

# ***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        | Off                                          |
| 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)            |                  |
| Fine-tuning                    | A-B: 0, G-M: 0   |
| Choose color temp.             | 5000 K           |
| Preset manual                  | d-1              |
| Set Picture Control ( 86)      |                  |
| 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 ⚡ 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                     | <b>Exposure compensation:</b> <input type="checkbox"/><br><b>Shutter speed/aperture:</b> <input type="checkbox"/> |
|        | Change main/sub                      | <b>Exposure setting:</b> Off<br><b>Autofocus setting:</b> 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)           |                                                                                                                   |
| f8     | Live view button options (📖 148)     | Enable                                                                                                            |
| f9     | 🌞 switch (📖 148)                     | LCD backlight (🌞)                                                                                                 |
| f10    | Assign MB-D18 buttons (📖 149)        |                                                                                                                   |
|        | Fn button                            | AE lock (Reset on release)                                                                                        |
|        | Fn button +                          | None                                                                                                              |
|        | AF-ON button                         | Same as camera AF-ON button                                                                                       |
|        | Multi selector                       | Same as camera multi selector                                                                                     |
|        | Photo info/playback                  | Info /Playback                                                                                                    |

| 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           |

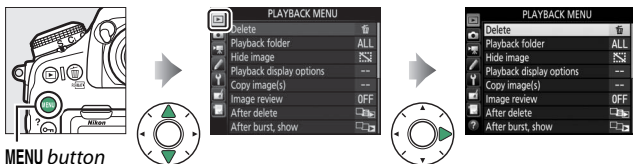
## ■ ■ Setup Menu Defaults

| 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                          |  |
|---------------------------------|-----------------------------------------------------------------------------------|
| <b>Delete</b>                   | 20                                                                                |
| <b>Playback folder</b>          | 20                                                                                |
| <b>Hide image</b>               | 21                                                                                |
| <b>Playback display options</b> | 22                                                                                |
| <b>Copy image(s)</b>            | 23                                                                                |
| <b>Image review</b>             | 27                                                                                |

| Option                                |  |
|---------------------------------------|-----------------------------------------------------------------------------------|
| <b>After delete</b>                   | 27                                                                                |
| <b>After burst, show</b>              | 28                                                                                |
| <b>Auto image rotation</b>            | 28                                                                                |
| <b>Rotate tall</b>                    | 29                                                                                |
| <b>Slide show</b>                     | 29                                                                                |
| <b>Select to send to smart device</b> | 31                                                                                |

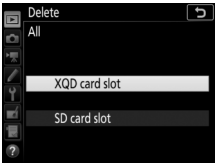
### **See Also**

For menu defaults, see “Playback Menu Defaults” ( 9).

## Delete

MENU button →  playback menu

Delete multiple images.

| Option                                                                                            | Description                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Selected</b> | Delete selected pictures.                                                                                                                                                                                                                    |
| <b>ALL All</b>                                                                                    | 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                                                                                                                                                                          |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>(Folder name)</b> | Pictures in all folders created with the D850 will be visible during playback. Folders can be renamed using the <b>Storage folder &gt; Rename</b> option in the photo shooting menu. |
| <b>All</b>           | Pictures in all folders will be visible during playback.                                                                                                                             |
| <b>Current</b>       | 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 .

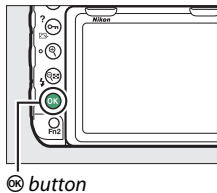


## 2 Select pictures.

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 **OK**.  
Press **OK** to complete the operation.



## 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 **OK**.

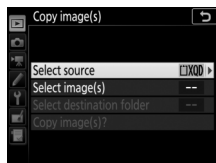
## Copy Image(s)

MENU button →  playback menu

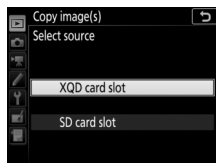
Copy pictures from one memory card to another. This option is only available when two memory cards are inserted in the camera.

| 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. |

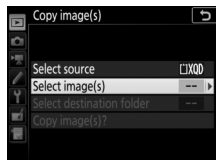
- 1 Choose Select source.**  
Highlight **Select source** and press .



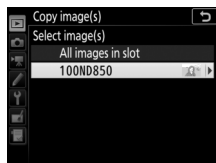
- 2 Select the source card.**  
Highlight the slot for the card containing the images to be copied and press .



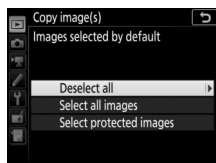
- 
- 3 Choose Select image(s).**  
Highlight **Select image(s)** and press .



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



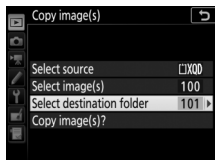
- 
- 5 Make the initial selection.**  
Before going on to select or deselect individual images, you can mark all or all protected images in the folder for copying by choosing **Select all images** or **Select protected images**. To mark only individually selected images for copying, choose **Deselect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



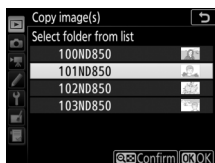
- 7 Choose Select destination folder.**  
Highlight **Select destination folder** and press **OK**.



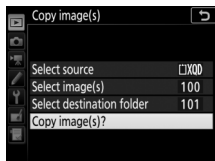
- 8 Select a destination folder.**  
To enter a folder number, choose **Select folder by number**, enter the number (book 36), and press **OK**. If the folder with the selected number does not already exist, a new folder will be created.



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.

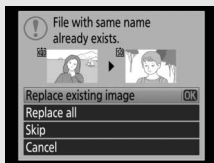


## ✓ Copying Images

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

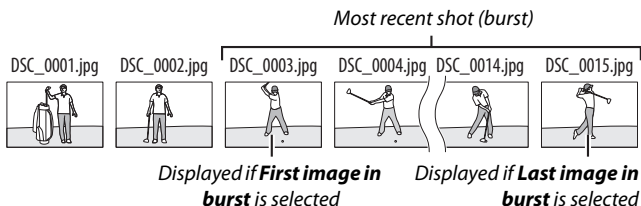
Choose the picture displayed after an image is deleted.

| Option                                                                                                      | Description                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Show next</b>          | Display following picture. If deleted picture was last frame, previous picture will be displayed.                                                                                                                                                                     |
|  <b>Show previous</b>      | Display previous picture. If deleted picture was first frame, following picture will be displayed.                                                                                                                                                                    |
|  <b>Continue as before</b> | If user was scrolling through pictures in order recorded, following picture will be displayed as described for <b>Show next</b> . If user was scrolling through pictures in reverse order, previous picture will be displayed as described for <b>Show previous</b> . |

## 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 NX Studio. 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.

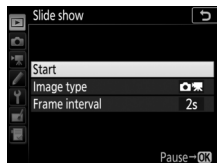
## Slide Show

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                                                                                                              |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Start</b>          | Start slide show.                                                                                                        |
| <b>Image type</b>     | Choose type of image displayed from <b>Still images and movies</b> , <b>Still images only</b> , and <b>Movies only</b> . |
| <b>Frame interval</b> | 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                                                                                            |
|-----------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Skip back/skip ahead</b>       | Press <b>Left Arrow</b> to return to previous frame, <b>Right Arrow</b> to skip to next frame.         |
| <b>View additional photo info</b> | Press <b>Up Arrow</b> or <b>Down Arrow</b> to change or hide photo info displayed (still images only). |
| <b>Pause</b>                      | Press <b>OK</b> to pause the slide show. To restart, highlight <b>Restart</b> and press <b>OK</b> .    |
| <b>Adjust volume</b>              | Press <b>Volume Up</b> during movie playback to increase volume, <b>Volume Down</b> to decrease.       |
| <b>Exit to playback menu</b>      | Press <b>MENU</b> to end the slide show and return to the playback menu.                               |
| <b>Exit to playback mode</b>      | Press <b>Play/Pause</b> to end the slide show and exit to playback mode.                               |
| <b>Exit to shooting mode</b>      | 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.

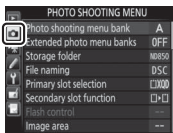
| Option                 | Description                                   |
|------------------------|-----------------------------------------------|
| <b>Select image(s)</b> | Mark pictures for upload to the smart device. |
| <b>Deselect all</b>    | Remove the upload markings from all pictures. |

## The Photo Shooting Menu: *Shooting Options*

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



**MENU button**



| Option                           |  |
|----------------------------------|-----------------------------------------------------------------------------------|
| <b>Photo shooting menu bank</b>  | 33                                                                                |
| <b>Extended photo menu banks</b> | 35                                                                                |
| <b>Storage folder</b>            | 35                                                                                |
| <b>File naming</b>               | 38                                                                                |
| <b>Primary slot selection</b>    | 39                                                                                |
| <b>Secondary slot function</b>   | 39                                                                                |
| <b>Flash control</b>             | 40                                                                                |
| <b>Image area</b>                | 45                                                                                |
| <b>Image quality</b>             | 46                                                                                |
| <b>Image size</b>                | 47                                                                                |
| <b>NEF (RAW) recording</b>       | 48                                                                                |
| <b>ISO sensitivity settings</b>  | 49                                                                                |
| <b>White balance</b>             | 50                                                                                |
| <b>Set Picture Control</b>       | 52                                                                                |

| Option                              |  |
|-------------------------------------|-----------------------------------------------------------------------------------|
| <b>Manage Picture Control</b>       | 53                                                                                |
| <b>Color space</b>                  | 56                                                                                |
| <b>Active D-Lighting</b>            | 56                                                                                |
| <b>Long exposure NR</b>             | 57                                                                                |
| <b>High ISO NR</b>                  | 57                                                                                |
| <b>Vignette control</b>             | 58                                                                                |
| <b>Auto distortion control</b>      | 59                                                                                |
| <b>Flicker reduction</b>            | 60                                                                                |
| <b>Auto bracketing set</b>          | 61                                                                                |
| <b>Multiple exposure</b>            | 62                                                                                |
| <b>HDR (high dynamic range)</b>     | 69                                                                                |
| <b>Interval timer shooting</b>      | 70                                                                                |
| <b>Focus shift shooting</b>         | 80                                                                                |
| <b>Silent live view photography</b> | 81                                                                                |

### See Also

For menu defaults, see “Photo Shooting Menu Defaults” ( 9).

## Photo Shooting Menu Bank

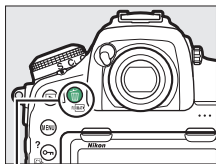
MENU button →  photo shooting menu

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.

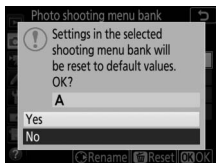
The default names for the four photo shooting menu banks are A, B, C, and D. A descriptive caption up to 20 characters long can be added as described in “Text Entry” (📖 38) by highlighting the menu bank and pressing .

## ■ 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  to restore default settings for the selected bank. Default settings are listed in “Photo Shooting Menu Defaults” (□ 9).

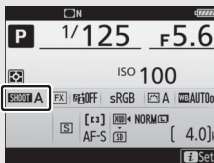
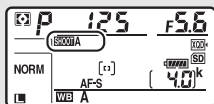


 (FORMAT) button



### 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

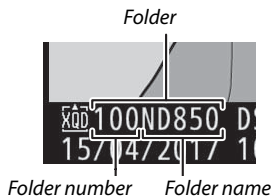
MENU button →  photo shooting menu

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 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  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 (book 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” (book 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 . To exit without completing text entry, press MENU.



### 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

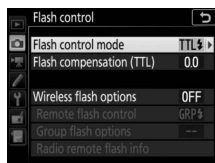
Choose the role played by the primary and secondary cards when two memory cards are inserted in the camera.

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

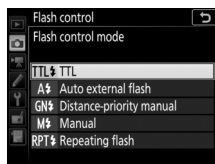
MENU button →  photo shooting menu

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.

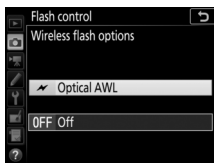


- **TTL:** i-TTL mode. In the cases of the SB-500, SB-400, and SB-300, flash compensation can be adjusted using the  button.
- **Auto external flash:** In this mode, output is adjusted automatically according to the amount of light reflected by the subject; flash compensation is also available. Auto 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.



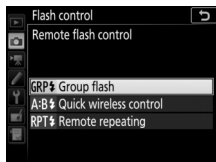
| Option                                                                                                          | Description                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Optical AWL</b>            | 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.                                                                                               |
|  <b>Optical/<br/>radio AWL</b> | 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. <b>Remote flash control</b> is automatically set to <b>Group flash</b> (□ 43). |
|  <b>Radio AWL</b>              | 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.                                                                                            |
| <b>Off</b>                                                                                                      | 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

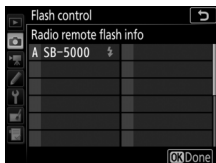
Choose from the following remote flash photography options.



| Option                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Group flash            | Choose a separate flash control mode and flash level for each group of remote flash units. If <b>Optical AWL</b> or <b>Optical/radio AWL</b> is selected for <b>Wireless flash options</b> (□ 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 <b>Quick wireless control options</b> 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 <b>Optical AWL</b> or <b>Optical/radio AWL</b> is selected for <b>Wireless flash options</b> (□ 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 ( <b>Output</b> ), the maximum number of times the flash units fire ( <b>Times</b> ), the number of times the units fire per second ( <b>Frequency</b> ), and, if <b>Optical AWL</b> or <b>Optical/radio AWL</b> is selected for <b>Wireless flash options</b> (□ 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 <b>Output</b> and <b>Frequency</b> ; see the documentation provided with the flash unit for details. |

## ■ ■ *Radio Remote Flash Info*

View the flash units currently controlled using radio AWL.



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

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

| Option                                                             | File type    | Description                                                                                                                                           |
|--------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>NEF (RAW)</b>                                                   | NEF          | RAW data from the image sensor are saved without additional processing. Settings such as white balance and contrast can be adjusted after shooting.   |
| <b>NEF (RAW)+<br/>JPEG fine★/<br/>NEF (RAW)+<br/>JPEG fine</b>     | NEF/<br>JPEG | Two images are recorded, one NEF (RAW) image and one fine-quality JPEG image.                                                                         |
| <b>NEF (RAW)+<br/>JPEG normal★/<br/>NEF (RAW)+<br/>JPEG normal</b> |              | Two images are recorded, one NEF (RAW) image and one normal-quality JPEG image.                                                                       |
| <b>NEF (RAW)+<br/>JPEG basic★/<br/>NEF (RAW)+<br/>JPEG basic</b>   |              | Two images are recorded, one NEF (RAW) image and one basic-quality JPEG image.                                                                        |
| <b>JPEG fine★/<br/>JPEG fine</b>                                   | JPEG         | Record JPEG images at a compression ratio of roughly 1 : 4 (fine quality).                                                                            |
| <b>JPEG normal★/<br/>JPEG normal</b>                               |              | Record JPEG images at a compression ratio of roughly 1 : 8 (normal quality).                                                                          |
| <b>JPEG basic★/<br/>JPEG basic</b>                                 |              | Record JPEG images at a compression ratio of roughly 1 : 16 (basic quality).                                                                          |
| <b>TIFF (RGB)</b>                                                  | 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.)*    |
|----------------------------------|---------------|---------------|-------------------------|
| <b>FX (36×24;<br/>FX format)</b> | <b>Large</b>  | 8256 × 5504   | 69.9 × 46.6/27.5 × 18.3 |
|                                  | <b>Medium</b> | 6192 × 4128   | 52.4 × 35.0/20.6 × 13.8 |
|                                  | <b>Small</b>  | 4128 × 2752   | 35.0 × 23.3/13.8 × 9.2  |
| <b>1.2× (30×20)</b>              | <b>Large</b>  | 6880 × 4584   | 58.3 × 38.8/22.9 × 15.3 |
|                                  | <b>Medium</b> | 5152 × 3432   | 43.6 × 29.1/17.2 × 11.4 |
|                                  | <b>Small</b>  | 3440 × 2288   | 29.1 × 19.4/11.5 × 7.6  |
| <b>DX (24×16;<br/>DX format)</b> | <b>Large</b>  | 5408 × 3600   | 45.8 × 30.5/18.0 × 12.0 |
|                                  | <b>Medium</b> | 4048 × 2696   | 34.3 × 22.8/13.5 × 9.0  |
|                                  | <b>Small</b>  | 2704 × 1800   | 22.9 × 15.2/9.0 × 6.0   |
| <b>5 : 4 (30×24)</b>             | <b>Large</b>  | 6880 × 5504   | 58.3 × 46.6/22.9 × 18.3 |
|                                  | <b>Medium</b> | 5152 × 4120   | 43.6 × 34.9/17.2 × 13.7 |
|                                  | <b>Small</b>  | 3440 × 2752   | 29.1 × 23.3/11.5 × 9.2  |
| <b>1 : 1 (24×24)</b>             | <b>Large</b>  | 5504 × 5504   | 46.6 × 46.6/18.3 × 18.3 |
|                                  | <b>Medium</b> | 4128 × 4128   | 35.0 × 35.0/13.8 × 13.8 |
|                                  | <b>Small</b>  | 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 dots per inch (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 <b>On</b> is selected, the camera will automatically adjust ISO sensitivity when optimal exposure cannot be achieved at the value selected for <b>ISO sensitivity</b> . 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 <b>P</b> and <b>A</b> (the minimum shutter speed; choose from values between $\frac{1}{4000}$ s and 30 s). The maximum ISO sensitivity for photos taken using an optional flash unit can be selected using <b>Maximum sensitivity with </b> . |

## White Balance

MENU button →  photo shooting menu

Match white balance to the light source.

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

| Option                                                                                                      | Description                                                                       |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  <b>Shade</b>              | Use in daylight with subjects in the shade.                                       |
|  <b>Choose color temp.</b> | Choose color temperature from list of values.                                     |
| <b>PRE Preset manual</b>                                                                                    | 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                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>A Auto</b>        | The camera automatically adjusts hues and tones based on the <b>Standard</b> 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 <b>Standard</b> Picture Control. |
|  <b>SD Standard</b>   | Standard processing for balanced results. Recommended for most situations.                                                                                                                                                                                                                    |
|  <b>NL Neutral</b>    | Minimal processing for natural results. Choose for photographs that will later be processed or retouched.                                                                                                                                                                                     |
|  <b>VI Vivid</b>      | Pictures are enhanced for a vivid, photoprint effect. Choose for photographs that emphasize primary colors.                                                                                                                                                                                   |
|  <b>MC Monochrome</b> | Take monochrome photographs.                                                                                                                                                                                                                                                                  |
|  <b>PT Portrait</b>   | Process portraits for skin with natural texture and a rounded feel.                                                                                                                                                                                                                           |
|  <b>LS Landscape</b>  | Produces vibrant landscapes and cityscapes.                                                                                                                                                                                                                                                   |
|  <b>FL Flat</b>      | 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.

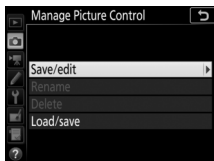
| Option           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Save/edit</b> | Create a new custom Picture Control based on an existing preset or custom Picture Control, or edit existing custom Picture Controls (📖 54).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Rename</b>    | Rename a selected Picture Control.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Delete</b>    | Delete a selected Picture Control.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Load/save</b> | <p>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.</p> <ul style="list-style-type: none"><li>• <b>Copy to camera:</b> 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.</li><li>• <b>Delete from card:</b> Delete selected custom Picture Controls from the memory card.</li><li>• <b>Copy to card:</b> Copy a custom Picture Control (C-1 through C-9) from the camera to a selected destination (1 through 99) on the memory card.</li></ul> |

## ■ Creating Custom Picture Controls

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

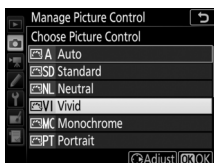
### 1 Select Save/edit.

Highlight **Save/edit** and press .



### 2 Select a Picture Control.

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



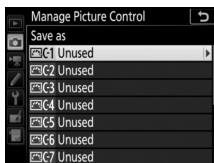
### 3 Edit the selected Picture Control.

To abandon any changes and start over from default settings, press the  () button. Press  when settings are complete.



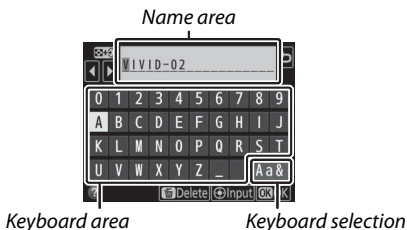
### 4 Select a destination.

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.

Original  
Picture Control icon



## 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

The selected color space may be overwritten when pictures are opened in third-party software. NX Studio can open pictures in the color space selected on the camera.

## Active D-Lighting

MENU button →  photo shooting menu

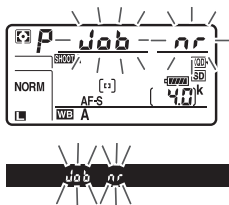
Preserve details in highlights and shadows, creating photographs with natural contrast.

| Option                             | Description                                                                          |
|------------------------------------|--------------------------------------------------------------------------------------|
| Auto                               | The camera automatically adjusts Active D-Lighting according to shooting conditions. |
| Extra high/<br>High/Normal/<br>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, “**Long Exposure Noise Reduction**” 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/<br>Normal/<br>Low | Reduce noise (randomly-spaced bright pixels), particularly in pictures taken at high ISO sensitivities. Choose the amount of noise reduction performed from <b>High</b> , <b>Normal</b> , and <b>Low</b> . |
| Off                     | Noise reduction is performed only as required and never at an amount as high as when <b>Low</b> 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).

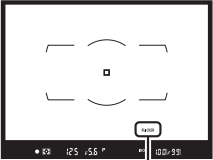
### Retouch: Distortion Control

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Flicker reduction setting</b>   | When <b>Enable</b> 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.                                                                                                                                                                                                                                                                                                                                        |
| <b>Flicker reduction indicator</b> | <div>When <b>On</b> is selected, a <b>FLICKER</b> icon will be displayed in the viewfinder if flicker is detected when the shutter-release button is pressed halfway. If flicker is detected when <b>Disable</b> is selected for <b>Flicker reduction setting</b>, the icon will flash; to enable flicker reduction, select <b>Enable</b> for <b>Flicker reduction setting</b>.</div> <div></div> <div><b>FLICKER icon</b></div> |

### **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  $\frac{1}{100}$  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** (☀️) 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Multiple exposure mode</b>      | <ul style="list-style-type: none"> <li>• <b>ON</b>  <b>On (series)</b>: Take a series of multiple exposures. Select <b>Off</b> to resume normal shooting.</li> <li>• <b>On (single photo)</b>: Take one multiple exposure.</li> <li>• <b>Off</b>: Exit without creating additional multiple exposures.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Number of shots</b>             | Choose the number of exposures that will be combined to form a single photograph.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Overlay mode</b>                | <ul style="list-style-type: none"> <li>• <b>Add</b>: The exposures are overlaid without modification; gain is not adjusted.</li> <li>• <b>Average</b>: 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 <math>\frac{1}{2}</math> for 2 exposures, <math>\frac{1}{3}</math> for 3 exposures, etc).</li> <li>• <b>Lighten</b>: The camera compares the pixels in each exposure and uses only the brightest.</li> </ul> <div style="text-align: center;">  </div> <ul style="list-style-type: none"> <li>• <b>Darken</b>: The camera compares the pixels in each exposure and uses only the darkest.</li> </ul> <div style="text-align: center;">  </div> |
| <b>Keep all exposures</b>          | <ul style="list-style-type: none"> <li>• <b>On</b>: Save the individual shots that make up each multiple exposure.</li> <li>• <b>Off</b>: Discard the individual shots and save only the multiple exposure.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Select first exposure (NEF)</b> | Choose the first exposure from the NEF (RAW) images on the memory card.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## ■ Creating a Multiple Exposure

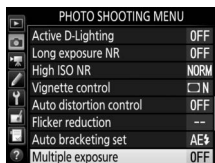
Multiple exposures cannot be recorded in live view. Exit live view before proceeding.

### 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).

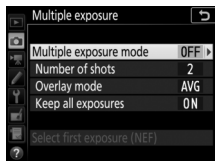
## 1 Select Multiple exposure.

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

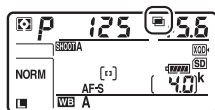


## 2 Select a mode.

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

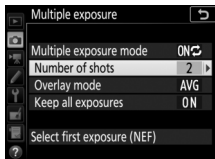


If **On (series)** or **On (single photo)** is selected, a icon will be displayed in the control panel.



**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 .



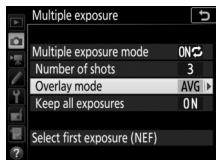
#### The BKT Button

If **Multiple exposure** is selected for Custom Setting f1 (**Custom control assignment**) > **BKT button** +  (p. 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  for **Off**,  for **On (single photo)**, and  for **On (series)**.



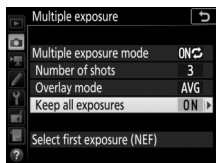
## 4 Choose the overlay mode.

Highlight **Overlay mode** and press , then press  or  to choose the desired mode and press  to select.



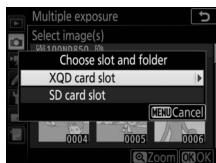
## 5 Choose whether to keep individual exposures.

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  to select.



## 6 Choose the first exposure.

To choose the first exposure from existing photos taken with **Large** selected for **Image size > NEF (RAW)** in the photo shooting menu, highlight **Select first exposure (NEF)** and press . Use the multi selector to highlight the desired image and press  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  button.



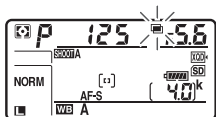
## 7 Frame a photograph, focus, and shoot.

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)**

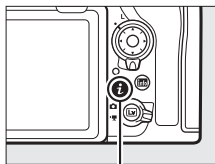
is selected, multiple exposure shooting ends automatically when the multiple exposure is complete. The  icon clears from the display when multiple exposure shooting ends.



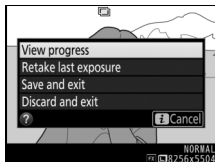
## ■ ■ Using the *i* Button

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.

- **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.

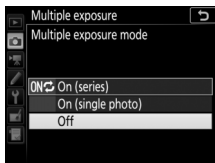


*i* button



## ■ ■ 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  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              | <ul style="list-style-type: none"><li>• <b>ON</b>  <b>On (series)</b>: Take a series of HDR photographs. Select <b>Off</b> to resume normal shooting.</li><li>• <b>On (single photo)</b>: Take one HDR photograph.</li><li>• <b>Off</b>: Exit without taking additional HDR photographs.</li></ul> |
| 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 <b>Auto</b> 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 ( <b>Now</b> selected for <b>Choose start day/time</b> ) or at a selected date and time ( <b>Choose day/time</b> ). 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 <b>Now</b> . To start shooting at a chosen date and time, select <b>Choose day/time</b> .                                                                                                                                                                                                                                                     |
| Interval                     | Choose the interval (hours, minutes, and seconds) between shots.                                                                                                                                                                                                                                                                                                                                           |
| Intervals×shots/<br>interval | Choose the number of intervals and the number of shots per interval.                                                                                                                                                                                                                                                                                                                                       |
| Exposure<br>smoothing        | Selecting <b>On</b> allows the camera to adjust exposure to match previous shot in exposure modes other than <b>M</b> (note that exposure smoothing only takes effect in mode <b>M</b> 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<br>photography        | Select <b>On</b> to silence the shutter during shooting.                                                                                                                                                                                                                                                                                                                                                   |

| Option                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Interval priority</b>       | <p>Choose whether the camera gives priority to exposure time or interval timing in exposure modes <b>P</b> and <b>A</b>. Select <b>On</b> to ensure photos are taken at the chosen interval, <b>Off</b> to ensure that photos are correctly exposed. If <b>On</b> is selected, be sure the <b>Minimum shutter speed</b> chosen for <b>ISO sensitivity settings</b> (☞ 49) &gt; <b>Auto ISO sensitivity control</b> in the photo shooting menu is faster than the interval. You should also focus using manual focus or, if you are using autofocus, choose <b>Release</b> for Custom Setting a1 (<b>AF-C priority selection</b>, ☞ 105) or Custom Setting a2 (<b>AF-S priority selection</b>, ☞ 106) according to whether <b>AF-C</b> or <b>AF-S</b> is selected.</p> |
| <b>Starting storage folder</b> | <p>Highlight either of the following options and press  to select or deselect:</p> <ul style="list-style-type: none"> <li>• <b>New folder:</b> A new folder is created for each new sequence.</li> <li>• <b>Reset file numbering:</b> File numbering is reset to 0001 whenever a new folder is created.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                   |

## Interval Timer Photography

### ✓ Before Shooting

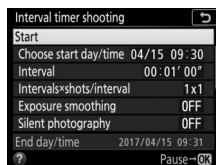
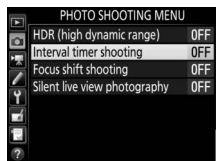
Before beginning interval timer photography, take a test shot at current settings and view the results in the monitor. Once settings have been adjusted to your satisfaction, close the viewfinder eyepiece shutter to prevent light entering via the viewfinder interfering with photographs and exposure.

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).

We recommend using a tripod and disabling lens vibration reduction (VR). 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.

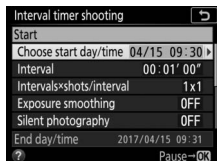
Highlight **Interval timer shooting** in the photo shooting menu and press  to display interval timer settings.



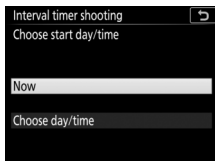
## 2 Adjust interval timer settings.

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:



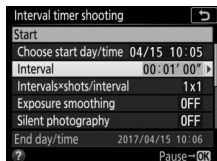
Highlight **Choose start day/time** and press **OK**.



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:

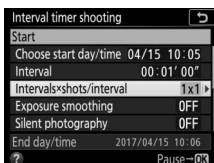


Highlight **Interval** and press **OK**.

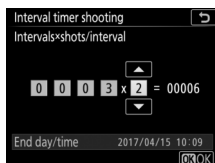


Choose an interval (hours, minutes, and seconds) and press **OK**.

- To choose the number of shots per interval:



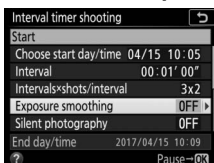
Highlight **Intervalsxshots/interval** and press  $\odot$ .



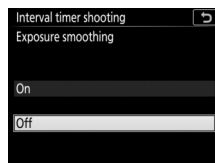
Choose the number of intervals and the number of shots per interval and press  $\odot$ .

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**;  $\square$  120).

- To enable or disable exposure smoothing:

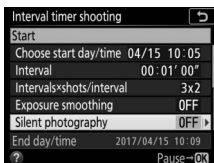


Highlight **Exposure smoothing** and press  $\odot$ .

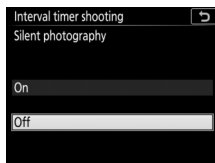


Highlight an option and press  $\odot$ .

- To enable or disable silent photography:



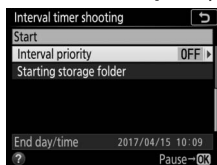
Highlight **Silent photography** and press  $\odot$ .



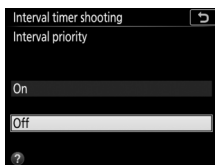
Highlight an option and press  $\odot$ .

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. Autofocus cannot be used.

- To choose an interval priority option:



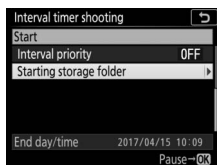
Highlight **Interval priority** and press .



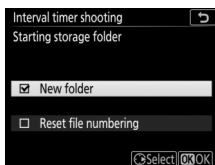
Highlight an option and press .

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:



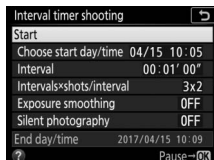
Highlight **Starting storage folder** and press .



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

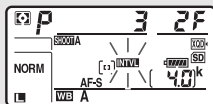
### 3 Start shooting.

Highlight **Start** and press  $\odot$ . 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

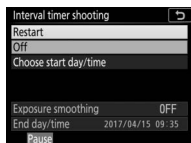
Regardless of the release mode selected, the camera will take the specified number of shots at each interval.

## ■ Pausing Interval Timer Photography

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

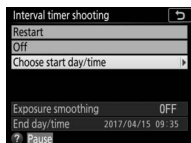
## ■ Resuming Interval Timer Shooting

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

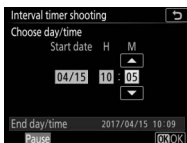


Highlight **Restart** and press **OK**.

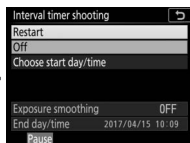
To resume shooting at a specified time:



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



Choose a starting date and time and press **OK**.



Highlight **Restart** and press **OK**.

## ■ 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), 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  $\frac{1}{4}$  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:

- Autofocus
- ISO sensitivities of Hi 0.3 through Hi 2 (□ 49)
- Flash photography (□ 219)
- Exposure delay mode (□ 121)
- Flicker reduction (□ 60)
- Bracketing (□ 61)
- Multiple exposure (□ 62)

## 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 can later be copied to a computer and combined using third-party focus-stacking software.

| Option                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Start</b>                    | Start shooting. Shooting will take the selected number of shots, changing the focus distance by the selected amount with each shot.                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>No. of shots</b>             | Choose the number of shots (maximum 300).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Focus step width</b>         | Choose the amount the focus distance changes with each shot.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Interval until next shot</b> | Choose the interval between shots. When the interval is set to <b>00</b> , the frame advance rate will change depending on the option selected for silent photography. If <b>Off</b> is selected, the camera takes photos at up to 5 fps. If <b>On</b> is selected, the camera takes photos at approximately 1 fps. The frame advance rate may also vary with shooting conditions, camera settings, lens, etc. Also, to ensure the correct exposure when using a flash, choose an interval long enough for the flash to charge. |
| <b>Exposure smoothing</b>       | Selecting <b>On</b> allows the camera to adjust exposure to match previous shot in exposure modes other than <b>M</b> (note that exposure smoothing only takes effect in mode <b>M</b> 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.                                                                                                                      |
| <b>Silent photography</b>       | Select <b>On</b> to silence the shutter during shooting.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Starting storage folder</b>  | Highlight either of the following options and press  to select or deselect: <ul style="list-style-type: none"> <li>• <b>New folder:</b> A new folder is created for each new sequence.</li> <li>• <b>Reset file numbering:</b> File numbering is reset to 0001 whenever a new folder is created.</li> </ul>                                                                                                                                  |

## Silent Live View Photography

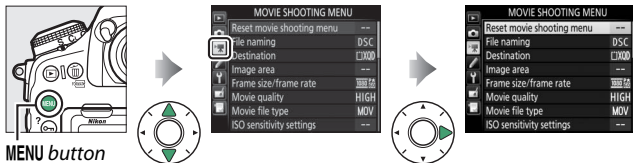
MENU button →  photo shooting menu

Eliminate shutter sounds during live view photography.

| Option             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>On (Mode 1)</b> | 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 <b>CH</b> is approximately 6 fps. ISO sensitivity (□ 49) can be set to values of from Lo 1 to 25600.                                                                                                                                                                                                                                                                                                              |
| <b>On (Mode 2)</b> | Photographs can be taken at a higher rate than when <b>On (Mode 1)</b> is selected. In release modes <b>S</b> , <b>Q</b> ,  , and <b>MUP</b> , 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 ( <b>CL</b> and <b>QC</b> ) or 30 fps ( <b>CH</b> ) for a maximum of 3 seconds. Image area is fixed at <b>DX (24×16)</b> , image size at 3600 × 2400, and image quality at <b>JPEG normal★</b> . |
| <b>Off</b>         | 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                    |    |
|---------------------------|----|
| Reset movie shooting menu | 83 |
| File naming               | 83 |
| Destination               | 83 |
| Image area                | 83 |
| Frame size/frame rate     | 84 |
| Movie quality             | 85 |
| Movie file type           | 85 |
| ISO sensitivity settings  | 85 |
| White balance             | 86 |
| Set Picture Control       | 86 |

| Option                 |    |
|------------------------|----|
| Manage Picture Control | 86 |
| Active D-Lighting      | 86 |
| High ISO NR            | 87 |
| Flicker reduction      | 87 |
| Microphone sensitivity | 88 |
| Attenuator             | 88 |
| Frequency response     | 89 |
| Wind noise reduction   | 89 |
| Electronic VR          | 89 |
| 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

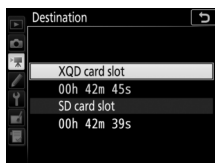
MENU button →  movie shooting menu

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

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

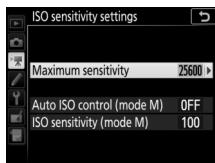
Choose the file format for movies from MOV and MP4.

## 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.



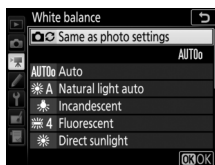
### Auto ISO Sensitivity Control

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

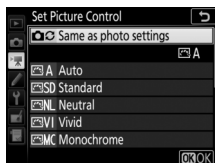
Choose the white balance for movies (📖 50). Select **Same as photo settings** to use the option currently selected for photos.



## 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.

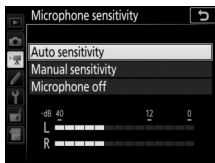
### ✓ Flicker Reduction in the Movie Shooting Menu

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:  $\frac{1}{125}$  s,  $\frac{1}{60}$  s, or  $\frac{1}{30}$  s for 60 Hz;  $\frac{1}{100}$  s,  $\frac{1}{50}$  s, or  $\frac{1}{25}$  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 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  **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                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Start</b>                 | Start time-lapse recording. Shooting starts after about 3 s and continues at the selected interval for the selected shooting time.                                                                                                                                                                                                                                                |
| <b>Interval</b>              | Choose the interval between shots in minutes and seconds.                                                                                                                                                                                                                                                                                                                         |
| <b>Shooting time</b>         | Choose the shooting time (hours and minutes).                                                                                                                                                                                                                                                                                                                                     |
| <b>Exposure smoothing</b>    | Selecting <b>On</b> smooths abrupt changes in exposure in exposure modes other than <b>M</b> (note that exposure smoothing only takes effect in mode <b>M</b> 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. |
| <b>Silent photography</b>    | Select <b>On</b> to silence the shutter during shooting.                                                                                                                                                                                                                                                                                                                          |
| <b>Image area</b>            | Choose an image area for time-lapse recording. The options are those for the <b>Image area</b> item in the movie shooting menu (□ 83).                                                                                                                                                                                                                                            |
| <b>Frame size/frame rate</b> | Choose the frame size and rate for the final movie. The options are those for the <b>Frame size/frame rate</b> item in the movie shooting menu (□ 84).                                                                                                                                                                                                                            |

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

## ■ Recording Time-Lapse Movies

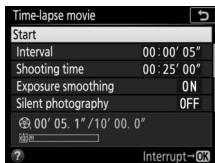
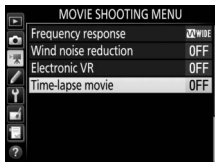
### Before Shooting

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  button in the **Time-lapse movie** display (to return to the **Time-lapse movie** display, press the  button again). For consistent coloration, choose a white balance setting ( 86) other than **AUTO** (auto) or  **A** (natural light auto).

We recommend using a tripod and disabling lens vibration reduction (VR). 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.

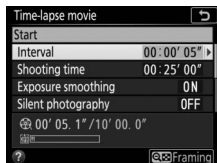
Highlight **Time-lapse movie** in the movie shooting menu and press  to display time-lapse movie settings.



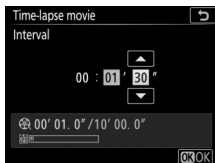
## 2 Adjust time-lapse movie settings.

Adjust time-lapse movie settings as described below.

- To choose the interval between frames:

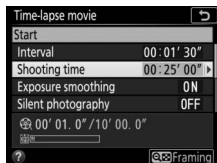


Highlight **Interval** and press

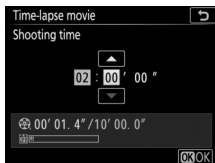


Choose an interval longer than the slowest anticipated shutter speed (minutes and seconds) and press .

- To choose the total shooting time:

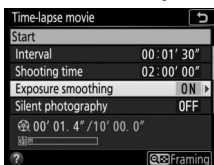


Highlight **Shooting time** and press .

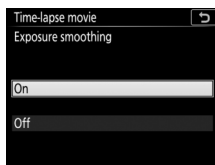


Choose shooting time (up to 7 hours 59 minutes) and press .

- To enable or disable exposure smoothing:

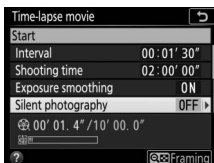


Highlight **Exposure smoothing** and press .

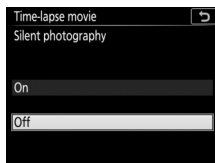


Highlight an option and press .

- To enable or disable silent photography:



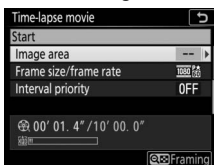
Highlight **Silent photography** and press .



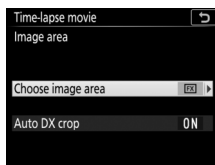
Highlight an option and press .

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:

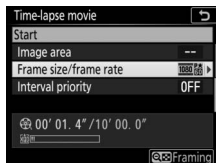


Highlight **Image area** and press .

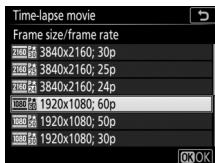


Highlight an option and press .

- To choose the frame size and rate:

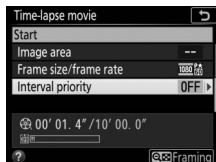


Highlight **Frame size/**  
**frame rate** and press .

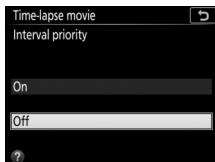


Highlight an option and  
press .

- To choose an interval priority option:



Highlight **Interval priority** and  
press .

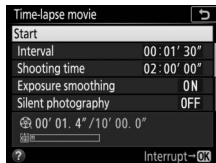


Highlight an option and  
press .

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

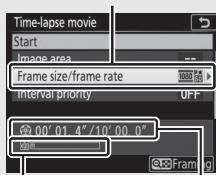
Selecting **On** for **Silent photography** disables some camera features, including:

- 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.

*Frame size/frame rate*



*Memory card indicator*

*Length recorded/  
maximum length*

## ■ ■ 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.



### Adjusting Settings Between Shots

Shooting and menu settings can be adjusted between shots. Note, however, that the monitor will turn off approximately 2 s before the next shot is taken.

### Image Review

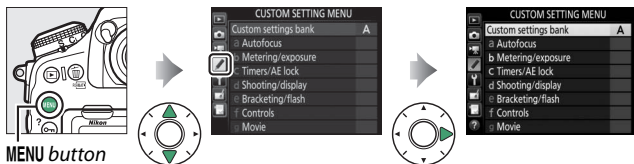
The  button cannot be used to view pictures while shooting is in progress, but the current frame will be displayed for a few seconds after each shot if **On** is selected for **Image review** in the playback menu ( 27). Other playback operations cannot be performed while the frame is displayed.

### See Also

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

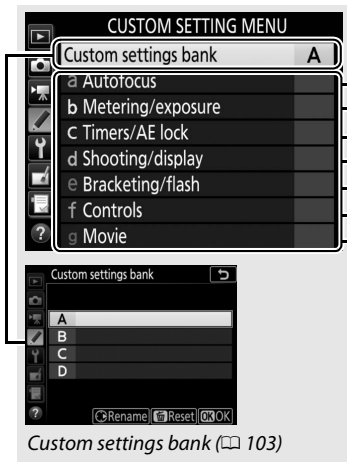
## Custom Settings: Fine-Tuning Camera Settings

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



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

Main menu



Custom settings bank (103)

Custom Setting groups



The following Custom Settings are available:

| Custom Setting              |                                           |  |
|-----------------------------|-------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Custom settings bank</b> |                                           | 103                                                                               |
| <b>a</b>                    | <b>Autofocus</b>                          |                                                                                   |
| 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 <sup>1</sup> | 114                                                                               |
| <b>b</b>                    | <b>Metering/exposure</b>                  |                                                                                   |
| 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            |                                                                                                                |  |
|---------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>c Timers/AE lock</b>   |                                                                                                                |                                                                                 |
| c1                        | Shutter-release button AE-L                                                                                    | 118                                                                             |
| c2                        | Standby timer                                                                                                  | 118                                                                             |
| c3                        | Self-timer                                                                                                     | 119                                                                             |
| c4                        | Monitor off delay                                                                                              | 119                                                                             |
| <b>d Shooting/display</b> |                                                                                                                |                                                                                 |
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|----------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
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1 Available only with lenses that support this item.

2 Available only with compatible AF-P lenses not equipped with a vibration reduction switch.

## Custom Settings Bank

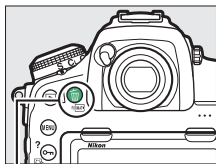
MENU button →  Custom Settings menu

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.

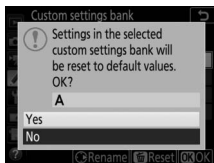
The default names for the four Custom Settings banks are A, B, C, and D. A descriptive caption up to 20 characters long can be added as described in “Text Entry” (📖 38) by highlighting the menu bank and pressing .

## ■ 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  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                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Release</b>                                                                                           | Photos can be taken whenever the shutter-release button is pressed.                                                                                                                                                                                                                                                                            |
|   <b>Focus + release</b> | 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. |
|   <b>Release + focus</b> | 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.                                                                                                                                                                                      |
|  <b>Focus</b>                                                                                             | 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*).

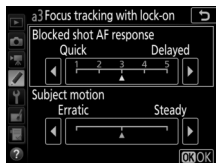
| Option                                                                                           | Description                                                            |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
|  <b>Release</b> | Photos can be taken whenever the shutter-release button is pressed.    |
|  <b>Focus</b>   | 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

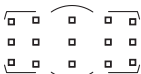
MENU button →  Custom Settings menu

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.

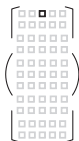
| Option         | Description                                                                                                                                               |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.

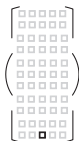
Select **Off** to use the same focus point and AF-area mode regardless of camera orientation.



Camera rotated  
90° counter-clockwise

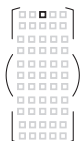


Landscape (wide)  
orientation

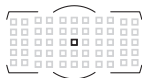


Camera rotated  
90° clockwise

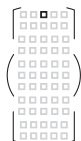
Choose **Focus point** to enable separate focus-point selection, or **Focus point and AF-area mode** to enable separate selection of both the focus point and the AF-area mode.



*Camera rotated  
90° counter-clockwise*



*Landscape (wide)  
orientation*



*Camera rotated  
90° clockwise*

## a8: AF Activation

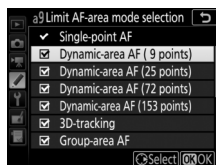
MENU button → Custom Settings menu

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

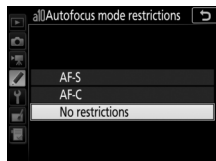
Choose the AF-area modes that can be selected using the AF-mode button and sub-command dial in viewfinder photography (live view is unaffected). Highlight the desired modes and press  to select or deselect. Press  to save changes when settings are complete.



## a10: Autofocus Mode Restrictions

MENU button →  Custom Settings menu

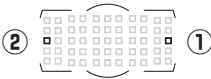
Choose the autofocus modes available in viewfinder photography. If only one mode is selected, the autofocus mode cannot be chosen using the AF-mode button and main command dial.



## 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Wrap</b>    | <p>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 (①) selects the corresponding focus point at the left edge of the display (②).</p>  |
| <b>No wrap</b> | <p>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.</p>                                                                                                                                                                                                          |

## a12: Focus Point Options

MENU button →  Custom Settings menu

Choose from the following focus point display options.

| Option                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Focus point illumination</b> | <p>Choose whether the active focus point is highlighted in red in the viewfinder.</p> <ul style="list-style-type: none"><li>• <b>Auto:</b> The selected focus point is automatically highlighted as needed to establish contrast with the background.</li><li>• <b>On:</b> 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.</li><li>• <b>Off:</b> The selected focus point is not highlighted.</li></ul> |
| <b>Manual focus mode</b>        | <p>Choose <b>On</b> to display the active focus point in manual focus mode, <b>Off</b> to display the focus point only during focus point selection.</p>                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Dynamic-area AF assist</b>   | <p>Choose <b>On</b> to display both the selected focus point and the surrounding focus points in dynamic-area AF mode.</p>                                                                                                                                                                                                                                                                                                                                                                                                                               |

## 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  $\pm 0$ .

| Option                 | Description                                                                                                                                                                                                                                                                                                                                                 |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>On (Auto reset)</b> | 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). |
| <b>On</b>              | 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.                                                                                                                                                                                                  |
| <b>Off</b>             | 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

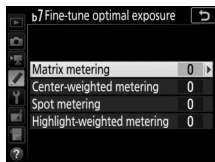
MENU button →  Custom Settings menu

Choose the size of the area given the most weight in center-weighted metering. If a non-CPU or AF-S Fisheye NIKKOR 8–15mm f/3.5–4.5E ED 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  $\frac{1}{6}$  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 (.

### 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  $\frac{1}{2000}$  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                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>On</b>    | 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. |
| <b>Off</b>   | 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.                                                                                                                                                    |
| <b>Reset</b> | As for <b>On</b> , 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

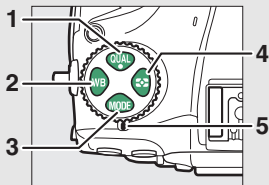
Choose **On** to display on-demand grid lines in the viewfinder for reference when composing photographs.

## d10: LCD Illumination

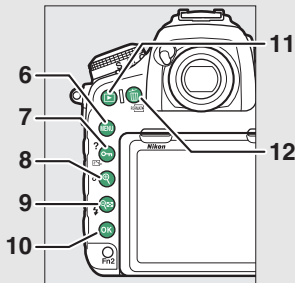
MENU button →  Custom Settings menu

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  (key/? ) button
- 8  button
- 9  (i) 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 available only with compatible AF-P lenses not equipped with a vibration reduction switch. 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<br>(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 <b>P</b> or <b>A</b> , 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 <b>P</b> and <b>A</b> ) or by the user (modes <b>S</b> and <b>M</b> ). |
| 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                                                                                       |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
|  <b>Entire frame</b>    | Both flash level and exposure compensation are adjusted to modify exposure over the entire frame. |
|  <b>Background only</b> | Exposure compensation applies to background only.                                                 |

## e4: Auto 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                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|  <b>Subject and background</b> | The camera takes both the main subject and background lighting into account when adjusting ISO sensitivity. |
|  <b>Subject only</b>           | 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                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|   <b>Flash/speed</b>          | Camera varies shutter speed ( <b>AE bracketing</b> ) or shutter speed and flash level ( <b>AE &amp; flash bracketing</b> ).                         |
|   <b>Flash/speed/aperture</b> | Camera varies shutter speed and aperture ( <b>AE bracketing</b> ) or shutter speed, aperture, and flash level ( <b>AE &amp; flash bracketing</b> ). |
|   <b>Flash/aperture</b>       | Camera varies aperture ( <b>AE bracketing</b> ) or aperture and flash level ( <b>AE &amp; flash bracketing</b> ).                                   |
|  <b>Flash only</b>                                                                                             | Camera varies flash level only ( <b>AE &amp; flash bracketing</b> ).                                                                                |

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** () , 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.

## f: Controls

### 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

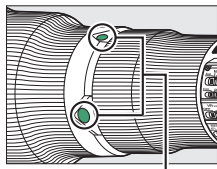
Choose the roles played by the following controls, highlight the desired option and press the center of the multi selector:



|                                                                                   |                                     |
|-----------------------------------------------------------------------------------|-------------------------------------|
|  | <b>Pv button</b>                    |
|  | <b>Fn1 button</b>                   |
|  | <b>Fn2 button</b>                   |
|  | <b>AF-ON button</b>                 |
|  | <b>Center of sub-selector</b>       |
|  | <b>Lens focus function buttons*</b> |



\* 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 |
|---------------------------------------------------------------------------------------------------------------------|----|-----|-----|-------|---|------|
|  <b>Preset focus point</b>         | ✓  | ✓   | —   | —     | ✓ | ✓    |
|  <b>AF-area mode</b>               | ✓  | ✓   | —   | ✓     | ✓ | ✓    |
|  <b>AF-area mode + AF-ON</b>       | ✓  | ✓   | —   | ✓     | ✓ | ✓    |
|  <b>Preview</b>                    | ✓  | ✓   | —   | —     | ✓ | —    |
|  <b>FV lock</b>                    | ✓  | ✓   | —   | —     | ✓ | —    |
|  <b>AE/AF lock</b>                 | ✓  | ✓   | —   | ✓     | ✓ | ✓    |
|  <b>AE lock only</b>               | ✓  | ✓   | —   | ✓     | ✓ | ✓    |
|  <b>AE lock (Reset on release)</b> | ✓  | ✓   | —   | ✓     | ✓ | —    |
|  <b>AE lock (Hold)</b>             | ✓  | ✓   | —   | ✓     | ✓ | —    |
|  <b>AF lock only</b>               | ✓  | ✓   | —   | ✓     | ✓ | ✓    |
|  <b>AF-ON</b>                      | ✓  | ✓   | —   | ✓     | ✓ | ✓    |
|  <b>ⓈDisable/enable</b>            | ✓  | ✓   | —   | —     | ✓ | ✓    |
|  <b>Bracketing burst</b>          | ✓  | ✓   | —   | —     | ✓ | —    |
|  <b>+ NEF (RAW)</b>              | ✓  | ✓   | —   | —     | ✓ | —    |

| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Preset focus point</b>   | <p>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 <b>Focus point</b> or <b>Focus point and AF-area mode</b> is selected for Custom Setting a7 (<b>Store by orientation</b>,  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.</p> |
|  <b>AF-area mode</b>         | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  <b>AF-area mode + AF-ON</b> | <p>As for <b>AF-area mode</b>, above, except that pressing the control also initiates autofocus.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|  <b>Preview</b>              | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|  <b>FV lock</b>            | <p>Press the control to lock flash value for optional flash units. Press again to cancel FV lock.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Option                                                                                                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>AE/AF lock</b>                 | Focus and exposure lock while the control is pressed.                                                                                                                                                                                                                                                                                                                                                                                                          |
|  <b>AE lock only</b>               | Exposure locks while the control is pressed.                                                                                                                                                                                                                                                                                                                                                                                                                   |
|  <b>AE lock (Reset on release)</b> | 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.                                                                                                                                                                                                                                                                                              |
|  <b>AE lock (Hold)</b>             | Exposure locks when the control is pressed, and remains locked until the control is pressed a second time or the standby timer expires.                                                                                                                                                                                                                                                                                                                        |
|  <b>AF lock only</b>               | Focus locks while the control is pressed.                                                                                                                                                                                                                                                                                                                                                                                                                      |
|  <b>AF-ON</b>                      | Pressing the control initiates autofocus.                                                                                                                                                                                                                                                                                                                                                                                                                      |
|  <b>⚡Disable/enable</b>            | 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.                                                                                                                                                                                                                                                                  |
|  <b>Bracketing burst</b>           | 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 <b>CH</b> , <b>CL</b> , or <b>QC</b> ) is selected, the camera will repeat the bracketing burst while the shutter-release button is held down. |

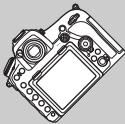
| Option                                                                                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  + NEF (RAW)                          | <p>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 <b>NEF (RAW) recording</b> and <b>Image size &gt; NEF (RAW)</b> in the photo shooting menu (☞ 47, 48). To exit without recording an NEF (RAW) copy, press the control again.</p> |
|  <b>Matrix metering</b>               | <p>Matrix metering is activated while the control is pressed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|  <b>Center-weighted metering</b>      | <p>Center-weighted metering is activated while the control is pressed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  <b>Spot metering</b>                 | <p>Spot metering is activated while the control is pressed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|  * <b>Highlight-weighted metering</b> | <p>Highlight-weighted metering is activated while the control is pressed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|  <b>Viewfinder grid display</b>       | <p>Press the control to turn the framing grid display in the viewfinder on or off.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|  <b>Viewfinder virtual horizon</b>    | <p>Press the control to view a virtual horizon display in the viewfinder (☞ 137).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Option                                                                                                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Sync. release selection</b>        | <p>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 (<b>Sync. release mode options</b>):</p> <ul style="list-style-type: none"> <li>• If <b>Sync</b> is selected, you can choose from <b>Master release only</b> (keep the control pressed to take pictures with the master camera only) and <b>Remote release only</b> (keep the control pressed to take pictures with the remote cameras only).</li> <li>• If <b>No sync</b> is selected, you can choose from <b>Synchronized release</b> (keep the control pressed to synchronize the releases on the master and remote cameras) and <b>Remote release only</b> (keep the control pressed to take pictures with the remote cameras only).</li> </ul> |
|  <b>MY MENU</b>                        | Pressing the control displays “MY MENU”.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|  <b>Access top item in MY MENU</b>     | Press the control to jump to the top item in “MY MENU.” Select this option for quick access to a frequently-used menu item.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|  <b>Playback</b>                       | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|  <b>Rating</b>                        | To rate the current picture in playback mode, keep the control pressed and press  or  .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>RESET</b> <b>Select center focus point</b>                                                                           | Press the control to select the center focus point.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|  <b>Highlight active focus point</b> | Pressing the control highlights the active focus point.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>None</b>                                                                                                             | 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                                                                |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  |  |  |
|  |  |  |

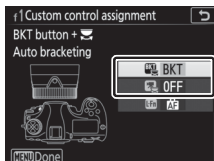
The roles of the pitch and roll indicators are reversed when the camera is rotated to take pictures in “tall” (portrait) orientation. Note that the display may not be accurate when the camera is tilted at a sharp angle forward or back. If the camera is unable to measure tilt, the amount of tilt will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



|  |                              |
|--|------------------------------|
|  | <b>Pv button</b> +           |
|  | <b>Fn1 button</b> +          |
|  | <b>Sub-selector center</b> + |



|  |                                |
|--|--------------------------------|
|  | <b>BKT button</b> +            |
|  | <b>Movie record button</b> + * |

\* 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 | Q | BKT | OK |
|----------------------------------------|----|-----|---|-----|----|
| <b>Choose image area</b>               | ✓  | ✓   | ✓ | —   | ✓  |
| <b>Shutter spd &amp; aperture lock</b> | ✓  | ✓   | ✓ | —   | ✓  |
| <b>1 step spd/aperture</b>             | ✓  | ✓   | — | —   | —  |
| <b>Choose non-CPU lens number</b>      | ✓  | ✓   | ✓ | —   | —  |
| <b>Active D-Lighting</b>               | ✓  | ✓   | — | —   | —  |
| <b>Exposure delay mode</b>             | ✓  | ✓   | — | —   | —  |
| <b>Photo shooting menu bank</b>        | ✓  | ✓   | ✓ | —   | ✓  |
| <b>Exposure mode</b>                   | —  | —   | — | —   | ✓  |
| <b>White balance</b>                   | —  | —   | — | —   | ✓  |
| <b>Auto bracketing</b>                 | —  | —   | — | ✓   | —  |
| <b>Multiple exposure</b>               | —  | —   | — | ✓   | —  |
| <b>HDR (high dynamic range)</b>        | —  | —   | — | ✓   | —  |
| <b>None</b>                            | ✓  | ✓   | ✓ | ✓   | ✓  |

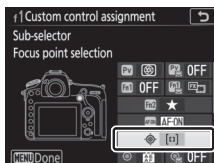
The following options are available:

| Option                                 | Description                                                                                                                                                                                                                          |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Choose image area</b>               | <p>Press the control and rotate a command dial to choose from pre-selected image areas (45). Selecting <b>Choose image area</b> displays a list of image areas; highlight options and press  to select or deselect, then press .</p> |
| <b>Shutter spd &amp; aperture lock</b> | <p>Press the control and rotate the main command dial to lock shutter speed in modes <b>S</b> and <b>M</b>; press the control and rotate the sub-command dial to lock aperture in modes <b>A</b> and <b>M</b>.</p>                   |

| Option                                                                                                            | Description                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>1 step spd/aperture</b>      | If the control is pressed when the command dials are rotated, changes to shutter speed (exposure modes <b>S</b> and <b>M</b> ) and aperture (exposure modes <b>A</b> and <b>M</b> ) are made in increments of 1 EV, regardless of the option selected for Custom Setting b2 ( <b>EV steps for exposure ctrl</b> , 115). |
| <b>Non-CPU</b><br><b>Choose non-CPU lens number</b>                                                               | Press the control and rotate a command dial to choose a lens number specified using the <b>Non-CPU lens data</b> option (169).                                                                                                                                                                                          |
|  <b>Active D-Lighting</b>        | Press the control and rotate the command dials to adjust Active D-Lighting (56).                                                                                                                                                                                                                                        |
|  <b>Exposure delay mode</b>      | Press the control and rotate a command dial to choose an exposure delay mode (121).                                                                                                                                                                                                                                     |
|  <b>Photo shooting menu bank</b> | Press the control and rotate a command dial to choose the photo shooting menu bank (33).                                                                                                                                                                                                                                |
|  <b>Exposure mode</b>            | Press the control and rotate the main command dial to choose the exposure mode.                                                                                                                                                                                                                                         |
| <b>WB</b> <b>White balance</b>                                                                                    | 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 <b>AUTO (Auto)</b> or  ( <b>Fluorescent</b> ) is selected (50).                               |
| <b>BKT</b> <b>Auto bracketing</b>                                                                                 | 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).                                                                                                                                           |
|  <b>Multiple exposure</b>      | 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).                                                                                                                                                                                      |
| <b>HDR</b> <b>HDR (high dynamic range)</b>                                                                        | Press the control and rotate the main command dial to choose the mode and the sub-command dial to choose the exposure differential (69).                                                                                                                                                                                |
| <b>None</b>                                                                                                       | 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 <sup>[a]</sup> 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 <b>Focus point</b> or <b>Focus point and AF-area mode</b> is selected for Custom Setting a7 ( <b>Store by orientation</b> ,  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                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Thumbnail on/off</b>       | Toggle between full-frame and thumbnail playback.                                                                                                                                                                                                             |
|  <b>View histograms</b>        | In both full-frame and thumbnail playback, a histogram is displayed while the center of the multi selector is pressed.                                                                                                                                        |
|  <b>Zoom on/off</b>            | Toggle between full-frame or thumbnail playback and playback zoom. Choose the initial zoom setting from <b>Low magnification (50%)</b> , <b>1 : 1 (100%)</b> , and <b>High magnification (200%)</b> . The zoom display will center on the active focus point. |
|  <b>Choose slot and folder</b> | Display the slot and folder selection dialog.                                                                                                                                                                                                                 |

## ■ ■ Live View

| Option                                                                                               | Role assigned to center of multi selector                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RESET</b> <b>Select center focus point</b>                                                        | Pressing the center of the multi selector in live view selects the center focus point.                                                                                                                                                                       |
|  <b>Zoom on/off</b> | Press the center of the multi selector to toggle zoom on and off. Choose the initial zoom setting from <b>Low magnification (50%)</b> , <b>1 : 1 (100%)</b> , and <b>High magnification (200%)</b> . The zoom display will center on the active focus point. |
| <b>None</b>                                                                                          | Pressing the center of the multi selector has no effect in live view.                                                                                                                                                                                        |

### f3: Shutter Spd & Aperture Lock

MENU button →  Custom Settings menu

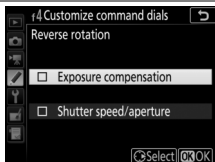
Selecting **On** for **Shutter speed lock** locks shutter speed at the value currently selected in mode **S** or **M**. Selecting **On** for **Aperture lock** locks aperture at the value currently selected in mode **A** or **M**. Shutter speed and aperture lock are not available in mode **P**.

### f4: Customize Command Dials

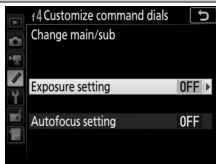
MENU button →  Custom Settings menu

This option controls the operation of the main and sub-command dials.

| Option           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reverse rotation | <p>Reverse the direction of rotation of the command dials when they are used to make adjustments to <b>Exposure compensation</b> and/or <b>Shutter speed/aperture</b>. Highlight options and press  to select or deselect, then press .</p> <p>This setting also applies to the command dials for optional MB-D18 battery packs.</p> |



| Option                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Change main/sub</b></p>  | <ul style="list-style-type: none"> <li>• <b>Exposure setting:</b> If <b>Off</b> is selected, the main command dial controls shutter speed and the sub-command dial controls aperture. If <b>On</b> is selected, the main command dial will control aperture and the sub-command dial shutter speed. If <b>On (Mode A)</b> is selected, the main command dial will be used to set aperture in exposure mode <b>A</b> only.</li> <li>• <b>Autofocus setting:</b> If <b>On</b> 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.</li> </ul> <p>These settings also apply to the command dials for the MB-D18.</p> |
| <p><b>Aperture setting</b></p> | <p>If <b>Sub-command dial</b> is selected, aperture can only be adjusted with the sub-command dial (or with the main command dial if <b>On</b> is selected for <b>Change main/sub &gt; Exposure setting</b>). If <b>Aperture ring</b> 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.</p>                                                                                                                                                                     |



| Option                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Menus and playback</b>     | <p>If <b>Off</b> is selected, the multi selector is used to choose the picture displayed during full-frame playback, highlight thumbnails, and navigate menus. If <b>On</b> or <b>On (image review excluded)</b> 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 <b>Sub-dial frame advance</b> 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 . Select <b>On (image review excluded)</b> to prevent the command dials from being used for playback during image review.</p> |
| <b>Sub-dial frame advance</b> | <p>When <b>On</b> or <b>On (image review excluded)</b> is selected for <b>Menus and playback</b>, 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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## 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** () , **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

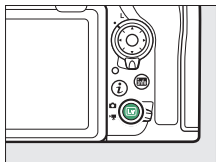
MENU button →  Custom Settings menu

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  button, preventing live view from starting accidentally. If **Enable (standby timer active)** is selected, the  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.

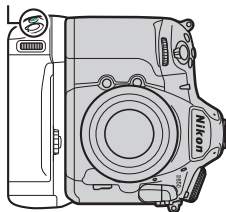
## f10: Assign MB-D18 Buttons

MENU button → Custom Settings menu

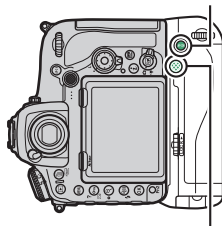
This option is available when an optional MB-D18 multi-power battery pack is attached. Choose the functions assigned to MB-D18 controls, whether used individually or in combination with the command dials.



MB-D18 **Fn** button



MB-D18 **AF-ON** button



MB-D18 multi selector

### 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**

**Preview**

**FV lock**

**AE lock (Reset on release)**

**AE lock (Hold)**

**+ NEF (RAW)**

**Matrix metering**

**Center-weighted metering**

**Spot metering**

**Highlight-weighted metering**

**Viewfinder grid display**

**Viewfinder virtual horizon**

**MY MENU**

**Access top item in MY MENU**

**Playback**

**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.

|                                                                                                                          |                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
|  <b>Choose image area</b>               |  <b>Photo shooting menu bank</b>          |
|  <b>Shutter spd &amp; aperture lock</b> |  <b>ISO sensitivity<sup>1</sup></b>       |
|  <b>1 step spd/aperture</b>             |  <b>Exposure mode<sup>2</sup></b>         |
|  <b>Choose non-CPU lens number</b>      |  <b>Exposure compensation<sup>3</sup></b> |
|  <b>Active D-Lighting</b>               |  <b>Metering<sup>4</sup></b>              |
|  <b>Exposure delay mode</b>             | <b>None</b>                                                                                                                |

1 Performs the same function as the camera **ISO** () 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.

|                                                                                                                       |                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|  <b>Same as camera AF-ON button*</b> |  <b>AE lock only</b>               |
|  <b>AF-ON</b>                        |  <b>AE lock (Reset on release)</b> |
|  <b>AF-area mode</b>                 |  <b>AE lock (Hold)</b>             |
|  <b>AF-area mode + AF-ON</b>         |  <b>AF lock only</b>               |
|  <b>AE/AF lock</b>                  | <b>None</b>                                                                                                         |

\* 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).

## 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 button              |
|  | Fn1 button             |
|  | 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 <b>Pv</b> button is pressed. Use in combination with Custom Setting g1 ( <b>Custom control assignment</b> ) > <b>Fn1 button</b> > <b>Power aperture (close)</b> for button-controlled aperture adjustment.      |
|  Power aperture (close) | Aperture narrows while the <b>Fn1</b> button is pressed. Use in combination with Custom Setting g1 ( <b>Custom control assignment</b> ) > <b>Preview button</b> > <b>Power aperture (open)</b> for button-controlled aperture adjustment. |

| Option                                                                                                            | Description                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Exposure compensation +</b>  | Exposure compensation increases while the <b>Pv</b> button is pressed. Use in combination with Custom Setting g1 ( <b>Custom control assignment</b> ) > <b>Fn1 button</b> > <b>Exposure compensation –</b> for button-controlled exposure compensation.      |
|  <b>Exposure compensation –</b>  | Exposure compensation decreases while the <b>Fn1</b> button is pressed. Use in combination with Custom Setting g1 ( <b>Custom control assignment</b> ) > <b>Preview button</b> > <b>Exposure compensation +</b> for button-controlled exposure compensation. |
|  <b>Index marking</b>            | Press the control during movie recording to add an index at the current position. Indices can be used when viewing and editing movies.                                                                                                                       |
|  <b>View photo shooting info</b> | Press the control to display photo shooting data in place of movie recording information. Press again to return to the movie recording display.                                                                                                              |
|  <b>AE/AF lock</b>               | Focus and exposure lock while the control is pressed.                                                                                                                                                                                                        |
|  <b>AE lock only</b>             | Exposure locks while the control is pressed.                                                                                                                                                                                                                 |
|  <b>AE lock (Hold)</b>           | Exposure locks when the control is pressed, and remains locked until the control is pressed a second time or the standby timer expires.                                                                                                                      |
|  <b>AF lock only</b>             | Focus locks while the control is pressed.                                                                                                                                                                                                                    |
|  <b>Take photos</b>            | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Record movies</b> | 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. |
| <b>None</b>                                                                                            | 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:



|  |                              |
|--|------------------------------|
|  | <b>Pv button</b> +           |
|  | <b>Fn1 button</b> +          |
|  | <b>Sub-selector center</b> + |

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

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

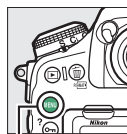
## g2: Highlight Brightness

**MENU button** → *Custom Settings menu*

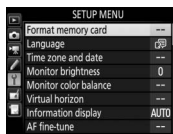
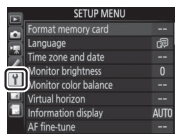
Choose the brightness needed to trigger the movie highlight display. The lower the value, the greater the range of brightnesses that will be shown as highlights. If **255** is selected, the highlight display will show only areas that are potentially overexposed.

## Y The Setup Menu: Camera Setup

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



**MENU button**



| Option                              |     |
|-------------------------------------|-----|
| <b>Format memory card</b>           | 158 |
| <b>Language</b>                     | 158 |
| <b>Time zone and date</b>           | 159 |
| <b>Monitor brightness</b>           | 160 |
| <b>Monitor color balance</b>        | 161 |
| <b>Virtual horizon</b>              | 162 |
| <b>Information display</b>          | 163 |
| <b>AF fine-tune</b>                 | 164 |
| <b>Non-CPU lens data</b>            | 169 |
| <b>Clean image sensor</b>           | 169 |
| <b>Lock mirror up for cleaning*</b> | 170 |
| <b>Image Dust Off ref photo</b>     | 173 |
| <b>Image comment</b>                | 175 |
| <b>Copyright information</b>        | 176 |
| <b>Beep options</b>                 | 177 |
| <b>Touch controls</b>               | 178 |
| <b>HDMI</b>                         | 178 |
| <b>Location data</b>                | 179 |

| Option                              |     |
|-------------------------------------|-----|
| <b>Wireless remote (WR) options</b> | 180 |
| <b>Assign remote (WR) Fn button</b> | 181 |
| <b>Airplane mode</b>                | 181 |
| <b>Connect to smart device</b>      | 182 |
| <b>Send to smart device (auto)</b>  | 183 |
| <b>Wi-Fi</b>                        | 183 |
| <b>Bluetooth</b>                    | 184 |
| <b>Network</b>                      | 184 |
| <b>Eye-Fi upload</b>                | 185 |
| <b>Conformity marking</b>           | 186 |
| <b>MB-D18 battery type</b>          | 187 |
| <b>Battery order</b>                | 188 |
| <b>Battery info</b>                 | 189 |
| <b>Slot empty release lock</b>      | 190 |
| <b>Save/load settings</b>           | 191 |
| <b>Reset all settings</b>           | 193 |
| <b>Firmware version</b>             | 193 |

\* Not available when battery is low.

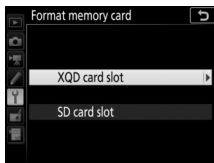
### See Also

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 () 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 <b>Yes</b> selected for <b>Location data &gt; External GPS device options &gt; Set clock from satellite</b> (📖 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 <b>Off</b> .                                                                                                                                                                                                                                                                                                                                             |

If the clock is reset, a  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.

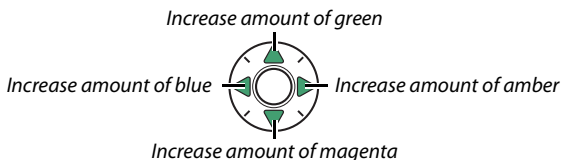
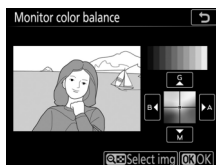
Brightness can be adjusted separately for:

- **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

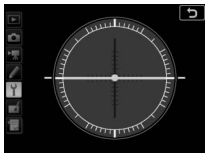
Use the multi selector as shown below to adjust monitor color balance with reference to a sample image. The sample image is the last photograph taken or, in playback mode, the last photograph displayed; to choose a different image, press the  button and select an image from a thumbnail list (to view 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

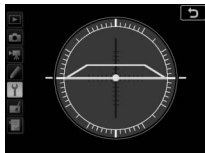
Display roll and pitch information based on information from the camera tilt sensor. If the camera is tilted neither left nor right, the roll reference line will turn green, while if the camera is tilted neither forward nor back, the dot in the center of the display will turn green. Each division is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

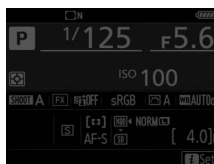
## Information Display

MENU button →  setup menu

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*

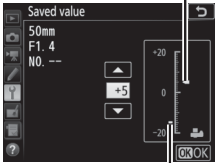


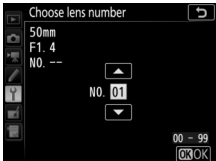
*Light on dark*

## 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AF fine-tune (On/Off)</b> | <ul style="list-style-type: none"> <li>• <b>On:</b> Turn AF tuning on.</li> <li>• <b>Off:</b> Turn AF tuning off.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Saved value</b>           | <p>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.</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <p><i>Current value</i></p> <p><i>Previous value</i></p> </div> </div> |
| <b>Default</b>               | Choose the AF tuning value used when no previously saved value exists for the current lens (CPU lenses only).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Option                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>List saved values</b> | <p>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 <b>Saved value</b> 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  to save changes and exit.</p>  |

### **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.

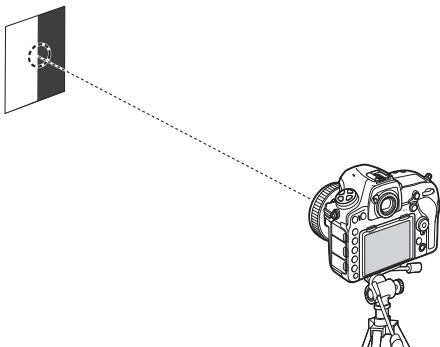
## ■ ■ Auto AF Fine-Tuning

Auto AF fine-tuning is performed as described below.

---

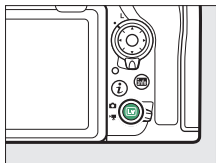
### 1 Ready the camera.

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  button.

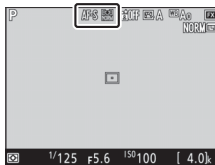


---

### 3 Adjust focus settings.

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

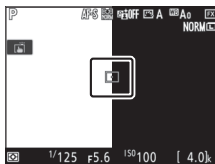
- **Autofocus mode: AF-S**
- **AF-area mode:** [] (wide), [] (normal), or [] (pinpoint)



---

### 4 Select the center focus point.

Press the center of the multi selector to select the center focus point.



---

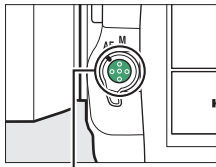
### 5 Focus.

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.

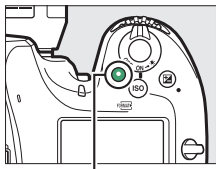
---

## 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*

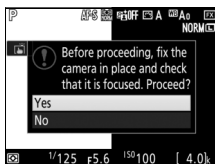


*Movie-record button*

---

## 7 Save the new value.

Highlight **Yes** and press **OK** 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 **OK**.

## 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                           |
|--------------------------|---------------------------------------|
| <b>Lens number</b>       | Choose a number to identify the lens. |
| <b>Focal length (mm)</b> | Enter the focal length.               |
| <b>Maximum aperture</b>  | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Clean now</b>                      | Perform image sensor cleaning immediately.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Clean at startup/<br/>shutdown</b> | <ul style="list-style-type: none"><li>•  <b>ON Clean at startup:</b> The image sensor is automatically cleaned each time the camera is turned on.</li><li>•  <b>OFF Clean at shutdown:</b> The image sensor is automatically cleaned during shutdown each time the camera is turned off.</li><li>•  <b>ON/OFF Clean at startup &amp; shutdown:</b> The image sensor is cleaned automatically at startup and at shutdown.</li><li>• <b>Cleaning off:</b> Automatic image sensor cleaning off.</li></ul> |

## 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**.

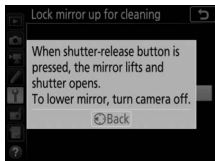
Turn the camera on and highlight **Lock mirror up for cleaning** in the setup menu and press .



---

## 4 Press **OK**.

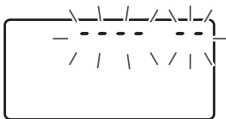
A message will be displayed in the monitor and a row of dashes will appear in the control panel and viewfinder. To restore normal operation without inspecting the image sensor, turn the camera off.



---

## 5 Raise the mirror.

Press the shutter-release button all the way down. The mirror will be raised and the shutter curtain

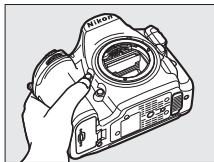


will open, revealing the image sensor. The display in the viewfinder will turn off and the row of dashes in the control panel will flash.

---

## 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 NX Studio. Image Dust Off processes NEF (RAW) pictures to mitigate effects caused by dust adhering in front of the camera image sensor. For more information, refer to NX Studio's 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.

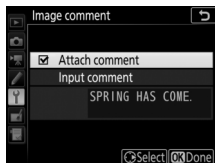


## Image Comment

MENU button → setup menu

Add a comment to new photographs as they are taken. Comments can be viewed in the NX Studio **Info** tab.

- **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 to exit.



Add copyright information to new photographs as they are taken. Copyright information can be viewed in the NX Studio **Info** tab.

- **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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Download from smart device</b>  | Select <b>Yes</b> 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Position</b>                    | View the location data supplied by the GPS or smart device (the items displayed vary with the device).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>External GPS device options</b> | <p>Adjust settings for connection to optional GPS devices.</p> <ul style="list-style-type: none"><li>• <b>Standby timer:</b> Choose whether the standby timer remains active while a GPS device is connected. If <b>Enable</b> is selected, the exposure meters will turn off automatically if no operations are performed for the period specified in Custom Setting c2 (<b>Standby timer</b>,  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 <b>Disable</b> to disable the standby timer when a GPS device is connected.</li><li>• <b>Set clock from satellite:</b> Select <b>Yes</b> to synchronize the camera clock with the time reported by the GPS device.</li></ul> |

## 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  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          |
|  FV lock                    |  Disable/enable |
|  AE/AF lock                 |  + NEF (RAW)    |
|  AE lock only               |  Live view*     |
|  AE lock (Reset on release) | None                                                                                             |
|  AF lock only               |                                                                                                  |

\* Performs the same function as the camera  button.

## Airplane Mode

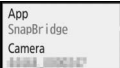
MENU button →  setup menu

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               | <p>Follow on-screen instructions to connect to the smart device.</p> <div><p>On your smart device, go to the app store and search for SnapBridge. After installing, open the SnapBridge app.</p><p> Cancel</p></div> |
| Password protection | <p>Choose a password for smart device connections and turn password protection on or off. For information on typing passwords, see “Text Entry” (□ 38).</p>                                                                                                                                                                                                                                                                                                             |

### 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                                     |
|-----------------------------------|-------------------------------------------------|
| <b>Establish Wi-Fi connection</b> | Initiate a Wi-Fi connection to a smart device.  |
| <b>Network settings</b>           | Adjust settings for Wi-Fi connections.          |
| <b>Current settings</b>           | View current Wi-Fi settings.                    |
| <b>Reset connection settings</b>  | 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                                                                                                     |
|---------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Network connection</b> | Enable or disable Bluetooth.                                                                                    |
| <b>Paired devices</b>     | View paired devices.                                                                                            |
| <b>Send while off</b>     | Select <b>Off</b> 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).

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.

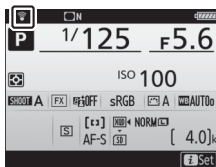
See the manual provided with the Eye-Fi card, and direct any inquiries to the manufacturer. The camera can be used to turn Eye-Fi cards on and off, but may not support other Eye-Fi functions.

### ✔ 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  or  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  or  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                                  |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------|
|  <b>LR6 (AA alkaline)</b> | Select when using LR6 alkaline AA batteries. |
|  <b>HR6 (AA Ni-MH)</b>    | Select when using HR6 Ni-MH AA batteries.    |
|  <b>FR6 (AA lithium)</b>  | 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:

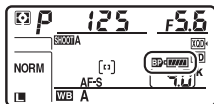
| Control panel                                                                                  | Viewfinder                                                                                     | Description                                 |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------|
|               | —                                                                                              | Batteries fully charged.                    |
|               |               | Low battery. Ready fresh batteries.         |
| <br>(flashes) | <br>(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.

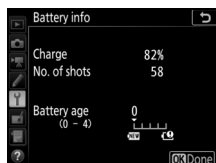
A  icon is displayed in the camera control panel when the batteries in the MB-D18 are in use.



## Battery Info

MENU button →  setup menu

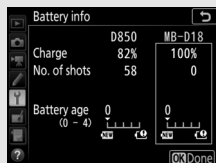
View information on the battery currently inserted in the camera.



| Item                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Charge</b>       | The current battery level expressed as a percentage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>No. of shots</b> | 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.                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Calibration</b>  | <p>This item is displayed only when the camera is powered by an optional MB-D18 multi-power battery pack equipped with an EN-EL18c (available separately).</p> <ul style="list-style-type: none"> <li>☀CAL: Due to repeated use and recharging, calibration is required to ensure that battery level can be measured accurately; recalibrate battery before charging.</li> <li>—: Calibration not required.</li> </ul>                                                                                                                                                                                                            |
| <b>Battery age</b>  | A five-level display showing battery age. 0 (  ) indicates that battery performance is unimpaired, 4 (  ) that the battery has reached the end of its charging life and should be replaced. Note that fresh batteries charged at temperatures under about 5 °C (41 °F) may show a temporary drop in charging life; the battery age display will however return to normal once the battery has been recharged at a temperature of about 20 °C (68 °F) or higher. |

### The MB-D18 Multi-Power Battery Pack

The display for the MB-D18 is shown in the illustration. In the case of EN-EL18c 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<br>(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 <b>Auto</b> ) |
|                               | 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 <b>Auto</b> )                |
|                                | Active D-Lighting                                                                      |
|                                | High ISO NR                                                                            |
|                                | Flicker reduction                                                                      |
|                                | Microphone sensitivity                                                                 |
|                                | Attenuator                                                                             |
|                                | Frequency response                                                                     |
|                                | Wind noise reduction                                                                   |
|                                | Electronic VR                                                                          |
| Custom settings<br>(all banks) | All Custom Settings                                                                    |
| Setup                          | Language                                                                               |
|                                | Time zone and date (excepting <b>Date and time</b> and <b>Sync with smart device</b> ) |
|                                | 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 <b>Download from smart device</b> )     |

| Menu                        | Option                       |
|-----------------------------|------------------------------|
| Setup                       | Wireless remote (WR) options |
|                             | Assign remote (WR) Fn button |
|                             | Eye-Fi upload                |
|                             | Slot empty release lock      |
| My Menu/<br>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).

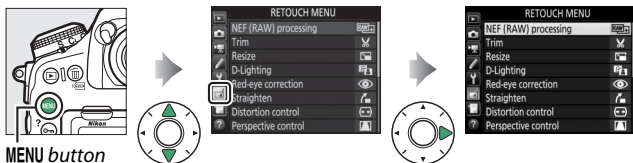
## Firmware Version

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.



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                                                                                                        |  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  <b>NEF (RAW) processing</b> | 197                                                                               |
|  <b>Trim</b>                 | 201                                                                               |
|  <b>Resize</b>               | 202                                                                               |
|  <b>D-Lighting</b>           | 204                                                                               |
|  <b>Red-eye correction</b>   | 205                                                                               |
|  <b>Straighten</b>           | 205                                                                               |
|  <b>Distortion control</b>   | 206                                                                               |

| Option                                                                                                                        |  |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|  <b>Perspective control</b>                  | 207                                                                               |
|  <b>Filter effects</b>                       | 208                                                                               |
|  <b>Monochrome</b>                           | 208                                                                               |
|  <b>Image overlay</b> <sup>1</sup>           | 209                                                                               |
|  <b>Trim movie</b>                           | 212                                                                               |
|  <b>Side-by-side comparison</b> <sup>2</sup> | 212                                                                               |

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

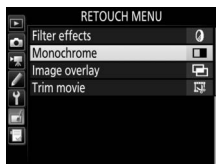
2 Can only be displayed by pressing  and selecting **Retouch** or holding  and pressing  in full-frame playback when a retouched image or original is displayed.

# Creating Retouched Copies

To create a retouched copy:

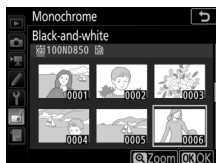
## 1 Select an item in the retouch menu.

Press or to highlight an item, to select.

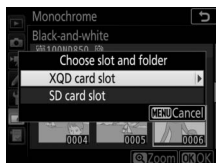


## 2 Select a picture.

Highlight a picture and press . 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.

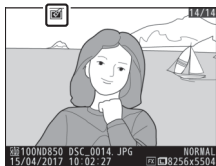
For more information, see the section for the selected item.  
To exit without creating a retouched copy, press **MENU**.

#### ✔ **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 **OK** 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 **OK** and press **OK**.

#### ✔ **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**

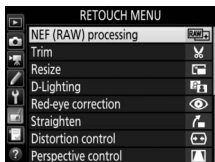
Except in the case of copies created with **Trim** and **Resize**, copies are the same size as the original. Copies created from JPEG images are the same quality as the original, while those created from NEF (RAW) and TIFF (RGB) images are saved in JPEG fine★ format.

## NEF (RAW) Processing

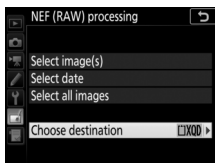
MENU button →  retouch menu

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.

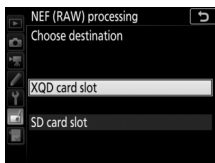
- 1 Select NEF (RAW) processing.**  
Highlight **NEF (RAW) processing** in the retouch menu and press .



- 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).



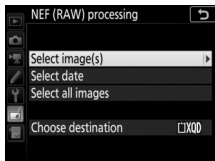
Highlight a card slot and press .



### 3 Choose how images are selected.

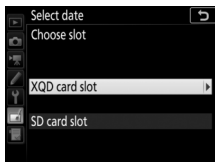
Choose from the following options:

- **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).



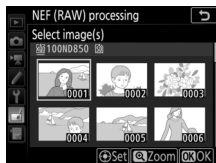
### 4 Select the source slot.

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.

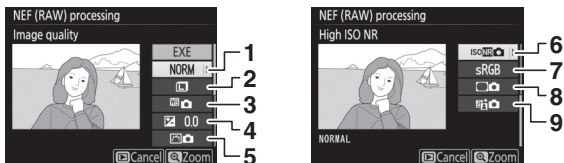


If you chose **Select date** in Step 3, a list of dates will be displayed. Highlight dates using the multi selector and press  to select or deselect. Press  to select all NEF (RAW) pictures taken on the chosen dates and proceed to Step 6.



## 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

2 Image size .....47

3 White balance .....50

4 Exposure compensation

5 Set Picture Control .....52

6 High ISO NR ..... 57

7 Color space ..... 56

8 Vignette control ..... 58

9 Active D-Lighting ..... 56

## 7 Copy the photographs.

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

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



## Trim

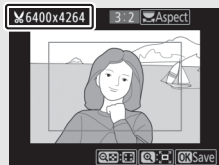
MENU button →  retouch menu

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                                                                                                                          |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reduce size of crop</b>      | Press  (⚡) to reduce the size of the crop.          |
| <b>Increase size of crop</b>    | Press  to increase the size of the crop.            |
| <b>Change crop aspect ratio</b> | Rotate the main command dial to choose the aspect ratio.                                                                             |
| <b>Position crop</b>            | Use the multi selector to position the crop. Press and hold to move the crop rapidly to the desired position.                        |
| <b>Preview crop</b>             | Press center of multi selector to preview cropped image.                                                                             |
| <b>Create copy</b>              | Press  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.

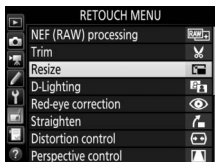
## Resize

MENU button →  retouch menu

Create small copies of selected photographs.

### 1 Select Resize.

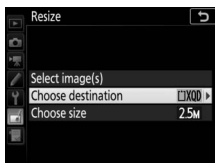
To resize selected images, highlight **Resize** in the retouch menu and press .



### 2 Choose a destination.

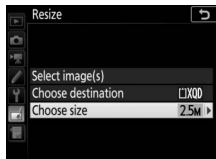
If two memory cards are inserted, you can choose a destination for the resized copies by highlighting **Choose destination** and pressing  (if only one memory card is inserted, proceed to Step 3).

Highlight a card slot and press  when prompted.

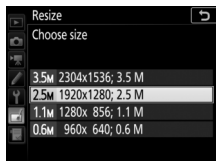


### 3 Choose a size.

Highlight **Choose size** and press .



Highlight an option and press  when prompted.



### 4 Choose pictures.

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

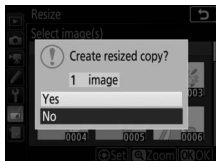


Highlight pictures and press the center of the multi selector to select or deselect (to view the highlighted picture full screen, press and hold the  button; to view pictures in other locations, press ). Selected pictures are marked by a  icon. Press  when the selection is complete. Note that photographs 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 **OK** to save the resized copies.



### Viewing Resized Copies

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

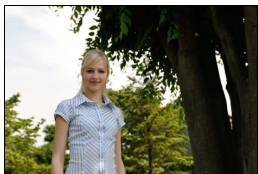
### Image Quality

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.

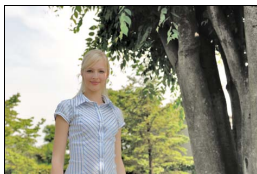
## D-Lighting

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 **OK** to save the retouched copy.

## Red-Eye Correction

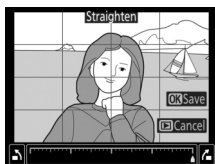
MENU button →  retouch menu

This option is used to correct “red-eye” caused by the flash, and is available only with photographs taken using the flash. The photograph selected for red-eye correction can be previewed in the edit display. Confirm the effects of red-eye correction and 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

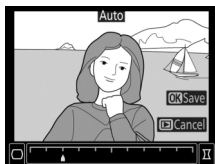
Create a straightened copy of the selected image. Press  to rotate the image clockwise by up to five degrees in increments of approximately 0.25 degrees,  to rotate it counterclockwise (the effect can be previewed in the edit display; note that edges of the image will be trimmed to create a square copy). 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” (p. 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)**.



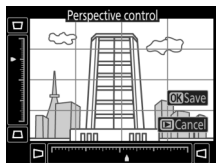
### Auto

**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

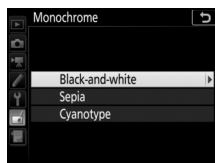
Choose from the following color filter effects. After adjusting filter effects as described below, press **OK** to copy the photograph.

| Option             | Description                                                                                                                  |
|--------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Skylight</b>    | Creates the effect of a skylight filter, making the picture less blue. The effect can be previewed in the monitor.           |
| <b>Warm filter</b> | Creates a copy with warm tone filter effects, giving the copy a “warm” red cast. The effect can be previewed in the monitor. |

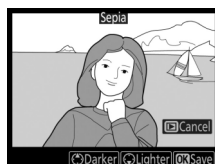
## Monochrome

MENU button →  retouch menu

Copy photographs in **Black-and-white**, **Sepia**, or **Cyanotype** (blue and white monochrome).



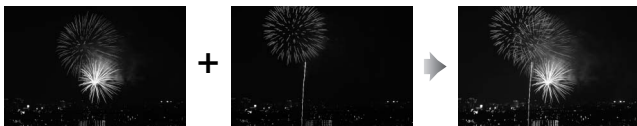
Selecting **Sepia** or **Cyanotype** displays a preview of the selected image; press  to increase color saturation,  to decrease. Press **OK** to create a monochrome copy.



## Image Overlay

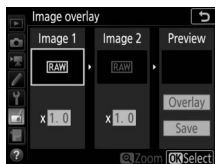
MENU button →  retouch menu

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.

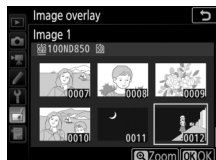
Highlight **Image overlay** in the retouch menu and press . Image overlay options will be displayed, with **Image 1** highlighted; press  to display a picture selection dialog listing only large NEF (RAW) images created with this camera (small and medium NEF/RAW images cannot be selected).



---

## 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.



---

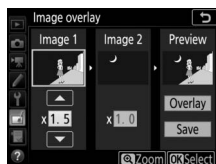
## 3 Select the second image.

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 (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 ().



## 6 Save the overlay.

Press 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.



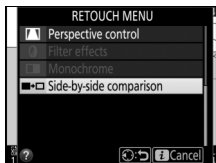
### 2 Display retouch options.

Press  while pressing and holding the **OK** button, or press **i** and select **Retouch**.



### 3 Select Side-by-side comparison.

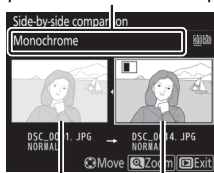
Highlight **Side-by-side comparison** and press **OK**.



## 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  to exit to playback with the highlighted image selected.

*Options used to create copy*



*Source image*

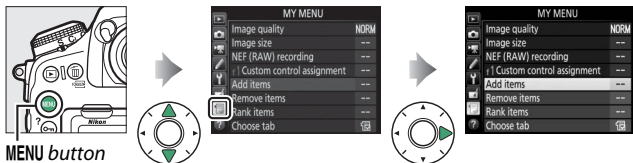
*Retouched copy*

### ✓ 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 (p 21).

## **My Menu** / **Recent Settings**

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



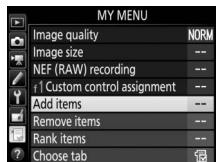
The **MY MENU** option can be used to create and edit a customized list of options from the playback, photo shooting, movie shooting, Custom Settings, setup, and retouch menus for quick access (up to 20 items). If desired, recent settings can be displayed in place of My Menu ( 218).

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

### **■ Adding Options to My Menu**

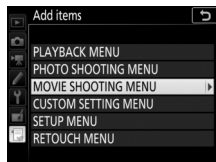
#### **1 Select Add items.**

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



#### **2 Select a menu.**

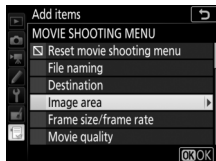
Highlight the name of the menu containing the option you wish to add and press .



---

### 3 Select an item.

Highlight the desired menu item and press **OK**.



---

### 4 Position the new item.

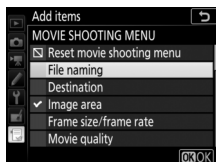
Press **▲** or **▼** to move the new item up or down in My Menu. Press **OK** to add the new item.



---

### 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.



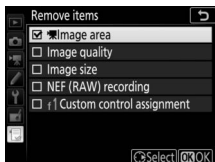
## ■ Deleting Options from My Menu

### 1 Select Remove items.

In My Menu (F10), highlight **Remove items** and press **▶**.

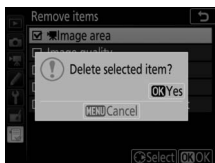
### 2 Select items.

Highlight items and press **▶** to select or deselect. Selected items are indicated by a check mark.



### 3 Delete the selected items.

Press **OK**. A confirmation dialog will be displayed; press **OK** again to delete the selected items.



#### Deleting Items in My Menu

To delete the item currently highlighted in My Menu, press the **Format** button (F10). A confirmation dialog will be displayed; press **Format** again to remove the selected item from My Menu.

## ■ Reordering Options in My Menu

### 1 Select Rank items.

In My Menu (M), highlight **Rank items** and press .

### 2 Select an item.

Highlight the item you wish to move and press .



### 3 Position the item.

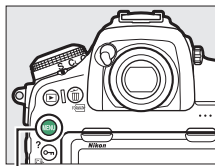
Press  or  to move the item up or down in My Menu and press .

Repeat Steps 2–3 to reposition additional items.

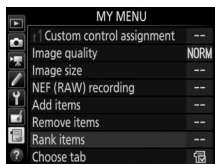


### 4 Exit to My Menu.

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



**MENU button**



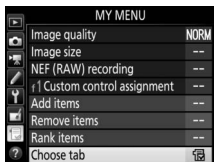
## Recent Settings

To display the twenty most recently used settings, select

**RECENT SETTINGS** for **MY MENU** > **Choose tab**.

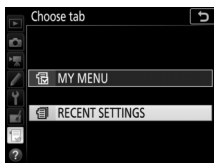
### 1 Select **Choose tab**.

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 () button. A confirmation dialog will be displayed; press () 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

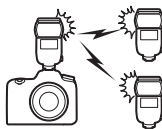
Take pictures using a flash unit mounted on the camera. See the camera and flash unit manuals for details.



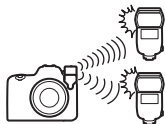
### Remote Flash Photography

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

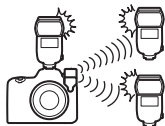
- **Optical AWL via a shoe-mounted flash unit** ( 221)



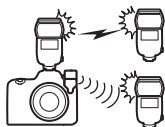
- **Radio AWL** (📖 230)



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



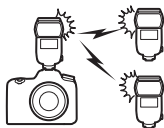
- **Radio AWL, with optical AWL provided by a shoe-mounted flash unit** (📖 242)



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

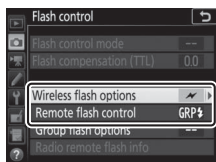
## Optical AWL

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.



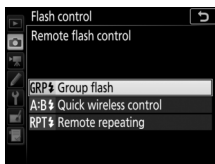
#### **The SB-5000**

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.

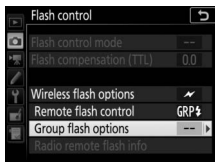
## ■ Group Flash

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.

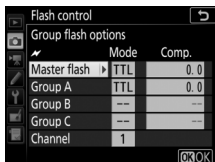


- 2 : Select **Group flash options**. Highlight **Group flash options** in the flash control display and press .

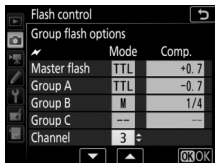


- 3 : Choose the flash control mode. Choose the flash control mode and flash level for the master flash and the flash units in each group:

- **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  button in the flash info display (📖 243) and selecting  **Test flash**.

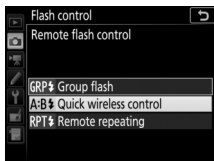
---

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

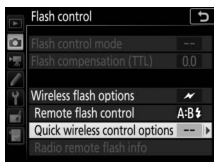
## ■ Quick Wireless Control (SB-5000 Only)

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.

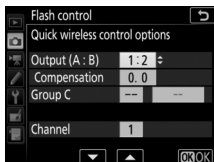


- 2 : Select **Quick wireless control options**. Highlight **Quick wireless control options** in the flash control display and press .

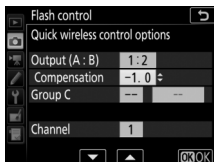


- 3 : Adjust flash settings.

Choose the balance between groups A and B.

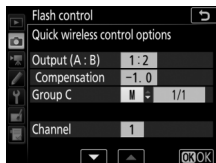


Adjust flash compensation for groups A and B.

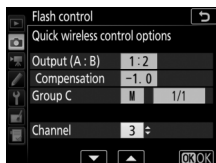


Choose a flash control mode and flash level for the units in group C:

- **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**.

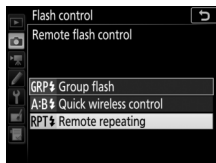
---

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

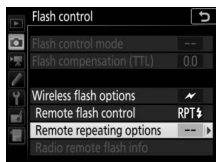
## ■ Remote Repeating (SB-5000 Only)

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.

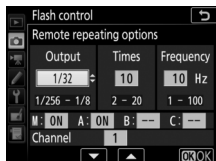


- 2 Select **Remote repeating options**. Highlight **Remote repeating options** in the flash control display menu and press .

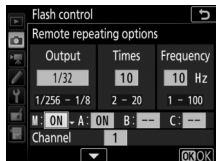


- 3 Adjust flash settings.

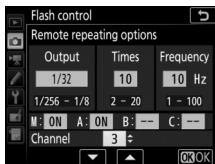
Choose the flash level (**Output**), the maximum number of times the flash units fire (**Times**), and the number of times the flash units fire per second (**Frequency**).



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 button in the flash info display (243) and selecting **Test flash**.

---

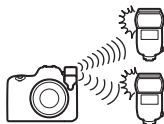
**7** : Frame the photograph, focus, and shoot.

### **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.



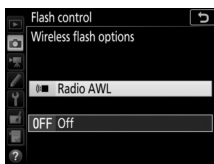
### **Establishing a Wireless Connection**

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.**

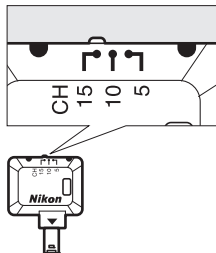


#### **The WR-R10 Wireless Remote Controller**

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.

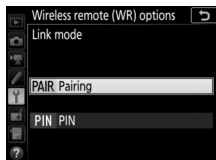
### 3 Choose a channel.

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:

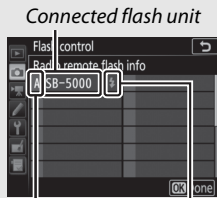
- **Pairing:** Initiate pairing on the remote unit and press the WR-R10 pairing button. Pairing is complete when the **LINK** lamps on the WR-R10 and flash unit flash orange and green; once a connection is established, the **LINK** lamp on the remote flash unit will light green.
- **PIN:** Use the controls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



*Group*

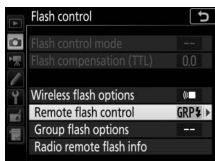
*Flash-ready indicator*

### **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

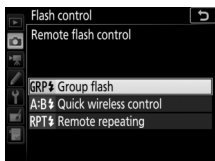
After selecting **Radio AWL** for **Flash control** > **Wireless flash options** in the photo shooting menu, select **Group flash**, **Quick wireless control**, or **Remote repeating** for **Remote flash control** and adjust settings as described below.



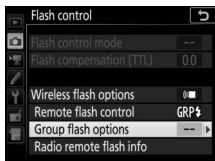
### ■ Group Flash

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 .

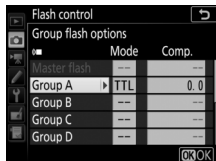


---

### 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  button in the flash info display (243) and select  **Test flash** to test fire the units and confirm that they are functioning normally.

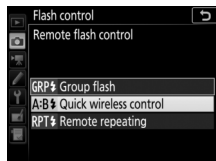
---

### 6 : Frame the photograph, focus, and shoot.

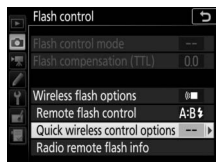
## ■ Quick Wireless Control

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.

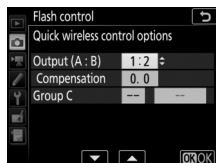


- 2 : Select **Quick wireless control options**. Highlight **Quick wireless control options** in the flash control display and press .

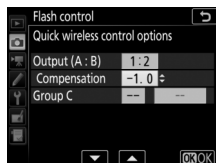


- 3 : Adjust flash settings.

Choose the balance between groups A and B.

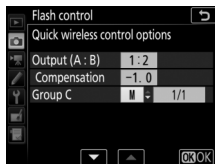


Adjust flash compensation for groups A and B.



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 button in the flash info display (📖 243) and select **Test flash** to test fire the units and confirm that they are functioning normally.

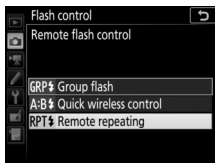
---

#### 6 : Frame the photograph, focus, and shoot.

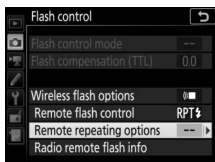
## ■ Remote Repeating

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

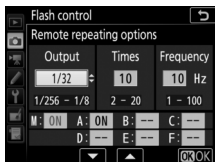
- 1 : Select Remote repeating for **Flash control > Remote flash control** in the photo shooting menu.



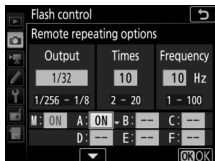
- 2 : Select Remote repeating options.  
Highlight **Remote repeating options** in the flash control display menu and press .



- 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.

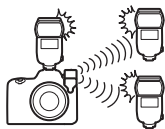
Compose the shot and arrange the flash units. See the documentation provided with the flash units for more information. After arranging the units, press the  button in the flash info display (📖 243) and select  **Test flash** to test fire the units and confirm that they are functioning normally.

---

#### 6 : Frame the photograph, focus, and shoot.

## **Adding a Shoe-Mounted Flash Unit**

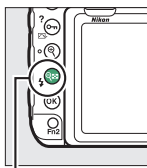
Radio-controlled flash units can be combined with any of the following flash units mounted on the camera accessory shoe:



- **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

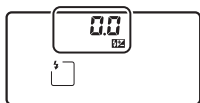
Flash compensation can be used to adjust the level of the master and remote flash units by from  $-3$  to  $+1$  EV in steps of  $\frac{1}{3}$  EV. To choose a value for flash compensation, press the  $\text{Q} \text{ (⚡)}$  button and rotate the sub-command dial until the desired value is displayed in the control panel.



$\text{Q} \text{ (⚡)}$  button

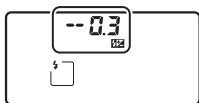


Sub-command dial

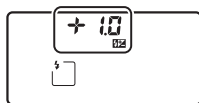


$\pm 0$  EV

( $\text{Q} \text{ (⚡)}$  button pressed)



$-0.3$  EV



$+1.0$  EV

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

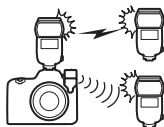
### See Also

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).

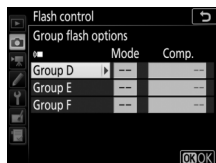
## Optical/Radio AWL

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 (book 42); with other flash units or the SU-800, this option is selected automatically.



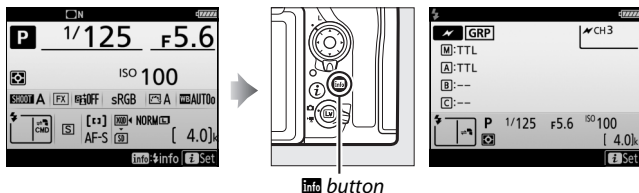
The only option available for **Remote flash control** (book 43) will be **Group flash**.

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.

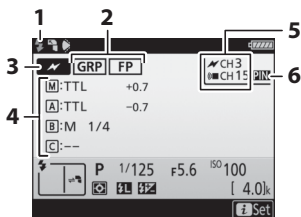


### Changing Flash Settings

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.

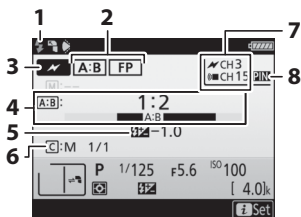


## ■ Group Flash



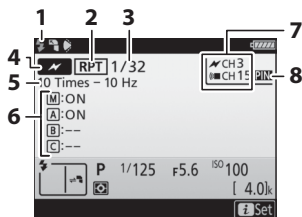
|   |                                                        |
|---|--------------------------------------------------------|
| 1 | Flash-ready indicator <sup>1</sup>                     |
| 2 | Remote flash control .....43                           |
|   | FP indicator ..... 126                    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

## ■ Quick Wireless Control



|   |                                                                  |
|---|------------------------------------------------------------------|
| 1 | Flash-ready indicator <sup>1</sup>                               |
| 2 | Remote flash control .....43                                     |
|   | FP indicator ..... 126                                           |
| 3 | Remote flash control mode <sup>2</sup> .....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 <sup>2</sup> ..... 224, 230                              |
| 8 | Link mode ..... 180                                              |

## ■ Remote Repeating



|   |                                              |          |
|---|----------------------------------------------|----------|
| 1 | Flash-ready indicator <sup>1</sup>           |          |
| 2 | Remote flash control .....                   | 43       |
| 3 | Flash level (output) .....                   | 227, 238 |
| 4 | Remote flash control mode <sup>2</sup> ..... | 42       |
| 5 | Number emitted (times) ...                   | 227, 238 |
|   | Frequency .....                              | 227, 238 |
| 6 | Group status<br>(enabled/disabled) .....     | 227, 238 |
| 7 | Channel <sup>2</sup> .....                   | 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.

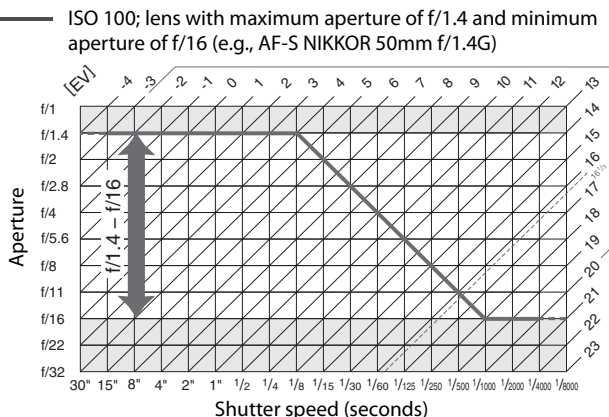


# Technical Notes

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:



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  $16 \frac{1}{3}$  EV are reduced to  $16 \frac{1}{3}$  EV.

## Connections

### **Installing NX Studio**

You will need an Internet connection when installing NX Studio. Visit the Nikon website for the latest information, including system requirements.

- Download the latest NX Studio installer from the website below and follow the on-screen instructions to complete installation.

*<https://downloadcenter.nikonimglib.com/>*

- Note that you may be unable to download pictures from the camera using earlier versions of NX Studio.

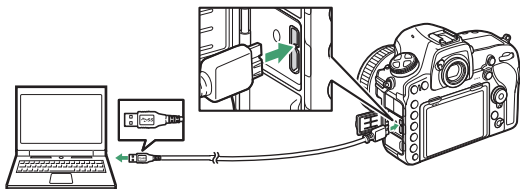
# **Copying Pictures to a Computer Using NX Studio**

See online help for detailed instructions.

---

## **1 Connect the camera to the computer.**

After turning the camera off and ensuring that a memory card is inserted, connect the supplied USB cable as shown.



### **Using a Card Reader**

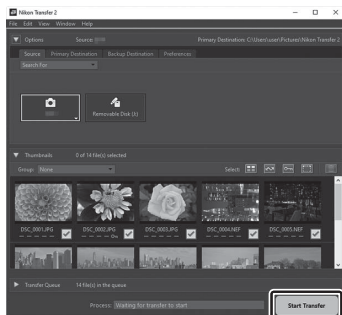
Pictures can also be copied from a memory card inserted in a third-party card reader. You should however check that the card is compatible with the card reader.

---

## **2 Turn the camera on.**

- The Nikon Transfer 2 component of NX Studio will start. Nikon Transfer 2 image transfer software is installed as part of NX Studio.
- If a message is displayed prompting you to choose a program, select Nikon Transfer 2.
- If Nikon Transfer 2 does not start automatically, launch NX Studio and click the "Import" icon.

- 3 Click Start Transfer.**  
Pictures on the memory card will be copied to the computer.

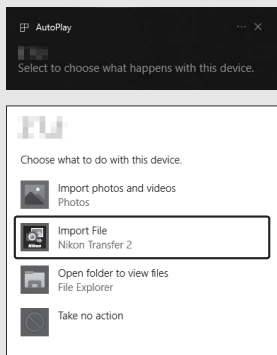


- 4 Turn the camera off.**  
Disconnect the USB cable when transfer is complete.

**✓ Windows 10 and Windows 8.1**

Windows 10 and Windows 8.1 may display an AutoPlay prompt when the camera is connected.

Click the dialog and then click **Nikon Transfer 2** to select Nikon Transfer 2.



### ✔ macOS

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) and select Nikon Transfer 2 as the application that opens when the camera is detected.

### ✔ Caution: Transferring Videos

Do not attempt to transfer videos from the memory card while it is inserted in a camera of a different make or model. Doing so could result in the videos being deleted without being transferred.

### ✔ Cautions: Connecting to Computers

- Do not turn the camera off or disconnect the USB cable while transfer is in progress.
- Do not use force or attempt to insert the connectors at an angle. Be sure also to keep the connectors straight when disconnecting the cable.
- Always turn the camera off before connecting or disconnecting a cable.
- To ensure that data transfer is not interrupted, be sure the camera battery is fully charged.

### ✔ USB Hubs

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

## **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:

| <b>Mode</b>           | <b>Function</b>                                                                                                          |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>FTP upload</b>     | Upload existing photos and movies to a computer or ftp server, or upload new photos as they are taken.                   |
| <b>Image transfer</b> |                                                                                                                          |
| <b>Camera control</b> | Control the camera using optional Camera Control Pro 2 software and save new photos and movies directly to the computer. |
| <b>HTTP server</b>    | 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

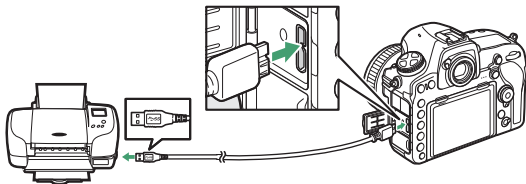
The principal differences between the WT-7 and WT-7A/B/C are in the number of channels supported; unless otherwise stated, all references to the WT-7 also apply to the WT-7A/B/C.

## 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 (). 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 to display the following items, then press or to highlight an item and press to view options (only options supported by the current printer are listed; to use the default option, select **Printer default**). After selecting an option, press to return to the printer settings menu.

| Option        | Description                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Page size     | Choose a page size.                                                                                                                                                                                                                                                                                                                                                                                                                     |
| No. of copies | This option is listed only when pictures are printed one at a time. Press  or  to choose number of copies (maximum 99).                                                                                                                                                                                                                                                                                                                 |
| Border        | Choose whether to frame photos in white borders.                                                                                                                                                                                                                                                                                                                                                                                        |
| 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 <b>No cropping</b> and press . To crop the current picture, highlight <b>Crop</b> 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  (↓) 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).

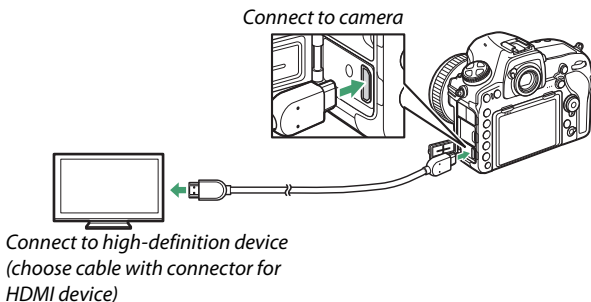
---

### 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 **High-Definition Multimedia Interface (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.



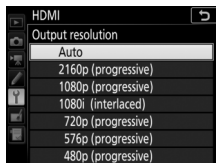
Tune the device to the HDMI channel, then turn the camera on and press the  button. During playback, images will be displayed on the television screen. Volume can be adjusted using television controls; the camera controls cannot be used.

## ■ ■ 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 (Atomos SHOGUN, NINJA, or SUMO-series Monitor recorders). 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  $3840 \times 2160$  or  $1920 \times 1080$  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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Output range</b>                | <p><b>Auto</b> 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:</p> <ul style="list-style-type: none"> <li>• <b>Limited range:</b> For devices with an RGB video signal input range of 16 to 235. Choose this option if you notice loss of detail in shadows.</li> <li>• <b>Full range:</b> For devices with an RGB video signal input range of 0 to 255. Choose this option if shadows are “washed out” or too bright.</li> </ul> |
| <b>Output display size</b>         | Choose horizontal and vertical frame coverage for HDMI output from 95% or 100%.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Live view on-screen display</b> | If <b>Off</b> 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 (8K).                                                                                                                                                                                                                                             |
| <b>Dual monitor</b>                | Choose <b>On</b> to mirror the HDMI display on the camera monitor, <b>Off</b> 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; 8K). <b>Dual monitor</b> turns on automatically when <b>Live view on-screen display</b> is <b>Off</b> .                                                                                                                                                                                          |

### **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

A variety of accessories are available for the D850.

### Power sources

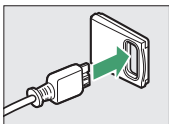
- **EN-EL15a Rechargeable Li-ion Battery** (□ 189): Additional EN-EL15a batteries are available from local retailers and Nikon service representatives. EN-EL15c/EN-EL15b/EN-EL15 batteries can also be used. Note, however, that you will not be able to take as many pictures on a single charge using EN-EL15 batteries.
- **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-EL18c batteries. EN-EL18b, 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  $\frac{1}{250}$  s or faster, and other settings at default values.

| Battery type | Release mode |         |
|--------------|--------------|---------|
|              | CH           | CL      |
| EN-EL15a/AA  | 7 fps        | 1–6 fps |
| EN-EL18c     | 9 fps        | 1–8 fps |

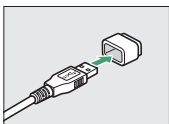
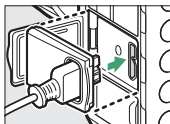
The number of pictures that can be taken in a single burst also varies with the power source; for more information, see “Buffer Capacity” (□ 269).

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power sources</b>                    | <ul style="list-style-type: none"> <li>• <b>EP-5B Power Connector, EH-5c and EH-5b AC Adapters:</b> 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.</li> </ul>                                                                                                                                                                                                                                                                              |
| <b>Filters</b>                          | <ul style="list-style-type: none"> <li>• Filters intended for special-effects photography may interfere with autofocus or the electronic rangefinder.</li> <li>• The D850 cannot be used with linear polarizing filters. Use the C-PL or C-PLII circular polarizing filter instead.</li> <li>• Neutral Color (NC) filters are recommended for protecting the lens.</li> <li>• 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.</li> <li>• Center-weighted metering is recommended with filters with exposure factors (filter factors) over <math>1\times</math> (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.</li> </ul> |
| <b>Wireless transmitters</b><br>(📖 251) | <ul style="list-style-type: none"> <li>• <b>WT-7 Wireless Transmitter:</b> 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.</li> </ul> <p><b>Note:</b> 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.</p>                                                                                                                                                                                                                                                                                                     |

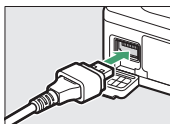
- **USB Cable Gaskets and Connector Covers:** Use a UF-4 connector cover for USB cables and UF3-RU14 USB cable gasket to help prevent accidental disconnections. Before connecting the cable, attach the UF-4 at the camera end and the UF3-RU14 at the end that connects to the wireless transmitter.



*UF-4 (attaches to connector for camera)*



*UF3-RU14 (attaches to connector for WT-7)*



|                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Wireless remote controllers</b><br><b>(180, 181)</b> | <ul style="list-style-type: none"> <li>• <b>WR-R10 Wireless Remote Controller/WR-T10 Wireless Remote Controller:</b> 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.</li> <li>• <b>WR-1 Wireless Remote Controller:</b> 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.</li> </ul> <p><b>Note:</b> 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.</p>                              |
| <b>Viewfinder eyepiece accessories</b>                  | <ul style="list-style-type: none"> <li>• <b>DK-19 Rubber Eyecup:</b> The DK-19 makes the image in the viewfinder easier to see, preventing eye fatigue.</li> <li>• <b>DK-17C Diopter-Adjustment Viewfinder Lens:</b> To accommodate individual differences in vision, viewfinder lenses are available with diopters of <math>-3</math>, <math>-2</math>, <math>0</math>, <math>+1</math>, and <math>+2\text{ m}^{-1}</math>. Use diopter adjustment lenses only if the desired focus cannot be achieved with the built-in diopter adjustment control (<math>-3</math> to <math>+1\text{ m}^{-1}</math>). Test diopter adjustment lenses before purchase to ensure that the desired focus can be achieved.</li> <li>• <b>DK-17M Magnifying Eyepiece:</b> The DK-17M magnifies the view through the viewfinder by approximately <math>1.2\times</math> for greater precision when framing.</li> <li>• <b>DG-2 Eyepiece Magnifier:</b> The DG-2 magnifies the scene at the center of the viewfinder for more accurate focus. DK-18 eyepiece adapter (available separately) required.</li> </ul> |

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Viewfinder eyepiece accessories | <ul style="list-style-type: none"> <li>• <b>DK-18 Eyepiece Adapter:</b> The DK-18 is used when attaching the DG-2 magnifier or DR-3 right-angle viewing attachment to the D850.</li> <li>• <b>DK-14 Antifog Finder Eyepiece/DK-17A Antifog Finder Eyepiece:</b> These viewfinder eyepieces prevent fogging in humid or cold conditions.</li> <li>• <b>DK-17F Fluorine-Coated Finder Eyepiece:</b> The protective glass features an easy-to-clean fluorine coating on both surfaces.</li> <li>• <b>DR-5 Right-Angle Viewing Attachment/DR-4 Right-Angle Viewing Attachment:</b> 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).</li> </ul> |
| HDMI cables (256)               | <p>• <b>HC-E1 HDMI Cable:</b> An HDMI cable with a type C connector for connection to the camera and a type A connector for connection to HDMI devices.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Software                        | <p>• <b>Camera Control Pro 2:</b> 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 (P C) will appear in the control panel.</p> <p><b>Note:</b> 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.</p>                                                                                                                                                                                                                                                           |

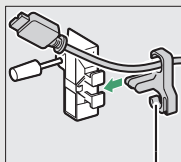
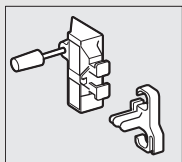
|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Body caps</b>                   | <b>BF-1B Body Cap/BF-1A Body Cap:</b> The body cap keeps the mirror, viewfinder screen, and image sensor free of dust when a lens is not in place.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Remote terminal accessories</b> | <p>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):</p> <ul style="list-style-type: none"> <li>• <b>MC-22 Remote Cord/MC-22A Remote Cord:</b> 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.).</li> <li>• <b>MC-30 Remote Cord/MC-30A Remote Cord:</b> Remote shutter release; can be used to reduce camera shake (length 80 cm/2 ft 8 in.).</li> <li>• <b>MC-36 Remote Cord/MC-36A Remote Cord:</b> 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.).</li> <li>• <b>MC-21 Extension Cord/MC-21A Extension Cord:</b> 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.).</li> <li>• <b>MC-23 Connecting Cord/MC-23A Connecting Cord:</b> Connects two cameras with ten-pin remote terminals for simultaneous operation (length 40 cm/1 ft 4 in.).</li> <li>• <b>MC-25 Adapter Cord /MC-25A Adapter Cord:</b> 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.).</li> </ul> |

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Remote terminal accessories</b> | <ul style="list-style-type: none"> <li>• <b>WR-A10 WR Adapter:</b> An adapter used to connect WR-R10 wireless remote controllers to cameras with ten-pin remote terminals.</li> <li>• <b>GP-1 GPS Unit/GP-1A GPS Unit</b> (☞ 179): Record latitude, longitude, altitude, and UTC time with pictures. Note that production of GP-1/GP-1A units has ended.</li> <li>• <b>ML-3 Modulate Remote Control Set:</b> Allows infrared remote control at ranges of up to 8 m (26 ft 3 in.).</li> </ul> |
| <b>Microphones</b>                 | <ul style="list-style-type: none"> <li>• <b>ME-1 Stereo Microphone:</b> 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 autofocus).</li> <li>• <b>ME-W1 Wireless Microphone:</b> Use this wireless Bluetooth microphone for off-camera recording.</li> </ul>                                                                                                       |
| <b>Accessory shoe covers</b>       | <p><b>BS-3 Accessory Shoe Cover/BS-1 Accessory Shoe Cover:</b> A cover protecting the accessory shoe. The accessory shoe is used for optional flash units.</p>                                                                                                                                                                                                                                                                                                                               |

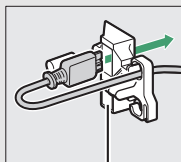
Availability may vary with country or region. See our website or brochures for the latest information.

### The HDMI/USB Cable Clip

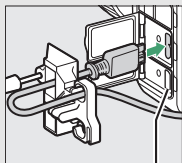
To prevent accidental disconnection, attach the supplied clip to HDMI cables or to the supplied USB cable as shown (the illustration shows the USB cable; note that the clip may not fit all third-party HDMI cables). Keep the monitor in the storage position when using the cable clip.



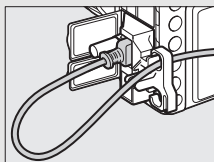
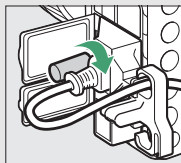
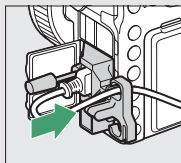
*HDMI cable goes  
here*



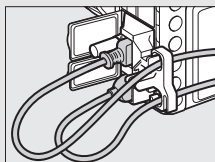
*HDMI cable goes  
here*



*HDMI cable goes  
here*



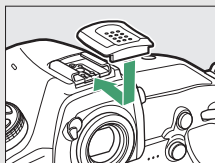
*USB cable*



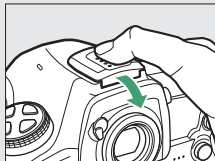
*HDMI cable and USB  
cable used  
simultaneously*

### **Attaching and Removing the Accessory Shoe Cover**

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

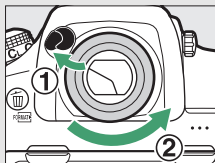


To remove the cover, hold the camera firmly, press the cover down with a thumb and slide it in the direction shown.



### **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-EL18c 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 (as of September 2017) 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-EL18c |
| 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-EL18c |
| 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-EL18c |
| 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      |

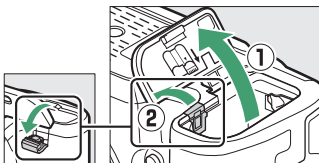
\* Includes images taken with DX lenses when **On** is selected for **Auto DX crop**.

## **Attaching a Power Connector and AC Adapter**

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

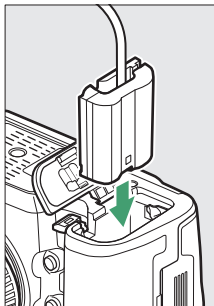
### **1 Ready the camera.**

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



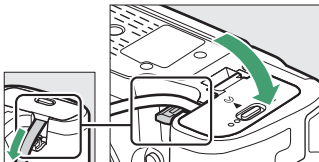
### **2 Insert the EP-5B power connector.**

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.



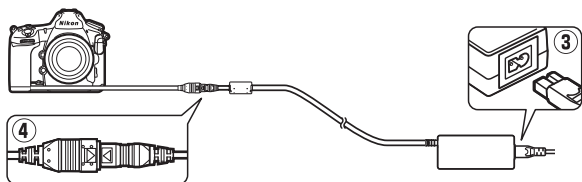
### **3 Close the battery-chamber cover.**

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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