



# Clifton Cameras Product Specification

## Nikon Z9 Mirrorless Camera

### Specifications

Type	Mirrorless
Lens mount	Nikon Z mount
Image sensor	FX, CMOS, 35.9 mm x 23.9 mm
Total pixels	52.37 million
Dust-reduction system	Image sensor cleaning, Image Dust Off reference data (requires NX Studio)
Effective pixels	45.7 million
Image size (pixels)	[FX (36 x 24)] selected for image area: (L) 8256 x 5504 (45.4 million), (M) 6192 x 4128 (25.6 million), (S) 4128 x 2752 (11.4 million), [DX (24 x 16)] selected for image area: (L) 5392 x 3592 (19.4 million), (M) 4032 x 2688 (10.8 million), (S) 2688 x 1792 (4.8 million), [1:1 (24 x 24)] selected for image area: (L) 5504 x 5504 (30.3 million), (M) 4128 x 4128 (17.0 million), (S) 2752 x 2752 (7.6 million), [16:9 (36 x 20)] selected for image area: (L) 8256 x 4640 (38.3 million), (M) 6192 x 3480 (21.5 million), (S) 4128 x 2320 (9.6 million)
Storage file formats	NEF (RAW): 14 bit; choose from lossless compression, high efficiency (high), 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
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
Storage media	CFexpress XQD
Dual card slot	2 CFexpress cards or XQD cards, 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	1.27-cm/0.5-in. approx. 3690k-dot (Quad VGA) OLED electronic viewfinder with color balance and auto and 16-level manual brightness controls
Frame coverage	Approx. 100% horizontal and 100% vertical
Magnification	Approx. 0.8x (50 mm lens at infinity, -1.0 m <sup>-1</sup> )



Eyepoint	23 mm (-1.0 m <sup>-1</sup> ; from rearmost surface of viewfinder eyepiece lens)
Diopter adjustment	-4 - +3 m <sup>-1</sup>
Eye sensor	Automatically switches between monitor and viewfinder displays
Compatible lenses	Z mount NIKKOR lenses F mount NIKKOR lenses (mount adapter required; restrictions may apply)
Shutter type	Electronic shutter with shutter sound and sensor shield
Shutter speed	1/32000 to 30 s (choose from step sizes of 1/3, 1/2, and 1 EV, extendable to 900 s in mode M), bulb, time
Flash sync speed	Flash synchronizes with shutter at speeds of 1/250 or 1/200 s or slower (but note that the guide number drops at speeds of 1/200 to 1/250 s); sync speeds as fast as 1/8000 s are supported with auto FP high-speed sync
Release mode	S (single frame), CL (continuous low-speed), CH (continuous high-speed), High-speed frame capture, Self-timer
Frame advance rate <sup>12</sup>	Up to 120 fps, Continuous low-speed: Approx. 1 to 10 fps, Continuous high-speed: Approx. 10 to 20 fps, High-speed frame capture (C30): Approx. 30 fps, High-speed frame capture (C120): Approx. 120 fps
Self-timer	2 s, 5 s, 10 s, 20 s; 1 to 9 exposures at intervals of 0.5, 1, 2, or 3 s
Exposure metering	TTL metering using camera image sensor
Metering method	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 4mm centered on selected focus point, Highlight-weighted metering
Metering range <sup>13</sup>	-3 to +17 EV
Mode	P: programmed auto with flexible program, S: shutter-priority auto, A: aperture-priority auto, M: manual
Exposure compensation	-5 to +5 EV (choose from step sizes of 1/3 and 1/2 EV)
Exposure lock	Luminosity locked at detected value
ISO sensitivity	ISO 64 to 25600, in steps of 1/3 and 1EV, 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 (Recommended Exposure Index)
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 mode flicker reduction
Autofocus	Hybrid phase-detection/contrast AF with AF assist
Detection range <sup>14</sup>	-6.5 to +19 EV (-8.5 to +19 EV with starlight view)
Lens servo	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 <sup>15</sup>	493
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 and L), 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
Camera VR	5-axis image sensor shift
Lens VR	Lens shift (available with VR lenses)
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 modes	Front-curtain sync, slow sync, rear-curtain sync, red-eye reduction, red-eye reduction with slow sync, off
Flash compensation	-3 to +1 EV in steps of 1/3 or 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	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	Auto (3 types), natural light auto, direct sunlight, cloudy, shade, incandescent, fluorescent (3 types), flash, choose color temperature (2500 to 10,000 K), preset manual (up to 6 values can be stored), all with fine-tuning
Bracketing types	Exposure and/or flash, white balance, ADL
Movie – metering	TTL exposure metering using main image sensor, TTL metering using camera image sensor
Movie - metering method	Matrix, center-weighted, or highlight-weighted
Movie - frame size (pixels) and frame rate <sup>16</sup>	7680 x 4320 (8K UHD): 30p (progressive)/25p/24p, 3840 x 2160 (4K UHD): 120p/100p/60p/50p/30p/25p/24p, 1920 x 1080: 120p/100p/60p/50p/30p/25p/24p
Movie - file format	MOV, MP4
Movie - video compression	Apple ProRes 422 HQ (10 bit), H.265/HEVC (8 bit/10 bit), H.264/AVC (8 bit)
Movie - audio recording format	Linear PCM (for videos recorded in MOV format), AAC (for videos recorded in MP4 format)
Movie - audio recording device	Built-in stereo or external microphone with attenuator option; sensitivity adjustable
Movie - exposure compensation	-3 to +3 EV (choose from step sizes of 1/3 and 1/2 EV)





Log deletion	Supported
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.
AC adapter	EH-7P charging AC adapter; EH-6d; requires EP-6a power connector (available separately)
Tripod socket	0.635 cm (1/4 in., ISO 1222)
Dimensions (W x H x D)	Approx. 149 x 149.5 x 90.5 mm (5.9 x 5.9 x 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 to 40 °C (+14 °F to 104 °F)

Operating environment – humidity 85% or less (no condensation)

#### Supplied accessories

BF-N1 Body Cap, EN-EL18d Rechargeable Li-ion Battery with Terminal Cover, MH-33 Battery Charger, EH-7P Charging AC Adapter (supplied with a plug adapter attached in countries or regions where required; shape depends on country of sale), HDMI/USB Cable Clip, AN-DC24 Strap, UC-E24 USB Cable, BS-1 Accessory Shoe Cover (comes attached to camera)

<sup>1</sup> You can shoot at C120 (120 fps, 11 MP, JPEG normal/small) in FX format only. You can shoot at C30 (30 fps, 45MP, JPEG normal/large) and at 20 fps (RAW and JPEG) in FX or DX format. Full AF/AE tracking is available for all frame rates and file sizes.

<sup>2</sup> 1000 full-resolution images at 20 fps (RAW and JPEG) in FX or DX format in one burst can be achieved when using ProGrade Digital Cobalt CFexpress cards (as per October 2021).

<sup>3</sup> Among full-frame mirrorless cameras as of October 2021. Based on Nikon research.

<sup>4</sup> Working remotely with a single Z 9 tethered to a smartphone requires use of Nikon's NX MobileAir software application. Working remotely with multiple cameras via a tethered 4G/5G network requires use of the NX Field software application.

<sup>5</sup> The Z 9 can record 8K/30p video for up to 125 minutes at a time.

<sup>6</sup> A firmware update (available spring 2022) is required to enable in-camera 8K/60p video recording.

<sup>7</sup> Recording in N-RAW is only possible following a firmware update (available spring 2022).

<sup>8</sup> Recording in ProRes RAW HQ is only possible following a firmware update (available spring 2022).

<sup>9</sup> 4K UHD video oversampled from 8K is possible when recording in 30p/25p/24p. A firmware update (available spring 2022) is required to oversample from 8K when recording in 50p/60p footage.

<sup>10</sup> 8K still frames are saved as JPEG files at the [frame size/frame rate] dimensions selected in the video recording menu when the video was recorded.

<sup>11</sup> Based on CIPA standards.

<sup>12</sup> Maximum frame advance rate as measured by in-house tests.



<sup>13</sup> Figures are for ISO 100 and f/2.0 lens at 20 °C/68 °F.

<sup>14</sup> 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.

<sup>15</sup> Number of focus points available in photo mode with single-point AF selected for AF-area mode and FX selected for image area.

<sup>16</sup> 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.

<sup>17</sup> Maximum logical data rates according to IEEE standard; actual rates may differ.

<sup>18</sup> Without interference. Range may vary with signal strength and presence or absence of obstacles.

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 these specifications are for expository purposes only.

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