



# Clifton Cameras Product Specification

## Panasonic Lumix DC-G9 with 12-60 Leica F2.8-F4 Lens

### Full Specifications

Specification:

TYPE Type Digital Single Lens Mirrorless camera

Recording media SD Memory Card, SDHC Memory Card, SDXC Memory Card

(Compatible with UHS-I / UHS-II UHS Speed Class 3 standard SDHC / SDXC Memory Cards)

Image sensor size 17.3 x 13.0 mm (in 4:3 aspect ratio)

Lens mount Micro Four Thirds mount

IMAGE SENSOR Type Live MOS Sensor

Total pixels 21.77 Megapixels

Camera effective pixels 20.33 Megapixels

Color filter Primary color filter

Dust reduction system Supersonic wave filter

IMAGE STABILIZATION SYSTEM Image sensor shift type (5-axis / 6.5-stop\*), Dual I.S. (Dual I.S. 2 compatible)

\*Based on the CIPA standard [Yaw/Pitch direction: focusing distance f=60mm (35mm camera equivalent f=120mm), when H-ES12060 is used.

RECORDING SYSTEM Recording file format Still image JPEG (DCF, Exif 2.31), RAW

6K PHOTO\*\* / 4K PHOTO\*\* 6K PHOTO: MP4 (H.265/HEVC, Audio format: AAC (2ch))

4K PHOTO: MP4 (H.264/MPEG-4 AVC, Audio format: AAC (2ch))

Motion picture MP4: H.264/MPEG-4 AVC (Audio format: LPCM (2ch 48kHz/16-bit), AAC (2ch))

AVCHD Progressive, AVCHD (Audio format: Dolby Audio 2ch)

Aspect ratio 4:3, 3:2, 16:9, 1:1



Image quality RAW, RAW+Fine, RAW+Standard, Fine, Standard

Color space sRGB, AdobeRGB

File size (Pixels) Still image [4:3] 5184x3888(L) / 3712x2784(M) / 2624x1968(S) / 10368x7776(XL)\* / 7296x5472(LL)\* / 4992x3744(6K PHOTO) / 3328x2496(4K PHOTO) \*High Resolution Mode.

[3:2] 5184x3456(L) / 3712x2480(M) / 2624x1752(S) / 10368x6912(XL)\* / 7296x4864(LL)\* / 5184x3456(6K PHOTO) / 3504x2336(4K PHOTO) \*High Resolution Mode.

[16:9] 5184x2920(L) / 3840x2160(M) / 1920x1080(S) / 10368x5832(XL)\* / 7296x4104(LL)\* / 3840x2160(4K PHOTO) \*High Resolution Mode.

[1:1] 3888x3888(L) / 2784x2784(M) / 1968x1968(S) / 7776x7776(XL)\* / 5472x5472(LL)\* / 2880x2880(4K PHOTO) \*High Resolution Mode.

Motion picture\*\* MP4\*\* [4K] 3840x2160 59.94p, 150Mbps (4:2:0 8-bit LongGOP) (LPCM)

50.00p, 150Mbps (4:2:0 8-bit LongGOP) (LPCM)

29.97p, 100Mbps (4:2:0 8-bit LongGOP) (AAC)

25.00p, 100Mbps (4:2:0 8-bit LongGOP) (AAC)

23.98p, 100Mbps (4:2:0 8-bit LongGOP) (AAC)

[Full HD] 1920x1080 59.94p, 28Mbps (4:2:0 8-bit LongGOP) (AAC)

50.00p, 28Mbps (4:2:0 8-bit LongGOP) (AAC)

29.97p, 20Mbps (4:2:0 8-bit LongGOP) (AAC)

25.00p, 20Mbps (4:2:0 8-bit LongGOP) (AAC)

AVCHD\*\* [Full HD] 1920x1080 50.00p, 28Mbps (LongGOP) (Dolby)

50.00i, 24Mbps (LongGOP) (Dolby) (Sensor output is 25.00fps)

50.00i, 17Mbps (LongGOP) (Dolby) (Sensor output is 50.00fps)

#### High speed video

\*When Creative Video Mode is selected. MP4\*\* [4K] 3840x2160 30p, 100Mbps (Sensor output is 60fps / 50fps / 48fps)

[Full HD] 1920x1080 30p, 20Mbps (Sensor output is 180fps / 150fps)

Continuous recordable time (Motion picture) AVCHD [FHD/50p]: Approx. 130 min (rear monitor), 120 min (LVF) with H-FS12060, Approx. 120 min (rear monitor), 110 min (LVF) with H-ES12060

AVCHD [FHD/50i]: Approx. 130 min (rear monitor), 120 min (LVF) with H-FS12060, Approx. 120 min (rear monitor), 120 min (LVF) with H-ES12060



MP4 [4K/60p, 4K/50p]: Approx. 120 min (rear monitor), 110 min (LVF) with H-FS12060, Approx. 110 min (rear monitor), 110 min (LVF) with H-ES12060

MP4 [4K/30p, 4K/25p]: Approx. 130 min (rear monitor), 120 min (LVF) with H-FS12060, Approx. 130 min (rear monitor), 120 min (LVF) with H-ES12060

Actual recordable time (Motion picture) AVCHD [FHD/50p]: Approx. 65 min (rear monitor), 60 min (LVF) with H-FS12060, Approx. 60 min (rear monitor), 55 min (LVF) with H-ES12060

AVCHD [FHD/50i]: Approx. 65 min (rear monitor), 60 min (LVF) with H-FS12060, Approx. 60 min (rear monitor), 60 min (LVF) with H-ES12060

MP4 [4K/60p, 4K/50p]: Approx. 60 min (rear monitor), 55 min (LVF) with H-FS12060, Approx. 55 min (rear monitor), 55 min (LVF) with H-ES12060

MP4 [4K/30p, 4K/25p]: Approx. 65 min (rear monitor), 60 min (LVF) with H-FS12060, Approx. 65 min (rear monitor), 60 min (LVF) with H-ES12060

WIRELESS Wi-Fi Wi-Fi2.4GHz (STA/AP) (IEEE802.11b/g/n)

Wi-Fi5GHz (STA) (IEEE 802.11a/n/ac) \*5GHz Wi-Fi is not available in some countries.

Please refer to "Wi-Fi" Sheet

Bluetooth Bluetooth® v4.2 (Bluetooth Low Energy (BLE))

QR code connection / Password-less connection Yes / Yes (ON / OFF selectable)

VIEWFINDER Type OLED Live View Finder (3,680k dots)

Field of view Approx. 100%

Magnification Approx. 1.66x / 0.83x (35mm camera equivalent) with 50 mm lens at infinity; -1.0 m-1

Eye point Approx. 21 mm from eyepiece lens

Diopter adjustment -4.0 - +3.0 (dpt)

Eye sensor Yes

Display speed 120fps / 60fps

FOCUS Type Contrast AF system

DFD technology Yes

Post Focus Yes

Focus Stacking Yes

Focus mode AFS (Single) / AFF (Flexible) / AFC (Continuous) / MF



AF mode Face/Eye Detection / Tracking / 225-Area / Custom Multi / 1-Area / Pinpoint

(Full area touch is available) (Scalable AF frame size and flexible AF position)

AF detective range EV -4 - 18 (ISO100 equivalent)

AF assist lamp Yes

AF lock Yes (AF/AE LOCK button)

AF custom setting AF Sensitivity, AF Area Switching Sensitivity, Moving Object Prediction

Others One Shot AF, Shutter AF, Half Press Release, Quick AF, Continuous AF (during motion picture recording), Eye Sensor AF, AF-Point Scope Setting, AF+MF, MF Assist, Touch MF Assist, Focus Peaking, Touch AF/AE Function, Touch Pad AF, Touch Shutter

EXPOSURE CONTROL Light metering system 1,728-zone multi-pattern sensing system

Light metering mode Multiple / Center Weighted / Spot

Metering range EV 0 - 18  $\square$ F2.0 lens, ISO100 equivalent)

Exposure mode Program AE, Aperture Priority AE, Shutter Priority AE, Manual

ISO sensitivity (Standard output sensitivity) Still image: Auto / Intelligent ISO / 100 (Extended) / 200 / 400 / 800 / 1600 / 3200 / 6400 / 12800 / 25600 (Changeable to 1/3 EV step)

Creative Video Mode: Auto / 100 (Extended) / 200 / 400 / 800 / 1600 / 3200 / 6400 / 12800 (Changeable to 1/3 EV step)

Exposure compensation 1/3 EV step  $\pm$ 5EV ( $\pm$ 3EV for motion picture)

AE lock Yes (AF/AE LOCK button)

WHITE BALANCE White balance AWB / AWBc / Daylight / Cloudy / Shade / Incandescent / Flash / White Set 1, 2, 3, 4 / Color temperature setting 1, 2, 3, 4

White balance adjustment Blue/Amber bias, Magenta/Green bias

Color temperature setting 2500-10000K in 100K

SHUTTER Type Focal-plane shutter

Shutter speed Still image: Bulb (Max. 30 minutes), 1/8,000 - 60

Electronic first curtain shutter: Bulb (Max. 30 minutes), 1/2,000 - 60

Electronic shutter: 1/32,000 - 1

Motion picture: 1/16,000 - 1/25

Shutter life Approx. 200,000 images



Self timer 10sec, 3 images / 2sec / 10sec

Remote control Remote control with Bulb function by DMW-RSL1 (sold separately)

BRACKET AE bracket 3, 5, 7 images in 1/3, 2/3 or 1 EV step, max.  $\pm 3$  EV, single/burst

Aperture bracket 3, 5 or all positions in 1 EV step

Focus bracket 1 to 999 images, focus steps can be set in 10 levels

White balance bracket 3 exposures in blue/amber axis or in magenta/green axis, color temperature setting

BURST SHOOTING Burst speed [Mechanical shutter / Electronic first curtain shutter]

AFS/MF: H: 12 frames/sec, M: 7 frames/sec (with Live View), L: 2 frames/sec (with Live View) \*When H-ES12060 is used.

AFF/AFC: H: 9 frames/sec (with Live View), M: 7 frames/sec (with Live View), L: 2 frames/sec (with Live View)  
\*When H-ES12060 is used.

[Electronic shutter]

AFS/MF: SH: 60 frames/sec, H: 12 frames/sec, M: 7 frames/sec (with Live View), L: 2 frames/sec (with Live View)

AFF/AFC: SH: 20 frames/sec, H: 9 frames/sec (with Live View), M: 7 frames/sec (with Live View), L: 2 frames/sec (with Live View)

Number of recordable images [H/M/L]

More than approx. 60 images (when there are RAW files with the particular speed.)

More than approx. 600 images (when there are no RAW files and using a card with SD Speed Class with "UHS-II UHS Speed Class 3 (U3)".)

(depending on memory card size, battery power, picture size, and compression)

[SH]

More than approx. 50 images

(depending on memory card size, battery power, picture size, and compression)

6K PHOTO\*\* / 4K PHOTO\*\* Burst speed [6K PHOTO] 30 frames/sec

[4K PHOTO] 60 frames/sec, 30 frames/sec

Exif information Yes (Each JPEG image cropped out of the 6K/4K burst file complies with EXIF.)

Marking function Yes (in 6K/4K Burst (S/S) mode)

TIME LAPSE SHOT Yes



STOP MOTION ANIMATION Yes

FLASH Flash type TTL External Flash (sold separately)

Flash mode Auto\*, Auto/Red-eye Reduction\*, Forced On, Forced On/Red-eye Reduction, Slow Sync., Slow Sync./Red-eye Reduction, Forced Off \*For iA, iA+ only.

Synchronization speed Less than 1/250 second

Flash output adjustment 1/3EV step  $\pm$ 3EV

Flash synchronization 1st Curtain Sync., 2nd Curtain Sync.

Synchronization for flash dimming and exposure compensation Yes

Wireless control Yes (When using DMW-FL200L / FL360L / FL580L (sold separately)), Wireless Channel: 1ch/2ch/3ch/4ch

Flash sync socket Yes

SILENT MODE Yes

REAR MONITOR Type TFT LCD monitor with static touch control

Monitor size Free-angle 7.5cm (3.0-inch) / 3:2 aspect

Pixels Approx. 1,040k dots

Field of view Approx. 100%

Monitor adjustment Brightness, Contrast, Saturation, Red-Green, Blue-Yellow

STATUS LCD Yes

LIVE VIEW Digital zoom 2x, 4x

Extra Tele Conversion Still image: Max. 2x

4K PHOTO: 1.6x (4:3), 1.5x (3:2), 1.4x (16:9, 1:1)

Motion picture: 2.7x (FHD), 1.4x (4K)

Other functions Level Gauge, Real-time Histogram, Guide Lines (3 patterns), Center Marker, Highlight display (Still image / motion picture), Zebra pattern (Still image / motion picture)

DIRECTION DETECTION FUNCTION Yes

FUNCTION BUTTON REC Wi-Fi / Q.MENU / Video Record / LVF/Monitor Switch / LVF/Monitor Disp. Style / AF-Point Scope / AF/AE LOCK / AF-ON / Preview / One Push AE / Touch AE / Level Gauge / Focus Area Set / Zoom Control / 1 Shot RAW+JPG / 1 Shot Spot Metering / 1 Shot 6K/4K PHOTO / Operation Lock / Dial Operation Switch / Destination Slot / Photo Style / Filter Select / Aspect Ratio / Picture Size / Quality / AFS/AFF / Metering Mode / Burst Shot Setting / 6K/4K PHOTO / Self Timer / High Resolution Mode / Bracket / Highlight Shadow / i. Dynamic / i.



Resolution / Min. Shtr Speed / Post Focus / HDR / Shutter Type / Flash Mode / Flash Adjust. / Wireless Flash Setup / Ex. Tele Conv. / Digital Zoom / Stabilizer / I.S. Lock (Video) / 4K Live Cropping / Motion Pic. Set / Picture Mode in Rec. / Mic Level Adj. / Mic. Directivity Adjust / Silent Mode / Peaking / Histogram / Guide Line / Zebra Pattern / Monochrome Live View / Constant Preview / Rec Area / Step Zoom / Zoom Speed / Night Mode / ON/OFF of each item in White Balance / ON/OFF of each item in Photo Style / AF Mode/MF / Rec/Playback Switch / Off / Restore to Default

PLAY Wi-Fi / LVF/Monitor Switch / Rec/Playback Switch / Slot Change / 6K/4K Photo Play / Delete Single / Protect / Rating 1, 2, 3, 4, 5 / RAW Processing / 6K/4K PHOTO Bulk Saving / Copy / Night Mode / Off / Restore to Default

Fn LEVER AF Mode / Quality / Photo Style / Long Shtr NR / Stabilizer / 6K/4K PHOTO (Pre-Burst) / Self Timer / Silent Mode / Shutter Type / Bracket / Touch Screen / Touch Pad AF / Auto Review (Photo) / Peaking / Night Mode / Front/Rear/Control Dial Lock / Off / Restore to Default

PHOTO STYLE Standard / Vivid / Natural / Monochrome / L. Monochrome / Scenery / Portrait / Custom 1, 2, 3, 4 / Cinelike D / Cinelike V

CREATIVE CONTROL Expressive / Retro / Old Days / High Key / Low Key / Sepia / Monochrome / Dynamic Monochrome / Rough Monochrome\* / Silky Monochrome\* / Impressive Art / High Dynamic / Cross Process / Toy Effect / Toy Pop / Bleach Bypass / Miniature Effect / Soft Focus\* / Fantasy / Star Filter\* / One Point Color / Sunshine\*

\*For photos only.

PLAYBACK Playback mode 30-thumbnail display, 12-thumbnail display, Calendar display, Zoomed playback (Max. 16x), Slideshow (All / Picture Only / Video Only, duration & effect is selectable), Playback Mode (Normal / Picture Only / Video Only), Protect, Rating, Title Edit, Face Recognition Edit, RAW Processing, 6K/4K PHOTO Bulk Saving, 6K/4K PHOTO Noise Reduction, Light Composition, Clear Retouch, Text Stamp, Copy, Resize, Cropping, Rotate, Video Divide, Time Lapse Video, Stop Motion Video, Rotation Display, Picture Sort, Delete Confirmation, Creating Still Pictures from a Motion Picture

IMAGE PROTECTION / ERASE ProtectionSingle / Multi or Cancel

Erase Single / Multi / All / Except Rating

PRINT Direct print PictBridge compatible

INTERFACE USB USB 3.0 Micro-B, SuperSpeed USB 3.0 Gen 1

HDMI\*\*\* HDMI TypeA / VIERA Link

Video: Auto / 4K/50p / 4K/25p / 1080p / 1080i / 720p / 576p

Audio: Stereo

Monitor-through: 4:2:2 8bit (Except for [4K/60p]/[4K/50p]) / 4:2:0 8bit

Audio video output No

Remote input  $\phi$ 2.5mm for remote

External microphone input  $\phi$ 3.5mm for external microphone



Stereo/Lens Auto/Shotgun/Super Shotgun/Manual is selectable when attaching DMW-MS2 (sold separately).

Headphone output  $\phi$ 3.5mm for headphone

Microphone Stereo, Wind Noise Canceller: OFF / Low\* / Standard / High \*When attaching DMW-MS2 (sold separately).

Speaker Monaural

SD card slot Slot 1, Slot 2

LANGUAGE OSD language Please refer to "OSD" Sheet

POWER Battery Li-ion Battery Pack (7.2V, 1860mAh, 14Wh) (included)

USB power supply, USB power charging

Battery life (CIPA standard) Approx. 400 images (rear monitor), 380 images (LVF), 920 images (Power Save LVF mode\*) with H-FS12060

Approx. 380 images (rear monitor), 360 images (LVF), 890 images (Power Save LVF mode\*) with H-ES12060

\*Under the test conditions specified by Panasonic based on CIPA standard. When the time to get in the sleep mode is set to 1 sec.

Battery grip DMW-BGG9 (sold separately)

DIMENSIONS / WEIGHT Dimensions (W x H x D) 136.9 x 97.3 x 91.6 mm / 5.39 x 3.83 x 3.61 inch (excluding protrusions)

Weight Approx. 658g / 1.45 lb (SD card x 1, Battery, Body)

Approx. 586g / 1.30 lb (Body only)

Approx. 868g / 1.91 lb (SD card x 1, Battery, H-FS12060 lens included)

Approx. 978g / 2.16 lb (SD card x 1, Battery, H-ES12060 lens included)

OPERATING ENVIRONMENT Operating temperature\*\*\*\* -10oC to 40oC (14oF to 104oF)

Operating humidity 10%RH to 80RH

STANDARD ACCESSORIES Software □ The software to edit and playback images on computer is not bundled with this camera. To do this, PHOTOfunSTUDIO 10.0PE is available for download at Panasonic website using computer connected to the Internet.

[http://panasonic.jp/support/global/cs/soft/download/d\\_pfs99pe.html](http://panasonic.jp/support/global/cs/soft/download/d_pfs99pe.html) (For Windows)

□ The software to process RAW file on computer is not bundled with this camera. To do this, SILKYPIX Developer Studio is available for download at Ichikawa Soft Laboratory's website using computer connected to the Internet.

<http://www.isl.co.jp/SILKYPIX/english/p/> (For Windows / Mac)





#### Standard accessories

#### DC-G9 Kit

Battery Charger (AC Adaptor, USB connection Cable included), Battery Pack, Body Cap, Hot Shoe Cover, Eye Cup, Flash Syncro Socket Cap, Cover for the Battery Grip Connector, USB Connection Cable, Shoulder Strap

#### DC-G9L / DC-G9M Kit

Battery Charger (AC Adaptor, USB connection Cable included), Battery Pack, Body Cap, Hot Shoe Cover, Eye Cup, Flash Syncro Socket Cap, Cover for the Battery Grip Connector, USB Connection Cable, Shoulder Strap, Lens Cap, Lens Hood, Lens Rear Cap

□ The DC-G9 Operating Instructions for advanced features is available for download at Panasonic LUMIX Customer Support Site using PC, smartphone or tablet connected to the Internet.

#### \*\* About motion picture recording / 6K PHOTO/4K PHOTO recording

- 6K PHOTO is a high speed burst shooting function that cuts a still image out of a 4:3 or 3:2 video footage with approx. 18-megapixel (approx. 6000 x 3000 effective pixel count) that the 6K image manages.

- Use a card with SD Speed Class with "Class 4" or higher when recording motion pictures in [AVCHD] or [MP4(under 28Mbps)].

- Use a card with SD Speed Class with "UHS-I / UHS-II UHS Speed Class 3 (U3)" when recording motion pictures with [MP4] in [4K] or [6K PHOTO/4K PHOTO].

(SD speed class is the speed standard regarding continuous writing.)

- Recording stops when the continuous recording time exceeds 10 minutes with [MP4] in [4K/60p] [4K/50p] [4K/High Speed Video].

- Recording stops when the continuous recording time exceeds 29 minutes and 59 seconds with [AVCHD] in [FHD] and [MP4] in [4K/30p] [4K/25p] [4K/24p] [FHD].

- MP4 motion pictures with [MP4] in [4K]:

- When using an SDHC memory card: You can continue recording without interruption even if the file size exceeds 4 GB, but the motion picture file will be divided and recorded/played back separately.

- When using an SDXC memory card: You can record a motion picture in a single file.

- MP4 motion pictures with [MP4] in [FHD]:

- You can continue recording without interruption even if the file size exceeds 4 GB, but the motion picture file will be divided and recorded/played back separately.

- When the ambient temperature is high or continuous recording is performed, the camera may stop the recording to protect itself. Wait until the camera cools down.



\*\*\* For [4K/60p] [4K/50p] video output, use an HDMI2.0 cable that has the HDMI logo on it, and that is described as "4K compatible".

\*\*\*\* The camera may stop recording when used in lower or higher than recommended operating temperature: -10 to 40 degrees