Nikon

DIGITAL CAMERA

D850

Menu Guide

This manual details menu options and provides information on accessories and connecting the camera to other devices.

En

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Menu Guide

Defaults

The default settings for the options in the camera menus are listed below.

■■ *Playback Menu Defaults*

Option	Default
Playback folder (📖 20)	All
Image review (📖 27)	Off
After delete (📖 27)	Show next
After burst, show (📖 28)	Last image in burst
Auto image rotation (📖 28)	On
Rotate tall (📖 29)	On
Slide show (📖 29)	
Image type	Still images and movies
Frame interval	2 s

■■ *Photo Shooting Menu Defaults*

Option	Default
Extended photo menu banks (📖 35)	Off
Storage folder (📖 35)	
Rename	ND850
Select folder by number	100
File naming (📖 38)	DSC
Primary slot selection (📖 39)	XQD card slot
Secondary slot function (📖 39)	Overflow

Option	Default
Flash control (📖 40)	
Flash control mode	TTL
Wireless flash options	Off
Remote flash control	Group flash
Image area (📖 45)	
Choose image area	FX (36×24)
Auto DX crop	On
Viewfinder mask display	On
Image quality (📖 46)	JPEG normal
Image size (📖 47)	
JPEG/TIFF	Large
NEF (RAW)	Large
NEF (RAW) recording (📖 48)	
NEF (RAW) compression	Lossless compressed
NEF (RAW) bit depth	14-bit
ISO sensitivity settings (📖 49)	
ISO sensitivity	100
Auto ISO sensitivity control	Off
White balance (📖 50)	Auto > AUTO0 Keep white (reduce warm colors)
Fine-tuning	A-B: 0, G-M: 0
Choose color temp.	5000 K
Preset manual	d-1
Set Picture Control (📖 52)	Auto
Color space (📖 56)	sRGB
Active D-Lighting (📖 56)	Off
Long exposure NR (📖 57)	Off
High ISO NR (📖 57)	Normal
Vignette control (📖 58)	Normal

Option	Default
Auto distortion control (🕮 59)	Off
Flicker reduction (🕮 60)	
Flicker reduction setting	Disable
Flicker reduction indicator	On
Auto bracketing set (🕮 61)	AE & flash bracketing
Multiple exposure (🕮 62) *	
Multiple exposure mode	Off
Number of shots	2
Overlay mode	Average
Keep all exposures	On
HDR (high dynamic range) (🕮 69)	
HDR mode	Off
Exposure differential	Auto
Smoothing	Normal
Interval timer shooting (🕮 70)	Off
Choose start day/time	Now
Interval	1 minute
Intervals×shots/interval	0001×1
Exposure smoothing	Off
Silent photography	Off
Interval priority	Off
Focus shift shooting (🕮 80)	
No. of shots	100
Focus step width	5
Interval until next shot	00
Exposure smoothing	Off
Silent photography	Off
Silent live view photography (🕮 81)	Off

* Photo shooting menu reset is not available while shooting is in progress.

■■ *Movie Shooting Menu Defaults*

Option	Default
File naming (🕮 83)	DSC
Destination (🕮 83)	XQD card slot
Image area (🕮 83)	
Choose image area	FX
Auto DX crop	On
Frame size/frame rate (🕮 84)	1920×1080; 60p
Movie quality (🕮 85)	High quality
Movie file type (🕮 85)	MOV
ISO sensitivity settings (🕮 85)	
Maximum sensitivity	25600
Auto ISO control (mode M)	Off
ISO sensitivity (mode M)	100
White balance (🕮 86)	Same as photo settings
Fine-tuning	A-B: 0, G-M: 0
Choose color temp.	5000 K
Preset manual	d-1
Set Picture Control (🕮 86)	Same as photo settings
Active D-Lighting (🕮 86)	Off
High ISO NR (🕮 87)	Normal
Flicker reduction (🕮 87)	Auto
Microphone sensitivity (🕮 88)	Auto sensitivity
Attenuator (🕮 88)	Disable
Frequency response (🕮 89)	Wide range
Wind noise reduction (🕮 89)	Off
Electronic VR (🕮 89)	Off

Option	Default
Time-lapse movie (📖 90)	Off
Interval	5 s
Shooting time	25 minutes
Exposure smoothing	On
Silent photography	Off
Image area	
Choose image area	FX
Auto DX crop	On
Frame size/frame rate	1920×1080; 60p
Interval priority	Off

■■ *Custom Settings Menu Defaults*

Option		Default
a1	AF-C priority selection (📖 105)	Release
a2	AF-S priority selection (📖 106)	Focus
a3	Focus tracking with lock-on (📖 107)	
	Blocked shot AF response	3
	Subject motion	(Normal)
a4	3D-tracking face-detection (📖 108)	Off
a5	3D-tracking watch area (📖 108)	Normal
a6	Number of focus points (📖 108)	55 points
a7	Store by orientation (📖 109)	Off
a8	AF activation (📖 110)	Shutter/AF-ON
	Out-of-focus release	Enable
a10	Autofocus mode restrictions (📖 111)	No restrictions
a11	Focus point wrap-around (📖 112)	No wrap
a12	Focus point options (📖 113)	
	Focus point illumination	Auto
	Manual focus mode	On
	Dynamic-area AF assist	On
a13	Manual focus ring in AF mode (📖 114)	Enable

	Option	Default
b1	ISO sensitivity step value (📖 115)	1/3 step
b2	EV steps for exposure cntrl (📖 115)	1/3 step
b3	Exp./flash comp. step value (📖 115)	1/3 step
b4	Easy exposure compensation (📖 116)	Off
b5	Matrix metering (📖 117)	Face detection on
b6	Center-weighted area (📖 117)	Ø 12 mm
b7	Fine-tune optimal exposure (📖 117)	
	Matrix metering	0
	Center-weighted metering	0
	Spot metering	0
	Highlight-weighted metering	0
c1	Shutter-release button AE-L (📖 118)	Off
c2	Standby timer (📖 118)	6 s
c3	Self-timer (📖 119)	
	Self-timer delay	10 s
	Number of shots	1
	Interval between shots	0.5 s
c4	Monitor off delay (📖 119)	
	Playback	10 s
	Menus	1 min
	Information display	10 s
	Image review	4 s
	Live view	10 min
d1	CL mode shooting speed (📖 120)	5 fps
d2	Max. continuous release (📖 120)	200
d3	ISO display (📖 120)	Show frame count
d4	Sync. release mode options (📖 121)	Sync
d5	Exposure delay mode (📖 121)	Off

	Option	Default
d6	Electronic front-curtain shutter (🕮 121)	Disable
d7	File number sequence (🕮 122)	On
d8	Peaking highlight color (🕮 123)	Red
d9	Viewfinder grid display (🕮 123)	Off
d10	LCD illumination (🕮 124)	Off
d11	Live view in continuous mode (🕮 125)	On
d12	Optical VR (🕮 125)	On
e1	Flash sync speed (🕮 126)	1/250 s
e2	Flash shutter speed (🕮 127)	1/60 s
e3	Exposure comp. for flash (🕮 127)	Entire frame
e4	Auto ϟ ISO sensitivity control (🕮 128)	Subject and background
e5	Modeling flash (🕮 128)	On
e6	Auto bracketing (mode M) (🕮 129)	Flash/speed
e7	Bracketing order (🕮 129)	MTR > under > over
f1	Custom control assignment (🕮 130)	
	Preview button	Preview
	Preview button + ▼	None
	Fn1 button	None
	Fn1 button + ▼	Choose image area
	Fn2 button	Rating
	AF-ON button	AF-ON
	Sub-selector	Focus point selection
	Sub-selector center	AE/AF lock
	Sub-selector center + ▼	None
	BKT button + ▼	Auto bracketing
	Movie record button + ▼	None
	Lens focus function buttons	AF lock only

Option			Default
f2	Multi selector center button (🕮 142)		
	Shooting mode		Select center focus point
	Playback mode		Zoom on/off
		Zoom on/off	Low magnification (50%)
	Live view		Select center focus point
f3	Shutter spd & aperture lock (🕮 144)		
	Shutter speed lock		Off
	Aperture lock		Off
f4	Customize command dials (🕮 144)		
	Reverse rotation		**Exposure compensation**: ☐ **Shutter speed/aperture**: ☐
	Change main/sub		**Exposure setting**: Off **Autofocus setting**: Off
	Aperture setting		Sub-command dial
	Menus and playback		Off
	Sub-dial frame advance		10 frames
f5	Multi selector (🕮 147)		Do nothing
f6	Release button to use dial (🕮 147)		No
f7	Reverse indicators (🕮 148)		−◂iiii

Option		Default
g1	Custom control assignment (🕮 152)	
	Preview button	Index marking
	Preview button + ▼	None
	Fn1 button	Index marking
	Fn1 button + ▼	None
	Fn2 button	None
	Sub-selector center	AE/AF lock
	Sub-selector center + ▼	None
	Shutter-release button	Take photos
g2	Highlight brightness (🕮 156)	248

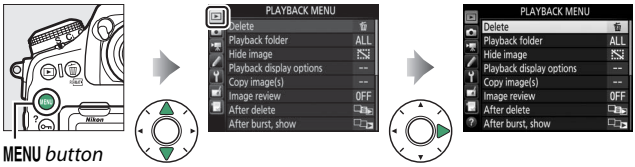
■■ *Setup Menu Defaults*

Option	Default
Time zone and date (🕮 159)	
Sync with smart device	Off
Daylight saving time	Off
Monitor brightness (🕮 160)	
Menus/playback	0
Live view	0
Monitor color balance (🕮 161)	A-B: 0, G-M: 0
Information display (🕮 163)	Auto
AF fine-tune (🕮 164)	
AF fine-tune (On/Off)	Off
Clean image sensor (🕮 169)	
Clean at startup/shutdown	Clean at startup & shutdown
Beep options (🕮 177)	
Beep on/off	Off
Volume	2
Pitch	Low

Option	Default
Touch controls (🕮 178)	
Enable/disable touch controls	Enable
Full-frame playback flicks	Left → Right
HDMI (🕮 178)	
Output resolution	Auto
External recording control	Off
Advanced	
Output range	Auto
Output display size	100%
Live view on-screen display	On
Dual monitor	On
Location data (🕮 179)	
Download from smart device	No
External GPS device options	
Standby timer	Enable
Set clock from satellite	Yes
Wireless remote (WR) options (🕮 180)	
LED lamp	On
Link mode	Pairing
Assign remote (WR) Fn button (🕮 181)	None
Airplane mode (🕮 181)	Disable
Send to smart device (auto) (🕮 183)	Off
Bluetooth (🕮 184)	
Network connection	Disable
Send while off	On
Eye-Fi upload (🕮 185)	Enable
MB-D18 battery type (🕮 187)	LR6 (AA alkaline)
Battery order (🕮 188)	Use MB-D18 batteries first
Slot empty release lock (🕮 190)	Enable release

▶ The Playback Menu: *Managing Images*

To display the playback menu, press **MENU** and select the ▶ (playback menu) tab.



MENU *button*

Option	🕮
Delete	20
Playback folder	20
Hide image	21
Playback display options	22
Copy image(s)	23
Image review	27

Option	🕮
After delete	27
After burst, show	28
Auto image rotation	28
Rotate tall	29
Slide show	29
Select to send to smart device	31

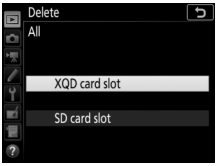
See Also

For menu defaults, see "Playback Menu Defaults" (🕮 9).

Delete

MENU *button* ➜ ▶ *playback menu*

Delete multiple images.

Option	Description
Selected	Delete selected pictures.
ALL **All**	Delete all pictures in the folder currently selected for playback. If two cards are inserted, you can select the card from which pictures will be deleted. 

Playback Folder

MENU *button* ➜ ▶ *playback menu*

Choose a folder for playback.

Option	Description
(Folder name)	Pictures in all folders created with the D850 will be visible during playback. Folders can be renamed using the **Storage folder** > **Rename** option in the photo shooting menu.
All	Pictures in all folders will be visible during playback.
Current	Only pictures in the current folder will be visible during playback.

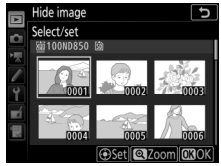
Hide Image

MENU *button* ➜ ▶ *playback menu*

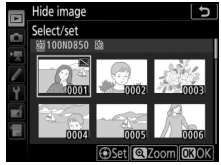
Hide or reveal selected pictures as described below. Hidden pictures are visible only in the **Hide image** menu and can only be deleted by formatting the memory card.

Protected and Hidden Images
Revealing a protected image will also remove protection from the image.

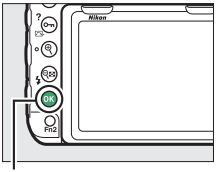
1 Choose Select/set.
Highlight **Select/set** and press ▶ (to skip the remaining steps and reveal all pictures, highlight **Deselect all** and press OK).



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 ⊕ button) and press the center of the multi selector to select the current picture. Selected pictures are marked by a ✓ icon; to deselect a picture, highlight it and press the center of the multi selector again. Continue until all the desired pictures have been selected.



3 Press ⓞ.
Press ⓞ to complete the operation.



ⓞ *button*

Playback Display Options

MENU *button* ➜ ▶ *playback menu*

Choose the information available in the playback photo information display. 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 ⓞ.

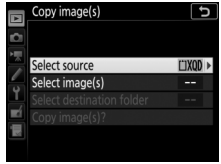
Copy Image(s)

MENU *button* ➜ ▶ *playback menu*

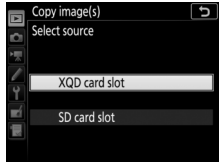
Copy pictures from one memory card to another. This option is only available when two memory cards are inserted in the camera.

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 ▶.



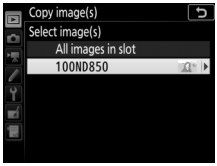
2 **Select the source card.**
Highlight the slot for the card containing the images to be copied and press OK.



3 **Choose Select image(s).**
Highlight **Select image(s)** and press ⊛.



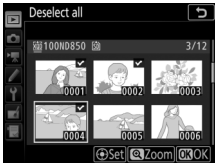
4 **Select the source folder.**
Highlight the folder containing the images to be copied and press ⊛.



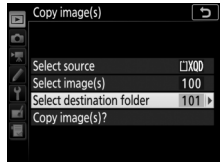
5 **Make the initial selection.**
Before going on to select or deselect individual images, you can mark all or all protected images in the folder for copying by choosing **Select all images** or **Select protected images**. To mark only individually selected images for copying, choose **Deselect all** before proceeding.



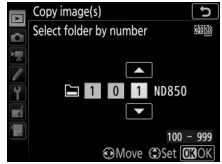
6 **Select additional images.**
Highlight pictures and press the center of the multi selector to select or deselect (to view the highlighted picture full screen, press and hold the ⊕ button). Selected images are marked with a ✔. Press ⊛ to proceed to Step 7 when your selection is complete.



7 **Choose Select destination folder.**
Highlight **Select destination folder** and press ▶.



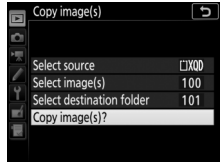
8 **Select a destination folder.**
To enter a folder number, choose **Select folder by number**, enter the number (📖 36), and press OK. If the folder with the selected number does not already exist, a new folder will be created.



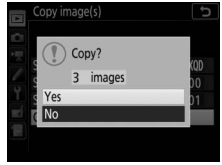
To choose from a list of existing folders, choose **Select folder from list**, highlight a folder, and press OK.



9 **Copy the images.**
Highlight **Copy image(s)?** and press OK.

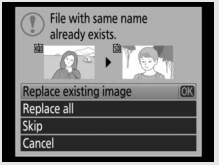


A confirmation dialog will be displayed; highlight **Yes** and press OK. Press OK again to exit when copying is complete.



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 and ratings are copied with the images. Hidden images cannot 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*

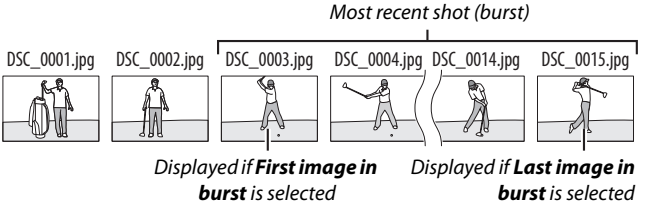
Choose the picture displayed after an image is deleted.

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**.

After Burst, Show

MENU *button* ➜ ▶ *playback menu*

Choose whether the photo displayed immediately after a burst of shots is taken in continuous release mode is the first or last shot in the burst. This option takes effect only when **Image review** (🕮 27) is off.



Auto Image Rotation

MENU *button* ➜ ▶ *playback menu*

Photographs taken while **On** is selected contain information on camera orientation, allowing them to be rotated automatically during playback or when viewed in ViewNX-i or in Capture NX-D. 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

MENU *button* ➜ ▶ *playback menu*

If **On** is selected, "tall" (portrait-orientation) pictures taken with **On** selected for **Auto image rotation** will be automatically rotated for display in the monitor. Pictures taken with **Off** selected for **Auto image rotation** will be displayed in "wide" (landscape orientation). Note that because the camera itself is already in the appropriate orientation during shooting, images are not rotated automatically during image review.

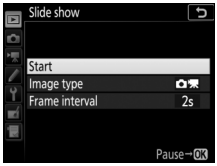
Slide Show

MENU *button* ➜ ▶ *playback menu*

View a slide show of the pictures in the current playback folder (🕮 20). Hidden images (🕮 21) 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 OK. The following operations can be performed while the slide show is in progress:



To	Description
Skip back/skip ahead	Press ◀ to return to previous frame, ▶ to skip to next frame.
View additional photo info	Press ▲ or ▼ to change or hide photo info displayed (still images only).
Pause	Press OK to pause the slide show. To restart, highlight **Restart** and press OK.
Adjust volume	Press ⊕ during movie playback to increase volume, ⊖ (⚡) to decrease.
Exit to playback menu	Press MENU to end the slide show and return to the playback menu.
Exit to playback mode	Press ▶ to end the slide show and exit to playback mode.
Exit to shooting mode	Press shutter-release button halfway to return to shooting mode.

A dialog is displayed when the show ends. Select **Restart** to restart or **Exit** to return to the playback menu.



Select to Send to Smart Device

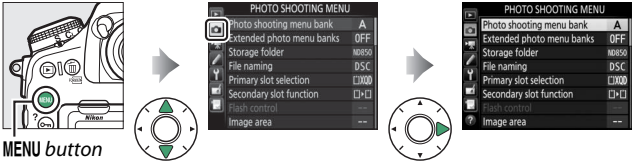
MENU *button* ➜ ▶ *playback menu*

Select photos for upload to the smart device. Movies cannot be selected for upload; photos are uploaded at a size of 2 megapixels.

Option	Description
Select image(s)	Mark pictures for upload to the smart device.
Deselect all	Remove the upload markings from all pictures.

The Photo Shooting Menu: *Shooting Options*

To display the photo shooting menu, press MENU and select the (photo shooting menu) tab.



MENU *button*

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See Also
For menu defaults, see "Photo Shooting Menu Defaults" (🕮 9).

Photo Shooting Menu Bank

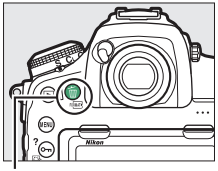
MENU *button* ➜ *photo shooting menu*

Photo shooting menu options are stored in one of four banks. With the exceptions of **Extended photo menu banks**, **Multiple exposure**, **Interval timer shooting**, and **Focus shift shooting**, changes to settings in one bank have no effect on the others. To store a particular combination of frequently-used settings, select one of the four banks and set the camera to these settings. The new settings will be stored in the bank even when the camera is turned off, and will be restored the next time the bank is selected. Different combinations of settings can be stored in the other banks, allowing the user to switch instantly from one combination to another by selecting the appropriate bank from the bank menu.

The default names for the four photo shooting menu banks are A, B, C, and D. A descriptive caption up to 20 characters long can be added as described in "Text Entry" (🕮 38) by highlighting the menu bank and pressing ▶.

▮▮ *Restoring Default Settings*

To restore default settings, highlight a bank in the **Photo shooting menu bank** menu and press 🗑 (FORMAT). A confirmation dialog will be displayed; highlight **Yes** and press OK to restore default settings for the selected bank. Default settings are listed in "Photo Shooting Menu Defaults" (🕮 9).



🗑 (FORMAT) *button*

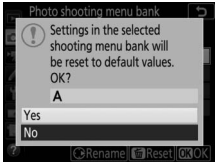
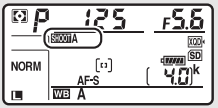
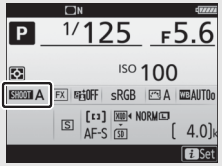


Photo Shooting Menu Bank

The control panel and information displays show the current photo shooting menu bank.





See Also

Exposure and flash modes, shutter speed, and aperture can be included in photo shooting menu banks using the **Extended photo menu banks** option in the photo shooting menu (🕮 35). For information on using the controls on the camera body to select the photo shooting menu bank, see ✎ > Custom Setting f1 (**Custom control assignment**, 🕮 130).

Extended Photo Menu Banks

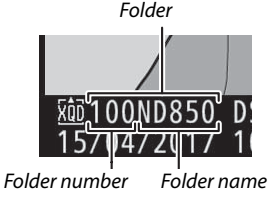
MENU *button* ➜ *photo shooting menu*

Select **On** to include exposure and flash modes, shutter speed (modes **S** and **M** only), and aperture (modes **A** and **M** only) in the information recorded in each of the four photo shooting menu banks, to be recalled whenever the bank is selected. Selecting **Off** restores the values in effect before **On** was selected.

Storage Folder

MENU *button* ➜ *photo shooting menu*

Rename folders and select the folder in which subsequent images will be stored.



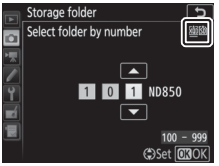
■■ *Rename*

Folders are identified by a 5-character folder name preceded by a 3-digit folder number assigned automatically by the camera. The default folder name is "ND850"; to change the name assigned to new folders, select **Rename** and rename the folder as described in "Text Entry" (🕮 38). If desired, the default name can be restored by pressing and holding the 🗑 (FORMAT) button while the keyboard is displayed. Existing folders cannot be renamed.

■■ *Select Folder by Number*

To select folders by number or create a new folder with the current folder name and a new folder number:

1 **Choose Select folder by number.**
Highlight **Select folder by number** and press ▶. A dialog will be displayed, with the current primary slot underlined.



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 5000 pictures or a picture numbered 9999. No further pictures can be stored in this folder.

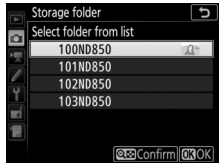
The card on which the folder is stored is shown by the card slot icon in the top right corner of the "select folder by number" dialog. The card used for new folders depends on the option currently selected for **Secondary slot function** (🕮 39).

3 **Save changes and exit.**
Press OK to complete the operation and return to the main menu (to exit without changing 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.

■ *Select Folder from List*

To choose from a list of existing folders:

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 OK to select the highlighted folder and return to the main menu. Subsequent photographs will be stored in the selected folder.

Folder and File Numbers
Once the folder number has reached 999, no new folders will be created, and consequently the shutter release will be disabled once the file number reaches 9999 or the number of files in the folder reaches 5000, or if you attempt to record a movie when the camera calculates that the number of files needed for a movie of maximum length would result in the creation of a file numbered higher than 9999 or the folder holding over 5000 files. To continue shooting, create a folder with a number less than 999 or try changing the options selected for **Frame size/frame rate** and **Movie quality** (🕮 84, 85).

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*

Photographs are saved using file names consisting of "DSC_" or, in the case of images that use the Adobe RGB color space (🕮 56), "_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 as described in "Text Entry" (🕮 38).

Text Entry

A dialog is displayed when text entry is required. Tap the letters on the touch-screen keyboard. You can also use the multi selector to highlight the desired character in the keyboard area and press the center of the multi selector to insert the highlighted character at the current cursor position (note that if a character is entered when the field is full, the last character in the field will be deleted). To delete the character under the cursor, press the 🗑 (FORMAT) button. To move the cursor to a new position, tap the display or hold the ⊖ (⚡) button and press ◀ or ▶. To complete entry and return to the previous menu, press OK. To exit without completing text entry, press MENU.

Text display area



Keyboard area

Extensions
The following extensions are used: ".NEF" for NEF (RAW) images, ".TIF" for TIFF (RGB) images, ".JPG" for JPEG images, ".MOV" for MOV movies, ".MP4" for MP4 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.

Primary Slot Selection

MENU *button* ➜ *photo shooting menu*

Choose the primary slot for shooting and playback. Select **XQD card slot** to designate the card in the XQD card slot as the primary card, **SD card slot** to choose the SD card.

Secondary Slot Function

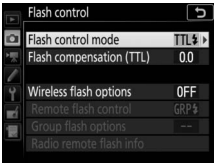
MENU *button* ➜ *photo shooting menu*

Choose the role played by the primary and secondary cards when two memory cards are inserted in the camera.

Choose from **Overflow** (the secondary card is used only when the primary card is full), **Backup** (each picture is recorded to both the primary and secondary card), and **RAW primary - JPEG secondary** (as for **Backup**, except that the NEF/RAW copies of photos shot at settings of NEF/RAW + JPEG are recorded only to the primary card and the JPEG copies only to the secondary card).

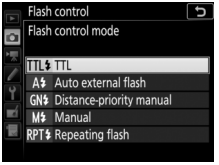
Flash Control

MENU *button* ➜ *photo shooting menu*



Choose the flash control mode for optional flash units mounted on the camera accessory shoe and adjust settings for off-camera flash photography. For information on remote flash photography using multiple flash units, see "Optional Flash Units" (🕮 219).

■■ *Flash Control Mode*

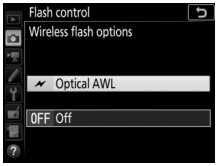


When an SB-5000, SB-500, SB-400, or SB-300 is mounted on the camera, the flash control mode, flash level, and other flash settings can be adjusted using the **Flash control** > **Flash control mode** item in the photo shooting menu (in the case of the SB-5000, these settings can also be adjusted using the controls on the flash unit). The options available vary with the flash used, while the options displayed under **Flash control mode** vary with the mode selected. Settings for other flash units can only be adjusted using flash unit controls.

- **TTL**: i-TTL mode. In the cases of the SB-500, SB-400, and SB-300, flash compensation can be adjusted using the ⚲ (ϟ) button.
- **Auto external flash**: In this mode, output is adjusted automatically according to the amount of light reflected by the subject; flash compensation is also available. Auto external flash supports "auto aperture" (⚲A) and "non-TTL auto" (A) modes; non-TTL auto is selected automatically if a non-CPU lens is attached without specifying the focal length and maximum aperture using the **Non-CPU lens data** option in the setup menu (🕮 169). See the flash unit manual for details.
- **Distance-priority manual**: Choose the distance to the subject; flash output will be adjusted automatically. Flash compensation is also available.
- **Manual**: Choose the flash level manually.
- **Repeating flash**: The flash fires repeatedly while the shutter is open, producing a multiple-exposure effect. Choose the flash level (**Output**), the maximum number of times the unit fires (**Times**), and the number of times the flash fires per second (**Frequency**, measured in Hertz). The options available for **Times** vary depending on the options selected for **Output** and **Frequency**; see the documentation provided with the flash unit for details.

■■ *Wireless Flash Options*

Adjust settings for simultaneous wireless control of multiple remote flash units. This option is available only when an SB-5000 or SB-500 flash unit or a WR-R10 wireless remote controller is mounted on the camera.



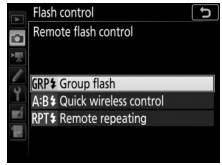
Option	Description
Optical AWL	The remote flash units are controlled using low-intensity flashes emitted by the master flash. Available only with an SB-5000 or SB-500 mounted on the camera accessory shoe.
Optical/ radio AWL	This option is for flash photography using both optically- and radio-controlled flash units. Choose this option when using both a WR-R10 and an SB-500 mounted on the camera accessory shoe. **Remote flash control** is automatically set to **Group flash** (🕮 43).
Radio AWL	The remote flash units are controlled by radio signals emitted by a WR-R10 attached to the camera. Available only with the WR-R10 and remote flash units that support radio AWL.
Off	Remote flash photography disabled.

The WR-R10

A WR-A10 adapter is required when using the WR-R10. Be sure to update the WR-R10 firmware to the latest version (version 3.0 or later); for information on firmware updates, see the Nikon website for your area.

■■ *Remote Flash Control*

Choose from the following remote flash photography options.



Option	Description
Group flash	Choose a separate flash control mode and flash level for each group of remote flash units. If **Optical AWL** or **Optical/radio AWL** is selected for **Wireless flash options** (🕮 42), you can choose the channel used by the master flash to communicate with the remote flash units.
Quick wireless control	Choose for control of overall flash output. Use **Quick wireless control options** to adjust the balance between groups A and B and set the output for group C manually (the master flash does not fire). You can also adjust flash compensation for groups A and B and, if **Optical AWL** or **Optical/radio AWL** is selected for **Wireless flash options** (🕮 42), choose the channel used by the master flash to communicate with the remote flash units.
Remote repeating	The flash units fire repeatedly while the shutter is open, producing a multiple-exposure effect. Choose the flash level (**Output**), the maximum number of times the flash units fire (**Times**), the number of times the units fire per second (**Frequency**), and, if **Optical AWL** or **Optical/radio AWL** is selected for **Wireless flash options** (🕮 42), the channel used by the master flash to communicate with the remote flash units. Note that the number of times the flash units fire in total may vary depending on the options selected for **Output** and **Frequency**; see the documentation provided with the flash unit for details.

■■ *Radio Remote Flash Info*

View the flash units currently controlled using radio AWL.

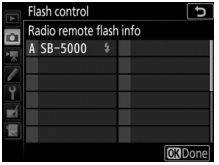


Image Area

MENU *button* ➜ *photo shooting menu*

Choose the image area and enable or disable the viewfinder mask display.

■■ *Choose Image Area*

The camera offers a choice of the following image areas:

Option	Description
FX **FX (36×24)**	Images are recorded in FX format with an angle of view equivalent to a NIKKOR lens on a 35 mm format camera.
1.2x **1.2× (30×20)**	Selecting this option reduces the angle of view and increases the apparent focal length of the lens by approximately 1.2×.
DX **DX (24×16)**	Images are recorded in DX format. To calculate the approximate focal length of the lens in 35 mm format, multiply by 1.5.
5:4 **5 : 4 (30×24)**	Pictures are recorded with an aspect ratio of 5 : 4.
1:1 **1 : 1 (24×24)**	Pictures are recorded with an aspect ratio of 1 : 1.

■■ *Auto DX Crop*

If **On** is selected, photos taken using a DX lens will automatically be recorded in DX format using the **DX (24×16)** image area.

■■ *Viewfinder Mask Display*

If **On** is selected, the area outside the **1.2× (30×20)**, **DX (24×16)**, **5 : 4 (30×24)**, and **1 : 1 (24×24)** crops will be shown in gray in the viewfinder.

Image Quality

MENU *button* ➜ *photo shooting menu*

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.
NEF (RAW)+ JPEG fine★/ NEF (RAW)+ JPEG fine	NEF/ JPEG	Two images are recorded, one NEF (RAW) image and one fine-quality JPEG image.
NEF (RAW)+ JPEG normal★/ NEF (RAW)+ JPEG normal		Two images are recorded, one NEF (RAW) image and one normal-quality JPEG image.
NEF (RAW)+ JPEG basic★/ NEF (RAW)+ JPEG basic		Two images are recorded, one NEF (RAW) image and one basic-quality JPEG image.
JPEG fine★/ JPEG fine	JPEG	Record JPEG images at a compression ratio of roughly 1 : 4 (fine quality).
JPEG normal★/ JPEG normal		Record JPEG images at a compression ratio of roughly 1 : 8 (normal quality).
JPEG basic★/ JPEG basic		Record JPEG images at a compression ratio of roughly 1 : 16 (basic quality).
TIFF (RGB)	TIFF (RGB)	Record uncompressed TIFF-RGB images at a bit depth of 8 bits per channel (24-bit color). TIFF is supported by a wide variety of imaging applications.

JPEG Compression

Image quality options with a star ("★") use compression intended to ensure maximum quality; the size of the files varies with the scene. Options without a star use a type of compression designed to produce smaller files; files tend to be roughly the same size regardless of the scene recorded.

Image Size

MENU *button* ➜ *photo shooting menu*

Choose the size, in pixels, of photographs recorded with the camera. Select **JPEG/TIFF** to choose the size of JPEG and TIFF images, **NEF (RAW)** to choose the size of NEF (RAW) images.

Image area	Option	Size (pixels)	Print size (cm/in.)*
FX (36×24; FX format)	Large	8256 × 5504	69.9 × 46.6/27.5 × 18.3
	Medium	6192 × 4128	52.4 × 35.0/20.6 × 13.8
	Small	4128 × 2752	35.0 × 23.3/13.8 × 9.2
1.2× (30×20)	Large	6880 × 4584	58.3 × 38.8/22.9 × 15.3
	Medium	5152 × 3432	43.6 × 29.1/17.2 × 11.4
	Small	3440 × 2288	29.1 × 19.4/11.5 × 7.6
DX (24×16; DX format)	Large	5408 × 3600	45.8 × 30.5/18.0 × 12.0
	Medium	4048 × 2696	34.3 × 22.8/13.5 × 9.0
	Small	2704 × 1800	22.9 × 15.2/9.0 × 6.0
5 : 4 (30×24)	Large	6880 × 5504	58.3 × 46.6/22.9 × 18.3
	Medium	5152 × 4120	43.6 × 34.9/17.2 × 13.7
	Small	3440 × 2752	29.1 × 23.3/11.5 × 9.2
1 : 1 (24×24)	Large	5504 × 5504	46.6 × 46.6/18.3 × 18.3
	Medium	4128 × 4128	35.0 × 35.0/13.8 × 13.8
	Small	2752 × 2752	23.3 × 23.3/9.2 × 9.2

* 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).

NEF (RAW) Recording

MENU *button* ➜ *photo shooting menu*

Choose a compression type and bit depth for NEF (RAW) photographs.

■■ *NEF (RAW) Compression*

Option		Description
ON	**Lossless compressed**	NEF images are compressed using a reversible algorithm, reducing file size by about 20–40% with no effect on image quality.
ON	**Compressed**	NEF images are compressed using a non-reversible algorithm, reducing file size by about 35–55% with almost no effect on image quality.
	Uncompressed	NEF images are not compressed.

■■ *NEF (RAW) Bit Depth*

Option		Description
12-bit	**12-bit**	NEF (RAW) images are recorded at a bit-depth of 12 bits.
14-bit	**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.

ISO Sensitivity Settings

MENU *button* ➜ *photo shooting menu*

Adjust ISO sensitivity settings for photographs.

Option	Description
ISO sensitivity	Adjust ISO sensitivity. Select from values between ISO 64 and 25600. Settings of from about 0.3 to 1 EV below ISO 64 and 0.3 to 2 EV above ISO 25600 are also available for special situations.
Auto ISO sensitivity control	If **On** is selected, the camera will automatically adjust ISO sensitivity when optimal exposure cannot be achieved at the value selected for **ISO sensitivity**. You can choose the maximum sensitivity to prevent ISO sensitivity being raised too high and the shutter speed below which auto ISO sensitivity control will kick in to prevent under exposure in modes **P** and **A** (the minimum shutter speed; choose from values between 1/4000 s and 30 s). The maximum ISO sensitivity for photos taken using an optional flash unit can be selected using **Maximum sensitivity with ϟ**.

White Balance

MENU *button* ➜ *photo shooting menu*

Match white balance to the light source.

Option		Description
AUTO	**Auto**	White balance is adjusted automatically. For best results, use type G, E or D lens. If optional flash fires, results are adjusted appropriately.
	Keep white (reduce warm colors)	
	Normal	
	Keep warm lighting colors	
A	**Natural light auto**	White balance is adjusted for natural light, producing colors closer to those seen by the naked eye.
	Incandescent	Use under incandescent lighting.
	Fluorescent	Use with:
	Sodium-vapor lamps	• Sodium-vapor lighting (found in sports venues).
	Warm-white fluorescent	• Warm-white fluorescent lights.
	White fluorescent	• White fluorescent lights.
	Cool-white fluorescent	• Cool-white fluorescent lights.
	Day white fluorescent	• Daylight white fluorescent lights.
	Daylight fluorescent	• Daylight fluorescent lights.
	High temp. mercury-vapor	• High color temperature light sources (e.g. mercury-vapor lamps).
	Direct sunlight	Use with subjects lit by direct sunlight.
	Flash	Use with optional flash units.
	Cloudy	Use in daylight under overcast skies.

Option	Description
Shade	Use in daylight with subjects in the shade.
Choose color temp.	Choose color temperature from list of values.
PRE Preset manual	Use subject, light source, or existing photograph as reference for white balance.

Set Picture Control

MENU *button* ➜ *photo shooting menu*

Choose how new photos will be processed. Select according to the type of scene or your creative intent.

Option	Description
A **Auto**	The camera automatically adjusts hues and tones based on the **Standard** Picture Control. The complexions of portrait subjects will appear softer, and such elements as the foliage and sky in outdoor shots more vivid, than in pictures taken with the **Standard** Picture Control.
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.

Manage Picture Control

MENU *button* ➜ *photo shooting menu*

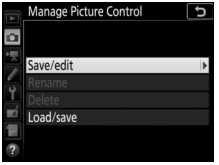
Create custom Picture Controls.

Option	Description
Save/edit	Create a new custom Picture Control based on an existing preset or custom Picture Control, or edit existing custom Picture Controls (🕮 54).
Rename	Rename a selected Picture Control.
Delete	Delete a selected Picture Control.
Load/save	Use the following options to copy custom Picture Controls to and from memory cards (if two memory cards are inserted, the card in the primary slot will be used; 🕮 39). Once copied to memory cards, Picture Controls can be used with other cameras or compatible software. • **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. • **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.

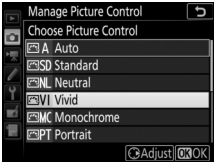
■■ *Creating Custom Picture Controls*

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

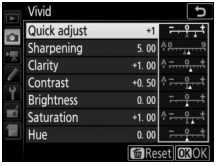
1 **Select Save/edit.**
Highlight **Save/edit** and press ▶.



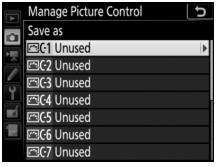
2 **Select a Picture Control.**
Highlight an existing Picture Control and press ▶, or press OK to proceed to Step 4 to save a copy of the highlighted Picture Control without further modification.



3 **Edit the selected Picture Control.**
To abandon any changes and start over from default settings, press the 🗑 (RESET) button. Press OK when settings are complete.

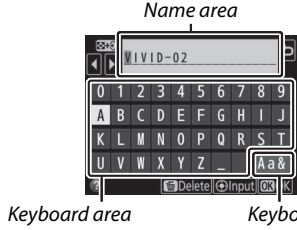


4 **Select a destination.**
Choose a destination for the custom Picture Control (C-1 through C-9) and press ▶.



5 **Name the Picture Control.**

A text-entry dialog 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 choose a different name, rename the Picture Control as described in "Text Entry" (🕮 38). Tap the keyboard selection button to cycle through the upper-case, lower-case, and symbol keyboards. Custom Picture Control names can be up to nineteen characters long. Any characters after the nineteenth will be deleted.



Custom Picture Control Options

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

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.



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-i and Capture NX-D automatically select the correct color space when opening photographs created with this camera. Results cannot be guaranteed with third-party software.

Active D-Lighting

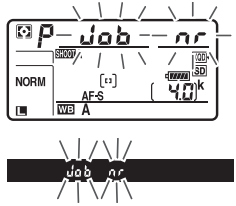
MENU *button* ➜ *photo shooting menu*

Preserve details in highlights and shadows, creating photographs with natural contrast.

Option	Description
Auto	The camera automatically adjusts Active D-Lighting according to shooting conditions.
Extra high/ High/Normal/ Low	Choose the Active D-Lighting level.
Off	Active D-Lighting off.

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 or fog). The time required for processing roughly doubles; during processing, "dabnr" will flash in the shutter speed/aperture displays and pictures cannot 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*

Photographs taken at high ISO sensitivities can be processed to reduce "noise".

Option	Description
High/ Normal/ Low	Reduce noise (randomly-spaced bright pixels), particularly in pictures taken at high ISO sensitivities. Choose the amount of noise reduction performed from **High**, **Normal**, and **Low**.
Off	Noise reduction is performed only as required and never at an amount as high as when **Low** is selected.

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, TIFF and 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 or multiple exposures.

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)**; selecting other options may result in heavily cropped photographs or in photographs with severe peripheral distortion (🕮 45).

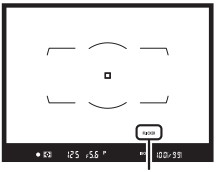
Retouch: Distortion Control

For information on creating copies of existing photographs with reduced barrel and pin-cushion distortion, see "Distortion Control" (🕮 206).

Flicker Reduction

MENU *button* ➜ *photo shooting menu*

Reduce banding or (in photographs taken in continuous release modes) uneven exposure or coloration caused by the flicker of such light sources as fluorescent or mercury-vapor lamps during viewfinder photography.

Option	Description
Flicker reduction setting	When **Enable** is selected, the camera will time photographs to reduce the effects of flicker. Note that the frame rate may drop while flicker reduction is in effect.
Flicker reduction indicator	When **On** is selected, a **FLICKER** icon will be displayed in the viewfinder if flicker is detected when the shutter-release button is pressed halfway. If flicker is detected when **Disable** is selected for **Flicker reduction setting**, the icon will flash; to enable flicker reduction, select **Enable** for **Flicker reduction setting**.  **FLICKER** *icon*

Flicker Reduction in the Photo Shooting Menu

Take a test shot and view the results before taking additional photographs. Flicker reduction can detect flicker at 100 and 120 Hz (associated respectively with AC power supplies of 50 and 60 Hz). Flicker may not be detected or the desired results may not be achieved with dark backgrounds, bright light sources, or decorative lighting displays and other non-standard lighting. Depending on the light source, there may be a slight delay before the shutter is released. During burst shooting, the frame rate may slow or become erratic; in addition, the desired results may not be achieved if the frequency of the power supply changes during shooting.

Flicker detection will not take effect at shutter speeds slower than 1/100 s (including Bulb and Time) or when **MUP** is selected for release mode or exposure delay mode is on.

Auto Bracketing Set

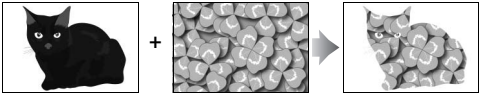
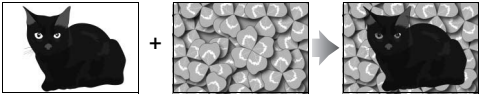
MENU *button* ➜ *photo shooting menu*

Choose the setting or settings bracketed when auto bracketing is in effect. Choose **AE & flash bracketing** (AE⚡) to perform both exposure and flash-level bracketing, **AE bracketing** (AE) to bracket only exposure, **Flash bracketing** (⚡) to perform only flash-level bracketing, **WB bracketing** (WB) to perform white-balance bracketing, or **ADL bracketing** (ADL) to perform bracketing using Active D-Lighting. Note that white balance bracketing is not available at image quality settings of NEF (RAW) or NEF (RAW) + JPEG.

Multiple Exposure

MENU *button* ➜ *photo shooting menu*

Record two to ten NEF (RAW) exposures as a single photograph.

Option	Description
Multiple exposure mode	• **ON↻ On (series)**: Take a series of multiple exposures. Select **Off** to resume normal shooting. • **On (single photo)**: Take one multiple exposure. • **Off**: Exit without creating additional multiple exposures.
Number of shots	Choose the number of exposures that will be combined to form a single photograph.
Overlay mode	• **Add**: The exposures are overlaid without modification; gain is not adjusted. • **Average**: Before the exposures are overlaid, the gain for each is divided by the total number of exposures taken (gain for each exposure is set to ½ for 2 exposures, ⅓ for 3 exposures, etc). • **Lighten**: The camera compares the pixels in each exposure and uses only the brightest.  • **Darken**: The camera compares the pixels in each exposure and uses only the darkest. 
Keep all exposures	• **On**: Save the individual shots that make up each multiple exposure. • **Off**: Discard the individual shots and save only the multiple exposure.
Select first exposure (NEF)	Choose the first exposure from the NEF (RAW) images on the memory card.

■■ *Creating a Multiple Exposure*

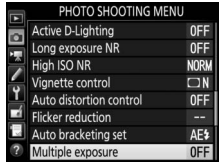
Multiple exposures cannot be recorded in live view. Exit live view before proceeding.

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**, 🕮 118).

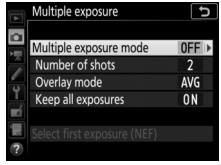
1 Select **Multiple exposure.**

Highlight **Multiple exposure** in the photo shooting menu and press ▶.

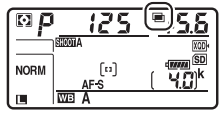


2 Select a mode.

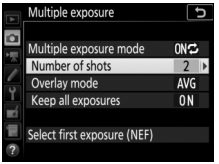
Highlight **Multiple exposure mode** and press ▶, then press ▲ or ▼ to choose the desired mode and press OK to select.



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



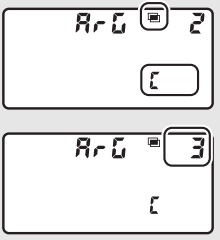
3 **Choose the number of shots.**
Highlight **Number of shots** and press ▶.



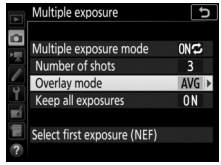
Press ▲ or ▼ to choose the number of exposures that will be combined to form a single photograph and press OK.

The BKT Button

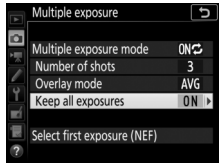
If **Multiple exposure** is selected for Custom Setting f1 (**Custom control assignment**) > **BKT button** + ▭ (📖 130), you can select the multiple exposure mode by pressing the **BKT** button and rotating the main command dial and the number of shots by pressing the **BKT** button and rotating the sub-command dial. The mode and number of shots are shown in the control panel: the icons representing the mode are OFF for **Off**, ! for **On (single photo)**, and □ for **On (series)**.



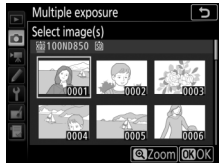
4 **Choose the overlay mode.**
Highlight **Overlay mode** and press ▶, then press ▲ or ▼ to choose the desired mode and press OK to select.

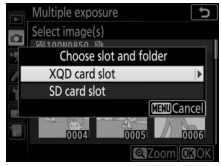


5 **Choose whether to keep individual exposures.**
To choose whether to keep or delete the individual shots that make up the multiple exposure, highlight **Keep all exposures** and press ▶, then press ▲ or ▼ to choose the desired option and press OK to select.



6 **Choose the first exposure.**
To choose the first exposure from the NEF (RAW) images already recorded to the memory card, highlight **Select first exposure (NEF)** and press ▶. Use the multi selector to highlight the desired image and press OK to select (to view the highlighted image full screen, press and hold the ⊕ button). To choose from images in a different slot or folder, press the ⊖ (ϟ) button.

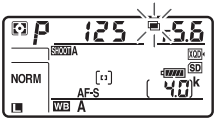




7 Frame a photograph, focus, and shoot.



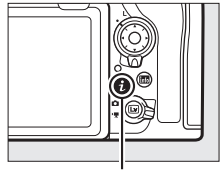
In continuous release modes, the camera records all exposures in a single burst. If **On (series)** is selected, the camera will continue to record multiple exposures while the shutter-release button is pressed; if **On (single photo)** is selected, multiple exposure shooting will end after the first photograph. In self-timer mode, the camera will automatically record the number of exposures selected in Step 3, regardless of the option selected for Custom Setting c3 (**Self-timer**) > **Number of shots** (🕮 119); 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. If you selected an existing NEF (RAW) image as the first exposure in Step 6, shooting will start from the second exposure. For information on interrupting a multiple exposure before all photographs are recorded, see "Ending Multiple Exposures" (🕮 68).



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.

■■ *Using the i Button*

The options listed below can be accessed by pressing the ▶ button during a multiple exposure and then pressing the **i** button. Use the touch screen or navigate the menu using the multi selector, pressing ▲ or ▼ to highlight items and pressing ⊛ to select.

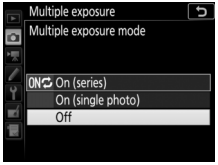


i button



- **View progress**: View a preview created from the exposures recorded to the current point.
- **Retake last exposure**: Retake the most recent exposure.
- **Save and exit**: Create a multiple exposure from the exposures taken to current point.
- **Discard and exit**: Exit without recording a multiple exposure. If **On** is selected for **Keep all exposures**, the individual exposures will be kept.

■■ *Ending Multiple Exposures*



To end a multiple exposure before the specified number of exposures have been taken, select **Off** for multiple exposure mode or press the ▶ button followed by the **i** button and select either **Save and exit** or **Discard and exit**. If shooting ends or you select **Save and exit** 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 **Average** is selected for **Overlay mode**, 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
- The camera is turned off
- The battery is exhausted

Multiple Exposure

Multiple exposures may be affected by noise (randomly-spaced bright pixels, fog, or lines).

Do not remove or replace the memory card while recording a multiple exposure.

Live view is not available while shooting is in progress. Selecting live view resets **Multiple exposure mode** to **Off**.

The shooting settings and photo info for multiple exposure photographs are those for the first exposure.

"Select First Exposure (NEF)"

If the NEF (RAW) image selected for the first exposure was recorded at an ISO sensitivity of Hi 0.3 to Hi 2, the electronic front-curtain shutter will not be used during the multiple exposure even if **Enable** is selected for Custom Setting d6 (**Electronic front-curtain shutter**, 📖 121).

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 cannot be formatted and some menu items are grayed out and cannot be changed.

HDR (High Dynamic Range)

MENU *button* ➜ *photo shooting menu*

Used with high contrast subjects, High Dynamic Range (HDR) preserves details in highlights and shadows by combining two shots taken at different exposures.

Option	Description
HDR mode	• **ON🔁 On (series)**: Take a series of HDR photographs. Select **Off** to resume normal shooting. • **On (single photo)**: Take one HDR photograph. • **Off**: Exit without taking additional HDR photographs.
Exposure differential	Choose the difference in exposure between the two shots that are combined to make an HDR photograph. Choose larger values for high-contrast subjects, or select **Auto** to let the camera adjust the exposure differential according to the scene.
Smoothing	Choose how much to smooth the boundaries between the shots that make up each HDR photograph.

Interval Timer Shooting

MENU *button* ➜ *photo shooting menu*

Take photographs at the selected interval until the specified number of shots has been recorded. Select a release mode other than self-timer (⏲) when using the interval timer.

Option	Description
Start	Start interval timer shooting, either after 3 s (**Now** selected for **Choose start day/time**) or at a selected date and time (**Choose day/time**). Shooting will continue at the selected interval until all shots have been taken.
Choose start day/time	Choose a start option. To start shooting immediately, select **Now**. To start shooting at a chosen date and time, select **Choose day/time**.
Interval	Choose the interval (hours, minutes, and seconds) between shots.
Intervals×shots/interval	Choose the number of intervals and the number of shots per interval.
Exposure smoothing	Selecting **On** allows the camera to adjust exposure to match previous shot in exposure modes other than **M** (note that exposure smoothing only takes effect in mode **M** if auto ISO sensitivity control is on). Large changes in subject brightness during shooting may result in apparent variations in exposure, in which case it may be necessary to shorten the interval between shots.
Silent photography	Select **On** to silence the shutter during shooting.

Option	Description
Interval priority	Choose whether the camera gives priority to exposure time or interval timing in exposure modes **P** and **A**. Select **On** to ensure photos are taken at the chosen interval, **Off** to ensure that photos are correctly exposed. If **On** is selected, be sure the **Minimum shutter speed** chosen for **ISO sensitivity settings** (🕮 49) > **Auto ISO sensitivity control** in the photo shooting menu is faster than the interval. You should also focus using manual focus or, if you are using autofocus, choose **Release** for Custom Setting a1 (**AF-C priority selection**, 🕮 105) or Custom Setting a2 (**AF-S priority selection**, 🕮 106) according to whether **AF-C** or **AF-S** is selected.
Starting storage folder	Highlight either of the following options and press ▶ to select or deselect: • **New folder**: A new folder is created for each new sequence. • **Reset file numbering**: File numbering is reset to 0001 whenever a new folder is created.

■■ *Interval Timer Photography*

✓ Before Shooting

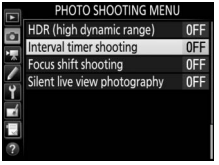
Before beginning interval timer photography, take a test shot at current settings and view the results in the monitor. Once settings have been adjusted to your satisfaction, close the viewfinder eyepiece shutter to prevent light entering via the viewfinder interfering with photographs and exposure.

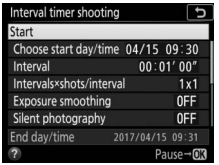
Before choosing a starting time, select **Time zone and date** in the setup menu and make sure that the camera clock is set to the correct time and date (🕮 159).

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.

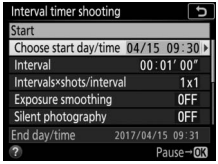




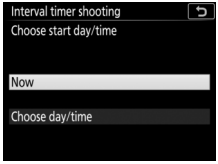
2 Adjust interval timer settings.

Choose a start day and time, interval, number of shots per interval, and exposure smoothing, silent photography, interval priority, and starting folder options.

- **To choose a start day and time**:



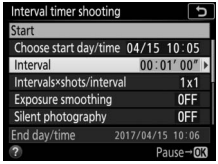
*Highlight **Choose start day/time** and press ▶.*



Highlight an option and press OK.

To start shooting immediately, select **Now**. To start shooting at a chosen date and time, select **Choose day/time**, then choose the date and time and press OK.

- **To choose the interval between shots**:

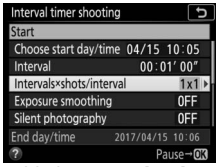


*Highlight **Interval** and press ▶.*

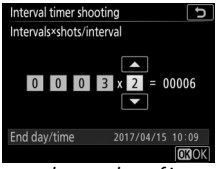


Choose an interval (hours, minutes, and seconds) and press OK.

- **To choose the number of shots per interval:**



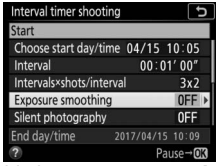
*Highlight **Intervals×shots/interval** and press ▶.*



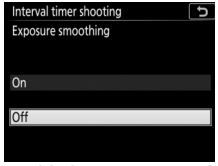
Choose the number of intervals and the number of shots per interval and press OK.

In **S** (single frame) mode, the photographs for each interval will be taken at the rate chosen for Custom Setting d1 (**CL mode shooting speed**; 🕮 120).

- **To enable or disable exposure smoothing:**

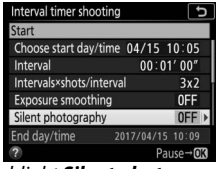


*Highlight **Exposure smoothing** and press ▶.*

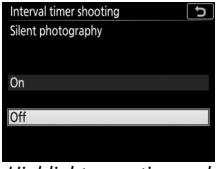


Highlight an option and press OK.

- **To enable or disable silent photography:**



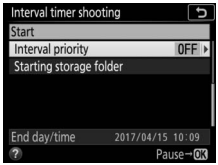
*Highlight **Silent photography** and press ▶.*



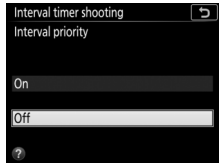
Highlight an option and press OK.

If **On** is selected, the only time the sound of the shutter or mirror will be heard is when the mirror is raised or lowered at the start and end of shooting.

- **To choose an interval priority option**:



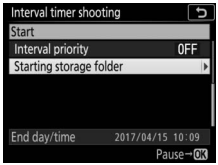
*Highlight **Interval priority** and press ▶.*



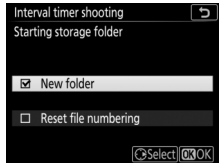
Highlight an option and press OK.

If **On** is selected, interval timer photography will end if the camera cannot focus or the shutter release is otherwise disabled.

- **Choosing start folder options**:



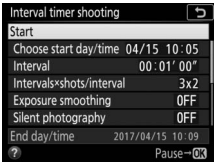
*Highlight **Starting storage folder** and press ▶.*



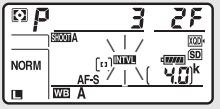
Highlight options and press ▶ to select or deselect. Press OK to proceed.

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 **Choose start day/time** in Step 2. Shooting will continue at the selected interval until all shots have been taken.



During Shooting



During interval timer photography, the INTVL icon will flash in the control panel. 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).

Settings can be adjusted, the menus used, and pictures 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.

Release Mode

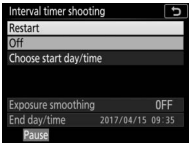
Regardless of the release mode selected, the camera will take the specified number of shots at each interval.

■■ *Pausing Interval Timer Photography*

Interval timer photography can be paused between intervals by pressing ⓚ or selecting **Pause** in the interval timer menu.

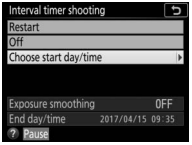
■■ *Resuming Interval Timer Shooting*

To resume shooting immediately, select **Restart**.

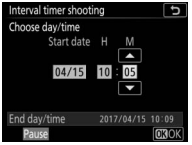


*Highlight **Restart** and press ⓚ.*

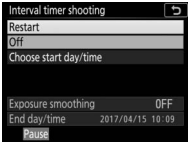
To resume shooting at a specified time:



*For **Choose start day/time**, highlight **Choose day/time** and press ⓑ.*



Choose a starting date and time and press ⓚ.



*Highlight **Restart** and press ⓚ.*

■■ *Ending Interval Timer Shooting*

To end interval timer photography before all the photos are taken, select **Off** in the interval timer menu.

■■ *No Photograph*

Photographs will not be taken at the selected interval if the current interval ends before the photograph or photographs for the previous interval have been taken, the memory card is full, or **AF-S** is selected and the camera is unable to focus (note that the camera focuses before each shot). In autofocus mode, the camera will either end interval timer photography (**On** selected **Interval priority**) or skip to the next interval (**Off** selected **Interval priority**) if no photograph is taken after eight seconds.

Out of Memory

If the memory card is full, the interval timer will remain active but no pictures will be taken. Resume shooting (🕮 77) after deleting some pictures or turning the camera off and inserting another memory card.

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. Note that bracketing cannot be used during interval timer photography when **On** is selected for **Interval priority**.

Interval Timer Photography

Choose an interval longer than the time needed to take the selected number of shots and, if you are using a flash, the time needed for the flash to charge. 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) or the flash may fire at less than the power needed for full exposure. Flash output may also fall below the desired level if more than one shot is taken per interval. Interval timer photography cannot be combined with some camera features, including live view, movie recording, time-lapse movies (🕮 90), long-time exposures (bulb or time photography), multiple exposure (🕮 62), and focus shift (🕮 80). In addition, interval timer photography is not available when **Record movies** is selected for Custom Setting g1 (**Custom control assignment**) > **Shutter-release button** (🕮 152). 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 cannot 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) 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.

Silent Photography

Selecting **On** for **Silent photography** disables some camera features, including:

- ISO sensitivities of Hi 0.3 through Hi 2 (🕮 49)
- Flash photography (🕮 219)
- Exposure delay mode (🕮 121)
- Flicker reduction (🕮 60)
- Bracketing (🕮 61)

Focus Shift Shooting

MENU *button* ➜ *photo shooting menu*

During focus shift, the camera automatically varies focus over a series of photographs. This feature can be used to take photos that will later be combined using focus stacking. Before using focus shift, rotate the focus mode selector to **AF** and choose a release mode other than ⏲.

Option	Description
Start	Start shooting. Shooting will take the selected number of shots, changing the focus distance by the selected amount with each shot.
No. of shots	Choose the number of shots (maximum 300).
Focus step width	Choose the amount the focus distance changes with each shot.
Interval until next shot	Choose the interval between shots. Select **00** to take photos at approximately 5 fps (release modes **S**, **CL**, **CH**, and **MUP**) or 3 fps (release modes **Q** and **QC**). To ensure the correct exposure when using a flash, choose an interval long enough for the flash to charge.
Exposure smoothing	Selecting **On** allows the camera to adjust exposure to match previous shot in exposure modes other than **M** (note that exposure smoothing only takes effect in mode **M** if auto ISO sensitivity control is on). Large changes in subject brightness during shooting may result in apparent variations in exposure, in which case it may be necessary to shorten the interval between shots.
Silent photography	Select **On** to silence the shutter during shooting.
Starting storage folder	Highlight either of the following options and press ▶ to select or deselect: • **New folder**: A new folder is created for each new sequence. • **Reset file numbering**: File numbering is reset to 0001 whenever a new folder is created.

Silent Live View Photography

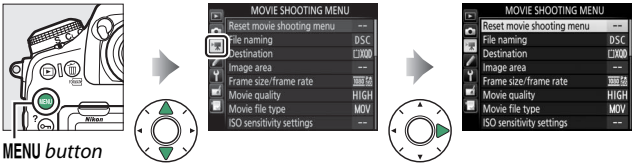
MENU *button* ➜ *photo shooting menu*

Eliminate shutter sounds during live view photography.

Option	Description
On (Mode 1)	Reduce vibrations caused by the shutter when shooting landscapes and other static subjects. Use of a tripod is recommended. The maximum frame rate for release mode **CH** is approximately 6 fps. In **CL** mode, the user can choose from frame rates of 1–6 fps, but the maximum rate will not exceed approximately 3 fps regardless of the option selected. ISO sensitivity (🕮 49) can be set to values of from Lo 1 to 25600.
On (Mode 2)	Photographs can be taken at a higher rate than when **On (Mode 1)** is selected. In release modes **S**, **Q**, ⏲, and **MUP**, one photograph will be taken each time the shutter-release button is pressed, while in continuous modes photos will be taken at approximately 15 fps (**CL** and **QC**) or 30 fps (**CH**) for a maximum of 3 seconds. Image area is fixed at **DX (24×16)**, image size at 3600 × 2400, and image quality at **JPEG normal★**.
Off	Silent live view photography disabled.

The Movie Shooting Menu: *Movie Shooting Options*

To display the movie shooting menu, press MENU and select the (movie shooting menu) tab.



MENU *button*

Option	🕮	Option	🕮
Reset movie shooting menu	83	**Manage Picture Control**	86
File naming	83	**Active D-Lighting**	86
Destination	83	**High ISO NR**	87
Image area	83	**Flicker reduction**	87
Frame size/frame rate	84	**Microphone sensitivity**	88
Movie quality	85	**Attenuator**	88
Movie file type	85	**Frequency response**	89
ISO sensitivity settings	85	**Wind noise reduction**	89
White balance	86	**Electronic VR**	89
Set Picture Control	86	**Time-lapse movie**	90

See Also

For menu defaults, see "Movie Shooting Menu Defaults" (🕮 12).

Reset Movie Shooting Menu

MENU *button* ➜ *movie shooting menu*

Highlight **Yes** and press ⊛ to restore movie shooting menu options to their default values (🕮 12).

File Naming

MENU *button* ➜ *movie shooting menu*

Choose the three-letter prefix used in naming the image files in which movies are stored. The default prefix is "DSC" (🕮 38).

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.

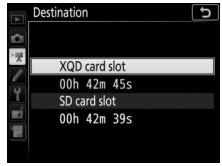


Image Area

MENU *button* ➜ *movie shooting menu*

Choose the image area for movies.

▮▮ *Auto DX Crop*

If **On** is selected, movies shot using a DX lens will automatically be recorded using the **DX** (DX-based movie format) image area.

Frame Size/Frame Rate

MENU *button* ➜ *movie shooting menu*

Choose the movie frame size (in pixels) and frame rate.

Option [1]	Maximum bit rate (Mbps) (★ high quality/Normal)	Maximum length
2160 60p	**3840 × 2160** (4K UHD); **30p** [2]	144	29 min. 59 s [3]
2160 25p	**3840 × 2160** (4K UHD); **25p** [2]		
2160 24p	**3840 × 2160** (4K UHD); **24p** [2]		
1080 60p / 1080 60p	**1920 × 1080; 60p**	48/24	
1080 50p / 1080 50p	**1920 × 1080; 50p**		
1080 30p / 1080 30p	**1920 × 1080; 30p**	24/12	
1080 25p / 1080 25p	**1920 × 1080; 25p**		
1080 24p / 1080 24p	**1920 × 1080; 24p**		
720 60p / 720 60p	**1280 × 720; 60p**		
720 50p / 720 50p	**1280 × 720; 50p**		
1080 ×4 60p	**1920 × 1080; 30p ×4 (slow-mo)** [4]	36	Recording: 3 min. Playback: 12 min.
1080 ×4 25p	**1920 × 1080; 25p ×4 (slow-mo)** [4]		
1080 ×5 24p	**1920 × 1080; 24p ×5 (slow-mo)** [4]	29	Recording: 3 min. Playback: 15 min.

1 Actual frame rate is 29.97 fps for values listed as 30p, 23.976 fps for values listed as 24p, and 59.94 fps for values listed as 60p.

2 When this option is selected, movie quality is fixed at "high".

3 Each movie will be recorded across up to 8 files of up to 4 GB each. The number of files and the length of each file vary with the options selected for **Frame size/frame rate** and **Movie quality**.

4 Movies recorded at 4 or 5 times the rated speed are played back at the rated speed for a slow-motion effect (for example, movies recorded at **1920 × 1080; 30p ×4 (slow-mo)** are recorded at 120 fps and play back at 30 fps). Movie quality is fixed at "normal" and image area is fixed at **DX**.

Movie Quality

MENU *button* ➜ *movie shooting menu*

Choose from **High quality** and **Normal**.

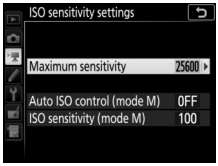
Movie File Type

MENU *button* ➜ *movie shooting menu*

Choose the file format for movies from MOV and MP4.

ISO Sensitivity Settings

MENU *button* ➜ *movie shooting menu*



Adjust the following ISO sensitivity settings.

- **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 exposure modes **P**, **S**, and **A** and when **On** is selected for **Auto ISO control (mode M)** in exposure mode **M**.
- **Auto ISO control (mode M)**: Select **On** for auto ISO sensitivity control in exposure mode **M**, **Off** to use the value selected for **ISO sensitivity (mode M)**.
- **ISO sensitivity (mode M)**: Choose the ISO sensitivity for exposure mode **M** from values between ISO 64 and Hi 2. Auto ISO sensitivity control is used in other exposure modes.

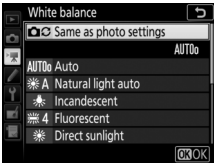
Auto ISO Sensitivity Control

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 **ISO sensitivity settings** > **Maximum sensitivity**.

White Balance

MENU *button* ➜ *movie shooting menu*

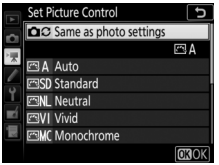
Choose the white balance for movies (🕮 50). Select **Same as photo settings** to use the option currently selected for photos.



Set Picture Control

MENU *button* ➜ *movie shooting menu*

Choose a Picture Control for movies (🕮 52). Select **Same as photo settings** to use the option currently selected for photos.



Manage Picture Control

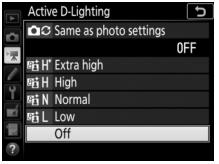
MENU *button* ➜ *movie shooting menu*

Create custom Picture Controls (🕮 53).

Active D-Lighting

MENU *button* ➜ *movie shooting menu*

Preserve details in highlights and shadows, creating movies with natural contrast. Select **Same as photo settings** to use the option currently selected for photos (🕮 56).



High ISO NR

MENU *button* ➜ *movie shooting menu*

Reduce "noise" (randomly-spaced bright pixels) in movies recorded at high ISO sensitivities (🕮 57).

Flicker Reduction

MENU *button* ➜ *movie shooting menu*

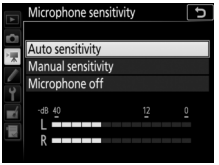
Reduce flicker and banding when shooting under fluorescent or mercury-vapor lighting during live view or movie recording. Choose **Auto** to allow the camera to automatically choose the correct frequency, or manually match the frequency to that of the local AC power supply.

Flicker Reduction in the Movie Shooting Menu

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). To prevent flicker, select mode **M** and choose a shutter speed adapted to the frequency of the local power supply: 1/125 s, 1/60 s, or 1/30 s for 60 Hz; 1/100 s, 1/50 s, or 1/25 s for 50 Hz.

Microphone Sensitivity

MENU *button* ➜ *movie shooting menu*



Turn the built-in or external microphones (🕮 266) 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 in full-frame and movie playback if the movie was recorded without sound.



Attenuator

MENU *button* ➜ *movie shooting menu*

Select **Enable** to reduce microphone gain and prevent audio distortion when recording movies in loud environments.

Frequency Response

MENU *button* ➜ *movie shooting menu*

If **WIDE** **Wide range** is selected, the built-in and external microphones (🕮 260) 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 that support this feature can be enabled or disabled using microphone controls.

Electronic VR

MENU *button* ➜ *movie shooting menu*

Choose whether to enable electronic vibration reduction in movie mode.

Time-Lapse Movie

MENU *button* ➜ *movie shooting menu*

The camera automatically takes photos at selected intervals to create a silent time-lapse movie.

Option	Description
Start	Start time-lapse recording. Shooting starts after about 3 s and continues at the selected interval for the selected shooting time.
Interval	Choose the interval between shots in minutes and seconds.
Shooting time	Choose the shooting time (hours and minutes).
Exposure smoothing	Selecting **On** smooths abrupt changes in exposure in exposure modes other than **M** (note that exposure smoothing only takes effect in mode **M** if auto ISO sensitivity control is on). Large changes in subject brightness during shooting may result in apparent variations in exposure, in which case it may be necessary to shorten the interval between shots.
Silent photography	Select **On** to silence the shutter during shooting.
Image area	Choose an image area for time-lapse recording. The options are those for the **Image area** item in the movie shooting menu (🕮 83).
Frame size/ frame rate	Choose the frame size and rate for the final movie. The options are those for the **Frame size/frame rate** item in the movie shooting menu (🕮 84).

Option	Description
Interval priority	Choose whether the camera gives priority to exposure time or interval timing in exposure modes **P** and **A**. Select **On** to ensure frames are taken at the chosen interval, **Off** to ensure that frames are correctly exposed. If **On** is selected, be sure the **Minimum shutter speed** chosen for **ISO sensitivity settings** (🕮 49) > **Auto ISO sensitivity control** in the photo shooting menu is faster than the interval. You should also focus using manual focus or, if you are using autofocus, choose **Release** for Custom Setting a1 (**AF-C priority selection**, 🕮 105) or Custom Setting a2 (**AF-S priority selection**, 🕮 106) according to whether **AF-C** or **AF-S** is selected.

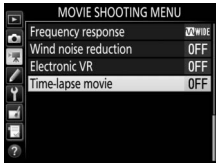
■■ *Recording Time-Lapse Movies*

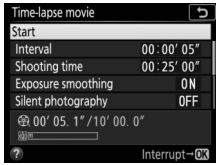
Before Shooting

Before shooting a time-lapse movie, take a test shot at current settings and view the results in the monitor. Time-lapse movies are shot using the movie crop; to check the composition, press the ⊖⊠ (ϟ) button in the **Time-lapse movie** display (to return to the **Time-lapse movie** display, press the ⊖⊠/ϟ button again). For consistent coloration, choose a white balance setting (🕮 86) other than AUTO (auto) or ☀A (natural light auto).

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. To prevent light entering via the viewfinder interfering with photographs and exposure, close the viewfinder eyepiece shutter.

1 **Select Time-lapse movie.**
Highlight **Time-lapse movie** in the movie shooting menu and press ⊛ to display time-lapse movie settings.

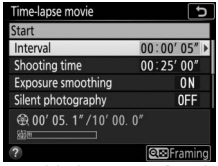




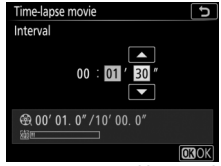
2 Adjust time-lapse movie settings.

Adjust time-lapse movie settings as described below.

- **To choose the interval between frames**:

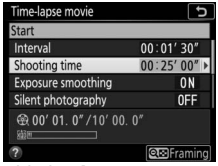


*Highlight **Interval** and press ▶.*

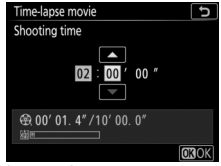


Choose an interval longer than the slowest anticipated shutter speed (minutes and seconds) and press ⊛.

- **To choose the total shooting time**:

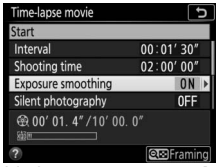


*Highlight **Shooting time** and press ▶.*

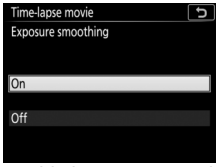


Choose shooting time (up to 7 hours 59 minutes) and press ⊛.

- **To enable or disable exposure smoothing**:

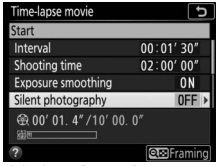


*Highlight **Exposure smoothing** and press ▶.*



Highlight an option and press OK.

- **To enable or disable silent photography**:



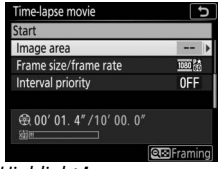
*Highlight **Silent photography** and press ▶.*



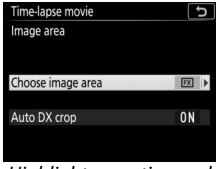
Highlight an option and press OK.

If **On** is selected, the only time the sound of the shutter or mirror will be heard is when the mirror is raised or lowered at the start and end of shooting.

- **To choose the image area**:



*Highlight **Image area** and press ▶.*



Highlight an option and press OK.

- **To choose the frame size and rate**:



*Highlight **Frame size/frame rate** and press ▶.*

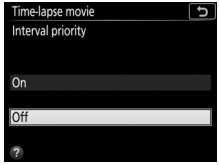


Highlight an option and press ⊛.

- **To choose an interval priority option**:



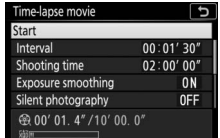
*Highlight **Interval priority** and press ▶.*



Highlight an option and press ⊛.

If **On** is selected, time-lapse recording will end if the camera cannot focus or the shutter release is otherwise disabled.

3 Start shooting.



Highlight **Start** and press ⊛. Shooting 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 (🕮 83).

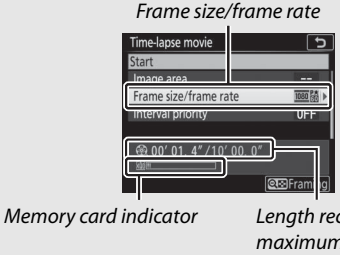
Silent Photography

Selecting **On** for **Silent photography** disables some camera features, including:

- ISO sensitivities of Hi 0.3 through Hi 2 (🕮 85)
- Flash photography (🕮 219)
- Exposure delay mode (🕮 121)
- Long exposure noise reduction (🕮 57)
- Flicker reduction (🕮 60)

Calculating the Length of the Final Movie

The total number of frames in the final movie can be calculated 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** (🕮 84). A 48 frame movie recorded at **1920 × 1080; 24p**, for example, will be about two seconds long. The maximum length for time-lapse movies is 20 minutes.



■■ *Ending Shooting*

To end shooting before all the photos are taken, highlight **Off** in the time-lapse movie menu and press ⊛, or press ⊛ between frames. A movie will be created from the frames shot to the point where shooting ended. Note that shooting 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*

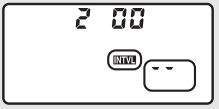
The camera will either end time-lapse recording (**On** selected **Interval priority**) or skip to the next frame (**Off** selected **Interval priority**) if it is unable to focus using autofocus (note that the camera focuses again before each shot).

☑ Time-Lapse Movies

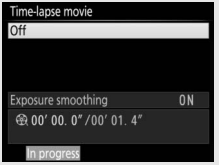
Time-lapse cannot be combined with some camera features, including live view, movie recording, long time exposures (bulb or time photography), the self-timer, bracketing (🕮 61), HDR (high dynamic range; 🕮 69), multiple exposure (🕮 62), interval timer photography (🕮 70), and focus shift (🕮 80). Note that 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 cannot 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).

Shooting 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 shooting ended. To end shooting and record a photograph, press the shutter-release button all the way down.

During Shooting



During shooting, INTVL 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**, 🕮 118), the standby timer will not expire during shooting.



To view current time-lapse movie settings or end shooting (🕮 97), press the MENU button between shots. The data displayed in the time-lapse movie menu while shooting is in progress include exposure smoothing, the interval, and the time remaining. These settings cannot be changed while shooting is in progress, nor can pictures be played back or other menu settings adjusted.

Image Review

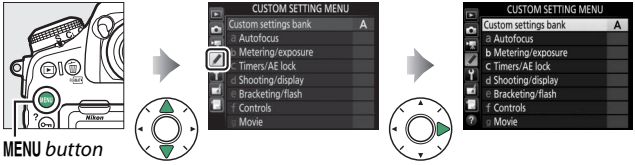
The ▶ button cannot be used to view pictures while shooting is in progress, but the current frame will be displayed for a few seconds after each shot if **On** is selected for **Image review** in the playback menu (🕮 27). Other playback operations cannot be performed while the frame is displayed.

See Also

For information on the beep that sounds when shooting is complete, see ✎ > **Beep options** (🕮 177).

Custom Settings: *Fine-Tuning Camera Settings*

To display the Custom Settings menu, press **MENU** and select the (Custom Settings menu) tab.

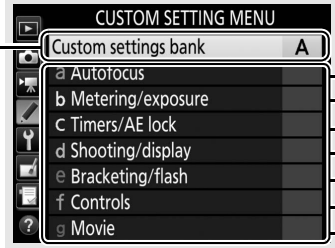


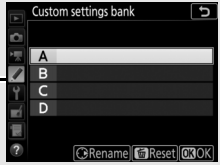
MENU *button*

Custom Settings are used to customize camera settings to suit individual preferences.

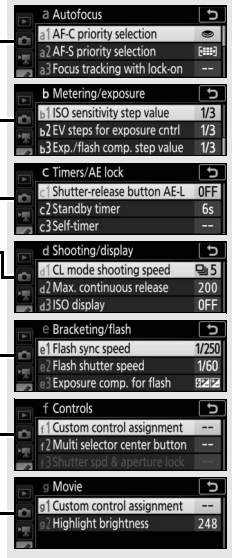
Custom Setting groups

Main menu





Custom settings bank (🕮 103)



The following Custom Settings are available:

	Custom Setting	🕮
	Custom settings bank	103
a	**Autofocus**	
a1	AF-C priority selection	105
a2	AF-S priority selection	106
a3	Focus tracking with lock-on	107
a4	3D-tracking face-detection	108
a5	3D-tracking watch area	108
a6	Number of focus points	108
a7	Store by orientation	109
a8	AF activation	110
a9	Limit AF-area mode selection	111
a10	Autofocus mode restrictions	111
a11	Focus point wrap-around	112
a12	Focus point options	113
a13	Manual focus ring in AF mode*	114
b	**Metering/exposure**	
b1	ISO sensitivity step value	115
b2	EV steps for exposure cntrl	115
b3	Exp./flash comp. step value	115
b4	Easy exposure compensation	116
b5	Matrix metering	117
b6	Center-weighted area	117
b7	Fine-tune optimal exposure	117

Custom Setting		🕮
c	**Timers/AE lock**	
c1	Shutter-release button AE-L	118
c2	Standby timer	118
c3	Self-timer	119
c4	Monitor off delay	119
d	**Shooting/display**	
d1	CL mode shooting speed	120
d2	Max. continuous release	120
d3	ISO display	120
d4	Sync. release mode options	121
d5	Exposure delay mode	121
d6	Electronic front-curtain shutter	121
d7	File number sequence	122
d8	Peaking highlight color	123
d9	Viewfinder grid display	123
d10	LCD illumination	124
d11	Live view in continuous mode	125
d12	Optical VR*	125
e	**Bracketing/flash**	
e1	Flash sync speed	126
e2	Flash shutter speed	127
e3	Exposure comp. for flash	127
e4	Auto ϟ ISO sensitivity control	128
e5	Modeling flash	128
e6	Auto bracketing (mode M)	129
e7	Bracketing order	129

	Custom Setting	🕮
f	**Controls**	
f1	Custom control assignment	130
f2	Multi selector center button	142
f3	Shutter spd & aperture lock	144
f4	Customize command dials	144
f5	Multi selector	147
f6	Release button to use dial	147
f7	Reverse indicators	148
f8	Live view button options	148
f9	☀ switch	148
f10	Assign MB-D18 buttons	149
g	**Movie**	
g1	Custom control assignment	152
g2	Highlight brightness	156

* Available only with lenses that support this item.

Custom Settings Bank

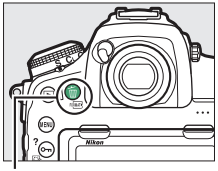
MENU *button* ➜ *Custom Settings menu*

Custom Settings are stored in one of four banks. Changes to settings in one bank have no effect on the others. To store a particular combination of frequently-used settings, select one of the four banks and set the camera to these settings. The new settings will be stored in the bank even when the camera is turned off, and will be restored the next time the bank is selected. Different combinations of settings can be stored in the other banks, allowing the user to switch instantly from one combination to another by selecting the appropriate bank from the bank menu.

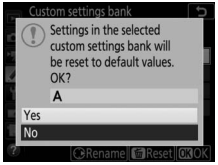
The default names for the four Custom Settings banks are A, B, C, and D. A descriptive caption up to 20 characters long can be added as described in "Text Entry" (🕮 38) by highlighting the menu bank and pressing ▶.

■■ *Restoring Default Settings*

To restore default settings, highlight a bank in the **Custom settings bank** menu and press 🗑 (FORMAT). A confirmation dialog will be displayed; highlight **Yes** and press OK to restore default settings for the selected bank (🕮 13).



🗑 (FORMAT) *button*



See Also

For menu defaults, see "Custom Settings Menu Defaults" (🕮 13). If settings in the current bank have been modified from default values, an asterisk will be displayed adjacent to the altered settings in the second level of the Custom Settings menu.

a: Autofocus

a1: AF-C Priority Selection

MENU *button* ➜ *Custom Settings menu*

When **AF-C** is selected for viewfinder photography, 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 + release	Photos can be taken even when the camera is not in focus. If the subject is dark or low contrast and the camera is in continuous mode, priority will be given to focus for the first shot in each series and to frame rate for the remaining shots, ensuring a high frame rate if the distance to the subject does not change during shooting.
Release + focus	Photos can be taken even when the camera is not in focus. In continuous mode, frame rate slows for improved focus if the subject is dark or low contrast.
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, 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*).

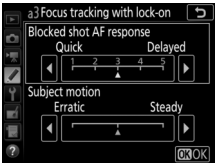
Option	Description
Release	Photos can be taken whenever the shutter-release button is pressed.
Focus	Photos can only be taken when the in-focus indicator (●) is displayed.

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 changes in the distance to the subject when **AF-C** is selected during viewfinder photography.



■ *Blocked Shot AF Response*

Choose how quickly focus responds when something passes between the subject and the camera. Choose from values between **5** (**Delayed**) and **1** (**Quick**). The higher the value, the slower the response and the less likely you are to lose focus on your original subject. The lower the value, the quicker the response and the easier it is to shift focus to objects crossing your field of view. Note that **2** and **1** (**Quick**) are equivalent to **3** when 3D-tracking or auto-area AF is selected for AF-area mode.

■ *Subject Motion*

Select **Steady** for smooth focus when photographing subjects that approach the camera at a steady pace, or **Erratic** for improved response when photographing subjects prone to sudden starts and stops.

a4: 3D-Tracking Face-Detection

MENU *button* ➜ *Custom Settings menu*

Choose whether the camera detects and focuses on faces when 3D-tracking is selected for AF-area mode.

a5: 3D-Tracking Watch Area

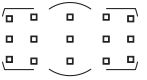
MENU *button* ➜ *Custom Settings menu*

In 3D-tracking, the camera tracks subjects that leave the selected focus point and selects new focus points as required while the shutter-release button is pressed halfway. Choose whether 3D-tracking uses data from the surrounding focus points to track subjects that move even slightly from the selected focus point (**Wide**) or tracks the subject based solely on data from the vicinity of the selected point (**Normal**). **Wide** is recommended for fast-moving subjects.

a6: Number of Focus Points

MENU *button* ➜ *Custom Settings menu*

Choose the number of focus points available for manual focus-point selection.

Option	Description	
AF55 **55 points**	Choose from the 55 focus points.	
AF15 **15 points**	Choose from the 15 focus points. Use for quick focus-point selection.	

a7: Store 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 **Off** to use the same focus point and AF-area mode regardless of camera orientation.





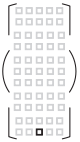
Camera rotated 90°counter-clockwise





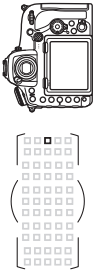
Landscape (wide) orientation



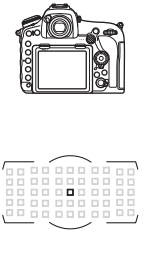


Camera rotated 90°clockwise

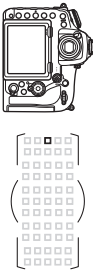
Choose **Focus point** to enable separate focus-point selection, or **Focus point and AF-area mode** to enable separate selection of both the focus point and the AF-area mode.



Camera rotated 90°counter-clockwise



Landscape (wide) orientation



Camera rotated 90°clockwise

a8: AF Activation

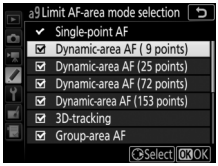
MENU *button* ➜ *Custom Settings menu*

Choose whether the shutter-release button can be used to focus (**Shutter/AF-ON**) or if focus can only be adjusted using the **AF-ON** button or other controls to which AF-ON has been assigned (**AF-ON only**). Highlighting **AF-ON only** and pressing ▶ displays an **Out-of-focus release** option; select **Enable** to allow pictures to be taken without focusing, or **Disable** to prevent the shutter being released before the camera has been focused using the AF-ON control. To take pictures when **Disable** is selected, use the AF-ON control to focus and press the shutter-release button all the way down to release the shutter. Note that **Disable** only applies if **Focus** is selected for Custom Setting a1 (**AF-C priority selection**) or a2 (**AF-S priority selection**) and an option other than auto-area AF is selected for AF-area mode.

a9: Limit AF-Area Mode Selection

MENU *button* ➜ *Custom Settings menu*

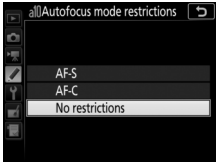
Choose the AF-area modes that can be selected using the AF-mode button and sub-command dial in viewfinder photography (live view is unaffected). Highlight the desired modes and press ▶ to select or deselect. Press OK to save changes when settings are complete.



a10: Autofocus Mode Restrictions

MENU *button* ➜ *Custom Settings menu*

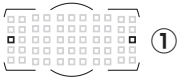
Choose the autofocus modes available in viewfinder photography. If only one mode is selected, the autofocus mode cannot be chosen using the AF-mode button and main command dial.



a11: 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 viewfinder display is highlighted (❶) selects the corresponding focus point at the left edge of the display (❷).
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.

a12: Focus Point Options

MENU *button* ➜ *Custom Settings menu*

Choose from the following focus point display options.

Option	Description
Focus point illumination	Choose whether the active focus point is highlighted in red in the viewfinder. • **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.
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 assist	Choose **On** to display both the selected focus point and the surrounding focus points in dynamic-area AF mode.

a13: Manual Focus Ring in AF Mode

MENU *button* ➜ *Custom Settings menu*

This item is displayed only with lenses that support it. Selecting **Enable** allows the lens focus ring to be used for manual focus when the camera is in autofocus mode. After pressing the shutter-release button halfway to focus, keep the button pressed halfway and adjust focus using the focus ring. To refocus using autofocus, lift your finger from the shutter-release button and then press it halfway again. To prevent the lens focus ring being used for manual focus when the camera is in autofocus mode, select **Disable**.

b: Metering/Exposure

b1: ISO Sensitivity Step Value

MENU *button* ➜ *Custom Settings menu*

Select the increments used when making adjustments to ISO sensitivity. If possible, the current ISO sensitivity setting is maintained when the step value is changed. If the current ISO sensitivity 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, and bracketing.

b3: Exp./Flash Comp. Step Value

MENU *button* ➜ *Custom Settings menu*

Select the increments used when making adjustments to exposure and flash compensation.

b4: Easy Exposure Compensation

MENU *button* ➜ *Custom Settings menu*

This option controls whether the ⊠ button is needed to set exposure compensation. 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 b4 (**Easy exposure compensation**) depends on the option selected for Custom Setting f4 (**Customize command dials**, 🕮 144) > **Change main/sub** > **Exposure setting**.

		f4 (Customize command dials) > Change main/sub > Exposure setting		
		On	**On (Mode A)**	**Off**
Exposure mode	**P**	Sub-command dial	Sub-command dial	Sub-command dial
	S	Main command dial	Sub-command dial	Sub-command dial
	A	Sub-command dial	Sub-command dial	Main command dial
	M	N/A		

b5: 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.

b6: Center-Weighted Area

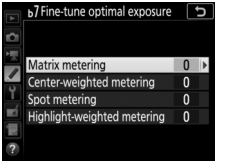
MENU *button* ➜ *Custom Settings menu*

Choose the size of the area given the most weight in center-weighted metering. If a non-CPU lens is attached, the size of the area is fixed at 12 mm.

b7: 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 can be fine-tuned separately for each Custom Settings bank and 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.

c: Timers/AE Lock

c1: Shutter-Release Button AE-L

MENU *button* ➜ *Custom Settings menu*

Choose whether exposure locks when the shutter-release button is pressed.

Option	Description
ON On (half press)	Pressing the shutter-release button halfway locks exposure.
ON On (burst mode)	Exposure only locks while the shutter-release button is pressed all the way down.
Off	Pressing the shutter-release button does not lock exposure.

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.

- **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.

d: Shooting/Display

d1: CL Mode Shooting Speed

MENU *button* ➜ *Custom Settings menu*

Choose the maximum frame advance rate in **CL** mode.

d2: 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 200. Note that regardless of the option selected, there is no limit to the number of photos that can be taken in a single burst when a shutter speed of 4 s or slower is selected in exposure mode **S** or **M**.

The Memory Buffer

Regardless of the option selected for Custom Setting d2, shooting will slow when the memory buffer fills (**r00**).

d3: ISO Display

MENU *button* ➜ *Custom Settings menu*

Choose whether the control panel shows ISO sensitivity (**Show ISO sensitivity**) or the number of exposures remaining (**Show frame count**).

d4: Sync. Release Mode Options

MENU *button* ➜ *Custom Settings menu*

Choose whether the shutters on the remote cameras are synchronized with the shutter on the master camera when using an optional wireless remote controller in synchronized release mode.

d5: Exposure Delay Mode

MENU *button* ➜ *Custom Settings menu*

In situations where the slightest camera movement can blur pictures, shutter release can be delayed by from about 0.2 to 3 seconds after the mirror is raised.

d6: Electronic Front-Curtain Shutter

MENU *button* ➜ *Custom Settings menu*

Select **Enable** to enable the electronic front-curtain shutter in **Q**, **Qc**, and **Mup** modes, eliminating blur caused by shutter motion. A mechanical shutter is used in other release modes.

The Electronic Front-Curtain Shutter

A type G, E, or D lens is recommended; select **Disable** if you notice lines or fog when shooting with other lenses. The fastest shutter speed and maximum ISO sensitivity available with the electronic front-curtain shutter are $1/2000$ s and ISO 25600, respectively.

d7: File Number Sequence

MENU *button* ➜ *Custom Settings menu*

When a picture 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 picture is taken when the current folder contains 5000 pictures.
Reset	As for **On**, except that the next picture 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 5000 pictures or a photograph numbered 9999, the shutter-release button will be disabled and no further pictures can be taken (in addition, movie recording may be disabled if the camera calculates that the number of files needed to record a movie of the maximum length would result in the folder containing over 5000 files or a file with a number over 9999). Choose **Reset** for Custom Setting d7 (**File number sequence**) and then either format the current memory card or insert a new memory card.

d8: Peaking Highlight Color

MENU *button* ➜ *Custom Settings menu*

Choose the highlight color for focus peaking. Peaking can be turned on or off and its sensitivity adjusted by pressing the i button during live view and selecting **Peaking level**.

d9: Viewfinder Grid Display

MENU *button* ➜ *Custom Settings menu*

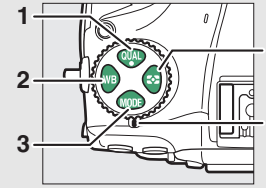
Choose **On** to display on-demand grid lines in the viewfinder for reference when composing photographs.

d10: LCD Illumination

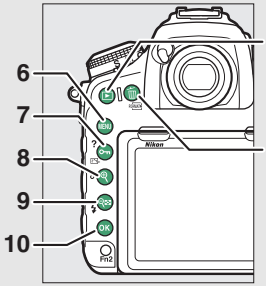
MENU *button* ➜ *Custom Settings menu*

If **Off** is selected, the control panel and button backlights (illuminators) will only light while the power switch is rotated toward ☀. If **On** is selected, the backlights will remain on while the standby timer is active. Regardless of the option selected, the backlights turn off when the shutter-release button is pressed; if **On** is selected, they will come back on when you lift your finger from the shutter-release button. Select **Off** for increased battery life.

Button Backlights



1 **QUAL** button
2 **WB** button
3 **MODE** button
4 ⊡ button
5 Release mode dial pointer



6 **MENU** button
7 ⊶ (▭/**?**) button
8 ⊕ button
9 ▭ (ϟ) button
10 ⊛ button
11 ▶ button
12 🗑 (FORMAT) button

d11: Live View in Continuous Mode

MENU *button* ➜ *Custom Settings menu*

Choose whether image review is available during burst shooting (release modes **CL**, **CH**, and **Qc**) in live view. If **Off** is selected, not only the monitor but also the monitor backlight will turn off during exposures.

d12: Optical VR

MENU *button* ➜ *Custom Settings menu*

This item is displayed only with lenses that support it. Selecting **On** enables vibration reduction, which takes effect whenever the shutter-release button is pressed halfway. Select **Off** to disable vibration reduction.

e: Bracketing/Flash

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. If 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 exposure mode **P** or **A**, auto FP high-speed sync will be activated if the actual shutter speed is faster than 1/250 s. If the flash unit supports auto FP high-speed sync, shutter speeds as fast as 1/8000 s can be selected by the camera (modes **P** and **A**) or by the user (modes **S** and **M**).
1/250 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 shutter-priority auto or manual exposure modes, 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 together with the flash sync speed.

Auto FP High-Speed Sync

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.

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 programmed auto or aperture-priority auto exposure modes (regardless of the setting chosen, shutter speeds can be as slow as 30 s in shutter-priority auto and manual exposure modes or at flash settings of slow sync, slow rear-curtain sync, or red-eye reduction with slow sync).

e3: 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.

e4: Auto ϟ ISO Sensitivity Control

MENU *button* ➜ *Custom Settings menu*

Choose the reference used to set exposure when a flash is used with auto ISO sensitivity control.

Option	Description
Subject and background	The camera takes both the main subject and background lighting into account when adjusting ISO sensitivity.
Subject only	ISO sensitivity is adjusted only to ensure that the main subject is correctly exposed.

e5: Modeling Flash

MENU *button* ➜ *Custom Settings menu*

If **On** is selected when the camera is used with an optional flash unit that supports the Nikon Creative Lighting system, a modeling flash will be emitted when the camera **Pv** button is pressed. No modeling flash is emitted if **Off** is selected.

e6: Auto Bracketing (Mode M)

MENU *button* ➜ *Custom Settings menu*

This option determines which settings are affected when **AE & flash bracketing** or **AE bracketing** is selected for the **Auto bracketing set** option in the photo shooting menu in manual exposure mode.

Option	Description
Flash/speed	Camera varies shutter speed (**AE bracketing**) or shutter speed and flash level (**AE & flash bracketing**).
Flash/speed/aperture	Camera varies shutter speed and aperture (**AE bracketing**) or shutter speed, aperture, and flash level (**AE & flash bracketing**).
Flash/aperture	Camera varies aperture (**AE bracketing**) or aperture and flash level (**AE & flash bracketing**).
Flash only	Camera varies flash level only (**AE & flash bracketing**).

Flash bracketing is performed only with i-TTL or A (auto aperture) flash control. If a setting other than **Flash only** is selected and the flash is not used, ISO sensitivity will be fixed at the value for the first shot when auto ISO sensitivity control is on (🕮 49).

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 following order: the unmodified shot is taken first, followed by the shot with the lowest value, followed by the shot with the highest value. 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.

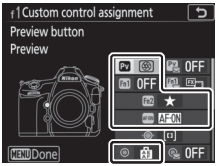
f1: Custom Control Assignment

MENU *button* ➜ *Custom Settings menu*

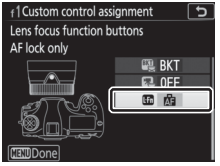
Choose the functions assigned to camera controls, whether used individually or in combination with the command dials.

■■ *Press*

Choose the roles played by the following controls, highlight the desired option and press the center of the multi selector:



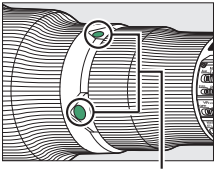
Pv	**Pv** *button*
Fn1	**Fn1** *button*
Fn2	**Fn2** *button*
AF-ON	**AF-ON** *button*
⊛	*Center of sub-selector*



L-Fn	*Lens focus function buttons* *

* The lens focus function buttons can be used for the assigned function only when **AF-L** is selected with the focus function selector.





Lens focus function buttons

"Press" and "Press + Command Dials"
Certain roles cannot be assigned simultaneously to both the "press" and "press + command" functions for some controls. Assigning such a role to "press" when it is already assigned to "press + command dial" sets the "press + command dial" option **None**, while assigning such a role to "press + command dials" when it is already assigned to "press" sets the "press" option **None**.

The functions that can be assigned to these controls are as follows:

Option	Pv	Fn1	Fn2	AF-ON	⊛	L-Fn
Preset focus point	✔	✔	—	—	✔	✔
AF-area mode	✔	✔	—	✔	✔	✔
AF-area mode + AF-ON	✔	✔	—	✔	✔	✔
Preview	✔	✔	—	—	✔	—
FV lock	✔	✔	—	—	✔	—
AE/AF lock	✔	✔	—	✔	✔	✔
AE lock only	✔	✔	—	✔	✔	✔
AE lock (Reset on release)	✔	✔	—	✔	✔	—
AE lock (Hold)	✔	✔	—	✔	✔	—
AF lock only	✔	✔	—	✔	✔	✔
AF-ON	✔	✔	—	✔	✔	✔
Disable/enable	✔	✔	—	—	✔	✔
Bracketing burst	✔	✔	—	—	✔	—
+ NEF (RAW)	✔	✔	—	—	✔	—

Option		Pv	Fn1	Fn2	AF-ON	◉	L-Fn
	Matrix metering	✔	✔	—	—	✔	—
	Center-weighted metering	✔	✔	—	—	✔	—
	Spot metering	✔	✔	—	—	✔	—
	Highlight-weighted metering	✔	✔	—	—	✔	—
	Viewfinder grid display	✔	✔	—	—	✔	—
	Viewfinder virtual horizon	✔	✔	—	—	✔	—
	Sync. release selection	✔	✔	—	—	✔	✔
	MY MENU	✔	✔	✔	—	✔	—
	Access top item in MY MENU	✔	✔	✔	—	✔	—
	Playback	✔	✔	—	—	✔	—
	Rating	—	—	✔	—	—	—
RESET	Select center focus point	—	—	—	—	✔	—
	Highlight active focus point	—	—	—	—	✔	—
	None	✔	✔	✔	✔	✔	—

The following options are available:

Option		Description
PRE	**Preset focus point**	Pressing control selects a preset focus point. To choose the point, select it and press the control while pressing the AF-mode button until the focus point flashes. Separate focus points can be selected for "wide" (landscape) orientation and for each of the two "tall" (portrait) orientations if **Focus point** or **Focus point and AF-area mode** is selected for Custom Setting a7 (**Store by orientation**, 🕮 109). If this option is assigned to the lens focus function buttons, you can select the preset focus point by pressing and holding a lens focus function button. Release the button to restore the original focus point selection.
[ ]	**AF-area mode**	Highlight this option and press ⊛ to select an AF-area mode (3D-tracking excluded). The selected mode will take effect while the control is pressed; releasing the control restores the original AF-area mode.
[ ] AF	**AF-area mode + AF-ON**	As for **AF-area mode**, above, except that pressing the control also initiates autofocus.
	Preview	During viewfinder photography, you can preview depth of field while the control is pressed. During live view photography, you can press the control once to open the lens to maximum aperture, making it easier to check focus; pressing the control again restores aperture to its original value.
	FV lock	Press the control to lock flash value for optional flash units. Press again to cancel FV lock.

Option	Description
AE/AF lock	Focus and exposure lock while the control is pressed.
AE lock only	Exposure locks while the control is pressed.
AE lock (Reset on release)	Exposure locks when the control is pressed, and remains locked until the control is pressed a second time, the shutter is released, or the standby timer expires.
AE lock (Hold)	Exposure locks when the control is pressed, and remains locked until the control is pressed a second time or the standby timer expires.
AF lock only	Focus locks while the control is pressed.
AF-ON	Pressing the control initiates autofocus.
Disable/ enable	If the flash is currently off, front-curtain sync will be selected while the control is pressed. If the flash is currently enabled, it will instead be disabled while the control is pressed.
Bracketing burst	If the control 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 a 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.

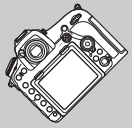
Option		Description
+RAW	+ NEF (RAW)	If a JPEG option is currently selected for image quality, "RAW" will be displayed in the control panel and an NEF (RAW) copy will be recorded with the next picture taken after the control is pressed (the original image quality setting will be restored when you remove your finger from the shutter-release button). NEF (RAW) copies are recorded at the settings currently selected for **NEF (RAW) recording** and **Image size** > **NEF (RAW)** in the photo shooting menu (🕮 47, 48). To exit without recording an NEF (RAW) copy, press the control again.
	Matrix metering	Matrix metering is activated while the control is pressed.
	Center-weighted metering	Center-weighted metering is activated while the control is pressed.
	Spot metering	Spot metering is activated while the control is pressed.
*	**Highlight-weighted metering**	Highlight-weighted metering is activated while the control is pressed.
	Viewfinder grid display	Press the control to turn the framing grid display in the viewfinder on or off.
	Viewfinder virtual horizon	Press the control to view a virtual horizon display in the viewfinder (🕮 137).

Option		Description
	Sync. release selection	When an optional wireless remote controller is connected, the control can be used to toggle between remote release and master or synchronized release. The options available depend on the setting chosen for Custom Setting d4 (**Sync. release mode options**): • If **Sync** is selected, you can choose from **Master release only** (keep the control pressed to take pictures with the master camera only) and **Remote release only** (keep the control pressed to take pictures with the remote cameras only). • If **No sync** is selected, you can choose from **Synchronized release** (keep the control pressed to synchronize the releases on the master and remote cameras) and **Remote release only** (keep the control pressed to take pictures with the remote cameras only).
	MY MENU	Pressing the control displays "MY MENU".
	Access top item in MY MENU	Press the control to jump to the top item in "MY MENU." Select this option for quick access to a frequently-used menu item.
	Playback	The control performs same function as the ▶ button. Select when using a telephoto lens or in other circumstances in which it is difficult to operate the ▶ button with your left hand.
	Rating	To rate the current picture in playback mode, keep the control pressed and press ◀ or ▶.
RESET	**Select center focus point**	Press the control to select the center focus point.
	Highlight active focus point	Pressing the control highlights the active focus point.
	None	Pressing the control has no effect.

Virtual Horizon

Pressing a control to which **Viewfinder virtual horizon** has been assigned displays pitch and roll indicators in the viewfinder. Press the control a second time to clear the indicators from display.

Roll

Camera tilted right	Camera level	Camera tilted left
		

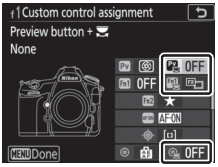
Pitch

Camera tilted forward	Camera level	Camera tilted back
		

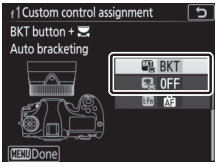
The roles of the pitch and roll indicators are reversed when the camera is rotated to take pictures in "tall" (portrait) orientation. Note that the display may not be accurate when the camera is tilted at a sharp angle forward or back. If the camera is unable to measure tilt, the amount of tilt will not be displayed.

■■ *Press + Command Dials*

To choose the roles played by the following controls in combination with the command dials, highlight the desired option and press the center of the multi selector:



Pv	**Pv** *button* + ▼
Fn1	**Fn1** *button* + ▼
	Sub-selector center + ▼



BKT	**BKT** *button* + ▼
	Movie record button + ▼*

* Choose the role played by the movie-record button in combination with the command dials when the live view selector is rotated to 📷.

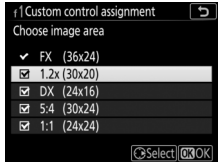
The BKT Button

If high dynamic range or multiple exposure is active while another function is assigned to the **BKT** button, the **BKT** button cannot be used in combination with a command dial until high dynamic range or multiple exposure photography ends.

The functions that can be assigned to these controls are as follows:

Option		Pv	Fn1	Fn2	BKT	
FX	**Choose image area**	✔	✔	✔	—	✔
L	**Shutter spd & aperture lock**	✔	✔	✔	—	✔
	1 step spd/aperture	✔	✔	—	—	—
Non-CPU	**Choose non-CPU lens number**	✔	✔	✔	—	—
	Active D-Lighting	✔	✔	—	—	—
DLY	**Exposure delay mode**	✔	✔	—	—	—
SHOOT	**Photo shooting menu bank**	✔	✔	✔	—	✔
MODE	**Exposure mode**	—	—	—	—	✔
WB	**White balance**	—	—	—	—	✔
BKT	**Auto bracketing**	—	—	—	✔	—
	Multiple exposure	—	—	—	✔	—
HDR	**HDR (high dynamic range)**	—	—	—	✔	—
	None	✔	✔	✔	✔	✔

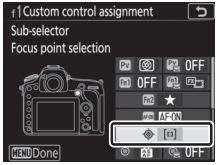
The following options are available:

Option		Description
FX	**Choose image area**	Press the control and rotate a command dial to choose from pre-selected image areas (🕮 45). Selecting **Choose image area** displays a list of image areas; highlight options and press ▶ to select or deselect, then press OK. 
L	**Shutter spd & aperture lock**	Press the control and rotate the main command dial to lock shutter speed in modes **S** and **M**; press the control and rotate the sub-command dial to lock aperture in modes **A** and **M**.

Option		Description
	1 step spd/ aperture	If the control is pressed when the command dials are rotated, changes to shutter speed (exposure modes **S** and **M**) and aperture (exposure 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**, 🕮 115).
Non-CPU	**Choose non-CPU lens number**	Press the control and rotate a command dial to choose a lens number specified using the **Non-CPU lens data** option (🕮 169).
	Active D-Lighting	Press the control and rotate the command dials to adjust Active D-Lighting (🕮 56).
DLY	**Exposure delay mode**	Press the control and rotate a command dial to choose an exposure delay mode (🕮 121).
SHOOT	**Photo shooting menu bank**	Press the control and rotate a command dial to choose the photo shooting menu bank (🕮 33).
MODE	**Exposure mode**	Press the control and rotate the main command dial to choose the exposure mode.
WB	**White balance**	Press the control and rotate the main command dial to choose a white balance option and the sub-command dial to choose a sub-option when AUTO (**Auto**) or (**Fluorescent**) is selected (🕮 50).
BKT	**Auto bracketing**	Press the control and rotate the main command dial to choose the number of shots in the bracketing sequence and the sub-command dial to choose the bracketing increment (🕮 61).
	Multiple exposure	Press the control and rotate the main command dial to choose the mode and the sub-command dial to choose the number of shots (🕮 62).
HDR	**HDR (high dynamic range)**	Press the control and rotate the main command dial to choose the mode and the sub-command dial to choose the exposure differential (🕮 69).
	None	No operation is performed when the command dials are rotated while the control is pressed.

■■ *Sub-Selector*

To choose the role assigned to the sub-selector, highlight **Sub-selector** and press the center of the multi selector. The sub-selector can be used for focus-point selection ([ ] **Focus point selection**) or to duplicate the role performed by the multi selector (= **Same as multi selector**). If = **Same as multi selector** is selected, you can further press ▶ and select **Playback zoom** to choose the role played by the sub-selector during playback zoom: scrolling photos (**Scroll**) or viewing other photos at the same zoom ratio (**Display next/previous frame**).

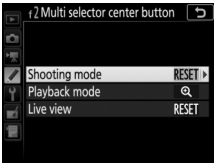


	Sub-selector

f2: Multi Selector Center Button

MENU *button* ➜ *Custom Settings menu*

This option determines the role assigned to the center of the multi selector during viewfinder photography, playback, and live view (regardless of the option selected, pressing the center of the multi selector when a movie is displayed full frame starts movie playback).



■■ *Shooting Mode*

Option	Role assigned to center of multi selector
RESET **Select center focus point**	Select the center focus point.
PRE **Preset focus point**	Pressing the center of the multi selector selects a preset focus point. To choose the point, select it and press the center of the multi selector while pressing the AF-mode button until the focus point flashes. Separate focus points can be selected for "wide" (landscape) orientation and for each of the two "tall" (portrait) orientations if **Focus point** or **Focus point and AF-area mode** is selected for Custom Setting a7 (**Store by orientation**, 🕮 109).
Highlight active focus point	Pressing the center of the multi selector highlights the active focus point.
None	Pressing the center of the multi selector has no effect in viewfinder photography.

■■ *Playback Mode*

Option	Role assigned to center of multi selector
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 center of the multi selector is pressed.
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.

■■ *Live View*

Option	Role assigned to center of multi selector
RESET **Select center focus point**	Pressing the center of the multi selector in live view selects the center focus point.
Zoom on/off	Press the center of the multi selector 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 center of the multi selector has no effect in live view.

f3: Shutter Spd & Aperture Lock

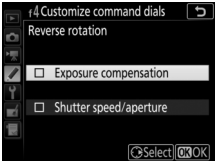
MENU *button* ➜ *Custom Settings menu*

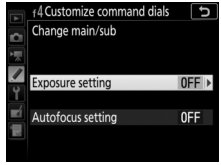
Selecting **On** for **Shutter speed lock** locks shutter speed at the value currently selected in mode **S** or **M**. Selecting **On** for **Aperture lock** locks aperture at the value currently selected in mode **A** or **M**. Shutter speed and aperture lock are not available in mode **P**.

f4: 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-D18 battery packs.

Option	Description
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 exposure mode **A** only. • **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. These settings also apply to the command dials for the MB-D18.
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.

Option	Description
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 ▶, the center of the multi selector, or OK. 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, to skip forward or back 10 or 50 frames at a time, or to skip to the next or previous protected image, photo, or movie.

f5: Multi Selector

MENU *button* ➜ *Custom Settings menu*

If **Restart standby timer** is selected, operating the multi selector when the standby timer expires will activate the meters and start the standby timer. If **Do nothing** is selected, the timer will not start when the multi selector is pressed.

f6: Release Button to Use Dial

MENU *button* ➜ *Custom Settings menu*

Selecting **Yes** allows adjustments that are normally made by holding the ⊠, **ISO** (FORMAT), **MODE**, **BKT**, ⊡, ⊙ (⚡), **QUAL**, **WB**, or AF-mode button and rotating a command dial to be made by rotating the command dial after the button is released. This also applies to controls to which **Active D-Lighting**, **Exposure delay mode**, **White balance**, or **Exposure mode** has been assigned as a "press + command dial" option for Custom Setting f1 (**Custom control assignment**, 🕮 130) and to controls to which **Active D-Lighting**, **Exposure delay mode**, **ISO sensitivity**, **Exposure mode**, **Exposure compensation**, or **Metering** has been assigned using Custom Setting f10 (**Assign MB-D18 buttons**, 🕮 149). Setting ends when any of the affected buttons is pressed again, the shutter-release button is pressed halfway, or the standby timer expires.

f7: Reverse Indicators

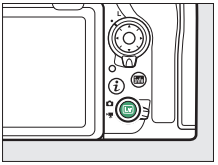
MENU *button* ➜ *Custom Settings menu*

If  (−0+) is selected, the exposure indicators in the control panel, viewfinder, and information display are displayed with negative values on the left and positive values on the right. Select  (+0−) to display positive values on the left and negative values on the right.

f8: Live View Button Options

MENU *button* ➜ *Custom Settings menu*

Select **Disable** to disable the Lv button, preventing live view from starting accidentally. If **Enable (standby timer active)** is selected, the Lv button can only be used to start live view while the standby timer is active.



f9: ☀ Switch

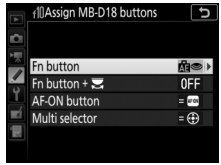
MENU *button* ➜ *Custom Settings menu*

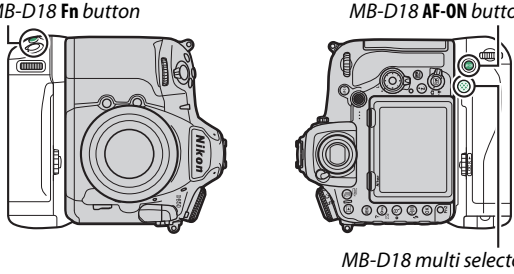
Choose whether rotating the power switch to ☀ activates only the control panel and button backlights or also turns on the information display.

f10: Assign MB-D18 Buttons

MENU *button* ➜ *Custom Settings menu*

This option is available when an optional MB-D18 multi-power battery pack is attached. Choose the functions assigned to MB-D18 controls, whether used individually or in combination with the command dials.





■■ *Fn button*

Choose the function performed by pressing the **Fn** button on the battery pack. See the "Press" section for Custom Setting f1 (**Custom control assignment**, 🕮 130) for more information.

Preset focus point	**Spot metering**
Preview	**Highlight-weighted metering**
FV lock	**Viewfinder grid display**
AE lock (Reset on release)	**Viewfinder virtual horizon**
AE lock (Hold)	**MY MENU**
+NEF (RAW)	**Access top item in MY MENU**
Matrix metering	**Playback**
Center-weighted metering	**None**

■■ *Fn button+*

Choose the function performed by pressing the **Fn** button on the battery pack and rotating a command dial. See the "Press + Command Dials" section for Custom Setting f1 (**Custom control assignment**, 🕮 138) for more information.

FX	**Choose image area**	SHOOT	**Photo shooting menu bank**
L	**Shutter spd & aperture lock**	ISO	**ISO sensitivity**[1]
	1 step spd/aperture	MODE	**Exposure mode**[2]
Non-CPU	**Choose non-CPU lens number**		**Exposure compensation**[3]
	Active D-Lighting		**Metering**[4]
DLY	**Exposure delay mode**		**None**

1 Performs the same function as the camera **ISO** (FORMAT) button.
2 Performs the same function as the camera **MODE** button.
3 Performs the same function as the camera button.
4 Performs the same function as the camera button.

■■ *AF-ON button*

Choose the function performed by pressing the **AF-ON** button on the battery pack. See the "Press" section for Custom Setting f1 (**Custom control assignment**, 🕮 130) for more information.

= AF-ON	**Same as camera AF-ON button***	AE	**AE lock only**
AF-ON	**AF-ON**	AE	**AE lock (Reset on release)**
[ ]	**AF-area mode**	AE	**AE lock (Hold)**
[ ] AF-ON	**AF-area mode + AF-ON**	AF	**AF lock only**
AE	**AE/AF lock**		**None**

* The control performs the same role as that currently selected for the camera **AF-ON** button.

■■ *Multi Selector*

The multi selector on the battery pack can be used for focus-point selection ([▫] **Focus point selection**) or to duplicate the role performed by the camera multi selector (= ⊕ **Same as camera multi selector**; note that in this case, you can select **Info ⊙/Playback ⊙** for **Photo info/playback** to reverse the role of the buttons so that pressing the selector up or down displays additional images and pressing the selector left or right changes the photo information displayed).

g: Movie

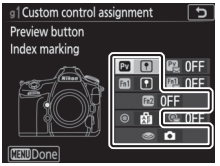
g1: Custom Control Assignment

MENU *button* ➜ *Custom Settings menu*

Choose the functions assigned to camera controls, whether used individually or in combination with the command dials, when the live view selector is rotated to 🎥 in live view.

■■ *Press*

To choose the roles played by the following controls, highlight an option and press the center of the multi selector:



Pv	**Pv** *button*
Fn1	**Fn1** *button*
Fn2	**Fn2** *button*
◉	*Center of sub-selector*
⬭	*Shutter-release button*

"Press" and "Press + Command Dials"

Certain roles cannot be assigned simultaneously to both the "press" and "press + command" functions for some controls. Assigning such a role to "press" when it is already assigned to "press + command dial" sets the "press + command dial" option **None**, while assigning such a role to "press + command dials" when it is already assigned to "press" sets the "press" option **None**.

The functions that can be assigned to these controls are as follows:

Option	Pv	Fn1	Fn2	⊛	
Power aperture (open)	✔	—	—	—	—
Power aperture (close)	—	✔	—	—	—
Exposure compensation +	✔	—	—	—	—
Exposure compensation –	—	✔	—	—	—
Index marking	✔	✔	✔	✔	—
View photo shooting info	✔	✔	✔	✔	—
AE/AF lock	—	—	—	✔	—
AE lock only	—	—	—	✔	—
AE lock (Hold)	—	—	—	✔	—
AF lock only	—	—	—	✔	—
Take photos	—	—	—	—	✔
Record movies	—	—	—	—	✔
None	✔	✔	✔	✔	—

The following options are available:

Option	Description
Power aperture (open)	Aperture widens while the **Pv** button is pressed. Use in combination with Custom Setting g1 (**Custom control assignment**) > **Fn1 button** > **Power aperture (close)** for button-controlled aperture adjustment.
Power aperture (close)	Aperture narrows while the **Fn1** button is pressed. Use in combination with Custom Setting g1 (**Custom control assignment**) > **Preview button** > **Power aperture (open)** for button-controlled aperture adjustment.

Option	Description
Exposure compensation +	Exposure compensation increases while the **Pv** button is pressed. Use in combination with Custom Setting g1 (**Custom control assignment**) > **Fn1 button** > **Exposure compensation –** for button-controlled exposure compensation.
Exposure compensation –	Exposure compensation decreases while the **Fn1** button is pressed. Use in combination with Custom Setting g1 (**Custom control assignment**) > **Preview button** > **Exposure compensation +** for button-controlled exposure compensation.
Index marking	Press the control during movie recording to add an index at the current position. Indices can be used when viewing and editing movies.
View photo shooting info	Press the control to display photo shooting data in place of movie recording information. Press again to return to the movie recording display.
AE/AF lock	Focus and exposure lock while the control is pressed.
AE lock only	Exposure locks while the control is pressed.
AE lock (Hold)	Exposure locks when the control is pressed, and remains locked until the control is pressed a second time or the standby timer expires.
AF lock only	Focus locks while the control is pressed.
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.

Option	Description
Record movies	Press the shutter-release button halfway to start 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 cannot be used for other purposes while the live view selector is rotated to . To end live view, press the button. The shutter-release button on an optional wireless remote controller or remote cord functions in the same way as the camera shutter-release button.
None	Pressing the control has no effect.

Power Aperture

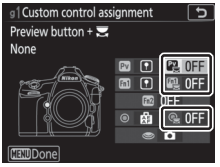
Power aperture is available only in exposure modes **A** and **M** and cannot be used while photo shooting info is displayed (a icon indicates that power aperture cannot be used). The display may flicker while aperture is adjusted.

"Record Movies"

When **Record movies** is selected for **Shutter-release button**, interval timer photography is not available.

■■ *Press + Command Dials*

To choose the roles played by the following controls in combination with the command dials, highlight an option and press the center of the multi selector:



Pv	**Pv** *button* + ▼
Fn1	**Fn1** *button* + ▼
	Sub-selector center + ▼

The following functions can be performed by pressing these controls and rotating a command dial:

Option	Description
Choose image area	Press the control and rotate a command dial to select the image area. The image area cannot be changed during shooting.
None	No operation is performed when the command dials are rotated while the control is pressed.

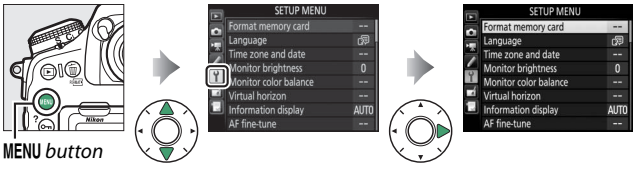
g2: Highlight Brightness

MENU *button* ➜ *Custom Settings menu*

Choose the brightness needed to trigger the movie highlight display. The lower the value, the greater the range of brightnesses that will be shown as highlights. If **255** is selected, the highlight display will show only areas that are potentially overexposed.

The Setup Menu: *Camera Setup*

To display the setup menu, press MENU and select the (setup menu) tab.



MENU *button*

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* Not available when battery is low.

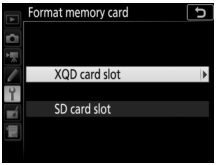
See Also

For menu defaults, see "Setup Menu Defaults" (🕮 17).

Format Memory Card

MENU *button* ➜ *setup menu*

To begin formatting, choose a memory card slot and select **Yes**. *Note that formatting permanently deletes all pictures and other data on the card in the selected slot*. Before formatting, be sure to make backup copies as required.



During Formatting

Do not turn the camera off or remove memory cards during formatting.

Two-Button Format

Memory cards can also be formatted by pressing the 🗑 (FORMAT) and **ISO** (FORMAT) buttons for more than two seconds.

Language

MENU *button* ➜ *setup menu*

Choose a language for camera menus and messages.

Time Zone and Date

MENU *button* ➜ *setup menu*

Change time zones, set the camera clock, synchronize the clock with the clock on a smart device, 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.
Sync with smart device	Choose whether the camera clock is updated to the time (Coordinated Universal Time, or UTC), time zone, and standard or daylight saving time supplied by the smart device when synchronization is enabled in the SnapBridge app. The camera clock cannot be synchronized with the smart device during interval timer photography or if a GPS device is connected with **Yes** selected for **Location data** > **External GPS device options** > **Set clock from satellite** (🕮 179).
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**.

If the clock is reset, a CLOCK icon will flash in the control panel and a flashing ⊕ indicator will appear in the information display.

Monitor Brightness

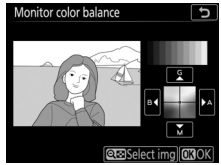
MENU *button* ➜ *setup menu*

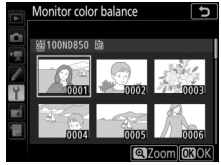
Press ▲ or ▼ to adjust monitor brightness. Choose higher values for increased brightness, lower values for reduced brightness. Brightness can be adjusted separately for:

- **Menus/playback**: Adjust the brightness of the menu, information, and playback displays.
- **Live view**: Adjust the brightness of the live view display.

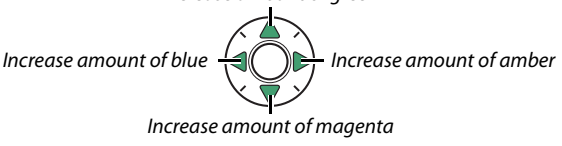
Monitor Color Balance

MENU *button* ➜ *setup menu*





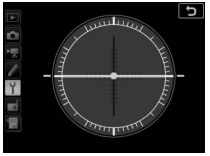
Use the multi selector as shown below to adjust monitor color balance with reference to a sample image. The sample image is the last photograph taken or, in playback mode, the last photograph displayed; to choose a different image, press the ⊖ (⚡) button and select an image from a thumbnail list (to view the highlighted image full frame, press and hold ⊕). 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; pictures taken with the camera are not affected.



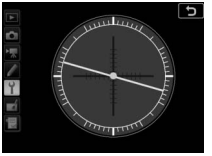
Virtual Horizon

MENU *button* ➜ *setup menu*

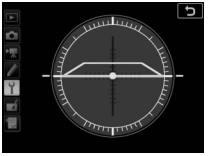
Display roll and pitch information based on information from the camera tilt sensor. If the camera is tilted neither left nor right, the roll reference line will turn green, while if the camera is tilted neither forward nor back, the dot in the center of the display will turn green. Each division is equivalent to 5°.



Camera level



Camera tilted left or right



Camera tilted forward or back

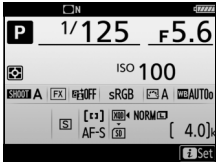
Tilting the Camera

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 virtual horizon display in the viewfinder, see ✎ > Custom Setting f1 (**Custom control assignment**; 🕮 130, 137).

If **Auto** (**AUTO**) is selected, the color of the lettering in the information display 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). Monitor brightness will automatically be adjusted for maximum contrast with the selected text color.



Dark on light

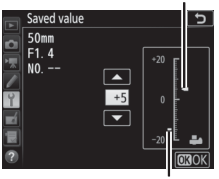


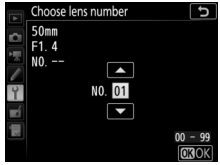
Light on dark

AF Fine-Tune

MENU *button* ➜ *setup menu*

Fine-tune focus for up to 20 lens types. Use only as required; AF tuning is not recommended in most situations and may interfere with normal focus. Auto fine-tuning is available in live view (🕮 166). We recommend that you perform fine-tuning at a focus distance you use frequently; if you perform focus-tuning at a short focus distance, for example, you may find it less effective at longer distances.

Option	Description
AF fine-tune (On/Off)	• **On**: Turn AF tuning on. • **Off**: Turn AF tuning off.
Saved value	Tune AF for the current lens (CPU lenses only). Press ⊕ to move focal point away from camera or ⊖ to move focal point toward camera; choose from values between +20 and –20. Values for up to 20 lens types can be stored. Only one value can be stored for each type of lens. *Current value*  *Previous value*
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 ▶. A menu will be displayed; press ▲ or ▼ to choose an identifier and press OK to save changes and exit. 

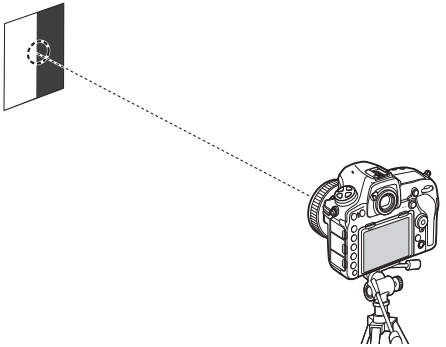
Live View Photography
Tuning is not applied to autofocus during live view photography.

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.

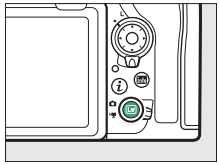
■■ *Auto AF Fine-Tuning*

Auto AF fine-tuning is performed as described below.

1 **Ready the camera.**
Mount the camera on a tripod and aim the camera at a flat, high-contrast subject parallel to the camera focal plane. Note that auto AF fine-tuning works best at maximum aperture and may not function in dark surroundings.

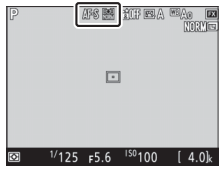


2 **Start live view.**
Rotate the live view selector to 📷 and press the Lv button.

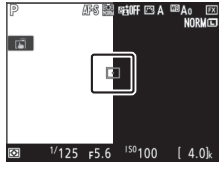


3 **Adjust focus settings.**
Rotate the focus-mode selector to **AF** and use the AF-mode button and command dials to select the following:

- **Autofocus mode: AF-S**
- **AF-area mode**: [WIDE] (wide), [NORM] (normal), or [PIN] (pinpoint)

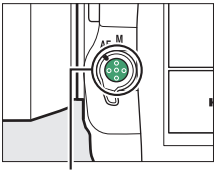


4 **Select the center focus point.**
Press the center of the multi selector to select the center focus point.

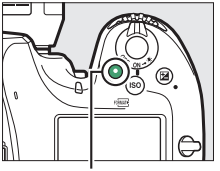


5 **Focus.**
Press the shutter-release button halfway to focus, then zoom in on the view through the lens to confirm that the subject is in focus. Focus can be adjusted manually if necessary.

6 **Perform auto AF fine-tuning.**
Press the AF-mode and movie-record buttons simultaneously and keep them pressed until the dialog shown in Step 7 is displayed (this should take slightly over two seconds).

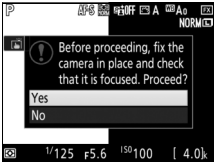


AF-mode button



Movie-record button

7 **Save the new value.**
Highlight **Yes** and press ⓚ to add the AF fine-tuning value for the current lens to the saved values list (CPU lenses only). Note that only one value can be stored for each type of lens.



8 **Enable AF fine-tuning.**
In the camera setup menu, select **AF fine-tune** > **AF fine-tune (On/Off)**, then highlight **On** and press ⓚ.

Non-CPU Lens Data

MENU *button* ➜ *setup menu*

Record the focal length and maximum aperture of non-CPU lenses, allowing them to be used with functions normally reserved for CPU lenses.

Option	Description
Lens number	Choose a number to identify the lens.
Focal length (mm)	Enter the focal length.
Maximum aperture	Enter the maximum aperture.

Clean Image Sensor

MENU *button* ➜ *setup menu*

Dirt or dust entering the camera when lenses are exchanged or the body cap is removed may adhere to the image sensor and affect your photographs. The **Clean image sensor** option vibrates the sensor to remove dust.

Option	Description
Clean now	Perform image sensor cleaning immediately.
Clean at startup/ shutdown	• **ON Clean at startup**: The image sensor is automatically cleaned each time the camera is turned on. • **OFF Clean at shutdown**: The image sensor is automatically cleaned during shutdown each time the camera is turned off. • **ON/OFF Clean at startup & shutdown**: The image sensor is cleaned automatically at startup and at shutdown. • **Cleaning off**: Automatic image sensor cleaning off.

Lock Mirror up for Cleaning

MENU *button* ➜ *setup menu*

Use this option to lock the mirror up so that dust that cannot be removed using **Clean image sensor** can be removed manually. Note, however, that the sensor is extremely delicate and easily damaged, we recommend that manual cleaning be performed only by a Nikon-authorized service representative.

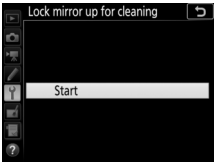
■ *Manual Cleaning*

The sensor can be cleaned manually as described below.

1 **Charge the battery or connect an AC adapter.**
A reliable power source is required when inspecting or cleaning the image sensor. 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 if the battery level is over and the camera is not connected to a smart device via Bluetooth or other devices via USB.

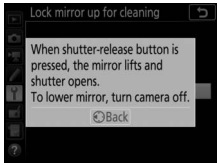
2 **Remove the lens.**
Turn the camera off and remove the lens.

3 **Select Lock mirror up for cleaning.**
Turn the camera on and highlight **Lock mirror up for cleaning** in the setup menu and press ⊛.



4 **Press ⊛.**

A message 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 image sensor, turn the camera off.



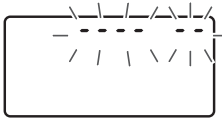




5 **Raise the mirror.**

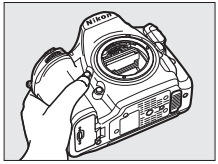
Press the shutter-release button all the way down. The mirror will be raised and the shutter curtain will open, revealing the image sensor. The display in the viewfinder will turn off and the row of dashes in the control panel will flash.



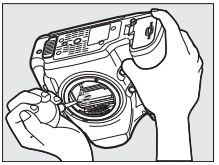


6 **Examine the image sensor.**

Holding the camera so that light falls on the image sensor, examine the sensor for dust or lint. If no foreign objects are present, proceed to Step 8.



7 Clean the sensor.



Remove any dust and lint from the sensor with a blower. Do not use a blower-brush, as the bristles could damage the sensor. Dirt that cannot be removed with a blower can only be removed by Nikon-authorized service personnel. Under no circumstances should you touch or wipe the sensor.

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.

Image Dust Off Ref Photo

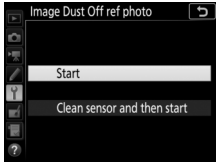
MENU *button* ➜ *setup menu*

Acquire reference data for the Image Dust Off option in Capture NX-D (for more information, refer to Capture NX-D online help). Image Dust Off cannot be used with small or medium-sized NEF (RAW) images.

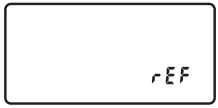
Image Dust Off ref photo is available only when a CPU lens is mounted on the camera. A non-DX lens with a focal length of at least 50 mm is recommended. When using a zoom lens, zoom all the way in.

1 Choose a start option.
Highlight one of the following options and press ⓚ. To exit without acquiring image dust off data, press MENU.

- **Start**: A message 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. A message 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 a message 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 cannot 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 cannot be viewed using computer imaging software. A grid pattern is displayed when reference images are viewed on the camera.

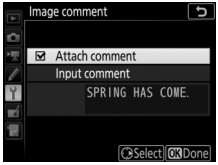


Image Comment

MENU *button* ➜ *setup menu*

Add a comment to new photographs as they are taken. Comments can be viewed as metadata in ViewNX-i or Capture NX-D. The comment is also visible on the shooting data page in the photo information display. The following options are available:

- **Input comment**: Input a comment as described in "Text Entry" (🕮 38). 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 and can be viewed as metadata in ViewNX-i or in Capture NX-D. The following options are available:

- **Artist**: Enter a photographer name as described in "Text Entry" (🕮 38). Photographer names can be up to 36 characters long.
- **Copyright**: Enter the name of the copyright holder as described in "Text Entry" (🕮 38). 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.

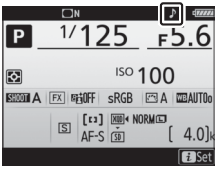
Beep Options

MENU *button* ➜ *setup menu*

Choose the pitch and volume of the beep that sounds when the camera focuses using single-servo AF (**AF-S**), when focus locks during live view photography, while the release timer is counting down in self-timer mode, if the shutter-release button is pressed when a write-protected memory card is inserted, when the shutter-release button is pressed for a second time during mirror-up photography, when time-lapse shooting ends, or the touch-screen is used for keyboard entry (🕮 38). Note that regardless of the option selected, a beep will not sound in movie mode or quiet-shutter release modes (modes **Q** and **Qc**) or when an option other than **Off** is selected for **Silent live view photography** (🕮 81). A beep will not sound when the camera focuses using single-servo AF if **Release** is selected for Custom Setting a2 (**AF-S priority selection**, 🕮 106).

■■ *Beep On/Off*

Select **Off (touch controls only)** to mute the sounds the camera makes in response to touch-screen controls, or choose **Off** to prevent beeps from sounding altogether. When an option other than **Off** is selected, ♪ appears in the information display.



■■ *Volume*

Adjust beep volume.

■■ *Pitch*

Choose the pitch of the beep from **High** and **Low**.

Touch Controls

MENU *button* ➜ *setup menu*

Adjust monitor touch control settings.

■■ *Enable/Disable Touch Controls*

Select **Disable** to prevent accidental use of touch-screen controls, or **Playback only** to enable touch-screen controls in playback mode only.

■■ *Full-Frame Playback Flicks*

Choose the gesture used to display the next image in full-frame playback: a flick from right to left or a flick from left to right.

HDMI

MENU *button* ➜ *setup menu*

Adjust settings for connection to HDMI devices (🕮 257).

Location Data

MENU *button* ➜ *setup menu*

Adjust location data settings for use when the camera is connected to a GPS or smart device.

Option	Description
Download from smart device	Select **Yes** to download location data from the smart device and embed them in pictures taken over the next two hours (note that the location data feature must be enabled in the SnapBridge app). If the camera is connected to both a smart device and a GPS unit, location data will be downloaded from the GPS unit. Location data cannot be acquired if the camera is off or the standby timer has expired.
Position	View the location data supplied by the GPS or smart device (the items displayed vary with the device).
External GPS device options	Adjust settings for connection to optional GPS devices. • **Standby timer**: Choose whether the standby timer remains active while a GPS device is connected. If **Enable** is selected, the exposure meters will turn off automatically if no operations are performed for the period specified in Custom Setting c2 (**Standby timer**, 🕮 118), reducing the drain on the battery. If a GP-1 or GP-1A unit is connected, the unit will remain active for a set period after the timer expires; to allow the camera time to acquire location data, the delay is extended by up to one minute after exposure meters are activated or the camera is turned on. Select **Disable** to disable the standby timer when a GPS device is connected. • **Set clock from satellite**: Select **Yes** to synchronize the camera clock with the time reported by the GPS device.

Wireless Remote (WR) Options

MENU *button* ➜ *setup menu*

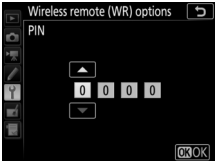
Adjust settings for optional WR-R10 wireless remote controllers and for optional radio-controlled flash units that support Advanced Wireless Lighting.

■■ *LED Lamp*

Enable or disable the status LEDs on a WR-R10 wireless remote controller mounted on the camera. For more information, see the documentation supplied with the wireless remote controller.

■■ *Link Mode*

Choose a link mode for WR-R10 wireless remote controllers mounted on other cameras or radio-controlled flash units that support Advanced Wireless lighting. Be sure that the same mode is selected for the other devices.

Option	Description
Pairing	To pair the camera with a WR-R10, mount the WR-R10 on the camera and press the pairing button.
PIN	Connect by entering the device PIN code. Press ◀ or ▶ to highlight digits and press ▲ or ▼ to change, then press OK to enter and display the selected PIN. 

Regardless of the option selected for **Link mode**, signals from paired wireless remote controllers will always be received by the WR-R10. Users of the WR-1 remote controller will need to select pairing as the WR-1 link mode.

The WR-R10 Wireless Remote Controller
The WR-R10 connects to the camera using a WR-A10 adapter. Be sure the firmware for the WR-R10 has been updated to the latest version. For information on firmware updates, see the Nikon website for your area.

Assign Remote (WR) Fn Button

MENU *button* ➜ *setup menu*

Choose the role played by the **Fn** button on optional wireless remote controllers equipped with an **Fn** button. See Custom Setting f1 (**Custom control assignment**, 🕮 130) for more information.

	Preview	AF-ON	**AF-ON**
FL	**FV lock**		**Disable/enable**
AE	**AE/AF lock**	+RAW	**+ NEF (RAW)**
AE	**AE lock only**	Lv	**Live view***
AE	**AE lock (Reset on release)**		**None**
AF	**AF lock only**		

* Performs the same function as the camera Lv button.

Airplane Mode

MENU *button* ➜ *setup menu*

Select **Enable** to disable the wireless features of Eye-Fi cards and Bluetooth and Wi-Fi connections to smart devices. Connections to other devices using a wireless transmitter can only be disabled by removing the transmitter from the camera.

Connect to Smart Device

MENU *button* ➜ *setup menu*

Adjust settings for connection to smart devices.

Option	Description
Start	Follow on-screen instructions to connect to the smart device. 
Password protection	Choose a password for smart device connections and turn password protection on or off. For information on typing passwords, see "Text Entry" (🕮 38).

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.

Send to Smart Device (Auto)

MENU *button* ➜ *setup menu*

If **On** is selected, new photos will automatically be uploaded to the smart device (if the camera is not currently connected to the smart device, the photos will be marked for upload and uploaded the next time a wireless connection is established). Movies are not uploaded; photos are uploaded at a size of 2 megapixels. If you select **Off** when images are selected for upload, a confirmation dialog will be displayed; to remove upload marking from all images, highlight **Yes** and press ⊛.

Upload Marking

No more than 1000 photos can be marked for upload at a time.

When **Backup** is selected for **Secondary slot function**, only the copy on the card in the primary slot will be marked for upload.

Before changing the rating of photos that are marked for upload, select **Disable** for **Bluetooth** > **Network connection** or switch wireless off by selecting **Enable** for **Airplane mode**.

Wi-Fi

MENU *button* ➜ *setup menu*

Adjust Wi-Fi (wireless LAN) settings.

Option	Description
Network settings	Adjust settings for Wi-Fi connections.
Current settings	View current Wi-Fi settings.
Reset connection settings	Restore Wi-Fi settings to their default values.

Bluetooth

MENU *button* ➜ *setup menu*

List paired devices and adjust settings for connection to smart devices. The camera can be paired with up to five smart devices but can only connect to one at a time.

Option	Description
Network connection	Enable or disable Bluetooth.
Paired devices	View paired devices.
Send while off	Select **Off** to suspend wireless transmissions when the camera is turned off or the standby timer expires.

Network

MENU *button* ➜ *setup menu*

Adjust settings for connection to computers or ftp servers via wireless or Ethernet networks using an optional WT-7 wireless transmitter (🕮 251).

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. Before uploading pictures via Eye-Fi, select **Disable** for **Airplane mode** (🕮 181) and **Bluetooth** > **Network connection** (🕮 184).

Observe all local laws concerning wireless devices and choose **Disable** where wireless devices are prohibited.

☑ Eye-Fi Cards

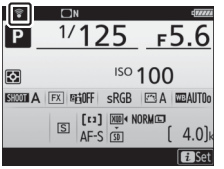
Eye-Fi cards may emit wireless signals when **Disable** is selected. A 📶 icon displayed when **Disable** is selected indicates that the camera is unable to control the Eye-Fi card (🕮 186); turn the camera off and remove the card.

Select longer values for Custom Setting c2 (**Standby timer**, 🕮 118) 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.

☑ Airplane Mode (🕮 181)

Enabling airplane mode disables Eye-Fi upload. To resume Eye-Fi upload, select **Disable** for **Airplane mode** before selecting **Enable** for **Eye-Fi upload**.



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 cannot control Eye-Fi card. If a flashing CArd or Cd indicator appears in the control panel or viewfinder, check that the Eye-Fi card firmware is up-to-date; if the error persists after the card firmware has been updated, insert a different card or format the card in the camera after copying any pictures it contains to a computer or other storage device. If the CArd/Cd 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.

Conformity Marking

MENU *button* ➜ *setup menu*

View a selection of the standards with which the camera complies.

MB-D18 Battery Type

MENU *button* ➜ *setup menu*

To ensure that the camera functions as expected when the optional MB-D18 multi-power battery pack is used with AA batteries, match the option selected in this menu to the type of batteries inserted in the battery pack.

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 cannot 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:

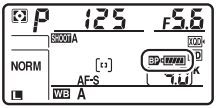
Control panel	Viewfinder	Description
	—	Batteries fully charged.
		Low battery. Ready fresh batteries.
(flashes)	(flashes)	Shutter release disabled. Change batteries.

Battery Order

MENU *button* ➜ *setup menu*

Choose whether the battery in the camera or the batteries in the battery pack are used first when an optional MB-D18 multi-power battery pack is attached. Note that if the MB-D18 is powered by an optional AC adapter and power connector, the AC adapter will be used regardless of the option selected.

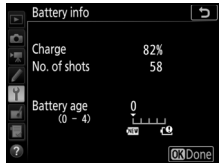
A BP icon is displayed in the camera control panel when the batteries in the MB-D18 are in use.



Battery Info

MENU *button* ➜ *setup menu*

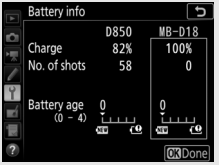
View information on the battery currently inserted in the camera.



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 white balance.
Calibration	This item is displayed only when the camera is powered by an optional MB-D18 multi-power battery pack equipped with an EN-EL18b (available separately). • ☀CAL: Due to repeated use and recharging, calibration is required to ensure that battery level can be measured accurately; recalibrate battery before charging. • —: Calibration not required.
Battery age	A five-level display showing battery age. 0 (NEW) indicates that battery performance is unimpaired, 4 (0) 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-D18 Multi-Power Battery Pack

The display for the MB-D18 is shown in the illustration. In the case of EN-EL18b batteries, the display shows whether calibration is required. If AA batteries are used, the battery level will be shown by a battery level icon; other items will not be displayed.



Slot Empty Release Lock

MENU *button* ➜ *setup 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.

Save/Load Settings

MENU *button* ➜ *setup menu*

Select **Save settings** to save the following settings to the memory card, or to the memory card in the primary card slot if two memory cards are inserted (if the card is full, an error will be displayed). Use this option to share settings among D850 cameras.

Menu	Option
Playback	Playback display options
	Image review
	After delete
	Auto image rotation
	Rotate tall
Photo shooting (all banks)	File naming
	Flash control
	Image area
	Image quality
	Image size
	NEF (RAW) recording
	ISO sensitivity settings
	White balance (with fine-tuning and presets d-1–d-6)
	Set Picture Control (Custom Picture Controls are saved as **Auto**)
	Color space
	Active D-Lighting
	Long exposure NR
	High ISO NR
	Vignette control
	Auto distortion control
	Flicker reduction
	Auto bracketing set

Menu	Option
Movie shooting	File naming
	Image area
	Frame size/frame rate
	Movie quality
	Movie file type
	ISO sensitivity settings
	White balance (with fine-tuning and presets d-1–d-6)
	Set Picture Control (Custom Picture Controls are saved as **Auto**)
	Active D-Lighting
	High ISO NR
	Flicker reduction
	Microphone sensitivity
	Attenuator
	Frequency response
	Wind noise reduction
	Electronic VR
Custom settings (all banks)	All Custom Settings
Setup	Language
	Time zone and date (excepting **Date and time** and **Sync with smart device**)
	Information display
	Non-CPU lens data
	Clean image sensor
	Image comment
	Copyright information
	Beep options
	Touch controls
	HDMI
	Location data (excepting the option chosen for **Download from smart device**)

Menu	Option
Setup	Wireless remote (WR) options
	Assign remote (WR) Fn button
	Eye-Fi upload
	Slot empty release lock
My Menu/ Recent Settings	All My Menu items
	All recent settings
	Choose tab

Settings saved using the D850 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 with a name beginning with "NCSETUP" and ending with two characters that differ from camera to camera. The camera will not be able to load settings if the file name is changed.

Reset All Settings

MENU *button* ➜ *setup menu*

Reset all settings except **Language** and **Time zone and date** to their default values (🕮 9). Copyright information and other user-generated entries are also reset. We recommend that you save settings using the **Save/load settings** option in the setup menu before performing a reset (🕮 191).

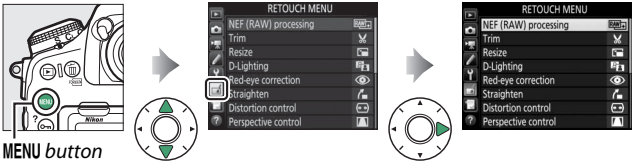
Firmware Version

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*

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	🕮
NEF (RAW) processing	197
Trim	201
Resize	202
D-Lighting	204
Red-eye correction	205
Straighten	205
Distortion control	206
Perspective control	207
Filter effects	208
Monochrome	208
Image overlay [1]	209
Trim movie	212
Side-by-side comparison [2]	212

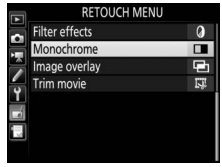
1 Can only be selected by pressing **MENU** and selecting tab.

2 Can only be displayed by pressing **i** and selecting **Retouch** or holding ⊛ and pressing ▶ in full-frame playback when a retouched image or original is displayed.

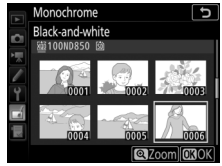
Creating Retouched Copies

To create a retouched copy:

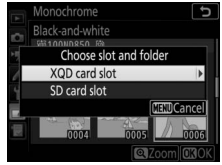
1 **Select an item in the retouch menu.**
Press ▲ or ▼ to highlight an item, ▶ to select.



2 **Select a picture.**
Highlight a picture and press OK. To view the highlighted picture full screen, press and hold the 🔍 button.



To view images in other locations, press 🔍 (⚡) and select the desired card and folder.



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.

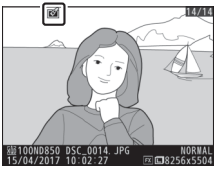
For more information, see the section for the selected item. To exit without creating a retouched copy, press MENU.

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**, 🕮 119).

4 Create a retouched copy.

Press ⊛ to create a retouched copy. Retouched copies are indicated by a 🖻 icon.



Retouching the Current Image

To create a retouched copy of the current image, press i and select **Retouch**, or hold ⊛ and press ▶.

Retouching Copies

Most options can be applied to copies created using other retouch options, although (with the exceptions of **Image overlay** and **Trim movie**) each option can be applied only once (note that multiple edits may result in loss of detail). Options that cannot be applied to the current image are grayed out and unavailable.

Image Quality and Size

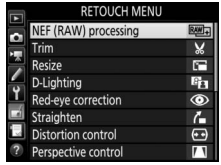
Except in the case of copies created with **Trim** and **Resize**, copies are the same size as the original. Copies created from JPEG images are the same quality as the original, while those created from NEF (RAW) and TIFF (RGB) images are saved in JPEG fine★ format.

NEF (RAW) Processing

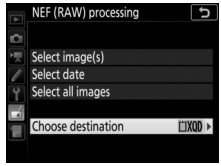
MENU *button* ➜ *retouch menu*

Create JPEG copies of NEF (RAW) photographs. If you displayed the retouch menu by pressing the MENU button, you can use this option to copy multiple images.

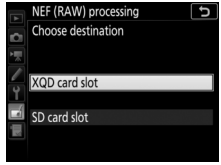
1 **Select NEF (RAW) processing.**
Highlight **NEF (RAW) processing** in the retouch menu and press ▶.



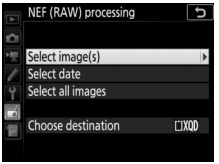
2 **Choose a destination.**
If two memory cards are inserted, you can choose a destination for the JPEG copy by highlighting **Choose destination** and pressing ▶ (if only one memory card is inserted, proceed to Step 3).



Highlight a card slot and press OK when prompted.

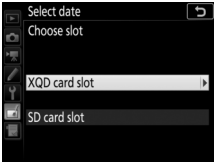


3 **Choose how images are selected.**
Choose from the following options:

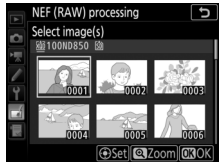


- **Select image(s)**: Select one or more images manually (proceed to Step 5).
- **Select date**: Create JPEG copies of all the NEF (RAW) images taken on selected dates (proceed to Step 4).
- **Select all images**: Create JPEG copies of all the NEF (RAW) images on the memory card (proceed to Step 4).

4 **Select the source slot.**
If two memory cards are inserted, you will be prompted to select the slot with the card containing the NEF (RAW) images. Highlight the desired slot and press ▶. If you chose **Select all images** in Step 3, proceed to Step 6.



5 Select photographs.



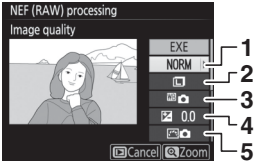
If you chose **Select image(s)** in Step 3, a picture selection dialog will be displayed listing only NEF (RAW) images created with this camera. Highlight images using the multi selector and press the center of the multi selector to select or deselect; selected images are indicated by a ✔ icon. To view the highlighted image full screen, press and hold the ⊕ button. Press ⊛ to proceed to Step 6 when your selection is complete.

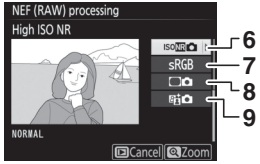


If you chose **Select date** in Step 3, a list of dates will be displayed. Highlight dates using the multi selector and press ⊕ to select or deselect. Press ⊛ to select all NEF (RAW) pictures taken on the chosen dates and proceed to Step 6.

6 Choose settings for the JPEG copies.

Adjust the settings listed below, or select **Original** to use the setting in effect when the photograph was taken (the original settings are listed below the preview). 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.





1	Image quality 46	6	High ISO NR 57
2	Image size 47	7	Color space 56
3	White balance 50	8	Vignette control 58
4	Exposure compensation	9	Active D-Lighting 56
5	Set Picture Control 52		

7 Copy the photographs.



Highlight **EXE** and press ⓚ to create a JPEG copy of the selected photograph (if multiple photos are selected, a confirmation dialog will be displayed; highlight **Yes** and press ⓚ to create JPEG copies of the selected photos).

To exit without copying the photographs, press the MENU button.

Trim

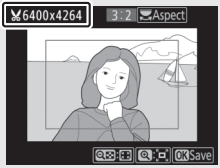
MENU *button* ➜ *retouch menu*

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 below.

To	Description
Reduce size of crop	Press (ISO/⚡) to reduce the size of the crop.
Increase size of crop	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 the multi selector to position the crop. Press and hold to move the crop rapidly to the desired position.
Preview crop	Press center of multi selector to preview cropped image.
Create copy	Press OK to save the current crop as a separate file.

Trim: Image Quality and Size

Copies created from NEF (RAW), NEF (RAW) + JPEG, or TIFF (RGB) photos have an image quality (🕮 46) 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

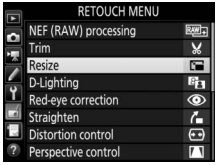
Playback zoom may not be available when cropped copies are displayed.

Resize

MENU *button* ➜ *retouch menu*

Create small copies of selected photographs.

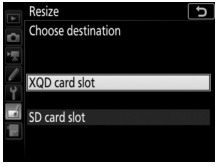
1 **Select Resize.**
To resize selected images, highlight **Resize** in the retouch menu and press ▶.



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 memory card is inserted, proceed to Step 3).



Highlight a card slot and press OK when prompted.

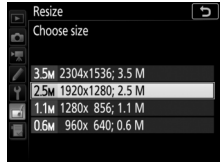


3 Choose a size.

Highlight **Choose size** and press ▶.



Highlight an option and press OK when prompted.

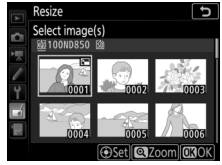


4 Choose pictures.

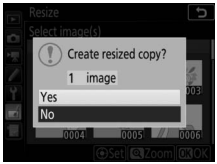
Highlight **Select image(s)** and press ▶.



Highlight pictures and press the center of the multi selector to select or deselect (to view the highlighted picture full screen, press and hold the 🔍 button; to view pictures in other locations, press 🔍/⚡). Selected pictures are marked by a ▪ icon. Press OK when the selection is complete. Note that photographs taken at an image-area setting of 5 : 4 (30 × 24) or 1 : 1 (24 × 24) cannot be resized.



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), NEF (RAW) + JPEG, or TIFF (RGB) photos have an image quality (🕮 46) of JPEG fine★; copies created from JPEG photos have the same image quality as the original.

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 ⓚ to save the retouched copy.

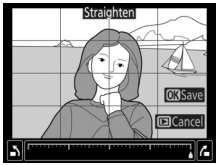
Red-Eye Correction

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 press ⊛ to create a copy. 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.

Straighten

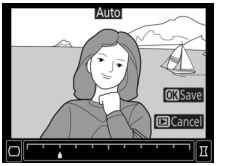
MENU *button* ➜ *retouch menu*



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*



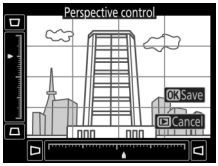
Create copies with reduced peripheral distortion. Select **Auto** to let the camera correct distortion automatically and then make fine adjustments using the multi selector, or select **Manual** to reduce distortion manually. Note that **Auto** is not available with photos taken using auto distortion control; see "Auto Distortion Control" (🕮 59). Press ⊕ to reduce barrel distortion, ⊖ to reduce pincushion 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.

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

Filter Effects

MENU *button* ➜ *retouch menu*

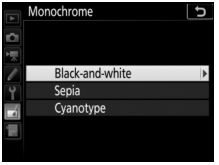
Choose from the following color filter effects. After adjusting filter effects as described below, press ⓚ to copy the photograph.

Option	Description
Skylight	Creates the effect of a skylight filter, making the picture less blue. The effect can be previewed in the monitor.
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.

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 ⓚ to create a monochrome copy.

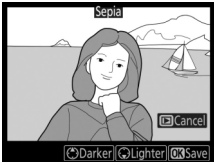


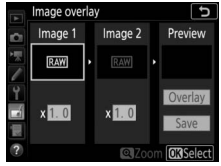
Image Overlay

MENU *button* ➜ *retouch menu*

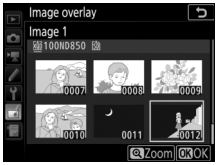
Image overlay combines two existing NEF (RAW) photographs to create a single picture that is saved separately from the originals; the results, which make use of RAW data from the camera image sensor, are noticeably better than photographs combined in an imaging application. The new picture is saved at current image quality and size settings; before creating an overlay, set image quality and size (🕮 46, 47; all options are available). To create a NEF (RAW) copy, choose an image quality of **NEF (RAW)** and an image size of **Large** (the overlay will be saved as a large NEF/RAW image even if **Small** or **Medium** is selected).



1 **Select Image overlay.**
Highlight **Image overlay** in the retouch menu and press ⊛. Image overlay options will be displayed, with **Image 1** highlighted; press ⊛ to display a picture selection dialog listing only large NEF (RAW) images created with this camera (small and medium NEF/RAW images cannot be selected).



2 Select the first image.

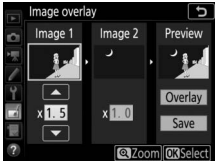


Use the multi selector to highlight the first photograph in the overlay. To view the highlighted photograph full frame, press and hold the ⊕ button. To view images in other locations, press ⊖ (⚡) and select the desired card and folder. Press ⊛ to select the highlighted photograph and return to the preview 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 the 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 of gain are visible in the **Preview** column.

5 **Preview the overlay.**

To preview the composition, press ◀ or ▶ to place the cursor in the **Preview** column, then press ▲ or ▼ to highlight **Overlay** and press OK (note that colors and brightness in the preview may differ from the final image). To save the overlay without displaying a preview, select **Save**. To return to Step 4 and select new photos or adjust gain, press ⊖ (ϟ).



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 large 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, exposure 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, are not copied. Overlays saved in NEF (RAW) format use the compression selected for **NEF (RAW) compression** in the **NEF (RAW) recording** menu and have the same bit depth as the original images.

Trim Movie

MENU *button* ➜ *retouch menu*

Create a copy from which unwanted footage has been removed.

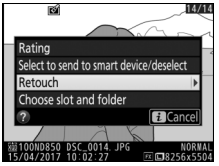
Side-by-Side Comparison

Compare retouched copies to the original photographs. This option is only available if the retouch menu is displayed by displaying a copy or original full frame and then either (a) holding and pressing OK and pressing ▶ or (b) pressing i and selecting **Retouch**.

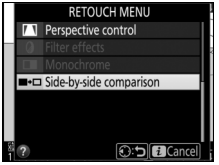
1 Select a picture.
Select a retouched copy (shown by a icon) or an original that has been retouched.



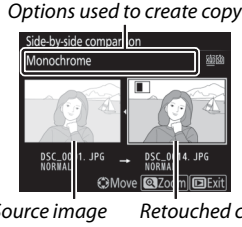
2 Display retouch options.
Press ▶ while pressing and holding the OK button, or press i and select **Retouch**.



3 Select Side-by-side comparison.
Highlight **Side-by-side comparison** and press OK.



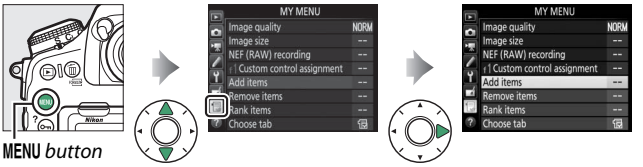
4 Compare the copy with the original.
The source image is displayed on the left, the retouched copy on the right, with the options used to create the copy listed at the top of the display. Press ◀ or ▶ to switch between the source image and the retouched copy. To view the highlighted picture full frame, press and hold the 🔍 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 image. To exit to playback, press the ▶ button, or press OK to exit to playback with the highlighted image selected.



Side-by-Side Comparison
The source image will not be displayed if the copy was created from a photograph that was protected or has since been deleted or hidden (📖 21).

My Menu/Recent Settings

To display My Menu, press **MENU** and select the (My Menu) tab.



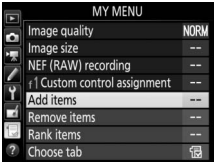
MENU *button*

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 (🕮 218).

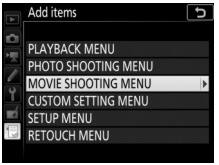
Options can be added, deleted, and reordered as described below.

▮▮ *Adding Options to My Menu*

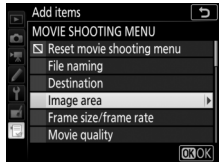
1 **Select Add items.**
In My Menu (), highlight **Add items** and press ▶.



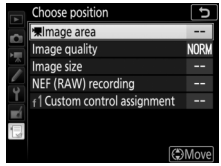
2 **Select a menu.**
Highlight the name of the menu containing the option you wish to add and press ▶.



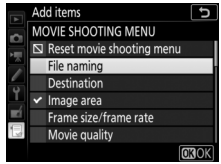
3 **Select an item.**
Highlight the desired menu item and press ⓚ.



4 **Position the new item.**
Press ⓢ or ⓣ to move the new item up or down in My Menu. Press ⓚ to add the new item.



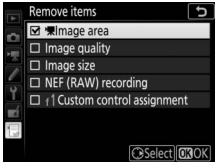
5 **Add more items.**
The items currently displayed in My Menu are indicated by a check mark. Items indicated by a ⊠ icon cannot be selected. Repeat steps 1–4 to select additional items.



■■ *Deleting Options from My Menu*

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.



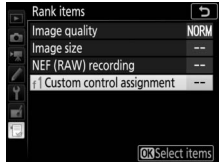
3 Delete the selected items.
Press ⊛. A confirmation dialog will be displayed; press ⊛ again to delete the selected items.



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 ▶.

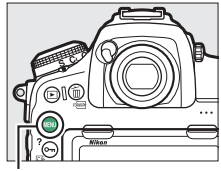
2 **Select an item.**
Highlight the item you wish to move and press OK.



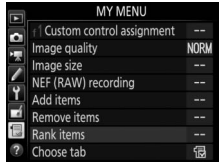
3 **Position the item.**
Press ▲ or ▼ to move the item up or down in My Menu and press OK. Repeat Steps 2–3 to reposition additional items.



4 **Exit to My Menu.**
Press the MENU button to return to My Menu.



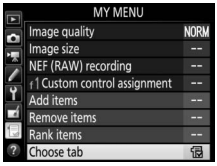
MENU *button*



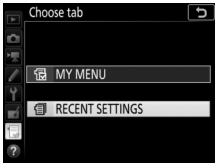
Recent Settings

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 (PROTECT) button. A confirmation dialog will be displayed; press (PROTECT) again to delete the selected item.

Optional Flash Units

The camera can be used with optional external flash units.

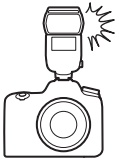
Throughout this chapter, operations involving an accessory connected to the camera are indicated by , operations involving remote flash units by . For more information on , see the manual provided with the flash unit.

Flash Control Options

You can take pictures using a flash unit mounted on the camera accessory shoe or one or more remote flash units.

Camera-Mounted Flash Units

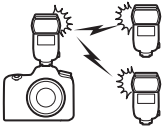
Take pictures using a flash unit mounted on the camera. See the camera and flash unit manuals for details.



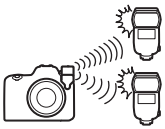
Remote Flash Photography

The following types of wireless flash control (Advanced Wireless Lighting, or AWL) can be used with one or more remote flash units:

- **Optical AWL via a shoe-mounted flash unit** (🕮 221)



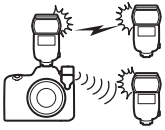
- **Radio AWL** (🕮 230)



- **Radio AWL with additional lighting provided by a shoe-mounted flash unit** (🕮 240)

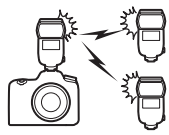


- **Radio AWL, with optical AWL provided by a shoe-mounted flash unit** (🕮 242)



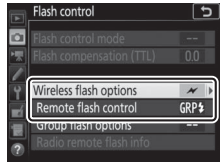
Radio flash control is available only when the camera is connected to a WR-R10 using a WR-A10 adapter.

Optical AWL



Remote flash units can be controlled via optical signals from an optional flash unit mounted on the camera accessory shoe and functioning as a master flash (optical AWL). If the flash unit in question is an SB-5000 or SB-500, settings can be adjusted from the camera (see "SB-5000/SB-500", 🕮 221); otherwise settings must be adjusted using flash unit controls as described in the documentation provided with the unit. For information on flash placement and other topics, see the documentation provided with the flash units.

SB-5000/SB-500



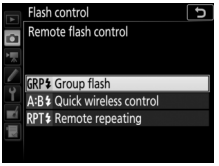
Mount the flash unit on the camera accessory shoe and select **Optical AWL** for **Flash control** > **Wireless flash options** in the photo shooting menu. **Group flash** settings can be adjusted using **Flash control** > **Remote flash control**; the **Remote flash control** item for the SB-5000 also offers **Quick wireless control** and **Remote repeating** settings. The options available are described below.

The SB-5000
When an SB-5000 is mounted on the camera accessory shoe, **Flash control** settings can also be changed using the controls on the flash unit.

■■ *Group Flash*

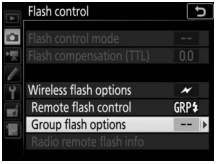
Select this option to adjust settings separately for each group.

1 : Select Group flash for Flash control > Remote flash control in the photo shooting menu.



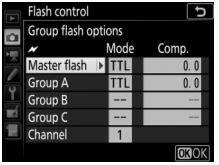
2 : Select Group flash options.

Highlight **Group flash options** in the flash control display and press ▶.



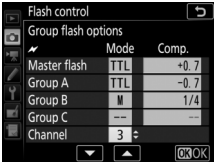
3 : Choose the flash control mode.

Choose the flash control mode and flash level for the master flash and the flash units in each group:



- **TTL**: i-TTL flash control.
- **A**: Auto aperture (available only with compatible flash units).
- **M**: Choose the flash level manually.
- **– – (off)**: The units do not fire and the flash level cannot be adjusted.

Choose a channel for the master flash. If the remote flash units include an SB-500, you must choose channel 3, but otherwise you can choose any channel between 1 and 4.



4 : Set the remote flash units to the same channel as the master flash.
Set the remote flash units to the channel selected in Step 3.

5 : Group the remote flash units.
Choose a group (A, B, or C, or if you are using an SB-500 master flash, A or B) for each remote flash unit. Although there is no limit on the number of remote flash units that may be used, the practical maximum is three per group. With more than this number, the light emitted by the remote flash units will interfere with performance.

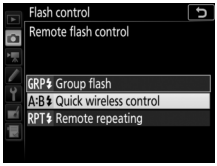
6 / : Compose the shot.
Compose the shot and arrange the flash units. See the documentation provided with the flash units for more information. After arranging the units, press the test buttons on the flash units to test-fire the flash and confirm that the units are functioning normally. Flash units can also be test fired by pressing the **i** button in the flash info display (🕮 243) and selecting **Test flash**.

7 / : Frame the photograph, focus, and shoot.

■■ *Quick Wireless Control (SB-5000 Only)*

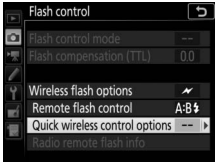
Select this option to control overall flash compensation for, and the relative balance between, groups A and B, while setting output for group C manually.

1 : Select Quick wireless control for Flash control > Remote flash control in the photo shooting menu.



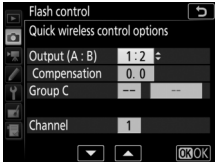
2 : Select Quick wireless control options.

Highlight **Quick wireless control options** in the flash control display and press ▶.

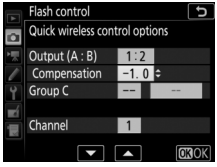


3 : Adjust flash settings.

Choose the balance between groups A and B.

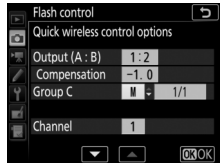


Adjust flash compensation for groups A and B.

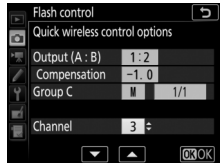


Choose a flash control mode and flash level for the units in group C:

- **M**: Choose the flash level manually.
- **– –**: The units in group C do not fire.



Choose a channel for the master flash. If the remote flash units include an SB-500, you must choose channel 3, but otherwise you can choose any channel between 1 and 4.



4 : Set the remote flash units to the same channel as the master flash.

Set the remote flash units to the channel selected in Step 3.

5 : Group the remote flash units.

Choose a group (A, B, or C).

Although there is no limit on the number of remote flash units that may be used, the practical maximum is three per group. With more than this number, the light emitted by the remote flash units will interfere with performance.

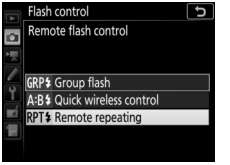
6 : Compose the shot.
Compose the shot and arrange the flash units. See the documentation provided with the flash units for more information. After arranging the units, press the test buttons on the flash units to test-fire the flash and confirm that the units are functioning normally. Flash units can also be test fired by pressing the *i* button in the flash info display (🕮 243) and selecting **Test flash**.

7 : Frame the photograph, focus, and shoot.

■■ *Remote Repeating (SB-5000 Only)*

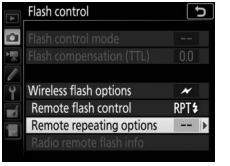
When this option is selected, the flash units fire repeatedly while the shutter is open, producing a multiple-exposure effect.

1 📷: Select Remote repeating for Flash control > Remote flash control in the photo shooting menu.



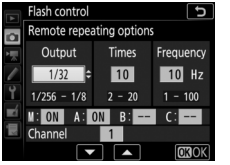
2 📷: Select Remote repeating options.

Highlight **Remote repeating options** in the flash control display menu and press ⊛.

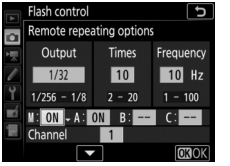


3 📷: Adjust flash settings.

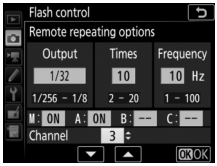
Choose the flash level (**Output**), the maximum number of times the flash units fire (**Times**), and the number of times the flash units fire per second (**Frequency**).



Enable or disable selected groups. Select **ON** to enable the selected group, – – to disable the selected group.



Choose a channel for the master flash. If the remote flash units include an SB-500, you must choose channel 3, but otherwise you can choose any channel between 1 and 4.



4 : Set the remote flash units to the same channel as the master flash.
Set the remote flash units to the channel selected in Step 3.

5 : Group the remote flash units.
Choose a group (A, B, or C) for each remote flash unit. Although there is no limit on the number of remote flash units that may be used, the practical maximum is three per group. With more than this number, the light emitted by the remote flash units will interfere with performance.

6 / : Compose the shot.
Compose the shot and arrange the flash units. See the documentation provided with the flash units for more information. After arranging the units, press the test buttons on the flash units to test-fire the flash and confirm that the units are functioning normally. Flash units can also be test fired by pressing the **i** button in the flash info display (🕮 243) and selecting **Test flash**.

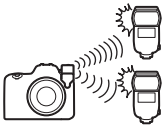
7 / : Frame the photograph, focus, and shoot.

Optical AWL

Position the sensor windows on the remote flash units to pick up the light from the master 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 (**A** mode), as this may interfere with exposure. To prevent low-intensity timing flashes emitted by the master flash from appearing in photographs taken at short range, choose low ISO sensitivities or small apertures (high f-numbers). After positioning the remote flash units, take a test shot and view the results in the camera monitor.

Radio AWL

To use radio AWL with compatible flash units, attach a WR-R10 wireless remote controller to the camera and establish a wireless connection between the flash units and the WR-R10.

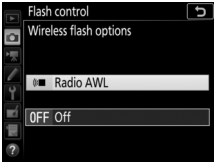


Establishing a Wireless Connection

Before using radio AWL, establish a wireless connection between the WR-R10 and the remote flash units.

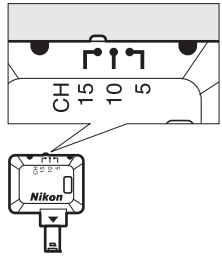
1 : Connect the WR-R10.
Connect the WR-R10 to the camera. For more information, see the documentation provided with the WR-R10.

2 : Select Radio AWL for Flash control > Wireless flash options in the photo shooting menu.

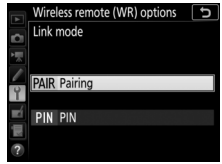


The WR-R10 Wireless Remote Controller
A WR-A10 adapter is required when using the WR-R10. Be sure to update the WR-R10 firmware to version 3.0 or later; for information on firmware updates, see the Nikon website for your area.

3 **: Choose a channel.**
Set the WR-R10 channel selector to the desired channel.



4 **: Choose a link mode.**
Select **Wireless remote (WR) options** > **Link mode** in the setup menu (🕮 180) and choose from the following options:



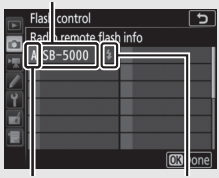
- **Pairing**: The camera connects only to devices with which it has previously been paired, preventing signal interference from other devices in the vicinity. Given that each device must be paired separately, **PIN** is recommended when connecting to a large number of devices.
- **PIN**: Communication is shared among all devices with the same four-digit PIN, making this a good choice for photography featuring a large number of remote devices. If there are multiple cameras present that share the same PIN, the flash units will be under the sole control of the camera that connects first, preventing all other cameras from connecting (the LEDs on the WR-R10 units connected to the affected cameras will blink).

5 : Establish a wireless connection.
Set the remote flash units to radio AWL remote mode and set the devices to the channel you selected in Step 3, then pair each of the remote units with the WR-R10 according to the option selected in Step 4:

- **Pairing**: Initiate pairing on the remote unit and press the WR-R10 pairing button. Pairing is complete when the **LINK** lamps on the WR-R10 and flash unit flash orange and green; once a connection is established, the **LINK** lamp on the remote flash unit will light green.
- **PIN**: Use the controls on the remote flash unit to enter the PIN you selected in Step 4. The **LINK** lamp on the remote unit will light green once a connection is established.

6 : Confirm that the flash-ready lights for all flash units are lit.
In radio AWL, the flash-ready indicator will light in the camera viewfinder or flash information display when all flash units are ready.

Listing Remote Flash Units
To view the flash units currently controlled using radio AWL, select **Flash control** > **Radio remote flash info** in the photo shooting menu. The identifier ("remote flash name") for each unit can be changed using flash unit controls.

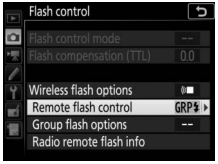


Reconnecting

As long as the channel, link mode, and other settings remain the same, the WR-R10 will automatically connect to previously paired flash units when you select remote mode and Steps 3–5 can be omitted. The flash unit **LINK** lamp lights green when a connection is established.

Adjusting Flash Settings

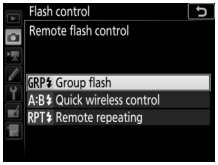
After selecting **Radio AWL** for **Flash control** > **Wireless flash options** in the photo shooting menu, select **Group flash**, **Quick wireless control**, or **Remote repeating** for **Remote flash control** and adjust settings as described below.



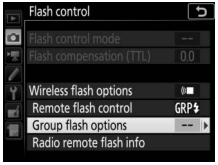
■ *Group Flash*

Select this option to adjust settings separately for each group.

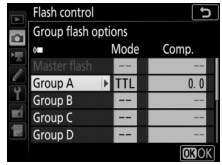
1 : Select Group flash for Flash control > Remote flash control in the photo shooting menu.



2 : Select Group flash options. Highlight **Group flash options** in the flash control display and press ▶.



3 : Choose the flash control mode.



Choose the flash control mode and flash level for the master flash and the flash units in each group:

- **TTL**: i-TTL flash control.
- **A**: Auto aperture (available only with compatible flash units).
- **M**: Choose the flash level manually.
- **– – (off)**: The units do not fire and the flash level cannot be adjusted.

4 : Group the remote flash units.

Choose a group (A–F) for each of the remote flash units. The master flash can control up to 18 flash units in any combination.

5 / : Compose the shot.

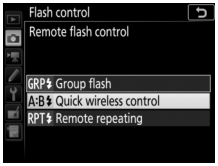
Compose the shot and arrange the flash units. See the documentation provided with the flash units for more information. After arranging the units, press the **i** button in the flash info display (📖 243) and select **Test flash** to test fire the units and confirm that they are functioning normally.

6 : Frame the photograph, focus, and shoot.

■■ *Quick Wireless Control*

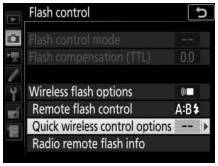
Select this option to control overall flash compensation for, and the relative balance between, groups A and B, while setting output for group C manually.

1 : Select Quick wireless control for Flash control > Remote flash control in the photo shooting menu.



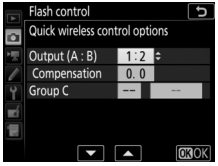
2 : Select Quick wireless control options.

Highlight **Quick wireless control options** in the flash control display and press ▶.

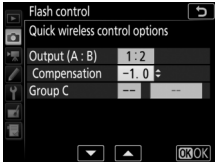


3 : Adjust flash settings.

Choose the balance between groups A and B.

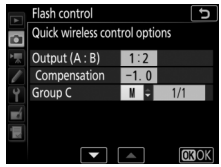


Adjust flash compensation for groups A and B.



Choose a flash control mode and flash level for the units in group C:

- **M**: Choose the flash level manually.
- **– –**: The units in group C do not fire.



4 : Group the remote flash units.

Choose a group (A, B, or C). The master flash can control up to 18 flash units in any combination.

5 / : Compose the shot.

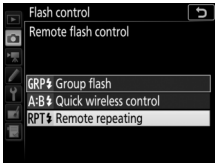
Compose the shot and arrange the flash units. See the documentation provided with the flash units for more information. After arranging the units, press the **i** button in the flash info display (🕮 243) and select **Test flash** to test fire the units and confirm that they are functioning normally.

6 : Frame the photograph, focus, and shoot.

■■ *Remote Repeating*

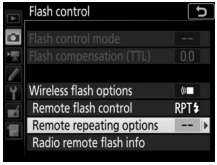
When this option is selected, the flash units fire repeatedly while the shutter is open, producing a multiple-exposure effect.

1 : Select Remote repeating for Flash control > Remote flash control in the photo shooting menu.



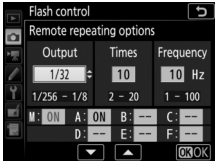
2 : Select Remote repeating options.

Highlight **Remote repeating options** in the flash control display menu and press ▶.

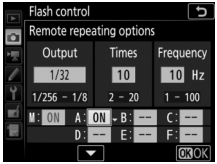


3 : Adjust flash settings.

Choose the flash level (**Output**), the maximum number of times the flash units fire (**Times**), and the number of times the flash units fire per second (**Frequency**).



Enable or disable selected groups. Select **ON** to enable the selected group, – – to disable the selected group.



4 : Group the remote flash units.
Choose a group (A–F) for each of the remote flash units. The master flash can control up to 18 flash units in any combination.

5 / : Compose the shot.
Compose the shot and arrange the flash units. See the documentation provided with the flash units for more information. After arranging the units, press the **i** button in the flash info display (🕮 243) and select **Test flash** to test fire the units and confirm that they are functioning normally.

6 : Frame the photograph, focus, and shoot.

Adding a Shoe-Mounted Flash Unit

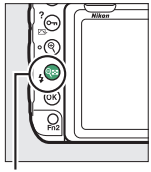


Radio-controlled flash units can be combined with any of the following flash units mounted on the camera accessory shoe:

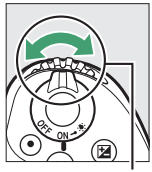
- **SB-5000**: Before attaching the flash unit, set it to radio-controlled master flash mode (a icon will appear at the top left corner of the display) and choose group or remote repeating flash control. Once the unit is attached, settings can be adjusted using the controls on the flash unit or the options listed in the camera menus under **Group flash options** > **Master flash** or under "M" in the **Remote repeating options** display.
- **SB-910, SB-900, SB-800, SB-700, SB-600**: Configure the flash for stand-alone use and use the controls on the flash unit to adjust flash settings.
- **SB-500, SB-400, SB-300**: Mount the unit on the camera and adjust settings using the camera **Group flash options** > **Master flash** option.

Flash Compensation

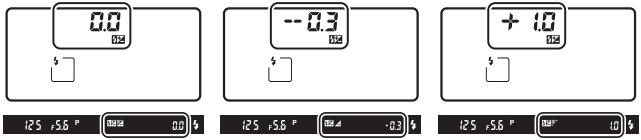
Flash compensation can be used to adjust the level of the master and remote flash units by from −3 to +1 EV in steps of ⅓ EV. To choose a value for flash compensation, press the ⊡ (ϟ) button and rotate the sub-command dial until the desired value is displayed in the control panel.



⊡ (ϟ) button



Sub-command dial



±0 EV (⊡/ϟ button pressed)

−0.3 EV

+1.0 EV

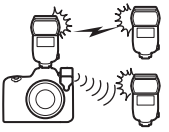
When the master flash or a remote flash is set to TTL or ⓐA and flash compensation to a value other than ±0.0, a ⚡ icon will be displayed in the control panel and viewfinder and the current value for flash compensation can be viewed by pressing ⊡ (ϟ). Normal flash output can be restored by setting flash compensation to ±0.0. Flash compensation is not reset when the camera is turned off.

See Also

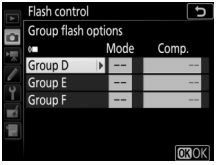
For information on:

- Choosing the size of the increments available for flash compensation, see ✎ > Custom Setting b3 (**Exp./flash comp. step value**, 🕮 115).
- Choosing whether flash compensation is applied in addition to exposure compensation when the flash is used, see ✎ > Custom Setting e3 (**Exposure comp. for flash**, 🕮 127).

Optical/Radio AWL



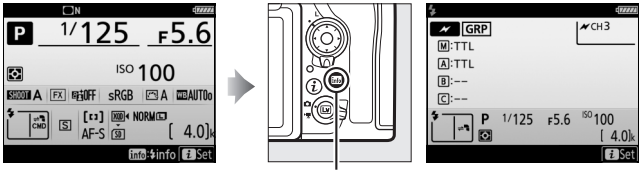
Optical and radio AWL can be used together. Radio flash control is provided by a WR-R10 connected to the camera (requires WR-A10 WR Adapter), optical control by an SU-800 flash controller or an SB-910, SB-900, SB-800, SB-700, or SB-500 flash unit mounted on the camera accessory shoe. Before proceeding, establish a wireless connection between the radio-controlled flash units and the WR-R10. If an SB-500 is mounted on the camera accessory shoe, select **Optical/radio AWL** for **Flash control** > **Wireless flash options** in the photo shooting menu (🕮 42); with other flash units or the SU-800, this option is selected automatically.



The only option available for **Remote flash control** (🕮 43) will be **Group flash**. Choose a group (A–F) for each of the remote flash units. Place optically-controlled flash units in groups A through C and radio-controlled units in groups D through F (to display options for groups D through F, press ◓ or ◒ in the group flash options display).

Viewing Flash Info

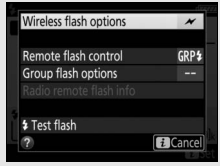
The camera can display flash info for SB-5000 and SB-500 flash units mounted on the camera accessory shoe and configured as a master flash for optical AWL, as well as for remote flash units controlled via radio AWL using a WR-R10. To view flash info during viewfinder photography, press the **info** button to display shooting information and then press the **info** button again. The information displayed varies with the flash control mode.



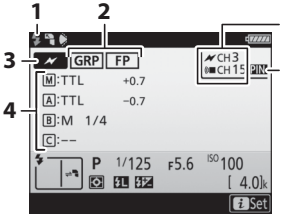
info *button*

Changing Flash Settings

Flash settings can be changed by pressing the **i** button in the flash info display. The options available vary with the flash unit and the settings selected. You can also test-fire the flash.

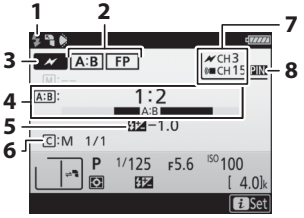


■■ *Group Flash*



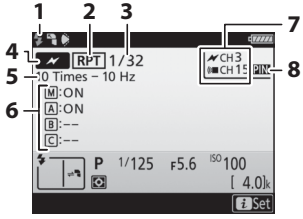
1	Flash-ready indicator [1]
2	Remote flash control ..... 43 FP indicator 126
3	Remote flash control mode [2] 222, 234
4	Group flash control mode [3] ..... 42 Group flash mode ..... 222, 234 Flash level (output)/ flash compensation 222, 234
5	Channel [2] 222, 230
6	Link mode 180

■■ *Quick Wireless Control*



1	Flash-ready indicator [1]
2	Remote flash control ..... 43 FP indicator 126
3	Remote flash control mode [2] 42
4	A : B ratio 224, 236
5	Flash compensation 224, 236
6	Group C flash control mode and flash level (output) ... 224, 236
7	Channel [2] 224, 230
8	Link mode 180

■■ *Remote Repeating*



1	Flash-ready indicator [1]
2	Remote flash control 43
3	Flash level (output) 227, 238
4	Remote flash control mode [2] 42
5	Number emitted (times) ... 227, 238 Frequency 227, 238
6	Group status (enabled/disabled) 227, 238
7	Channel [2] 227, 230
8	Link mode 180

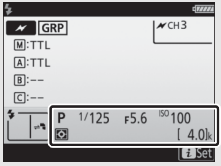
1 Displayed in radio AWL when all flash units are ready.

2 Optical AWL is indicated by ⚡, radio AWL by ((■, joint optical and radio AWL by ⚡ and ((■. Optical AWL channel for joint optical and radio AWL is displayed only when SB-500 is used as master flash.

3 Icons are displayed for each group when joint optical and radio AWL is used.

Flash Info and Camera Settings

The flash information display shows selected camera settings, including exposure mode, shutter speed, aperture, and ISO sensitivity.



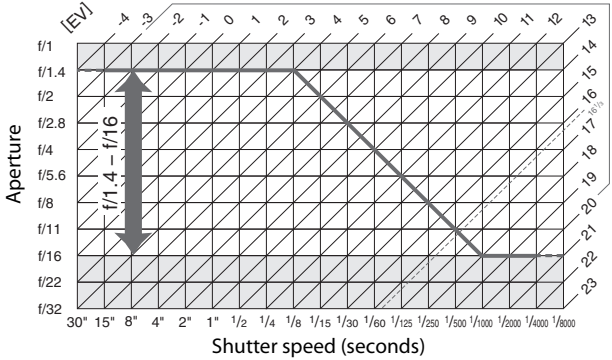
Technical Notes

Read this chapter for information on the camera exposure program, on connecting to other devices, and on compatible accessories.

Exposure Program

The exposure program for programmed auto 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-S NIKKOR 50mm f/1.4G)



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 16 ⅓ EV are reduced to 16 ⅓ EV.

Installing ViewNX-i

To fine-tune photos and upload and view pictures, download the latest version of the ViewNX-i installer from the following website and follow the on-screen instructions to complete installation. An Internet connection is required. For system requirements and other information, see the Nikon website for your region.
http://downloadcenter.nikonimglib.com/

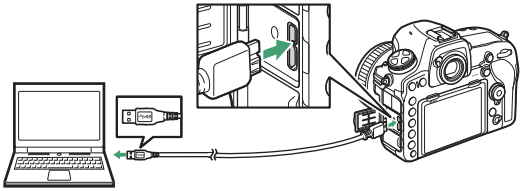
Capture NX-D
Use Nikon's Capture NX-D software to fine-tune photos or to change settings for NEF (RAW) pictures and save them in other formats. Capture NX-D is available for download from:
http://downloadcenter.nikonimglib.com/

Copying Pictures to the Computer

Before proceeding, be sure you have installed ViewNX-i (🕮 247).

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.



USB Hubs

Connect the camera directly to the computer; do not connect the cable via a USB hub or keyboard.

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.

2 Start Nikon Transfer 2 component of ViewNX-i.

If a message is displayed prompting you to choose a program, select Nikon Transfer 2.

During Transfer

Do not turn the camera off or disconnect the USB cable while transfer is in progress.

Windows 7

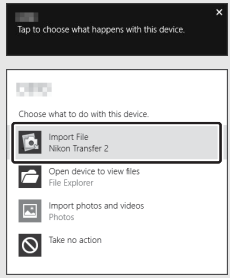
If the following dialog is displayed, select Nikon Transfer 2 as described below.



1. Under **Import pictures and videos**, click **Change program**. A program selection dialog will be displayed; select Nikon Transfer 2 and click **OK**.
2. Double-click .

Windows 10 and Windows 8.1

Windows 10 and Windows 8.1 may display an AutoPlay prompt when the camera is connected. Tap or click the dialog and then tap or click **Nikon Transfer 2** to select Nikon Transfer 2.

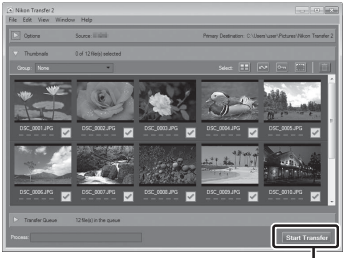


macOS/OS X

If Nikon Transfer 2 does not start automatically, confirm that the camera is connected and then launch Image Capture (an application that comes with macOS or OS X) and select Nikon Transfer 2 as the application that opens when the camera is detected.

3 Click **Start Transfer.**

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.

For More Information

Consult online help for more information on using ViewNX-i.

Ethernet and Wireless Networks

When connected to the camera via the supplied USB cable, the optional WT-7 wireless transmitter (🕮 261) can be used for connection to computers or ftp servers over wireless or Ethernet networks.

■■ *Mode Selection*

The following modes are available when the camera is connected to a network using an optional WT-7 wireless transmitter:

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 smart device.

For information on using optional wireless transmitters, refer to the manuals provided with the device. Be sure to update all related software to the latest versions.

During Transfer

Features unavailable during transfer (either while images are being transferred via Ethernet or wireless networks or while images remain to be sent) include:

- Movie recording and playback
- **Silent live view photography** > **On (Mode 2)** in the photo shooting menu (🕮 81)

Movies

Movies can be uploaded in transfer mode if the camera is connected to an Ethernet or a wireless network and **Auto send** or **Send folder** is not selected for **Network** > **Options**.

HTTP Server Mode

Features unavailable in http server mode include:

- On-camera movie recording and playback
- **Silent live view photography** > **On (Mode 2)** in the photo shooting menu (🕮 81)

Send Folder

If the folder selected for **Network** > **Options** > **Send folder** in the setup menu contains more than 1000 files, only the first 1000 (starting from the lowest file number) will be uploaded to the destination.

Wireless Transmitters

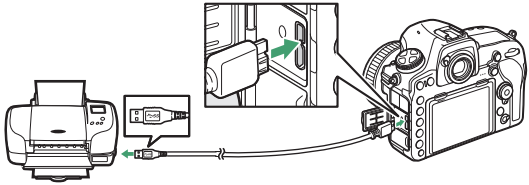
The principal differences between the WT-7 and WT-7A/B/C are in the number of channels supported; unless otherwise stated, all references to the WT-7 also apply to the WT-7A/B/C.

Printing Photographs

Selected JPEG images can be printed on a PictBridge printer 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.

Selecting Photographs for Printing

Images created at image quality settings of NEF (RAW) or TIFF (RGB) (🕮 46) cannot be selected for printing. JPEG copies of NEF (RAW) images can be created using the **NEF (RAW) processing** option in the retouch menu (🕮 197).

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** (🕮 56).

See Also

See the *User's Manual* for information on what to do if an error occurs during printing.

1 Display the desired picture.
Press ◀ or ▶ to view additional pictures. Press the 🔍 button to zoom in on the current frame (press ▶ to exit zoom). To view six pictures at a time, press the 🔍 (⚡) button. Use the multi selector to highlight pictures, or press the 🔍 button to display the highlighted picture full frame. To view images in other locations, press 🔍 (⚡) when thumbnails are displayed and select the desired card and folder.

2 Adjust printing options.
Press OK 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 OK 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.
Print date	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 OK. To crop the current picture, highlight **Crop** and press ▶. A crop selection dialog will be displayed; press 🔍 to increase the size of the crop, 🔍 (⚡) 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 ⊛.

■■ *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 ▶.

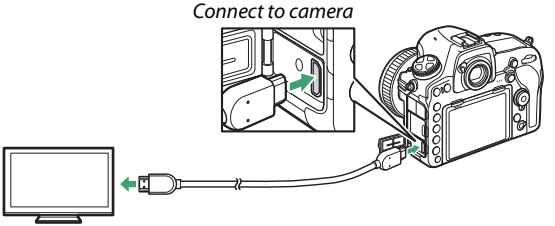
- **Print select**: Select pictures for printing. Use the multi selector to highlight pictures (to view images in other locations, press ⊖ (🖂/ϟ) and select the desired card and folder; to display the current picture full screen, press and hold the ⊕ button) and, keeping the ⊶ (🖂/**?**) button pressed, press ▲ or ▼ to choose the number of prints (maximum 99). To deselect a picture, set the number of prints to zero.
- **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 of "Printing Pictures One at a Time" (🕮 254).

4 Start printing.
Select **Start printing** and press ⊛ to start printing. To cancel before all copies have been printed, press ⊛.

Viewing Photographs on TV

The optional **H**igh-**D**efinition **M**ultimedia **I**nterface (HDMI) cable (🕮 264) 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.



Connect to high-definition device (choose cable with connector for HDMI device)

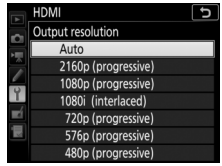
Tune the device to the HDMI channel, then turn the camera on and press the ▶ button. During playback, images will be displayed on the television screen. Volume can be adjusted using television controls; the camera controls cannot be used.

■■ *HDMI Options*

The **HDMI** option in the setup menu (🕮 178) controls output resolution and other advanced HDMI options.

Output Resolution

Choose the format for images output to the HDMI device. If **Auto** is selected, the camera will automatically select the appropriate format.



External Recording Control

Enabling external recording control allows camera controls to be used to start and stop recording when the camera is connected via HDMI to a third-party recorder that supports the Atomos Open Protocol (the Atomos SHOGUN, NINJA2, or NINJA BLADE). An icon will be displayed in the camera monitor: ⊕STBY is displayed in movie live view, while ⊕REC is displayed during movie recording (note camera controls cannot be used for movie recording when 3840 × 2160 or 1920 × 1080 slow-mo is selected for frame size; use the controls on the recorder). During recording, check the recorder and recorder display to ensure that footage is being saved to the device. Note that depending on the recorder, you may need to adjust recorder settings; for more information, see the manual provided with the recorder.

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: • **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. • **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. Note that regardless of the option selected, shooting information is not displayed at movie frame sizes of 1920 × 1080 (slow-mo) or 3840 × 2160 (🕮 84).
Dual monitor	Choose **On** to mirror the HDMI display on the camera monitor, **Off** to turn the camera monitor off to save power (note that regardless of the option selected, the camera monitor remains on at movie frame sizes of 1920 × 1080 slow-mo or 3840 × 2160; 🕮 84). **Dual monitor** turns on automatically when **Live view on-screen display** is **Off**.

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** (🕮 258).

Slide Shows
The **Slide show** option in the playback menu can be used for automated playback (🕮 29).

Dual Monitor
Regardless of the option chosen for **Dual monitor**, images will not be displayed in the camera monitor if **On (Mode 2)** is selected for **Silent live view photography** in the photo shooting menu (🕮 81).

Using Third-Party Recording Devices
The following settings are recommended when using third-party recorders:
- **HDMI** > **Advanced** > **Output display size**: **100%**
- **HDMI** > **Advanced** > **Live view on-screen display**: **Off**

Other Accessories

At the time of writing, the following accessories were available for the D850.

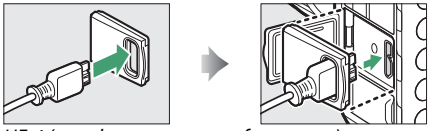
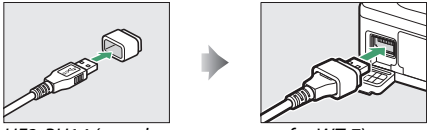
Power sources

- **EN-EL15a Rechargeable Li-ion Battery** (🕮 189): Additional EN-EL15a batteries are available from local retailers and Nikon service representatives. EN-EL15 batteries can also be used.
- **MH-25a Battery Charger**: The MH-25a can be used to recharge EN-EL15a batteries. MH-25 battery chargers can also be used.
- **MB-D18 Multi-Power Battery Pack** (🕮 149, 187, 188): The MB-D18 is equipped with a shutter-release button, **Fn** button, **AF-ON** button, multi selector, and main- and sub-command dials for improved operation when taking photographs in portrait (tall) orientation. When attaching the MB-D18, remove the camera MB-D18 contact cover. A BL-5 battery-chamber cover and an MH-26a or MH-26 battery charger are required when using EN-EL18b batteries. EN-EL18a and EN-EL18 batteries can also be used. The maximum frame advance rate varies with the battery type; the figures below are the average maximum frame rates available with continuous-servo AF, manual or shutter-priority auto exposure, a shutter speed of 1/250 s or faster, and other settings at default values.

Battery type	Release mode	
	CH	CL
EN-EL15a/AA	7 fps	1– 6 fps
EN-EL18b	9 fps	1–8 fps

The number of pictures that can be taken in a single burst also varies with the power source; for more information, see “Buffer Capacity” (🕮 269).

Power sources	• **EP-5B Power Connector, EH-5c and EH-5b AC Adapters**: These accessories can be used to power the camera for extended periods. The EP-5B is required to connect the camera to the EH-5c/EH-5b; see "Attaching a Power Connector and AC Adapter" (🕮 271) for details. Note that when the camera is used with an MB-D18, the EP-5B must be inserted into the MB-D18, not the camera. Do not attempt to use the camera with power connectors inserted into both the camera and MB-D18.
Filters	• Filters intended for special-effects photography may interfere with autofocus or the electronic rangefinder. • The D850 cannot be used with linear polarizing filters. Use the C-PL or C-PLII circular polarizing filter instead. • Neutral Color (NC) filters are recommended for protecting the lens. • 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. • 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.
Wireless transmitters (🕮 251)	• **WT-7 Wireless Transmitter**: Use the WT-7 to upload pictures over a wireless network, to control the camera from a computer running Camera Control Pro 2 (available separately), or to take and browse pictures remotely from a computer or smart device. **Note**: A wireless network and some basic network knowledge is required when using a wireless transmitter. Be sure to update the wireless transmitter software to the latest version.

Wireless transmitters (🕮 251)	• **USB Cable Gaskets and Connector Covers**: Use a UF-4 connector cover for USB cables and UF3-RU14 USB cable gasket to help prevent accidental disconnections. Before connecting the cable, attach the UF-4 at the camera end and the UF3-RU14 at the end that connects to the wireless transmitter.  *UF-4 (attaches to connector for camera)*  *UF3-RU14 (attaches to connector for WT-7)*

Wireless remote controllers (📖 180, 181)	• **WR-R10 Wireless Remote Controller/WR-T10 Wireless Remote Controller**: When a WR-R10 wireless remote controller is attached to ten-pin remote terminal using a WR-A10 adapter, the camera can be controlled wirelessly using a WR-T10 wireless remote controller. The WR-R10 can also be used to control radio-controlled flash units. • **WR-1 Wireless Remote Controller**: WR-1 units are used with WR-R10 or WR-T10 wireless remote controllers or with other WR-1 remote controllers, with the WR-1 units functioning as either transmitters or receivers. For example, a WR-1 can be attached to the ten-pin remote terminal and used as a receiver, allowing the shutter to be released remotely by another WR-1 acting as a transmitter. A WR-A10 WR adapter is required when using the WR-R10. **Note**: Be sure the firmware for the WR-R10 and WR-1 has been updated to the latest version. For information on firmware updates, see the Nikon website for your area.
Viewfinder eyepiece accessories	• **DK-19 Rubber Eyecup**: The DK-19 makes the image in the viewfinder easier to see, preventing eye fatigue. • **DK-17C Diopter-Adjustment Viewfinder Lens**: To accommodate individual differences in vision, viewfinder lenses are available with diopters of –3, –2, 0, +1, and +2 m^{-1}. Use diopter adjustment lenses only if the desired focus cannot be achieved with the built-in diopter adjustment control (–3 to +1 m^{-1}). Test diopter adjustment lenses before purchase to ensure that the desired focus can be achieved. • **DK-17M Magnifying Eyepiece**: The DK-17M magnifies the view through the viewfinder by approximately 1.2 × for greater precision when framing. • **DG-2 Eyepiece Magnifier**: The DG-2 magnifies the scene at the center of the viewfinder for more accurate focus. DK-18 eyepiece adapter (available separately) required.

Viewfinder eyepiece accessories	• **DK-18 Eyepiece Adapter**: The DK-18 is used when attaching the DG-2 magnifier or DR-3 right-angle viewing attachment to the D850. • **DK-14 Antifog Finder Eyepiece/DK-17A Antifog Finder Eyepiece**: These viewfinder eyepieces prevent fogging in humid or cold conditions. • **DK-17F Fluorine-Coated Finder Eyepiece**: The protective glass features an easy-to-clean fluorine coating on both surfaces. • **DR-5 Right-Angle Viewing Attachment/DR-4 Right-Angle Viewing Attachment**: The DR-5 and DR-4 attach to the viewfinder eyepiece at a right angle, allowing the image in the viewfinder to be viewed from above when the camera is in the horizontal shooting position. The DR-5 supports diopter adjustment and can also magnify the view through the viewfinder by 2 × for greater precision when framing (note that the edges of the frame will not be visible when the view is magnified).
HDMI cables (🕮 256)	**HC-E1 HDMI Cable**: An HDMI cable with a type C connector for connection to the camera and a type A connector for connection to HDMI devices.
Software	**Camera Control Pro 2**: Control the camera remotely from a computer and save photographs directly to the computer hard disk. When Camera Control Pro 2 is used to capture photographs directly to the computer, a PC connection indicator (**PC**) will appear in the control panel. **Note**: Use the latest versions of Nikon software; see the Nikon website for your region 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.

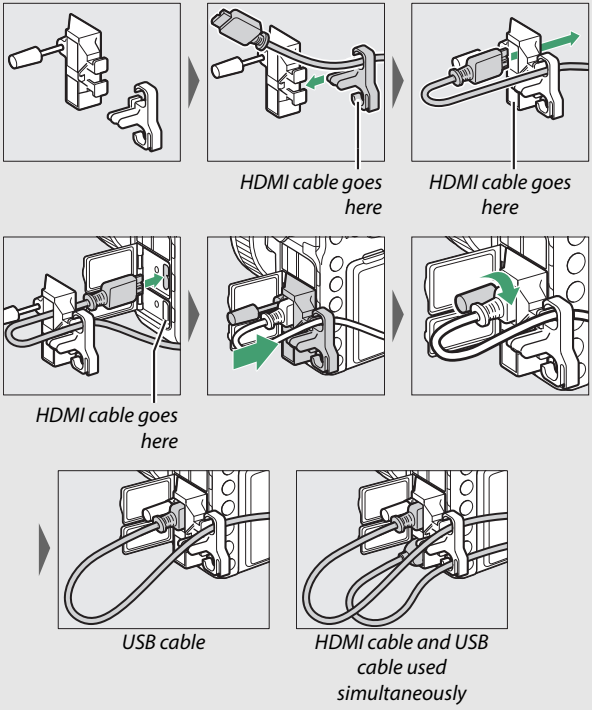
Body caps	**BF-1B Body Cap/BF-1A Body Cap**: The body cap keeps the mirror, viewfinder screen, and image sensor free of dust when a lens is not in place.
Remote terminal accessories	The D850 is equipped with a ten-pin remote terminal for remote control and automatic photography. The terminal is provided with a cap, which protects the contacts when the terminal is not in use. The following accessories can be used (all lengths are approximate): • **MC-22 Remote Cord/MC-22A Remote Cord**: Remote shutter release with blue, yellow, and black terminals for connection to a remote shutter-triggering device, allowing control via sound or electronic signals (length 1 m/3 ft 4 in.). • **MC-30 Remote Cord/MC-30A Remote Cord**: Remote shutter release; can be used to reduce camera shake (length 80 cm/2 ft 8 in.). • **MC-36 Remote Cord/MC-36A Remote Cord**: Remote shutter release; can be used for interval timer photography or to reduce camera shake or keep the shutter open during a time exposure (length 85 cm/2 ft 10 in.). • **MC-21 Extension Cord/MC-21A Extension Cord**: Can be connected to ML-3 or MC-series 20, 22, 22A, 23, 23A, 25, 25A, 30, 30A, 36, or 36A. Only one MC-21 or MC-21A can be used at a time (length 3 m/9 ft 11 in.). • **MC-23 Connecting Cord/MC-23A Connecting Cord**: Connects two cameras with ten-pin remote terminals for simultaneous operation (length 40 cm/1 ft 4 in.). • **MC-25 Adapter Cord /MC-25A Adapter Cord**: Ten-pin to two-pin adapter cord for connection to devices with two-pin terminals, including the MW-2 radio control set, MT-2 intervalometer, and ML-2 modulite control set (length 20 cm/8 in.).

Remote terminal accessories	• **WR-A10 WR Adapter**: An adapter used to connect WR-R10 wireless remote controllers to cameras with ten-pin remote terminals. • **GP-1 GPS Unit/GP-1A GPS Unit** (🕮 179): Record latitude, longitude, altitude, and UTC time with pictures. • **ML-3 Modulite Remote Control Set**: Allows infrared remote control at ranges of up to 8 m (26 ft 3 in.).
Microphones	• **ME-1 Stereo Microphone**: Connect the ME-1 to the camera microphone jack to record stereo sound and reduce the chance of picking up equipment noise (such as the sounds produced by the lens during autofocusing). • **ME-W1 Wireless Microphone**: Use this wireless Bluetooth microphone for off-camera recording.
Accessory shoe covers	**BS-3 Accessory Shoe Cover/BS-1 Accessory Shoe Cover**: A cover protecting the accessory shoe. The accessory shoe is used for optional flash units.

Availability may vary with country or region. See our website or brochures for the latest information.

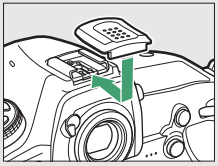
The HDMI/USB Cable Clip

To prevent accidental disconnection, attach the supplied clip to HDMI cables or to the supplied USB cable as shown (the illustration shows the USB cable; note that the clip may not fit all third-party HDMI cables). Keep the monitor in the storage position when using the cable clip.

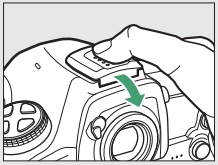


Attaching and Removing the Accessory Shoe Cover

The accessory shoe cover (available separately) slides into the accessory shoe as shown.

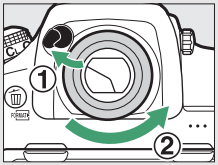


To remove the cover, hold the camera firmly, press the cover down with a thumb and slide it in the direction shown.



Attaching and Removing the Supplied Eyepiece

After closing the eyepiece shutter and releasing the latch (①), lightly grasp the supplied DK-17F eyepiece in two fingers and rotate and remove as shown (②). To reattach, rotate the eyepiece in the opposite direction. Optional eyepieces can be attached and removed in the same fashion.



Buffer Capacity

Substituting an EN-EL18b battery inserted in an optional MB-D18 multi-power battery pack for an EN-EL15a changes the buffer capacity. The following table shows the maximum number of exposures that can be stored in the buffer in release mode **CH** at an ISO sensitivity of ISO 100 when a 64 GB Sony QD-G64E XQD card is inserted; actual capacity varies with the card type and shooting conditions (for example, buffer capacity may drop at image qualities marked with "★" or if auto distortion control is on).

■■ *FX (36×24) Image Area*[*]

Image quality	Image size	Power source	
		EN-EL15a	EN-EL18b
NEF (RAW), Lossless compressed, 12-bit	Large	170	54
	Medium	94	40
	Small	56	35
NEF (RAW), Lossless compressed, 14-bit	Large	51	29
NEF (RAW), Compressed, 12-bit	Large	200	56
NEF (RAW), Compressed, 14-bit	Large	74	31
NEF (RAW), Uncompressed, 12-bit	Large	55	39
NEF (RAW), Uncompressed, 14-bit	Large	29	24
TIFF (RGB)	Large	32	29
	Medium	35	28
	Small	39	31
JPEG fine	Large	200	79
	Medium	200	86
	Small	200	56
JPEG normal	Large	200	86
	Medium	200	92
	Small	200	57

Image quality	Image size	Power source	
		EN-EL15a	EN-EL18b
JPEG basic	Large	200	108
	Medium	200	102
	Small	200	59

* Includes images taken with non-DX lenses when **On** is selected for **Auto DX crop**.

■■ *DX (24 × 16) Image Area**

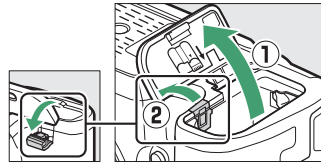
Image quality	Image size	Power source	
		EN-EL15a	EN-EL18b
NEF (RAW), Lossless compressed, 12-bit	Large	200	91
	Medium	200	56
	Small	200	54
NEF (RAW), Lossless compressed, 14-bit	Large	200	45
NEF (RAW), Compressed, 12-bit	Large	200	102
NEF (RAW), Compressed, 14-bit	Large	200	48
NEF (RAW), Uncompressed, 12-bit	Large	200	72
NEF (RAW), Uncompressed, 14-bit	Large	200	43
TIFF (RGB)	Large	113	54
	Medium	200	71
	Small	200	73
JPEG fine	Large	200	138
	Medium	200	152
	Small	200	135
JPEG normal	Large	200	165
	Medium	200	158
	Small	200	143
JPEG basic	Large	200	176
	Medium	200	166
	Small	200	145

* Includes images taken with DX lenses when **On** is selected for **Auto DX crop**.

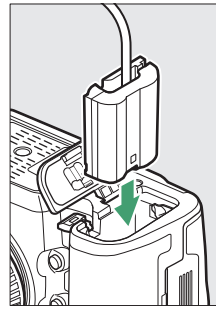
Attaching a Power Connector and AC Adapter

Turn the camera off before attaching an optional power connector and AC adapter.

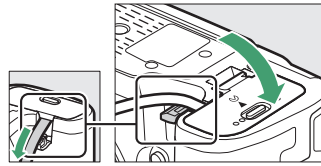
1 **Ready the camera.**
Open the battery-chamber (①) and power connector (②) covers.



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.

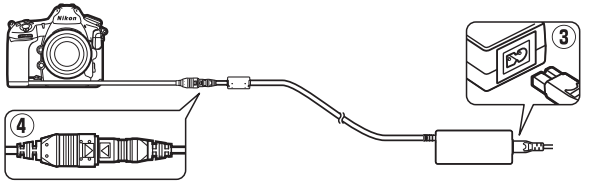


3 **Close the battery-chamber cover.**
Position the power connector cable so that it passes through the power connector slot and close the battery-chamber cover.



4 Connect the EH-5c/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.



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