




Z 9 Reference Guide

(Supplement for Firmware Version 2.00)

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Features Available with “C” Firmware Version 2.00

The *Z 9 Reference Guide* is for “C” firmware version 1.xx. This supplement details the new features and changes introduced with camera “C” firmware version 2.00. 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 2.00

The features added or updated with the latest version of the camera firmware (“C” version 2.00) are summarized below. More information is available on the pages listed. For information on the menu items and defaults for “C” firmware version 2.00, see ‘Menu Items and Defaults for “C” Firmware Version 2.00’ (☞8).

Still Photography

- New AF-Area Modes: “Wide-Area AF (C1)” and “Wide-Area AF (C2)” (☞36)
- Changes to Long-Exposure Displays (☞39)
- Pre-Release Burst (☞40)
- Changes to the “Choose Color Temperature” White Balance Option (☞42)
- Changes to “Preset Manual” White Balance Targets (☞45)

Video Recording

- New AF-Area Modes: “Wide-Area AF (C1)” and “Wide-Area AF (C2)” (□36)
- Zooming in on the Display During Video Recording (□46)
- Changes to Video Mode Displays (□47)
- New RAW “Video File Type” Options (□48)
- New Menu Item: “Extended Oversampling” (□54)
- New “View Video Info” Option for Custom Setting g1 “Customize  Menu” (□55)
- New “Fast AF-ON” Option for Custom Setting g2 “Custom Controls” (□56)
- New Custom Setting: g8 “Fine ISO Control (Mode M)” (□57)
- New Custom Setting: g9 “Extended Shutter Speeds (Mode M)” (□58)
- New Custom Setting: g14 “Brightness Information Display” (□59)
- New Custom Setting: g17 “Red REC Frame Indicator” (□60)
- New HDMI Output Resolution (□61)

Displays

- Changes to the “Viewfinder Only” and “Prioritize Viewfinder” Monitor Modes (□62)
- Release Timing Indicators for High-Speed Frame Capture (□63)
- New Custom Setting: d20 “High FPS Viewfinder Display” (□64)
- Dimming the Viewfinder (□65)
- New Menu Item: “Auto Temperature Cutout” (□66)

Playback

- New “Retouch” Option for the Playback **i** Menu: “Motion Blend” (📖67)
- New Playback **i** Menu Option: “Save Consecutive Frames” (📖69)
- Skipping to the First Shot in a Burst During Playback (📖71)

Controls

- New Custom Setting: a14 “Focus Point Selection Speed” (📖72)
- New “Recall Shooting Functions (Hold)” Option for Custom Setting f2 “Custom Controls (Shooting)” (📖73)
- New Custom Setting: f11 “Switch Focus/Control Ring Roles” (📖74)
- New Custom Setting: f13 “Prefer Sub-selector Center” (📖75)
- New Options for Custom Settings f2 “Custom Controls (Shooting)” and g2 “Custom Controls” (📖76)
- Changes to “Save/Load Menu Settings” (📖82)

Menu Items and Defaults for “C” Firmware Version 2.00

The menu items and defaults after the firmware has been upgraded to “C” firmware version 2.00 are listed below.

Photo Shooting Menu

Photo shooting menu option	Default
[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]	Large
[RAW recording]	High efficiency★

Photo shooting menu option	Default
[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
[Metering]	Matrix metering

Photo shooting menu option	Default
[Flash control]	
[Flash control mode]	TTL
[Wireless flash options]	Off
[Remote flash control]	Group flash
[Focus mode]	
[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

Photo shooting menu option	Default
[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]	<input type="checkbox"/>
[Reset file numbering]	<input type="checkbox"/>
[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

Photo shooting menu option		Default
[Focus shift shooting]		
	[No. of shots]	100
	[Focus step width]	5
	[Interval until next shot]	0
	[First-frame exposure lock]	ON
[Starting storage folder]		
	[New folder]	<input type="checkbox"/>
	[Reset file numbering]	<input type="checkbox"/>

Video Recording Menu

Video recording menu option		Default
	[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

Video recording menu option	Default
[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
[Metering]	Matrix metering
[Focus mode]	Full-time AF
[AF-area mode]	Single-point AF

Video recording menu option	Default
[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

Custom Settings Menu



Custom Settings menu option		Default
[Custom Settings bank]		A
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]	<input checked="" type="checkbox"/>
	[Single-point AF]	✓ (cannot be deselected)
	[Dynamic-area AF (S)]	<input checked="" type="checkbox"/>
	[Dynamic-area AF (M)]	<input checked="" type="checkbox"/>
	[Dynamic-area AF (L)]	<input checked="" type="checkbox"/>
	[Wide-area AF (S)]	<input checked="" type="checkbox"/>
	[Wide-area AF (L)]	<input checked="" type="checkbox"/>
	[Wide-area AF (C1)]	<input checked="" type="checkbox"/>
	[Wide-area AF (C2)]	<input checked="" type="checkbox"/>
	[3D-tracking]	<input checked="" type="checkbox"/>
	[Auto-area AF]	<input checked="" type="checkbox"/>

	Custom Settings menu option	Default
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
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
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

Custom Settings menu option		Default
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



Custom Settings menu option		Default
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]	<input checked="" type="checkbox"/>
	[Continuous H]	<input checked="" type="checkbox"/>
	[C30]	<input checked="" type="checkbox"/>
	[C120]	<input checked="" type="checkbox"/>
	[Self-timer]	<input checked="" type="checkbox"/>
d4	[C30/C120 options]	
	[Pre-release burst]	None
	[Post-release burst]	Max.
d5	[Sync. release mode options]	Sync
d6	[Extended shutter speeds (M)]	OFF
d7	[Limit selectable image area]	
	[FX (36×24)]	✓ (cannot be deselected)
	[DX (24×16)]	<input checked="" type="checkbox"/>
	[1:1 (24×24)]	<input checked="" type="checkbox"/>
	[16:9 (36×20)]	<input checked="" type="checkbox"/>
d8	[File number sequence]	On
d9	[View mode (photo Lv)]	Show effects of settings
d10	[Starlight view (photo Lv)]	OFF

Custom Settings menu option		Default
d11	[Warm display colors]	
	[Warm display color options]	Off
	[Warm color display brightness]	0
d12	[LCD illumination]	OFF
d13	[View all in continuous mode]	ON
d14	[Release timing indicator]	Type B
d15	[Image frame]	ON
d16	[Grid type]	3×3
d17	[Virtual horizon type]	Type A
d18	[Custom monitor shooting display]	
	[Display 1]	✓ (cannot be deselected)
	[Display 2]	<input checked="" type="checkbox"/>
	[Display 3]	<input checked="" type="checkbox"/>
	[Display 4]	<input checked="" type="checkbox"/>
	[Display 5]	<input checked="" type="checkbox"/>
d19	[Custom viewfinder shooting display]	
	[Display 1]	✓ (cannot be deselected)
	[Display 2]	<input checked="" type="checkbox"/>
	[Display 3]	<input checked="" type="checkbox"/>
	[Display 4]	<input checked="" type="checkbox"/>
d20	[High fps viewfinder display]	OFF

Custom Settings menu option		Default
e1	[Flash sync speed]	1/200 s
e2	[Flash shutter speed]	1/60 s
e3	[Exposure comp. for flash]	Entire frame
e4	[Auto  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
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

Custom Settings menu option		Default
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
	[Protect/Fn4 button]	Set Picture Control
	[AF-ON button]	AF-ON
	[Sub-selector center]	AE/AF lock
	[OK button]	Select center focus point
	[Audio button]	None
	[QUAL button]	Image quality/size
	[Vertical multi selector center]	AE/AF lock
	[AF-ON button for vertical shooting]	Same as AF-ON button
	[Video record button]	None
	[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
	[Lens Fn button]	AE/AF lock
	[Lens Fn2 button]	AF-ON
	[Lens control ring]	(Varies with lens)
	[Lens Fn ring (clockwise)]	Recall focus position
	[Lens Fn ring (counterclockwise)]	Recall focus position
	[Lens memory set button]	Save focus position

Custom Settings menu option		Default
f3	[Custom controls (playback)]	
	[Fn1 button]	None
	[Fn2 button]	None
	[Fn3 button]	None
	[Fn button for vertical shooting]	None
	[Protect/Fn4 button]	Protect
	[OK button]	Zoom on/off
	[Audio button]	Voice memo
	[QUAL button]	Rating
	[WB button]	Select for upload to computer
	[Vertical shooting multi selector]	Unswitch
	[Main command dial]	
	[Frame advance]	1 frame
	[Video playback]	10 frames
	[Sub-command dial]	
	[Frame advance]	1 frame
	[Video playback]	10 s
	[Video record button]	None
f4	[Control lock]	
	[Shutter speed lock]	OFF
	[Aperture lock]	OFF
	[Focus-point lock]	OFF

Custom Settings menu option		Default
f5	[Reverse dial rotation]	
	[Exposure compensation]	<input type="checkbox"/>
	[Shutter speed/aperture]	<input type="checkbox"/>
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	[Full-frame playback flicks]	
	[Flick up]	None
	[Flick down]	None
	[Flick advance direction]	Left→Right
f13	[Prefer sub-selector center]	ON
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

Custom Settings menu option		Default
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
	[Focus mode button]	Focus mode/AF-area mode
	[AF-ON button]	AF-ON
	[Protect/Fn4 button]	Set Picture Control
	[OK button]	Select center focus point
	[Sub-selector center]	AE/AF lock
	[QUAL button]	None
	[Audio button]	Microphone sensitivity
	[AF-ON button for vertical shooting]	Same as AF-ON button
	[Vertical multi selector center]	AE/AF lock
	[Command dials]	
	[Exposure setting]	A: Av/Tv M: Av/Tv
	[Focus/AF-area mode selection]	[+]/AF/MF
	[Sub-command dial zoom role]	Exposure setting
	[Shutter-release button]	None
	[Lens Fn2 button]	AF-ON
	[Lens Fn button]	AE/AF lock
	[Lens control ring]	(Varies with lens)
	[Lens Fn ring (clockwise)]	Recall focus position
	[Lens Fn ring (counterclockwise)]	Recall focus position
	[Lens memory set button]	Save focus position

	Custom Settings menu option	Default
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	[Fine ISO control (mode M)]	Off
g9	[Extended shutter speeds (mode M)]	OFF
g10	[View assist]	OFF
g11	[Zebra pattern]	
	[Pattern tone range]	Zebra pattern off
	[Pattern]	Pattern 1
	[Highlight threshold]	250
	[Mid-tone range]	Value: 160; range: ±10
g12	[Limit zebra pattern tone range]	No restrictions

	Custom Settings menu option	Default
g13	[Grid type]	3×3
g14	[Brightness information display]	Histogram
g15	[Custom monitor shooting display]	
	[Display 1]	✓ (cannot be deselected)
	[Display 2]	<input checked="" type="checkbox"/>
	[Display 3]	<input checked="" type="checkbox"/>
	[Display 4]	<input checked="" type="checkbox"/>
g16	[Custom viewfinder shooting display]	
	[Display 1]	✓ (cannot be deselected)
	[Display 2]	<input checked="" type="checkbox"/>
	[Display 3]	<input checked="" type="checkbox"/>
g17	[Red REC frame indicator]	ON

Playback Menu

Playback menu option	Default
[Delete]	—
[Playback folder]	All
[Playback display options]	
[Focus point]	<input type="checkbox"/>
[Exposure info]	<input type="checkbox"/>
[Highlights]	<input type="checkbox"/>
[RGB histogram]	<input type="checkbox"/>
[Shooting data]	<input type="checkbox"/>
[Overview]	<input type="checkbox"/>
[None (picture only)]	<input checked="" type="checkbox"/>
[Basic shooting data]	<input checked="" type="checkbox"/>
[Flash data]	<input checked="" type="checkbox"/>
[Picture Control/HLG data]	<input checked="" type="checkbox"/>
[Other shooting data]	<input checked="" type="checkbox"/>
[Copyright info]	<input checked="" type="checkbox"/>
[Location data]	<input checked="" type="checkbox"/>
[IPTC data]	<input checked="" type="checkbox"/>
[Delete pictures from both slots]	Yes (confirmation required)
[Dual-format recording PB slot]	Slot 1

Playback menu option	Default
[Filtered playback criteria]	
[Protect]	<input type="checkbox"/>
[Picture type]	<input type="checkbox"/>
[Rating]	<input type="checkbox"/>
[Select for upload to computer]	<input type="checkbox"/>
[Select for upload (FTP)]	<input type="checkbox"/>
[Voice memo]	<input type="checkbox"/>
[Retouched pictures]	<input type="checkbox"/>
[Picture review]	Off
[After delete]	Show next
[After burst, show]	Last picture in burst
[Rotate tall]	ON
[Copy image(s)]	—

Setup Menu

Setup menu option	Default
[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
[Finder display size (photo Lv)]	Standard
[Limit monitor mode selection]	
[Automatic display switch]	<input checked="" type="checkbox"/>
[Viewfinder only]	<input checked="" type="checkbox"/>
[Monitor only]	<input checked="" type="checkbox"/>
[Prioritize viewfinder]	<input checked="" type="checkbox"/>
[Auto rotate info display]	ON

Setup menu option	Default
[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]	--
[Save focus position]	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

Setup menu option	Default
[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
[Beep on/off]	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

Setup menu option	Default
[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

Network menu option	Default
[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?]	—

Network menu option	Default
[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?]	—
[Connect to other cameras]	
[Synchronized release]	ON
[Network settings]	—
[Group name]	—
[Master/remote]	Master camera
[Remote camera list]	—
[Synchronize date and time]	—
[USB]	MTP/PTP
[Start via LAN]	OFF
[Router frequency band]	(Default varies with country of purchase)
[MAC address]	—





My Menu/Recent Settings

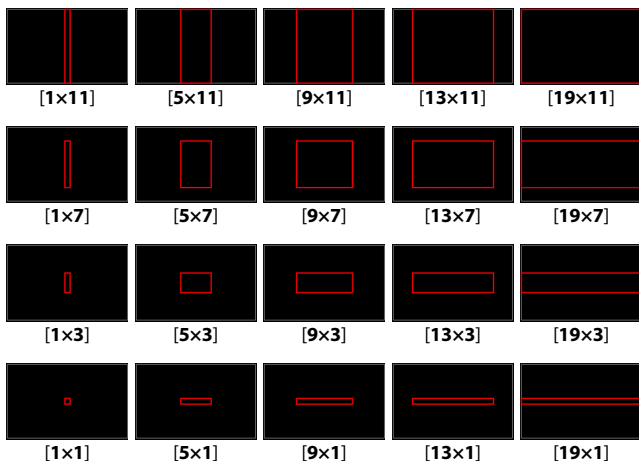
My Menu option	Default
[Add items]	—
[Remove items]	—
[Rank items]	—
[Choose tab]	MY MENU

New AF-Area Modes: “Wide-Area AF (C1)” and “Wide-Area AF (C2)”

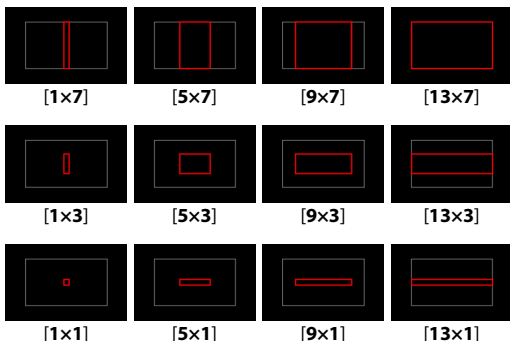
[Wide-area AF (C1)] and [Wide-area AF (C2)] options have been added to the AF-area modes available with autofocus (*Reference Guide*, 113). Use these options to define custom AF-area sizes, with heights and widths measured in focus points.

Choosing Custom AF-Area Sizes





After selecting [Wide-area AF (C1)] or [Wide-area AF (C2)] for [AF-area mode] in the photo shooting menu, you can choose the dimensions of the focus areas used for the selected AF-area during still photography. Use  and  to choose the height and  and  to choose the width.

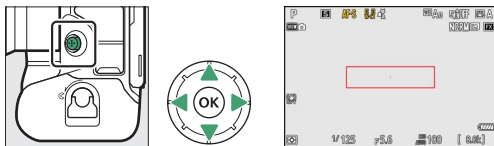


After selecting [**Wide-area AF (C1)**] or [**Wide-area AF (C2)**] for [**AF-area mode**] in the video recording menu, you can choose the dimensions of the focus areas used for the selected AF-area mode during video recording. The items in the video recording menu offer a choice of 12 options ranging from [**1×1**] to [**13×7**].



Choosing the Focus-Area Size

To choose the dimensions of the focus area when [**Wide-area AF (C1)**] or [**Wide-area AF (C2)**] is selected for [**AF-area mode**], hold the focus-mode button and press , , , or . The illustration shows the display for an AF area with a size of [**13×3**].



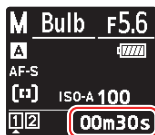
“Wide-Area AF (C1)”/“Wide-Area AF (C2)”

- These options are recommended where the area used for focus can to a certain extent be determined in advance.
- Subject detection is available via the [**AF subject detection options**] items in the photo shooting and video recording menus. These can be used to choose the type of subject to which the camera gives priority when focusing.
- [**Wide-area AF (C1)**] and [**Wide-area AF (C2)**] have been added to the options available for Custom Settings a8 and g4 [**Limit AF-area mode selection**].
- [**Wide-area AF (C1)**] and [**Wide-area AF (C2)**] have also been added to the [**AF-area mode**], [**AF-area mode + AF-ON**], [**Recall shooting functions**], and [**Recall shooting functions (hold)**] options available for Custom Setting f2 [**Custom controls (shooting)**].

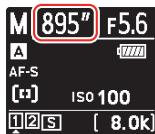
Changes to Long-Exposure Displays

The control panel display for long time-exposures in photo mode now shows additional information.

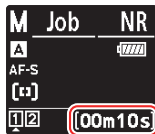
- The time elapsed since the shutter-release button was pressed all the way down to start the exposure is now shown in the control panel during “Bulb” and “Time” photography (*Reference Guide*, □ 138).



- The control panel now shows the time remaining in exposures taken at slow shutter speeds with [ON] selected for Custom Setting d6 [Extended shutter speeds (M)] (*Reference Guide*, □ 621).

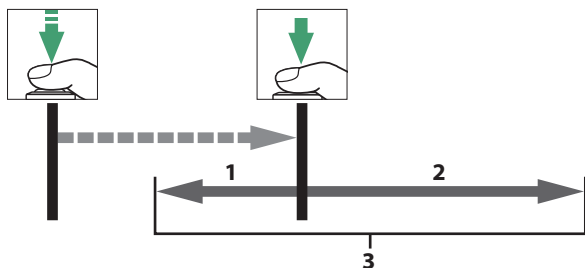


- When [ON] selected for [Long exposure NR] (*Reference Guide*, □ 514) in the photo shooting menu, the control panel will now display a count-down timer while the camera processes pictures taken at shutter speeds of “Bulb” or “Time” or at speeds slower than 30 s.



Pre-Release Burst

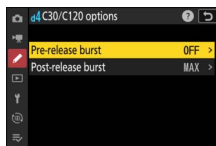
When photographs are taken using high-speed frame capture (*Reference Guide*, □ 149), the camera can now also record a “pre-release burst” of pictures saved to a buffer for up to a second before the shutter-release button was pressed all the way down. You can also limit the remainder of the burst taken after the shutter-release button is pressed all the way down.




- 1 Portion of buffer recorded to memory card at release (**Pre-release burst**)
- 2 Pictures taken after release (**Post-release burst**)
- 3 Complete high-speed burst

High-Speed Capture Options

Pre- and post-release burst options can be adjusted using the newly-added Custom Setting d4 [C30/C120 options].



Option	Description
[Pre-release burst]	<p>Choose how many of the last frames in the buffer are recorded when the shutter-release button is pressed all the way down: [None] or [0.3 s], [0.5 s], or [1 s] worth.</p> <ul style="list-style-type: none">Choosing [None] disables pre-release burst recording.If the interval between the shutter-release button being pressed halfway and its being pressed all the way down is shorter than the time selected, only the frames saved to the buffer while the button was pressed halfway will be recorded.
[Post-release burst]	<p>Choose the maximum length of time the camera will continue to take pictures after the shutter-release button is pressed all the way down: [1 s], [2 s], [3 s], or [Max.]. Shooting can continue for up to about 4 s when [Max.] is selected.</p>


- A  icon appears in the shooting display when an option other than **[None]** is selected for **[Pre-release burst]**. While the shutter-release button is pressed halfway, a green dot (●) will appear in the icon to show that buffering is in progress.



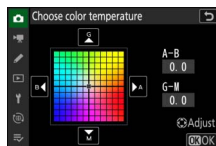
Changes to the “Choose Color Temperature” White Balance Option

Changes have been made to the procedure for choosing a color temperature when [**Choose color temperature**] is selected for white balance (*Reference Guide*, □ 167). You can adjust color temperature on the A (amber)–B (blue) and G (green)–M (magenta) axes, just as you would when fine-tuning other white balance options.

Using the Menus

When prompted to choose a color temperature, press  (?) to view fine-tuning options. Use the multi selector to position the cursor on the grid.





- The cursor can be moved up to six steps from the center along either axis. The selected value is displayed to the right of the grid.
- The A (amber)–B (blue) axis corresponds to color temperature and is ruled in increments of 0.5. A change of 1 is equivalent to approximately 5 mired.
- The G (green)–M (magenta) axis has effects similar to color compensation filters and is ruled in increments of 0.25. A change of 1 is equivalent to approximately 0.05 diffuse density units.







Using Buttons

To make fine adjustments to color temperature when [**Choose color temperature**] is selected for white balance, hold the **WB** button and use the multi selector.



- Hold the **WB** button and rotate the sub-command dial to choose a color temperature in mireds.
- To choose a color temperature, hold the **WB** button and press , , , or .
- The selected setting takes effect when the **WB** button is released.





The *i* Menu

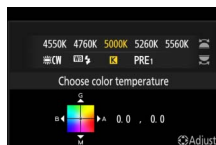
Pressing  when [**White balance**] is highlighted in the *i* menu displays a list of white balance options. Highlight  [**Choose color temperature**] and press  to choose a color temperature. To view fine-tuning options, press  (?) in the color-temperature adjustment display.





The Information Display

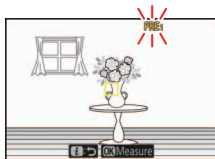
To choose a color temperature using the command dials, press the **WB** button while shooting information is displayed.

- Hold the **WB** button and rotate the sub-command dial to choose a color temperature in mireds.
- To choose a color temperature, hold the **WB** button and press , , , or .
- The selected setting takes effect when the **WB** button is released.






Changes to “Preset Manual” White Balance Targets

We have changed the size of the area the camera uses to meter values for [**Preset manual**] white balance (*Reference Guide*,  171). The target () shown in the center of the display in direct measurement mode is now smaller, allowing the subject used to measure white balance to be selected with greater precision.



Zooming in on the Display During Video Recording

Display zoom ratios of 50% and 200% have been added for use during video recording (*Reference Guide*,  96).

- Use the  and  (?) buttons to zoom in and out.
- A zoom ratio of 50% is not available at a frame size of 1920×1080 .
- Display zoom cannot be used while video is being recorded in RAW format.

Changes to Video Mode Displays

The control panel now displays the current frame size and frame rate in video mode.



New RAW “Video File Type” Options

Two RAW options have been added under **[Video file type]** in the video recording menu (*Reference Guide*, 214).

Option	Description	YCbCr/ Bayer
[N-RAW 12-bit (NEV)]	<p>This option assumes the footage will later undergo RAW processing and editing on a powerful computer.</p> <ul style="list-style-type: none">• Video is recorded in NEV format.• The camera simultaneously records an H.264 8-bit MP4 video (proxy video) at a frame size of 1920 × 1080 for playback on the camera.• You have a choice of two tone modes: [SDR] and [N-Log].• Quality can be adjusted using [Video quality (N-RAW)] in the video recording menu.• Audio is recorded in Linear PCM format.	Bayer
[ProRes RAW HQ 12-bit (MOV)]	<p>This option assumes the footage will later undergo RAW processing and editing on a powerful computer.</p> <ul style="list-style-type: none">• Video is recorded in MOV format.• The camera simultaneously records an H.264 8-bit MP4 video (proxy video) at a frame size of 1920 × 1080 for playback on the camera.• You have a choice of two tone modes: [SDR] and [N-Log].• Audio is recorded in Linear PCM format.	Bayer

- **[Upload RAW video as]** items have been added to the **[Options]** sub-menu for **[Connect to computer]** (*Reference Guide*, □ 760) and **[Connect to FTP server]** (*Reference Guide*, □ 765) in the network menu. You can choose to upload RAW videos to computers or FTP servers as both RAW- and MP4-format files or as MP4-format files only.
- ISO sensitivities of Hi 0.3 through Hi 2.0 are not available with RAW videos.
- Selecting **[N-Log]** for **[Tone mode]** limits minimum ISO sensitivity.
 - The lowest value available for the **[ISO sensitivity settings]** > **[Maximum sensitivity]** item in the video recording menu is ISO 1600.
 - The lowest value available for the **[ISO sensitivity settings]** > **[ISO sensitivity (mode M)]** item in the video recording menu is ISO 800.
- **[Active D-Lighting]**, **[High ISO NR]**, **[Diffraction compensation]** and **[Electronic VR]** are not available in the video recording menu.
- RAW videos cannot be edited on the camera.
- Regardless of the option selected for **[HDMI]** > **[Output resolution]**, the maximum output resolution is 1920×1080.

RAW Video Frame Size and Rate Options

The [Frame size/frame rate] options available when [N-RAW 12-bit (NEV)] or [ProRes RAW HQ 12-bit (MOV)] is selected are as follows:

Option	Video file type	
	N-RAW 12-bit	ProRes RAW HQ 12-bit
[[FX] 8256×4644; 60p]	✓	—
[[FX] 8256×4644; 50p]	✓	—
[[FX] 8256×4644; 30p]	✓	—
[[FX] 8256×4644; 25p]	✓	—
[[FX] 8256×4644; 24p]	✓	—
[[FX] 4128×2322; 120p]	✓	—
[[FX] 4128×2322; 100p]	✓	—
[[FX] 4128×2322; 60p]	✓	✓
[[FX] 4128×2322; 50p]	✓	✓
[[FX] 4128×2322; 30p]	✓	✓
[[FX] 4128×2322; 25p]	✓	✓
[[FX] 4128×2322; 24p]	✓	✓
[[DX] 5392×3032; 60p]	✓	—
[[DX] 5392×3032; 50p]	✓	—
[[DX] 5392×3032; 30p]	✓	✓
[[DX] 5392×3032; 25p]	✓	✓
[[DX] 5392×3032; 24p]	✓	✓
[[2.3×] 3840×2160; 120p]	✓	—
[[2.3×] 3840×2160; 100p]	✓	—
[[2.3×] 3840×2160; 60p]	—	✓
[[2.3×] 3840×2160; 50p]	—	✓

- Regardless of the setting chosen for **[Image area]** > **[Choose image area]** in the video recording menu, “FX” options will be recorded using the **[FX]** image area and “DX” options using the **[DX]** image area. Choosing a “2.3×” option increases the apparent focal length by approximately 2.3× when compared to FX format.
- DX-based video format is selected automatically when a DX lens is attached. “FX” options cannot be selected.

Bit Rate

The bit rate for NEV videos and average bit rate for MP4 videos recorded with **[N-RAW 12-bit (NEV)]** selected for video file type are listed below.

- ProRes RAW HQ 12-bit data specifications are available from the Apple website.

■ “Video Quality (N-RAW)” in the Video Recording Menu: “High Quality”

Option	NEV	MP4
[[FX] 8256×4644; 60p]	Approx. 5780 Mbps	Approx. 56 Mbps
[[FX] 8256×4644; 50p]	Approx. 4810 Mbps	
[[FX] 8256×4644; 30p]	Approx. 2890 Mbps	
[[FX] 8256×4644; 25p]	Approx. 2410 Mbps	
[[FX] 8256×4644; 24p]	Approx. 2310 Mbps	
[[FX] 4128×2322; 120p]	Approx. 3480 Mbps	Approx. 120 Mbps
[[FX] 4128×2322; 100p]	Approx. 2900 Mbps	
[[FX] 4128×2322; 60p]	Approx. 1740 Mbps	Approx. 56 Mbps
[[FX] 4128×2322; 50p]	Approx. 1450 Mbps	
[[FX] 4128×2322; 30p]	Approx. 870 Mbps	Approx. 28 Mbps
[[FX] 4128×2322; 25p]	Approx. 730 Mbps	
[[FX] 4128×2322; 24p]	Approx. 700 Mbps	
[[DX] 5392×3032; 60p]	Approx. 2960 Mbps	
[[DX] 5392×3032; 50p]	Approx. 2470 Mbps	Approx. 56 Mbps
[[DX] 5392×3032; 30p]	Approx. 1480 Mbps	
[[DX] 5392×3032; 25p]	Approx. 1240 Mbps	Approx. 28 Mbps
[[DX] 5392×3032; 24p]	Approx. 1190 Mbps	
[[2.3×] 3840×2160; 120p]	Approx. 3020 Mbps	Approx. 120 Mbps
[[2.3×] 3840×2160; 100p]	Approx. 2510 Mbps	

■ ■ “Video Quality (N-RAW)” in the Video Recording Menu: “Normal”



Option	NEV	MP4
[[FX] 8256×4644; 60p]	Approx. 3470 Mbps	Approx. 56 Mbps
[[FX] 8256×4644; 50p]	Approx. 2890 Mbps	
[[FX] 8256×4644; 30p]	Approx. 1740 Mbps	
[[FX] 8256×4644; 25p]	Approx. 1450 Mbps	
[[FX] 8256×4644; 24p]	Approx. 1390 Mbps	
[[FX] 4128×2322; 120p]	Approx. 1750 Mbps	Approx. 120 Mbps
[[FX] 4128×2322; 100p]	Approx. 1460 Mbps	
[[FX] 4128×2322; 60p]	Approx. 880 Mbps	Approx. 56 Mbps
[[FX] 4128×2322; 50p]	Approx. 730 Mbps	
[[FX] 4128×2322; 30p]	Approx. 440 Mbps	Approx. 28 Mbps
[[FX] 4128×2322; 25p]	Approx. 370 Mbps	
[[FX] 4128×2322; 24p]	Approx. 350 Mbps	
[[DX] 5392×3032; 60p]	Approx. 1490 Mbps	Approx. 56 Mbps
[[DX] 5392×3032; 50p]	Approx. 1240 Mbps	
[[DX] 5392×3032; 30p]	Approx. 750 Mbps	Approx. 28 Mbps
[[DX] 5392×3032; 25p]	Approx. 620 Mbps	
[[DX] 5392×3032; 24p]	Approx. 600 Mbps	
[[2.3×] 3840×2160; 120p]	Approx. 1510 Mbps	Approx. 120 Mbps
[[2.3×] 3840×2160; 100p]	Approx. 1260 Mbps	


New Menu Item: “Extended Oversampling”

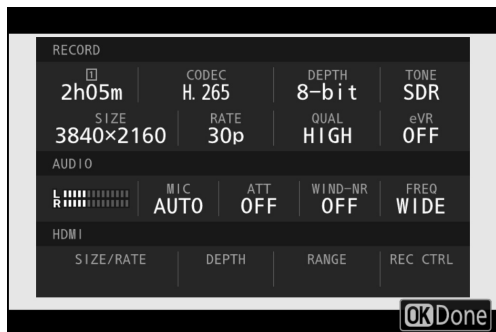
An [**Extended oversampling**] item has been added to the video recording menu. Selecting [**ON**] optimizes image readout for improved image quality when [**3840×2160; 60p**] or [**3840×2160; 50p**] is selected for [**Frame size/frame rate**].

- Note that the drain on the battery increases when [**ON**] is selected.

New “View Video Info” Option for Custom Setting g1 “Customize Menu”

A [View video info] option has been added to Custom Setting g1 [Customize  menu] (*Reference Guide*,  672).

- Selecting this option in the  menu displays video recording settings. It can be used to view but not to change the options selected.



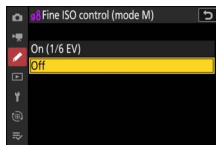
New “Fast AF-ON” Option for Custom Setting g2 “Custom Controls”

[**Fast AF-ON**] has been added to the roles that can be assigned using Custom Setting g2 [**Custom controls**] (*Reference Guide*, 674).

- If [**AF-ON**] is selected in focus mode **AF-C**, the camera will focus at the speed selected for Custom Setting g6 [**AF speed**] (*Reference Guide*, 684) when the control is pressed. If [**Fast AF-ON**] is selected, the camera will focus at maximum speed, regardless of the option chosen for Custom Setting g6.
- Assigning [**AF-ON**] and [**Fast AF-ON**] to different controls gives you a choice of two focus speeds.

New Custom Setting: g8 “Fine ISO Control (Mode M)”

A [**Fine ISO control (mode M)**] item has been added to the Custom Settings menu at position g8. Selecting [**On (1/6 EV)**] allows ISO sensitivity for videos to be adjusted in increments of $\frac{1}{6}$ EV.



- ISO sensitivity adjustment is available only in mode **M**.
- Sensitivity can be set to values of from ISO 64 to 25600 in increments of $\frac{1}{6}$ EV.

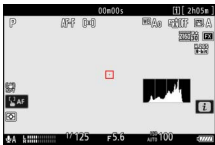
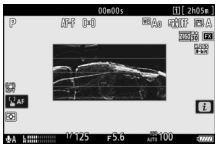
New Custom Setting: g9 “Extended Shutter Speeds (Mode M)”

An [**Extended shutter speeds (mode M)**] item has been added to the Custom Settings menu at position g9. Select [**ON**] for access to a range of slower shutter speeds in mode **M**.

- When [**OFF**] is selected, the minimum shutter speed varies with frame rate as follows.
 - 120p: $\frac{1}{125}$ s
 - 100p: $\frac{1}{100}$ s
 - 60p: $\frac{1}{60}$ s
 - 50p: $\frac{1}{50}$ s
 - 30p: $\frac{1}{30}$ s
 - 25p: $\frac{1}{25}$ s
 - 24p: $\frac{1}{25}$ s
- When [**ON**] is selected, the minimum shutter speeds for frame rates of 60p to 24p drop to $\frac{1}{4}$ s. Those for 120p and 100p do not change.
- Selecting [**ON**] and choosing a slow shutter speed helps prevent ISO sensitivity rising too high during shots of the night sky and other dark subjects.
- Videos recorded at slow shutter speeds when [**ON**] is selected will include repeated multiple copies of the same frames.
- To reduce blur caused by camera shake in videos recorded at slow shutter speeds while [**ON**] is selected, we recommend mounting the camera on a tripod.

New Custom Setting: g14 “Brightness Information Display”

A **[Brightness information display]** item has been added to the Custom Settings menu at position g14. Use it to choose how the camera displays brightness information.

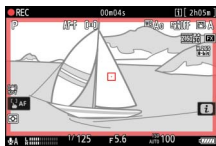
Option	Description
[Histogram]	<p>The camera displays an RGB histogram.</p> 
[Wave-form monitor]	<p>The camera displays a wave-form monitor. The monitor can be displayed at either of two different sizes.</p> 
[Wave-form monitor (large)]	

- The **[Histogram]** options for Custom Settings g15 **[Custom monitor shooting display]** and g16 **[Custom viewfinder shooting display]** have been renamed **[Brightness information]**. Enabling (☑) these options adds the brightness information selected for Custom Setting g14 to the relevant display.



New Custom Setting: g17 “Red REC Frame Indicator”

A [**Red REC frame indicator**] item has been added to the Custom Settings menu at position g17. If [**ON**] is selected, a red border will appear around the shooting display while video recording is in progress. This helps prevent missed shots by alerting you when recording is in progress.



New HDMI Output Resolution

A **[1080i (interlaced)]** option has been added under **[HDMI] > [Output resolution]** (*Reference Guide*, 302) in the setup menu. Choose this option for interlaced output to connected HDMI devices.

- Video will not be output at 1080i when **[Auto]** is selected for **[Output resolution]** even when a recorder that supports this option is connected. Choose **[1080i (interlaced)]** for interlaced output.

Changes to the “Viewfinder Only” and “Prioritize Viewfinder” Monitor Modes

The [**Viewfinder only**] and [**Prioritize viewfinder**] monitor modes (*Reference Guide*, 50) have changed as described below.

“Viewfinder Only”

The viewfinder will now turn on for a few seconds before you place your eye to the viewfinder when the camera is turned on or the standby timer is activated.

“Prioritize Viewfinder”

- The viewfinder will now turn on for a few seconds before placing your eye to the viewfinder when the camera is turned on or the standby timer is activated.
- The shooting display now appears whenever you put your eye to the viewfinder. You will need to take your eye from the viewfinder and use the monitor for menus and playback.
- When [**On**] is selected for [**Picture review**], a picture will be displayed in the monitor when you take your eye from the viewfinder.

Release Timing Indicators for High-Speed Frame Capture

In “C” firmware version 1.xx, release timing indicators would not be displayed during high-speed frame capture, regardless of the option selected for Custom Setting d14 **[Release timing indicator]** (*Reference Guide*, 629). With “C” firmware version 2.00, release timing indicators are now displayed during high-speed frame capture.

New Custom Setting: d20 “High FPS Viewfinder Display”






A [**High fps viewfinder display**] item has been added to the Custom Settings menu at position d20. Select [**ON**] to smooth the display in the viewfinder according to shooting conditions. The movements of fast-moving subjects will be easier to see.

Dimming the Viewfinder

In addition to [–5] to [+8] and [Hi 1] and [Hi 2], the options available for [Viewfinder brightness] > [Manual] (*Reference Guide*, 711) in the setup menu now also include [Lo 1] and [Lo 2]. Both options are dimmer than [–5]. [Lo 2] is dimmer than [Lo 1].

New Menu Item: “Auto Temperature Cutout”

An **[Auto temperature cutout]** item has been added to the setup menu.

- When **[Standard]** is selected, the camera will display first a  and then a  icon as its internal temperature rises, switching to a count-down timer if the temperature increases still further.
- When **[High]** is selected, the camera will display , , and  icons as its internal temperature rises, switching to a count-down timer if the temperature increases still further.
- When the count-down timer reaches zero, the camera will turn off automatically and further photography will be suspended.



✓ “High”

Although selecting **[High]** gives you more time before the camera shuts down, the camera may become hot to the touch. We recommend using a tripod or other equipment to reduce the time spent touching the camera.

✓ When the Camera Is Hot

- In some cases, the count-down timer may be displayed the moment the camera is turned on, even when **[High]** is selected.
- Image quality may drop when the camera is hot.
- Memory cards inserted in a hot camera may also become hot. In this case, do not attempt to remove the memory card immediately, instead, wait for the camera to cool.


New “Retouch” Option for the Playback *i* Menu: “Motion Blend”

A **[Motion blend]** option has been added under **[Retouch]** in the playback *i* menu (*Reference Guide*, 264). The camera examines a selected burst of pictures to detect moving subjects and overlays them to create a single JPEG image.







- 1 Select [Retouch] in the *i* menu, then highlight [Motion blend] and press .**

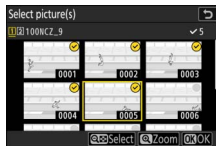


- 2 Select the source slot.**

- Highlight the slot with the card containing the desired pictures and press .
- You will not be prompted to select the slot if only one memory card is inserted.




- 3 Select the pictures.**

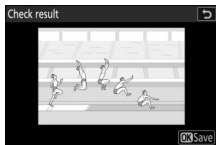
- Highlight pictures using the multi selector.
- To view the highlighted picture full screen, press and hold the  button.
- To select the highlighted picture, press the  (?). Selected pictures are marked with a check (). To remove the check () and deselect the current picture, press the  (?) button again.
- Press  once you have selected from 5 to 20 pictures.




4 Check the results.

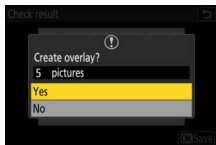
Check the results of the overlay in the preview display.

- To return to Step 3 and choose different pictures, tap  or press .
- To proceed with the current selection, press ; a confirmation dialog will be displayed.



5 Save the overlay.

Highlight **[Yes]** in the confirmation dialog and press  to save the overlay.






✓ Cautions: [Motion Blend]

- The final picture may differ from the preview both in how it looks (including color and brightness) and in how the pictures are combined.
- Only pictures created with this camera can be selected. Pictures created with other models cannot be selected.
- **[Motion blend]** is intended for bursts shot with the camera on a tripod, with a fixed background and moving subjects. The desired results may consequently not be achieved with bursts shot without a tripod.
- The overlay will include only pictures created with the same options selected for **[Image area] > [Choose image area]** in the photo shooting menu.
- The image quality setting for the completed overlay is that of the highest quality picture it contains.
- Overlays that include NEF (RAW) pictures will be saved at an image quality of **[JPEG fine★]**.
- All JPEG pictures in the overlay must be the same size.

New Playback *i* Menu Option: “Save Consecutive Frames”

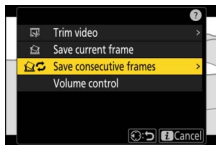
You can now save the frames in a selected length of footage as a series of individual JPEG images.

1 Pause the video on the desired frame.




- Press  to pause playback.
- Your approximate position in the video can be ascertained from the video progress bar.
- Press  or  or rotate the command dials to locate the desired frame.



2 Press the *i* button, then highlight [Save consecutive frames] and press .



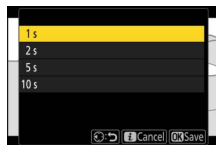
3 Choose a destination.

- Choose the destination.
- Press  or  to highlight a card slot and press .
- You will not be prompted to select the slot if only one memory card is inserted.



4 Choose the length of footage.

Choose the length of footage that will be saved as stills.



5 Press **OK**.

The selected footage will be saved as a series of JPEG stills. The number varies with the video frame rate.

Skipping to the First Shot in a Burst During Playback

[**Skip to first shot in burst**] has been added to the [**Frame advance**] options (*Reference Guide*, 663) available for [**Main command dial**] and [**Sub-command dial**] under Custom Setting f3 [**Custom controls (playback)**].


- Select this option to view only the first shot in each burst and skip the remaining shots when scrolling through pictures with the command dial.
- If the current picture is not part of a burst, rotating the command dial will scroll through pictures one at a time.

New Custom Setting: a14 “Focus Point Selection Speed”

A [**Focus point selection speed**] item has been added to the Custom Settings menu at position a14. The speed at which the camera cycles through focus points while the multi selector or sub-selector is pressed can be chosen from [**Low**], [**Normal**], and [**High**].

New “Recall Shooting Functions (Hold)” Option for Custom Setting f2 “Custom Controls (Shooting)”

[**Recall shooting functions (hold)**] has been added to the roles that can be assigned using Custom Setting f2 [**Custom controls (shooting)**] (*Reference Guide*, 647). Previously-stored settings for still photography (including shooting mode and metering) can be recalled by pressing the chosen control once. Pressing the control a second time restores the settings in effect before stored settings were recalled.

- To choose the settings recalled, press  when [**Recall shooting functions (hold)**] is highlighted. The settings that can be stored are the same as for [**Recall shooting functions**]. [**Recall shooting functions (hold)**] cannot, however, be used to save or recall settings for [**AF-ON**].
- The shooting mode indicators in the shooting display and control panel will flash while stored settings are in effect.
- Shutter speed and aperture can be changed by rotating the command dials while stored settings are in effect.
 - In mode **P**, you can adjust flexible program settings.
 - If an option other than [**Off**] is selected for Custom Setting b3 [**Easy exposure compensation**], exposure compensation can be adjusted by rotating a command dial.

New Custom Setting: f11 “Switch Focus/Control Ring Roles”

A [**Switch focus/control ring roles**] item has been added to the Custom Settings menu at position f11. If [**ON**] is selected, the focus ring will perform the role currently assigned to the control ring.

- The function performed by the control ring can be selected using Custom Settings f2 [**Custom controls (shooting)**] (*Reference Guide*, ☞ 647) or g2 [**Custom controls**] (*Reference Guide*, ☞ 674).
- This option applies only to compatible lenses.

New Custom Setting: f13 “Prefer Sub-selector Center”

A [**Prefer sub-selector center**] item has been added to the Custom Settings menu at position f13. Although at the default setting ([**ON**]) the sub-selector cannot be used to position the focus point while its center is pressed, it can be so used when [**OFF**] is selected for [**Prefer sub-selector center**].




- This means that you can position the focus point while using the center of the sub-selector to perform the function chosen for [**Sub-selector center**] using Custom Setting f2 [**Custom controls (shooting)**] (*Reference Guide*, □ 647) or g2 [**Custom controls**] (*Reference Guide*, □ 674). In particular, you can assign [**AF-area mode**] to the center of the sub-selector and use it to temporarily switch AF-area modes without interfering with your ability to position the focus point.

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)**] (*Reference Guide*, 647) or g2 [**Custom controls**] (*Reference Guide*, 674) and the controls to which they can be assigned.

Newly Customizable Controls

The following controls can now be customized.

Control		Description
	[Lens Fn ring (clockwise)]	Choose the role performed by rotating the lens Fn ring clockwise (applies only to lenses with Fn rings).
	[Lens Fn ring (counterclockwise)]	Choose the role performed by rotating the lens Fn ring counterclockwise (applies only to lenses with Fn rings).
	[Lens memory set button]	Choose the role performed by pressing the lens memory set button (applies only to lenses with memory set buttons).

New Assignable Roles: “Save Focus Position” and “Recall Focus Position”

[**Save focus position**] and [**Recall focus position**] have been added to the roles that can be assigned to camera controls. Assign controls these roles to save and quickly restore the lens’s current focus position (“memory recall”). You may find this useful if you frequently return to subjects at a fixed focus distance.

- To save the current focus position, press and hold the control assigned the [**Save focus position**] role. The saved focus position can be restored by pressing a control assigned [**Recall focus position**].
- [**Recall focus position**] can be assigned to multiple buttons. You can choose whether each button recalls a separate focus position or the same focus position can be recalled using multiple buttons.
- Focus positions can be saved in any focus mode.
- The focus positions are stored in the lens currently attached to the camera. The stored distance is not reset when the camera is turned off.
- The stored distance is however reset when the lens is detached.

✔ Cautions: Memory Recall

- No focus position can be saved while the information display appears.
 - Due to the change in the ambient temperature, the focus position may change from where it was saved when recalled.
 - Adjusting the lens focal length by zooming after a focus position is saved, the position tends to change when recalled.
-

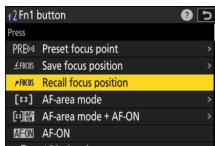
Memory Recall

Focus positions are saved using controls to which **[Save focus position]** has been assigned. When you save the focus position, you can choose whether it can be recalled using any of the controls to which **[Recall focus position]** is assigned (**[Save to all]**) or using only a specific control (**[Save individually]**).

■ “Save to All”

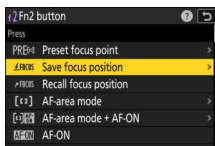
1 Assign **[Recall focus position]** to a control.

Repeat this step for each of the controls you intend to use for memory recall.

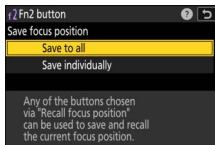


2 Select another control in the custom control list and, when prompted to choose a role, highlight **[Save focus position]** and press **[OK]**.

Save options will be displayed.

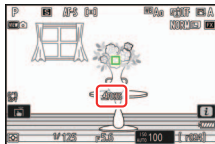


3 Highlight **[Save to all]** and press **[OK]**.



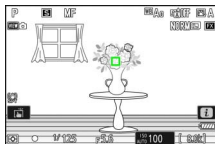
4 Focus on the desired subject in the shooting display and press and hold the control to which [Save focus position] is assigned.

A **FOCUS** icon will appear in the shooting display if the operation is successful.



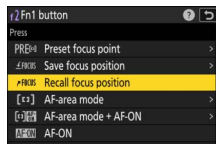
5 Press any of the controls to which [Recall focus position] was assigned in Step 1.

- The saved focus position will be restored.
- Although **[Recall focus position]** can be assigned to multiple controls, the same focus position will be restored regardless of the control used.
- Holding a control to which **[Recall focus position]** is assigned activates manual focus, and the camera will not refocus if the shutter-release button is pressed halfway while the control is pressed.

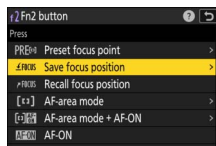


■ “Save Individually”

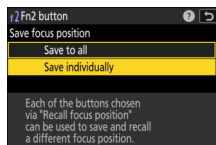
- 1 Assign [Recall focus position] to multiple controls.



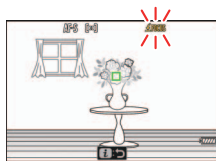
- 2 Select another control in the custom control list and, when prompted to choose a role, highlight [Save focus position] and press . Save options will be displayed.



- 3 Highlight [Save individually] and press .



- 4 Focus on the desired subject in the shooting display and press and hold the control to which [Save focus position] is assigned. A icon will flash in the shooting display.



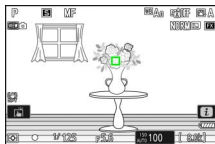
5 Press the button you intend to use for recall of the focus position saved in Step 4.

- Of the controls to which **[Recall focus position]** was assigned in Step 1, press the control you intend to use for recall of the focus position saved in Step 4.
- A message will appear in the shooting display if the operation is successful.
- Repeat Steps 4 to 5 to save additional focus positions to the other controls to which **[Recall focus position]** is assigned.



6 Press the control for the desired focus position.

- The focus position saved to the control in question will be restored.
- Holding a control to which **[Recall focus position]** is assigned activates manual focus, and the camera will not refocus if the shutter-release button is pressed halfway while the control is pressed.



Changes to “Save/Load Menu Settings”

The settings saved and loaded using **[Save/load menu settings]** (*Reference Guide*, 📖 748) now include those for **[Delete pictures from both slots]** and **[Filtered playback criteria]** in the playback menu.

Post-Upgrade Specifications for “C” Firmware Version 2.00

Product specifications following upgrade to “C” firmware version 2.00 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)	<ul style="list-style-type: none"> • [FX (36 × 24)] selected for image area: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 8256 × 4640 (Large: 38.3 M) - 6192 × 3480 (Medium: 21.5 M) - 4128 × 2320 (Small: 9.6 M)
File format (image quality)	<ul style="list-style-type: none"> • 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 and auto and 18-level manual brightness controls; high frame-rate display available
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 11-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 burst), 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 (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

Exposure	
Range	–3 – +17 EV * Figures are for ISO 100 and f/2.0 lens at 20 °C/68 °F
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 $\frac{1}{3}$ and $\frac{1}{2}$ EV)
Exposure lock	Luminosity locked at detected value
ISO sensitivity (Recommended Exposure Index)	ISO 64–25600 (choose from step sizes of $\frac{1}{3}$ 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, motion blend
Other options	HDR overlay, photo mode flicker reduction
Autofocus	
Type	Hybrid phase-detection/contrast AF with AF assist
Detection range	–6.5 – +19 EV (–8.5 – +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

Autofocus	
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 $\frac{1}{3}$ and $\frac{1}{2}$ 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

Flash	
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
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 <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 <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>

Video	
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 (for videos recorded in NEV or MOV format) or AAC (for videos recorded in MP4 format)
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, waveform 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

Playback	
Playback	Full-frame and thumbnail (up to 4, 9, or 72 pictures) playback with playback zoom, playback zoom cropping, video playback, histogram display, highlights, photo information, location data display, auto picture rotation, picture rating, voice memo input and playback, IPTC information embedding and display, skip to first shot in burst, and save consecutive frames
Interface	
USB	Type C USB connector (SuperSpeed USB); connection to built-in USB port 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)
Ethernet	<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	<ul style="list-style-type: none"> • Standards: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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): <ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> • Communication protocols: Bluetooth Specification version 5.0 • Operating frequency: <ul style="list-style-type: none"> - Bluetooth: 2402–2480 MHz - Bluetooth Low Energy: 2402–2480 MHz • Maximum output power (EIRP): <ul style="list-style-type: none"> - Bluetooth: 2.9 dBm - Bluetooth Low Energy: 1.4 dBm
Range (line of sight)	<p>Approximately 10 m (32 ft) *</p> <p>* Without interference. Range may vary with signal strength and presence or absence of obstacles.</p>

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.
- Nikon reserves the right to change the appearance and specifications of the hardware and software described in this document at any time and without prior notice. Nikon will not be held liable for damages that may result from any mistakes that this document may contain.

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