

Nikon

Z 9 Reference Guide

(Supplement for Firmware Version 4.00)

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Changes with “C” Firmware Version 4.00

Features Available with “C” Firmware Version 4.00

The *Z 9 Reference Guide* is for “C” firmware version 3.00 (the latest version of the *Z 9 Reference Guide* is available from the Nikon Download Center). This chapter details the new features and changes introduced with camera “C” firmware version 4.00. The two documents are to be read together.

“Firmware Version”

To view the camera firmware version or update the camera firmware, select [**Firmware version**] in the setup menu.

Updates can be performed using a computer or smart device.

- **Computer:** Check the Nikon Download Center for new versions of the camera firmware. Information on performing updates is available via the firmware download page. <https://downloadcenter.nikonimglib.com/>
- **Smart device:** If the smart device has been paired with the camera using the SnapBridge app, the app will automatically notify you when updates become available, and you can then download the update to the camera memory card via the smart device. For information on performing updates, see SnapBridge online help. Note that automatic notifications may not be displayed at exactly the same time as the updates are made available on the Nikon Download Center.

Changes Made with “C” Firmware Version 4.00

The features added or updated with camera “C” firmware version 4.00 are summarized below. More information is available on the pages listed. For information on the menu items and defaults for “C” firmware version 4.00, see ‘Menu Items and Defaults for “C” Firmware Version 4.00’ ([📖 67](#)).

Still Photography

- New Bracketing Increments ([📖 8](#))
- More Time for Pre-Release Capture ([📖 9](#))
- New Size Option for JPEG + JPEG Recording ([📖 10](#))
- New Menu Item: “Auto Capture” ([📖 11](#))

Video Recording

- New Menu Item: “Auto Capture” ([📖 11](#))
- Low ISO Sensitivity Settings for N-Log Video ([📖 29](#))
- New Options for Hi-Res Zoom Speed ([📖 30](#))
- New: Slow-Motion Videos ([📖 31](#))

Playback

- Changes to **i**-Menu “Select for Upload” Options ([📖 33](#))
- Priority Upload Options Added to **i** Menu ([📖 34](#))

Controls

- Support for Power Zoom ([📖 35](#))
- New Custom Setting: d6 “Exposure Delay Mode” ([📖 38](#))
- New Options for Custom Settings f2 “Custom Controls (Shooting)” and g2 “Custom Controls” ([📖 39](#))
- New Options for Custom Setting f3 “Custom Controls (Playback)” ([📖 41](#))
- Updates to “Non-CPU Lens Data” ([📖 43](#))
- Increased Character Limit for IPTC “Category” Entries ([📖 44](#))
- New Shutter Sound and Volume Options ([📖 45](#))

Displays

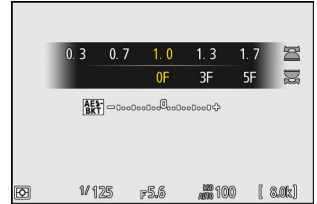
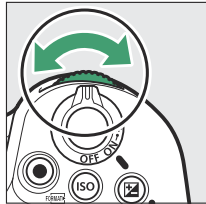
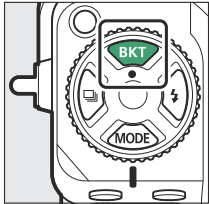
- Support for Viewfinder Display Size Selection in Video Mode ([📖 46](#))
- Updated Distance Display for Manual Focus ([📖 47](#))

Networks

- Changes and Additions to “Connect to FTP server” ([📖 48](#))
- Changes to Synchronized Release ([📖 49](#))
- New “Overwrite Copyright Info” Option for Master Cameras ([📖 66](#))

New Bracketing Increments

New options have been added to the bracketing increments that can be selected by pressing the **BKT** button and rotating the sub-command dial when **[AE & flash bracketing]**, **[AE bracketing]**, or **[Flash bracketing]** is selected for **[Auto bracketing] > [Auto bracketing set]** in the photo shooting menu.





- Increments of 1.3, 1.7, 2.3, and 2.7 EV have been added to options available when $\frac{1}{3}$ step is selected for Custom Setting b2 **[EV steps for exposure cntrl]**.
- Increments of 1.5 and 2.5 EV have been added to options available when $\frac{1}{2}$ step is selected for Custom Setting b2 **[EV steps for exposure cntrl]**.
- Bracketing programs with increments of 2.0 EV or more offer a maximum of 5 shots.

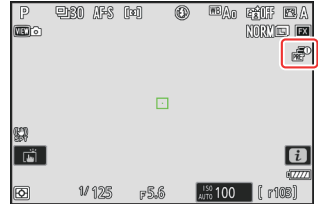
Tip: Exposure Bracketing and Interval-Timer Photography

These new options have also been added to the bracketing increments available for **[Interval timer shooting] > [Options] > [AE bracketing]** in the photo shooting menu.


More Time for Pre-Release Capture

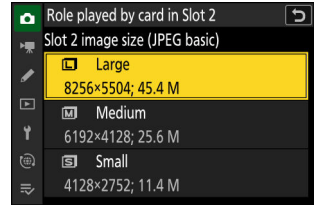
The length of time the camera will continue to buffer frames before cancelling shooting during the Pre-Release Capture phase of high-speed frame capture has been increased from 30 to 300 seconds.

- If an option other than **[None]** is selected for Custom Setting d4 **[Pre-Release Capture options]** > **[Pre-release burst]**, a green dot (●) will appear in the  icon in the shooting display when the shutter-release button is pressed halfway. If the shutter-release button is not pressed the rest of the way down before about 300 seconds have passed, the ● will change to ⚠ and Pre-Release Capture will be cancelled. A pre-release burst will not be recorded if the shutter-release button is pressed all the way down when ⚠ is displayed.
- Depending on camera settings, Pre-Release Capture may be cancelled before 300 seconds have passed.
- The  icon will start to flash about 30 seconds before Pre-Release Capture is cancelled.





New Size Option for JPEG + JPEG Recording

[Large] has been added to the size options available for copies recorded to the memory card in Slot 2 when [JPEG Slot 1 - JPEG Slot 2] is selected for [Role played by card in Slot 2] in the photo shooting menu. The size can be selected by pressing  when [JPEG Slot 1 - JPEG Slot 2] is highlighted.



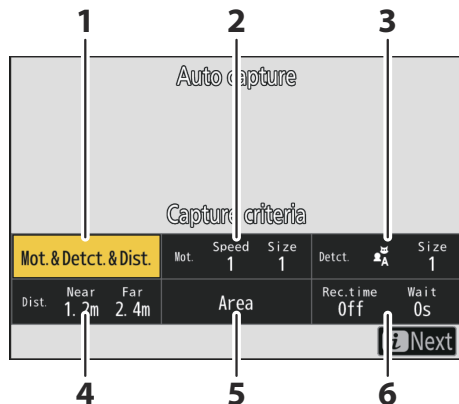
New Menu Item: “Auto Capture”

[Auto capture] items have been added to the photo shooting and video recording menus. These items are used to shoot bursts or record video automatically when the camera detects that the subject meets certain conditions, for example that it is in the frame, within a certain range of distances, and moving in a certain direction. They can even help photographers take photographs or record videos automatically without being present.

Option	Description
[Start]	Display auto capture settings and adjust auto capture criteria. After reviewing the selected criteria in the settings confirmation dialog to determine whether they will behave as predicted, press the video-record button to initiate auto capture.
[Select user preset]	<ul style="list-style-type: none">• Auto capture criteria can be saved to user presets [User preset 1] through [User preset 5]. Highlighting a preset and pressing  displays a menu where you can rename the preset and view settings or copy them to another preset.<ul style="list-style-type: none">- [View settings]: View the settings in the selected preset.- [Rename]: Rename the preset. Preset names can be up to 19 characters long.- [Copy]: Highlight the destination and press  to copy settings to the selected preset.• To immediately initiate auto capture using the criteria in a previously-saved preset, select the preset then choose [Start].

The Auto Capture Settings Display

The auto capture settings display can be viewed by selecting [Start] for [Auto capture] in the photo shooting or video recording menu. Highlight items and press \odot to display options for the selected item.



- 1 [Capture criteria]
- 2 [Advanced: Motion]
- 3 [Advanced: Subject detection]
- 4 [Advanced: Distance]
- 5 [Target area]
- 6 [Timing options]

Option	Description
[Capture criteria]	<ul style="list-style-type: none"> • Adjust auto capture criteria. <ul style="list-style-type: none"> - [Motion]: Select (<input checked="" type="checkbox"/>) this option to include the direction the subject is moving as one of the criteria that must be satisfied to trigger the start of auto capture shooting. - [Subject detection]: Select (<input checked="" type="checkbox"/>) this option to include detection of a subject as one of the criteria that must be satisfied to trigger the start of auto capture shooting. - [Distance]: If this option is selected (<input checked="" type="checkbox"/>), shooting will continue while the subject is within the specified range of distances. • Auto capture will be triggered only if all the selected criteria are satisfied.

Option	Description
[Advanced: Motion]	This option will take effect only if [Motion] is selected (☑) for [Capture criteria] . It is used to choose the direction of motion, size, and speed of subjects that will trigger auto capture (📖 21).
[Advanced: Subject detection]	This option will take effect only if [Subject detection] is selected (☑) for [Capture criteria] . It is used to choose the type and size of subjects that will trigger auto capture (📖 24).
[Advanced: Distance]	This option will take effect only if [Distance] is selected (☑) for [Capture criteria] . It is used to choose the range of distances at which the presence of a subject will trigger auto capture (📖 26). Shooting will continue while the subject is within the specified range of distances.
[Target area]	Choose the focus points used for subject detection when [Auto-area AF] is selected for AF-area mode. Auto capture will be triggered if a subject that meets the trigger conditions is detected in any of the selected focus points. Target-area selection can be used to disable focus points in areas of the frame that are blocked by obstacles or can otherwise be ignored for purposes of subject detection, ensuring that the desired subject can be detected more reliably.
[Timing options]	<p>Choose values for [Recording time selection] and [Wait after shooting].</p> <ul style="list-style-type: none"> • [Recording time selection]: Choose how long the camera will shoot once auto capture is triggered. Shooting will continue for the selected time even if the trigger conditions are no longer met. <ul style="list-style-type: none"> - Depending on camera settings, shooting may end before the expiration of the selected time. • [Wait after shooting]: Choose the minimum time the camera will wait before beginning shooting again.

Taking Pictures Using Auto Capture

✓ Before Shooting

To ensure that shooting is not interrupted, use a fully-charged battery, the supplied charging AC adapter, or an optional AC adapter and power connector.

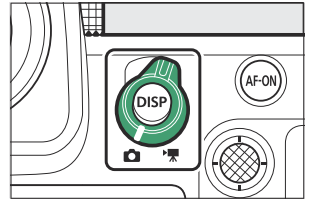
1 Mount the camera on a tripod or take other steps to hold it steady.

Fix the camera in place after framing the shot.

Tip: Framing the Shot

We recommend that you choose a wider angle than usual until you have grown used to auto capture.

2 Select the desired mode (photo or video) using the photo/video selector.



3 If you are using auto capture for photographs, select a continuous release mode: continuous high-speed, continuous low-speed, or high-speed frame capture ([C30] or [C120]).

- If you are using auto capture to record videos, proceed to Step 4.
- If single-frame or self-timer mode is selected, the camera will switch to continuous high-speed mode when auto capture begins.
- If [C60] is selected for high-speed frame capture, the camera will switch to [C120].
- If you selected continuous low-speed or continuous high-speed mode, choose the frame advance rate before proceeding.

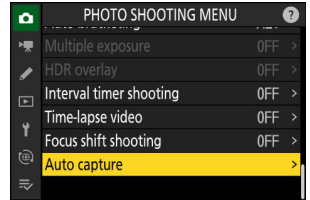


4 Position the focus point.

Choose an AF-area mode and position the focus point in the area of the frame in which you anticipate the subject will appear.

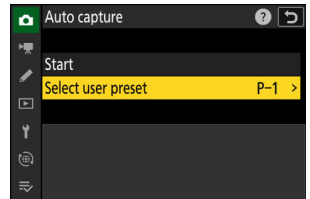
- If autofocus is enabled, the camera will focus in mode **AF-C** during auto capture.
- When using manual focus, slide the lens focus-mode switch to **[M]** and adjust focus manually. Manual focus is available only with lenses equipped with a focus-mode switch.

5 Highlight [Auto capture] in the photo shooting or video recording menu and press \odot .



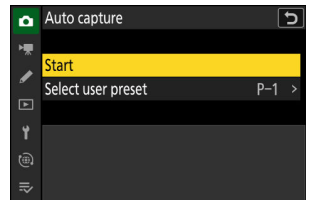
6 Choose [Select user preset], then highlight a destination preset for the auto capture settings and press \odot .

Choose a destination from presets **[User preset 1]** through **[User preset 5]**.

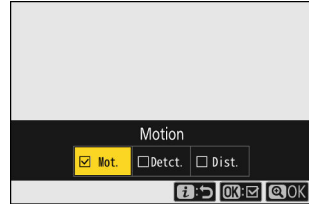
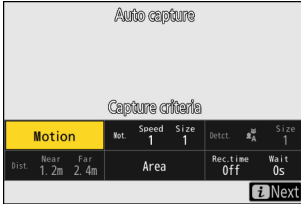


7 Highlight [Start] and press \odot .

Auto capture settings will be displayed.



8 Highlight [Capture criteria] and press \otimes .

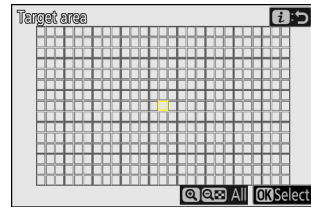
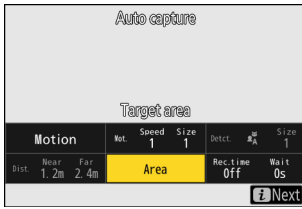


- Adjust auto capture criteria. Highlight options and press \otimes to select () or deselect ().
- Press \mathcal{Q} to save changes and return to the auto capture settings display.

9 Adjust settings for each of the criteria selected for [Capture criteria].

- For information on the criteria available when [**Motion**] is enabled (), see "Capture Criteria" > "Motion" ([📖 21](#)).
- For information on the criteria available when [**Subject detection**] is enabled (), see "Capture Criteria" > "Subject Detection" ([📖 24](#)).
- For information on the criteria available when [**Distance**] is enabled (), see "Capture Criteria" > "Distance" ([📖 26](#)).
- Although multiple [**Capture criteria**] can be used together, we recommend that you enable () only one criterion at a time until you have grown used to auto capture.

10 Highlight [Target area] and press **OK**.

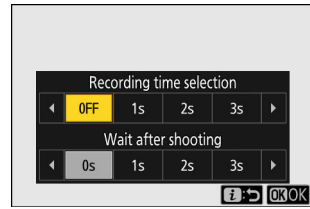
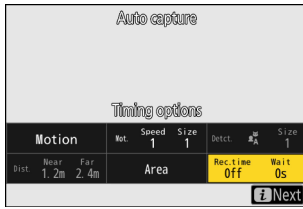


- Choose the focus points used for subject detection when **[Auto-area AF]** is selected for AF-area mode. Target-area selection is not available in other AF-area modes. If another mode is selected, proceed to Step 11.
- Target-area selection can be used to disable focus points in areas of the frame that are blocked by obstacles or can otherwise be ignored for purposes of subject detection, ensuring that the desired subject can be detected more reliably.
- Press **OK** to prevent focus points being used for subject detection (disabled focus points are displayed in red). Press **OK** again to clear (re-enable) the focus point.
- Press **Q** to enable all focus points.
- Press **Q(?)** to disable all focus points.
- Focus points can be enabled and disabled nine at a time (in 3 × 3 grids) by tapping the monitor.
- Press **i** to save changes and return to the auto capture settings display.

✓ Disabled Focus Points

Subjects meeting the **[Capture criteria]** will be detected only in the vicinity of the chosen focus points. For example, the camera will ignore motion in disabled focus points even when **[Motion]** is enabled (**✓**).

11 Highlight [Timing options] and press **OK**.



- Use **[Recording time selection]** to choose the length of each individual burst or video recording; options include **[OFF]** (no limit) and values of from 1 second to 30 minutes. When an option other than **[OFF]** is selected, shooting will continue for the selected time even if the trigger conditions are no longer met.
- The minimum length of time the camera will wait before beginning shooting again can be selected using **[Wait after shooting]**, which offers a choice of values of from 0 seconds to 30 minutes.
- Press **OK** to save changes and return to the auto capture settings display.

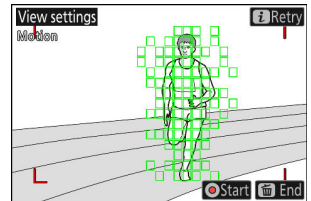
12 Press the **i** button.

- The settings confirmation dialog will be displayed.
- The currently selected () **[Capture criteria]** are listed in the top left corner of the dialog.



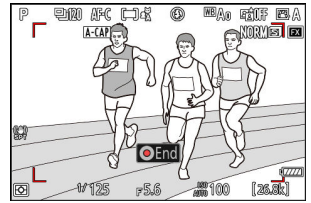
13 Check that the camera can detect subjects as desired using the selected criteria.

- A green border appears around subjects matching the selected criteria in the settings confirmation dialog.
- If a green border is not displayed as expected, press the **i** button and repeat Steps 9 and 10 until the desired results are achieved.



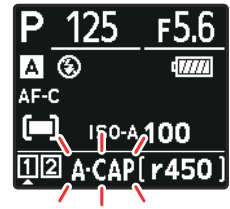
14 Initiate auto capture.

- To initiate auto capture, press the video-record button in the settings confirmation dialog.
- Shooting will begin when a subject that meets the selected criteria is detected and continue while the criteria are met.
- Auto capture will be triggered only if all the options selected for [**Capture criteria**] are satisfied.
- The shooting display will turn off to save power if no operations are performed for about three minutes, but auto capture will remain active. The display can be reactivated by pressing the **DISP** button or pressing the shutter-release button halfway.

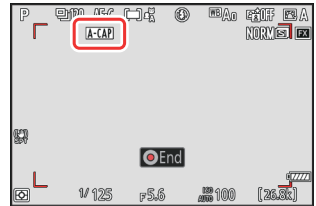


✓ The Auto Capture Standby Display

- “A- CAP” will be displayed in the control panel.



- An **A-CAP** icon will flash in the shooting display.



Tip: Pre-Release Capture

The settings selected for Custom Setting d4 [Pre-Release Capture options] apply when [C30] or [C120] is selected for release mode.

Tip: Silent Mode

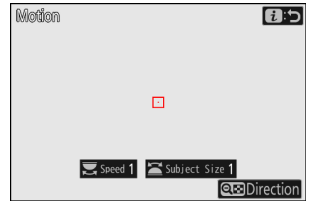
Silent mode can be enabled by selecting [ON] for [Silent mode] in the setup menu.

“Capture Criteria” > “Motion”

This option is used to choose the direction of motion, size, and speed of subjects that will trigger auto capture.

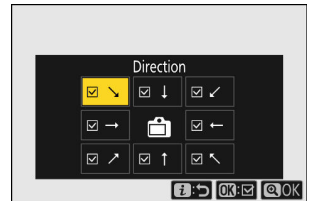
1 Highlight [Advanced: Motion] in the auto capture settings display and press **Ⓜ**.

Motion criteria will be displayed.



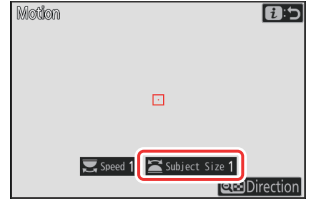
2 Press the **Ⓜ(?)** button and select directions.

- Direction criteria will be displayed.
- Highlight a direction and press **Ⓜ** to select () or deselect (); subjects moving in any of the selected directions will be detected by the camera, while subjects moving in other directions will be ignored.
- Press **Ⓜ** to save changes and return to the motion settings display.



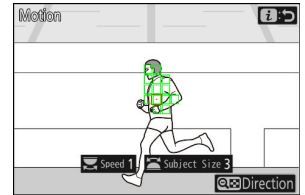
3 Rotate the sub-command dial to choose the subject size.

Rotate the sub-command dial to choose a **[Subject Size]** of **[1]** to **[5]**. Auto capture will be triggered only by subjects of the selected size or larger.



Tip: Size Options

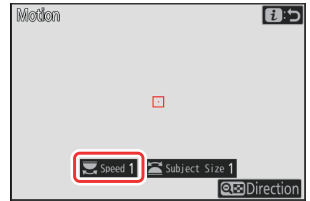
- Subjects that meet the criteria for **[Subject Size]** and **[Speed]** are shown by green boxes in the motion settings display.
- The apparent subject size (measured in focus points) for each **[Subject Size]** option is listed below.
 - **[1]**: 4 focus points or larger
 - **[2]**: 8 focus points or larger
 - **[3]**: 14 focus points or larger
 - **[4]**: 24 focus points or larger
 - **[5]**: 34 focus points or larger



Subject detected in 14 focus points

4 Rotate the main command dial to choose the subject speed.

Rotate the main command dial to choose a **[Speed]** of **[1]** to **[5]**. Choose higher values to restrict subject detection to faster-moving subjects, lower values to include subjects moving at slower speeds.



Tip: Size and Speed

- Subjects that meet the criteria for **[Subject Size]** and **[Speed]** are shown by green boxes in the motion settings display.
 - **[Speed]** is measured as the time taken for the subject to cross the frame horizontally. The approximate time for each value is listed below. Subjects that are moving too quickly may not be detected.
 - **[1]**: About 5 s
 - **[2]**: About 4 s
 - **[3]**: About 3 s
 - **[4]**: About 2 s
 - **[5]**: About 1 s
 - Selecting **[1]** for both **[Subject Size]** and **[Speed]** makes it easier for the camera to detect subjects of a variety of sizes moving at a variety of speeds. We recommend that you begin from low values and then gradually raise them while checking the display of green boxes in the motion settings display or taking test pictures until subject detection functions as desired.
-

5 Press the **i** button.

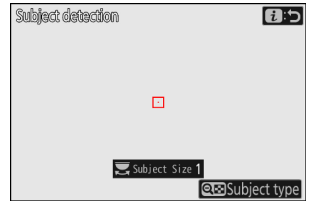
The camera will save the changes and return you to the auto capture settings display.

“Capture Criteria” > “Subject Detection”

This option is used to choose the types and sizes of subject that trigger auto capture.

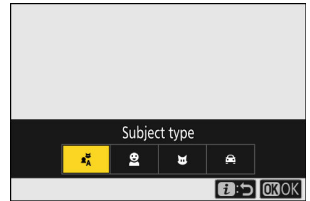
1 Highlight [Advanced: Subject detection] in the auto capture settings display and press **Ⓜ**.

Subject detection criteria will be displayed.



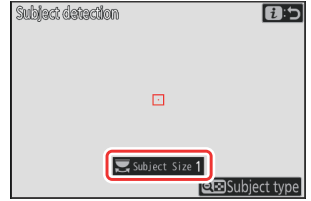
2 Press the **Ⓜ (?)** button and select the desired subject types.

- Your choices are auto, people, animals, and vehicles.
- Press **Ⓜ** to save changes and return to the subject detection display.



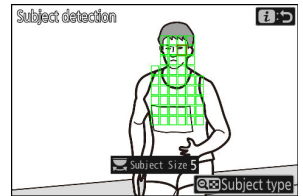
3 Rotate the main command dial to choose the subject size size

Choose a **[Subject Size]** from values [1] through [5]. Auto capture will be triggered only by subjects of the selected size or larger.



Tip: Size Options

- Subjects that meet the criterion for **[Subject Size]** are shown by green boxes in the subject detection display.
- The apparent subject size (as a percentage of the angle of view) for each setting is listed below.
 - [1]: 2.5%
 - [2]: 5%
 - [3]: 10%
 - [4]: 15%
 - [5]: 20%



Subject detected at size of
20%

- A **[Subject Size]** of [1] makes it easier for the camera to detect subjects of a variety of sizes. We recommend that you begin from a low value and then gradually raise it while checking the display of green boxes in the subject detection display or taking test pictures until subject detection functions as desired.
-

4 Press the *i* button.

The camera will save the changes and return you to the auto capture settings display.

✓ Caution: Subject Detection

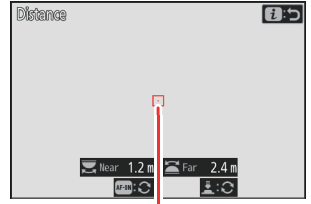
If "auto" or "people" is selected, auto capture will begin when human portrait subjects are detected, whether or not they are facing the camera.

“Capture Criteria” > “Distance”

Choose the maximum and minimum distances at which the camera will detect subjects for auto capture. Auto capture shooting will continue while the subject is within the specified range of distances.

1 Highlight [Advanced: Distance] in the auto capture settings display and press **OK**.

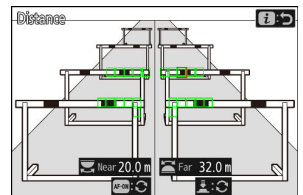
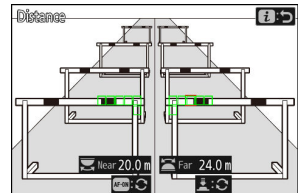
- Distance criteria will be displayed.
- A focus-point target will appear in the distance criteria display.



Focus-point target

2 Choose the closest and farthest distances at which the camera will detect subjects for auto capture.

- Place the target over a subject at the closest distance for auto capture subject detection and press the **AF-ON** button to set the minimum distance, which will appear in the display as [**Near**]. The minimum distance can be fine-tuned by rotating the main command dial.
- Place the target over a subject at the farthest distance for auto capture subject detection and press the shutter-release button halfway to set the maximum distance, which will appear in the display as [**Far**]. The maximum distance can be fine-tuned by rotating the sub-command dial.



Tip: Fine-Tuning the Distances for “Near” and “Far”

Fine-tuning is available exclusively with Nikon Z mount lenses, but not with the NIKKOR Z 58 mm f/0.95 S Noct.


Tip: The “Near” and “Far” Displays

The distances for [Near] and [Far] are displayed in meters only. They will not be displayed in feet even when [Feet (ft)] is selected for [Distance units] in the setup menu.

3 Press the *i* button.

The camera will save the changes and return you to the auto capture settings display.


Pausing and Ending Auto Capture

- To pause auto capture and return to the settings confirmation dialog, press the video-record button. Auto capture can be resumed by pressing the button again.
- To end auto capture and exit to the shooting display, press the  button.

✔ Cautions: Auto Capture

- Image-area selection is fixed at **[FX (36×24)]**. Auto capture cannot be used when a DX lens is attached.
- During auto-capture standby, the camera focuses as described below.
 - **[Capture criteria] > [Distance]** enabled (): The camera focuses at the distance in effect when auto capture began.
- The camera may fail to detect subjects in the **[Target area]** when there are multiple subjects in the frame.
- Falling rain and snow may interfere with subject detection. Auto capture may be triggered by falling snow, heat haze, or other weather phenomena.

✔ During Auto Capture

All controls other than the **DISP**, video-record, and  buttons are disabled while auto capture shooting is in progress. End auto capture before attempting to adjust camera settings.

✔ Auto Capture: Restrictions

Auto capture cannot be combined with some camera features, including:

- long time-exposures (“Bulb” or “Time”),
 - the self-timer,
 - bracketing,
 - multiple exposures,
 - HDR overlay,
 - interval-timer photography,
 - time-lapse video recording,
 - focus shift, and
 - electronic vibration reduction.
-

Low ISO Sensitivity Settings for N-Log Video

Low ISO sensitivity options ranging from Lo 0.3 to Lo 2.0 have been added to the choices available for [ISO sensitivity settings] > [ISO sensitivity (mode M)] in the video recording menu when [N-Log] is selected as the video tone mode. Sensitivity can be set to values below ISO 800 by approximately 0.3 to 2.0 EV (equivalent respectively to ISO 640 and 200).

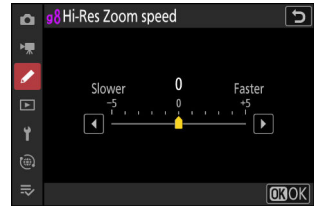
Cautions: Low ISO Sensitivities

The maximum output level for videos recorded at low ISO sensitivities drops due to loss of highlight data. We recommend that you select a low value for Custom Setting g13 [Zebra pattern] > [Highlight threshold] when using the zebra pattern feature. A highlight threshold around [230] is recommended for Lo 0.3 to 1.0 and [200] for Lo 2.0.

New Options for Hi-Res Zoom Speed

Custom Setting g8 [**Hi-Res Zoom speed**] now offers a choice of 11 speeds, from -5 to +5.

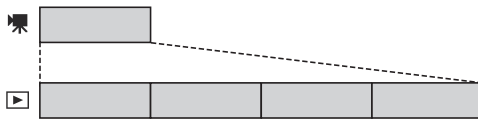
- Press ◀ or ▶ to choose the speed.
- The higher the value, the higher the speed; the lower the value, the lower the speed.



New: Slow-Motion Videos

[1920×1080; 30p ×4 (slow-motion)], [1920×1080; 25p ×4 (slow-motion)], and [1920×1080; 24p ×5 (slow-motion)] have been added to the options available for [Frame size/frame rate] when [H.264 8-bit (MP4)] is selected for [Video file type] in the video recording menu. These options are used to record slow-motion videos.

- Videos shot using [1920×1080; 30p ×4 (slow-motion)], for example, are recorded at a frame rate of 120p and play back at a rate of 30p. It takes around 10 seconds of recording to produce about 40 seconds of footage. Slow-motion videos can be used to view crucial moments in sport and other events of brief duration in slow motion.



- Sound is not recorded.
- Selecting [DX] for [Choose image area] or mounting a DX lens on the camera increases the apparent focal length by approximately 2.3× when compared to FX format.
- Custom Setting g11 [Extended shutter speeds (mode M)] is fixed at [OFF].
- Recording and playback speeds are shown below.

Frame size/frame rate	Rate frames are read at *	Rate frames are recorded/play at *
[1920×1080; 30p ×4 (slow-motion)]	120p	30p
[1920×1080; 25p ×4 (slow-motion)]	100p	25p
[1920×1080; 24p ×5 (slow-motion)]	120p	24p

* Actual frame rate is 119.88 fps for values listed as 120p, 29.97 fps for values listed as 30p, and 23.976 fps for values listed as 24p.

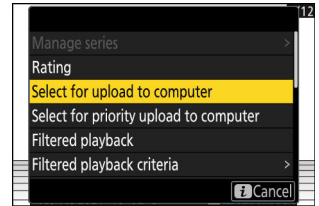
- The maximum bit rate is 36 Mbps.
- The maximum recording time is about three minutes.

✓ Cautions: Recording Slow-Motion Videos

- Features that cannot be used during slow-motion video recording include:
 - flicker reduction,
 - electronic vibration reduction, and
 - time code output.
 - Videos recorded at [**1920×1080; 30p ×4 (slow-motion)**], [**1920×1080; 25p ×4 (slow-motion)**], and [**1920×1080; 24p ×5 (slow-motion)**] will be output to HDMI devices at [**1920×1080; 30p**], [**1920×1080; 25p**], and [**1920×1080; 24p**], respectively.
-

Changes to *i*-Menu “Select for Upload” Options

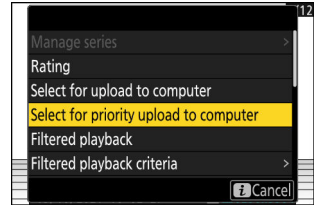
Changes have been made to the behavior of the [**Select for upload to computer**] and [**Select for upload (FTP)**] items in the playback *i* menu.





- These options are displayed only if the camera is connected to a computer or FTP server.
- While in earlier versions of the camera firmware, choosing [**Select for upload to computer**] or [**Select for upload (FTP)**] would mark the current picture for priority upload (📁) and begin upload immediately, from “C” version firmware 4.00 these options simply mark the picture for upload (📁). Pictures with this marking will be added to the end of the upload queue and not begin uploading until upload of any pictures ahead of them in the queue is complete.

Priority Upload Options Added to *i* Menu

[**Select for priority upload to computer**] and [**Select for priority upload (FTP)**] items have been added to the playback *i* menu.









- These options are displayed only if the camera is connected to a computer or FTP server.
- To mark the current picture for priority upload () and begin upload immediately, press the *i* button, highlight [**Select for priority upload to computer**] or [**Select for priority upload (FTP)**], and press . Pictures marked for priority upload will be uploaded before pictures marked for upload using other means.

Support for Power Zoom



The camera now supports power zoom for use with power zoom (PZ) lenses. In addition to using the lens zoom ring, you now have the option of zooming power zoom lenses attached to the camera in and out using camera controls (“power zoom”).





New Custom Setting: f12 “Assign Power Zoom Buttons”

Choose whether the  and  (?) buttons can be used for power zoom during still photography when a power zoom lens is attached.

Option	Description
[Use  /  buttons]	Selecting [ON] allows the  and  (?) buttons to be used for power zoom.
[Power zoom speed]	Choose the speed at which power zoom lenses can be zoomed in and out using the buttons.

New Custom Setting: g9 “Assign Power Zoom Buttons”

Choose whether the  and  (?) buttons can be used for power zoom during video recording when a power zoom lens is attached.

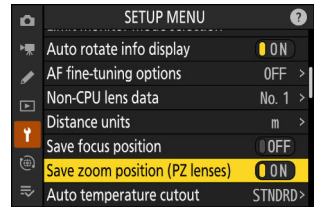
Option	Description
[Use  /  buttons]	Selecting [ON] allows the  and  (?) buttons to be used for power zoom.
[Power zoom speed]	Choose the speed at which power zoom lenses can be zoomed in and out using the buttons; if desired, you can choose one speed for use during recording and another for pre- and post-recording. <ul style="list-style-type: none">Note that the sounds produced by the lens may be audible in footage recorded during zoom. The effect can be mitigated by selecting a slower zoom speed.

Tip: Assigning Power Zoom to Camera Controls

The power zoom role can be assigned to camera controls using options newly added to Custom Settings f2 [Custom controls (shooting)] and g2 [Custom controls]. This role can be assigned to the Fn1 and Fn2 buttons ([📖 39](#)).

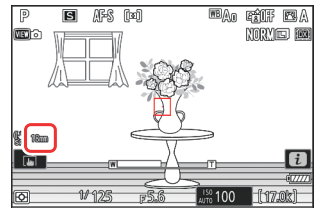
New Setup Menu Item: “Save Zoom Position (PZ Lenses)”

If [ON] is selected when a power zoom (PZ) lens is attached, the camera will save the current zoom position when turned off and restore it when next turned on.



The Focal Length Display

The lens focal length is shown in the shooting display when a power zoom lens is attached.



New Custom Setting: d6 “Exposure Delay Mode”





An [**Exposure delay mode**] item has been added to the Custom Settings menu at position d6. It can be used to delay the release of the shutter until about 0.2 to 3 seconds after the shutter-release button has been pressed, helping to reduce blur caused by camera shake.

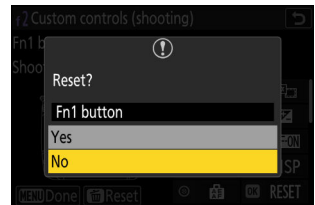
New Options for Custom Settings f2 “Custom Controls (Shooting)” and g2 “Custom Controls”

Additions have been made to the roles available for Custom Setting f2 [**Custom controls (shooting)**] or g2 [**Custom controls**] and the controls to which they can be assigned. In addition, custom controls can now be reset.

New Reset Option





You can now reset selected controls to their default roles in the control-selection displays for Custom Settings f2 [**Custom controls (shooting)**] and g2 [**Custom controls**].

- Highlight the desired control and press  to display a confirmation dialog where you can reset the control to its default role by highlighting [**Yes**] and pressing .
- Pressing and holding the  button for about three seconds when a control is highlighted displays a confirmation dialog where you can reset all controls to their default roles by highlighting [**Yes**] and pressing .




Newly Customizable Controls


The following controls can now be customized:

-  [**WB button**]
-  [**Playback button**]
-  [**Flash mode button**]
-  [**BKT button**]

New Roles Available via Custom Setting f2 “Custom Controls (Shooting)”

Option		Description
	[Switch eyes]	Press the control to choose the eye used for focus when the camera detects the eyes of a human or animal portrait subject.
PZ[T]	[Power zoom +]	Press the control to zoom in using power zoom when a power zoom lens is attached. This option is enabled automatically when [Power zoom –] is selected for [Fn2 button].
PZ[W]	[Power zoom –]	Press the control to zoom out using power zoom when a power zoom lens is attached. This option is enabled automatically when [Power zoom +] is selected for [Fn1 button].
DL	[Exposure delay mode]	Hold the control and rotate a command dial to choose the exposure delay.

New Roles Available via Custom Setting g2 “Custom Controls”





Option		Description
	[Switch eyes]	Press the control to choose the eye used for focus when the camera detects the eyes of a human or animal portrait subject.
PZ[T]	[Power zoom +]	Press the control to zoom in using power zoom when a power zoom lens is attached. This option is enabled automatically when [Power zoom –] is selected for [Fn2 button].
PZ[W]	[Power zoom –]	Press the control to zoom out using power zoom when a power zoom lens is attached. This option is enabled automatically when [Power zoom +] is selected for [Fn1 button].

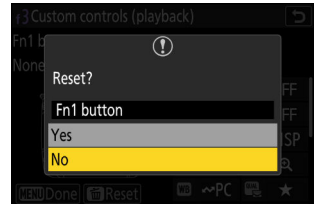
New Options for Custom Setting f3: “Custom Controls (Playback)”

Additions have been made to the roles available for Custom Setting f3 [**Custom controls (playback)**]. An option has also been added to control the behavior of frame advance during playback zoom. In addition, custom controls can now be reset.

New Reset Option






You can now reset selected controls to their default roles in the Custom Setting f3 [**Custom controls (playback)**] control-selection display.

- Highlight the desired control and press  (Reset) to display a confirmation dialog where you can reset the control to its default role by highlighting [Yes] and pressing .
- Pressing and holding the  (Reset) button for about three seconds when a control is highlighted displays a confirmation dialog where you can reset all controls to their default roles by highlighting [Yes] and pressing .




Newly Customizable Controls

The following controls can now be customized:

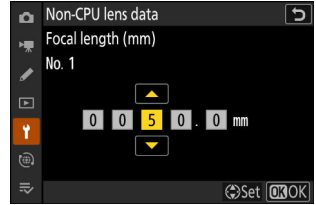
-  [Playback button]
-  [BKT button]
-  [Flash mode button]
-  [Lens Fn2 button]
-  [Lens Fn button]

New Roles

Option		Description
	[Delete]	Press the control once to display a confirmation dialog. Press the control again to delete the current picture and return to playback.
[Frame advance zoom position]		Choose how the camera centers the display when a command dial is rotated to scroll through pictures during playback zoom. <ul style="list-style-type: none">• [Keep current zoom position]: Center the display on the current zoom location.• [Prefer focus point]: Center the display on the focus point active when the photograph was taken.

Updates to “Non-CPU Lens Data”

- The [Focal length (mm)] and [Maximum aperture] options for [Non-CPU lens data] in the setup menu can now be used to enter a value of your choice.



- Names can be assigned to lenses with a [Lens number] of from [1] to [20]. To enter a name of up to 36 characters, highlight [Lens name] and press .



Increased Character Limit for IPTC “Category” Entries

The character limit for “Category” entries in IPTC presets created or edited using the camera has been increased from 3 to 256.

New Shutter Sound and Volume Options

The **[Camera sounds]** item in the setup menu has been restructured with the addition of new options. You can now choose a shutter sound and adjust its volume.

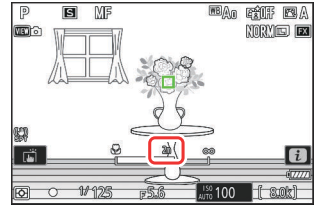
Option	Description
[Shutter sound]	If [ON] is selected, the camera will make a sound when the shutter is released.
[Volume]	Choose the volume of the electronic shutter sound from a total of five options.
[Type]	Choose from 5 types of shutter sound.
[Beep]	<ul style="list-style-type: none">• If [On] or [Off (touch controls only)] is selected, beeps will sound when:<ul style="list-style-type: none">- the self-timer counts down,- interval-timer photography, time-lapse video recording, or focus shift ends,- the camera focuses in photo mode (note that this does not apply if AF-C is selected for focus mode or if [Release] is selected for Custom Setting a2 [AF-S priority selection]), or- touch controls are used (but note that beeps will not sound for touch controls if [Off (touch controls only)] is selected).• Select [Off] to mute the beep speaker.
[Volume]	Choose from three options for beep volume.
[Pitch]	Choose the pitch of the beep from [High] and [Low] .

Support for Viewfinder Display Size Selection in Video Mode

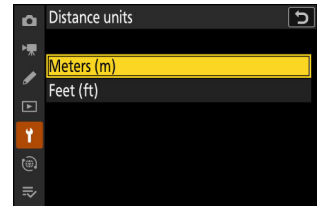
The option selected for [**Finder display size (photo Lv)**] in the setup menu now applies in both photo and video modes. This item has consequently been renamed [**Viewfinder display size**]. The viewfinder display magnification can be selected from [**Standard**] and [**Small**].

Updated Distance Display for Manual Focus

The focus distance indicator for manual focus now shows the distance between the camera and the focus position in units of your choosing.



- The choice is made using a **[Distance units]** item newly added to the setup menu, which has options for **[Meters (m)]** and **[Feet (ft)]**.



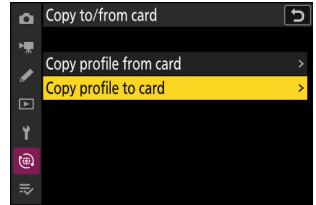
- The distance shown is intended as a guide only. It may vary substantially from the actual distance depending on the lens used.




Changes and Additions to “Connect to FTP server”

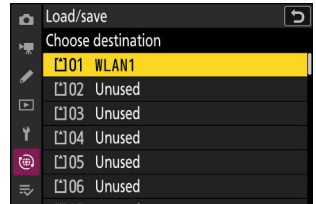
Changes and additions have been made to the [Connect to FTP server] item in the network menu.

Increased Profile Storage

The number of network profiles that can be saved using [Connect to FTP server] > [Network settings] > [Copy to/from card] > [Copy profile to card] has been increased from 1 to 99.



- Highlight [Copy profile to card] and press , and then highlight a profile you wish to save and press  again. Select the destination (1–99) and press  to copy the profile to the card.



Auto Reconnect on Error

[Keep connection] has been added to the options available for [Connect to FTP server] > [Options] in the network menu. If the connection is lost due to a wireless, TCP/IP, or FTP error when [ON] is selected, the camera will automatically attempt to reconnect after about 15 seconds. The camera will attempt to reconnect repeatedly until the connection is re-established.

- The standby timer will not expire when [ON] is selected, regardless of the option selected for Custom Setting c3 [Power off delay] > [Standby timer]. Note that this increases the drain on the battery.

Changes to Synchronized Release

A **[Group settings]** item has been added under **[Connect to other cameras]** in the network menu. Cameras can be grouped for synchronized release and remote camera settings adjusted separately for each group. Switching groups switches the remote cameras the master camera controls.

- The addition of **[Group settings]** changes how cameras are configured for synchronized release. The procedure described below replaces that described under “Synchronized Release” in the “Connecting to Other Cameras” chapter of the *Reference Guide*.
- Remote cameras can now be grouped. **[Remote camera list]** has consequently been moved from its former location directly under **[Connect to other cameras]** in earlier firmware versions and placed in **[Connect to other cameras] > [Group settings] > (group name) > [Remote camera list]**.

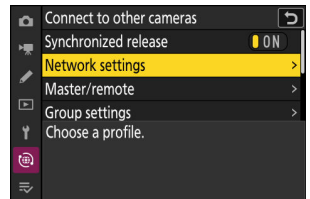
Configuring and Using Synchronized Release

Follow the steps below to create host profiles for synchronized release. Each camera saves the pictures it takes to its own memory card. Repeat the process to create identical profiles for each camera.

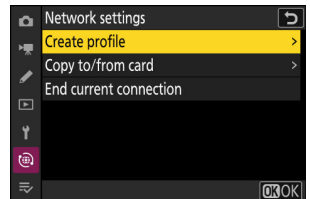
Wireless LAN

To create host profiles when connecting via wireless LAN:

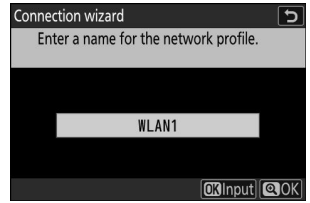
- 1 Select **[Connect to other cameras]** in the network menu, then highlight **[Network settings]** and press **↩**.



- 2 Highlight **[Create profile]** and press **OK**.

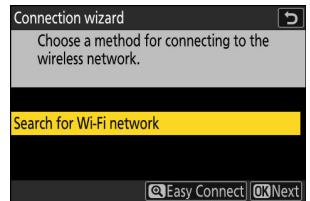


3 Name the new profile.



- To proceed to the next step without changing the default name, press **↩**.
- Whatever name you choose will appear in the network menu [**Connect to other cameras**] > [**Network settings**] list.
- To rename the profile, press **⊗**. Press **↩** to proceed after entering a name.

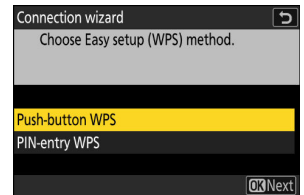
4 Highlight [Search for Wi-Fi network] and press **⊗**.



The camera will search for networks currently active in the vicinity and list them by name (SSID).

✓ "Easy Connect"

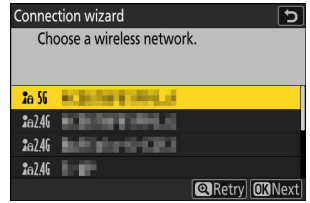
- To connect without entering an SSID or encryption key, press **↩** in Step 4. Next, press **⊗** and choose from the options below.



Option	Description
[Push-button WPS]	For routers that support push-button WPS. Press the WPS button on the router and then press the camera ⊗ button to connect.
[PIN-entry WPS]	The camera will display a PIN. Using a computer, enter the PIN on the router. For more information, see the documentation provided with the router.

- After connecting, proceed to Step 7.

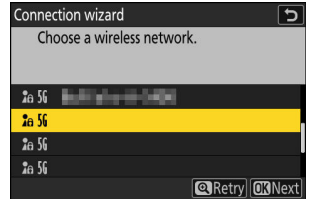
5 Choose a network.



- Highlight a network SSID and press Ⓞ.
- The band on which each SSID operates is indicated by an icon.
- Encrypted networks are indicated by a 🔒 icon. If the selected network is encrypted (🔒), you will be prompted to enter the encryption key. If the network is not encrypted, proceed to Step 7.
- If the desired network is not displayed, press 🔍 to search again.

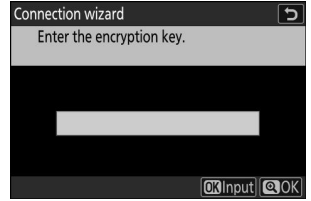
✔ Hidden SSIDs

Networks with hidden SSIDs are indicated by blank entries in the network list.



- To connect to a network with a hidden SSID, highlight a blank entry and press Ⓞ. Next, press Ⓞ; the camera will prompt you to provide an SSID.
 - Enter the network name and press 🔍. Press 🔍 again; the camera will now prompt you to enter the encryption key.
-

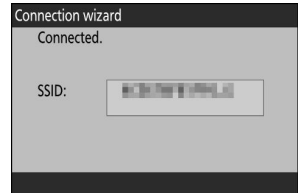
6 Enter the encryption key.



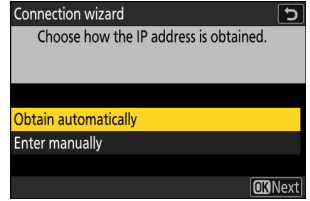
- Press **⌘** and enter the encryption key for the wireless router.
- For more information on the wireless router encryption key, see the documentation for the wireless router.



- Press **⌘** when entry is complete.
- Press **⌘** again to initiate the connection. A message will be displayed for a few seconds when the connection is established.



7 Obtain or select an IP address.

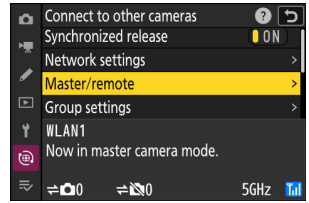


- Highlight one of the following options and press **⏎**.

Option	Description
[Obtain automatically]	Select this option if the network is configured to supply the IP address automatically. A “configuration complete” message will be displayed once an IP address has been assigned. <ul style="list-style-type: none">- It is recommended that you note the remote camera IP address, as you will need it in subsequent steps.
[Enter manually]	Enter the IP address and sub-net mask manually. <ul style="list-style-type: none">- Press ⏎; you will be prompted to enter the IP address.- Rotate the main command dial to highlight segments.- Press ⏪ or ⏩ to change the highlighted segment and press ⏎ to proceed.- Next, press Ⓚ; a “configuration complete” message will be displayed. Press Ⓚ again to display the sub-net mask.- Press ⏪ or ⏩ to edit the sub-net mask and press ⏎; a “configuration complete” message will be displayed.

- Press **⏎** to proceed when the “configuration complete” message is displayed.
- The profile name is displayed when a connection is established.

8 Highlight [Master/remote] and press .



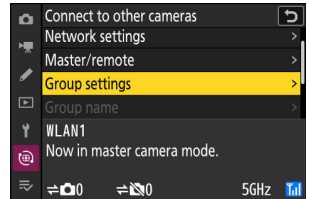
Choose a role for each camera from “master” and “remote”.

- **[Master camera]:** Pressing the shutter-release button on the master camera releases the shutters on the remote cameras. Each group can have only one master. If the group has multiple master cameras, only the first to connect to the network will actually serve in that capacity.
- **[Remote camera]:** The shutters on the remote cameras are synchronized with the shutter on the master camera.

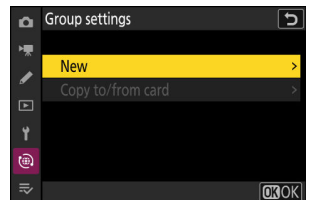
9 Repeat Steps 1 through 8 for the remaining cameras.

When configuring remote cameras, be sure to select **[Remote camera]** in Step 8.

10 On the master camera, highlight [Group settings] and press .



11 Highlight [New] and press .



12 Enter the group display name.

- Choose the display name for the remote camera group.
Display names can be up to 32 characters long.
- Press **OK** to proceed once entry is complete.



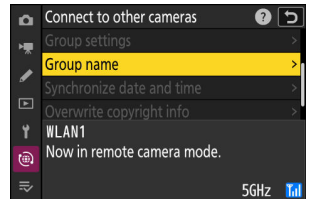
13 Highlight [Group name], press **OK**, and enter a group name.

Enter a group name for the synchronized cameras. Group names can be up to eight characters long.



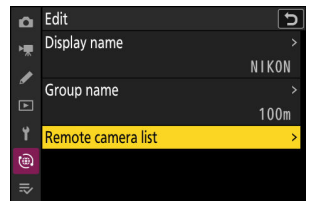
✓ Assigning Remote Cameras a “Group Name”

The group name selected on the remote cameras must match that chosen for the master camera. Choose the name using **[Connect to other cameras] > [Group name]** in the network menu.



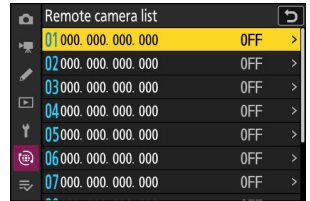
14 Highlight [Remote camera list] and press **OK**.

Add remote cameras to the group. The master camera can store information for up to 16 remote cameras in slots **[01]** through **[16]**.



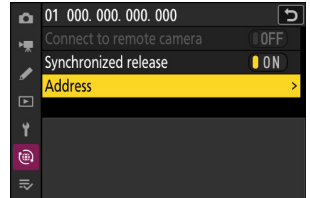
15 Highlight the desired slot and press .

Remote camera options will be displayed.

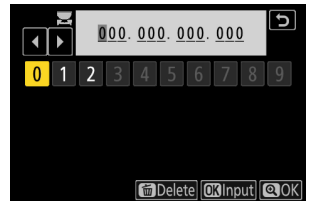


16 Highlight [Address] and press .





You will be prompted to enter an IP address.




17 Enter the remote camera IP address.

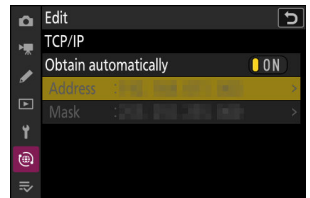


Enter the remote camera IP address you noted in Step 7.


- Rotate the main command dial to highlight segments.
- Press  or  to change the highlighted segment and press  to proceed.
- Press  to add the remote camera to the master camera remote camera list and establish a connection.

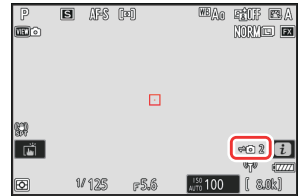
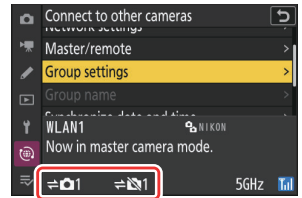
Tip: Viewing Remote Camera IP Addresses

To view a remote camera's IP address, select **[Connect to other cameras]** > **[Network settings]** in the camera's network menu, highlight a synchronized release host profile, press , and select **[TCP/IP]**.



18 Add the remaining remote cameras.

- When connecting to wireless networks, the cameras will display the band used by the selected SSID.
- The master camera shows the number of cameras in the group currently connected or not connected.
- The shooting display for the master camera shows a  icon together with the number of remote cameras connected.

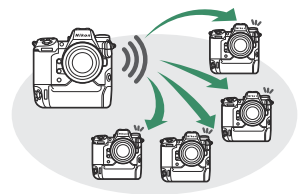


Connection Errors

In the event of remote camera connection errors, the remote camera count in the master camera shooting display will turn red and instead show the number of remote cameras that failed to connect.

19 Take pictures.

- Pressing the shutter-release button on the master camera releases the shutters on the remote cameras.

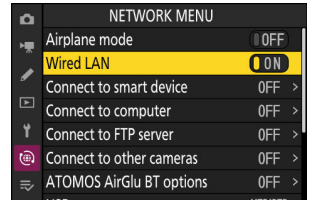



- Note that the standby timers will not expire automatically when the cameras are in synchronized release mode.

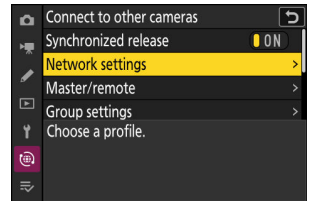
Ethernet

Follow the steps below to create host profiles for Ethernet connections. Before proceeding, connect an Ethernet cable to the camera's Ethernet connector. Do not use force or attempt to insert the connectors at an angle. Connect the other end of the cable to a router.

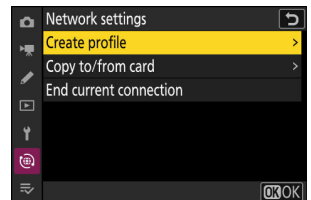
1 Select [ON] for [Wired LAN] in the network menu.



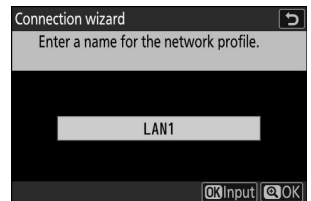
2 Select [Connect to other cameras] in the network menu, then highlight [Network settings] and press .






3 Highlight [Create profile] and press .

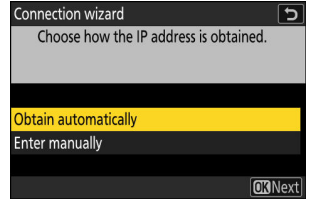


4 Name the new profile.



- To display IP address options without changing the default name, press .
- Whatever name you choose will appear in the network menu [Connect to other cameras] > [Network settings] list.
- To rename the profile, press . Press  to proceed after entering a name.

5 Obtain or select an IP address.

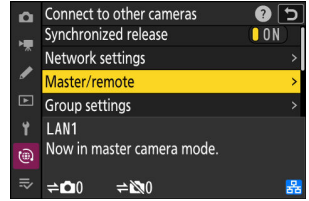


- Highlight one of the following options and press **⏎**.

Option	Description
[Obtain automatically]	Select this option if the network is configured to supply the IP address automatically. A “configuration complete” message will be displayed once an IP address has been assigned. <ul style="list-style-type: none">- It is recommended that you note the remote camera IP address, as you will need it in subsequent steps.
[Enter manually]	Enter the IP address and sub-net mask manually. <ul style="list-style-type: none">- Press ⏎; you will be prompted to enter the IP address.- Rotate the main command dial to highlight segments.- Press ⏪ or ⏩ to change the highlighted segment and press ⏎ to proceed.- Next, press Ⓚ; a “configuration complete” message will be displayed. Press Ⓚ again to display the sub-net mask.- Press ⏪ or ⏩ to edit the sub-net mask and press ⏎; a “configuration complete” message will be displayed.

- Press **⏎** to proceed when the “configuration complete” message is displayed.
- The camera will initiate the connection. The profile name is displayed when a connection is established.

6 Highlight [Master/remote] and press .



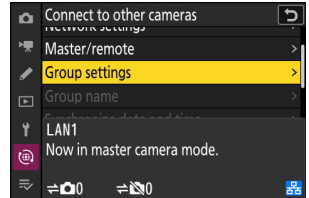
Choose a role for each camera from “master” and “remote”.

- **[Master camera]:** Pressing the shutter-release button on the master camera releases the shutters on the remote cameras. Each group can have only one master. If the group has multiple master cameras, only the first to connect to the network will actually serve in that capacity.
- **[Remote camera]:** The shutters on the remote cameras are synchronized with the shutter on the master camera.

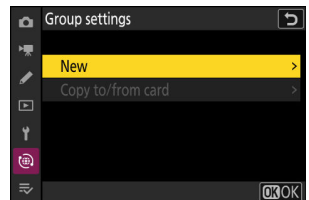
7 Repeat Steps 1 through 6 for the remaining cameras.

When configuring remote cameras, be sure to select **[Remote camera]** in Step 6.

8 On the master camera, highlight [Group settings] and press .



9 Highlight [New] and press .



10 Enter the group display name.

- Choose the display name for the remote camera group.
Display names can be up to 32 characters long.
- Press **OK** to proceed once entry is complete.



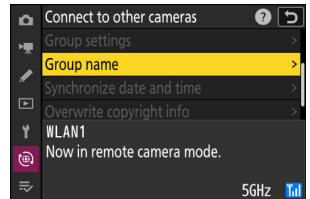
11 Highlight [Group name], press **OK**, and enter a group name.

Enter a group name for the synchronized cameras. Group names can be up to eight characters long.



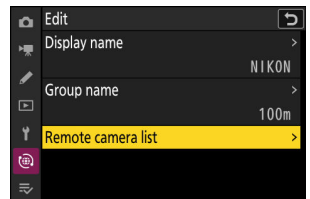
✓ Assigning Remote Cameras a “Group Name”

The group name selected on the remote cameras must match that chosen for the master camera. Choose the name using **[Connect to other cameras] > [Group name]** in the network menu.



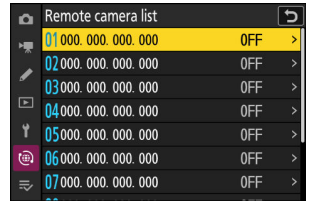
12 Highlight [Remote camera list] and press **OK**.

Add remote cameras to the group. The master camera can store information for up to 16 remote cameras in slots **[01]** through **[16]**.



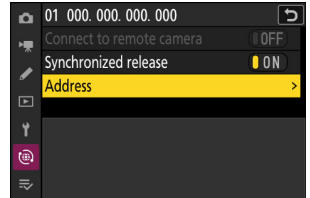
13 Highlight the desired slot and press .

Remote camera options will be displayed.

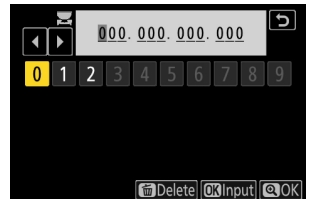


14 Highlight [Address] and press .





You will be prompted to enter an IP address.




15 Enter the remote camera IP address.

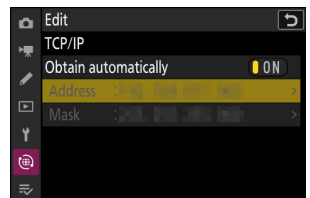


Enter the remote camera IP address you noted in Step 5.

- Rotate the main command dial to highlight segments.
- Press  or  to change the highlighted segment and press  to proceed.
- Press  to add the remote camera to the master camera remote camera list and establish a connection.

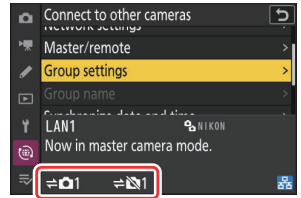
Tip: Viewing Remote Camera IP Addresses

To view a remote camera's IP address, select **[Connect to other cameras] > [Network settings]** in the camera's network menu, highlight a synchronized release host profile, press , and select **[TCP/IP]**.

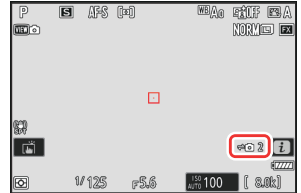


16 Add the remaining remote cameras.

- The master camera shows the number of cameras in the group currently connected or not connected.



- The shooting display for the master camera shows a camera icon together with the number of remote cameras connected.

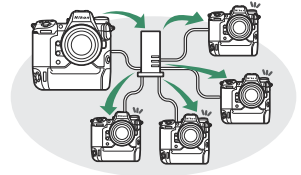


✓ Connection Errors

In the event of remote camera connection errors, the remote camera count in the master camera shooting display will turn red and instead show the number of remote cameras that failed to connect.

17 Take pictures.

- Pressing the shutter-release button on the master camera releases the shutters on the remote cameras.




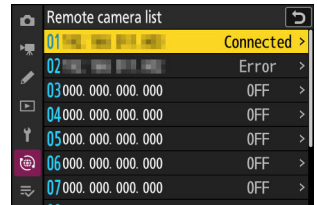
- Note that the standby timers will not expire automatically when the cameras are in synchronized release mode.


Tip: Suspending Synchronized Release

To temporarily disable synchronized release without ending the camera's connection to the network, select **[OFF]** for **[Connect to other cameras]** > **[Synchronized release]** in the network menu.

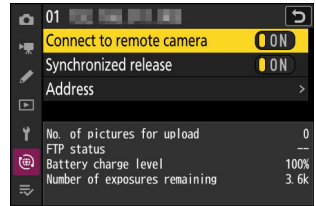
Tip: Viewing Remote Camera Status

To view remote camera status, go to **[Connect to other cameras]** > **[Group settings]** > (group name) in the master camera network menu, highlight **[Remote camera list]**, and press .



- Remote cameras are identified by IP address.
- Remote camera status is displayed as follows:
 - **[Connected]**: Normal connection.
 - **[Busy]**: The camera is being controlled from another master camera.
 - **[Error]**: One of the following errors has been detected:
 - The remote camera standby timer has expired.
 - The remote camera is off.
 - The remote camera is not in the same group as the master camera.
 - The IP address is incorrect.
 - **[OFF]**: Either
 - no remote camera has been assigned to the slot, or
 - **[OFF]** is selected for **[Connect to remote camera]** for the camera in question.
- Highlighting a remote camera with the **[Connected]** label and pressing  displays the number of pictures awaiting upload from the camera via FTP, FTP connection status, the battery level, and the number of exposures remaining.
- The entries for the remote cameras previously used for synchronized release will show the time of the most recent shot.

- To edit remote camera settings from the master camera, highlight the camera in the remote camera list and press \odot .



- To temporarily suspend the connection to the selected camera, select **[OFF]** for **[Connect to remote camera]**.
- To temporarily suspend synchronized release on the selected camera, select **[OFF]** for **[Synchronized release]**.
- If desired, you can then edit the camera's IP address by highlighting **[Address]** and pressing \odot . To reconnect, select **[ON]** for **[Connect to remote camera]**. No connection will be established if no remote camera exists at the specified address.

Tip: Saving Group Settings to a Memory Card.

Navigate to **[Connect to other cameras]** > **[Group settings]** > **[Copy to/from card]** in the network menu, highlight **[Copy to card]**, press \odot , and then highlight group settings you wish to save and press \odot again. Select the destination (1–99) and press \odot to copy the group settings to the card. Saved group settings can be loaded using **[Copy from card]**.

New “Overwrite Copyright Info” Option for Master Cameras

[**Overwrite copyright info**] has been added to the options available for [**Connect to other cameras**] in the network menu. Selecting this option overwrites the copyright information on any remote cameras currently connected with the copyright information stored on the master camera.

Menu Items and Defaults for “C” Firmware Version 4.00

The menu items and defaults after the firmware has been upgraded to “C” firmware version 4.00 are listed below.

Photo Shooting Menu

- [Shooting menu bank]: A
- [Extended menu banks]: OFF
- [Storage folder]
 - [Rename]: NCZ_9
 - [Select folder by number]: 100
 - [Select folder from list]: —
- [File naming]: DSC
- [Role played by card in Slot 2]: Overflow
- [Image area]
 - [Choose image area]: FX (36×24)
 - [DX crop alert]: OFF
- [Image quality]: JPEG normal
- [Image size settings]
 - [Image size]: Large
 - [Enable DX image sizes]: OFF
 - [Image size (DX)]: Large
- [RAW recording]: High efficiency★
- [ISO sensitivity settings]
 - [ISO sensitivity]: 100
 - [Auto ISO sensitivity control]: ON
 - [Maximum sensitivity]: 25600
 - [Maximum sensitivity with $\frac{1}{2}$]: Same as without flash
 - [Minimum shutter speed]: Auto
- [White balance]: Auto—Keep white (reduce warm colors)
- [Set Picture Control]: Auto
- [Manage Picture Control]: —
- [Color space]: sRGB
- [Active D-Lighting]: Off
- [Long exposure NR]: OFF
- [High ISO NR]: Normal
- [Vignette control]: Normal

- **[Diffraction compensation]**: ON
- **[Auto distortion control]**: ON
- **[Photo flicker reduction]**: OFF
- **[High-frequency flicker reduction]**: Off
- **[Metering]**: Matrix metering
- **[Flash control]**
 - **[Flash control mode]**: TTL
 - **[Wireless flash options]**: Off
 - **[Remote flash control]**: Group flash
- **[Focus mode]**: Single AF
- **[AF-area mode]**: Single-point AF
- **[AF subject detection options]**: Auto
- **[Vibration reduction]**: Sport
- **[Auto bracketing]**
 - **[Auto bracketing set]**: AE & flash bracketing
 - **[Number of shots]**: 0
 - **[Increment]**: 1.0
- **[Multiple exposure]**
 - **[Multiple exposure mode]**: Off
 - **[Number of shots]**: 2
 - **[Overlay mode]**: Average
 - **[Save individual pictures (RAW)]**: ON
 - **[Overlay shooting]**: ON
 - **[Select first exposure (RAW)]**: —
- **[HDR overlay]**
 - **[HDR mode]**: Off
 - **[HDR strength]**: Auto
 - **[Save individual pictures (RAW)]**: OFF
- **[Interval timer shooting]**
 - **[Choose start day/time]**: Now
 - **[Interval]**: 1 min.
 - **[Intervals×shots/interval]**: 0001×1
 - **[Exposure smoothing]**: ON
 - **[Interval priority]**: OFF
 - **[Focus before each shot]**: OFF
 - **[Options]**: Off
 - **[Starting storage folder]**
 - **[New folder]**:
 - **[Reset file numbering]**:
- **[Time-lapse video]**
 - **[Interval]**: 5 s
 - **[Shooting time]**: 25 min.
 - **[Exposure smoothing]**: ON

- [**Choose image area**]: FX
- [**Video file type**]: H.265 8-bit (MOV)
- [**Frame size/frame rate**]: 3840×2160; 30p
- [**Interval priority**]: OFF
- [**Focus before each shot**]: OFF
- [**Destination**]: Slot 1
- [**Focus shift shooting**]
 - [**No. of shots**]: 100
 - [**Focus step width**]: 5
 - [**Interval until next shot**]: 0
 - [**First-frame exposure lock**]: ON
 - [**Focus position auto reset**]: OFF
 - [**Starting storage folder**]
 - [**New folder**]:
 - [**Reset file numbering**]:
- [**Auto capture**]
 - [**Select user preset**]: P-1

Video Recording Menu

- [Shooting menu bank]: A
- [Extended menu banks]: OFF
- [Storage folder]
 - [Rename]: NCZ_9
 - [Select folder by number]: 100
 - [Select folder from list]: —
- [File naming]: DSC
- [Destination]: Slot 1
- [Video file type]: H.265 8-bit (MOV)
- [Frame size/frame rate]: 3840×2160; 30p
- [Video quality (N-RAW)]: High quality
- [Image area]
 - [Choose image area]: FX
 - [DX crop alert]: OFF
- [Extended oversampling]: OFF
- [ISO sensitivity settings]
 - [Maximum sensitivity]: 25600
 - [Auto ISO control (mode M)]: ON
 - [ISO sensitivity (mode M)]: 100
- [White balance]: Same as photo settings
- [Set Picture Control]: Same as photo settings
- [Manage Picture Control]: —
- [HLG quality]
 - [Quick sharp]: 0
 - [Contrast]: 0
 - [Saturation]: 0
 - [Hue]: 0
- [Active D-Lighting]: Off
- [High ISO NR]: Normal
- [Vignette control]: Normal
- [Diffraction compensation]: ON
- [Auto distortion control]: ON
- [Video flicker reduction]: Auto
- [High-frequency flicker reduction]: Off
- [Metering]: Matrix metering
- [Focus mode]: Full-time AF
- [AF-area mode]: Single-point AF
- [AF subject detection options]
 - [Subject detection]: Auto
 - [AF when subject not detected]: ON

- **[Vibration reduction]**: Same as photo settings
- **[Electronic VR]**: OFF
- **[Microphone sensitivity]**: Auto
- **[Attenuator]**: OFF
- **[Frequency response]**: Wide range
- **[Wind noise reduction]**: OFF
- **[Mic jack plug-in power]**: ON
- **[Headphone volume]**: 15
- **[Timecode]**
 - **[Record timecodes]**: Off
 - **[Count-up method]**: Record run
 - **[Timecode origin]**: —
 - **[Drop frame]**: ON
- **[External rec. cntrl (HDMI)]**: OFF
- **[Hi-Res Zoom]**: OFF
- **[Auto capture]**
 - **[Select user preset]**: P-1



Custom Settings Menu






- [Custom Settings bank]: A
- a [Focus]
 - a1: [AF-C priority selection]: Release
 - a2: [AF-S priority selection]: Focus
 - a3: [Focus tracking with lock-on]
 - [Blocked shot AF response]: 3
 - [Subject motion]: Steady
 - a4: [Focus points used]: All points
 - a5: [Store points by orientation]: Off
 - a6: [AF activation]: Shutter/AF-ON
 - a7: [Focus point persistence]: Auto
 - a8: [Limit AF-area mode selection]
 - [Pinpoint AF]:
 - [Single-point AF]: ✓ (cannot be deselected)
 - [Dynamic-area AF (S)]:
 - [Dynamic-area AF (M)]:
 - [Dynamic-area AF (L)]:
 - [Wide-area AF (S)]:
 - [Wide-area AF (L)]:
 - [Wide-area AF (C1)]:
 - [Wide-area AF (C2)]:
 - [3D-tracking]:
 - [Auto-area AF]:
 - a9: [Focus mode restrictions]: No restrictions
 - a10: [Focus point wrap-around]: OFF
 - a11: [Focus point display]
 - [Manual focus mode]: ON
 - [Dynamic-area AF assist]: ON
 - [AF-C in-focus display]: OFF
 - [3D-tracking focus point color]: White
 - a12: [Built-in AF-assist illuminator]: ON
 - a13: [Focus peaking]
 - [Focus peaking display]: OFF
 - [Focus peaking sensitivity]: 2 (standard)
 - [Focus peaking highlight color]: Red
 - a14: [Focus point selection speed]: Normal
 - a15: [Manual focus ring in AF mode]: ON
- b [Metering/exposure]
 - b1: [ISO sensitivity step value]: 1/3 step


- b2: **[EV steps for exposure cntrl]**: 1/3 EV steps (comp. 1/3 EV)
- b3: **[Easy exposure compensation]**: Off
- b4: **[Matrix metering face detection]**: ON
- b5: **[Center-weighted area]**: Standard
- b6: **[Fine-tune optimal exposure]**
 - **[Matrix metering]**: 0
 - **[Center-weighted metering]**: 0
 - **[Spot metering]**: 0
 - **[Highlight-weighted metering]**: 0
- b7: **[Keep exp. when f/ changes]**: Exposure maintenance off
- **c [Timers/AE lock]**
 - c1: **[Shutter-release button AE-L]**: Off
 - c2: **[Self-timer]**
 - **[Self-timer delay]**: 10 s
 - **[Number of shots]**: 1
 - **[Interval between shots]**: 0.5 s
 - c3: **[Power off delay]**
 - **[Playback]**: 10 s
 - **[Menus]**: 1 min
 - **[Picture review]**: 4 s
 - **[Standby timer]**: 30 s
- **d [Shooting/display]**
 - d1: **[Continuous shooting speed]**
 - **[Continuous high-speed]**: 20 fps
 - **[Continuous low-speed]**: 5 fps
 - d2: **[Maximum shots per burst]**: ∞
 - d3: **[Limit release mode selection]**
 - **[Single frame]**: ✓ (cannot be deselected)
 - **[Continuous L]**:
 - **[Continuous H]**:
 - **[C30]**:
 - **[C60]**:
 - **[C120]**:
 - **[Self-timer]**:
 - d4: **[Pre-Release Capture options]**
 - **[Pre-release burst]**: None
 - **[Post-release burst]**: Max.
 - d5: **[Sync. release mode options]**: Sync
 - d6: **[Exposure delay mode]**: Off
 - d7: **[Extended shutter speeds (M)]**: OFF
 - d8: **[Limit selectable image area]**
 - **[FX (36×24)]**: ✓ (cannot be deselected)

- [DX (24×16)]:
- [1:1 (24×24)]:
- [16:9 (36×20)]:
- d9: [File number sequence]: On
- d10: [View mode (photo Lv)]: Show effects of settings
 - [Show effects of settings]: Only when flash is not used
 - [Adjust for ease of viewing]: Auto
- d11: [Starlight view (photo Lv)]: OFF
- d12 [Warm display colors]
 - [Warm display color options]: Off
 - [Warm color display brightness]: 0
- d13: [LCD illumination]: OFF
- d14: [View all in continuous mode]: ON
- d15: [Release timing indicator]
 - [Indicator type]: Type B
 - [Type A auto restore delay]: 1/6 s
- d16: [Image frame]: ON
- d17: [Grid type]: 3×3
- d18: [Virtual horizon type]: Type A
- d19: [Custom monitor shooting display]
 - [Display 1]: (cannot be deselected)
 - [Display 2]:
 - [Display 3]:
 - [Display 4]:
 - [Display 5]:
- d20: [Custom viewfinder shooting display]
 - [Display 1]: (cannot be deselected)
 - [Display 2]:
 - [Display 3]:
 - [Display 4]:
- d21: [High fps viewfinder display]: OFF
- e [Bracketing/flash]
 - e1: [Flash sync speed]: 1/200 s
 - e2: [Flash shutter speed]: 1/60 s
 - e3: [Exposure comp. for flash]: Entire frame
 - e4: [Auto ½ ISO sensitivity control]: Subject and background
 - e5: [Modeling flash]: ON
 - e6: [Auto bracketing (mode M)]: Flash/speed
 - e7: [Bracketing order]: MTR > under > over
 - e8: [Flash burst priority]: Prioritize precise flash control
- f [Controls]

- f1: [**Customize  menu**]: Set Picture Control, White balance, Image quality, Image size, AF-area mode/subj. detection, Focus mode, Metering, Vibration reduction, Shooting menu bank, Custom controls (shooting), Airplane mode, View memory card info
- f2: [**Custom controls (shooting)**]
 - [**Fn1 button**]: Shooting menu bank
 - [**Fn2 button**]: Choose image area
 - [**Fn3 button**]: Live view info display off
 - [**Fn button for vertical shooting**]: Exposure compensation
 - [**Vertical ISO sensitivity button**]: ISO sensitivity
 - [**AF-ON button**]: AF-ON
 - [**Protect/Fn4 button**]: Set Picture Control
 - [**DISP button**]: Cycle live view info display
 - [**Sub-selector center**]: AE/AF lock
 - [**OK button**]: Select center focus point
 - [**Audio button**]: None
 - [**QUAL button**]: Image quality/size
 - [**WB button**]: White balance
 - [**Playback button**]: Playback
 - [**Vertical multi selector center**]: AE/AF lock
 - [**AF-ON button for vertical shooting**]: Same as AF-ON button
 - [**Video record button**]: None
 - [**Exposure compensation button**]: Exposure compensation
 - [**ISO sensitivity button**]: ISO sensitivity
 - [**Command dials**]
 - [**Exposure setting**] : **P**: --/P*, **S**: --/Tv, **A**: Av/--, **M**: Av/Tv
 - [**Focus/AF-area mode selection**]: /AF/MF
 - [**Sub-command dial zoom role**]: Exposure setting
 - [**Flash mode button**]: Flash mode/compensation
 - [**BKT button**]: Auto bracketing
 - [**Lens Fn button**]: AE/AF lock
 - [**Lens Fn2 button**]: AF-ON
 - [**Lens Fn ring (counterclockwise)**]: Recall focus position
 - [**Lens Fn ring (clockwise)**]: Recall focus position
 - [**Lens memory set button**]: Save focus position
 - [**Lens control ring**]: (Varies with lens)
- f3: [**Custom controls (playback)**]
 - [**Fn1 button**]: None
 - [**Fn2 button**]: None
 - [**Fn3 button**]: None
 - [**Fn button for vertical shooting**]: None
 - [**Protect/Fn4 button**]: Protect
 - [**DISP button**]: Cycle info display
 - [**Audio button**]: Voice memo

- [OK button]: Zoom on/off
- [WB button]: Select for upload to computer
- [QUAL button]: Rating
- [Vertical shooting multi selector]: Unswitch
- [Playback button]: Resume shooting
- [Main command dial]
 - [Frame advance]: 1 frame
 - [Video playback]: 10 frames
 - [Frame advance zoom position]: Keep current zoom position
- [Sub-command dial]
 - [Frame advance]: 1 frame
 - [Video playback]: 10 s
 - [Frame advance zoom position]: Keep current zoom position
- [Video record button]: None
- [BKT button]: None
- [Flash mode button]: None
- [Lens Fn2 button]: None
- [Lens Fn button]: None
- f4: [Control lock]
 - [Shutter speed lock]: OFF
 - [Aperture lock]: OFF
 - [Focus-point lock]: OFF
- f5: [Reverse dial rotation]
 - [Exposure compensation]:
 - [Shutter speed/aperture]:
- f6: [Release button to use dial]: OFF
- f7: [Reverse indicators]: 
- f8: [Reverse ring for focus]: OFF
- f9: [Focus ring rotation range]: Non-linear
- f10: [Control ring response]: High
- f11: [Switch focus/control ring roles]: OFF
- f12: [Assign power zoom buttons]
 - [Use @/@@ buttons]: OFF
 - [Power zoom speed]: +3
- f13: [Full-frame playback flicks]
 - [Flick up]: None
 - [Flick down]: None
 - [Flick advance direction]: Left→Right
- f14: [Prefer sub-selector center]: ON
- g [Video]
 - g1: [Customize  menu]: Set Picture Control, White balance, Frame size/frame rate, Microphone sensitivity, AF-area mode/subj. detection, Focus mode, Electronic VR, Vibration reduction, Shooting menu bank, Custom controls, Airplane mode, Destination

- g2: [Custom Controls]
 - [Fn1 button]: Shooting menu bank
 - [Fn2 button]: Choose image area
 - [Fn3 button]: Live view info display off
 - [Fn button for vertical shooting]: Exposure compensation
 - [Vertical ISO sensitivity button]: ISO sensitivity
 - [Focus mode button]: Focus mode/AF-area mode
 - [Protect/Fn4 button]: Set Picture Control
 - [AF-ON button]: AF-ON
 - [Sub-selector center]: AE/AF lock
 - [DISP button]: Cycle live view info display
 - [Audio button]: Microphone sensitivity
 - [OK button]: Select center focus point
 - [WB button]: White balance
 - [QUAL button]: None
 - [Vertical multi selector center]: AE/AF lock
 - [Playback button]: Playback
 - [Video record button]: Record videos
 - [AF-ON button for vertical shooting]: Same as AF-ON button
 - [ISO sensitivity button]: ISO sensitivity
 - [Exposure compensation button]: Exposure compensation
 - [Shutter-release button]: None
 - [Command dials]
 - [Exposure setting]: A: Av/Tv, M: Av/Tv
 - [Focus/AF-area mode selection]: AF/MF
 - [Sub-command dial zoom role]: Exposure setting
 - [Flash mode button]: None
 - [BKT button]: None
 - [Lens Fn button]: AE/AF lock
 - [Lens Fn2 button]: AF-ON
 - [Lens Fn ring (counterclockwise)]: Recall focus position
 - [Lens Fn ring (clockwise)]: Recall focus position
 - [Lens memory set button]: Save focus position
 - [Lens control ring]: (Varies with lens)
- g3: [Control lock]
 - [Shutter speed lock]: OFF
 - [Aperture lock]: OFF
 - [Focus-point lock]: OFF
- g4: [Limit AF-area mode selection]
 - [Single-point AF]: ✓ (cannot be deselected)
 - [Wide-area AF (S)]:
 - [Wide-area AF (L)]:
 - [Wide-area AF (C1)]:

- [Wide-area AF (C2)]:
- [Subject-tracking AF]:
- [Auto-area AF]:
- g5: [Focus mode restrictions]: No restrictions
- g6: [AF speed]: 0
 - [When to apply]: Always
- g7: [AF tracking sensitivity]: 4
- g8: [Hi-Res Zoom speed]: 0
- g9: [Assign power zoom buttons]
 - [Use /AF-ON buttons]: OFF
 - [Power zoom speed]
 - [Pre/post recording]: +3
 - [During recording]: 0
- g10: [Fine ISO control (mode M)]: Off
- g11: [Extended shutter speeds (mode M)]: OFF
- g12: [View assist]: OFF
- g13: [Zebra pattern]
 - [Pattern tone range]: Zebra pattern off
 - [Pattern]: Pattern 1
 - [Highlight threshold]: 250
 - [Mid-tone range]: Value: 160; range: ±10
- g14: [Limit zebra pattern tone range]: No restrictions
- g15: [Grid type]: 3×3
- g16: [Brightness information display]: Histogram
- g17: [Custom monitor shooting display]
 - [Display 1]: (cannot be deselected)
 - [Display 2]:
 - [Display 3]:
 - [Display 4]:
- g18: [Custom viewfinder shooting display]
 - [Display 1]: (cannot be deselected)
 - [Display 2]:
 - [Display 3]:
- g19: [Red REC frame indicator]: ON

Playback Menu

- [Delete]: —
- [Playback folder]: All
- [Playback display options]
 - [Focus point]:
 - [Mark first shot in series]:
 - [Exposure info]:
 - [Highlights]:
 - [RGB histogram]:
 - [Shooting data]:
 - [Overview]:
 - [None (picture only)]:
 - [File info]:
 - [Basic shooting data]:
 - [Flash data]:
 - [Picture Control/HLG data]:
 - [Other shooting data]:
 - [Copyright info]:
 - [Location data]:
 - [IPTC data]:
- [Delete pictures from both slots]: Yes (confirmation required)
- [Dual-format recording PB slot]: Slot 1
- [Filtered playback criteria]
 - [Protect]:
 - [Picture type]:
 - [Rating]:
 - [Select for upload to computer]:
 - [Select for upload (FTP)]:
 - [Voice memo]:
 - [Retouched pictures]:
- [Series playback]
 - [Sub-selector displays first shot]: ON
 - [Auto series playback]: OFF
 - [List series as single thumbnails]: OFF
- [Picture review]: Off
- [After delete]: Show next
- [After burst, show]: Last picture in burst
- [Auto-rotate pictures]: ON

• [Copy image(s)]: —

Setup Menu

- **[Format memory card]**: —
- **[Language]**: (Default varies with country of purchase)
- **[Time zone and date]**
 - **[Time zone]**: (Default varies with country of purchase)
 - **[Date and time]**: —
 - **[Date format]**: (Default varies with country of purchase)
 - **[Daylight saving time]**: OFF
- **[Monitor brightness]**: 0
- **[Monitor color balance]**: A-B: 0, G-M: 0
- **[Viewfinder brightness]**: Auto
- **[Viewfinder color balance]**: A-B: 0, G-M: 0
- **[Viewfinder display size]**: Standard
- **[Limit monitor mode selection]**
 - **[Automatic display switch]**:
 - **[Viewfinder only]**:
 - **[Monitor only]**:
 - **[Prioritize viewfinder (1)]**:
 - **[Prioritize viewfinder (2)]**:
- **[Auto rotate info display]**: ON
- **[AF fine-tuning options]**
 - **[AF fine-tune]**: OFF
 - **[Fine-tune and save lens]**: —
 - **[Default]**: —
 - **[List saved values]**: —
 - **[Choose value for current lens]**: —
- **[Non-CPU lens data]**
 - **[Lens number]**: 1
 - **[Focal length (mm)]**: --
 - **[Maximum aperture]**: --
 - **[Lens name]**: --
- **[Distance units]**: Meters (m)
- **[Save focus position]**: OFF
- **[Save zoom position (PZ lenses)]**: OFF
- **[Auto temperature cutout]**: Standard
- **[Sensor shield behavior at power off]**: Sensor shield stays open
- **[Clean image sensor]**
 - **[Automatic cleaning]**: Clean at shutdown
- **[Image Dust Off ref photo]**: —
- **[Pixel mapping]**: —
- **[Image comment]**

- [**Attach comment**]: OFF
- [**Copyright information**]
 - [**Attach copyright information**]: OFF
- [**IPTC**]
 - [**Edit/save**]: —
 - [**Delete**]: —
 - [**Auto embed during shooting**]: Off
 - [**Load/save**]: —
- [**Voice memo options**]
 - [**Voice memo control**]: Press and hold
 - [**Audio output (playback)**]: Speaker/headphones
- [**Camera sounds**]
 - [**Shutter sound**]: ON
 - [**Volume**]: 3
 - [**Type**]: Type A
 - [**Beep**]: Off
 - [**Volume**]: 2
 - [**Pitch**]: Low
- [**Silent mode**]: OFF
- [**Touch controls**]
 - [**Enable/disable touch controls**]: Enable
 - [**Glove mode**]: OFF
- [**HDMI**]
 - [**Output resolution**]: Auto
 - [**Output range**]: Auto
 - [**Output shooting info**]: ON
 - [**Mirror camera info display**]: ON
- [**USB connection priority**]: Upload
- [**Location data (built-in)**]
 - [**Record location data**]: OFF
 - [**Standby timer**]: ON
 - [**Set clock from satellite**]: OFF
 - [**Create log**]: —
 - [**Log list**]: —
 - [**Position**]: —
- [**Wireless remote (WR) options**]
 - [**LED lamp**]: ON
 - [**Link mode**]: Pairing
- [**Assign remote (WR) Fn button**]: None
- [**Conformity marking**]: —
- [**Battery info**]: —
- [**USB power delivery**]: ON
- [**Energy saving (photo mode)**]: OFF

- **[Slot empty release lock]**: Enable release
- **[Save/load menu settings]**: —
- **[Reset all settings]**: —
- **[Firmware version]**: —

Network Menu

- **[Airplane mode]:** OFF
- **[Wired LAN]:** OFF
- **[Connect to smart device]**
 - **[Pairing (Bluetooth)]**
 - **[Bluetooth connection]:** OFF
 - **[Select pictures for upload]**
 - **[Auto select for upload]:** ON
 - **[Wi-Fi connection]:** —
 - **[Upload while off]:** ON
 - **[Location data (smart device)]:** —
- **[Connect to computer]**
 - **[Network settings]:** —
 - **[Connection type]:** Picture transfer
 - **[Options]**
 - **[Auto upload]:** OFF
 - **[Delete after upload]:** OFF
 - **[Upload RAW + JPEG as]:** RAW + JPEG
 - **[JPEG+JPEG slot selection]:** Slot 1
 - **[Upload RAW video as]:** RAW video + MP4
 - **[Upload folder]:** —
 - **[Deselect all?]:** —
- **[Connect to FTP server]**
 - **[Network settings]:** —
 - **[Options]**
 - **[Auto upload]:** OFF
 - **[Delete after upload]:** OFF
 - **[Upload RAW + JPEG as]:** RAW + JPEG
 - **[JPEG+JPEG slot selection]:** Slot 1
 - **[Upload RAW video as]:** RAW video + MP4
 - **[Overwrite if same name]:** OFF
 - **[Protect if marked for upload]:** OFF
 - **[Upload marking]:** OFF
 - **[Upload folder]:** —
 - **[Deselect all?]:** —
 - **[Keep connection]:** OFF
 - **[Manage root certificate]:** —
- **[Connect to other cameras]**
 - **[Synchronized release]:** ON
 - **[Network settings]:** —
 - **[Master/remote]:** Master camera

- [Group settings]: —
- [Group name]: —
- [Synchronize date and time]: —
- [Overwrite copyright info]: —
- [ATOMOS AirGlu BT options]
 - [Connect to ATOMOS AirGlu BT]: OFF
 - [Save ATOMOS AirGlu BT pairing info]: —
 - [Delete ATOMOS AirGlu BT pairing info]: —
 - [Camera]: GGGG
- [USB]: MTP/PTP
- [Start via LAN]: OFF
- [Router frequency band]: (Default varies with country of purchase)
- [MAC address]: —

My Menu/Recent Settings

- [Add items]: —
- [Remove items]: —
- [Rank items]: —
- [Choose tab]: MY MENU

Post-Upgrade Specifications for “C” Firmware Version 4.00

Product specifications following upgrade to “C” firmware version 4.00 are listed below.

Type	
Type	Digital camera with support for interchangeable lenses
Lens mount	Nikon Z mount
Lens	
Compatible lenses	<ul style="list-style-type: none">• Z mount NIKKOR lenses• F mount NIKKOR lenses (mount adapter required; restrictions may apply)
Effective pixels	
Effective pixels	45.7 million
Image sensor	
Type	35.9 × 23.9 mm CMOS sensor (Nikon FX format)
Total pixels	52.37 million
Dust-reduction system	Image sensor cleaning, Image Dust Off reference data (requires NX Studio)

Storage

Image size (pixels)

- **[FX (36 × 24)] selected for image area:**
 - 8256 × 5504 (Large: 45.4 M)
 - 6192 × 4128 (Medium: 25.6 M)
 - 4128 × 2752 (Small: 11.4 M)
- **[DX (24 × 16)] selected for image area:**
 - 5392 × 3592 (Large: 19.4 M)
 - 4032 × 2688 (Medium: 10.8 M)
 - 2688 × 1792 (Small: 4.8 M)
- **[1:1 (24 × 24)] selected for image area:**
 - 5504 × 5504 (Large: 30.3 M)
 - 4128 × 4128 (Medium: 17.0 M)
 - 2752 × 2752 (Small: 7.6 M)
- **[16:9 (36 × 20)] selected for image area:**
 - 8256 × 4640 (Large: 38.3 M)
 - 6192 × 3480 (Medium: 21.5 M)
 - 4128 × 2320 (Small: 9.6 M)

File format (image quality)

- **NEF (RAW):** 14 bit; choose from lossless compression, high efficiency★, and high efficiency options
- **JPEG:** JPEG-Baseline compliant with fine (approx. 1: 4), normal (approx. 1: 8), or basic (approx. 1: 16) compression; size-priority and optimal-quality compression available
- **NEF (RAW) + JPEG:** Single photograph recorded in both NEF (RAW) and JPEG formats

Storage	
Picture Control System	Auto, Standard, Neutral, Vivid, Monochrome, Portrait, Landscape, Flat, Creative Picture Controls (Dream, Morning, Pop, Sunday, Somber, Dramatic, Silence, Bleached, Melancholic, Pure, Denim, Toy, Sepia, Blue, Red, Pink, Charcoal, Graphite, Binary, Carbon); selected Picture Control can be modified; storage for custom Picture Controls
Media	CFexpress (Type B) and XQD memory cards
Dual card slots	The card in Slot 2 can be used for overflow or backup storage, for separate storage of NEF (RAW) and JPEG pictures, or for storage of duplicate JPEG pictures at different sizes and image qualities; pictures can be copied between cards.
File system	DCF 2.0, Exif 2.32
Viewfinder	
Viewfinder	1.27-cm/0.5-in. approx. 3690k-dot (Quad VGA) OLED electronic viewfinder with color balance, auto and 18-level manual brightness controls, and support for high frame rates
Frame coverage	Approx. 100% horizontal and 100% vertical
Magnification	Approx. 0.8× (50 mm lens at infinity, -1.0 m^{-1})
Eyepoint	23 mm (-1.0 m^{-1} ; from rearmost surface of viewfinder eyepiece lens)
Diopter adjustment	$-4 - +3 \text{ m}^{-1}$
Eye sensor	Automatically switches between monitor and viewfinder displays

Monitor	
Monitor	8-cm/3.2-in., approx. 2100k-dot vertically and horizontally tilting TFT touch-sensitive LCD with 170° viewing angle, approximately 100% frame coverage, and color balance and 15-level manual brightness controls
Shutter	
Type	Electronic shutter with shutter sound and sensor shield
Speed	$\frac{1}{32000}$ – 30 s (choose from step sizes of $\frac{1}{3}$, $\frac{1}{2}$, and 1 EV, extendable to 900 s in mode M), bulb, time
Flash sync speed	Flash synchronizes with shutter at speeds of $\frac{1}{250}$ or $\frac{1}{200}$ s or slower (but note that the guide number drops at speeds of $\frac{1}{200}$ to $\frac{1}{250}$ s); sync speeds as fast as $\frac{1}{8000}$ s are supported with auto FP high-speed sync
Release	
Release mode	Single frame, continuous low-speed, continuous high-speed, high-speed frame capture with Pre-Release Capture, self-timer
Approximate frame advance rate	<ul style="list-style-type: none"> • Continuous low-speed: Approx. 1 – 10 fps • Continuous high-speed: Approx. 10 – 20 fps • High-speed frame capture (C30): Approx. 30 fps • High-speed frame capture (C60): Approx. 60 fps • High-speed frame capture (C120): Approx. 120 fps <p>* Maximum frame advance rate as measured by in-house tests.</p>
Self-timer	2 s, 5 s, 10 s, 20 s; 1–9 exposures at intervals of 0.5, 1, 2, or 3 s

Exposure	
Metering system	TTL metering using camera image sensor
Metering mode	<ul style="list-style-type: none"> • Matrix metering • Center-weighted metering: Weight of 75% given to 12 or 8 mm circle in center of frame or weighting can be based on average of entire frame • Spot metering: Meters circle with a diameter of approximately 4 mm centered on selected focus point • Highlight-weighted metering
Range *	<p>–3 – +17 EV</p> <p>* Figures are for ISO 100 and f/2.0 lens at 20 °C/68 °F</p>
Mode	P: programmed auto with flexible program, S: shutter-priority auto, A: aperture-priority auto, M: manual
Exposure compensation	–5 – +5 EV (choose from step sizes of 1/3 and 1/2 EV)
Exposure lock	Luminosity locked at detected value
ISO sensitivity (Recommended Exposure Index)	ISO 64–25600 (choose from step sizes of 1/3 and 1 EV); can also be set to approx. 0.3, 0.7, or 1 EV (ISO 32 equivalent) below ISO 64 or to approx. 0.3, 0.7, 1, or 2 EV (ISO 102400 equivalent) above ISO 25600; auto ISO sensitivity control available
Active D-Lighting	Auto, Extra high 2, Extra high 1, High, Normal, Low, and Off
Multiple exposure	Add, average, lighten, darken
Other options	HDR overlay, photo flicker reduction, high-frequency flicker reduction

Autofocus	
Type	Hybrid phase-detection/contrast AF with AF assist
Detection range *	-7 – +19 EV (-9 – +19 EV with starlight view) * Measured in photo mode at ISO 100 and a temperature of 20 °C/68 °F using single-servo AF (AF-S) and a lens with a maximum aperture of f/1.2
Lens servo	<ul style="list-style-type: none"> • Autofocus (AF): Single-servo AF (AF-S); continuous-servo AF (AF-C); full-time AF (AF-F; available only in video mode); predictive focus tracking • Manual focus (M): Electronic rangefinder can be used
Focus points *	493 focus points * Number of focus points available in photo mode with single-point AF selected for AF-area mode and FX selected for image area
AF-area mode	Pinpoint (available in photo mode only), single-point, dynamic-area (S, M, and L; available in photo mode only), wide-area (S, L, C1, and C2), and auto-area AF; 3D-tracking (available in photo mode only); subject-tracking AF (available in video mode only)
Focus lock	Focus can be locked by pressing shutter-release button halfway (single-servo AF/ AF-S) or by pressing the center of the sub-selector
Vibration reduction (VR)	
Camera on-board VR	5-axis image sensor shift
Lens on-board VR	Lens shift (available with VR lenses)

Flash	
Flash control	TTL: i-TTL flash control; i-TTL balanced fill-flash is used with matrix, center-weighted, and highlight-weighted metering, standard i-TTL fill-flash with spot metering
Flash mode	Front-curtain sync, slow sync, rear-curtain sync, red-eye reduction, red-eye reduction with slow sync, off
Flash compensation	-3 – +1 EV (choose from step sizes of 1/3 and 1/2 EV)
Flash-ready indicator	Lights when optional flash unit is fully charged; flashes as underexposure warning after flash is fired at full output
Accessory shoe	ISO 518 hot-shoe with sync and data contacts and safety lock
Nikon Creative Lighting System (CLS)	i-TTL flash control, radio-controlled Advanced Wireless Lighting, optical Advanced Wireless Lighting, modeling illumination, FV lock, Color Information Communication, auto FP high-speed sync, unified flash control
Sync terminal	ISO 519 sync terminal with locking thread
White balance	
White balance	Auto (3 types), natural light auto, direct sunlight, cloudy, shade, incandescent, fluorescent (3 types), flash, choose color temperature (2500–10,000 K), preset manual (up to 6 values can be stored), all with fine-tuning
Bracketing	
Bracketing	Exposure and/or flash, white balance, and ADL

Other options for still photography	
Other options for still photography	Vignette control, diffraction compensation, auto distortion control, interval-timer photography, focus-shift photography, and auto capture
Video	
Metering system	TTL metering using camera image sensor
Metering mode	Matrix, center-weighted, or highlight-weighted
Frame size (pixels) and frame rate	<ul style="list-style-type: none"> • 7680 × 4320 (8K UHD): 30p (progressive)/25p/24p • 3840 × 2160 (4K UHD): 120p/100p/60p/50p/30p/25p/24p • 1920 × 1080: 120p/100p/60p/50p/30p/25p/24p • 1920 × 1080 (slow-motion): 30p (4×)/25p (4×)/24p (5×) <p>* Actual frame rates for 120p, 100p, 60p, 50p, 30p, 25p, and 24p are 119.88, 100, 59.94, 50, 29.97, 25, and 23.976 fps respectively</p>
Frame size (pixels) and frame rate (RAW video)	<ul style="list-style-type: none"> • 8256 × 4644: 60p/50p/30p/25p/24p • 5392 × 3032: 60p/50p/30p/25p/24p • 4128 × 2322: 120p/100p/60p/50p/30p/25p/24p • 3840 × 2160: 120p/100p/60p/50p <p>* Actual frame rates for 120p, 100p, 60p, 50p, 30p, 25p, and 24p are 119.88, 100, 59.94, 50, 29.97, 25, and 23.976 fps respectively</p>
File format	NEV, MOV, MP4
Video compression	N-RAW (12 bit), Apple ProRes RAW HQ (12 bit), Apple ProRes 422 HQ (10 bit), H.265/HEVC (8 bit/10 bit), H.264/AVC (8 bit)
Audio recording format	Linear PCM (48 KHz, 24 bit, for videos recorded in NEV or MOV format) or AAC (48 KHz, 16 bit, for videos recorded in MP4 format)

Video	
Audio recording device	Built-in stereo or external microphone with attenuator option; sensitivity adjustable
Exposure compensation	-3 – +3 EV (choose from step sizes of $\frac{1}{3}$ and $\frac{1}{2}$ EV)
ISO sensitivity (Recommended Exposure Index)	<ul style="list-style-type: none"> • Mode M: Manual selection (ISO 64–25600; choose from step sizes of $\frac{1}{6}$, $\frac{1}{3}$ and 1 EV); with additional options available equivalent to approximately 0.3, 0.7, 1, or 2 EV (ISO 102400 equivalent) above ISO 25600; auto ISO sensitivity control (ISO 64–Hi 2.0) available with selectable upper limit • Modes P, S, A: Auto ISO sensitivity control (ISO 64–Hi 2.0) with selectable upper limit
Active D-Lighting	Extra high, High, Normal, Low, and Off
Other options	Time-lapse video recording, electronic vibration reduction, time codes, N-Log and HDR (HLG) video, wave-form display, red REC frame indicator, video recording display zoom (50%, 100%, and 200%), extended shutter speeds (mode M), and dual-format (proxy-video) recording for RAW video; extended oversampling available; option to view video recording info available via i menu; Hi-Res Zoom; auto capture
Playback	
Playback	Full-frame and thumbnail (up to 4, 9, or 72 pictures) playback with playback zoom, playback zoom cropping, video playback, slide shows, histogram display, highlights, photo information, location data display, auto picture rotation, picture rating, voice memo recording and playback, IPTC information embedding and display, filtered playback, skip to first shot in series, series playback, save consecutive frames, and motion blend

Interface	
USB	Type C SuperSpeed USB connector; connection to built-in USB ports is recommended
HDMI output	Type A HDMI connector
Audio input	Stereo mini-pin jack (3.5 mm diameter; plug-in power supported)
Audio output	Stereo mini-pin jack (3.5 mm diameter)
Ten-pin remote terminal	Built-in (can be used with MC-30A/MC-36A remote cords and other optional accessories)
Wired LAN	<p>RJ-45 connector</p> <ul style="list-style-type: none"> • Standards: IEEE 802.3ab (1000BASE-T), IEEE 802.3u (100BASE-TX), IEEE 802.3 (10BASE-T) • Data rates *: 1000/100/10 Mbps with auto detect • Port: 1000BASE-T/100BASE-TX/10BASE-T (AUTO-MDIX) <p>* Maximum logical data rates according to IEEE standard; actual rates may differ.</p>

Wi-Fi/Bluetooth

Wi-Fi

- **Standards:**
 - IEEE 802.11b/g/n (Africa, Asia, and Oceania)
 - IEEE 802.11b/g/n/a/ac (Europe, U.S.A., Canada, Mexico)
 - IEEE 802.11b/g/n/a (other countries in the Americas)
- **Operating frequency:**
 - 2412–2462 MHz (channel 11; Africa, Asia, and Oceania)
 - 2412–2462 MHz (channel 11) and 5180–5825 MHz (U.S.A., Canada, Mexico)
 - 2412–2462 MHz (channel 11) and 5180–5805 MHz (other countries in the Americas)
 - 2412–2462 MHz (channel 11) and 5745–5805 MHz (Georgia)
 - 2412–2462 MHz (channel 11) and 5180–5320 MHz (other European countries)
- **Maximum output power (EIRP):**
 - 2.4 GHz band: 8.4 dBm
 - 5 GHz band: 6.0 dBm (Georgia)
 - 5 GHz band: 9.0 dBm (other countries)
- **Authentication:** Open system, WPA2-PSK, WPA3-SAE

Bluetooth

- **Communication protocols:** Bluetooth Specification version 5.0
- **Operating frequency:**
 - Bluetooth: 2402–2480 MHz
 - Bluetooth Low Energy: 2402–2480 MHz
- **Maximum output power (EIRP):**
 - Bluetooth: 2.9 dBm
 - Bluetooth Low Energy: 1.4 dBm

Range (line of sight)

Approximately 10 m (32 ft) *

* Without interference. Range may vary with signal strength and presence or absence of obstacles.

Location Data	
Supported GNS systems	GPS (USA), GLONASS (Russia), QZSS (Japan)
Data acquired	Latitude, longitude, altitude, UTC (Universal Coordinated Time)
Clock synchronization	Camera clock can be set to time acquired via GNSS
Track logs	NMEA-compliant
Log interval	15 s, 30 s, 1 min., 2 min., 5 min.
Maximum log recording time	6, 12, or 24 hours
Log deletion	Supported
Power source	
Battery	One EN-EL18d rechargeable Li-ion battery * * EN-EL18c, EN-EL18b, EN-EL18a, and EN-EL18 batteries can also be used. Note, however, that fewer pictures can be taken on a single charge than with the EN-EL18d. The EH-7P charging AC adapter can be used to charge EN-EL18d, EN-EL18c, and EN-EL18b batteries only.
Charging AC adapter	EH-7P charging AC adapter
AC adapter	EH-6d; requires EP-6a power connector (available separately)
Tripod socket	
Tripod socket	0.635 cm (1/4 in., ISO 1222)

Dimensions/weight	
Dimensions (W × H × D)	Approx. 149 × 149.5 × 90.5 mm/5.9 × 5.9 × 3.6 in.
Weight	Approx. 1340 g (2 lb. 15.3 oz.) with battery and memory card but without body cap and accessory shoe cover; approx. 1160 g/2 lb. 9 oz. (camera body only)
Operating environment	
Temperature	−10 °C– 40 °C (+14 °F– 104 °F)
Humidity	85% or less (no condensation)

- Unless otherwise stated, all measurements are performed in conformity with Camera and Imaging Products Association (CIPA) standards or guidelines.
- All figures are for a camera with a fully-charged battery.
- The sample images displayed on the camera and the images and illustrations in this document are for expository purposes only.
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