printing** and press ⓚ to start printing. To cancel before all copies have been printed, press ⓚ.

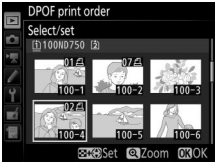
## Creating a DPOF Print Order: Print Set

The **DPOF print order** option in the playback menu is used to create digital "print orders" for PictBridge-compatible printers and devices that support DPOF (🕮 488).

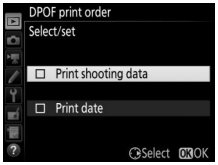
**1** **Choose DPOF print order > Select/set.**
Select **DPOF print order** in the playback menu, then highlight **Select/set** and press ⓡ (to remove all photographs from the print order, select **Deselect all**).




**2** **Select pictures.**
Use the multi selector to scroll through the pictures on (to display the current picture full screen, press and hold the ⊕/**QUAL** button) and keeping the ⊖ (**ISO**) button pressed, press ⓤ or ⓓ to choose the number of prints (maximum 99). To deselect a picture, set the number of prints to zero. Press ⓚ when all the desired pictures have been selected.



## 3 Select imprint options.




Highlight the following options and press ▶ to toggle the highlighted option on or off.

- **Print shooting data**: Print shutter speed and aperture on all pictures in print order.
- **Print date**: Print date of recording on all pictures in print order.

## 4 Complete the print order.

Press OK to complete the print order.

**DPOF Print Order**

To print the current print order when the camera is connected to a PictBridge printer, select **Print (DPOF)** in the PictBridge menu and follow the steps in "Printing Multiple Pictures" to modify and print the current order (📖 274). DPOF print date and shooting data options are not supported when printing via direct USB connection; to print the date of recording on photographs in the current print order, use the PictBridge **Time stamp** option.

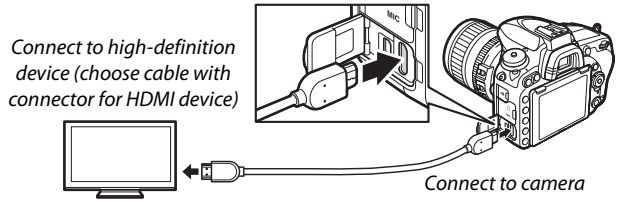
The **DPOF print order** option can not be used if there is not enough space on the memory card to store the print order.

NEF (RAW) photographs (📖 115) can not be selected using this option. JPEG copies of NEF (RAW) images can be created using the **NEF (RAW) processing** option in the retouch menu (📖 406).

Print orders may not print correctly if images are deleted using a computer or other device after the print order is created.

## Viewing Photographs on TV

The optional High-Definition Multimedia Interface (HDMI) cable (🕮 442) or a type C HDMI cable (available separately from third-party suppliers) can be used to connect the camera to high-definition video devices. Always turn the camera off before connecting or disconnecting an HDMI cable.




Tune the device to the HDMI channel, then turn the camera on and press the ▶ button. During playback, images will be displayed on the television screen. Volume can be adjusted using television controls; the camera controls can not be used.

**Television Playback**

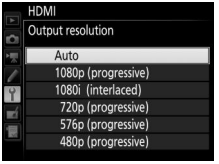
Use of an AC adapter and power connector (available separately) is recommended for extended playback. If the edges of photographs are not visible in the television display, select **95%** for **HDMI** > **Advanced** > **Output display size** (🕮 279).

## HDMI Options

The **HDMI** option in the setup menu (🕮 374) controls output resolution and other advanced HDMI options, and can also be used to enable the camera for remote control from devices that support HDMI-CEC (**H**igh-**D**efinition **M**ultimedia **I**nterface–**C**onsumer **E**lectronics **C**ontrol, a standard that allows HDMI devices to be used to control peripherals to which they are connected).

### ■■ *Output Resolution*

Choose the format for images output to the HDMI device. If **Auto** is selected, the camera will automatically select the appropriate format.




### ■■ *Device Control*

If **On** is selected for **HDMI** >**Device control** when the camera is connected to a television that supports HDMI-CEC and both the camera and television are on, the television remote can be used in place of the camera multi selector and ⓞⓚ button during full-frame playback and slide shows. If **Off** is selected, the television remote can not be used to control the camera.

## ■■ *Advanced*

| Option | Description |
|---|---|
| **Output range** | **Auto** is recommended in most situations. If the camera is unable to determine the correct RGB video signal output range for the HDMI device, you can choose from the following options:<br>• **Limited range**: For devices with an RGB video signal input range of 16 to 235. Choose this option if you notice loss of detail in shadows.<br>• **Full range**: For devices with an RGB video signal input range of 0 to 255. Choose this option if shadows are "washed out" or too bright. |
| **Output display size** | Choose horizontal and vertical frame coverage for HDMI output from 95% or 100%. |
| **Live view on-screen display** | If **Off** is selected when the camera is connected to an HDMI device, shooting information will not be displayed in the monitor during live view photography. |
| **Dual monitor** | Choose **On** to mirror the HDMI display on the camera monitor, **Off** to turn the camera monitor off to save power. **Dual monitor** turns on automatically when **Live view on-screen display** is **Off**. |

**HDMI and Live View**

When the camera is connected via an HDMI cable, HDMI displays can be used for live view photography and movie live view (🕮 65, 78). Note that if **1920 × 1080; 60p** is selected for the **Frame size/frame rate** in the movie shooting menu (🕮 319), the selected setting will only be reflected in the HDMI output during movie recording if all the following conditions are met: **Auto** or **1080p (progressive)** is selected for **HDMI** > **Output resolution**, **100%** is selected for **HDMI** > **Advanced** > **Output display size**, and **Off** is selected for **HDMI** > **Advanced** > **Live view on-screen display** (🕮 279). At other settings, the output resolution, display size, or frame rate may differ from that selected in the camera menus.

**HDMI-CEC Devices**

When the camera is connected to an HDMI-CEC device, **CEC** will appear in the control panel in place of the number of exposures remaining.

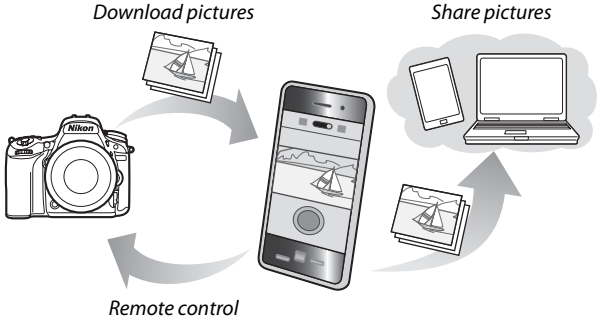
**Device Control**

See the television manual for details.

# Wi-Fi

## What Wi-Fi Can Do for You

The camera can connect via Wi-Fi wireless networks to a smart device running Nikon's dedicated Wireless Mobile Utility app. The smart device can be used to control the camera and take pictures remotely, or pictures can be downloaded from the camera to the smart device and shared with others on the Internet. Pictures can also be uploaded from the camera to the smart device (🕮 289).




See the Wireless Mobile Utility manual for details (🕮 283).

**Wi-Fi**
Wi-Fi is available with the D750 only. The D750 (K) does not support Wi-Fi.

## Accessing the Camera

Before connecting via Wi-Fi (wireless LAN), install the Wireless Mobile Utility on your Android or iOS smart device. Instructions for accessing the camera vary with the type of connection used by the smart device.

**Android**

- **Push-button WPS**: If the smart device supports push-button WPS (i.e., has a **WPS button connection** option in its **Wi-Fi settings** menu), you can use this easy method to connect to the smart device (🕮 284)
- **PIN-entry WPS**: If the smart device supports WPS, you can use the camera to establish a connection by entering the PIN displayed by the smart device (🕮 285)
- **View SSID**: If the smart device does not support WPS, you can connect by selecting the camera SSID on the smart device (🕮 286)

**iOS**

- **View SSID**: Connect by selecting the camera SSID on the smart device (🕮 286)

**Security**

If you do not use WPS when connecting for the first time, the connection will not be protected by a password or other form of security. Security settings can be configured in the Wireless Mobile Utility once a connection is established. More information can be found in the Wireless Mobile Utility manual, which is available for download in pdf format from the following URLs:

- **Android**: *http://nikonimglib.com/ManDL/WMAU/*
- **iOS**: *http://nikonimglib.com/ManDL/WMAU-ios/*

**Installing the Wireless Mobile Utility App**

**1** Find the app.
On the smart device, connect to the Google Play service, the App Store, or another app marketplace and search for "Wireless Mobile Utility". For more information, see the instructions provided with the smart device.

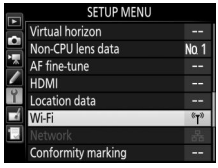
**2** Install the app.
Read the app description and install the app. A pdf manual for the Wireless Mobile Utility is available for download at the following URLs:

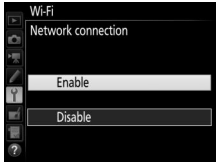
- **Android**: *http://nikonimglib.com/ManDL/WMAU/*

- **iOS**: *http://nikonimglib.com/ManDL/WMAU-ios/*

## WPS (Android Only)

**1 Enable the camera's built-in Wi-Fi.**
Highlight **Wi-Fi** in the setup menu and press ▶. Highlight **Network connection** and press ▶, then highlight **Enable** and press OK. Wait a few seconds for Wi-Fi to activate.

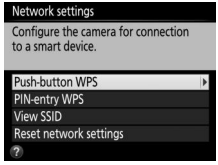



**2 Connect.**
Enable WPS button connections on the camera and smart device:

- **Camera**: Highlight **Network settings** and press ▶.

Highlight **Push-button WPS** and press ▶ to ready the camera for a WPS connection. The camera will wait about two minutes for a WPS connection request from the smart device. To extend the wait time, press OK.

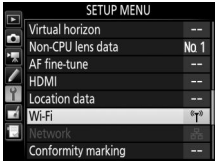


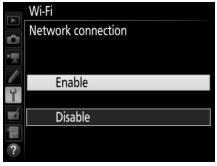

- **Smart device**: Select **Wi-Fi settings** > **WPS button connection**.

**3 Launch the Wireless Mobile Utility.**
Launch the Wireless Mobile Utility on the smart device. The main dialog will be displayed.

## PIN Entry (Android Only)

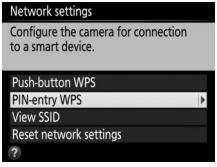
**1 Enable the camera's built-in Wi-Fi.**
Highlight **Wi-Fi** in the setup menu and press ▶. Highlight **Network connection** and press ▶, then highlight **Enable** and press OK. Wait a few seconds for Wi-Fi to activate.




**2 Select Network settings > PIN-entry WPS.**
Highlight **Network settings** and press ▶.

Highlight **PIN-entry WPS** and press ▶.

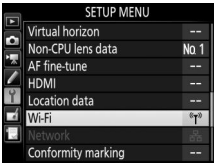


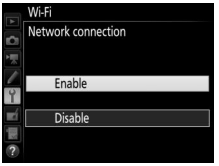
**3** **Enter the PIN.**
Enter the PIN displayed by the smart device. Press ◀ or ▶ to highlight digits and press ▲ or ▼ to change. Press OK when entry is complete.

**4** **Launch the Wireless Mobile Utility.**
Launch the Wireless Mobile Utility on the smart device. The main dialog will be displayed.

## SSID (Android and iOS)

**1** **Enable the camera's built-in Wi-Fi.**
Highlight **Wi-Fi** in the setup menu and press ▶. Highlight **Network connection** and press ▶, then highlight **Enable** and press OK. Wait a few seconds for Wi-Fi to activate.

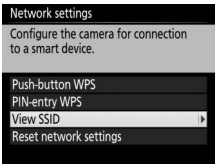


## 2 Display the camera SSID.

Highlight **Network settings** and press ⊛.

Highlight **View SSID** and press ⊛.




## 3 Select the camera SSID.

Select the camera SSID in the list of networks displayed by the smart device.

## 4 Launch the Wireless Mobile Utility.

Launch the Wireless Mobile Utility on the smart device. The main dialog will be displayed.

### ■■ *Terminating the Connection*

Wi-Fi can be disabled by:

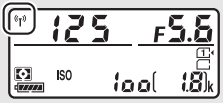
- Selecting **Wi-Fi** > **Network connection** > **Disable** in the camera setup menu
- Starting movie recording
- Connecting an optional UT-1 communication unit
- Turning the camera off

### ■■ *Restoring Default Settings*

To restore default network settings, select **Wi-Fi** > **Network settings** > **Reset network settings**. A confirmation dialog will be displayed; highlight **Yes** and press ⓚ to restore default network settings.

**The Wi-Fi Display**

While Wi-Fi is enabled, a ((ᵞ)) icon will flash in the control panel. The icon will stop flashing once a connection has been established and the camera is exchanging data with the smart device.




**Wi-Fi**

Read the warnings on pages xxiv to xxvi before using the Wi-Fi function. To disable Wi-Fi in settings in which its use is prohibited, select **Wi-Fi** > **Network connection** > **Disable** in the camera setup menu. Note that Eye-Fi cards can not be used while Wi-Fi is enabled and that the standby timer will not turn off while the Wireless Mobile Utility app on the smart device is communicating with the camera. If no data are exchanged for about 5 minutes, the standby timer will turn off. The camera Wi-Fi function is only available when a memory card is inserted and can not be used when a USB or HDMI cable is connected. To prevent loss of power while connected, charge the battery before enabling the network connection.

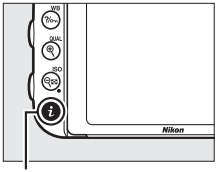
## Selecting Pictures for Upload

Follow the steps below to select photos for upload to the smart device. Movies can not be selected for upload.

### Selecting Individual Pictures for Upload

**1 Select an image.**
Display the image or highlight it in the thumbnail list in thumbnail or calendar playback.

**2 Display playback options.**
Press the **i** button.




**i** *button*

**3** **Choose Select to send to smart device/deselect.**
Highlight **Select to send to smart device/deselect** and press ⓚ. Pictures selected for upload are indicated by a icon; to deselect, display or highlight the image and repeat Steps 2 and 3.

## Selecting Multiple Pictures for Upload

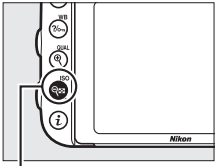
To change the upload status of multiple pictures, use the **Wi-Fi** > **Select to send to smart device** option in the setup menu.

**1 Choose Select to send to smart device.**

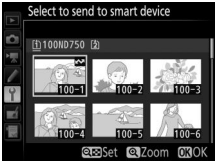
Select **Wi-Fi** in the setup menu, then highlight **Select to send to smart device** and press ▶.

**2 Select pictures.**

Use the multi selector to highlight pictures and press ⊖ (**ISO**) to select or deselect (to view the highlighted picture full screen, press and hold the ⊕/**QUAL** button). Selected pictures are marked by a 🗠 icon.




⊖ (**ISO**) *button*




**3 Press ⊛.**

Press ⊛ to complete the operation.

# Menu Guide

## Defaults

The default settings for the options in the camera menus are listed below. For information on two-button resets, see page 199.

### ■■ *Playback Menu Defaults*

| Option | Default |
|---|---|
| Playback folder (🕮 300) | ND750 |
| Image review (🕮 307) | Off |
| After delete (🕮 307) | Show next |
| Rotate tall (🕮 308) | On |
| Slide show (🕮 308) | |
| Image type (🕮 308) | Still images and movies |
| Frame interval (🕮 308) | 2 s |

### ■■ *Photo Shooting Menu Defaults* [1]

| Option | Default |
|---|---|
| File naming (🕮 313) | DSC |
| Role played by card in Slot 2 (🕮 119) | Overflow |
| Image quality (🕮 115) | JPEG normal |
| Image size (🕮 118) | Large |
| Image area (🕮 110) | |
| Choose image area (🕮 111) | FX (36×24) |
| Auto DX crop (🕮 111) | On |
| JPEG compression (🕮 117) | Size priority |
| NEF (RAW) recording (🕮 117) | |
| Type (🕮 117) | Lossless compressed |
| NEF (RAW) bit depth (🕮 117) | 14-bit |

| Option | Default |
|---|---|
| White balance (📖 145) | Auto > Normal |
| Fine-tuning (📖 149) | A-B: 0, G-M: 0 |
| Choose color temp. (📖 152) | 5000 K |
| Preset manual (📖 155) | d-1 |
| Set Picture Control (📖 165) | Standard |
| Color space (📖 314) | sRGB |
| Active D-Lighting (📖 175) | |
| **P**, **S**, **A**, **M**, 🖼, 🖼, 🖼, 🖼, 🖼, 🖼, 🖼 | Off |
| Other modes | Auto |
| HDR (high dynamic range) (📖 177) | |
| HDR mode (📖 178) | Off |
| HDR strength (📖 178) | Auto |
| Vignette control (📖 315) | Normal |
| Auto distortion control (📖 316) | Off |
| Long exposure NR (📖 317) | Off |
| High ISO NR (📖 317) | Normal |
| ISO sensitivity settings (📖 134) | |
| ISO sensitivity (📖 134) | |
| **P**, **S**, **A**, **M** | 100 |
| Other modes | Auto |
| Auto ISO sensitivity control (📖 136) | Off |
| Remote control mode (ML-L3) (📖 193) | Off |
| Multiple exposure[2] (📖 216) | |
| Multiple exposure mode (📖 217) | Off |
| Number of shots (📖 218) | 2 |
| Auto gain (📖 218) | On |

| Option | Default |
|---|---|
| Interval timer shooting (📖 222) | |
| Start options (📖 223) | Now |
| Interval (📖 223) | 1 min. |
| No. of intervals×shots/interval (📖 224) | 0001×1 |
| Exposure smoothing (📖 224) | Off |

1 Default settings restored with **Reset photo shooting menu** (📖 311).
2 **Reset photo shooting menu** can not be selected while shooting is in progress.

### ■■ *Movie Shooting Menu Defaults* *

| Option | Default |
|---|---|
| File naming (📖 313) | DSC |
| Destination (📖 319) | Slot 1 |
| Frame size/frame rate (📖 319) | 1920×1080; 60p |
| Movie quality (📖 320) | Normal |
| Microphone sensitivity (📖 320) | Auto sensitivity |
| Frequency response (📖 320) | Wide range |
| Wind noise reduction (📖 321) | Off |
| Image area (📖 76) | |
| Choose image area (📖 111) | FX (36×24) |
| Auto DX crop (📖 111) | On |
| White balance (📖 321) | Same as photo settings |
| Fine-tuning (📖 149) | A-B: 0, G-M: 0 |
| Choose color temp. (📖 152) | 5000 K |
| Preset manual (📖 155) | d-1 |
| Set Picture Control (📖 321) | Same as photo settings |
| High ISO NR (📖 317) | Normal |
| Movie ISO sensitivity settings (📖 322) | |
| ISO sensitivity (mode M) (📖 322) | 100 |
| Auto ISO control (mode M) (📖 322) | Off |
| Maximum sensitivity (📖 322) | 12800 |

| Option | | Default |
|---|---|---|
| Time-lapse photography (🕮 229) | | |
| | Interval (🕮 230) | 5 s |
| | Shooting time (🕮 230) | 25 minutes |
| | Exposure smoothing (🕮 231) | On |

* Default settings restored with **Reset movie shooting menu** (🕮 318).

## ■■ *Custom Settings Menu Defaults* *

| Option | | | Default |
|---|---|---|---|
| a1 | AF-C priority selection (🕮 326) | | Release |
| a2 | AF-S priority selection (🕮 327) | | Focus |
| a3 | Focus tracking with lock-on (🕮 328) | | 3 (Normal) |
| a4 | Focus point illumination (🕮 329) | | |
| | | Manual focus mode | On |
| | | Dynamic-area AF display | Off |
| | | Group-area AF illumination | ✣ (Squares) |
| a5 | AF point illumination (🕮 329) | | Auto |
| a6 | Focus point wrap-around (🕮 330) | | No wrap |
| a7 | Number of focus points (🕮 330) | | 51 points |
| a8 | Store points by orientation (🕮 331) | | No |
| a9 | Built-in AF-assist illuminator (🕮 332) | | On |
| b1 | ISO sensitivity step value (🕮 333) | | 1/3 step |
| b2 | EV steps for exposure cntrl (🕮 333) | | 1/3 step |
| b3 | Easy exposure compensation (🕮 334) | | Off |
| b4 | Matrix metering (🕮 335) | | Face detection on |
| b5 | Center-weighted area (🕮 335) | | ø 12 mm |
| b6 | Fine-tune optimal exposure (🕮 336) | | |
| | | Matrix metering | 0 |
| | | Center-weighted metering | 0 |
| | | Spot metering | 0 |
| | | Highlight-weighted metering | 0 |

| | Option | Default |
|---|---|---|
| c1 | Shutter-release button AE-L (🕮 336) | Off |
| c2 | Standby timer (🕮 336) | 6 s |
| c3 | Self-timer (🕮 337) | |
| | Self-timer delay | 10 s |
| | Number of shots | 1 |
| | Interval between shots | 0.5 s |
| c4 | Monitor off delay (🕮 337) | |
| | Playback | 10 s |
| | Menus | 1 min |
| | Information display | 10 s |
| | Image review | 4 s |
| | Live view | 10 min |
| c5 | Remote on duration (ML-L3) (🕮 337) | 1 min |
| d1 | Beep (🕮 338) | |
| | Volume | Off |
| | Pitch | Low |
| d2 | Continuous low-speed (🕮 338) | 3 fps |
| d3 | Max. continuous release (🕮 339) | 100 |
| d4 | Exposure delay mode (🕮 339) | Off |
| d5 | Flash warning (🕮 339) | On |
| d6 | File number sequence (🕮 340) | On |
| d7 | Viewfinder grid display (🕮 341) | Off |
| d8 | Easy ISO (🕮 341) | Off |
| d9 | Information display (🕮 341) | Auto |
| d10 | LCD illumination (🕮 342) | Off |
| d11 | MB-D16 battery type (🕮 343) | LR6 (AA alkaline) |
| d12 | Battery order (🕮 344) | Use MB-D16 batteries first |

| | Option | Default |
|---|---|---|
| e1 | Flash sync speed (📖 345) | 1/200 s |
| e2 | Flash shutter speed (📖 346) | 1/60 s |
| e3 | Flash cntrl for built-in flash/Optional flash (📖 347) | TTL |
| e4 | Exposure comp. for flash (📖 353) | Entire frame |
| e5 | Modeling flash (📖 353) | On |
| e6 | Auto bracketing set (📖 353) | AE & flash |
| e7 | Bracketing order (📖 354) | MTR > under > over |
| f1 | OK button (📖 354) | |
| | Shooting mode (📖 354) | Select center focus point |
| | Playback mode (📖 355) | Thumbnail on/off |
| | Live view (📖 355) | Select center focus point |
| f2 | Assign Fn button (📖 356) | |
| | Press (📖 356) | None |
| | Press + command dials (📖 360) | Choose image area |
| f3 | Assign preview button (📖 361) | |
| | Press (📖 361) | Preview |
| | Press + command dials (📖 361) | None |
| f4 | Assign AE-L/AF-L button (📖 361) | |
| | Press (📖 361) | AE/AF lock |
| | Press + command dials (📖 362) | None |
| f5 | Customize command dials (📖 363) | |
| | Reverse rotation (📖 363) | Exposure compensation: ☐<br>Shutter speed/aperture: ☐ |
| | Change main/sub (📖 363) | Exposure setting: Off<br>Autofocus setting: Off |
| | Aperture setting (📖 364) | Sub-command dial |
| | Menus and playback (📖 364) | Off |
| | Sub-dial frame advance (📖 364) | 10 frames |

| | Option | Default |
|---|---|---|
| f6 | Release button to use dial (📖 365) | No |
| f7 | Slot empty release lock (📖 365) | Enable release |
| f8 | Reverse indicators (📖 366) | |
| f9 | Assign movie record button (📖 366) | |
| | Press + command dials | None |
| f10 | Assign MB-D16 Fn button (📖 367) | AE/AF lock |
| f11 | Assign remote (WR) Fn button (📖 368) | None |
| g1 | Assign Fn button (📖 370) | |
| | Press | None |
| g2 | Assign preview button (📖 372) | |
| | Press | Index marking |
| g3 | Assign AE-L/AF-L button (📖 373) | |
| | Press | AE/AF lock |
| g4 | Assign shutter button (📖 373) | Take photos |

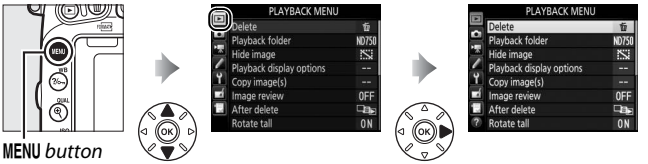
* Default settings restored with **Reset custom settings** (📖 326).

## ■■ *Setup Menu Defaults*

| Option | Default |
|---|---|
| Save user settings (🕮 99) | |
| Save to U1 | Shooting mode defaults to **P** |
| Save to U2 | |
| Monitor brightness (🕮 376) | 0 |
| Monitor color balance (🕮 377) | A-B: 0, G-M: 0 |
| Clean image sensor (🕮 448) | |
| Clean at startup/shutdown (🕮 449) | Clean at startup & shutdown |
| Flicker reduction (🕮 380) | Auto |
| Time zone and date (🕮 381) | |
| Daylight saving time | Off |
| Auto image rotation (🕮 382) | On |
| HDMI (🕮 278) | |
| Output resolution (🕮 278) | Auto |
| Device control (🕮 278) | On |
| Advanced (🕮 279) | |
| Output range | Auto |
| Output display size | 100% |
| Live view on-screen display | On |
| Dual monitor | On |
| Location data (🕮 239) | |
| Standby timer | Enable |
| Set clock from satellite | Yes |
| Wi-Fi (🕮 282) | |
| Network connection | Disable |
| Eye-Fi upload (🕮 391) | Enable |

# ▶ The Playback Menu: *Managing Images*

To display the playback menu, press MENU and select the ▶ (playback menu) tab.




MENU *button*

## Playback Menu Options

The playback menu contains the following options:

| Option | 🕮 | Option | 🕮 |
|---|---|---|---|
| **Delete** | 260 | **Image review** | 307 |
| **Playback folder** | 300 | **After delete** | 307 |
| **Hide image** | 301 | **Rotate tall** | 308 |
| **Playback display options** | 302 | **Slide show** | 308 |
| **Copy image (s)** | 303 | **DPOF print order** | 275 |

**See Also**

Menu defaults are listed on page 292.

## Playback Folder

MENU *button* ➜ ▶ *playback menu*

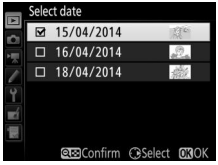
Choose a folder for playback (🕮 241):

| Option | Description |
|---|---|
| **ND750** | Pictures in all folders created with the D750 will be visible during playback. |
| **All** | Pictures in all folders will be visible during playback. |
| **Current** | Only pictures in the current folder will be visible during playback. |

## Hide Image

MENU *button* ➜ ▶ *playback menu*

Hide or reveal pictures. Hidden pictures are visible only in the **Hide image** menu and can only be deleted by formatting the memory card.

| Option | Description |
|---|---|
| **Select/set** | Hide or reveal selected pictures. |
| **Select date** | Selecting this option displays a list of dates. To hide all pictures taken on a date, highlight the date and press ▶. Selected dates are marked by a ✓; to reveal all pictures taken on a selected date, highlight it and press ▶. Press OK to complete the operation.   |
| **Deselect all** | Reveal all pictures. |

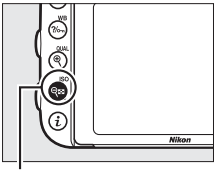
**☑ Protected and Hidden Images**
Revealing a protected image will also remove protection from the image.

Follow the steps below to hide or reveal selected pictures.

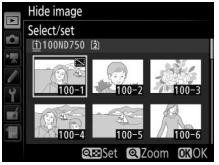
**1** **Choose Select/set.**
Highlight **Select/set** and press ▶.

## 2 Select pictures.

Use the multi selector to scroll through the pictures on the memory card (to view the highlighted picture full screen, press and hold the ⊕/**QUAL** button) and press ⊖ (**ISO**) to select the current picture. Selected pictures are marked by a ▨ icon; to deselect a picture, highlight it and press ⊖ (**ISO**) again. Continue until all the desired pictures have been selected.




⊖ (**ISO**) *button*




## 3 Press ⊛.

Press ⊛ to complete the operation.

### Playback Display Options

**MENU** *button* ➜ ▶ *playback menu*

Choose the information available in the playback photo information display (🕮 246). Press ▲ or ▼ to highlight an option, then press ▶ to select the option for the photo information display. A ✔ appears next to selected items; to deselect, highlight an item and press ▶. To return to the playback menu, press ⊛.

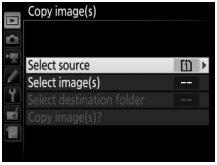
## Copy Image(s)

MENU *button* ➜ ▶ *playback menu*

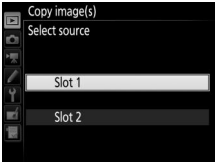
Copy pictures from one memory card to another. This option is only available when two memory cards are inserted in the camera.

| Option | Description |
|---|---|
| **Select source** | Choose card from which pictures will be copied. |
| **Select image(s)** | Select pictures to be copied. |
| **Select destination folder** | Select destination folder on remaining card. |
| **Copy image(s)?** | Copy selected pictures to specified destination. |

**1** **Choose Select source.**
Highlight **Select source** and press ▶.

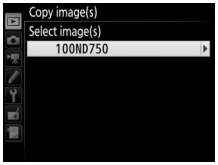



**2** **Select the source card.**
Highlight the slot for the card containing the images to be copied and press OK.

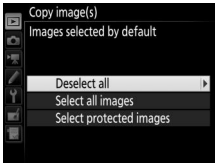



**3** **Choose Select image(s).**
Highlight **Select image(s)** and press ▶.

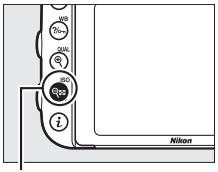
**4 Select the source folder.**
Highlight the folder containing the images to be copied and press ▶.



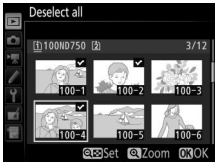

**5 Make the initial selection.**
Before going on to select or deselect individual images, you can mark all or all protected images in the folder for copying by choosing **Select all images** or **Select protected images**. To mark only individually selected images for copying, choose **Deselect all** before proceeding.



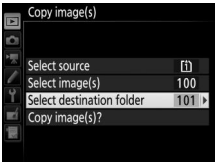

**6 Select additional images.**
Highlight pictures and press ⊖ (**ISO**) to select or deselect (to view the highlighted picture full screen, press and hold the ⊕/**QUAL** button). Selected images are marked with a ✓. Press OK to proceed to Step 7 when your selection is complete.



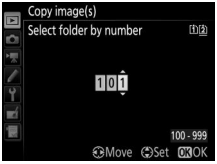

⊖ (**ISO**) *button*



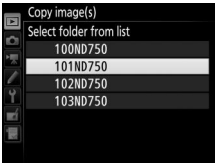
**7** **Choose Select destination folder.**
Highlight **Select destination folder** and press ▶.




**8** **Select a destination folder.**
To enter a folder number, choose **Select folder by number**, enter the number (🕮 311), and press OK. If the folder with the selected number does not already exist, a new folder will be created.

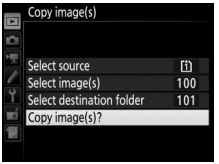



To choose from a list of existing folders, choose **Select folder from list**, highlight a folder, and press OK.



## 9 Copy the images.

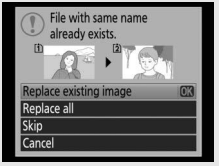
Highlight **Copy image(s)?** and press ⓞⓚ.




A confirmation dialog will be displayed; highlight **Yes** and press ⓞⓚ. Press ⓞⓚ again to exit when copying is complete.

**Copying Images**

Images will not be copied if there is insufficient space on the destination card. Be sure the battery is fully charged before copying movies.




If the destination folder contains an image with the same name as one of the images to be copied, a confirmation dialog will be displayed. Select **Replace existing image** to replace the image with the image to be copied, or select **Replace all** to replace all existing images with the same names without further prompting. To continue without replacing the image, select **Skip**, or select **Cancel** to exit without copying any further images. Hidden or protected files in the destination folder will not be replaced.

Protect status is copied with the images but print marking (🕮 275) is not. Hidden images can not be copied.

## Image Review

MENU *button* ➜ ▶ *playback menu*

Choose whether pictures are automatically displayed in the monitor immediately after shooting. If **Off** is selected, pictures can only be displayed by pressing the ▶ button.

## After Delete

MENU *button* ➜ ▶ *playback menu*

Choose the picture displayed after an image is deleted.

| Option | Description |
|---|---|
| **Show next** | Display following picture. If deleted picture was last frame, previous picture will be displayed. |
| **Show previous** | Display previous picture. If deleted picture was first frame, following picture will be displayed. |
| **Continue as before** | If user was scrolling through pictures in order recorded, following picture will be displayed as described for **Show next**. If user was scrolling through pictures in reverse order, previous picture will be displayed as described for **Show previous**. |

## Rotate Tall

MENU *button* ➜ ▶ *playback menu*

Choose whether to rotate "tall" (portrait-orientation) pictures for display during playback. Note that because the camera itself is already in the appropriate orientation during shooting, images are not rotated automatically during image review.

| Option | Description |
|---|---|
| **On** | "Tall" (portrait-orientation) pictures are automatically rotated for display in the camera monitor. Pictures taken with **Off** selected for **Auto image rotation** (🕮 382) will be displayed in "wide" (landscape) orientation. |
| **Off** | "Tall" (portrait-orientation) pictures are displayed in "wide" (landscape) orientation. |

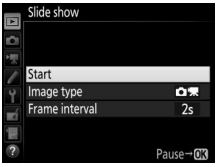
## Slide Show

MENU *button* ➜ ▶ *playback menu*

Create a slide show of the pictures in the current playback folder (🕮 300). Hidden images (🕮 301) are not displayed.

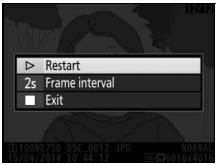
| Option | Description |
|---|---|
| **Start** | Start slide show. |
| **Image type** | Choose type of image displayed from **Still images and movies**, **Still images only**, and **Movies only**. |
| **Frame interval** | Choose how long each picture will be displayed. |

To start the slide show, highlight **Start** and press ⊛. The following operations can be performed while the slide show is in progress:



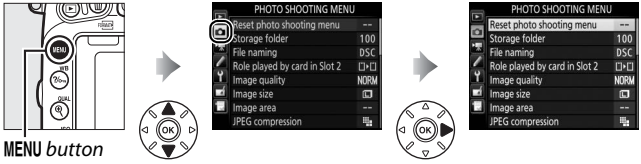

| To | Press | Description |
|---|---|---|
| Skip back/skip ahead | | Press ◀ to return to previous frame, ▶ to skip to next frame. |
| View additional photo info | | Change or hide photo info displayed (still images only; 🕮 246). |
| Pause | ⊛ | Pause slide show. Select **Restart** to resume. |
| Raise/lower volume | ⊕ (**QUAL**)/ ⊖ (**ISO**) | Press ⊕ (**QUAL**) during movie playback to increase volume, ⊖ (**ISO**) to decrease. |
| Exit to playback menu | MENU | End slide show and return to playback menu. |
| Exit to playback mode | ▶ | End show and exit to playback mode. |
| Exit to shooting mode | | Press shutter-release button halfway to return to shooting mode. |

The dialog shown at right is displayed when the show ends. Select **Restart** to restart or **Exit** to return to the playback menu.



# The Photo Shooting Menu: *Photo Shooting Options*

To display the photo shooting menu, press MENU and select the (photo shooting menu) tab.




MENU *button*

## Photo Shooting Menu Options

The photo shooting menu contains the following options:

| Option | 🕮 |
|---|---|
| **Reset photo shooting menu*** | 311 |
| **Storage folder*** | 311 |
| **File naming** | 313 |
| **Role played by card in Slot 2** | 119 |
| **Image quality** | 115 |
| **Image size** | 118 |
| **Image area*** | 110 |
| **JPEG compression** | 117 |
| **NEF (RAW) recording** | 117 |
| **White balance** | 145 |
| **Set Picture Control** | 165 |
| **Manage Picture Control*** | 170 |

| Option | 🕮 |
|---|---|
| **Color space** | 314 |
| **Active D-Lighting** | 175 |
| **HDR (high dynamic range)** | 177 |
| **Vignette control** | 315 |
| **Auto distortion control** | 316 |
| **Long exposure NR** | 317 |
| **High ISO NR** | 317 |
| **ISO sensitivity settings** | 134 |
| **Remote control mode (ML-L3)*** | 193 |
| **Multiple exposure*** | 216 |
| **Interval timer shooting*** | 222 |

* Not included in the settings saved to **U1** or **U2** (🕮 99).

**Note:** Depending on camera settings, some items may be grayed out and unavailable.

## Reset Photo Shooting Menu

MENU *button* ➜ *photo shooting menu*

Select **Yes** to restore photo shooting menu options to their default values (🕮 292).

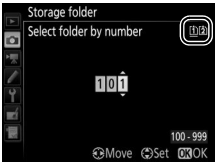
## Storage Folder

MENU *button* ➜ *photo shooting menu*

Select the folder in which subsequent images will be stored.

### ■■ *Selecting Folders by Folder Number*

**1** **Choose Select folder by number.**
Highlight **Select folder by number** and press ▶. The dialog shown at right will be displayed.



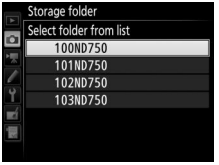

**2** **Choose a folder number.**
Press ◀ or ▶ to highlight a digit, press ▲ or ▼ to change. If a folder with the selected number already exists, a 🗀, 🗁, or 🗀 icon will be displayed to the left of the folder number:
- 🗀 : Folder is empty.
- 🗁 : Folder is partially full.
- 🗀 : Folder contains 999 pictures or a picture numbered 9999. No further pictures can be stored in this folder.

The card on which the folder is stored is shown by the card slot icon in the top right corner of the "select folder by number" dialog. The card used for new folders depends on the option currently selected for **Role played by card in slot 2** (🕮 119).

**3** **Save changes and exit.**
Press ⓚ to complete the operation and return to the main menu (to exit without choosing the storage folder, press the MENU button). If a folder with the specified number does not already exist, a new folder will be created. Subsequent photographs will be stored in the selected folder unless it is already full.

### ■■ *Selecting Folders from a List*

**1** **Choose Select folder from list.**
Highlight **Select folder from list** and press ▶.




**2** **Highlight a folder.**
Press ▲ or ▼ to highlight a folder.

**3** **Select the highlighted folder.**
Press ⓚ to select the highlighted folder and return to the main menu. Subsequent photographs will be stored in the selected folder.

**Folder and File Numbers**
If the current folder is numbered 999 and contains 999 pictures or a picture numbered 9999, the shutter-release will be disabled and no further photographs can be taken. To continue shooting, create a folder with a number less than 999, or select an existing folder with a number less than 999 and less than 999 images.

**Startup Time**
Additional time may be required for camera startup if the memory card contains a very large number of files or folders.

## File Naming

MENU *button* ➜ *photo shooting menu/movie shooting menu*

Photographs are saved using file names consisting of "DSC_" or, in the case of images that use the Adobe RGB color space, "_DSC", followed by a four-digit number and a three-letter extension (e.g., "DSC_0001.JPG"). The **File naming** option is used to select three letters to replace the "DSC" portion of the file name. For information on editing file names, see page 171.

**Extensions**
The following extensions are used: ".NEF" for NEF (RAW) images, ".JPG" for JPEG images, ".MOV" for movies, and ".NDF" for dust off reference data. In each pair of photographs recorded at image-quality settings of NEF (RAW)+JPEG, the NEF and JPEG images have the same file names but different extensions.

## Color Space

MENU *button* ➜ *photo shooting menu*

The color space determines the gamut of colors available for color reproduction. **sRGB** is recommended for general-purpose printing and display; **Adobe RGB**, with its broader gamut of colors, for professional publication and commercial printing.

**Adobe RGB**

For accurate color reproduction, Adobe RGB images require applications, displays, and printers that support color management.

**Color Space**

ViewNX 2 (supplied) and Nikon's Capture NX-D software (🕮 268) automatically select the correct color space when opening photographs created with this camera. Results can not be guaranteed with third-party software.

## Vignette Control

MENU *button* ➜ *photo shooting menu*

"Vignetting" is a drop in brightness at the edges of a photograph. **Vignette control** reduces vignetting for type G, E, and D lenses (PC lenses excluded). Its effects vary from lens to lens and are most noticeable at maximum aperture. Choose from **High**, **Normal**, **Low**, and **Off**.

**Vignette Control**

Depending on the scene, shooting conditions, and type of lens, JPEG images may exhibit noise (fog) or variations in peripheral brightness, while custom Picture Controls and preset Picture Controls that have been modified from default settings may not produce the desired effect. Take test shots and view the results in the monitor. Vignette control does not apply to movies (🕮 66), multiple exposures (🕮 216), or pictures taken with an FX lens and **DX (24 × 16)** selected for **Image area** > **Choose image area** (🕮 111) or with a DX lens, an option other than **DX (24 × 16)** selected for **Choose image area**, and **Off** selected for **Image area** > **Auto DX crop** (🕮 111).

## Auto Distortion Control

MENU *button* ➜ *photo shooting menu*

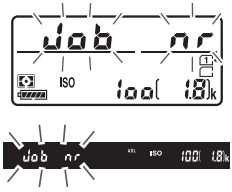
Select **On** to reduce barrel distortion when shooting with wide-angle lenses and to reduce pin-cushion distortion when shooting with long lenses (note that the edges of the area visible in the viewfinder may be cropped out of the final photograph, and that the time needed to process photographs before recording begins may increase). This option does not apply to movies and is available only with type G, E, and D lenses (PC, fisheye, and certain other lenses excluded); results are not guaranteed with other lenses. Before using auto distortion control with DX lenses, select **On** for **Auto DX crop** or choose an image area of **DX (24×16)** as described on page 110; selecting other options may result in heavily cropped photographs or in photographs with severe peripheral distortion.

**Retouch: Distortion Control**

For information on creating copies of existing photographs with reduced barrel and pin-cushion distortion, see page 412.

## Long Exposure NR *(Long Exposure Noise Reduction)*

MENU *button* ➜ *photo shooting menu*




If **On** is selected, photographs taken at shutter speeds slower than 1 s will be processed to reduce noise (bright spots, randomly-spaced bright pixels, or fog). The time required for processing roughly doubles; during processing, "Job nr" will flash in the shutter speed/aperture displays and pictures can not be taken (if the camera is turned off before processing is complete, the picture will be saved but noise reduction will not be performed). In continuous release mode, frame rates will slow and while photographs are being processed, the capacity of the memory buffer will drop.

## High ISO NR

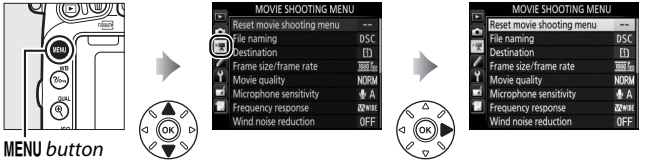
MENU *button* ➜ *photo shooting menu*/*movie shooting menu*

Photographs and movies taken at high ISO sensitivities can be processed to reduce "noise."

| Option | Description |
|---|---|
| **High** | Reduce noise (randomly-spaced bright pixels), particularly in photographs and movies taken at high ISO sensitivities. Choose the amount of noise reduction performed from **High**, **Normal**, and **Low**. |
| **Normal** | |
| **Low** | |
| **Off** | Noise reduction is performed only as required and never at an amount higher than when **Low** is selected. |

# The Movie Shooting Menu: *Movie Shooting Options*

To display the movie shooting menu, press MENU and select the (movie shooting menu) tab.




MENU *button*

## Movie Shooting Menu Options

The movie shooting menu contains the following options:

| Option | 🕮 |
|---|---|
| **Reset movie shooting menu*** | 318 |
| **File naming** | 313 |
| **Destination** | 319 |
| **Frame size/frame rate** | 319 |
| **Movie quality** | 320 |
| **Microphone sensitivity** | 320 |
| **Frequency response** | 320 |
| **Wind noise reduction** | 321 |

| Option | 🕮 |
|---|---|
| **Image area*** | 76 |
| **White balance** | 321 |
| **Set Picture Control** | 321 |
| **Manage Picture Control*** | 170 |
| **High ISO NR** | 317 |
| **Movie ISO sensitivity settings** | 322 |
| **Time-lapse photography*** | 229 |

* Not included in the settings saved to **U1** or **U2** (🕮 99).

**Note:** Depending on camera settings, some items may be grayed out and unavailable.

### Reset Movie Shooting Menu

MENU *button* ➜ *movie shooting menu*

Select **Yes** to restore movie shooting menu options to their default values (🕮 294).

## Destination

MENU *button* ➜ *movie shooting menu*

Choose the slot to which movies are recorded. The menu shows the time available on each card; recording ends automatically when no time remains.

## Frame Size/Frame Rate

MENU *button* ➜ *movie shooting menu*

Choose from the following options:

| Option [1] | Maximum bit rate (Mbps) (★ high quality/ normal [2]) | Maximum length (★ high quality/ normal [2]) |
|---|---|---|
| 1080 P 60 / 1080 P 60 **1920 × 1080; 60p** | 42/24 | 10 min./20 min. |
| 1080 P 50 / 1080 P 50 **1920 × 1080; 50p** | | |
| 1080 P 30 / 1080 P 30 **1920 × 1080; 30p** | 24/12 | 20 min./29 min. 59 s |
| 1080 P 25 / 1080 P 25 **1920 × 1080; 25p** | | |
| 1080 P 24 / 1080 P 24 **1920 × 1080; 24p** | | |
| 720 P 60 / 720 P 60 **1280 × 720; 60p** | | |
| 720 P 50 / 720 P 50 **1280 × 720; 50p** | | |

1 Listed values. Actual frame rates for 60p, 50p, 30p, 25p, and 24p are 59.94, 50, 29.97, 25, and 23.976 fps respectively.

2 See page 320.

**Frame Size and Rate**

Frame size and rate affect the distribution and amount of noise (randomly-spaced bright pixels, fog, or bright spots).

## Movie Quality

MENU *button* ➜ *movie shooting menu*

Together with **Frame size/frame rate** (🕮 319), **Movie quality** determines the movie recording bit rate and maximum length. Choose from **High quality** and **Normal**.

## Microphone Sensitivity

MENU *button* ➜ *movie shooting menu*

Turn the built-in or optional stereo microphones on or off or adjust microphone sensitivity. Choose **Auto sensitivity** to adjust sensitivity automatically, **Microphone off** to turn sound recording off; to select microphone sensitivity manually, select **Manual sensitivity** and choose a sensitivity.

**The Icon**

is displayed during playback if the movie was recorded without sound.

## Frequency Response

MENU *button* ➜ *movie shooting menu*

If **WIDE** **Wide range** is selected, the built-in and optional stereo microphones (🕮 73) will respond to a wide range of frequencies, from music to the bustling hum of a city street. Choose **VOICE** **Vocal range** to bring out human voices.

## Wind Noise Reduction

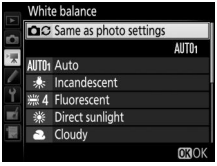
MENU *button* ➜ *movie shooting menu*

Select **On** to enable the low-cut filter for the built-in microphone (optional stereo microphones are unaffected), reducing noise produced by wind blowing over the microphone (note that other sounds may also be affected). Wind-noise reduction for optional stereo microphones can be enabled or disabled using microphone controls.

## White Balance

MENU *button* ➜ *movie shooting menu*

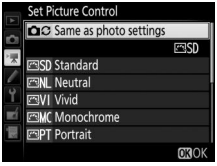
Choose the white balance for movies (🕮 145). Select **Same as photo settings** to use the option currently selected for photos.




## Set Picture Control

MENU *button* ➜ *movie shooting menu*

Choose a Picture Control for movies (🕮 165). Select **Same as photo settings** to use the option currently selected for photos.



## Movie ISO Sensitivity Settings

MENU *button* ➜ *movie shooting menu*

Adjust the following ISO sensitivity settings:

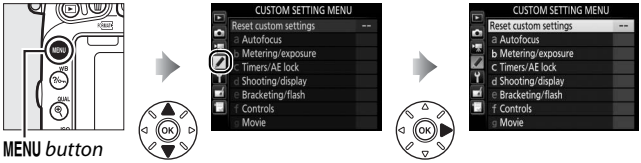
- **ISO sensitivity (mode M)**: Choose the ISO sensitivity for mode **M** from values between ISO 100 and Hi 2. Auto ISO sensitivity control is used in other shooting modes.
- **Auto ISO control (mode M)**: Select **On** for auto ISO sensitivity control in mode **M**, **Off** to use the value selected for **ISO sensitivity (mode M)**.
- **Maximum sensitivity**: Choose the upper limit for auto ISO sensitivity control from values between ISO 200 and Hi 2. Auto ISO sensitivity control is used in modes **P**, **S**, and **A** and when **On** is selected for **Auto ISO control (mode M)** in exposure mode **M**.

**Auto ISO Sensitivity Control**

At high ISO sensitivities, the camera may have difficulty focusing and noise (randomly-spaced bright pixels, fog, or lines) may increase. This can be prevented by choosing a lower value for **Movie ISO sensitivity settings** > **Maximum sensitivity**.

# Custom Settings: *Fine-Tuning Camera Settings*

To display the Custom Settings menu, press **MENU** and select the ✎ (Custom Settings menu) tab.

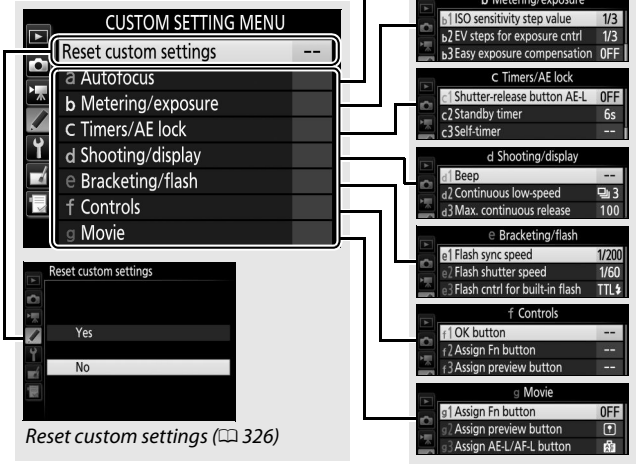



**MENU** *button*

Custom Settings are used to customize camera settings to suit individual preferences.

*Custom Setting groups*

*Main menu*




*Reset custom settings* (🕮 326)

## Custom Settings

The following Custom Settings are available:

| | Custom Setting | 🕮 |
|---|---|---|
| | **Reset custom settings** | 326 |
| **a** | **Autofocus** | |
| a1 | AF-C priority selection | 326 |
| a2 | AF-S priority selection | 327 |
| a3 | Focus tracking with lock-on | 328 |
| a4 | Focus point illumination | 329 |
| a5 | AF point illumination | 329 |
| a6 | Focus point wrap-around | 330 |
| a7 | Number of focus points | 330 |
| a8 | Store points by orientation | 331 |
| a9 | Built-in AF-assist illuminator | 332 |
| **b** | **Metering/exposure** | |
| b1 | ISO sensitivity step value | 333 |
| b2 | EV steps for exposure cntrl | 333 |
| b3 | Easy exposure compensation | 334 |
| b4 | Matrix metering | 335 |
| b5 | Center-weighted area | 335 |
| b6 | Fine-tune optimal exposure | 336 |
| **c** | **Timers/AE lock** | |
| c1 | Shutter-release button AE-L | 336 |
| c2 | Standby timer | 336 |
| c3 | Self-timer | 337 |
| c4 | Monitor off delay | 337 |
| c5 | Remote on duration (ML-L3) | 337 |
| **d** | **Shooting/display** | |
| d1 | Beep | 338 |
| d2 | Continuous low-speed | 338 |
| d3 | Max. continuous release | 339 |
| d4 | Exposure delay mode | 339 |
| d5 | Flash warning | 339 |
| d6 | File number sequence | 340 |
| d7 | Viewfinder grid display | 341 |
| d8 | Easy ISO | 341 |

| | Custom Setting | 🕮 |
|---|---|---|
| **d** | **Shooting/display** | |
| d9 | Information display | 341 |
| d10 | LCD illumination | 342 |
| d11 | MB-D16 battery type | 343 |
| d12 | Battery order | 344 |
| **e** | **Bracketing/flash** | |
| e1 | Flash sync speed | 345 |
| e2 | Flash shutter speed | 346 |
| e3 | Flash cntrl for built-in flash | 347 |
| e4 | Exposure comp. for flash | 353 |
| e5 | Modeling flash | 353 |
| e6 | Auto bracketing set | 353 |
| e7 | Bracketing order | 354 |
| **f** | **Controls** | |
| f1 | OK button | 354 |
| f2 | Assign Fn button | 356 |
| f3 | Assign preview button | 361 |
| f4 | Assign AE-L/AF-L button | 361 |
| f5 | Customize command dials | 363 |
| f6 | Release button to use dial | 365 |
| f7 | Slot empty release lock | 365 |
| f8 | Reverse indicators | 366 |
| f9 | Assign movie record button | 366 |
| f10 | Assign MB-D16 Fn button | 367 |
| f11 | Assign remote (WR) Fn button | 368 |
| **g** | **Movie** | |
| g1 | Assign Fn button | 370 |
| g2 | Assign preview button | 372 |
| g3 | Assign AE-L/AF-L button | 373 |
| g4 | Assign shutter button | 373 |

**Note**: Depending on camera settings, some items may be grayed out and unavailable. If settings in the current bank have been modified from default values (🕮 295), an asterisk will be displayed adjacent to the altered settings in the second level of the Custom Settings menu.

### Reset Custom Settings

MENU *button* ➜ *Custom Settings menu*

Select **Yes** to restore Custom Settings to their default values (🕮 295).

## a: Autofocus

### a1: AF-C Priority Selection

MENU *button* ➜ *Custom Settings menu*

When **AF-C** is selected for viewfinder photography (🕮 121), this option controls whether photographs can be taken whenever the shutter-release button is pressed (*release priority*) or only when the camera is in focus (*focus priority*).

| Option | Description |
|---|---|
| **Release** | Photos can be taken whenever the shutter-release button is pressed. |
| **Focus** | Photos can only be taken when the in-focus indicator (●) is displayed. |

Regardless of the option selected, focus will not lock when **AF-C** is selected for autofocus mode. The camera will continue to adjust focus until the shutter is released.

## a2: AF-S Priority Selection

MENU *button* ➜ *Custom Settings menu*

When **AF-S** is selected for viewfinder photography (🕮 121), this option controls whether photographs can be taken only when the camera is in focus (*focus priority*) or whenever the shutter-release button is pressed (*release priority*).

| Option | Description |
|---|---|
| **Release** | Photos can be taken whenever the shutter-release button is pressed. |
| **Focus** | Photos can only be taken when the in-focus indicator (●) is displayed. |

Regardless of the option selected, if the in-focus indicator (●) is displayed when **AF-S** is selected for autofocus mode, focus will lock while the shutter-release button is pressed halfway. Focus lock continues until the shutter is released.

## a3: Focus Tracking with Lock-On

MENU *button* ➜ *Custom Settings menu*

This option controls how autofocus adjusts to sudden large changes in the distance to the subject when **AF-C** is selected or continuous-servo autofocus is selected when the camera is in **AF-A** mode for viewfinder photography (🕮 121).

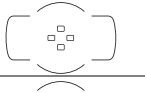
| Option | Description |
|---|---|
| AF **5 (Long)** | When the distance to the subject changes abruptly, the camera waits for the specified period before adjusting the distance to the subject. This prevents the camera from refocusing when the subject is briefly obscured by objects passing through the frame. Note that **2**, **1 (Short)**, and **Off** are equivalent to **3 (Normal)** when 3D-tracking or auto-area AF is selected for AF-area mode. |
| AF **4** | |
| AF **3 (Normal)** | |
| AF **2** | |
| AF **1 (Short)** | |
| **Off** | The camera immediately adjusts focus when the distance to the subject changes. Use when photographing a series of subjects at varying distances in quick succession. |

## a4: Focus Point Illumination

MENU *button* ➜ *Custom Settings menu*

Choose from the following focus point display options.

| Option | Description |
|---|---|
| **Manual focus mode** | Choose **On** to display the active focus point in manual focus mode, **Off** to display the focus point only during focus point selection. |
| **Dynamic-area AF display** | Choose **On** to display both the selected focus point and the surrounding focus points in dynamic-area AF mode (🕮 123). When 3D-tracking is used, a dot will be displayed in the center of the focus point (⊡). Select **Off** to display only the selected focus point. |
| **Group-area AF illumination** | Choose how the active focus points are displayed in group-area AF (🕮 124). |

| Option | Focus point display |
|---|---|
| ✣ |  |
| ⁘ | |

## a5: AF Point Illumination

MENU *button* ➜ *Custom Settings menu*

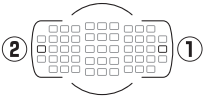
Choose whether the active focus point is highlighted in red in the viewfinder.

| Option | Description |
|---|---|
| **Auto** | The selected focus point is automatically highlighted as needed to establish contrast with the background. |
| **On** | The selected focus point is always highlighted, regardless of the brightness of the background. Depending on the brightness of the background, the selected focus point may be difficult to see. |
| **Off** | The selected focus point is not highlighted. |

## a6: Focus Point Wrap-Around

MENU *button* ➜ *Custom Settings menu*

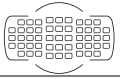
Choose whether focus-point selection "wraps around" from one edge of the viewfinder to another.

| Option | Description |
|---|---|
| **Wrap** | Focus-point selection "wraps around" from top to bottom, bottom to top, right to left, and left to right, so that, for example, pressing ⊕ when a focus point at the right edge of the display is highlighted (①) selects the corresponding focus point at the left edge of the display (②).   |
| **No wrap** | The focus-point display is bounded by the outermost focus points so that, for example, pressing ⊕ when a focus point at the right edge of the display is selected has no effect. |

## a7: Number of Focus Points

MENU *button* ➜ *Custom Settings menu*

Choose the number of focus points available for manual focus-point selection.

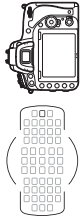
| Option | Description |
|---|---|
| AF51 **51 points** | Choose from the 51 focus points shown at right.  |
| AF11 **11 points** | Choose from the 11 focus points shown at right. Use for quick focus-point selection. |

## a8: Store Points by Orientation

MENU *button* ➜ *Custom Settings menu*

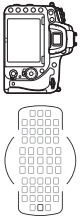
Choose whether separate focus points can be selected for "wide" (landscape) orientation, for "tall" (portrait) orientation with the camera rotated 90 ° clockwise, and for "tall" orientation with the camera rotated 90 ° counterclockwise.

Select **No** to use the same focus point regardless of camera orientation.



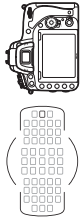
*Camera rotated 90 ° counter-clockwise*

*Landscape (wide) orientation*



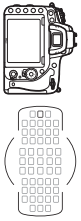
*Camera rotated 90 ° clockwise*

Choose **Yes** to enable separate focus-point selection.



*Camera rotated 90 ° counter-clockwise*

*Landscape (wide) orientation*

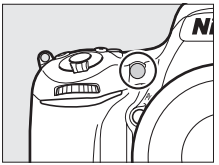


*Camera rotated 90 ° clockwise*

## a9: Built-in AF-assist Illuminator

MENU *button* ➜ *Custom Settings menu*

Choose whether the built-in AF-assist illuminator lights to assist the focus operation when lighting is poor.



| Option | Description |
|---|---|
| **On** | The AF-assist illuminator lights when lighting is poor (viewfinder photography only). AF-assist illumination is only available when both of the following conditions are met:<br>1. **AF-S** is selected for autofocus mode (🕮 121) or single-servo autofocus is selected when the camera is in **AF-A** mode.<br>2. Auto-area AF is chosen for AF-area mode (🕮 123), or an option other than auto-area AF is chosen and the center focus point is selected. |
| **Off** | The AF-assist illuminator does not light to assist the focus operation. The camera may not be able to focus using autofocus when lighting is poor. |

**The AF-Assist Illuminator**

The AF-assist illuminator has a range of about 0.5–3.0 m (1 ft 8 in.–9 ft 10 in.); when using the illuminator, remove the lens hood.

## b: Metering/Exposure

### b1: ISO Sensitivity Step Value

MENU *button* ➜ *Custom Settings menu*

Select the increments used when making adjustments to ISO sensitivity (🕮 134). If possible, the current ISO sensitivity setting is maintained when the step value is changed. If the current setting is not available at the new step value, ISO sensitivity will be rounded to the nearest available setting.

### b2: EV Steps for Exposure Cntrl

MENU *button* ➜ *Custom Settings menu*

Select the increments used when making adjustments to shutter speed, aperture, exposure and flash compensation, and bracketing.

## b3: Easy Exposure Compensation

MENU *button* ➜ *Custom Settings menu*

This option controls whether the ⊠ button is needed to set exposure compensation (🕮 143). If **On (Auto reset)** or **On** is selected, the 0 at the center of the exposure display will flash even when exposure compensation is set to ±0.

| Option | Description |
|---|---|
| **On (Auto reset)** | Exposure compensation is set by rotating one of the command dials (see note below). The setting selected using the command dial is reset when the camera turns off or the standby timer expires (exposure compensation settings selected using the ⊠ button are not reset). |
| **On** | As above, except that the exposure compensation value selected using the command dial is not reset when the camera turns off or the standby timer expires. |
| **Off** | Exposure compensation is set by pressing the ⊠ button and rotating the main command dial. |

**Change Main/Sub**

The dial used to set exposure compensation when **On (Auto reset)** or **On** is selected for Custom Setting b3 (**Easy exposure compensation**) depends on the option selected for Custom Setting f5 (**Customize command dials**) > **Change main/sub** (🕮 363).

| | | Customize command dials > Change main/sub | |
|---|---|---|---|
| | | Off | On |
| Mode | P | Sub-command dial | Sub-command dial |
| | S | Sub-command dial | Main command dial |
| | A | Main command dial | Sub-command dial |
| | M | N/A | |

**Easy ISO**

Custom Setting b3 (**Easy exposure compensation**) can not be used with Custom Setting d8 (**Easy ISO**, 🕮 341). Adjustments to either of these items reset the remaining item; a message is displayed when the item is reset.

## b4: Matrix Metering

MENU *button* ➜ *Custom Settings menu*

Choose **ON Face detection on** to enable face detection when shooting portraits with matrix metering during viewfinder photography (🕮 139).

## b5: Center-Weighted Area

MENU *button* ➜ *Custom Settings menu*

When calculating exposure, center-weighted metering assigns the greatest weight to a circle in the center of the frame. The diameter (ϕ) of this circle can be set to 8, 12, 15, or 20 mm or to the average of the entire frame.

Note that when a non-CPU lens is used, the area assigned the greatest weight for center-weighted metering is equivalent to a circle with a diameter of 12 mm, regardless of the setting selected for **Non-CPU lens data** in the setup menu (🕮 235).

### b6: Fine-tune Optimal Exposure

MENU *button* ➜ *Custom Settings menu*

Use this option to fine-tune the exposure value selected by the camera. Exposure can be fine-tuned separately for each metering method by from +1 to –1 EV in steps of ⅙ EV.

**Fine-Tuning Exposure**

Exposure fine-tuning is not affected by two-button resets. Note that as the exposure compensation (⊠) icon is not displayed, the only way to determine how much exposure has been altered is to view the amount in the fine-tuning menu. Exposure compensation (🕮 143) is preferred in most situations.

## c: Timers/AE Lock

### c1: Shutter-Release Button AE-L

MENU *button* ➜ *Custom Settings menu*

If **On** is selected, exposure will lock when the shutter-release button is pressed halfway.

### c2: Standby timer

MENU *button* ➜ *Custom Settings menu*

Choose how long the camera continues to meter exposure when no operations are performed. The shutter-speed and aperture displays in the control panel and viewfinder turn off automatically when the standby timer expires.

Choose a shorter standby timer delay for longer battery life.

## c3: Self-Timer

MENU *button* ➜ *Custom Settings menu*

Choose the length of the shutter release delay, the number of shots taken, and the interval between shots in self-timer mode (🕮 106).

- **Self-timer delay**: Choose the length of the shutter-release delay.
- **Number of shots**: Press ◔ and ◒ to choose the number of shots taken each time the shutter-release button is pressed.
- **Interval between shots**: Choose the interval between shots when the **Number of shots** is more than 1.

## c4: Monitor off Delay

MENU *button* ➜ *Custom Settings menu*

Choose how long the monitor remains on when no operations are performed during playback (**Playback**; defaults to 10 s) and image review (**Image review**; defaults to 4 s), when menus (**Menus**; defaults to 1 minute) or information (**Information display**; defaults to 10 s) are displayed, or during live view and movie recording (**Live view**; defaults to 10 minutes). Choose a shorter monitor-off delay for longer battery life.

## c5: Remote on Duration (ML-L3)

MENU *button* ➜ *Custom Settings menu*

Choose how long the camera will remain on stand-by in remote release mode (🕮 193). If no operations are performed for the selected period, remote shooting will end and **Off** will automatically be selected for **Remote control mode (ML-L3)** in the photo shooting menu. Choose shorter times for longer battery life.

## d: Shooting/Display

### d1: Beep

MENU *button* ➜ *Custom Settings menu*

Choose the pitch and volume of the beep that sounds when the camera focuses using single-servo AF (**AF-S** or when single-servo AF is selected for **AF-A**; 🕮 121), when focus locks during live view photography, while the release timer is counting down in self-timer and delayed remote release modes (🕮 193), when a photograph is taken in quick-response remote or remote mirror-up mode (🕮 193), when time-lapse photography ends (🕮 229), or if you attempt to take a photograph when the memory card is locked (🕮 33).

- **Volume**: Choose **3** (high), **2** (medium), **1** (low) or **Off** (mute). When an option other than **Off** is selected, ♪ appears in the information display.
- **Pitch**: Choose **High** or **Low**.

**Beep**

Note that regardless of the option selected, a beep will not sound when the camera focuses in movie live view (🕮 66) or quiet-shutter release modes (modes **Q** and **Qc**; 🕮 103).

### d2: Continuous Low-Speed

MENU *button* ➜ *Custom Settings menu*

Choose the maximum frame advance rate in **CL** (continuous low speed) mode (🕮 103).

## d3: Max. Continuous Release

MENU *button* ➜ *Custom Settings menu*

The maximum number of shots that can be taken in a single burst in continuous mode can be set to any value between 1 and 100. Note that this setting has no effect at shutter speeds of 4 s or slower.

**The Memory Buffer**

Regardless of the option selected for Custom Setting d3, shooting will slow when the memory buffer fills (). See page 492 for more information on the capacity of the memory buffer.

## d4: Exposure Delay Mode

MENU *button* ➜ *Custom Settings menu*

In situations where the slightest camera movement can blur pictures, select **1 s**, **2 s**, or **3 s** to delay shutter release until one, two, or three seconds after the mirror is raised.

## d5: Flash Warning

MENU *button* ➜ *Custom Settings menu*

If **On** is selected, the flash-ready indicator () will flash in the viewfinder if the flash is required to ensure optimal exposure.

## d6: File Number Sequence

MENU *button* ➜ *Custom Settings menu*

When a photograph is taken, the camera names the file by adding one to the last file number used. This option controls whether file numbering continues from the last number used when a new folder is created, the memory card is formatted, or a new memory card is inserted in the camera.

| Option | Description |
|---|---|
| **On** | When a new folder is created, the memory card formatted, or a new memory card inserted in the camera, file numbering continues from the last number used or from the largest file number in the current folder, whichever is higher. If a photograph is taken when the current folder contains a photograph numbered 9999, a new folder will be created automatically and file numbering will begin again from 0001. |
| **Off** | File numbering is reset to 0001 when a new folder is created, the memory card is formatted, or a new memory card is inserted in the camera. Note that a new folder is created automatically if a photograph is taken when the current folder contains 999 photographs. |
| **Reset** | As for **On**, except that the next photograph taken is assigned a file number by adding one to the largest file number in the current folder. If the folder is empty, file numbering is reset to 0001. |

**File Number Sequence**

If the current folder is numbered 999 and contains either 999 photographs or a photograph numbered 9999, the shutter-release button will be disabled and no further photographs can be taken. Choose **Reset** for Custom Setting d6 (**File number sequence**) and then either format the current memory card or insert a new memory card.

## d7: Viewfinder Grid Display

MENU *button* ➜ *Custom Settings menu*

Choose **On** to display on-demand grid lines in the viewfinder for reference when composing photographs (🕮 10).

## d8: Easy ISO

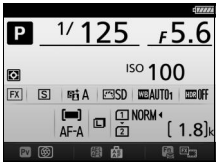
MENU *button* ➜ *Custom Settings menu*

If **On** is selected, ISO sensitivity can be set in modes **P** and **S** by rotating the sub-command dial or in mode **A** by rotating the main command dial. Select **Off** to set ISO sensitivity by pressing the ⊡ (**ISO**) button and rotating the main command dial.

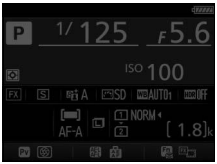
## d9: Information Display

MENU *button* ➜ *Custom Settings menu*

If **Auto** (AUTO) is selected, the color of the lettering in the information display (🕮 12) will automatically change from black to white or white to black to maintain contrast with the background. To always use the same color lettering, select **Manual** and choose **Dark on light** (B; black lettering) or **Light on dark** (W; white lettering).




*Dark on light*




*Light on dark*

## d10: LCD Illumination

MENU *button* ➜ *Custom Settings menu*

If **Off** is selected, the control panel backlight (LCD illuminator) will only light while the power switch is rotated toward ☀. If **On** is selected, the control panel will be illuminated whenever the standby timer is active (🕮 39). Select **Off** for increased battery life.

## d11: MB-D16 Battery Type

MENU *button* ➜ *Custom Settings menu*

To ensure that the camera functions as expected when the optional MB-D16 battery pack is used with AA batteries, match the option selected in this menu to the type of batteries inserted in the battery pack. There is no need to adjust this option when using EN-EL15 batteries.

| Option | Description |
|---|---|
| LR6 **LR6 (AA alkaline)** | Select when using LR6 alkaline AA batteries. |
| Ni-MH **HR6 (AA Ni-MH)** | Select when using HR6 Ni-MH AA batteries. |
| FR6 **FR6 (AA lithium)** | Select when using FR6 lithium AA batteries. |

**Using AA Batteries**

The capacity of AA batteries drops sharply at temperatures below 20 °C (68 °F) and varies with make and storage conditions; in some cases, batteries may cease to function before their expiry date. Some AA batteries can not be used; due to their performance characteristics and limited capacity, alkaline batteries have less capacity than some other types and should only be used if no alternative is available and then only at warmer temperatures. The camera shows the level of AA batteries as follows:

| Control panel | Viewfinder | Description |
|---|---|---|
|  | — | Batteries fully charged. |
| | | Low battery. Ready fresh batteries. |
| (flashes) | (flashes) | Shutter release disabled. Change batteries. |

## d12: Battery Order

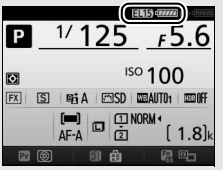
MENU *button* ➜ *Custom Settings menu*

Choose whether the battery in the camera or the batteries in the battery pack are used first when an optional MB-D16 battery pack is attached. Note that if the MB-D16 is powered by an optional AC adapter and power connector, the AC adapter will be used regardless of the option selected.

**The MB-D16 Battery Pack**

The MB-D16 takes one EN-EL15 rechargeable Li-ion battery or six AA alkaline, Ni-MH, or lithium batteries (an EN-EL15 is supplied with the camera; AA batteries are available separately).

The information display shows the type of battery inserted in the MB-D16 as follows:




| MB-D16 battery type display | Battery type |
|---|---|
| EL15 | EN-EL15 rechargeable Li-ion battery |
| LR6/AA | LR6 alkaline AA batteries |
| HR6/AA | HR6 Ni-MH AA batteries |
| FR6/AA | FR6 lithium AA batteries |

## e1: Flash Sync Speed

MENU *button* ➜ *Custom Settings menu*

This option controls flash sync speed.

| Option | Description |
|---|---|
| **1/250 s (Auto FP)** | Auto FP high-speed sync is used when a compatible flash unit is attached (🕮 435). If the built-in flash or other flash units are used, shutter speed is set to 1/250 s. When the camera shows a shutter speed of 1/250 s in mode **P** or **A**, auto FP high-speed sync will be activated if the actual shutter speed is faster than 1/250 s. |
| **1/200 s (Auto FP)** | Auto FP high-speed sync is used when a compatible flash unit is attached (🕮 435). If the built-in flash or other flash units are used, shutter speed is set to 1/200 s. When the camera shows a shutter speed of 1/200 s in mode **P** or **A**, auto FP high-speed sync will be activated if the actual shutter speed is faster than 1/200 s. |
| **1/200 s–1/60 s** | Flash sync speed set to selected value. |

**Fixing Shutter Speed at the Flash Sync Speed Limit**

To fix shutter speed at the sync speed limit in mode **S** or **M**, select the next shutter speed after the slowest possible shutter speed (30 s or **- -**). An X (flash sync indicator) will be displayed in the viewfinder and control panel.

**Auto FP High-Speed Sync**

Allows the flash to be used at the highest shutter speed supported by the camera, making it possible to choose the maximum aperture for reduced depth of field even when the subject is backlit in bright sunlight. The information display flash mode indicator shows "FP" when auto FP high-speed sync is active (🕮 440).

### ■■ *Auto FP High-Speed Sync*

When **1/250 s (Auto FP)** or **1/200 s (Auto FP)** is selected for Custom Setting e1 (**Flash sync speed**, 🕮 345), the built-in flash can be used at shutter speeds as fast as 1/250 s or 1/200 s, while compatible optional flash units (🕮 435) can be used at any shutter speed (Auto FP High-Speed Sync).

| Flash sync speed / Shutter speed | 1/250 s (Auto FP) | | 1/200 s (Auto FP) | | 1/200 s | |
|---|---|---|---|---|---|---|
| | Built-in flash | Optional flash unit | Built-in flash | Optional flash unit | Built-in flash | Optional flash unit |
| From 1/4000 to but not including 1/250 s | — | Auto FP | — | Auto FP | — | — |
| From 1/250 to but not including 1/200 s | Flash sync* | | — | Auto FP | — | — |
| 1/200–30 s | Flash sync | | | | | |

* Flash range drops as shutter speed increases. Flash range will nevertheless be greater than that obtained at the same speeds with Auto FP.

## e2: Flash Shutter Speed

MENU *button* ➜ ✎ *Custom Settings menu*

This option determines the slowest shutter speed available when using front- or rear-curtain sync or red-eye reduction in mode **P** or **A** (regardless of the setting chosen, shutter speeds can be as slow as 30 s in **S** and **M** modes or at flash settings of slow sync, slow rear-curtain sync, or red-eye reduction with slow sync).

## e3: Flash Cntrl for Built-in Flash

MENU *button* ➜ *Custom Settings menu*

Choose the flash mode for the built-in flash.

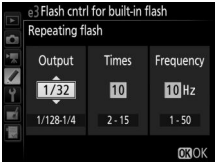
| Option | Description |
|---|---|
| TTL **TTL** | Flash output is adjusted automatically in response to shooting conditions. |
| M **Manual** | Choose the flash level (🕮 347). The camera does not emit monitor pre-flashes. |
| RPT **Repeating flash** | The flash fires repeatedly while the shutter is open, producing a strobe-light effect (🕮 347). |
| CMD **Commander mode** | Use the built-in flash as a master flash controlling remote optional flash units in one or more groups (🕮 348). |

### ■■ *Manual*

Choose a flash level. Flash level is stated in fractions of full power: at full power, the built-in flash has a Guide Number of 12/39 (m/ft, ISO 100, 20°C/68°F).

### ■■ *Repeating Flash*

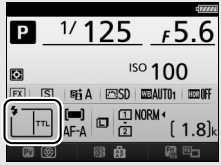
The flash fires repeatedly while the shutter is open, producing a strobe-light effect. Press ◀ or ▶ to highlight the following options, ▲ or ▼ to change.




| Option | Description |
|---|---|
| **Output** | Choose flash output (expressed as a fraction of full power). |
| **Times** | Choose the number of times the flash fires at the selected output. Note that depending on shutter speed and the option selected for **Frequency**, the actual number of flashes may be less than selected. |
| **Frequency** | Choose how often the flash fires per second. |

**Flash Control Mode**

The flash control mode for the built-in flash is shown in the information display (🕮 185).




**"Manual" and "Repeating Flash"**

icons flash in the control panel and viewfinder when these options are selected.

**The SB-500, SB-400, and SB-300**

When an optional SB-500, SB-400, or SB-300 flash unit is attached and turned on, Custom Setting e3 changes to **Optional flash**, allowing the flash control mode for the optional flash unit to be selected from **TTL** and **Manual** (the SB-500 also offers a **Commander mode** option).

**"Times"**

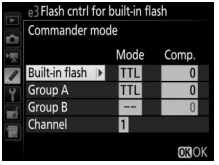
The options available for **Repeating Flash** > **Times** are determined by flash output.

| Output | Options available for "Times" | Output | Options available for "Times" |
|---|---|---|---|
| 1/4 | 2 | 1/32 | 2–10, 15 |
| 1/8 | 2–5 | 1/64 | 2–10, 15, 20, 25 |
| 1/16 | 2–10 | 1/128 | 2–10, 15, 20, 25, 30, 35 |

## ■■ *Commander Mode*

Use the built-in flash as a master flash controlling one or more remote optional flash units in up to two groups (A and B) using advanced wireless lighting (🕮 435).

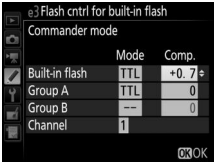
Selecting this option displays the menu shown at right. Press ◀ or ▶ to highlight the following options, ▲ or ▼ to change.



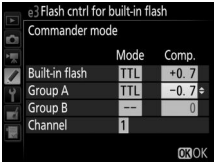
| Option | | Description |
|---|---|---|
| **Built-in flash** | | Choose a flash mode for the built-in flash (commander flash). When an optional SB-500 flash unit is attached, this option changes to **Optional flash** and is used to choose a flash mode for the SB-500. Otherwise this option is identical to **Built-in flash**. |
| | **TTL** | i-TTL mode. Choose flash compensation from values between +3.0 and –3.0 EV in increments of ⅓ EV. |
| | **M** | Choose the flash level. |
| | **– –** | The built-in flash does not fire, although remote flash units do. The built-in flash must be raised so that it can emit monitor pre-flashes. |
| **Group A** | | Choose a flash mode for all flash units in group A. |
| | **TTL** | i-TTL mode. Choose flash compensation from values between +3.0 and –3.0 EV in increments of ⅓ EV. |
| | **AA** | Auto aperture (available only with compatible flash units; 🕮 435). Choose flash compensation from values between +3.0 and –3.0 EV in increments of ⅓ EV. |
| | **M** | Choose the flash level. |
| | **– –** | The flash units in this group do not fire. |
| **Group B** | | Choose a flash mode for all flash units in group B. The options available are the same as those listed for **Group A**, above. |
| **Channel** | | Choose from channels 1–4. All flash units in both groups must be set to the same channel. |

Follow the steps below to take photographs in commander mode.

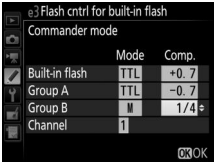
**1 Adjust settings for the built-in flash.**
Choose the flash control mode and output level for the built-in flash. Note that output level can not be adjusted in – – mode.



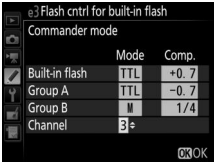

**2 Adjust settings for group A.**
Choose the flash control mode and output level for the flash units in group A.




**3 Adjust settings for group B.**
Choose the flash control mode and output level for the flash units in group B.



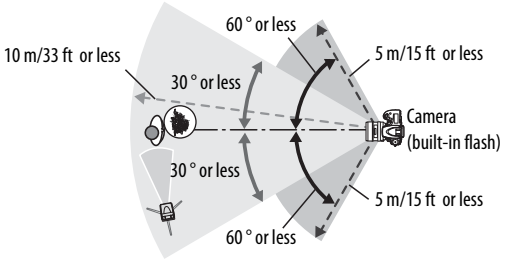

**4 Select the channel.**




**5 Press OK.**

## 6 Compose the shot.

Compose the shot and arrange the flash units as shown below. Note that the maximum distance at which the remote flash units can be placed may vary with shooting conditions.




*Wireless remote sensors on flash units should face camera.*

## 7 Configure the remote flash units.

Turn all the remote flash units on, adjust group settings as desired, and set them to the channel selected in Step 4. See the flash unit instruction manuals for details.

## 8 Raise the built-in flash.

Press the ⚡ (⚡/WB) button to raise the built-in flash. Note that even if **– –** is selected for **Built-in flash** > **Mode**, the built-in flash must be raised so that monitor preflashes will be emitted.

**9 Frame the photograph, focus, and shoot.**
After confirming that the camera flash-ready light and the flash-ready lights for all other flash units are lit, frame the photograph, focus, and shoot. FV lock (🕮 190) can be used if desired.

**The Flash Sync Mode Display**
ϟ does not appear in the information display when **– –** is selected for **Built-in flash** > **Mode**.

**Flash Compensation**
The flash compensation value selected with the ϟ (ϟ) button and sub-command dial is added to the flash compensation values selected for the built-in flash, group A, and group B in the **Commander mode** menu. A ϟ icon is displayed in the control panel and viewfinder when a flash compensation value other than ±0 is selected for the built-in flash or remote flash units in TTL or AA mode. The ϟ icon flashes when the built-in flash is in mode **M**.

**Commander Mode**
Position the sensor windows on the remote flash units to pick up the light from the built-in flash (particular care is required if the camera is not mounted on a tripod). Be sure that direct light or strong reflections from the remote flash units do not enter the camera lens (in TTL mode) or the photocells on the remote flash units (AA mode), as this may interfere with exposure. To prevent timing flashes emitted by the built-in flash from appearing in photographs taken at short range, choose low ISO sensitivities or small apertures (high f-numbers) or use an optional SG-3IR infrared panel for the built-in flash. An SG-3IR is required for best results with rear-curtain sync, which produces brighter timing flashes. After positioning the remote flash units, take a test shot and view the results in the camera monitor.

Although there is no limit on the number of remote flash units that may be used, the practical maximum is three. With more than this number, the light emitted by the remote flash units will interfere with performance.

## e4: Exposure Comp. for Flash

MENU *button* ➜ *Custom Settings menu*

Choose how the camera adjusts flash level when exposure compensation is used.

| Option | Description |
|---|---|
| **Entire frame** | Both flash level and exposure compensation are adjusted to modify exposure over the entire frame. |
| **Background only** | Exposure compensation applies to background only. |

## e5: Modeling Flash

MENU *button* ➜ *Custom Settings menu*

If **On** is selected when the camera is being used with the built-in flash or an optional flash unit that supports the Nikon Creative Lighting system (🕮 435), a modeling flash will be emitted when the camera **Pv** button is pressed (🕮 92). No modeling flash is emitted if **Off** is selected.

## e6: Auto Bracketing Set

MENU *button* ➜ *Custom Settings menu*

Choose the setting or settings bracketed when auto bracketing (🕮 202) is in effect. Choose **AE & flash** (AE⚡) to perform both exposure and flash-level bracketing, **AE only** (AE) to bracket only exposure, **Flash only** (⚡) to perform only flash-level bracketing, **WB bracketing** (WB) to perform white-balance bracketing (🕮 208), or **ADL bracketing** (🖼) to perform bracketing using Active D-Lighting (🕮 212). Note that white balance bracketing is not available at image quality settings of NEF (RAW) or NEF (RAW) + JPEG.

### e7: Bracketing Order

MENU *button* ➜ *Custom Settings menu*

At the default setting of **MTR > under > over** (N), exposure, flash, and white balance bracketing are performed in the order described on pages 204 and 209. If **Under > MTR > over** (−→+) is selected, shooting will proceed in order from the lowest to the highest value. This setting has no effect on ADL bracketing.

## f: Controls

### f1: OK Button

MENU *button* ➜ *Custom Settings menu*

This option determines the role assigned to the OK button during viewfinder photography, playback, and live view (regardless of the option selected, pressing OK when a movie is displayed full frame starts movie playback).

#### ■■ *Shooting Mode*

| Option | Role assigned to OK button |
|---|---|
| RESET **Select center focus point** | Select the center focus point. |
| **Highlight active focus point** | Highlight the active focus point. |
| **None** | Pressing the OK button has no effect in viewfinder photography. |

### ■■ *Playback Mode*

| Option | Role assigned to ⊛ button |
|---|---|
| **Thumbnail on/off** | Toggle between full-frame and thumbnail playback. |
| **View histograms** | In both full-frame and thumbnail playback, a histogram is displayed while the ⊛ button is pressed (🕮 250). |
| **Zoom on/off** | Toggle between full-frame or thumbnail playback and playback zoom. Choose the initial zoom setting from **Low magnification (50%)**, **1 : 1 (100%)**, and **High magnification (200%)**. The zoom display will center on the active focus point. |
| **Choose slot and folder** | Display the slot and folder selection dialog (🕮 245). |

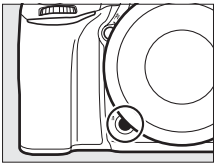
### ■■ *Live View*

| Option | Role assigned to ⊛ button |
|---|---|
| **Select center focus point** | Pressing the ⊛ button in live view selects the center focus point. |
| **Zoom on/off** | Press the ⊛ button to toggle zoom on and off. Choose the initial zoom setting from **Low magnification (50%)**, **1 : 1 (100%)**, and **High magnification (200%)**. The zoom display will center on the active focus point. |
| **None** | Pressing the ⊛ button has no effect in live view. |

## f2: Assign Fn Button

MENU *button* ➜ *Custom Settings menu*

Choose the role played by the **Fn** button, either by itself (**Press**) or when used in combination with the command dials (**Press + command dials**).



### ■ *Press*

Selecting **Press** displays the following options:

| Option | Description |
|---|---|
| **Preview** | During viewfinder photography, you can preview depth of field while the **Fn** button is pressed (🕮 92). During live view photography, you can press the button once to open the lens to maximum aperture, making it easier to check focus; pressing the button again restores aperture to its original value (🕮 56). |
| **FV lock** | Press the **Fn** button to lock flash value (built-in flash and compatible optional flash units only, 🕮 190, 435). Press again to cancel FV lock. |
| **AE/AF lock** | Focus and exposure lock while the **Fn** button is pressed. |
| **AE lock only** | Exposure locks while the **Fn** button is pressed. |
| **AE lock (Hold)** | Exposure locks when the **Fn** button is pressed, and remains locked until the button is pressed a second time or the standby timer expires. |
| **AF lock only** | Focus locks while the **Fn** button is pressed. |
| **AF-ON** | Pressing the **Fn** button initiates autofocus. The shutter-release button can not be used to focus. |
| **Flash off** | The flash will not fire in photos taken while the **Fn** button is pressed. |

| Option | Description |
|---|---|
| BKT **Bracketing burst** | If the **Fn** button is pressed while exposure, flash, or ADL bracketing is active in single frame or quiet shutter-release mode, all shots in the current bracketing program will be taken each time the shutter-release button is pressed. If white balance bracketing is active or continuous release mode (mode **CH**, **CL** or **Qc**) is selected, the camera will repeat the bracketing burst while the shutter-release button is held down. |
| +RAW **+ NEF (RAW)** | If image quality is set to **JPEG fine**, **JPEG normal**, or **JPEG basic**, +RAW will be displayed in the viewfinder and an NEF (RAW) copy will be recorded with the next picture taken after the **Fn** button is pressed (the original image quality setting will be restored when you remove your finger from the shutter-release button). To exit without recording an NEF (RAW) copy, press the **Fn** button again. |
| **Matrix metering** | Matrix metering is activated while the **Fn** button is pressed. |
| **Center-weighted metering** | Center-weighted metering is activated while the **Fn** button is pressed. |
| **Spot metering** | Spot metering is activated while the **Fn** button is pressed. |
| **Highlight-weighted metering** | Highlight-weighted metering is activated while the **Fn** button is pressed. |
| **Viewfinder grid display** | Press the **Fn** button to turn the framing grid display in the viewfinder on or off (🕮 10). |
| **Viewfinder virtual horizon** | Press the **Fn** button to view a virtual horizon display in the viewfinder (🕮 359). |
| **MY MENU** | Pressing the **Fn** button displays "MY MENU" (🕮 421). |

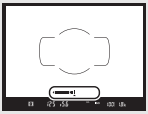
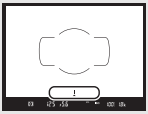
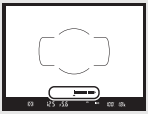
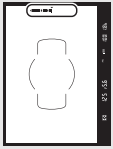
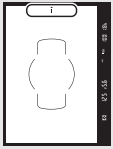
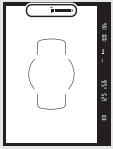
| Option | Description |
|---|---|
| **Access top item in MY MENU** | Press the **Fn** button to jump to the top item in "MY MENU." Select this option for quick access to a frequently-used menu item. |
| **Playback** | **Fn** button performs same function as ▶ button. Select when using a telephoto lens or in other circumstances in which it is difficult to operate the ▶ button with your left hand. |
| **None** | Pressing the button has no effect. |

**Incompatible Options**

If the option selected for **Press** can not be used in combination with the option selected for **Press + command dials**, a message will be displayed and whichever of **Press** or **Press + command dials** was selected first will be set to **None**.

**Viewfinder Virtual Horizon**

When **Viewfinder virtual horizon** is selected for Custom Setting f2 (**Assign Fn button**) > **Press**, pressing the **Fn** button displays a roll indicator in the viewfinder. Press the button a second time to return to clear the indicators from display.

| | Camera tilted right | Camera level | Camera tilted left |
|---|---|---|---|
| **Viewfinder (camera in landscape orientation)** |  |  |  |
| **Viewfinder (camera in portrait orientation)** |  |  |  |

Note that the display may not be accurate when the camera is tilted at a sharp angle forward or back. For a display that shows both pitch and roll, use the **Virtual horizon** option in the setup menu (🕮 388).

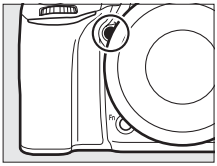
### ■■ *Press + Command Dials*

Selecting **Press + command dials** displays the following options:

| Option | | Description |
|---|---|---|
| FX | **Choose image area** | Keeping the **Fn** button pressed, rotate a command dial to choose an image area (🕮 114). |
| | **1 step spd/ aperture** | If the **Fn** button is pressed when the command dials are rotated, changes to shutter speed (modes **S** and **M**) and aperture (modes **A** and **M**) are made in increments of 1 EV, regardless of the option selected for Custom Setting b2 (**EV steps for exposure cntrl**, 🕮 333). |
| Non-CPU | **Choose non-CPU lens number** | Press the **Fn** button and rotate a command dial to choose a lens number specified using the **Non-CPU lens data** option (🕮 238). |
| | **Active D-Lighting** | Press the **Fn** button and rotate a command dial to adjust Active D-Lighting (🕮 175). |
| HDR | **HDR (high dynamic range)** | Keeping the **Fn** button pressed, rotate the main command dial to choose an **HDR mode**, the sub-command dial to choose **HDR strength** (🕮 178). |
| DLY | **Exposure delay mode** | Press the **Fn** button and rotate a command dial to choose an exposure delay mode (🕮 339). |
| | **None** | No operation is performed when the command dials are rotated while the **Fn** button is pressed. |

## f3: Assign Preview Button

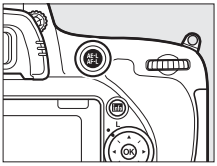
MENU *button* ➜ *Custom Settings menu*



Choose the role played by the **Pv** button, either by itself (**Press**) or when used in combination with the command dials (**Press + command dials**). The options available are the same as for **Assign Fn button** (🕮 356). The default options for **Press** and **Press + command dials** are **Preview** and **None**, respectively.

## f4: Assign AE-L/AF-L Button

MENU *button* ➜ *Custom Settings menu*



Choose the role played by the **AE-L/AF-L** button, either by itself (**Press**) or when used in combination with the command dials (**Press + command dials**).

### ■■ *Press*

Selecting **Press** displays the following options:

| Option | Description |
|---|---|
| **AE/AF lock** | Focus and exposure lock while the **AE-L/AF-L** button is pressed. |
| **AE lock only** | Exposure locks while the **AE-L/AF-L** button is pressed. |
| **AE lock (Hold)** | Exposure locks when the **AE-L/AF-L** button is pressed, and remains locked until the button is pressed a second time or the standby timer expires. |

| Option | | Description |
|---|---|---|
| AF | **AF lock only** | Focus locks while the AE-L/AF-L **AE-L/AF-L** button is pressed. |
| AF-ON | **AF-ON** | The AE-L/AF-L **AE-L/AF-L** button initiates autofocus. The shutter-release button can not be used to focus. |
| ⚡L | **FV lock** | Press the AE-L/AF-L **AE-L/AF-L** button to lock flash value (built-in flash and compatible optional flash units only, 🕮 190, 435). Press again to cancel FV lock. |
| | **None** | Pressing the button has no effect. |

### ■■ *Press + Command Dials*

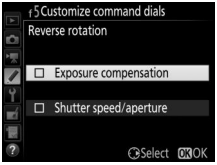
Selecting **Press + command dials** displays the following options:

| Option | | Description |
|---|---|---|
| FX | **Choose image area** | Keeping the AE-L/AF-L **AE-L/AF-L** button pressed, rotate a command dial to choose an image area (🕮 114). |
| Non-CPU | **Choose non-CPU lens number** | Press the AE-L/AF-L **AE-L/AF-L** button and rotate a command dial to choose a lens number specified using the **Non-CPU lens data** option (🕮 238). |
| | **None** | No operation is performed when the command dials are rotated while the AE-L/AF-L **AE-L/AF-L** button is pressed. |

## f5: Customize Command Dials

MENU *button* ➜ *Custom Settings menu*

This option controls the operation of the main and sub-command dials.

| Option | Description |
|---|---|
| **Reverse rotation** | Reverse the direction of rotation of the command dials when they are used to make adjustments to **Exposure compensation** and/or **Shutter speed/aperture**. Highlight options and press ▶ to select or deselect, then press OK. This setting also applies to the command dials for optional MB-D16 multi-power battery packs.   |
| **Change main/sub** | **Exposure setting**: If **Off** is selected, the main command dial controls shutter speed and the sub-command dial controls aperture. If **On** is selected, the main command dial will control aperture and the sub-command dial shutter speed. If **On (Mode A)** is selected, the main command dial will be used to set aperture in shooting mode **A** only.<br>**Autofocus setting**: If **On** is selected, autofocus mode can be selected by keeping the AF-mode button pressed and rotating the sub-command dial, AF-area mode by keeping the AF-mode button pressed and rotating the main command dial.<br>These settings also apply to the command dials for the MB-D16. |

| Option | Description |
|---|---|
| **Aperture setting** | If **Sub-command dial** is selected, aperture can only be adjusted with the sub-command dial (or with the main command dial if **On** is selected for **Change main/sub** > **Exposure setting**). If **Aperture ring** is selected, aperture can only be adjusted with the lens aperture ring and the camera aperture display will show aperture in increments of 1 EV (aperture for type G and E lenses is still set using the sub-command dial). Note that regardless of the setting chosen, the aperture ring must be used to adjust aperture when a non-CPU lens is attached. |
| **Menus and playback** | If **Off** is selected, the multi selector is used to choose the picture displayed during full-frame playback, highlight thumbnails, and navigate menus. If **On** or **On (image review excluded)** is selected, the main command dial can be used to choose the picture displayed during full-frame playback, move the cursor left or right during thumbnail playback, and move the menu highlight bar up or down. The sub-command dial is used in full-frame playback to skip forward or back according to the option selected for **Sub-dial frame advance** and in thumbnail playback to page up or down. While menus are displayed, rotating the sub-command dial right displays the sub-menu for the selected option, while rotating it left displays the previous menu. To make a selection, press ▶ or ⊛. Select **On (image review excluded)** to prevent the command dials from being used for playback during image review. |
| **Sub-dial frame advance** | When **On** or **On (image review excluded)** is selected for **Menus and playback**, the sub-command dial can be rotated during full-frame playback to select a folder or to skip forward or back 10 or 50 frames at a time. |

## f6: Release Button to Use Dial

MENU *button* ➜ *Custom Settings menu*

Selecting **Yes** allows adjustments that are normally made by holding a button and rotating a command dial to be made by rotating the command dial after the button is released. Setting ends when the button is pressed again, the shutter-release button is pressed halfway, or the standby timer expires. This option is available with the following buttons:

| Button | 📖 |
|---|---|
| ± | 143 |
| ⚡ (⚡±) | 180, 182 |
| ⊖ (ISO) | 134 |
| ⊕ (QUAL) | 116, 118 |
| ?/⊶ (WB) | 146, 150, 154, 156, 159 |
| AF mode button | 57, 59, 121, 125 |

| Button | 📖 |
|---|---|
| (FORMAT) | 140 |
| BKT | 202 |
| Fn [1] | 360 |
| Pv [2] | 361 |
| AE-L/AF-L AE-L/AF-L [3] | 362 |
| Movie-record button [4] | 366 |

1 When assigned non-CPU lens number selection, Active D-Lighting, HDR, or exposure delay mode using Custom Setting f2.

2 When assigned non-CPU lens number selection, Active D-Lighting, HDR, or exposure delay mode using Custom Setting f3.

3 When assigned non-CPU lens number selection using Custom Setting f4.

4 When assigned white balance or ISO sensitivity using Custom Setting f9.

## f7: Slot Empty Release Lock

MENU *button* ➜ *Custom Settings menu*

Selecting **Enable release** allows the shutter to be released when no memory card is inserted, although no pictures will be recorded (they will however be displayed in the monitor in demo mode). If **Release locked** is selected, the shutter-release button is only enabled when a memory card is inserted in the camera.

## f8: Reverse Indicators

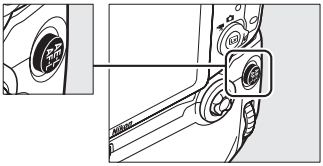
MENU *button* ➜ *Custom Settings menu*

If −◂iiii

## f10: Assign MB-D16 AE-L/AF-L Button

MENU *button* ➜ *Custom Settings menu*

Choose the function assigned to the AE-L/AF-L **AE-L/AF-L** button on the optional MB-D16 battery pack.



| Option | | Description |
|---|---|---|
| AE/AF | **AE/AF lock** | Focus and exposure lock while the MB-D16 AE-L/AF-L **AE-L/AF-L** button is pressed. |
| AE | **AE lock only** | Exposure locks while the MB-D16 AE-L/AF-L **AE-L/AF-L** button is pressed. |
| AE | **AE lock (Hold)** | Exposure locks when the MB-D16 AE-L/AF-L **AE-L/AF-L** button is pressed, and remains locked until the button is pressed a second time or the standby timer expires. |
| AF | **AF lock only** | Focus locks while the MB-D16 AE-L/AF-L **AE-L/AF-L** button is pressed. |
| AF-ON | **AF-ON** | Pressing the MB-D16 AE-L/AF-L **AE-L/AF-L** button initiates autofocus. The shutter-release button can not be used to focus. |
| FL | **FV lock** | Press the MB-D16 AE-L/AF-L **AE-L/AF-L** button to lock flash value (built-in flash and compatible optional flash units only, 🕮 190, 435). Press again to cancel FV lock. |
| Fn | **Same as Fn button** | The MB-D16 AE-L/AF-L **AE-L/AF-L** button performs the same function as the camera **Fn** button (🕮 356). |

## f11: Assign Remote (WR) Fn Button

MENU *button* ➜ *Custom Settings menu*

Choose the role played by the **Fn** button on the wireless remote controller.

| Option | Description |
|---|---|
| **Preview** | During viewfinder photography, you can preview depth of field while the **Fn** button is pressed (🕮 92). During live view photography, you can press the button once to open the lens to maximum aperture, making it easier to check focus; pressing the button again restores aperture to its original value (🕮 56). |
| **FV lock** | Press the **Fn** button to lock flash value (built-in flash and compatible optional flash units only, 🕮 190, 435). Press again to cancel FV lock. |
| **AE/AF lock** | Focus and exposure lock while the **Fn** button is pressed. |
| **AE lock only** | Exposure locks while the **Fn** button is pressed. |
| **AE lock (Hold)** | Exposure locks when the **Fn** button is pressed, and remains locked until the button is pressed a second time or the standby timer expires. |
| **AF lock only** | Focus locks while the **Fn** button is pressed. |
| **Flash off** | The flash will not fire in photos taken while the **Fn** button is pressed. |

| Option | | Description |
|---|---|---|
| +RAW | + NEF (RAW) | If image quality is set to **JPEG fine**, **JPEG normal**, or **JPEG basic**, +RAW will be displayed in the viewfinder and an NEF (RAW) copy will be recorded with the next picture taken after the **Fn** button is pressed (the original image quality setting will be restored when you remove your finger from the shutter-release button). To exit without recording an NEF (RAW) copy, press the **Fn** button again. |
| Lv | **Live view** | Pressing the **Fn** button starts and ends live view. |
| = Fn | **Same as camera Fn button** | The wireless remote controller **Fn** button performs the same function as the camera **Fn** button (🕮 356). |
| = Pv | **Same as camera Pv button** | The wireless remote controller **Fn** button performs the same function as the camera **Pv** button (🕮 361). |
| = AE-L AF-L | **Same as camera AE-L/AF-L button** | The wireless remote controller **Fn** button performs the same function as the camera AE-L AF-L **AE-L/AF-L** button (🕮 361). |
| | **None** | Pressing the button has no effect. |

# g: Movie

## g1: Assign Fn Button

MENU *button* ➜ *Custom Settings menu*

Choose the role played by the **Fn** button during movie live view (the default option is **None**).

### ■■ *Press*

| Option | Description |
|---|---|
| **Power aperture (open)** | Aperture widens while the button is pressed. Use in combination with Custom Setting g2 (**Assign preview button**) > **Power aperture (close)** for button-controlled aperture adjustment (🕮 372). |
| **Index marking** | Press the button during movie recording to add an index at the current position (🕮 70). Indices can be used when viewing and editing movies. |
| **View photo shooting info** | Press the button to display information on shutter speed, aperture, and other photo settings in place of movie recording information. Press again to return to the movie recording display. |
| **AE/AF lock** | Focus and exposure lock while the button is pressed. |
| **AE lock only** | Exposure locks while the button is pressed. |
| **AE lock (Hold)** | Exposure locks when the button is pressed, and remains locked until the button is pressed a second time. |
| **AF lock only** | Focus locks while the button is pressed. |
| **AF-ON** | Pressing the button initiates autofocus. The shutter-release button can not be used to focus. |
| **None** | Pressing the button has no effect. |

**Power Aperture**

Power aperture is not available with some lenses. Power aperture is available only in modes **A** and **M** and can not be used while photo shooting info is displayed (a icon indicates that power aperture can not be used). Turning the camera off or exiting movie live view disables power aperture (note that in the latter case power aperture will remain available until the standby timer has expired).

## g2: Assign Preview Button

MENU *button* ➜ *Custom Settings menu*

Choose the role played by the **Pv** button during movie live view (the default option is **Index marking**).

### ■■ *Press*

| Option | Description |
|---|---|
| **Power aperture (close)** | Aperture narrows while the button is pressed. Use in combination with Custom Setting g1 (**Assign Fn button**) > **Power aperture (open)** for button-controlled aperture adjustment (🕮 370). |
| **Index marking** | Press the button during movie recording to add an index at the current position (🕮 70). Indices can be used when viewing and editing movies. |
| **View photo shooting info** | Press the button to display information on shutter speed, aperture, and other photo settings in place of movie recording information. Press again to return to the movie recording display. |
| **AE/AF lock** | Focus and exposure lock while the button is pressed. |
| **AE lock only** | Exposure locks while the button is pressed. |
| **AE lock (Hold)** | Exposure locks when the button is pressed, and remains locked until the button is pressed a second time. |
| **AF lock only** | Focus locks while the button is pressed. |
| **AF-ON** | Pressing the button initiates autofocus. The shutter-release button can not be used to focus. |
| **None** | Pressing the button has no effect. |

## g3: Assign AE-L/AF-L Button

MENU *button* ➜ *Custom Settings menu*

### ▮▮ *Press*

Choose the role played by the AE-L/AF-L **AE-L/AF-L** button during movie live view. The options available are the same as for **Assign Fn button** (🕮 370), except that **Power aperture (open)** is not available and the default setting is **AE/AF lock**.

## g4: Assign Shutter Button

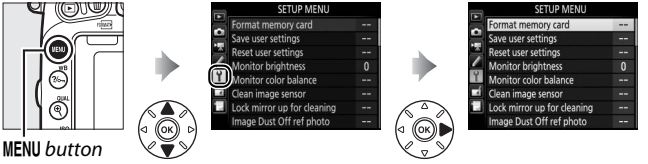
MENU *button* ➜ *Custom Settings menu*

Choose the role played by pressing the shutter-release button when 🎥 is selected with the live view selector.

| Option | Description |
|---|---|
| 📷 **Take photos** | Press the shutter-release button all the way down to end movie recording and take a photograph with an aspect ratio of 16 : 9 (for information on image size, see page 77). |
| 🎥 **Record movies** | Press the shutter-release button halfway to start movie live view. You can then press the shutter-release button halfway to focus (autofocus mode only) and press it all the way down to start or end recording. The shutter-release button can not be used for other purposes during movie live view. To end movie live view, press the Lv button. The shutter-release button on an optional wireless remote controller or remote cord (🕮 443, 444) functions in the same way as the camera shutter-release button; the optional ML-L3 remote control, however, can not be used to record movies; the shutter-release button on the ML-L3 has no effect. |

# The Setup Menu: *Camera Setup*

To display the setup menu, press MENU and select the (setup menu) tab.




MENU *button*

## Setup Menu Options

The setup menu contains the following options:

| Option | 🕮 | Option | 🕮 |
|---|---|---|---|
| **Format memory card** | 375 | **Image comment** | 384 |
| **Save user settings** | 99 | **Copyright information** | 385 |
| **Reset user settings** | 101 | **Save/load settings** | 386 |
| **Monitor brightness** | 376 | **Virtual horizon** | 388 |
| **Monitor color balance** | 377 | **Non-CPU lens data** | 235 |
| **Clean image sensor** | 448 | **AF fine-tune** | 389 |
| **Lock mirror up for cleaning** [1] | 451 | **HDMI** | 278 |
| **Image Dust Off ref photo** | 378 | **Location data** | 239 |
| **Flicker reduction** | 380 | **Wi-Fi** | 282 |
| **Time zone and date** | 381 | **Network** | 269 |
| **Language** | 381 | **Eye-Fi upload** [2] | 391 |
| **Auto image rotation** | 382 | **Conformity marking** | 392 |
| **Battery info** | 383 | **Firmware version** | 392 |

1 Not available when battery is low.

2 Only displayed when compatible Eye-Fi memory card is inserted.

**See Also**

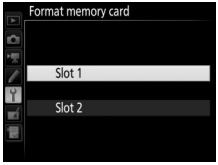
Menu defaults are listed on page 299.

## Format Memory Card

MENU *button* ➜ *setup menu*

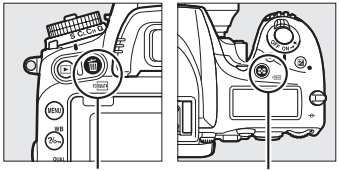
Memory cards must be formatted before first use or after being used or formatted in other devices. *Note that formatting permanently deletes all pictures and other data on the card.* Before formatting, be sure to make backup copies as required (🕮 266).

**During Formatting**
*Do not turn the camera off or remove memory cards during formatting.*

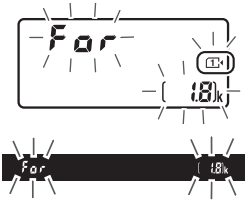



Selecting **Format memory card** in the setup menu displays the options shown at right; choose a memory card slot and select **Yes** to format the selected card.

Memory cards can also be formatted by holding the 🗑 (FORMAT) and ⚙ (FORMAT) buttons down simultaneously until a flashing **For** appears in the shutter-speed displays in the control panel and viewfinder.




🗑 (FORMAT) *button* ⚙ (FORMAT) *button*



Press the buttons together again a second time to format the card (to exit without formatting the card, press any other button or wait for about six seconds until For stops flashing). When formatting is complete, the control panel and viewfinder will show the number of photographs that can be recorded at current settings.

**Two Memory Cards**

If two memory cards are inserted when the 🗑 (FORMAT) and ⊞ (FORMAT) buttons are pressed, the card to be formatted will be shown by a flashing icon. Rotate the main command dial to choose a different slot.

## Monitor Brightness

MENU *button* ➜ Y *setup menu*

Press ⊕ or ⊖ to choose monitor brightness for playback, menus, and the information display. Choose higher values for increased brightness, lower values for reduced brightness.

**Monitor Brightness**

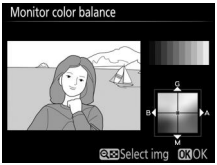
Values of **+4** or higher make the monitor easier to read in bright light but also result in yellow colors taking on a greenish cast. Choose lower values for accurate color reproduction.

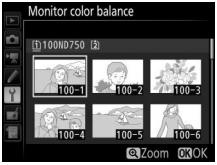
**See Also**

The option selected for **Monitor brightness** has no effect on the brightness of the display during live view photography or movie live view. For information on adjusting monitor brightness in live view, see page 62.

## Monitor Color Balance

MENU *button* ➜ *setup menu*




Use the multi selector as shown below to adjust monitor color balance with reference to a sample image. The sample image is the last photograph taken or, in playback mode, the last photograph displayed; to choose a different image, press the ⊖ (**ISO**) button and select an image from a thumbnail list (to view the highlighted image full frame, press and hold ⊕/**QUAL**). If the memory card contains no photographs, an empty frame with a gray border will be displayed in place of the sample image. Press ⊛ to exit when adjustments are complete. Monitor color balance applies only to menus, playback, and the view through the lens displayed during live view photography and movie live view; pictures taken with the camera are not affected.

*Increase amount of green*

*Increase amount of blue* ◀ OK ▶ *Increase amount of amber*

*Increase amount of magenta*

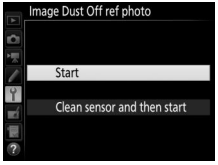
## Image Dust Off Ref Photo

MENU *button* ➜ *setup menu*

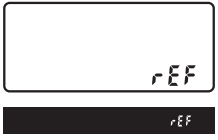
Acquire reference data for the Image Dust Off option in Capture NX-D (available for download, 🕮 268; for more information, refer to Capture NX-D on-line help).

**Image Dust Off ref photo** is available only when a CPU lens is mounted on the camera. A non-DX lens with a focal length of at least 50 mm is recommended. When using a zoom lens, zoom all the way in.

**1 Choose a start option.**
Highlight one of the following options and press OK. To exit without acquiring image dust off data, press MENU.




- **Start**: The message shown at right will be displayed and "rEF" will appear in the viewfinder and control panel displays.
- **Clean sensor and then start**: Select this option to clean the image sensor before starting. The message shown at right will be displayed and "rEF" will appear in the viewfinder and control panel displays when cleaning is complete.



**2 Frame a featureless white object in the viewfinder.**
With the lens about ten centimeters (four inches) from a well-lit, featureless white object, frame the object so that it fills the viewfinder and then press the shutter-release button halfway.

In autofocus mode, focus will automatically be set to infinity; in manual focus mode, set focus to infinity manually.

**3 Acquire dust off reference data.**
Press the shutter-release button the rest of the way down to acquire Image Dust Off reference data. The monitor turns off when the shutter-release button is pressed.

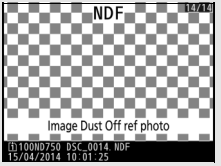
If the reference object is too bright or too dark, the camera may be unable to acquire Image Dust Off reference data and the message shown at right will be displayed. Choose another reference object and repeat the process from step 1.

**Image Sensor Cleaning**

Dust off reference data recorded before image sensor cleaning is performed can not be used with photographs taken after image sensor cleaning is performed. Select **Clean sensor and then start** only if the dust off reference data will not be used with existing photographs.

**Image Dust Off Reference Data**

The same reference data can be used for photographs taken with different lenses or at different apertures. Reference images can not be viewed using computer imaging software. A grid pattern is displayed when reference images are viewed on the camera.




## Flicker Reduction

MENU *button* ➜ *setup menu*

Reduce flicker and banding when shooting under fluorescent or mercury-vapor lighting during live view or movie recording. Choose **Auto** to allow the camera to automatically choose the correct frequency, or manually match the frequency to that of the local AC power supply.

**Flicker Reduction**

If **Auto** fails to produce the desired results and you are unsure as to the frequency of the local power supply, test both the 50 and 60 Hz options and choose the one that produces the best results. Flicker reduction may not produce the desired results if the subject is very bright, in which case you should try choosing a smaller aperture (higher f-number).

## Time Zone and Date

MENU *button* ➜ *setup menu*

Change time zones, set the camera clock, choose the date display order, and turn daylight saving time on or off.

| Option | Description |
|---|---|
| **Time zone** | Choose a time zone. The camera clock is automatically set to the time in the new time zone. |
| **Date and time** | Set the camera clock. If the clock is reset, a flashing icon will appear in the information display. |
| **Date format** | Choose the order in which the day, month, and year are displayed. |
| **Daylight saving time** | Turn daylight saving time on or off. The camera clock will automatically be advanced or set back one hour. The default setting is **Off**. |

## Language

MENU *button* ➜ *setup menu*

Choose a language for camera menus and messages.

## Auto Image Rotation

MENU *button* ➜ *setup menu*

Photographs taken while **On** is selected contain information on camera orientation, allowing them to be rotated automatically during playback (🕮 242) or when viewed in ViewNX 2 (supplied) or in Capture NX-D (available for download; 🕮 268). The following orientations are recorded:

*Landscape (wide) orientation*

*Camera rotated 90° clockwise*

*Camera rotated 90° counter-clockwise*

Camera orientation is not recorded when **Off** is selected. Choose this option when panning or taking photographs with the lens pointing up or down.

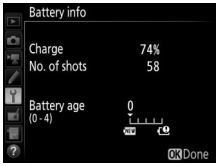
**Rotate Tall**

To automatically rotate "tall" (portrait-orientation) photographs for display during playback, select **On** for the **Rotate tall** option in the playback menu (🕮 308).

## Battery Info

MENU *button* ➜ *setup menu*

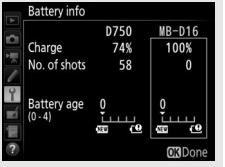
View information on the battery currently inserted in the camera.




| Item | Description |
|---|---|
| **Charge** | The current battery level expressed as a percentage. |
| **No. of shots** | The number of times the shutter has been released with the current battery since the battery was last charged. Note that the camera may sometimes release the shutter without recording a photograph, for example when measuring preset manual white balance. |
| **Battery age** | A five-level display showing battery age. 0 (NEW) indicates that battery performance is unimpaired, 4 ( ) that the battery has reached the end of its charging life and should be replaced. Note that fresh batteries charged at temperatures under about 5 °C (41 °F) may show a temporary drop in charging life; the battery age display will however return to normal once the battery has been recharged at a temperature of about 20 °C (68 °F) or higher. |

**The MB-D16 Battery Pack**

The display for the MB-D16 battery pack is shown at right. If AA batteries are used, the battery level will be shown by a battery level icon; other items will not be displayed.



## Image Comment

MENU *button* ➜ *setup menu*

Add a comment to new photographs as they are taken. Comments can be viewed as metadata in ViewNX 2 (supplied) or Capture NX-D (available for download; 🕮 268). The comment is also visible on the shooting data page in the photo information display (🕮 251). The following options are available:

- **Input comment**: Input a comment as described on page 171. Comments can be up to 36 characters long.
- **Attach comment**: Select this option to attach the comment to all subsequent photographs. **Attach comment** can be turned on and off by highlighting it and pressing ▶. After choosing the desired setting, press OK to exit.

## Copyright Information

MENU *button* ➜ *setup menu*

Add copyright information to new photographs as they are taken. Copyright information is included in the shooting data shown in the photo information display (🕮 251) and can be viewed as metadata in ViewNX 2 (supplied) or in Capture NX-D (available for download; 🕮 268). The following options are available:

- **Artist**: Enter a photographer name as described on page 171. Photographer names can be up to 36 characters long.
- **Copyright**: Enter the name of the copyright holder as described on page 171. Copyright holder names can be up to 54 characters long.
- **Attach copyright information**: Select this option to attach copyright information to all subsequent photographs. **Attach copyright information** can be turned on and off by highlighting it and pressing ⊛. After choosing the desired setting, press ⊛ to exit.

**Copyright Information**

To prevent unauthorized use of the artist or copyright holder names, make sure that **Attach copyright information** is not selected and that the **Artist** and **Copyright** fields are blank before lending or transferring the camera to another person. Nikon does not accept liability for any damages or disputes arising from the use of the **Copyright information** option.

## Save/Load Settings

MENU *button* ➜ *setup menu*

Select **Save settings** to save the following settings to the memory card in Slot 1 (🕮 119; if the card is full, an error will be displayed). Use this option to share settings among D750 cameras.

| Menu | Option |
|---|---|
| Playback | Playback display options |
| | Image review |
| | After delete |
| | Rotate tall |
| Photo shooting | File naming |
| | Role played by card in Slot 2 |
| | Image quality |
| | Image size |
| | Image area |
| | JPEG compression |
| | NEF (RAW) recording |
| | White balance (with fine-tuning and presets d-1–d-6) |
| | Set Picture Control (Custom Picture Controls are saved as **Standard**) |
| | Color space |
| | Active D-Lighting |
| | Vignette control |
| | Auto distortion control |
| | Long exposure NR |
| | High ISO NR |
| | ISO sensitivity settings |
| | Remote control mode (ML-L3) |
| Movie shooting | Destination |
| | Frame size/frame rate |
| | Movie quality |

| Menu | Option |
|---|---|
| Movie shooting | Microphone sensitivity |
| | Frequency response |
| | Wind noise reduction |
| | Image area |
| | White balance (with fine-tuning and presets d-1–d-6) |
| | Set Picture Control (Custom Picture Controls are saved as **Standard**) |
| | High ISO NR |
| | Movie ISO sensitivity settings |
| Custom settings | All Custom Settings except **Reset custom settings** |
| Setup | Clean image sensor |
| | Flicker reduction |
| | Time zone and date (excepting date and time) |
| | Language |
| | Auto image rotation |
| | Image comment |
| | Copyright information |
| | Non-CPU lens data |
| | HDMI |
| | Location data |
| | Wi-Fi |
| | Eye-Fi upload |
| My Menu/ Recent Settings | All My Menu items |
| | All recent settings |
| | Choose tab |

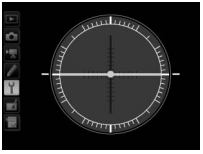
Settings saved using this model of camera can be restored by selecting **Load settings**. Note that **Save/load settings** is only available when a memory card is inserted in the camera, and that the **Load settings** option is only available if the card contains saved settings.

**Saved Settings**
Settings are saved in a file named NCSETUPG. The camera will not be able to load settings if the file name is changed.

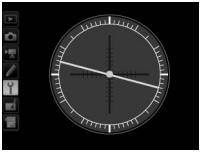
## Virtual Horizon

MENU *button* ➜ *setup menu*

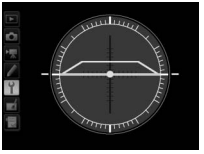
Display roll and pitch information based on information from the camera tilt sensor. If the camera is tilted neither left nor right, the roll reference line will turn green, while if the camera is tilted neither forward nor back, the dot in the center of the display will turn green. Each division is equivalent to about 5°.



*Camera level*



*Camera tilted left or right*



*Camera tilted forward or back*

**Tilting the Camera**
The virtual horizon display is not accurate when the camera is tilted at a sharp angle forward or back. If the camera is unable to measure tilt, the amount of tilt will not be displayed.

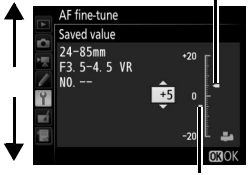
**See Also**
For information on viewing a roll indicator in the viewfinder, see Custom Setting f2 (**Assign Fn button** > **Press**; 🕮 356, 359). For information on displaying a virtual horizon in live view, see pages 64 and 75.

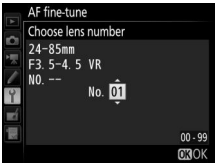
## AF Fine-tune

MENU *button* ➜ *setup menu*

Fine-tune focus for up to 12 lens types. AF tuning is not recommended in most situations and may interfere with normal focus; use only when required.

| Option | Description |
|---|---|
| **AF fine-tune (On/Off)** | • **On**: Turn AF tuning on.<br>• **Off**: Turn AF tuning off. |
| **Saved value** | Tune AF for the current lens (CPU lenses only). Press ⊕ or ⊖ to choose a value between +20 and –20. Values for up to 12 lens types can be stored. Only one value can be stored for each type of lens. |
| **Default** | Choose the AF tuning value used when no previously saved value exists for the current lens (CPU lenses only). |



| Option | Description |
|---|---|
| **List saved values** | List previously saved AF tuning values. To delete a lens from the list, highlight the desired lens and press 🗑 (FORMAT). To change a lens identifier (for example, to choose an identifier that is the same as the last two digits of the lens serial number to distinguish it from other lenses of the same type in light of the fact that **Saved value** can be used with only one lens of each type), highlight the desired lens and press ▶.<br><br>The menu shown at right will be displayed; press ▲ or ▼ to choose an identifier and press OK to save changes and exit.<br><br>  |

**✓ AF Tuning**
The camera may be unable to focus at minimum range or at infinity when AF tuning is applied.

**✓ Live View**
Tuning is not applied to autofocus during in live view (🕮 54).

**✎ Saved Value**
Only one value can be stored for each type of lens. If a teleconverter is used, separate values can be stored for each combination of lens and teleconverter.

## Eye-Fi Upload

MENU *button* ➜ *setup menu*

This option is displayed only when an Eye-Fi memory card (available separately from third-party suppliers) is inserted in the camera. Choose **Enable** to upload photographs to a preselected destination. Note that pictures will not be uploaded if signal strength is insufficient.

Observe all local laws concerning wireless devices and choose **Disable** where wireless devices are prohibited.

**Eye-Fi Cards**

Eye-Fi cards may emit wireless signals when **Disable** is selected. If a warning is displayed in the monitor (🕮 473), turn the camera off and remove the card.

Set Custom Setting c2 (**Standby timer**, 🕮 336) to 30 s or more when using an Eye-Fi card.

See the manual provided with the Eye-Fi card, and direct any inquiries to the manufacturer. The camera can be used to turn Eye-Fi cards on and off, but may not support other Eye-Fi functions.

When an Eye-Fi card is inserted, its status is indicated by an icon in the information display:

- : Eye-Fi upload disabled.
- : Eye-Fi upload enabled but no pictures available for upload.
- (static): Eye-Fi upload enabled; waiting to begin upload.
- (animated): Eye-Fi upload enabled; uploading data.
- : Error — camera can not control Eye-Fi card. If a flashing CArd appears in the control panel or viewfinder, refer to page 473; if this indicator is not flashing, pictures can be taken normally but you may be unable to change Eye-Fi settings.

**Supported Eye-Fi Cards**

Some cards may not be available in some countries or regions; consult the manufacturer for more information. Eye-Fi cards are for use only in the country of purchase. Be sure the Eye-Fi card firmware has been updated to the latest version. Note that using Eye-Fi cards in both slots is not recommended, as it may result in an unreliable network connection.

## Conformity Marking

MENU *button* ➜ *setup menu*

View the standards with which the camera complies.

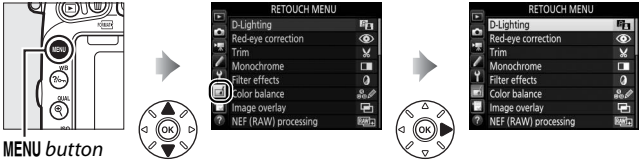
## Firmware Version

MENU *button* ➜ *setup menu*

View the current camera firmware version.

# The Retouch Menu: *Creating Retouched Copies*

To display the retouch menu, press MENU and select the (retouch menu) tab.




MENU *button*

## Retouch Menu Options

The options in the retouch menu are used to create trimmed or retouched copies of existing pictures. The retouch menu is only displayed when a memory card containing photographs is inserted in the camera.

| | Option | 🕮 |
|---|---|---|
| | **D-Lighting** | 397 |
| | **Red-eye correction** | 398 |
| | **Trim** | 399 |
| | **Monochrome** | 400 |
| | **Filter effects** | 401 |
| | **Color balance** | 402 |
| | **Image overlay** [1] | 403 |
| | **NEF (RAW) processing** | 406 |
| | **Resize** | 408 |
| | **Quick retouch** | 411 |
| | **Straighten** | 411 |
| | **Distortion control** | 412 |
| | **Fisheye** | 413 |
| | **Color outline** | 413 |
| | **Color sketch** | 414 |
| | **Perspective control** | 415 |
| | **Miniature effect** | 416 |
| | **Selective color** | 417 |
| | **Edit movie** | 81 |
| | **Side-by-side comparison** [2] | 419 |

1 Can only be selected by pressing MENU and selecting tab.

2 Available only if retouch menu is displayed by pressing i and selecting **Retouch** in full-frame playback when a retouched image or original is displayed.

### Retouching Copies

Most options can be applied to copies created using other retouch options, although with the exceptions of **Image overlay** and **Edit movie** > **Choose start/end point** each option can be applied only once (note that multiple edits may result in loss of detail). Options that can not be applied to the current image can not be selected.

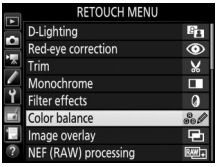
### Image Quality

Except in the case of copies created with **Trim**, **Image overlay**, **NEF (RAW) processing**, and **Resize**, copies created from JPEG images are the same size and quality as the original, while copies created from NEF (RAW) photos are saved as large fine-quality JPEG images. Size-priority compression is used when copies are saved in JPEG format.

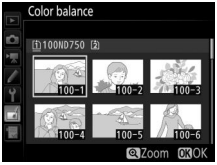
## Creating Retouched Copies

To create a retouched copy:

**1 Select an item in the retouch menu.**
Press ▲ or ▼ to highlight an item, ▶ to select.




**2 Select a picture.**
Highlight a picture and press ⊛. To view the highlighted picture full screen, press and hold the ⊕ (**QUAL**) button.




**Retouch**
In the case of images recorded at image quality settings of NEF + JPEG, only the NEF (RAW) image will be retouched. The camera may not be able to display or retouch images created with other devices.

**3 Select retouch options.**
For more information, see the section for the selected item. To exit without creating a retouched copy, press **MENU**.

**Monitor off Delay**
The monitor will turn off and the operation will be cancelled if no actions are performed for a brief period. Any unsaved changes will be lost. To increase the time the monitor remains on, choose a longer menu display time for Custom Setting c4 (**Monitor off delay**; 🕮 337).

**4 Create a retouched copy.**
Press ⓚ to create a retouched copy. Retouched copies are indicated by a icon.

**Creating Retouched Copies During Playback**
To create a retouched copy of the picture currently displayed in full-frame playback (🕮 245), press *i*, then highlight **Retouch** and press ⓚ and select a retouch option.

## D-Lighting

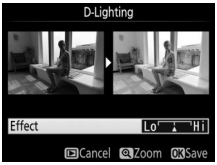
MENU *button* ➜ *retouch menu*

D-Lighting brightens shadows, making it ideal for dark or backlit photographs.

*Before*

*After*

Press ◀ or ▶ to choose the amount of correction performed. The effect can be previewed in the edit display. Press OK to save the retouched copy.



## Red-Eye Correction

MENU *button* ➜ *retouch menu*

This option is used to correct "red-eye" caused by the flash, and is available only with photographs taken using the flash. The photograph selected for red-eye correction can be previewed in the edit display. Confirm the effects of red-eye correction and create a copy as described in the following table. Note that red-eye correction may not always produce the expected results and may in very rare circumstances be applied to portions of the image that are not affected by red-eye; check the preview thoroughly before proceeding.

| To | Use | Description |
|---|---|---|
| **Zoom in** | ⊕ (**QUAL**) | Press ⊕ (**QUAL**) to zoom in, ⊖ (**ISO**) to zoom out. While photo is zoomed in, use multi selector to view areas of image not visible in monitor. Keep multi selector pressed to scroll rapidly to other areas of frame. Navigation window is displayed when zoom buttons or multi selector is pressed; area currently visible in monitor is indicated by yellow border. Press ⊛ to cancel zoom. |
| **Zoom out** | ⊖ (**ISO**) | |
| **View other areas of image** | | |
| **Cancel zoom** | ⊛ | |
| **Create copy** | ⊛ | If the camera detects red-eye in the selected photograph, a copy will be created that has been processed to reduce its effects. No copy will be created if the camera is unable to detect red-eye. |

## Trim

MENU *button* ➜ *retouch menu*

Create a cropped copy of the selected photograph. The selected photograph is displayed with the selected crop shown in yellow; create a cropped copy as described in the following table.

| To | Use | Description |
|---|---|---|
| **Reduce size of crop** | (**ISO**) | Press (**ISO**) to reduce the size of the crop. |
| **Increase size of crop** | (**QUAL**) | Press (**QUAL**) to increase the size of the crop. |
| **Change crop aspect ratio** | | Rotate the main command dial to choose the aspect ratio. |
| **Position crop** | | Use multi selector to position the crop. Press and hold to move the crop rapidly to the desired position. |
| **Create copy** | OK | Save the current crop as a separate file. |

**Trim: Image Quality and Size**

Copies created from NEF (RAW) or NEF (RAW) + JPEG photos have an image quality (🕮 115) of JPEG fine; cropped copies created from JPEG photos have the same image quality as the original. The size of the copy varies with crop size and aspect ratio and appears at upper left in the crop display.

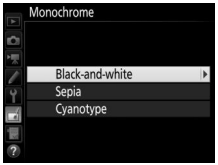
**Viewing Cropped Copies**

Playback zoom may not be available when cropped copies are displayed.

## Monochrome

MENU *button* ➜ *retouch menu*

Copy photographs in **Black-and-white**, **Sepia**, or **Cyanotype** (blue and white monochrome).




Selecting **Sepia** or **Cyanotype** displays a preview of the selected image; press ▲ to increase color saturation, ▼ to decrease. Press OK to create a monochrome copy.

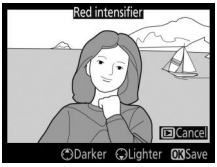
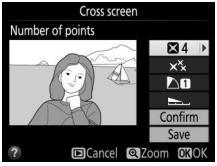
*Increase saturation*

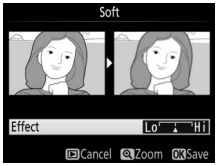
*Decrease saturation*

## Filter Effects

MENU *button* ➜ *retouch menu*

Choose from the following filter effects. After adjusting filter effects as described below, press OK to save the retouched copy.

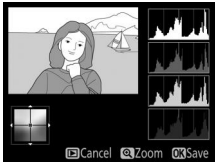
| Option | Description |
|---|---|
| **Skylight** | Creates the effect of a skylight filter, making the picture less blue. The effect can be previewed in the monitor as shown at right. |
| **Warm filter** | Creates a copy with warm tone filter effects, giving the copy a "warm" red cast. The effect can be previewed in the monitor. |
| **Red intensifier**<br>**Green intensifier**<br>**Blue intensifier** | Intensify reds (**Red intensifier**), greens (**Green intensifier**), or blues (**Blue intensifier**). Press ▲ to increase the effect, ▼ to decrease.   |
| **Cross screen** | Add starburst effects to light sources.<br>• **Number of points**: Choose from four, six, or eight.<br>• **Filter amount**: Choose the brightness of the light sources affected.<br>• **Filter angle**: Choose the angle of the points.<br>• **Length of points**: Choose the length of points.<br>• **Confirm**: Preview the effects of the filter. Press ⊕ (**QUAL**) to preview the copy full frame.<br>• **Save**: Create a retouched copy.   |

| Option | Description | |
|---|---|---|
| **Soft** | Add a soft filter effect. Press ◀ or ▶ to choose the filter strength. |   |

## Color Balance

MENU *button* ➜ *retouch menu*

Use the multi selector to create a copy with modified color balance as shown below. The effect is displayed in the monitor together with red, green, and blue histograms (🕮 250) giving the distribution of tones in the copy.



**Zoom**

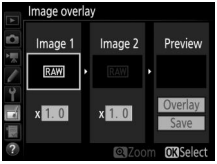
To zoom in on the image displayed in the monitor, press 🔍 (**QUAL**). The histogram will be updated to show data only for the portion of the image displayed in the monitor. While the image is zoomed in, press ?/WB (**WB**) to toggle back and forth between color balance and zoom. When zoom is selected, you can zoom in and out with the 🔍 (**QUAL**) and 🔍/ISO (**ISO**) and scroll the image with the multi selector.

## Image Overlay

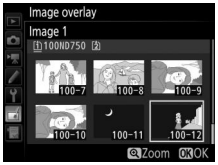
MENU *button* ➜ *retouch menu*

Image overlay combines two existing NEF (RAW) photographs to create a single picture that is saved separately from the originals; the results, which make use of RAW data from the camera image sensor, are noticeably better than overlays created in an imaging application. The new picture is saved at current image quality and size settings; before creating an overlay, set image quality and size (📖 115, 118; all options are available). To create a NEF (RAW) copy, choose an image quality of **NEF (RAW)**.

**1** **Select Image overlay.**
Highlight **Image overlay** in the retouch menu and press ▶. The dialog shown at right will be displayed, with **Image 1** highlighted; press OK to display a picture selection dialog listing only NEF (RAW) images created with this camera.



## 2 Select the first image.

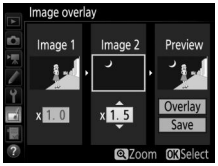



Use the multi selector to highlight the first photograph in the overlay. To view the highlighted photograph full frame, press and hold the ⊕ (**QUAL**) button. Press ⊛ to select the highlighted photograph and return to the preview display.

## 3 Select the second image.

The selected image will appear as **Image 1**. Highlight **Image 2** and press ⊛, then select the second photo as described in Step 2.

## 4 Adjust gain.




Highlight **Image 1** or **Image 2** and optimize exposure for the overlay by pressing ⊛ or ⊛ to select gain from values between 0.1 and 2.0. Repeat for the second image. The default value is 1.0; select 0.5 to halve gain or 2.0 to double it. The effects are visible in the **Preview** column.

## 5 Preview the overlay.

Press ◀ or ▶ to place the cursor in the **Preview** column and press ▲ or ▼ to highlight **Overlay**. Press OK to preview the overlay as shown at right (to save the overlay without displaying a preview, select **Save**). To return to Step 4 and select new photos or adjust gain, press ⊖ (**ISO**).

## 6 Save the overlay.

Press OK while the preview is displayed to save the overlay. After an overlay is created, the resulting image will be displayed full-frame in the monitor.

### Image Overlay

Only NEF (RAW) photographs with the same image area and bit depth can be combined.

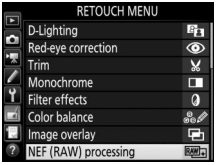
The overlay has the same photo info (including date of recording, metering, shutter speed, aperture, shooting mode, exposure compensation, focal length, and image orientation), and values for white balance and Picture Control as the photograph selected for **Image 1**. The current image comment is appended to the overlay when it is saved; copyright information, however, is not copied. Overlays saved in NEF (RAW) format use the compression selected for **Type** in the **NEF (RAW) recording** menu and have the same bit depth as the original images; JPEG overlays are saved using size-priority compression.

## NEF (RAW) Processing

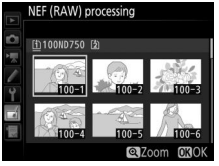
MENU *button* ➜ *retouch menu*

Create JPEG copies of NEF (RAW) photographs.

**1** **Select NEF (RAW) processing.**
Highlight **NEF (RAW) processing** in the retouch menu and press ▶ to display a picture selection dialog listing only NEF (RAW) images created with this camera.

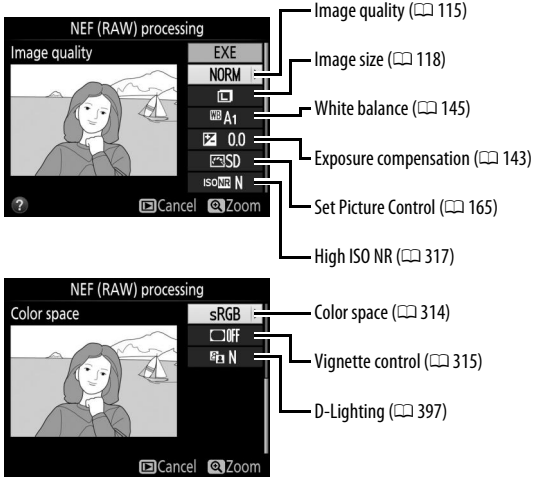



**2** **Select a photograph.**
Use the multi selector to highlight a photograph (to view the highlighted photograph full frame, press and hold the ⊕/**QUAL** button). Press ⊛ to select the highlighted photograph and proceed to the next step.



## 3 Choose settings for the JPEG copy.

Adjust the settings listed below. Note that white balance and vignette control are not available with multiple exposures or pictures created with image overlay and that exposure compensation can only be set to values between –2 and +2 EV.




## 4 Copy the photograph.

Highlight **EXE** and press ⓚ to create a JPEG copy of the selected photograph (to exit without copying the photograph, press the **MENU** button).

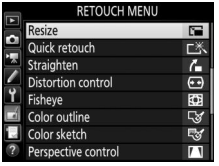
## Resize

MENU *button* ➜ *retouch menu*

Create small copies of selected photographs.

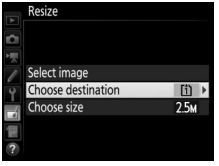
### 1 Select **Resize.**

To resize selected images, highlight **Resize** in the retouch menu and press ▶.




### 2 Choose a destination.

If two memory cards are inserted, you can choose a destination for the resized copies by highlighting **Choose destination** and pressing ▶ (if only one card is inserted, proceed to Step 3).

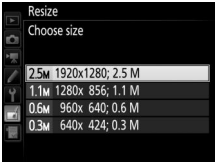



The menu shown at right will be displayed; highlight a card slot and press OK.

## 3 Choose a size.

Highlight **Choose size** and press ▶.

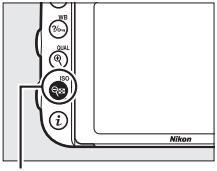
The options shown at right will be displayed; highlight an option and press OK.



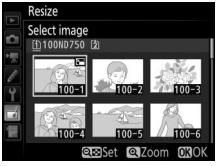

## 4 Choose pictures.

Highlight **Select image** and press ▶.

Highlight pictures using the multi selector and press the ⊖ (**ISO**) button to select or deselect (to view the highlighted picture full screen, press and hold the ⊕/**QUAL** button). Selected pictures are marked by a ✓ icon. Press OK when the selection is complete.




⊖ (**ISO**) *button*



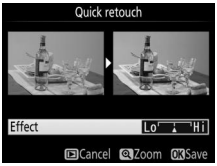
**5** **Save the resized copies.**
A confirmation dialog will be displayed. Highlight **Yes** and press ⊛ to save the resized copies.

**Viewing Resized Copies**
Playback zoom may not be available when resized copies are displayed.

**Image Quality**
Copies created from NEF (RAW) or NEF (RAW) + JPEG photos have an image quality (🕮 115) of JPEG fine; copies created from JPEG photos have the same image quality as the original.

## Quick Retouch

MENU *button* ➜ *retouch menu*

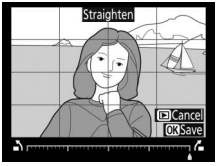



Create copies with enhanced saturation and contrast. D-Lighting is applied as required to brighten dark or backlit subjects.

Press ◀ or ▶ to choose the amount of enhancement. The effect can be previewed in the edit display. Press ⊛ to save the retouched copy.

## Straighten

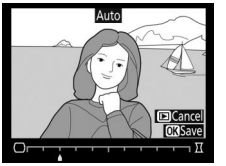
MENU *button* ➜ *retouch menu*




Create a straightened copy of the selected image. Press ▶ to rotate the image clockwise by up to five degrees in increments of approximately 0.25 degrees, ◀ to rotate it counterclockwise (the effect can be previewed in the edit display; note that edges of the image will be trimmed to create a square copy). Press ⊛ to save the retouched copy.

## Distortion Control

MENU *button* ➜ *retouch menu*



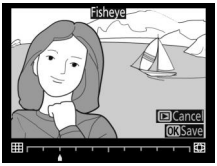

Create copies with reduced peripheral distortion. Select **Auto** to let the camera correct distortion automatically and then make fine adjustments using the multi selector, or select **Manual** to reduce distortion manually (note that **Auto** is not available with photos taken using auto distortion control; see page 316). Press ⊕ to reduce barrel distortion, ⊖ to reduce pin-cushion distortion (the effect can be previewed in the edit display; note that greater amounts of distortion control result in more of the edges being cropped out). Press ⊛ to save the retouched copy. Note that distortion control may heavily crop or distort the edges of copies created from photographs taken with DX lenses at image areas other than **DX (24×16)**.

### Auto

**Auto** is for use only with pictures taken with type G, E, and D lenses (PC, fisheye, and certain other lenses excluded). Results are not guaranteed with other lenses.

## Fisheye

MENU *button* ➜ *retouch menu*

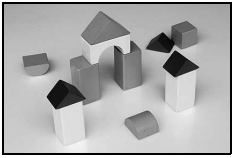



Create copies that appear to have been taken with a fisheye lens. Press ⊕ to increase the effect (this also increases the amount of that will be cropped out at the edges of the image), ⊖ to reduce it. The effect can be previewed in the edit display. Press ⊛ to save the retouched copy.

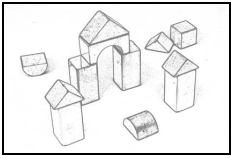
## Color Outline

MENU *button* ➜ *retouch menu*

Create an outline copy of a photograph to use as a base for painting. The effect can be previewed in the edit display. Press ⊛ to save the retouched copy.



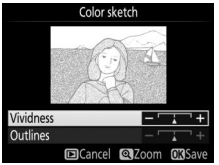
*Before*



*After*

## Color Sketch

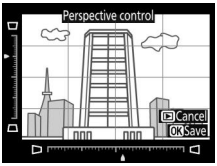
MENU *button* ➜ *retouch menu*




Create a copy of a photograph that resembles a sketch made with colored pencils. Press ▲ or ▼ to highlight **Vividness** or **Outlines** and press ◀ or ▶ to change. Vividness can be increased to make colors more saturated, or decreased for a washed-out, monochromatic effect, while outlines can be made thicker or thinner. Thicker outlines makes colors more saturated. The results can be previewed in the edit display. Press OK to save the retouched copy.

## Perspective Control

MENU *button* ➜ *retouch menu*




Create copies that reduce the effects of perspective taken from the base of a tall object. Use the multi selector to adjust perspective (note that greater amounts of perspective control result in more of the edges being cropped out). The results can be previewed in the edit display. Press ⓚ to save the retouched copy.

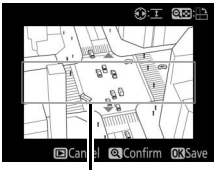
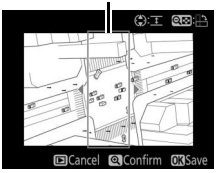
*Before*

*After*

## Miniature Effect

MENU *button* ➜ *retouch menu*

Create a copy that appears to be a photo of a diorama. Works best with photos taken from a high vantage point. The area that will be in focus in the copy is indicated by a yellow frame.

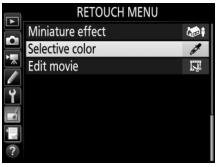
| To | Press | Description |
|---|---|---|
| **Choose orientation** | (**ISO**) | Press (**ISO**) to choose orientation of area that is in focus. |
| **Choose position** | | If area of effect is in wide orientation, press ▲ or ▼ to position frame showing area of copy that will be in focus.   *Area in focus* |
| | | If area of effect is in tall orientation, press ◀ or ▶ to position frame showing area of copy that will be in focus.   |
| **Choose size** | | If area of effect is in wide orientation, press ◀ or ▶ to choose height. |
| | | If area of effect is in tall orientation, press ▲ or ▼ to choose width. |
| **Preview copy** | (**QUAL**) | Preview copy. |
| **Create copy** | OK | Create copy. |

## Selective Color

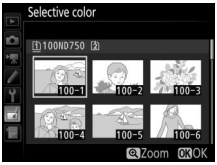
MENU *button* ➜ *retouch menu*

Create a copy in which only selected hues appear in color.

**1 Select Selective color.**
Highlight **Selective color** in the retouch menu and press ▶ to display a picture selection dialog.

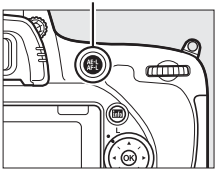



**2 Select a photograph.**
Use the multi selector to highlight a photograph (to view the highlighted photograph full frame, press and hold the ⊕/**QUAL** button). Press ⊛ to select the highlighted photograph and proceed to the next step.




**3 Select a color.**
Use the multi selector to position the cursor over an object and press the **AE-L/AF-L** button to select the color of the object as one that will remain in the final copy (the camera may have difficulty detecting unsaturated colors; choose a saturated color). To zoom in on the picture for precise color selection, press ⊕ (**QUAL**). Press ⊖ (**ISO**) to zoom out.

**AE-L/AF-L** *button*



*Selected color*

**4 Highlight the color range.**
Rotate the main command dial to highlight the color range for the selected color.

*Color range*

**5 Choose the color range.**
Press ◆ or ◆ to increase or decrease the range of similar hues that will be included in the final photograph. Choose from values between 1 and 7; note that higher values may include hues from other colors. The effect can be previewed in the edit display.

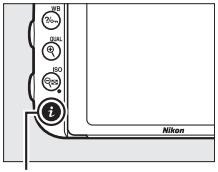
**6 Select additional colors.**
To select additional colors, rotate the main command dial to highlight another of the three color boxes at the top of the display and repeat Steps 3–5 to select another color. Repeat for a third color if desired. To deselect the highlighted color, press 🗑 (FORMAT); to remove all colors, press and hold 🗑 (FORMAT). A confirmation dialog will be displayed; select **Yes**.

**7** **Save the edited copy.**
Press ⓚ to save the retouched copy.

## Side-by-side Comparison

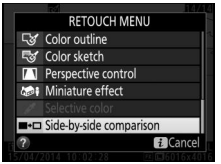
Compare retouched copies to the original photographs. This option is only available if the retouch menu is displayed by pressing the **i** button and selecting **Retouch** when a copy or original is played back full frame.

**1** **Select a picture.**
Select a retouched copy (shown by a icon) or a photograph that has been retouched in full-frame playback. Press **i**, then highlight **Retouch** and press ⓚ.



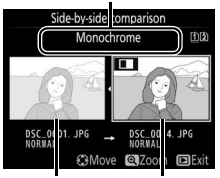

**i** *button*

**2** **Select Side-by-side comparison.** Highlight **Side-by-side comparison** and press OK.




**3** **Compare the copy with the original.** The source image is displayed on the left, the retouched copy on the right, with the options used to create the copy listed at the top of the display. Press ◀ or ▶ to switch between the source image and the retouched copy. To view the highlighted picture full frame, press and hold the ⊕ (**QUAL**) button. If the copy was created from two source images using **Image overlay**, or if the source has been copied multiple times, press ▲ or ▼ to view the other source images or copies. To exit to playback mode, press the ▶ button, or press OK to exit to playback with the highlighted image selected.

*Options used to create copy*



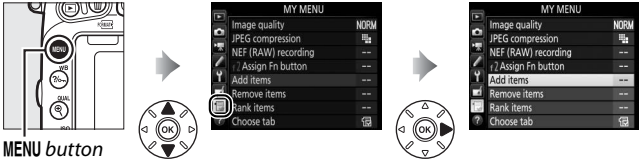

*Source image* *Retouched copy*

**Side-by-side Comparisons**

The source image will not be displayed if the copy was created from a photograph that was protected (📖 257), has since been deleted or hidden (📖 301), or is on a card in a different slot from that used when the image was created.

# My Menu / Recent Settings

To display My Menu, press **MENU** and select the (My Menu) tab.



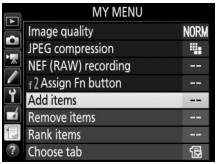

**MENU** *button*

The **MY MENU** option can be used to create and edit a customized list of options from the playback, photo shooting, movie shooting, Custom Settings, setup, and retouch menus for quick access (up to 20 items). If desired, recent settings can be displayed in place of My Menu (🕮 425).

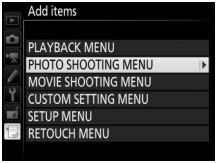
Options can be added, deleted, and reordered as described below.

### ■■ *Adding Options to My Menu*

**1** **Select Add items.**
In My Menu (), highlight **Add items** and press ▶.

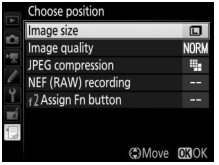



**2** **Select a menu.**
Highlight the name of the menu containing the option you wish to add and press ▶.

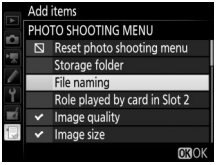


**3** **Select an item.**
Highlight the desired menu item and press ⓚ.

**4** **Position the new item.**
Press ⓐ or ⓑ to move the new item up or down in My Menu. Press ⓚ to add the new item.

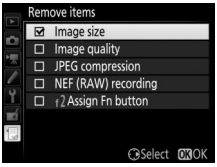



**5** **Add more items.**
The items currently displayed in My Menu are indicated by a check mark. Items indicated by a ☒ icon can not be selected. Repeat steps 1–4 to select additional items.



**1** **Select Remove items.**
In My Menu (☰), highlight **Remove items** and press ▶.

**2** **Select items.**
Highlight items and press ▶ to select or deselect. Selected items are indicated by a check mark.

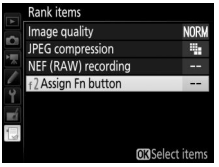



**3** **Delete the selected items.**
Press OK. A confirmation dialog will be displayed; press OK again to delete the selected items.

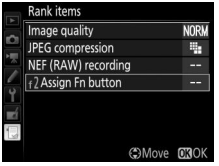
**Deleting Items in My Menu**
To delete the item currently highlighted in My Menu, press the 🗑 (FORMAT) button. A confirmation dialog will be displayed; press 🗑 (FORMAT) again to remove the selected item from My Menu.

**1** **Select Rank items.**
In My Menu (☰), highlight **Rank items** and press ▶.

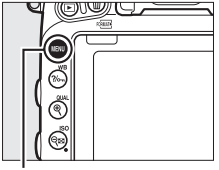
**2** **Select an item.**
Highlight the item you wish to move and press OK.



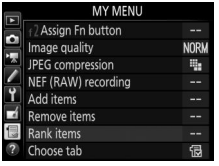

**3** **Position the item.**
Press ▲ or ▼ to move the item up or down in My Menu and press OK. Repeat Steps 2–3 to reposition additional items.




**4** **Exit to My Menu.**
Press the MENU button to return to My Menu.



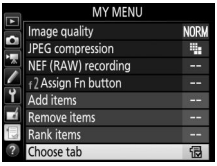

**MENU** *button*



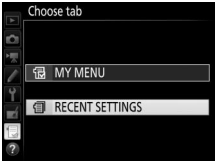
## Recent Settings

To display the twenty most recently used settings, select **RECENT SETTINGS** for **MY MENU** > **Choose tab**.

**1** **Select Choose tab.**
In My Menu (), highlight **Choose tab** and press .




**2** **Select RECENT SETTINGS.**
Highlight **RECENT SETTINGS** and press . The name of the menu will change from "MY MENU" to "RECENT SETTINGS."




Menu items will be added to the top of the recent settings menu as they are used. To view My Menu again, select **MY MENU** for **RECENT SETTINGS** > **Choose tab**.

**Removing Items from the Recent Settings Menu**
To remove an item from the recent settings menu, highlight it and press the (FORMAT) button. A confirmation dialog will be displayed; press (FORMAT) again to delete the selected item.

# Technical Notes

Read this chapter for information on compatible accessories, cleaning and storing the camera, and what to do if an error message is displayed or you encounter problems using the camera.

## Compatible Lenses

| Lens/accessory \ Camera setting | | Focus mode | | Shooting mode | | Metering system | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | AF | M (with electronic rangefinder)[1] | P S | A M | [2] 3D | [2] Color | [3] [4] | [*5] |
| CPU lenses[6] | Type G, E, or D AF NIKKOR[7] AF-S, AF-I NIKKOR | ✔ | ✔ | ✔ | ✔ | ✔ | — | ✔[8] | ✔ |
| | PC-E NIKKOR series[9] | — | ✔[10] | ✔[10] | ✔[10] | ✔[10] | — | ✔[8,10] | ✔ |
| | PC Micro 85mm f/2.8D[11] | — | ✔[10] | — | ✔[12] | ✔ | — | ✔[8,10] | ✔ |
| | AF-S / AF-I Teleconverter[13] | ✔ | ✔ | ✔ | ✔ | ✔ | — | ✔[8] | ✔ |
| | Other AF NIKKOR (except lenses for F3AF) | ✔[14] | ✔[14] | ✔ | ✔ | — | ✔ | ✔[8] | — |
| | AI-P NIKKOR | — | ✔[15] | ✔ | ✔ | — | ✔ | ✔[8] | — |

| Lens/accessory \ Camera setting | | Focus mode | | Shooting mode | | Metering system | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | AF | M (with electronic rangefinder)[1] | P S | A M | [2] 3D | [2] Color | [3] / [4] | [5] |
| Non-CPU lenses[16] | AI-, AI-modified NIKKOR or Nikon Series E lenses[17] | — | ✔[15] | — | ✔[18] | — | ✔[19] | ✔[20] | — |
| | Medical-NIKKOR 120mm f/4 | — | ✔ | — | ✔[21] | — | — | — | — |
| | Reflex-NIKKOR | — | — | — | ✔[18] | — | — | ✔[20] | — |
| | PC-NIKKOR | — | ✔[10] | — | ✔[22] | — | — | ✔ | — |
| | AI-type Teleconverter[23] | — | ✔[24] | — | ✔[18] | — | ✔[19] | ✔[20] | — |
| | PB-6 Bellows Focusing Attachment[25] | — | ✔[24] | — | ✔[26] | — | — | ✔ | — |
| | Auto extension rings (PK-series 11A, 12, or 13; PN-11) | — | ✔[24] | — | ✔[18] | — | — | ✔ | — |

1 Manual focus available with all lenses.
2 Matrix.
3 Center-weighted.
4 Spot.
5 Highlight-weighted.
6 IX-NIKKOR lenses can not be used.
7 Vibration Reduction (VR) supported with VR lenses.
8 Spot metering meters selected focus point (🕮 139).
9 The tilt knob for the PC-E NIKKOR 24mm f/3.5D ED may contact the camera body when the lens is revolved. This can be prevented by installing a smaller tilt knob; contact a Nikon-authorized service representative for more information.
10 Can not be used with shifting or tilting.
11 The camera's exposure metering and flash control systems do not work properly when shifting and/or tilting the lens, or when an aperture other than the maximum aperture is used.

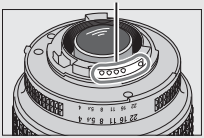
12 Manual shooting mode only.
13 Can be used with AF-S and AF-I lenses only (🕮 430). For information on the focus points available for autofocus and electronic rangefinding, see page 430.
14 When focusing at minimum focus distance with AF 80–200mm f/2.8, AF 35–70mm f/2.8, AF 28–85mm f/3.5–4.5 <New>, or AF 28–85mm f/3.5–4.5 lens at maximum zoom, in-focus indicator may be displayed when image on matte screen in viewfinder is not in focus. Adjust focus manually until image in viewfinder is in focus.
15 With maximum aperture of f/5.6 or faster.
16 Some lenses can not be used (see page 431).
17 Range of rotation for AI 80–200mm f/2.8 ED tripod mount is limited by camera body. Filters can not be exchanged while AI 200–400mm f/4 ED is mounted on camera.
18 If maximum aperture is specified using **Non-CPU lens data** (🕮 235), aperture value will be displayed in viewfinder and control panel.
19 Can be used only if lens focal length and maximum aperture are specified using **Non-CPU lens data** (🕮 235). Use spot or center-weighted metering if desired results are not achieved.
20 For improved precision, specify lens focal length and maximum aperture using **Non-CPU lens data** (🕮 235).
21 Can be used in manual mode **M** at shutter speeds slower than flash sync speed by one step or more.
22 Exposure determined by presetting lens aperture. In mode **A**, preset aperture using lens aperture ring before performing AE lock and shifting lens. In mode **M**, preset aperture using lens aperture ring and determine exposure before shifting lens.
23 Exposure compensation required when used with AI 28–85mm f/3.5–4.5, AI 35–105mm f/3.5–4.5, AI 35–135mm f/3.5–4.5, or AF-S 80–200mm f/2.8D.
24 With maximum effective aperture of f/5.6 or faster.
25 Requires PK-12 or PK-13 auto extension ring. PB-6D may be required depending on camera orientation.
26 Use preset aperture. In mode **A**, set aperture using focusing attachment before determining exposure and taking photograph.

- PF-4 Reprocopy Outfit requires PA-4 Camera Holder.
- With some lenses, noise in the form of lines may appear during autofocus at high ISO sensitivities. Use manual focus or focus lock.

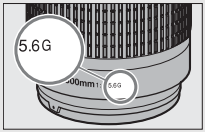
**Recognizing CPU and Type G, E, and D Lenses**

CPU lenses (particularly types G, E, and D) are recommended, but note that IX-NIKKOR lenses can not be used. CPU lenses can be identified by the presence of CPU contacts, type G, E, and D lenses by a letter on the lens barrel. Type G and E lenses are not equipped with a lens aperture ring.

*CPU contacts*

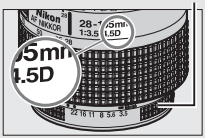


*CPU lens*




*Type G/E lens*

*Aperture ring*




*Type D lens*

**AF-S/AF-I Teleconverters**

The table below shows the focus points available for autofocus and electronic rangefinding when an AF-S/AF-I teleconverter is attached. Note that the camera may be unable to focus on dark or low-contrast subjects if the combined aperture is slower than f/5.6. Autofocus is not available when teleconverters are used with the AF-S VR Micro-Nikkor 105mm f/2.8G IF-ED.

| Accessory | Maximum aperture of lens | Focus points |
|---|---|---|
| TC-14E, TC-14E II, TC-14E III | f/4 or faster | |
| | f/5.6 | [1] |
| TC-17E II | f/2.8 or faster | |
| | f/4 | [1] |
| | f/5.6 | — [2] |
| TC-20E, TC-20E II, TC-20E III | f/2.8 or faster | |
| | f/4 | [3] |
| | f/5.6 | — [2] |
| TC-800-1.25E ED | f/5.6 | [1] |

1 Single-point AF is used when 3D-tracking or auto-area AF is selected forAF-area mode (🕮 123).

2 Autofocus not available.

3 Focus data for focus points other than the center focus point are obtained from line sensors.

**Lens f-number**

The f-number given in lens names is the maximum aperture of the lens.

**Compatible Non-CPU Lenses**

**Non-CPU lens data** (🕮 235) can be used to enable many of the features available with CPU lenses, including color matrix metering; if no data are provided, center-weighted metering will be used in place of color matrix metering, while if the maximum aperture is not provided, the camera aperture display will show the number of stops from maximum aperture and the actual aperture value must be read off the lens aperture ring.

**Incompatible Accessories and Non-CPU Lenses**

The following can NOT be used with the D750:

- TC-16A AF teleconverter
- Non-AI lenses
- Lenses that require the AU-1 focusing unit (400mm f/4.5, 600mm f/5.6, 800mm f/8, 1200mm f/11)
- Fisheye (6mm f/5.6, 7.5mm f/5.6, 8mm f/8, OP 10mm f/5.6)
- 2.1cm f/4
- Extension Ring K2
- 180–600mm f/8 ED (serial numbers 174041–174180)
- 360–1200mm f/11 ED (serial numbers 174031–174127)
- 200–600mm f/9.5 (serial numbers 280001–300490)
- AF lenses for the F3AF (AF 80mm f/2.8, AF 200mm f/3.5 ED, AF Teleconverter TC-16)
- PC 28mm f/4 (serial number 180900 or earlier)
- PC 35mm f/2.8 (serial numbers 851001–906200)
- PC 35mm f/3.5 (old type)
- Reflex 1000mm f/6.3 (old type)
- Reflex 1000mm f/11 (serial numbers 142361–143000)
- Reflex 2000mm f/11 (serial numbers 200111–200310)

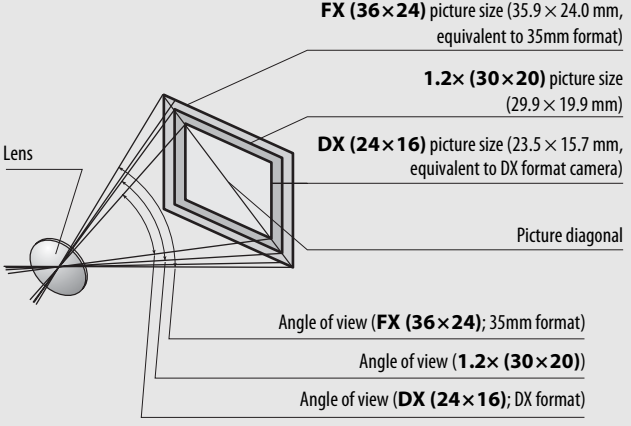
**Red-Eye Reduction**

Lenses that block the subject's view of the red-eye reduction lamp may interfere with red-eye reduction.

### Calculating Angle of View

The D750 can be used with Nikon lenses for 35mm (135) format cameras. If **Auto DX crop** is on (🕮 111) and a 35mm format lens is attached, the angle of view will be the same as a frame of 35mm film (35.9 × 24.0 mm); if a DX lens is attached, the angle of view will automatically be adjusted to 23.5 × 15.7 mm (DX format).

To choose an angle of view different from that of the current lens, turn **Auto DX crop** off and select from **FX (36×24)**, **1.2× (30×20)**, and **DX (24×16)**. If a 35mm format lens is attached, the angle of view could be reduced by 1.5 × by selecting **DX (24×16)** or by 1.2 × by selecting **1.2× (30×20)** to expose a smaller area.




The **DX (24×16)** angle of view is about 1.5 times smaller than the 35mm format angle of view, while the **1.2× (30×20)** angle of view is about 1.2 times smaller. To calculate the focal length of lenses in 35mm format when **DX (24×16)** is selected, multiply the focal length of the lens by about 1.5 or by about 1.2 when **1.2× (30×20)** is selected (for example, the effective focal length of a 50mm lens in 35mm format would be 75 mm when **DX (24×16)** is selected or 60 mm when **1.2× (30×20)** is selected).

# Optional Flash Units (Speedlights)

The camera supports the Nikon Creative Lighting System (CLS) and can be used with CLS-compatible flash units. The built-in flash will not fire when an optional flash unit is attached.

## The Nikon Creative Lighting System (CLS)

Nikon's advanced Creative Lighting System (CLS) offers improved communication between the camera and compatible flash units for improved flash photography.

### ■■ *CLS-Compatible Flash Units*

The camera can be used with the following CLS-compatible flash units:

- **The SB-910, SB-900, SB-800, SB-700, SB-600, SB-500, SB-400, SB-300, and SB-R200:**

| Feature \ Flash unit | SB-900[1], SB-910 | SB-800 | SB-700[1] | SB-600 | SB-500[2] | SB-400[3] | SB-300[3] | SB-R200[4] |
|---|---|---|---|---|---|---|---|---|
| **Guide No. (ISO 100)**[5] | 34/111 | 38/125 | 28/92 | 30/98 | 24/78 | 21/69 | 18/59 | 10/33 |

1 If a color filter is attached to the SB-910, SB-900, or SB-700 when AUTO or ϟ (flash) is selected for white balance, the camera will automatically detect the filter and adjust white balance appropriately.

2 Users of the LED light can set camera white balance to AUTO or ϟ for optimal results.

3 Wireless flash control is not available.

4 Controlled remotely with built-in flash in commander mode or using optional SB-910, SB-900, SB-800, SB-700, or SB-500 flash unit or SU-800 wireless Speedlight commander.

5 m/ft, 20 °C (68 °F), SB-910, SB-900, SB-800, SB-700, and SB-600 at 35 mm zoom head position; SB-910, SB-900, and SB-700 with standard illumination.

- **SU-800 Wireless Speedlight Commander**: When mounted on a CLS-compatible camera, the SU-800 can be used as a commander for remote SB-910, SB-900, SB-800, SB-700, SB-600, SB-500, or SB-R200 flash units in up to three groups. The SU-800 itself is not equipped with a flash.

**Guide Number**

To calculate the range of the flash at full power, divide the Guide Number by the aperture. If, for example, the flash unit has a Guide Number of 34 m or 111 ft (ISO 100, 20 °C/68 °F); its range at an aperture of f/5.6 is 34÷5.6 or about 6.1 meters (or in feet, 111÷5.6=approximately 19 ft 10 in.). For each twofold increase in ISO sensitivity, multiply the Guide Number by the square root of two (approximately 1.4).

**The AS-15 Sync Terminal Adapter**

When the AS-15 sync terminal adapter (available separately) is mounted on the camera accessory shoe, flash accessories can be connected via a sync terminal.

The following features are available with CLS-compatible flash units:

| | | | | SB-910, SB-900, SB-800 | SB-700 | SB-600 | SB-500 | SU-800 | SB-R200 | SB-400 | SB-300 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Single flash | | i-TTL | i-TTL balanced fill-flash for digital SLR [1] | ✔ | ✔ | ✔ | ✔ | — | — | ✔ | ✔ |
| | | | Standard i-TTL flash for digital SLR | ✔[2] | ✔ | ✔[2] | ✔ | — | — | ✔ | ✔ |
| | | AA | Auto aperture | ✔[3] | — | — | — | — | — | — | — |
| | | A | Non-TTL auto | ✔[3] | — | — | — | — | — | — | — |
| | | GN | Distance-priority manual | ✔ | ✔ | — | — | — | — | — | — |
| | | M | Manual | ✔ | ✔ | ✔ | ✔[4] | — | — | ✔[4] | ✔[4] |
| | | RPT | Repeating flash | ✔ | — | — | — | — | — | — | — |
| Advanced Wireless Lighting | Master | Remote flash control | | ✔ | ✔ | — | ✔[4] | ✔ | — | — | — |
| | | i-TTL | i-TTL | ✔ | ✔ | — | ✔[4] | — | — | — | — |
| | | [A:B] | Quick wireless flash control | — | ✔ | — | — | ✔[5] | — | — | — |
| | | AA | Auto aperture | ✔[6] | — | — | — | — | — | — | — |
| | | A | Non-TTL auto | ✔ | — | — | — | — | — | — | — |
| | | M | Manual | ✔ | ✔ | — | ✔[4] | — | — | — | — |
| | | RPT | Repeating flash | ✔ | — | — | — | — | — | — | — |
| | Remote | i-TTL | i-TTL | ✔ | ✔ | ✔ | ✔ | — | ✔ | — | — |
| | | [A:B] | Quick wireless flash control | ✔ | ✔ | ✔ | ✔ | — | ✔ | — | — |
| | | AA | Auto aperture | ✔[6] | — | — | — | — | — | — | — |
| | | A | Non-TTL auto | ✔ | — | — | — | — | — | — | — |
| | | M | Manual | ✔ | ✔ | ✔ | ✔ | — | ✔ | — | — |
| | | RPT | Repeating flash | ✔ | ✔ | ✔ | ✔ | — | — | — | — |

| | SB-910, SB-900, SB-800 | SB-700 | SB-600 | SB-500 | SU-800 | SB-R200 | SB-400 | SB-300 |
|---|---|---|---|---|---|---|---|---|
| Color Information Communication (flash) | ✔ | ✔ | ✔ | ✔ | — | — | ✔ | ✔ |
| Color Information Communication (LED light) | — | — | — | ✔ | — | — | — | — |
| Auto FP High-Speed Sync[7] | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | — | — |
| FV lock[8] | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| AF-assist for multi-area AF | ✔ | ✔ | ✔ | — | ✔[9] | — | — | — |
| Red-eye reduction | ✔ | ✔ | ✔ | ✔ | — | — | ✔ | — |
| Camera modeling illumination | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | — | — |
| Camera flash mode selection | — | — | — | ✔ | — | — | ✔ | ✔ |
| Camera flash unit firmware update | ✔[10] | ✔ | — | ✔ | — | — | — | ✔ |

1 Not available with spot metering.
2 Can also be selected with flash unit.
3 AA/A mode selection performed on flash unit using custom settings. Unless lens data have been provided using the **Non-CPU lens data** option in the setup menu, "A" will be selected when a non-CPU lens is used.
4 Can only be selected with camera.
5 Available only during close-up photography.
6 Unless lens data have been provided using the **Non-CPU lens data** option in the setup menu, non-TTL auto (A) is used with non-CPU lenses, regardless of mode selected with flash unit.
7 Available only in i-TTL, AA, A, GN, and M flash-control modes.
8 Availalbe only in i-TTL, AA, and A flash-control modes.
9 Available only in commander mode.
10 Firmware updates for the SB-910 and SB-900 can be performed from the camera.

### ■■ *Other Flash Units*

The following flash units can be used in non-TTL auto and manual modes.

| Flash mode \ Flash unit | | SB-80DX, SB-28DX, SB-28, SB-26, SB-25, SB-24 | SB-50DX[1] | SB-30, SB-27[2], SB-22S, SB-22, SB-20, SB-16B, SB-15 | SB-23, SB-29[3], SB-21B[3], SB-29S[3] |
|---|---|---|---|---|---|
| **A** | **Non-TTL auto** | ✔ | — | ✔ | — |
| **M** | **Manual** | ✔ | ✔ | ✔ | ✔ |
| 🎞 | **Repeating flash** | ✔ | — | — | — |
| **REAR** | **Rear-curtain sync**[4] | ✔ | ✔ | ✔ | ✔ |

1 Select mode **P**, **S**, **A**, or **M**, lower built-in flash, and use optional flash unit only.

2 Flash mode is automatically set to TTL and shutter-release is disabled. Set flash unit to **A** (non-TTL auto flash).

3 Autofocus is available with AF-S VR Micro-Nikkor 105mm f/2.8G IF-ED and AF-S Micro NIKKOR 60mm f/2.8G ED lenses only.

4 Available when camera is used to select flash mode.

**Notes on Optional Flash Units**

Refer to the flash unit manual for detailed instructions. If the flash unit supports CLS, refer to the section on CLS-compatible digital SLR cameras. The D750 is not included in the "digital SLR" category in the SB-80DX, SB-28DX, and SB-50DX manuals.

If an optional flash unit is attached in shooting modes other than , , and , the flash will fire with every shot, even in modes in which the built-in flash can not be used.

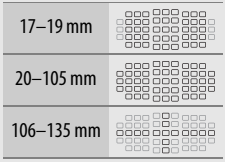
i-TTL flash control can be used at ISO sensitivities between 100 and 12800. At values under 100 or over 12800, the desired results may not be achieved at some ranges or aperture settings. If the flash-ready indicator flashes for about three seconds after a photograph is taken in i-TTL or non-TTL auto mode, the flash has fired at full power and the photograph may be underexposed (CLS-compatible flash units only; for information on the exposure and flash charge indicators on other units, see the manual provided with the flash).

When an SC-series 17, 28, or 29 sync cable is used for off-camera flash photography, correct exposure may not be achieved in i-TTL mode. We recommend that you select standard i-TTL flash control. Take a test shot and view the results in the monitor.

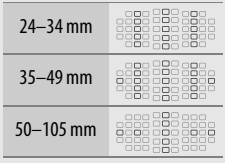
In i-TTL, use the flash panel or bounce adapter provided with the flash unit. Do not use other panels such as diffusion panels, as this may produce incorrect exposure.

The SB-910, SB-900, SB-800, SB-700, SB-600, SB-500, and SB-400 provide red-eye reduction, while the SB-910, SB-900, SB-800, SB-700, SB-600, and SU-800 provide AF-assist illumination with the following restrictions:

- **SB-910 and SB-900**: AF-assist illumination is available with 17–135 mm AF lenses, however, autofocus is available only with the focus points shown at right.




- **SB-800, SB-600, and SU-800**: AF-assist illumination is available with 24–105 mm AF lenses, however, autofocus is available only with the focus points shown at right.




- **SB-700**: AF-assist illumination is available with 24–135 mm AF lenses, however, autofocus is available only with the focus points shown at right.

Depending on the lens used and scene recorded, the in-focus indicator (●) may be displayed when the subject is not in focus, or the camera may be unable to focus and the shutter release will be disabled.

In mode **P**, the maximum aperture (minimum f-number) is limited according to ISO sensitivity, as shown below:

| Maximum aperture at ISO equivalent of: | | | | | | | |
|---|---|---|---|---|---|---|---|
| **100** | **200** | **400** | **800** | **1600** | **3200** | **6400** | **12800** |
| 4 | 4.8 | 5.6 | 6.7 | 8 | 9.5 | 11 | 13 |

If the maximum aperture of the lens is smaller than given above, the maximum value for aperture will be the maximum aperture of the lens.

**Flash Control Mode**

The information display shows the flash control mode for optional flash units attached to the camera accessory shoe as follows:

| | Flash sync | Auto FP (🕮 345) |
|---|---|---|
| **i-TTL** | | |
| **Auto aperture (AA)** | | |
| **Non-TTL auto flash (A)** | | |
| **Distance-priority manual (GN)** | | |
| **Manual** | | |
| **Repeating flash** | | — |
| **Advanced wireless lighting** | | |

**Use Only Nikon Flash Accessories**

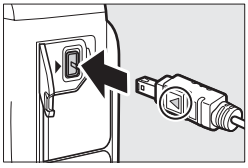
*Use only Nikon flash units.* Negative voltages or voltages over 250 V applied to the accessory shoe could not only prevent normal operation, but damage the sync circuitry of the camera or flash. Before using a Nikon flash unit not listed in this section, contact a Nikon-authorized service representative for more information.

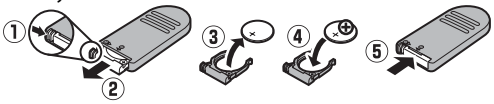
## Other Accessories

At the time of writing, the following accessories were available for the D750.

| | |
|---|---|
| **Power sources** | • **Rechargeable Li-ion Battery EN-EL15** (🕮 25, 26): Additional EN-EL15 batteries are available from local retailers and Nikon-authorized service representatives.<br>• **Battery Charger MH-25a** (🕮 25): The MH-25a can be used to recharge EN-EL15 batteries. MH-25 battery chargers can also be used.<br>• **Multi-Power Battery Pack MB-D16**: The MB-D16 is equipped with a shutter-release button, AE-L/AF-L AE/AF lock button, multi selector, and main- and sub-command dials for improved operation when taking photographs in portrait (tall) orientation. When attaching the MB-D16, remove the camera MB-D16 contact cover.<br>• **Power Connector EP-5B, AC Adapter EH-5b**: These accessories can be used to power the camera for extended periods (EH-5a and EH-5 AC adapters can also be used). The EP-5B is required to connect the camera to the EH-5b; see page 445 for details. Note that when the camera is used with an MB-D16, the EP-5B must be inserted into the MB-D16, not the camera. Do not attempt to use the camera with power connectors inserted into both the camera and MB-D16. |

| | |
|---|---|
| **Filters** | • Filters intended for special-effects photography may interfere with autofocus or the electronic rangefinder.<br>• The D750 can not be used with linear polarizing filters. Use C-PL or C-PL II circular polarizing filters instead.<br>• Use NC filters to protect the lens.<br>• To prevent ghosting, use of a filter is not recommended when the subject is framed against a bright light, or when a bright light source is in the frame.<br>• Center-weighted metering is recommended with filters with exposure factors (filter factors) over 1 × (Y44, Y48, Y52, O56, R60, X0, X1, C-PL, ND2S, ND4, ND4S, ND8, ND8S, ND400, A2, A12, B2, B8, B12). See the filter manual for details. |
| **LAN adapters (🕮 269)** | • **Communication Unit UT-1**: Use a USB cable to connect the UT-1 to the camera and an Ethernet cable to connect the UT-1 to an Ethernet network. Once connected, you can upload photos and movies to a computer or ftp server, control the camera remotely using optional Camera Control Pro 2 software, or browse pictures or control the camera remotely from an iPhone or computer web browser.<br>• **Wireless Transmitter WT-5**: Attach the WT-5 to the UT-1 to access wireless networks.<br>**Note**: Use of LAN adapters requires an Ethernet or wireless network and some basic network knowledge. Be sure to upgrade any related software to the latest version. |
| **HDMI cables (🕮 277)** | **HDMI Cable HC-E1**: An HDMI cable with a type C connector for connection to the camera and a type A connector for connection to HDMI devices. |
| **Accessory shoe covers** | **Accessory Shoe Cover BS-1**: A cover protecting the accessory shoe. The accessory shoe is used for optional flash units. |
| **Body cap** | **Body Cap BF-1B/Body Cap BF-1A**: The body cap keeps the mirror, viewfinder screen, and low-pass filter free of dust when a lens is not in place. |

| | |
|---|---|
| **Viewfinder eyepiece accessories** | • **DK-20C Eyepiece Correction Lenses**: Lenses are available with diopters of –5, –4, –3, –2, 0, +0.5, +1, +2, and +3 $m^{-1}$ when the camera diopter adjustment control is in the neutral position (–1 $m^{-1}$). Use eyepiece correction lenses only if the desired focus can not be achieved with the built in diopter adjustment control (–3 to +1 $m^{-1}$). Test eyepiece correction lenses before purchase to ensure that the desired focus can be achieved. The rubber eyecup can not be used with eyepiece correction lenses.<br>• **Magnifying Eyepiece DK-21M**: The DK-21M magnifies the view through the viewfinder by approximately 1.17 × (50 mm f/1.4 lens at infinity; –1.0 $m^{-1}$) for greater precision when framing.<br>• **Magnifier DG-2**: The DG-2 magnifies the scene displayed in the center of the viewfinder for greater precision during focusing. Eyepiece adapter required (available separately).<br>• **Eyepiece Adapter DK-22**: The DK-22 is used when attaching the DG-2 magnifier.<br>• **Right-Angle Viewing Attachment DR-6**: The DR-6 attaches at a right angle to the viewfinder eyepiece, allowing the image in the viewfinder to be viewed at right angles to the lens (for example, from directly above when the camera is horizontal). |
| **Accessory terminal accessories** |  The D750 is equipped with an accessory terminal for **WR-1** and **WR-R10 wireless remote controllers** (🕮 197, 444), **MC-DC2 remote cords** (🕮 95), and **GP-1** and **GP-1A GPS units** (🕮 239), which connect with the ◀ mark on the connector aligned with the ▶ next to the accessory terminal (close the camera connector cover when the terminal is not in use). |
| **Microphones** | **Stereo Microphone ME-1** (🕮 73) |

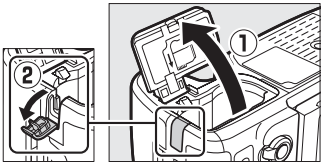
| | |
|---|---|
| **Software** | **Camera Control Pro 2**: Control the camera remotely from a computer to record movies and photographs and save photographs directly to the computer hard disk. When Camera Control Pro 2 is used to capture photographs directly to the computer, the PC connection indicator (PC) will appear in the control panel.<br>**Note**: Use the latest versions of Nikon software; see the websites listed on page xxiii for the latest information on supported operating systems. At default settings, Nikon Message Center 2 will periodically check for updates to Nikon software and firmware while you are logged in to an account on the computer and the computer is connected to the Internet. A message is automatically displayed when an update is found. |
| **Remote controls/ wireless remote controller (🕮 193)** | • **Wireless Remote Control ML-L3**: The ML-L3 uses a 3 V CR2025 battery.<br>  <br>Pressing the battery-chamber latch to the right (①), insert a fingernail into the gap and open the battery chamber (②). Ensure that the battery is inserted in the correct orientation (④).<br>• **Wireless Remote Controller WR-R10/WR-T10**: When a WR-R10 wireless remote controller is attached, the camera can be controlled wirelessly using a WR-T10 wireless remote controller.<br>• **Wireless Remote Controller WR-1**: The WR-1 can function as either a transmitter or a receiver and is used in combination either with another WR-1 or a WR-R10 or WR-T10 wireless remote controller. For example, a WR-1 can be connected to the accessory terminal for use as a receiver, allowing camera settings to be changed or the shutter to be released remotely by another WR-1 acting as a transmitter. |

Availability may vary with country or region. See our website or brochures for the latest information.

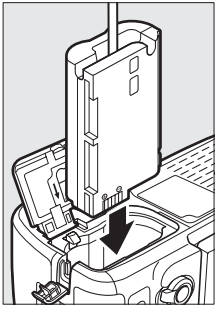
## Attaching a Power Connector and AC Adapter

Turn the camera off before attaching an optional power connector and AC adapter.

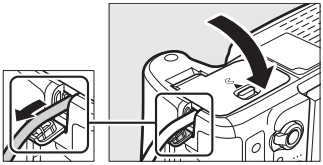
**1** **Ready the camera.**
Open the battery-chamber (Ⓘ) and power connector (Ⓘ) covers.




**2** **Insert the EP-5B power connector.**
Be sure to insert the connector in the orientation shown, using the connector to keep the orange battery latch pressed to one side. The latch locks the connector in place when the connector is fully inserted.

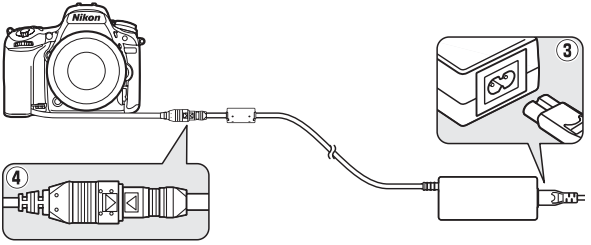


**3** **Close the battery-chamber cover.**
Position the power connector cable so that it passes through the power connector slot and close the battery-chamber cover.



**4** **Connect the EH-5b AC adapter.**

Connect the AC adapter power cable to the AC socket on AC adapter (③) and the power cable to the DC socket (④). A ⬅ icon is displayed in the monitor when the camera is powered by the AC adapter and power connector.



# Caring for the Camera

## Storage

When the camera will not be used for an extended period, remove the battery and store it in a cool, dry area with the terminal cover in place. To prevent mold or mildew, store the camera in a dry, well-ventilated area. Do not store your camera with naphtha or camphor moth balls or in locations that:

- are poorly ventilated or subject to humidities of over 60%
- are next to equipment that produces strong electromagnetic fields, such as televisions or radios
- are exposed to temperatures above 50 °C (122 °F) or below –10 °C (14 °F)

## Cleaning

| | |
|---|---|
| **Camera body** | Use a blower to remove dust and lint, then wipe gently with a soft, dry cloth. After using the camera at the beach or seaside, wipe off sand or salt with a cloth lightly dampened in distilled water and dry thoroughly. **Important**: *Dust or other foreign matter inside the camera may cause damage not covered under warranty.* |
| **Lens, mirror, and viewfinder** | These glass elements are easily damaged. Remove dust and lint with a blower. If using an aerosol blower, keep the can vertical to prevent the discharge of liquid. To remove fingerprints and other stains, apply a small amount of lens cleaner to a soft cloth and clean with care. |
| **Monitor** | Remove dust and lint with a blower. When removing fingerprints and other stains, wipe the surface lightly with a soft cloth or chamois leather. Do not apply pressure, as this could result in damage or malfunction. |

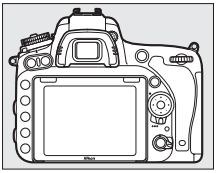
*Do not use alcohol, thinner, or other volatile chemicals.*

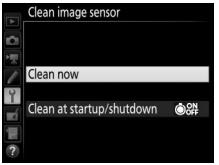
## The Low-Pass Filter

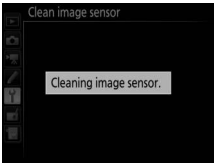
The image sensor that acts as the camera's picture element is fitted with a low-pass filter to prevent moiré. If you suspect that dirt or dust on the filter is appearing in photographs, you can clean the filter using the **Clean image sensor** option in the setup menu. The filter can be cleaned at any time using the **Clean now** option, or cleaning can be performed automatically when the camera is turned on or off.

### ■ *"Clean Now"*

Holding the camera base down, select **Clean image sensor** in the setup menu, then highlight **Clean now** and press ⊛. The camera will check the image sensor and then begin cleaning. Other operations can not be performed while cleaning is in progress. Do not remove or disconnect the power source until cleaning ends and the setup menu is displayed.





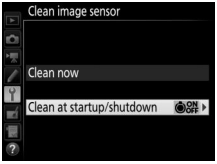



### ■■ *"Clean at Startup/Shutdown"*

Choose from the following options:

| Option | Description |
|---|---|
| **Clean at startup** | The image sensor is automatically cleaned each time the camera is turned on. |
| **Clean at shutdown** | The image sensor is automatically cleaned during shutdown each time the camera is turned off. |
| **Clean at startup & shutdown** | The image sensor is cleaned automatically at startup and at shutdown. |
| **Cleaning off** | Automatic image sensor cleaning off. |

**1** **Select Clean at startup/shutdown.**
Display the **Clean image sensor** menu as described on page 448. Highlight **Clean at startup/shutdown** and press ▶.




**2** **Select an option.**
Highlight an option and press OK.

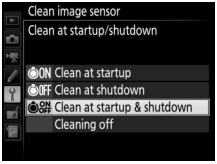


**Image Sensor Cleaning**

Using camera controls during startup interrupts image sensor cleaning. Image sensor cleaning may not be performed at startup if the flash is charging.

Cleaning is performed by vibrating the low-pass filter. If dust can not be fully removed using the options in the **Clean image sensor** menu, clean the image sensor manually (🕮 451) or consult a Nikon-authorized service representative.

If image sensor cleaning is performed several times in succession, image sensor cleaning may be temporarily disabled to protect the camera's internal circuitry. Cleaning can be performed again after a short wait.

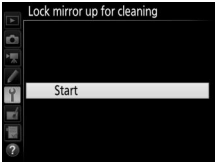
### ■■ *Manual Cleaning*

If foreign matter can not be removed from the low-pass filter using the **Clean image sensor** option in the setup menu (🕮 448), the filter can be cleaned manually as described below. Note, however, that the filter is extremely delicate and easily damaged. Nikon recommends that the filter be cleaned only by Nikon-authorized service personnel.

**1** **Charge the battery or connect an AC adapter.**
A reliable power source is required when inspecting or cleaning the low-pass filter. Turn the camera off and insert a fully-charged battery or connect an optional AC adapter and power connector. The **Lock mirror up for cleaning** option is only available in the setup menu at battery levels over .

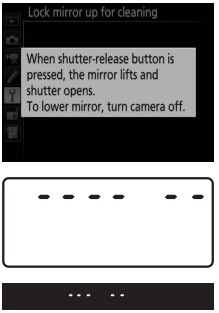
**2** **Remove the lens.**
Turn the camera off and remove the lens.

**3** **Select Lock mirror up for cleaning.**
Highlight **Lock mirror up for cleaning** in the setup menu and press ▶.



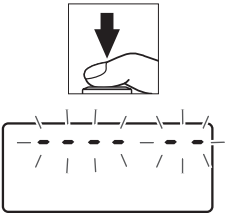
## 4 Press OK.

The message shown at right will be displayed in the monitor and a row of dashes will appear in the control panel and viewfinder. To restore normal operation without inspecting the low-pass filter, turn the camera off.



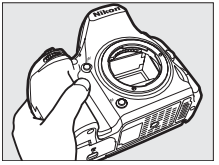

## 5 Raise the mirror.

Press the shutter-release button all the way down. The mirror will be raised and the shutter curtain will open, revealing the low-pass filter. The display in the viewfinder will turn off and the row of dashes in the control panel will flash.

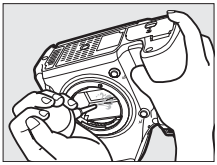


## 6 Examine the low-pass filter.

Holding the camera so that light falls on the low-pass filter, examine the filter for dust or lint. If no foreign objects are present, proceed to Step 8.



**7** **Clean the filter.**



Remove any dust and lint from the filter with a blower. Do not use a blower-brush, as the bristles could damage the filter. Dirt that can not be removed with a blower can only be removed by Nikon-authorized service personnel. Under no circumstances should you touch or wipe the filter.

**8** **Turn the camera off.**

The mirror will return to the down position and the shutter curtain will close. Replace the lens or body cap.

**Use a Reliable Power Source**

The shutter curtain is delicate and easily damaged. If the camera powers off while the mirror is raised, the curtain will close automatically. To prevent damage to the curtain, observe the following precautions:

- Do not turn the camera off or remove or disconnect the power source while the mirror is raised.
- If the battery runs low while the mirror is raised, a beep will sound and the self-timer lamp will flash to warn that the shutter curtain will close and the mirror will be lowered after about two minutes. End cleaning or inspection immediately.

**Foreign Matter on the Low-Pass Filter**

Foreign matter entering the camera when lenses or body caps are removed or exchanged (or in rare circumstances lubricant or fine particles from the camera itself) may adhere to the low-pass filter, where it may appear in photographs taken under certain conditions. To protect the camera when no lens is in place, be sure to replace the body cap provided with the camera, being careful to first remove all dust and other foreign matter that may be adhering to the camera mount, lens mount, and body cap. Avoid attaching the body cap or exchanging lenses in dusty environments.

Should foreign matter find its way onto the low-pass filter, use the low-pass filter cleaning option as described on page 448. If the problem persists, clean the filter manually (🕮 451) or have the filter cleaned by authorized Nikon service personnel. Photographs affected by the presence of foreign matter on the filter can be retouched using the clean image options available in some imaging applications.

**Servicing the Camera and Accessories**

The camera is a precision device and requires regular servicing. Nikon recommends that the camera be inspected by the original retailer or Nikon-authorized service representative once every one to two years, and that it be serviced once every three to five years (note that fees apply to these services). Frequent inspection and servicing are particularly recommended if the camera is used professionally. Any accessories regularly used with the camera, such as lenses or optional flash units, should be included when the camera is inspected or serviced.

# Caring for the Camera and Battery: Cautions

**Do not drop**: The product may malfunction if subjected to strong shocks or vibration.

**Keep dry**: This product is not waterproof, and may malfunction if immersed in water or exposed to high levels of humidity. Rusting of the internal mechanism can cause irreparable damage.

**Avoid sudden changes in temperature**: Sudden changes in temperature, such as those that occur when entering or leaving a heated building on a cold day, can cause condensation inside the device. To prevent condensation, place the device in a carrying case or plastic bag before exposing it to sudden changes in temperature.

**Keep away from strong magnetic fields**: Do not use or store this device in the vicinity of equipment that generates strong electromagnetic radiation or magnetic fields. Strong static charges or the magnetic fields produced by equipment such as radio transmitters could interfere with the monitor, damage data stored on the memory card, or affect the product's internal circuitry.

**Do not leave the lens pointed at the sun**: Do not leave the lens pointed at the sun or other strong light source for an extended period. Intense light may cause the image sensor to deteriorate or produce a white blur effect in photographs.

**Turn the product off before removing or disconnecting the power source**: Do not unplug the product or remove the battery while the product is on or while images are being recorded or deleted. Forcibly cutting power in these circumstances could result in loss of data or in damage to product memory or internal circuitry. To prevent an accidental interruption of power, avoid carrying the product from one location to another while the AC adapter is connected.

**Cleaning**: When cleaning the camera body, use a blower to gently remove dust and lint, then wipe gently with a soft, dry cloth. After using the camera at the beach or seaside, wipe off any sand or salt using a cloth lightly dampened in pure water and then dry the camera thoroughly. In rare instances, static electricity may cause LCDs to light up or go dark. This does not indicate a malfunction, and the display will soon return to normal.

The lens and mirror are easily damaged. Dust and lint should be gently removed with a blower. When using an aerosol blower, keep the can vertical to prevent discharge of liquid. To remove fingerprints and other stains from the lens, apply a small amount of lens cleaner to a soft cloth and wipe the lens carefully.

See "The Low-Pass Filter" (🕮 448, 451) for information on cleaning the low-pass filter.

**Lens contacts**: Keep the lens contacts clean.

**Do not touch the shutter curtain**: The shutter curtain is extremely thin and easily damaged. Under no circumstances should you exert pressure on the curtain, poke it with cleaning tools, or subject it to powerful air currents from a blower. These actions could scratch, deform, or tear the curtain.

**Storage**: To prevent mold or mildew, store the camera in a dry, well-ventilated area. If you are using an AC adapter, unplug the adapter to prevent fire. If the product will not be used for an extended period, remove the battery to prevent leakage and store the camera in a plastic bag containing a desiccant. Do not, however, store the camera case in a plastic bag, as this may cause the material to deteriorate. Note that desiccant gradually loses its capacity to absorb moisture and should be replaced at regular intervals.

To prevent mold or mildew, take the camera out of storage at least once a month. Turn the camera on and release the shutter a few times before putting it away.

Store the battery in a cool, dry place. Replace the terminal cover before putting the battery away.

**Notes on the monitor**: The monitor is constructed with extremely high precision; at least 99.99% of pixels are effective, with no more than 0.01% being missing or defective. Hence while these displays may contain pixels that are always lit (white, red, blue, or green) or always off (black), this is not a malfunction and has no effect on images recorded with the device.

Images in the monitor may be difficult to see in a bright light.

Do not apply pressure to the monitor, as this could cause damage or malfunction. Dust or lint on the monitor can be removed with a blower. Stains can be removed by wiping lightly with a soft cloth or chamois leather. Should the monitor break, care should be taken to avoid injury from broken glass and to prevent liquid crystal from the monitor touching the skin or entering the eyes and mouth.

**The battery and charger**: Batteries may leak or explode if improperly handled. *Read and follow the warnings and cautions on pages xiii–xvi of this manual.* Observe the following precautions when handling batteries:

- Use only batteries approved for use in this equipment.
- Do not expose the battery to flame or excessive heat.
- Keep the battery terminals clean.
- Turn the product off before replacing the battery.
- Remove the battery from the camera or charger when not in use and replace the terminal cover. These devices draw minute amounts of charge even when off and could draw the battery down to the point that it will no longer function. If the battery will not be used for some time, insert it in the camera and run it flat before removing it from the camera for storage. The battery should be stored in a cool location with an ambient temperature of 15 °C to 25 °C (59 °F to 77 °F; avoid hot or extremely cold locations). Repeat this process at least once every six months.
- Turning the camera on or off repeatedly when the battery is fully discharged will shorten battery life. Batteries that have been fully discharged must be charged before use.

- The internal temperature of the battery may rise while the battery is in use. Attempting to charge the battery while the internal temperature is elevated will impair battery performance, and the battery may not charge or charge only partially. Wait for the battery to cool before charging.
- Charge the battery indoors at ambient temperatures of 5 °C–35 °C (41 °F–95 °F). Do not use the battery at ambient temperatures below 0 °C (32 °F) or above 40 °C (104 °F); failure to observe this precaution could damage the battery or impair its performance. Capacity may be reduced and charging times increase at battery temperatures from 0 °C (32 °F) to 15 °C (59 °F) and from 45 °C (113 °F) to 60 °C (140 °F). The battery will not charge if its temperature is below 0 °C (32 °F) or above 60 °C (140 °F).
- If the **CHARGE** lamp flashes quickly (about eight times a second) during charging, confirm that the temperature is in the correct range and then unplug the charger and remove and reinsert the battery. If the problem persists, cease use immediately and take battery and charger to your retailer or a Nikon-authorized service representative.
- Do not move the charger or touch the battery during charging. Failure to observe this precaution could in very rare instances result in the charger showing that charging is complete when the battery is only partially charged. Remove and reinsert the battery to begin charging again. Battery capacity may temporarily drop if the battery is charged at low temperatures or used at a temperature below the temperature at which it was charged. If the battery is charged at a temperature below 5 °C (41 °F), the battery life indicator in the **Battery info** (🕮 383) display may show a temporary decrease.
- Continuing to charge the battery after it is fully charged can impair battery performance.
- A marked drop in the time a fully charged battery retains its charge when used at room temperature indicates that it requires replacement. Purchase a new EN-EL15 battery.
- The supplied power cable and AC wall adapter are for use with the MH-25a only. Use the charger with compatible batteries only. Unplug when not in use.

- Charge the battery before use. When taking photographs on important occasions, ready a spare battery and keep it fully charged. Depending on your location, it may be difficult to purchase replacement batteries on short notice. Note that on cold days, the capacity of batteries tends to decrease. Be sure the battery is fully charged before taking photographs outside in cold weather. Keep a spare battery in a warm place and exchange the two as necessary. Once warmed, a cold battery may recover some of its charge.
- Used batteries are a valuable resource; recycle in accord with local regulations.

# Available Settings

The following table lists the settings that can be adjusted in each mode. Note that some settings may be unavailable depending on the options selected.

| | | AUTO | | P, S, A, M | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Shooting menus | White balance | — | — | ✔ | — | — | — | — | — | — | — |
| | Set Picture Control | — | — | ✔ | — | — | — | — | — | — | — |
| | Active D-Lighting | —[1] | —[1] | ✔ | —[1] | —[1] | — | — | — | — | — |
| | HDR (high dynamic range) | — | — | ✔ | — | — | — | — | — | — | — |
| | Long exposure NR | ✔ | ✔ | ✔ | ✔ | ✔ | — | ✔ | ✔ | ✔ | ✔ |
| | High ISO NR | ✔ | ✔ | ✔ | ✔ | ✔ | — | ✔ | ✔ | ✔ | ✔ |
| | ISO sensitivity settings | ✔[2] | ✔[2] | ✔ | ✔[2] | ✔[2] | — | ✔[2] | ✔[2] | ✔[2] | ✔[2] |
| | Multiple exposure | — | — | ✔ | — | — | — | — | — | — | — |
| | Movie ISO sensitivity settings | — | — | ✔ | — | — | — | — | — | — | — |
| | Time-lapse photography | ✔ | ✔ | ✔ | ✔ | ✔ | — | — | — | — | — |
| Other settings | Metering | — | — | ✔ | — | — | — | — | — | — | — |
| | Exposure compensation | — | — | ✔ | ✔ | ✔ | ✔ | — | — | — | — |
| | Bracketing | — | — | ✔ | — | — | — | — | — | — | — |
| | Flash mode | ✔ | — | ✔ | ✔ | — | — | ✔ | — | — | — |
| | Flash compensation | — | — | ✔ | ✔ | — | — | — | — | — | — |
| | FV lock | ✔ | — | ✔ | ✔ | — | — | ✔ | — | — | — |

| | | AUTO | | P, S, A, M | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Other settings | Autofocus mode (viewfinder) | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | — | — | — | ✔ |
| | AF-area mode (viewfinder) | ✔ | ✔ | ✔ | ✔ | ✔ | — | ✔ | — | ✔ | ✔ |
| | AF mode (Live view/movie) | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | — | — | ✔ | ✔ |
| | AF-area mode (Live view/movie) | ✔ | ✔ | ✔ | ✔ | ✔ | ✔[3] | ✔[3] | — | ✔[3] | ✔ |
| Custom Settings | a9: Built-in AF-assist illuminator | ✔ | ✔ | ✔ | ✔[4] | ✔[5] | ✔ | ✔ | — | ✔ | ✔ |
| | b3: Easy exposure compensation | — | — | ✔ | — | — | — | — | — | — | — |
| | b4: Matrix metering | — | — | ✔ | — | — | — | — | — | — | — |
| | b5: Center-weighted area | — | — | ✔ | — | — | — | — | — | — | — |
| | d5: Flash warning | — | — | ✔ | — | — | — | — | — | — | — |
| | e2: Flash shutter speed | — | — | ✔ | — | — | — | — | — | — | — |
| | e3: Flash cntrl for built-in flash/Optional flash | — | — | ✔ | — | — | — | — | — | — | — |
| | e4: Exposure comp. for flash | — | — | ✔ | — | — | — | — | — | — | — |
| | e5: Modeling flash | — | — | ✔ | — | — | — | — | — | — | — |
| | e6: Auto bracketing set | — | — | ✔ | — | — | — | — | — | — | — |
| | e7: Bracketing order | — | — | ✔ | — | — | — | — | — | — | — |

1 Fixed at **Auto**.

2 **Auto ISO sensitivity control** is not available.

3 Subject-tracking AF is not available.

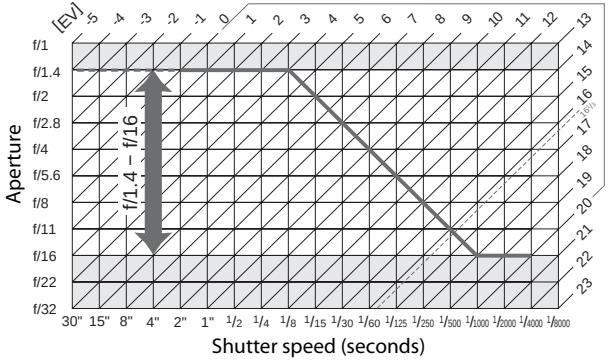
4 Not available in mode.

5 Available only in , , and modes.

## Exposure Program (Mode P)

The exposure program for mode **P** is shown in the following graph:

ISO 100; lens with maximum aperture of f/1.4 and minimum aperture of f/16 (e.g., AF 50mm f/1.4D)




The maximum and minimum values for EV vary with ISO sensitivity; the above graph assumes an ISO sensitivity of ISO 100 equivalent. When matrix metering is used, values over 16⅓ EV are reduced to 16⅓ EV.

# Troubleshooting

If the camera fails to function as expected, check the list of common problems below before consulting your retailer or Nikon-authorized service representative.

## Battery/Display

**The camera is on but does not respond**: Wait for recording to end. If the problem persists, turn the camera off. If the camera does not turn off, remove and reinsert the battery or, if you are using an AC adapter, disconnect and reconnect the AC adapter. Note that although any data currently being recorded will be lost, data that have already been recorded will not be affected by removing or disconnecting the power source.

**Viewfinder is out of focus**: Adjust viewfinder focus (🕮 29). If this does not correct the problem, select single-servo autofocus (**AF-S**; 🕮 121), single-point AF (🕮 123), and the center focus point (🕮 127), and then frame a high-contrast subject in the center focus point and press the shutter-release button halfway to focus the camera. With the camera in focus, use the diopter adjustment control to bring the subject into clear focus in the viewfinder. If necessary, viewfinder focus can be further adjusted using optional corrective lenses (🕮 443).

**Viewfinder is dark**: Insert a fully-charged battery (🕮 25, 30).

**Displays turn off without warning**: Choose longer delays for Custom Setting c2 (**Standby timer**) or c4 (**Monitor off delay**) (🕮 336, 337).

**Control panel and viewfinder displays are unresponsive and dim**: The response times and brightness of these displays vary with temperature.

**Fine lines are visible around active focus point or display turns red when focus point is highlighted**: These phenomena are normal for this type of viewfinder and do not indicate a malfunction.

## Shooting (All Modes)

**Camera takes time to turn on**: Delete files or folders.

**Shutter-release disabled**:
- Memory card is locked, full, or not inserted (📖 26, 33).
- **Release locked** is selected for Custom Setting f7 (**Slot empty release lock**; 📖 365) and no memory card is inserted (📖 33).
- Built-in flash is charging (📖 40).
- Camera is not in focus (📖 36).
- Aperture ring for CPU lens not locked at highest f-number (does not apply to type G and E lenses). If **Fℰ ℰ** is displayed in control panel, select **Aperture ring** for Custom Setting f5 (**Customize command dials**) > **Aperture setting** to use lens aperture ring to adjust aperture (📖 364).
- Non-CPU lens is attached but camera is not in mode **A** or **M** (📖 88).

**Camera is slow to respond to shutter-release button**: Select **Off** for Custom Setting d4 (**Exposure delay mode**; 📖 339).

**No photo taken when remote control shutter-release button is pressed**:
- Replace battery in remote control (📖 444).
- Choose an option other than **Off** for **Remote control mode (ML-L3)** (📖 193).
- Flash is charging (📖 195).
- Time selected for Custom Setting c5 (**Remote on duration (ML-L3)**, 📖 337) has elapsed: press camera shutter-release button halfway.
- Bright light is interfering with remote.

**Photos are out of focus**:
- Rotate focus-mode selector to **AF** (📖 120).
- Camera unable to focus using autofocus: use manual focus or focus lock (📖 129, 132).

**Focus does not lock when shutter-release button is pressed halfway**: Use **AE-L/AF-L** button to lock focus when **AF-C** is selected for focus mode or when photographing moving subjects in **AF-A** mode.

**Can not select focus point**:
- Unlock focus selector lock (🕮 127).
- Auto-area AF or face-priority AF selected for AF-area mode: choose another mode.
- Camera is in playback mode (🕮 241) or menus are in use (🕮 292).
- Press shutter-release button halfway to start standby timer (🕮 39).

**Can not select AF mode**: Manual focus selected (🕮 60, 132).

**Can not select AF-area mode**: Manual focus selected (🕮 60, 132).

**Only one shot taken each time shutter-release button is pressed in continuous release mode**: Continuous shooting is not available if built-in flash fires (🕮 184).

**Image size can not be changed**: **Image quality** set to **NEF (RAW)** (🕮 115).

**Camera is slow to record photos**: Turn long exposure noise reduction off (🕮 317).

**Noise (bright spots, randomly-spaced bright pixels, fog, or lines) appear in photos**:
- Choose lower ISO sensitivity or use high ISO noise reduction (🕮 134, 317).
- Shutter speed is slower than 1 s: use long exposure noise reduction (🕮 317).
- Turn **Active D-Lighting** off to avoid heightening the effects of noise (🕮 175).

**AF-assist illuminator does not light**:
- AF-assist illuminator does not light if **AF-C** is selected for autofocus mode (🕮 121) or if continuous-servo autofocus is selected when the camera is in **AF-A** mode. Choose **AF-S**. If an option other than auto-area AF is selected for AF-area mode, select center focus point (🕮 123, 127).
- The camera is currently in live view or a movie is being recorded.
- **Off** is selected for Custom Setting a9 (**Built-in AF-assist illuminator**) (🕮 332).
- Illuminator has turned off automatically. Illuminator may become hot with continued use; wait for it to cool down.

**Smudges appear in photographs**: Clean front and rear lens elements. If problem persists, perform image sensor cleaning (🕮 448).

**Sound is not recorded with movies**: **Microphone off** is selected for **Microphone sensitivity** in the movie shooting menu (🕮 320).

**Live view ends unexpectedly or does not start**: Live view may end automatically to prevent damage to the camera's internal circuits if:

- The ambient temperature is high
- The camera has been used for extended periods in live view or to record movies
- The camera has been used in continuous release modes for extended periods

If live view does not start when you press the Ⓛv button, wait for the internal circuits to cool and then try again. Note that the camera may feel warm to the touch, but this does not indicate a malfunction.

**Image artifacts appear during live view**: The temperature of the camera's internal circuits may rise during live view, causing image "noise" in the form of bright spots, randomly-spaced bright pixels, or fog. Exit live view when the camera is not in use.

**Flicker or banding appears during live view or movie recording**: Choose an option for **Flicker reduction** that matches the frequency of the local AC power supply (🕮 380).

**Bright bands appear during live view or movie recording**: A flashing sign, flash, or other light source with brief duration was used during live view or movie recording.

**Menu item can not be selected**: Some options are not available in all modes (🕮 460).

## Shooting (P, S, A, M)

**Shutter-release disabled**:
- Non-CPU lens is attached: rotate camera mode dial to **A** or **M** (🕮 88).
- Mode dial rotated to **S** after shutter speed of **buLb** or **- -** selected in mode **M**: choose new shutter speed (🕮 90).

**Full range of shutter speeds not available**: Flash in use. Flash sync speed can be selected using Custom Setting e1 (**Flash sync speed**); when using compatible flash units, choose **1/250 s (Auto FP)** or **1/200 s (Auto FP)** for full range of shutter speeds (🕮 345).

**Colors are unnatural**:
- Adjust white balance to match light source (🕮 145).
- Adjust **Set Picture Control** settings (🕮 165).

**Can not measure white balance**: Subject is too dark or too bright (🕮 158).

**Image can not be selected as source for manual preset white balance**: Image was not created with D750 (🕮 162).

**White balance bracketing unavailable**:
- NEF (RAW) or NEF+JPEG image quality option selected for image quality (🕮 115).
- Multiple exposure mode is in effect (🕮 221).

**Effects of Picture Control differ from image to image**: **A** (auto) is selected for sharpening, clarity, contrast, or saturation. For consistent results over a series of photos, choose another setting (🕮 168).

**Metering can not be changed**: Autoexposure lock is in effect (🕮 141).

**Exposure compensation can not be used**: Camera is in mode **M**. Choose another mode.

**Noise (reddish areas or other artifacts) appears in long time-exposures**: Enable long exposure noise reduction (🕮 317).

## Playback

**NEF (RAW) image is not played back**: Photo was taken at image quality of NEF + JPEG (🕮 115).

**Can not view pictures recorded with other cameras**: Pictures recorded with other makes of camera may not be displayed correctly.

**Message is displayed stating that no images are available for playback**: Select **All** for **Playback folder** (🕮 300).

**"Tall" (portrait) orientation photos are displayed in "wide" (landscape) orientation**:
- Select **On** for **Rotate tall** (🕮 308).
- Photo was taken with **Off** selected for **Auto image rotation** (🕮 382).
- Camera was pointed up or down when photo was taken (🕮 382).
- Photo is displayed in image review (🕮 307).

**Can not delete picture**:
- Picture is protected: remove protection (🕮 257).
- Memory card is locked (🕮 33).

**Can not retouch picture**: Photo can not be further edited with this camera (🕮 395).

**Can not change print order**:
- Memory card is full: delete pictures (🕮 38, 258).
- Memory card is locked (🕮 33).

**Can not select photo for printing**: Photo is in NEF (RAW) format. Transfer photos to computer and print using ViewNX 2 (supplied) or Capture NX-D (available for download; 🕮 268). NEF (RAW) photos can be saved in JPEG format using **NEF (RAW) processing** (🕮 406).

**Photo is not displayed on high-definition video device**: Confirm that HDMI cable is connected (🕮 277).

**Camera does not respond to remote control for HDMI-CEC television**:
- Select **On** for **HDMI** > **Device control** in the setup menu (🕮 278).
- Adjust HDMI-CEC settings for the television as described in documentation provided with the device.

**Can not transfer photos to computer**: OS not compatible with camera or transfer software. Use card reader to copy photos to computer (🕮 264).

**Image Dust Off option in Capture NX-D does not have desired effect**: Image sensor cleaning changes the position of dust on the low-pass filter. Dust off reference data recorded before image sensor cleaning is performed can not be used with photographs taken after image sensor cleaning is performed. Dust off reference data recorded after image sensor cleaning is performed can not be used with photographs taken before image sensor cleaning is performed (🕮 380).

**Computer displays NEF (RAW) images differently from camera**: Third-party software does not display effects of Picture Controls, Active D-Lighting, or vignette control. Use ViewNX 2 (supplied) or Nikon software such as Capture NX-D (available for download; 🕮 268).

## Wi-Fi (Wireless Networks)

**Smart devices do not display the camera SSID (network name)**:

- Confirm that **Enable** is selected for **Wi-Fi** > **Network connection** in the camera setup menu (🕮 284).
- Try turning the smart device Wi-Fi off and then on again.

## Miscellaneous

**Date of recording is not correct**: Set camera clock (🕮 28, 381).

**Menu item can not be selected**: Some options are not available at certain combinations of settings or when no memory card is inserted. Note that **Battery info** option is not available when camera is powered by an optional power connector and AC adapter (🕮 383).

## Error Messages

This section lists the indicators and error messages that appear in the viewfinder, control panel, and monitor.

| Indicator | | Problem | Solution | 🕮 |
|---|---|---|---|---|
| Control panel | Viewfinder | | | |
| FE E (flashes) | | Lens aperture ring is not set to minimum aperture. | Set ring to minimum aperture (highest f-number). | 33 |
| | | Low battery. | Ready a fully-charged spare battery. | 25 |
| (flashes) | (flashes) | • Battery exhausted.<br>• Battery can not be used.<br>• An extremely exhausted rechargeable Li-ion battery or a third-party battery is inserted either in the camera or in the optional MB-D16 battery pack. | • Recharge or replace battery.<br>• Contact Nikon-authorized service representative.<br>• Replace the battery, or recharge the battery if the rechargeable Li-ion battery is exhausted. | xxii, 25, 26 |
| dF | | No lens attached, or non-CPU lens attached without specifying maximum aperture. Aperture shown in stops from maximum aperture. | Aperture value will be displayed if maximum aperture is specified. | 235 |

| Indicator | | Problem | Solution | 🕮 |
|---|---|---|---|---|
| Control panel | Viewfinder | | | |
| F- - (flashes) | | • No lens attached. | • Attach non-IX Nikkor lens. If a CPU lens is attached, remove and reattach the lens. | 27, 426 |
| | | • Non-CPU lens attached. | • Select mode **A** or **M**. | 88 |
| — | ▶ ◀ (flashes) | Camera unable to focus using autofocus. | Change composition or focus manually. | 131, 132 |
| (Exposure indicators and shutter speed or aperture display flash) | | Subject too bright; photo will be overexposed. | • Use a lower ISO sensitivity | 134 |
| | | | • In shooting mode: | |
| | | | **P** Use optional ND filter | 442 |
| | | | **S** Increase shutter speed | 90 |
| | | | **A** Choose a smaller aperture (higher f-number) | 91 |
| | | | ⚅ Choose another shooting mode | 6 |
| | | Subject too dark; photo will be underexposed. | • Use a higher ISO sensitivity | 134 |
| | | | • In shooting mode: | |
| | | | **P** Use flash | 180 |
| | | | **S** Lower shutter speed | 90 |
| | | | **A** Choose a larger aperture (lower f-number) | 91 |

| Indicator | | Problem | Solution | 🕮 |
|---|---|---|---|---|
| Control panel | Viewfinder | | | |
| bulb (flashes) | | bulb selected in mode **S**. | Change shutter speed or select mode **M**. | 90, 93 |
| - - (flashes) | | - - selected in mode **S**. | Change shutter speed or select mode **M**. | 90, 93 |
| buSY (flashes) | bSY (flashes) | Processing in progress. | Wait until processing is complete. | — |
| — | ϟ (flashes) | If indicator flashes for 3s after flash fires, photo may be underexposed. | Check photo in monitor; if underexposed, adjust settings and try again. | 241 |
| FuLL (flashes) | Ful (flashes) | Memory insufficient to record further photos at current settings, or camera has run out of file or folder numbers. | • Reduce quality or size.<br>• Delete photographs after copying important images to computer or other device.<br>• Insert new memory card. | 115, 118<br>258<br>26 |
| Err (flashes) | | Camera malfunction. | Release shutter. If error persists or appears frequently, consult Nikon-authorized service representative. | — |

| Indicator | | Problem | Solution | 🕮 |
|---|---|---|---|---|
| Monitor | Control panel | | | |
| **No memory card.** | [- E -] | Camera cannot detect memory card. | Turn camera off and confirm that card is correctly inserted. | 26 |
| **This memory card cannot be used. Card may be damaged. Insert another card.** | CArd, Err (flashes) | • Error accessing memory card. | • Use Nikon-approved card.<br>• Check that contacts are clean. If card is damaged, contact retailer or Nikon-authorized service representative. | 491<br>— |
| | | • Unable to create new folder. | • Delete files or insert new memory card after copying important images to computer or other device. | 26, 258 |
| 📶 | CArd, Err (flashes) | Camera can not control Eye-Fi card. | • Check that Eye-Fi card firmware is up to date.<br>• Copy files on Eye-Fi card to a computer or other device and format card, or insert new card. | 391<br>26, 266, 375 |

| Indicator | | Problem | Solution | 🕮 |
|---|---|---|---|---|
| Monitor | Control panel | | | |
| **Memory card is locked. Slide lock to "write" position.** | CArd, - - - (flashes) | Memory card is locked (write protected). | Slide card write-protect switch to "write" position. | 33 |
| **Not available if Eye-Fi card is locked.** | CArd, Err (flashes) | Eye-Fi card is locked (write protected). | | |
| **This card is not formatted. Format the card.** | [For] (flashes) | Memory card has not been formatted for use in camera. | Format memory card or insert new memory card. | 26, 375 |
| **Clock has been reset.** | — | Camera clock is not set. | Set camera clock. | 28, 381 |
| **Unable to start live view. Please wait.** | — | The internal temperature of the camera is high. | Wait for the internal circuits to cool before resuming live view or movie recording. | 466 |
| **Folder contains no images.** | — | No images on memory card or in folder(s) selected for playback. | Select folder containing images from **Playback folder** menu or insert memory card containing images. | 26, 300 |
| **All images are hidden.** | — | All photos in current folder are hidden. | No images can be played back until another folder has been selected or **Hide image** used to allow at least one image to be displayed. | 301 |

| Indicator | | Problem | Solution | 🕮 |
|---|---|---|---|---|
| Monitor | Control panel | | | |
| **Cannot display this file.** | — | File has been created or modified using a computer or different make of camera, or file is corrupt. | File can not be played back on camera. | — |
| **Cannot select this file.** | — | Selected image can not be retouched. | Images created with other devices can not be retouched. | 395 |
| **This movie cannot be edited.** | — | The selected movie can not be edited. | • Movies created with other devices can not be edited.<br>• Movies must be at least two seconds long. | —<br>85 |
| **Could not connect; multiple devices detected. Try again later.** | — | Multiple smart devices are attempting to connect to camera simultaneously. | Wait a few minutes before trying again. | 282 |
| **Error** | — | Wi-Fi error. | Select **Disable** for **Wi-Fi** > **Network connection**, then select **Enable** again. | 288 |

| Indicator | | Problem | Solution | 🕮 |
|---|---|---|---|---|
| Monitor | Control panel | | | |
| **Network access not available until camera cools.** | — | The internal temperature of the camera is high. | Turn camera off and try again after waiting for camera to cool. | — |
| **Check printer.** | — | Printer error. | Check printer. To resume, select **Continue** (if available). | 271* |
| **Check paper.** | — | Paper in printer is not of selected size. | Insert paper of correct size and select **Continue**. | 271* |
| **Paper jam.** | — | Paper is jammed in printer. | Clear jam and select **Continue**. | 271* |
| **Out of paper.** | — | Printer is out of paper. | Insert paper of selected size and select **Continue**. | 271* |
| **Check ink supply.** | — | Ink error. | Check ink. To resume, select **Continue**. | 271* |
| **Out of ink.** | — | Printer is out of ink. | Replace ink and select **Continue**. | 271* |

* See printer manual for more information.

# Specifications

## ■■ *Nikon D750 Digital Camera*

| | |
|---|---|
| **Type** | |
| **Type** | Single-lens reflex digital camera |
| **Lens mount** | Nikon F mount (with AF coupling and AF contacts) |
| **Effective angle of view** | Nikon FX format |
| **Effective pixels** | |
| **Effective pixels** | 24.3 million |
| **Image sensor** | |
| **Image sensor** | 35.9 × 24.0 mm CMOS sensor |
| **Total pixels** | 24.93 million |
| **Dust-reduction System** | Image sensor cleaning, Image Dust Off reference data (Capture NX-D software required) |
| **Storage** | |
| **Image size (pixels)** | • **FX (36×24) image area**<br>6016 × 4016 (L) 4512 × 3008 (M)<br>3008 × 2008 (S)<br>• **1.2× (30×20) image area**<br>5008 × 3336 (L) 3752 × 2504 (M)<br>2504 × 1664 (S)<br>• **DX (24×16) image area**<br>3936 × 2624 (L) 2944 × 1968 (M)<br>1968 × 1312 (S)<br>• **FX-format photographs taken in movie live view**<br>6016 × 3376 (L) 4512 × 2528 (M)<br>3008 × 1688 (S)<br>• **DX-format photographs taken in movie live view**<br>3936 × 2224 (L) 2944 × 1664 (M)<br>1968 × 1112 (S)<br>**Note**: Photographs taken in movie live view have an aspect ratio of 16 : 9. The camera offers a choice of DX- and FX-based formats. |

| Storage | |
|---|---|
| **File format** | • **NEF (RAW)**: 12 or 14 bit, lossless compressed or compressed<br>• **JPEG**: JPEG-Baseline compliant with fine (approx. 1 : 4), normal (approx. 1 : 8), or basic (approx. 1 : 16) compression (**Size priority**); **Optimal quality** compression available<br>• **NEF (RAW)+JPEG**: Single photograph recorded in both NEF (RAW) and JPEG formats |
| **Picture Control System** | Standard, Neutral, Vivid, Monochrome, Portrait, Landscape, Flat; selected Picture Control can be modified; storage for custom Picture Controls |
| **Media** | SD (Secure Digital) and UHS-I compliant SDHC and SDXC memory cards |
| **Double slot** | Slot 2 can be used for overflow or backup storage or for separate storage of copies created using NEF+JPEG; pictures can be copied between cards. |
| **File system** | DCF 2.0, DPOF, Exif 2.3, PictBridge |

| Viewfinder | |
|---|---|
| **Viewfinder** | Eye-level pentaprism single-lens reflex viewfinder |
| **Frame coverage** | • **FX (36×24)**: Approx. 100% horizontal and 100% vertical<br>• **1.2× (30×20)**: Approx. 97% horizontal and 97% vertical<br>• **DX (24×16)**: Approx. 97% horizontal and 97% vertical |
| **Magnification** | Approx. 0.7 × (50 mm f/1.4 lens at infinity, –1.0 $m^{-1}$) |
| **Eyepoint** | 21 mm (–1.0 $m^{-1}$; from center surface of viewfinder eyepiece lens) |
| **Diopter adjustment** | –3–+1 $m^{-1}$ |

| Viewfinder | |
|---|---|
| **Focusing screen** | Type B BriteView Clear Matte Mark III screen with AF area brackets (framing grid can be displayed) |
| **Reflex mirror** | Quick return |
| **Depth-of-field preview** | Pressing **Pv** button stops lens aperture down to value selected by user (**A** and **M** modes) or by camera (other modes) |
| **Lens aperture** | Instant return, electronically controlled |
| **Lens** | |
| **Compatible lenses** | Compatible with AF NIKKOR lenses, including type G, E, and D lenses (some restrictions apply to PC lenses) and DX lenses (using DX 24 × 16 1.5× image area), AI-P NIKKOR lenses, and non-CPU AI lenses (**A** and **M** modes only). IX NIKKOR lenses, lenses for the F3AF, and non-AI lenses can not be used.<br><br>The electronic rangefinder can be used with lenses that have a maximum aperture of f/5.6 or faster (the electronic rangefinder supports the 11 focus points with lenses that have a maximum aperture of f/8 or faster). |
| **Shutter** | |
| **Type** | Electronically-controlled vertical-travel focal-plane shutter |
| **Speed** | 1/4000 – 30 s in steps of 1/3 or 1/2 EV, bulb, time, X200 |
| **Flash sync speed** | X = 1/200 s; synchronizes with shutter at 1/250 s or slower (flash range drops at speeds between 1/200 and 1/250 s) |

| Release | |
|---|---|
| **Release mode** | **S** (single frame), **CL** (continuous low speed), **CH** (continuous high speed), **Q** (quiet shutter-release), **Qc** (quiet continuous shutter-release), ⏲ (self-timer), **MUP** (mirror up) |
| **Frame advance rate** | 1–6 fps (**CL**), 6.5 fps (**CH**), or 3 fps (**Qc**) |
| **Self-timer** | 2 s, 5 s, 10 s, 20 s; 1–9 exposures at intervals of 0.5, 1, 2, or 3 s |
| **Remote control modes (ML-L3)** | Delayed remote, quick-response remote, remote mirror-up |

| Exposure | |
|---|---|
| **Metering** | TTL exposure metering using RGB sensor with approximately 91K (91,000) pixels |
| **Metering method** | • **Matrix**: 3D color matrix metering III (type G, E, and D lenses); color matrix metering III (other CPU lenses); color matrix metering available with non-CPU lenses if user provides lens data<br>• **Center-weighted**: Weight of approximately 75% given to 12 mm circle in center of frame. Diameter of circle can be changed to 8, 15, or 20 mm, or weighting can be based on average of entire frame (non-CPU lenses use 12-mm circle)<br>• **Spot**: Meters 4 mm circle (about 1.5% of frame) centered on selected focus point (on center focus point when non-CPU lens is used)<br>• **Highlight-weighted**: Available with type G, E, and D lenses; equivalent to center-weighted when other lenses are used. |
| **Range (ISO 100, f/1.4 lens, 20 °C/68 °F)** | • **Matrix, center-weighted, or highlight-weighted metering**: 0–20 EV<br>• **Spot metering**: 2–20 EV |
| **Exposure meter coupling** | Combined CPU and AI |

| Exposure | |
|---|---|
| **Mode** | Auto modes (auto; auto (flash off)); scene modes (portrait; landscape; child; sports; close up; night portrait; night landscape; party/indoor; beach/snow; sunset; dusk/dawn; pet portrait; candlelight; blossom; autumn colors; food); special effects modes (night vision; color sketch; miniature effect; selective color; silhouette; high key; low key); programmed auto with flexible program (**P**); shutter-priority auto (**S**); aperture-priority auto (**A**); manual (**M**); **U1** (user settings 1); **U2** (user settings 2) |
| **Exposure compensation** | Can be adjusted by –5 – +5 EV in increments of 1/3 or 1/2 EV in **P**, **S**, **A**, **M**, **SCENE**, and modes |
| **Exposure bracketing** | 2–9 frames in steps of 1/3, 1/2, 2/3, or 1 EV; 2–5 frames in steps of 2 or 3 EV |
| **Flash bracketing** | 2–9 frames in steps of 1/3, 1/2, 2/3, or 1 EV; 2–5 frames in steps of 2 or 3 EV |
| **White balance bracketing** | 2–3 frames in steps of 1, 2, or 3 |
| **ADL bracketing** | 2 frames using selected value for one frame or 3–5 frames using preset values for all frames |
| **Exposure lock** | Luminosity locked at detected value with **AE-L/AF-L** button |
| **ISO sensitivity (Recommended Exposure Index)** | ISO 100 – 12800 in steps of 1/3 or 1/2 EV. Can also be set to approx. 0.3, 0.5, 0.7, or 1 EV (ISO 50 equivalent) below ISO 100 or to approx. 0.3, 0.5, 0.7, 1, or 2 EV (ISO 51200 equivalent) above ISO 12800; auto ISO sensitivity control available |
| **Active D-Lighting** | **Auto**, **Extra high**, **High**, **Normal**, **Low**, **Off** |

| Focus | |
|---|---|
| **Autofocus** | Nikon Advanced Multi-CAM 3500 II autofocus sensor module with TTL phase detection, fine-tuning, 51 focus points (including 15 cross-type sensors; f/8 supported by 11 sensors), and AF-assist illuminator (range approx. 0.5 – 3 m/1 ft 8 in. – 9 ft 10 in.) |
| **Detection range** | –3 – +19 EV (ISO 100, 20 °C/68 °F) |
| **Lens servo** | • **Autofocus (AF)**: Single-servo AF (**AF-S**); continuous-servo AF (**AF-C**); auto AF-S/AF-C selection (**AF-A**); predictive focus tracking activated automatically according to subject status<br>• **Manual focus (M)**: Electronic rangefinder can be used |
| **Focus point** | Can be selected from 51 or 11 focus points |
| **AF-area mode** | Single-point AF; 9-, 21-, or 51-point dynamic-area AF, 3D-tracking, group-area AF, auto-area AF |
| **Focus lock** | Focus can be locked by pressing shutter-release button halfway (single-servo AF) or by pressing AE-L/AF-L **AE-L/AF-L** button |

| Flash | |
|---|---|
| **Built-in flash** | AUTO, , , , , , , : Auto flash with auto pop-up<br>**P**, **S**, **A**, **M**, : Manual pop-up with button release |
| **Guide Number** | Approx. 12/39, 12/39 with manual flash (m/ft, ISO 100, 20 °C/68 °F) |

| Flash | |
|---|---|
| **Flash control** | **TTL**: i-TTL flash control using RGB sensor with approximately 91K (91,000) pixels is available with built-in flash; i-TTL balanced fill-flash for digital SLR is used with matrix, center-weighted, and highlight-weighted metering, standard i-TTL flash for digital SLR with spot metering |
| **Flash mode** | Auto, auto with red-eye reduction, auto slow sync, auto slow sync with red-eye reduction, fill-flash, red-eye reduction, slow sync, slow sync with red-eye reduction, rear-curtain with slow sync, rear-curtain sync, off; Auto FP High-Speed Sync supported |
| **Flash compensation** | –3 – +1 EV in increments of ⅓ or ½ EV |
| **Flash-ready indicator** | Lights when built-in flash or optional flash unit is fully charged; blinks after flash is fired at full output |
| **Accessory shoe** | ISO 518 hot-shoe with sync and data contacts and safety lock |
| **Nikon Creative Lighting System (CLS)** | Nikon CLS supported; commander mode option available |
| **Sync terminal** | AS-15 sync terminal adapter (available separately) |
| **White balance** | |
| **White balance** | Auto (2 types), incandescent, fluorescent (7 types), direct sunlight, flash, cloudy, shade, preset manual (up to 6 values can be stored, spot white balance measurement available during live view), choose color temperature (2500 K–10000 K), all with fine-tuning |

| | |
|---|---|
| **Live view** | |
| **Modes** | Live view photography (still images), movie live view (movies) |
| **Lens servo** | • **Autofocus (AF)**: Single-servo AF (**AF-S**); full-time servo AF (**AF-F**)<br>• **Manual focus (M)** |
| **AF-area mode** | Face-priority AF, wide-area AF, normal-area AF, subject-tracking AF |
| **Autofocus** | Contrast-detect AF anywhere in frame (camera selects focus point automatically when face-priority AF or subject-tracking AF is selected) |
| **Movie** | |
| **Metering** | TTL exposure metering using main image sensor |
| **Metering method** | Matrix, center-weighted, or highlight-weighted |
| **Frame size (pixels) and frame rate** | • 1920 × 1080; 60 p (progressive), 50 p, 30 p, 25 p, 24 p<br>• 1280 × 720; 60 p, 50 p<br>Actual frame rates for 60 p, 50 p, 30 p, 25 p, and 24 p are 59.94, 50, 29.97, 25, and 23.976 fps respectively; options support both ★high and normal image quality |
| **File format** | MOV |
| **Video compression** | H.264/MPEG-4 Advanced Video Coding |
| **Audio recording format** | Linear PCM |
| **Audio recording device** | Built-in or external stereo microphone; sensitivity adjustable |
| **Other options** | Index marking, time-lapse photography |
| **Monitor** | |
| **Monitor** | 8-cm/3.2-in., approx. 1229 k-dot (VGA; 640 × RGBW × 480 = 1,228,800 dots), low-temperature polysilicon tilting TFT LCD with approx. 170 ° viewing angle, approx. 100% frame coverage, and brightness and angle adjustment |

| | |
|---|---|
| **Playback** | |
| **Playback** | Full-frame and thumbnail (4, 9, or 72 images or calendar) playback with playback zoom, movie playback, photo and/or movie slide shows, histogram display, highlights, photo information, location data display, and auto image rotation |
| **Interface** | |
| **USB** | Hi-Speed USB; connection to built-in USB port is recommended |
| **HDMI output** | Type C HDMI connector |
| **Accessory terminal** | • **Wireless remote controllers**: WR-1, WR-R10 (available separately)<br>• **Remote cord**: MC-DC2 (available separately)<br>• **GPS unit**: GP-1/GP-1A (available separately) |
| **Audio input** | Stereo mini-pin jack (3.5 mm diameter; plug-in power supported) |
| **Audio output** | Stereo mini-pin jack (3.5 mm diameter) |
| **Wireless (D750 only; not available with the D750 (K))** | |
| **Standards** | IEEE 802.11b, IEEE 802.11g |
| **Communications protocols** | • **IEEE 802.11b**: DSSS/CCK<br>• **IEEE 802.11g**: OFDM |
| **Operating frequency** | 2412–2462 MHz (channels 1–11) |
| **Range (line of sight)** | Approximately 30 m/98 ft (assumes no interference; range may vary with signal strength and presence or absence of obstacles) |
| **Data rate** | 54 Mbps<br>Maximum logical data rates according to IEEE standard. Actual rates may differ. |
| **Security** | • **Authentication**: Open system, WPA2-PSK<br>• **Encryption**: AES |
| **Wireless setup** | Supports WPS |
| **Access protocols** | Infrastructure |

| | |
|---|---|
| **Supported languages** | |
| **Supported languages** | Arabic, Bengali, Bulgarian, Chinese (Simplified and Traditional), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hindi, Hungarian, Indonesian, Italian, Japanese, Korean, Marathi, Norwegian, Persian, Polish, Portuguese (Portugal and Brazil), Romanian, Russian, Serbian, Spanish, Swedish, Tamil, Telugu, Thai, Turkish, Ukrainian, Vietnamese |
| **Power source** | |
| **Battery** | One EN-EL15 rechargeable Li-ion battery |
| **Battery pack** | Optional MB-D16 multi-power battery pack with one Nikon EN-EL15 rechargeable Li-ion battery or six AA alkaline, Ni-MH, or lithium batteries |
| **AC adapter** | EH-5b AC adapter; requires EP-5B power connector (available separately) |
| **Tripod socket** | |
| **Tripod socket** | ¼ in. (ISO 1222) |
| **Dimensions/weight** | |
| **Dimensions (W × H × D)** | Approx. 140.5 × 113 × 78 mm (5.6 × 4.5 × 3.1 in.) |
| **Weight** | Approx. 840 g (1 lb 13.7 oz) with battery and memory card but without body cap; approx. 750 g (1 lb 10.5 oz; camera body only) |
| **Operating environment** | |
| **Temperature** | 0 °C–40 °C (+32 °F–104 °F) |
| **Humidity** | 85% or less (no condensation) |

- Unless otherwise stated, all measurements are performed in conformity with **C**amera and **I**maging **P**roducts **A**ssociation (CIPA) standards or guidelines.
- All figures are for a camera with a fully-charged battery.
- Nikon reserves the right to change the appearance and specifications of the hardware and software described in this manual at any time and without prior notice. Nikon will not be held liable for damages that may result from any mistakes that this manual may contain.

| MH-25a Battery Charger | |
|---|---|
| **Rated input (in North America)** | AC 120 V, 60 Hz, 0.2 A |
| **Rated input (in other regions)** | AC 100–240 V, 50/60 Hz, 0.23–0.12 A |
| **Rated output** | DC 8.4 V/1.2 A |
| **Supported batteries** | Nikon EN-EL15 rechargeable Li-ion batteries |
| **Charging time** | Approx. 2 hours and 35 minutes at an ambient temperature of 25 °C (77 °F) when no charge remains |
| **Operating temperature** | 0 °C–40 °C (+32 °F–104 °F) |
| **Dimensions (W × H × D)** | Approx. 95 × 33.5 × 71 mm (3.7 × 1.3 × 2.8 in.), excluding projections |
| **Length of power cable (if supplied)** | Approx. 1.5 m (4.9 ft) |
| **Weight** | Approx. 115 g (4.1 oz), excluding supplied power connector (power cable or AC wall adapter) |

The symbols on this product represent the following:
~ AC, ⎓ DC, ⧈ Class II equipment (The construction of the product is double-insulated.)

| EN-EL15 Rechargeable Li-ion Battery | |
|---|---|
| **Type** | Rechargeable lithium-ion battery |
| **Rated capacity** | 7.0 V/1900 mAh |
| **Operating temperature** | 0 °C–40 °C (+32 °F–104 °F) |
| **Dimensions (W × H × D)** | Approx. 40 × 56 × 20.5 mm (1.6 × 2.2 × 0.8 in.) |
| **Weight** | Approx. 88 g (3.1 oz), excluding terminal cover |

- Nikon reserves the right to change the appearance and specifications of the hardware and software described in this manual at any time and without prior notice. Nikon will not be held liable for damages that may result from any mistakes that this manual may contain.

### ■■ *Supported Standards*

- **DCF Version 2.0**: The **D**esign Rule for **C**amera **F**ile Systems (DCF) is a standard widely used in the digital camera industry to ensure compatibility among different makes of camera.
- **DPOF**: **D**igital **P**rint **O**rder **F**ormat (DPOF) is an industry-wide standard that allows pictures to be printed from print orders stored on the memory card.
- **Exif version 2.3**: The camera supports Exif (**Ex**changeable **I**mage **F**ile Format for Digital Still Cameras) version 2.3, a standard in which information stored with photographs is used for optimal color reproduction when the images are output on Exif-compliant printers.
- **PictBridge**: A standard developed through cooperation with the digital camera and printer industries, allowing photographs to be output directly to a printer without first transferring them to a computer.
- **HDMI**: **H**igh-**D**efinition **M**ultimedia **I**nterface is a standard for multimedia interfaces used in consumer electronics and AV devices capable of transmitting audiovisual data and control signals to HDMI-compliant devices via a single cable connection.

**Trademark Information**

IOS is a trademark or registered trademark of Cisco Systems, Inc., in the United States and/or other countries and is used under license. Mac and OS X are registered trademarks of Apple Inc. in the United States and/or other countries. Microsoft, Windows, and Windows Vista are either registered trademarks, or trademarks of Microsoft Corporation in the United States and/or other countries. PictBridge is a trademark. The SD, SDHC, and SDXC logos are trademarks of the SD-3C, LLC. HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing, LLC.

Wi-Fi and the Wi-Fi logo are trademarks or registered trademarks of the Wi-Fi Alliance. All other trade names mentioned in this manual or the other documentation provided with your Nikon product are trademarks or registered trademarks of their respective holders.

**Conformity Marking**

The standards with which the camera complies can be viewed using the **Conformity marking** option in the setup menu (🕮 392).

**FreeType License (FreeType2)**

Portions of this software are copyright © 2012 The FreeType Project (*http://www.freetype.org*). All rights reserved.

**MIT License (HarfBuzz)**

Portions of this software are copyright © 2014 The HarfBuzz Project (*http://www.freedesktop.org/wiki/Software/HarfBuzz*). All rights reserved.

## Certificates

- **Indonesia**

| |
|---|
| **35157/SDPPI/2014** |
| **4593** |

| |
|---|
| **35158/SDPPI/2014** |
| **4588** |

- **México**
  **COFETEL: RCPMULB13-0954**
  **LBWA1U5YR1**
- **Paraguay**
  **Número del Registro: 2014-01-I-00028**
  Este producto contiene un transmisor aprobado por la CONATEL.
- **Brasil**

ANATEL

(01)0789857980 048 9

- **الأردن**
  **TRC/LPD/2013/141**
- **عُمان**

| |
|---|
| **OMAN-TRA** |
| **R/1307/13** |
| **D100428** |

- **الإمارات العربية المتحدة**

| |
|---|
| **TRA** |
| **REGISTERED No:** |
| **ER47249/16** |
| **DEALER No:** |
| **DA0073692/11** |

## Approved Memory Cards

The following SD memory cards have been tested and approved for use in the camera. Cards with class 6 or faster write speeds are recommended for movie recording. Recording may end unexpectedly when cards with slower write speeds are used.

| | SD cards | SDHC cards[2] | SDXC cards[3] |
|---|---|---|---|
| **SanDisk** | 2 GB[1] | 4 GB, 8 GB, 16 GB, 32 GB | 64 GB, 128 GB |
| **Toshiba** | — | | 64 GB |
| **Panasonic** | 2 GB[1] | 4 GB, 6 GB, 8 GB, 12 GB, 16 GB, 24 GB, 32 GB | 48 GB, 64 GB |
| **Lexar Media** | | 4 GB, 8 GB, 16 GB, 32 GB | — |
| **Platinum II** | — | 8 GB, 16 GB, 32 GB | 64 GB |
| **Professional** | | | 64 GB, 128 GB, 256 GB |
| **Full-HD Video** | | 4 GB, 8 GB, 16 GB | — |

1 Check that any card readers or other devices with which the card will be used support 2 GB cards.

2 Check that any card readers or other devices with which the card will be used are SDHC-compliant. The camera supports UHS-1.

3 Check that any card readers or other devices with which the card will be used are SDXC-compliant. The camera supports UHS-1.

Other cards have not been tested. For more details on the above cards, please contact the manufacturer.

# Memory Card Capacity

The following table shows the approximate number of pictures that can be stored on a 16 GB SanDisk SDSDXPA-016G-J35 UHS-I SDHC card at different image quality (🕮 115), image size (🕮 118), and image area settings (🕮 110).

### ■■ *FX (36×24) Image Area* *

| Image quality | Image size | File size [1] | No. of images [1] | Buffer capacity [2] |
|---|---|---|---|---|
| NEF (RAW), Lossless compressed, 12-bit | — | 21.0 MB | 376 | 25 |
| NEF (RAW), Lossless compressed, 14-bit | — | 26.9 MB | 292 | 15 |
| NEF (RAW), Compressed, 12-bit | — | 19.2 MB | 507 | 33 |
| NEF (RAW), Compressed, 14-bit | — | 23.9 MB | 425 | 21 |
| JPEG fine [3] | Large | 12.6 MB | 923 | 87 |
| | Medium | 7.7 MB | 1500 | 100 |
| | Small | 4.1 MB | 2900 | 100 |
| JPEG normal [3] | Large | 6.7 MB | 1800 | 100 |
| | Medium | 3.9 MB | 2900 | 100 |
| | Small | 2.1 MB | 5500 | 100 |
| JPEG basic [3] | Large | 2.2 MB | 3500 | 100 |
| | Medium | 1.6 MB | 5700 | 100 |
| | Small | 1.1 MB | 10100 | 100 |

* Includes images taken with non-DX lenses when **On** is selected for **Auto DX crop**.

### ■■ *DX (24×16) Image Area**

| Image quality | Image size | File size[1] | No. of images[1] | Buffer capacity[2] |
|---|---|---|---|---|
| NEF (RAW), Lossless compressed, 12-bit | — | 10.5 MB | 579 | 100 |
| NEF (RAW), Lossless compressed, 14-bit | — | 13.1 MB | 449 | 48 |
| NEF (RAW), Compressed, 12-bit | — | 9.8 MB | 785 | 100 |
| NEF (RAW), Compressed, 14-bit | — | 11.9 MB | 656 | 100 |
| JPEG fine[3] | Large | 6.2 MB | 1900 | 100 |
| | Medium | 3.9 MB | 3000 | 100 |
| | Small | 2.3 MB | 5000 | 100 |
| JPEG normal[3] | Large | 3.1 MB | 3700 | 100 |
| | Medium | 2.0 MB | 5700 | 100 |
| | Small | 1.2 MB | 9300 | 100 |
| JPEG basic[3] | Large | 1.6 MB | 7000 | 100 |
| | Medium | 1.2 MB | 10300 | 100 |
| | Small | 0.8 MB | 15600 | 100 |

* Includes images taken with DX lenses when **On** is selected for **Auto DX crop**.

1 All figures are approximate. File size varies with scene recorded.

2 Maximum number of exposures that can be stored in memory buffer at ISO 100. Drops if **Optimal quality** is selected for **JPEG compression** (🕮 117), ISO sensitivity is set to Hi 0.3 or higher, or long exposure noise reduction or auto distortion control is on.

3 Figures assume **JPEG compression** is set to **Size priority**. Selecting **Optimal quality** increases the file size of JPEG images; number of images and buffer capacity drop accordingly.

**d3—Max. Continuous Release (🕮 339)**
The maximum number of photographs that can be taken in a single burst can be set to any amount between 1 and 100.

## Battery Life

The movie footage or number of shots that can be recorded with fully-charged batteries varies with the condition of the battery, temperature, interval between shots, and the length of time menus are displayed. In the case of AA batteries, capacity also varies with make and storage conditions; some batteries can not be used. Sample figures for the camera and optional MB-D16 multi-power battery pack are given below.

- **Photographs, single-frame release mode (CIPA standard [1])**
  **One EN-EL15 battery (camera)**: Approximately 1230 shots
  **One EN-EL15 battery (MB-D16)**: Approximately 1230 shots
  **Six AA alkaline batteries (MB-D16)**: Approximately 430 shots
- **Photographs, continuous release mode (Nikon standard [2])**
  **One EN-EL15 battery (camera)**: Approximately 4420 shots
  **One EN-EL15 battery (MB-D16)**: Approximately 4420 shots
  **Six AA alkaline batteries (MB-D16)**: Approximately 780 shots
- **Movies [3]**
  **One EN-EL15 battery (camera)**: Approximately 55 minutes of HD footage
  **One EN-EL15 battery (MB-D16)**: Approximately 55 minutes of HD footage
  **Six AA alkaline batteries (MB-D16)**: Approximately 20 minutes of HD footage

1 Measured at 23 °C/73.4 °F (±2 °C/3.6 °F) with an AF-S NIKKOR 24–85mm f/3.5–4.5G ED VR lens under the following test conditions: lens cycled from infinity to minimum range and one photograph taken at default settings once every 30 s; flash fired once every other shot. Live view not used.
2 Measured at 20 °C/68 °F with an AF-S NIKKOR 24–85mm f/3.5–4.5G ED VR lens under the following test conditions: image quality set to JPEG basic, image size set to **M** (medium), shutter speed 1/250 s, shutter-release button pressed halfway for three seconds and focus cycled from infinity to minimum range three times; six shots are then taken in succession and monitor turned on for five seconds and then turned off; cycle repeated once standby timer expires.
3 Measured at 23 °C/73.4 °F (±2 °C/3.6 °F) with the camera at default settings and an AF-S NIKKOR 24–85mm f/3.5–4.5G ED VR lens under conditions specified by the Camera and Imaging Products Association (CIPA). Individual movies can be up to 20 minutes (1080/60p) in length or 4 GB in size; recording may end before these limits are reached if the camera temperature rises.

The following can reduce battery life:

- Using the monitor
- Keeping the shutter-release button pressed halfway
- Repeated autofocus operations
- Taking NEF (RAW) photographs
- Slow shutter speeds
- Using an optional GP-1 or GP-1A GPS unit or WR-R10/WR-1 wireless remote controller
- Using Wi-Fi or an optional UT-1 communication unit or WT-5 wireless transmitter
- Using VR (vibration reduction) mode with VR lenses

To ensure that you get the most from Nikon EN-EL15 rechargeable Li-ion batteries:

- Keep the battery contacts clean. Soiled contacts can reduce battery performance.
- Use batteries immediately after charging. Batteries will lose their charge if left unused.

## Lenses That May Block the Built-in Flash and AF-Assist Illuminator

The lenses listed in this section may block the built-in flash or AF-assist illuminator under some conditions.

### ■ *AF-Assist Illumination*

Some lenses may block the illuminator at certain focus distances. Remove lens hoods when using the illuminator. AF-assist illumination is not available with the following lenses:

- AF-S NIKKOR 200mm f/2G ED VR II
- AF-S VR Zoom-Nikkor 200–400mm f/4G IF-ED
- AF-S NIKKOR 200–400mm f/4G ED VR II
- AF-S NIKKOR 300mm f/2.8G ED VR II

At ranges under 0.7 m (2 ft 4 in.), the following lenses may block the AF-assist illuminator and interfere with autofocus when lighting is poor:

- AF-S NIKKOR 16–35mm f/4G ED VR
- AF-S Zoom-Nikkor 17–35mm f/2.8D IF-ED
- AF-S DX Zoom-Nikkor 17–55mm f/2.8G IF-ED
- AF-S DX VR Zoom-Nikkor 18–200mm f/3.5–5.6G IF-ED
- AF Zoom-Nikkor 20–35mm f/2.8D IF
- AF Zoom-Nikkor 24–85mm f/2.8–4D IF
- AF-S NIKKOR 24–85mm f/3.5–4.5G ED VR
- AF Zoom Nikkor 24–120mm f/3.5–5.6D (IF)
- AF-S NIKKOR 24–120mm f/4G ED VR
- AF-S NIKKOR 28–300mm f/3.5–5.6G ED VR
- AF-S NIKKOR 35mm f/1.4G
- AF Zoom Micro Nikkor ED 70–180mm f/4.5–5.6D
- AF-S VR Micro-Nikkor 105mm f/2.8G IF-ED

At ranges under 1.0 m (3 ft 3 in.), the following lenses may block the AF-assist illuminator and interfere with autofocus when lighting is poor:

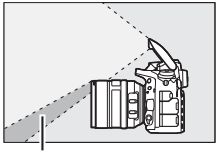
- AF-S DX NIKKOR 18–200mm f/3.5–5.6G ED VR II
- AF-S DX NIKKOR 18–300mm f/3.5–5.6G ED VR
- AF-S DX NIKKOR 18–300mm f/3.5–6.3G ED VR
- AF-S NIKKOR 24–70mm f/2.8G ED
- AF-S VR Zoom-Nikkor 24–120mm f/3.5–5.6G IF-ED
- AF-S Zoom-Nikkor 28–70mm f/2.8D IF-ED
- AF-S NIKKOR 28–300mm f/3.5–5.6G ED VR
- AF Micro-Nikkor 200mm f/4D IF-ED

At ranges under 1.5 m (4 ft 11 in.), the following lenses may block the AF-assist illuminator and interfere with autofocus when lighting is poor:

- AF-S NIKKOR 14–24mm f/2.8G ED
- AF-S DX NIKKOR 18–300mm f/3.5–5.6G ED VR
- AF-S DX NIKKOR 55–300mm f/4.5–5.6G ED VR
- AF-S VR Zoom-Nikkor 70–200mm f/2.8G IF-ED
- AF-S NIKKOR 70–200mm f/2.8G ED VR II
- AF Zoom-Nikkor 80–200mm f/2.8D ED
- AF-S Zoom-Nikkor 80–200mm f/2.8D IF-ED

### ■■ *The Built-in Flash*

The built-in flash has a minimum range of 0.6 m (2 ft) and can not be used in the macro range of macro zoom lenses. It can be used with CPU lenses with focal lengths of 24 mm (16 mm in DX format) to 300 mm, although in some cases the flash may be unable to entirely light the subject at some ranges or focal lengths due to shadows cast by the lens. The following illustrations show the effect of vignetting caused by shadows cast by the lens when the flash is used.



*Shadow*

*Vignetting*

Remove lens hoods to prevent shadows. The flash may be unable to light the entire subject with the following lenses at ranges less than those given below:

| | Lens | Zoom position | Minimum distance without vignetting |
|---|---|---|---|
| DX | AF-S DX NIKKOR 10–24mm f/3.5–4.5G ED | 18–24 mm | No vignetting |
| | AF-S DX Zoom-Nikkor 12–24mm f/4G IF-ED | 18 mm | 1.0 m/3 ft 3 in. |
| | | 20–24 mm | No vignetting |
| | AF-S DX Zoom-Nikkor 17–55mm f/2.8G IF-ED | 20 mm | 2.0 m/6 ft 7 in. |
| | | 24–55 mm | 1.0 m/3 ft 3 in. |
| | AF-S DX NIKKOR 18–200mm f/3.5–5.6G ED VR II<br>AF-S DX VR Zoom-Nikkor 18–200mm f/3.5–5.6G IF-ED | 18 mm | 1.0 m/3 ft 3 in. |
| | | 24–200 mm | No vignetting |
| | AF-S DX NIKKOR 18–300mm f/3.5–5.6G ED VR | 28 mm | 1.0 m/3 ft 3 in. |
| | | 50–300 mm | No vignetting |

| | Lens | Zoom position | Minimum distance without vignetting |
|---|---|---|---|
| FX | AF-S NIKKOR 16–35mm f/4G ED VR | 35 mm | 1.5 m/4 ft 11 in. |
| | AF-S Zoom-Nikkor 17–35mm f/2.8D IF-ED | 28 mm | 1.5 m/4 ft 11 in. |
| | | 35 mm | No vignetting |
| | AF Zoom-Nikkor 18–35mm f/3.5–4.5D IF-ED | 24 mm | 1.0 m/3 ft 3 in. |
| | | 28–35 mm | No vignetting |
| | AF-S NIKKOR 18–35mm f/3.5–4.5G ED | 28 mm | 1.5 m/4 ft 11 in. |
| | | 35 mm | No vignetting |
| | AF Zoom-Nikkor 20–35mm f/2.8D IF | 24 mm | 1.5 m/4 ft 11 in. |
| | | 28 mm | 1.0 m/3 ft 3 in. |
| | | 35 mm | No vignetting |
| | AF-S NIKKOR 20mm f/1.8G | 20 mm | 1.0 m/3 ft 3 in. |
| | AF-S NIKKOR 24mm f/1.4G ED | 24 mm | 1.0 m/3 ft 3 in. |
| | AF-S NIKKOR 24–70mm f/2.8G ED | 35 mm | 1.5 m/4 ft 11 in. |
| | | 50–70 mm | No vignetting |
| | AF-S VR Zoom-Nikkor 24–120mm f/3.5–5.6G IF-ED | 24 mm | 1.0 m/3 ft 3 in. |
| | | 35–120 mm | No vignetting |
| | AF-S NIKKOR 24–120mm f/4G ED VR | 24 mm | 2.0 m/6 ft 7 in. |
| | | 28 mm | 1.0 m/3 ft 3 in. |
| | | 50–120 mm | No vignetting |
| | AF-S Zoom-Nikkor 28–70mm f/2.8D IF-ED | 28 mm | 1.0 m/3 ft 3 in. |
| | | 50–70 mm | No vignetting |
| | AF-S NIKKOR 28–300mm f/3.5–5.6G ED VR | 28 mm | 1.5 m/4 ft 11 in. |
| | | 35 mm | 1.0 m/3 ft 3 in. |
| | | 50–300 mm | No vignetting |
| | PC-E NIKKOR 24mm f/3.5D ED * | 24 mm | 1.5 m/4 ft 11 in. |

* When not shifted or tilted.

When used with the AF-S NIKKOR 14–24mm f/2.8G ED, the flash will be unable to light the entire subject at all ranges.

The built-in flash can also be used with the following non-CPU lenses: Nikon Series E and 24–300 mm NIKKOR (AI-S, AI-, and AI-modifed). AI 50–300mm f/4.5, modified AI 50–300mm f/4.5, AI-S 50–300mm f/4.5 ED, and AI 50–300mm f/4.5 ED lenses must be used at a zoom position of 70 mm or above. With AI-S and AI 25–50mm f/4 ED lenses, the ranges above which vignetting will not occur are: 2.0 m (6 ft 7 in.) at a zoom position of 25 mm and 1.0 m (3 ft 3 in.) at a zoom position of 28 mm; vignetting will not occur at zoom positions of 35 mm or above.

# Index


### Symbols

AUTO (Auto mode) ..... 34
(Auto (flash off) mode) ..... 34
**SCENE** (Scene mode) ..... 41
**EFFECTS** (Special effects) ..... 46
(Portrait) ..... 42
(Landscape) ..... 42
(Child) ..... 42
(Sports) ..... 42
(Close up) ..... 43
(Night portrait) ..... 43
(Night landscape) ..... 43
(Party/indoor) ..... 43
(Beach/snow) ..... 44
(Sunset) ..... 44
(Dusk/dawn) ..... 44
(Pet portrait) ..... 44
(Candlelight) ..... 45
(Blossom) ..... 45
(Autumn colors) ..... 45
(Food) ..... 45
(Night vision) ..... 47
(Color sketch) ..... 47, 50
(Miniature effect) ..... 48, 51
(Selective color) ..... 48, 52
(Silhouette) ..... 48
(High key) ..... 49
(Low key) ..... 49
**P** (Programmed auto) ..... 89
**S** (Shutter-priority auto) ..... 90
**A** (Aperture-priority auto) ..... 91
**M** (Manual) ..... 93
**U1**/**U2** ..... 99
**S** (Single frame) ..... 103
**CL** (Continuous low speed) ..... 103, 338
**CH** (Continuous high speed) ..... 103
**Q** (Quiet shutter-release) ..... 103
**QC** (Qc shutter-release) ..... 103
(Self-timer) ..... 103, 106
**MUP** (Mirror up) ..... 104, 109
(Face-priority AF) ..... 58
WIDE (Wide-area AF) ..... 58
NORM (Normal-area AF) ..... 58
(Subject-tracking AF) ..... 58
(Matrix) ..... 139, 335
(Center-weighted) ..... 139, 335
(Spot) ..... 139
(Highlight-weighted) ..... 139
**AUTO** (Auto flash) ..... 181
(Red-eye reduction) ..... 181, 183
**SLOW** (Slow sync) ..... 181, 183
**REAR** (Rear-curtain sync) ..... 183
(Exposure compensation) ..... 143
(Flash compensation) ..... 188
(Flexible program) ..... 89
(Live view) button ..... 54, 66
*i* button ..... 16, 61, 71, 198, 245, 396
(Info) button ..... 12, 64, 75
switch ..... 5, 342
**WB** (White balance) ..... 145, 321
**PRE** (Preset manual) ..... 145, 155
**BKT** (Bracketing) ..... 202
(Focus indicator) ..... 36, 129, 133
(Memory buffer) ..... 105
(Flash-ready indicator) ..... 40

### Numerics

1.2× (30×20) 1.2× ..... 110, 111
12-bit ..... 117
14-bit ..... 117
3D-tracking ..... 124, 125, 126

### A

AC adapter ..... 441, 445
Accessories ..... 441

Accessory terminal ..... 443
Active D-Lighting ..... 175, 212
Add items (My Menu) ..... 421
ADL bracketing ..... 212, 353
Adobe RGB ..... 314
Advanced (HDMI) ..... 279
AE & flash (Auto bracketing set) 202, 353
AE lock ..... 141
AE only (Auto bracketing set) ..... 202, 353
**AE-L/AF-L** button ..... 129, 141, 361, 373
AF ..... 57–59, 120–130
AF area brackets ..... 10, 29, 247
AF fine-tune ..... 389
AF point illumination ..... 329
AF-A ..... 121
AF-area mode ..... 58, 123
AF-assist ..... 332, 439
AF-C ..... 121, 326
AF-F ..... 57
AF-mode button ..... 57, 59, 121, 125
AF-S ..... 57, 121, 327
After delete ..... 307
Angle of view ..... 111, 432
Aperture ..... 91–93
Aperture-priority auto ..... 91
Aspect ratio ..... 76, 399
Assign AE-L/AF-L button ..... 361, 373
Assign Fn button ..... 356, 370
Assign MB-D16 button ..... 367
Assign movie record button ..... 366
Assign preview button ..... 361, 372
Assign remote (WR) Fn button ..... 368
Assign shutter button ..... 373
Auto (White balance) ..... 145
Auto bracketing ..... 202, 353
Auto bracketing set ..... 353
Auto distortion control ..... 316
Auto DX crop ..... 111
Auto flash ..... 181
Auto FP high-speed sync. ..... 345, 346
Auto image rotation ..... 382
Auto ISO sensitivity control 136, 322
Auto-area AF ..... 124, 126
Autoexposure lock ..... 141
Autofocus ..... 57–59, 120–130
Autofocus mode ..... 57, 121
Auto-servo AF ..... 121
Available settings ..... 460

## B

Backlight ..... 5, 342
Backup (Role played by card in Slot 2) ..... 119
Battery ..... 25, 26, 30, 383, 487
Battery info ..... 383
Battery life ..... 494
Battery order ..... 344
Battery pack .. 343, 344, 367, 383, 441
Beep ..... 338
Black-and-white (Monochrome) . 400
Blue intensifier (Filter effects) ..... 401
Body cap ..... 3, 442
Border ..... 272
Bracketing ..... 202, 353
Bracketing order ..... 354
Built-in AF-assist illuminator ..... 332
Built-in flash ..... 40, 180
Bulb ..... 93, 95
Burst ..... 219, 339, 357

## C

Calendar playback ..... 244
Camera Control Pro 2 ..... 444
Capture NX-D ..... 116, 268, 378, 384
CEC ..... 278, 280
Center-weighted ..... 139, 335
Charging the battery ..... 25
Choose color temp. (White balance). 145, 152

Choose image area 71, 111, 113, 360, 362, 366
Choose start/end point 81
Clean image sensor 448
Clock 381
Clock battery 15
Cloudy (White balance) 145
CLS 433
Color balance 402
Color outline 413
Color sketch 47, 50, 414
Color space 314
Color temperature 145, 147, 152
Commander mode 348
Communication unit 269, 442
Compatible lenses 426
Compressed (Type) 117
Computer 262
Conformity marking 392, 489
Connector for external microphone 2
Continuous high speed 103
Continuous low speed 103, 338
Continuous release mode 103
Continuous-servo AF 121, 326
Control panel 8
Copy image(s) 303
Copyright 252, 385
CPU contacts 429
CPU lens 33, 426
Creative Lighting System 433
Cropping (PictBridge [Setup] menu) 272
Cross screen (Filter effects) 401
Custom Settings 323
Customize command dials 363
Cyanotype (Monochrome) 400

## D

Date and time 28, 381
Date format 381
Daylight saving time 381
DCF 488
Default settings 199, 292, 311, 318, 326
Delayed remote (Remote control mode (ML-L3)) 193
Delete 38, 258
Delete all images 260
Delete current image 38, 258
Delete selected images 260
Depth-of-field 92
Destination 72, 319
Device control (HDMI) 278
Digital Print Order Format 274, 275, 488
Diopter adjustment control 29, 443
Direct sunlight (White balance) 145
Distortion control 412
D-Lighting 397
DPOF 274, 275, 488
DPOF print order 275
DX (24 × 16) 1.5 × 76, 110, 111
DX format 110
Dynamic-area AF 123, 126, 329

## E

Easy exposure compensation 334
Easy ISO 341
Edit movie 81, 245
Electronic rangefinder 133
Ethernet 269, 442
EV steps for exposure cntrl 333
Exif 488
Exposure 139–144
Exposure bracketing 202, 353
Exposure comp. for flash 353
Exposure compensation 143
Exposure delay mode 339
Exposure indicator 63, 94
Exposure lock 141
Exposure meters 39, 336

Exposure preview ..... 55, 62
Exposure program ..... 462
External microphone ..... 73
Eye-Fi upload ..... 391

## F

Face detection ..... 335
Face-priority AF ..... 58
File naming ..... 313
File number sequence ..... 340
Filter effects ..... 169, 401
Fine-tune optimal exposure ..... 336
Fine-tuning white balance ..... 149
Firmware version ..... 392
Fisheye ..... 413
Flash 40, 180, 181, 188, 190, 345, 433
Flash (White balance) ..... 145
Flash bracketing ..... 202, 353
Flash cntrl for built-in flash ..... 347
Flash compensation ..... 188
Flash mode ..... 181, 183
Flash only (Auto bracketing set) 202, 353
Flash range ..... 187
Flash ready indicator ..... 40, 191, 438
Flash shutter speed ..... 185, 346
Flash sync speed ..... 345, 346, 479
Flash warning ..... 339
Flat (Set Picture Control) ..... 165
Flexible program ..... 89
Flicker reduction ..... 380
Fluorescent (White balance) ..... 145
**Fn** button ..... 114, 356, 370
f-number ..... 89, 92, 431
Focal length ..... 237, 432
Focal plane mark ..... 133
Focus indicator ..... 36, 129, 133
Focus lock ..... 129
Focus mode ..... 57, 121
Focus point ..... 58, 123, 127, 133, 329, 330, 331
Focus point illumination ..... 329
Focus point wrap-around ..... 330
Focus tracking ..... 122, 328
Focus tracking with lock-on ..... 328
Focusing screen ..... 479
Focus-mode selector ..... 57, 120
Format memory card ..... 375
Frame interval (Slide show) ..... 308
Frame size/frame rate ..... 71, 319
Framing guides ..... 64, 75
Frequency response ..... 71, 320
Front-curtain sync ..... 183
Full-frame playback ..... 241
Full-time servo AF ..... 57
FV lock ..... 190
FX (36 × 24) 1.0 × ..... 110, 111
FX format ..... 110

## G

GPS ..... 239, 253
Green intensifier (Filter effects) ..... 401
Group-area AF ..... 124, 329

## H

H.264 ..... 484
HDMI ..... 65, 78, 277, 488
HDMI connector ..... 2
HDMI-CEC ..... 278, 280
Headphone volume ..... 72
Headphones ..... 73
Help ..... 21
Hi (Sensitivity) ..... 135
Hide image ..... 301
High definition ..... 277, 488
High Dynamic Range (HDR) ..... 177
High ISO NR ..... 317
Highlight display ..... 72
Highlights ..... 248
Histogram ..... 64, 249, 250, 355

**I**

Image area ..... 76, 77, 110, 113, 118
Image comment ..... 384
Image Dust Off ref photo ..... 378
Image overlay ..... 403
Image quality ..... 115
Image review ..... 234, 242, 307
Image size ..... 118
Image type (Slide show) ..... 308
Incandescent (White balance) ..... 145
Index marking .....70, 80, 370, 372
Index print ..... 274
In-focus indicator .....36, 129, 133
Information ..... 12, 246
Information display .... 12, 64, 75, 341
Interval timer shooting ..... 222
ISO sensitivity ..... 134, 136, 322
ISO sensitivity settings .....136, 322
ISO sensitivity step value..... 333
i-TTL..... 184, 185, 348

**J**

JPEG..... 115
JPEG basic ..... 115
JPEG compression..... 117
JPEG fine..... 115
JPEG normal ..... 115

**L**

**L** (large)..... 77, 118
LAN ..... 442
Landscape (Set Picture Control) . 165
Language ..... 381
LCD illumination.....5, 342
Lens ..... 27, 33, 235, 389, 426
Lens focus ring ..... 60, 132
Lens mount .....3, 133
Live view.....54–65, 66–78
Live view photography .....54
Live view selector.....54, 66
Lo (Sensitivity).....135
Location data ..... 239, 253
Lock mirror up for cleaning.....451
Long exposure NR.....317
Lossless compressed (Type).....117

**M**

**M** (medium) .....77, 118
Manage Picture Control .....170
Manual .....93, 132
Manual (Flash cntrl for built-in flash) 347
Manual focus ..... 60, 132, 329
Matrix metering..... 139, 335
Max. continuous release .....339
Maximum aperture .....187, 430, 439
Maximum sensitivity..... 137, 322
MB-D16.....343, 344, 367, 383, 441
MB-D16 battery type .....343
Memory buffer.....105
Memory card ....26, 31, 119, 375, 491, 492
Memory card capacity.....492
Metering.....139
Microphone ..... 73
Microphone sensitivity .....71, 320
Miniature effect .....48, 51, 416
Minimum aperture ..... 33, 88
Minimum shutter speed.....137
Mired .....151
Mirror.....109, 193, 451
Mirror up ..... 104, 109
Mode dial .....6
Mode dial lock release .....6
Modeling flash .....353
Monitor..... 17, 37, 54, 241, 376
Monitor brightness .....62, 72, 376
Monitor color balance.....377
Monitor off delay .....337
Monitor pre-flash ..... 185, 191
Monochrome..... 165, 400

Movie ISO sensitivity settings ..... 322
Movie live view ..... 66, 370–373
Movie quality ..... 71, 320
Movie shooting menu ..... 318
Movie-record button ..... 68, 366
Movies ..... 66, 370–373
Multiple exposure ..... 216
Multi-selector power aperture ..... 72
My Menu ..... 421

## N

NEF (RAW) ..... 115, 117, 313, 406
NEF (RAW) bit depth ..... 117
NEF (RAW) processing ..... 406
NEF (RAW) recording ..... 117
Network ..... 269, 374
Network connection ..... 284
Neutral (Set Picture Control) ..... 165
Nikon Transfer 2 ..... 267
No. of copies (PictBridge [Setup] menu) ..... 272
Non-CPU lens ..... 235, 427, 431
Non-CPU lens data ..... 235
Normal-area AF ..... 58
Number of focus points ..... 330
Number of shots ..... 494

## O

OK button ..... 354
Optimal quality (JPEG compression) 117
Optional flash ..... 348, 433
Output resolution (HDMI) ..... 278
Overflow (Role played by card in Slot 2) ..... 119
Overview data ..... 254

## P

Page size ..... 272
Perspective control ..... 415
Photo information ..... 246, 302
Photo shooting menu ..... 310
PictBridge ..... 271, 488
Picture Controls ..... 165, 167
Picture size ..... 432
PIN-entry WPS ..... 285
Pitching ..... 388
Playback ..... 37, 241
Playback display options ..... 302
Playback folder ..... 300
Playback information ..... 246, 302
Playback menu ..... 300
Playback slot and folder ..... 245
Playback zoom ..... 255
Portrait (Set Picture Control) ..... 165
Power aperture ..... 72, 73, 370, 372
Power connector ..... 441, 445
Predictive focus tracking ..... 122
Preset manual (White balance) ... 145, 155
Press the shutter-release button all the way down ..... 36
Press the shutter-release button halfway ..... 36
Preview button ..... 92, 361, 372
Print (DPOF) ..... 274
Print options (PictBridge [Setup] menu) ..... 272
Print select ..... 274
Printing ..... 271
Programmed auto ..... 89
Protecting photographs ..... 257
Push-button WPS ..... 284
**Pv** button ..... 70, 92, 353, 361, 372

## Q

Qc (quiet continuous) shutter-release ..... 103
Quick retouch ..... 411
Quick-response remote (Remote control mode (ML-L3)) ..... 193
Quiet shutter-release ..... 103

## R

Rank items (My Menu) ..... 424
RAW Slot 1 - JPEG Slot 2 (Role played by card in Slot 2) ..... 119
Rear-curtain sync ..... 183
Recent settings ..... 425
Red intensifier (Filter effects) ..... 401
Red-eye correction ..... 398
Red-eye reduction ..... 181, 183
Release button to use dial ..... 365
Release mode ..... 7, 103
Release mode dial ..... 7, 103
Release mode dial lock release 7, 103
Remote control ..... 193, 444
Remote control mode (ML-L3) ..... 193
Remote cord ..... 95, 443
Remote mirror-up (Remote control mode (ML-L3)) ..... 193
Remote on duration (ML-L3) ..... 337
Remove items (My Menu) ..... 423
Removing the lens from the camera 33
Repeating flash ..... 347
Reset ..... 199, 311, 318, 326
Reset custom settings ..... 326
Reset movie shooting menu ..... 318
Reset photo shooting menu ..... 311
Reset user settings ..... 101
Resize ..... 408
Restoring default settings ... 199, 292, 311, 318, 326
Retouch menu ..... 245, 393
Reverse indicators ..... 366
RGB ..... 249, 314
Role played by card in Slot 2 ..... 119
Rotate tall ..... 308

## S

**S** (small) ..... 77, 118
Save selected frame ..... 81, 86
Save user settings ..... 99
Save/load settings ..... 386
Saving camera settings ..... 386
Scene mode ..... 41
SD memory card ..... 26, 31, 119, 491, 492
Select date ..... 261, 274, 301
Select to send to smart device/ deselect ..... 245, 289
Selective color ..... 48, 52, 417
Self-timer ..... 103, 106, 337
Sensitivity ..... 134, 136, 322
Sepia (Monochrome) ..... 400
Set clock from satellite ..... 239
Set Picture Control ..... 165, 321
Setup menu ..... 374
Shade (White balance) ..... 145
Shooting data ..... 251
Shooting menus ..... 310, 318
Shutter speed ..... 90, 93
Shutter-priority auto ..... 90
Shutter-release button . 36, 129, 141, 336, 373
Shutter-release button AE-L ..... 336
Side-by-side comparison ..... 419
Single frame ..... 103
Single-point AF ..... 123, 126
Single-servo AF ..... 57, 121, 327
Size ..... 77, 118
Size priority (JPEG compression) . 117
Skylight (Filter effects) ..... 401
Slide show ..... 308
Slot ..... 31, 119, 245, 319
Slot empty release lock ..... 365
Slow sync ..... 181, 183
Smart device ..... 281
Soft (Filter effects) ..... 402
Speaker ..... 4
Special effects ..... 46
Speedlight ..... 433
Spot ..... 139

Spot white balance ..... 159
sRGB ..... 314
SSID ..... 286
Standard (Set Picture Control) .... 165
Standard i-TTL flash for digital SLR.... 185, 435
Standby timer ..... 39, 239, 336
Start printing (PictBridge) .... 273, 275
Storage folder ..... 311
Store points by orientation ..... 331
Straighten ..... 411
Sub-dial frame advance ..... 364
Subject-tracking AF ..... 58

## T

Television ..... 277
Thumbnail playback ..... 243, 355
Tilting monitor ..... 17
Time ..... 28, 381
Time stamp (PictBridge) ..... 272
Time zone ..... 381
Time zone and date ..... 381
Time-lapse photography ..... 229
Timer ..... 106, 222
Toning ..... 168, 170
Trim ..... 399
Trimming movies ..... 81
Tripod ..... 3
Two-button reset ..... 199
Type D lens ..... 426, 429
Type E lens ..... 426, 429
Type G lens ..... 426, 429

## U

USB cable ..... 266
User settings ..... 99
UT-1 ..... 269, 442
UTC ..... 240, 253

## V

View SSID ..... 287
Viewfinder ..... 10, 29, 443, 478
Viewfinder eyepiece ..... 107
Viewfinder eyepiece cap ..... 107
Viewfinder focus ..... 29, 443
Viewfinder grid display ..... 341
ViewNX 2 ..... 262, 314
Vignette control ..... 315
Virtual horizon ..... 64, 75, 359, 388
Vivid (Set Picture Control) ..... 165
Volume ..... 80, 309

## W

Warm filter (Filter effects) ..... 401
WB ..... 145, 208, 321
WB bracketing (Auto bracketing set) 208, 353
White balance ..... 145, 208, 321
Wide-area AF ..... 58
Wi-Fi ..... 281
Wind noise reduction ..... 72, 321
Wireless Mobile Utility . 281, 282, 283
Wireless network ..... 269, 281, 442
Wireless remote controller .. 197, 368
Wireless transmitter ..... 269, 442
WT-5 ..... 269, 442

No reproduction in any form of this manual, in whole or in part (except for brief quotation in critical articles or reviews), may be made without written authorization from NIKON CORPORATION.

NIKON CORPORATION

© 2014 Nikon Corporation

SB6H03(11)
*6MB25511-03*