

DC-BGH1 Specifications

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 and UHS-II Video Speed Class 90 standard SDXC Memory Cards.		
IMAGE SENSOR	Lens mount	Micro Four Thirds mount		
	Type	Live MOS sensor (17.3 x 13.0 mm)		
	Camera effective pixels / Total pixels	10.28 megapixels / 11.93 megapixels		
	Aspect ratio / Color filter / Dust reduction system	4.3 / Primary color filter -		
LATITUDE	13 stops (V-Log L)			
STILL IMAGE	Recording file format	JPEG (DCF, Exif 2.31) *Only the PTP command using the software "LUMIX Tether" for still image shooting.		
	Aspect ratio	4:3		
	File size (Pixels)	3680x2760(L) / 2592x1944(M) / 1824x1368(S)		
	Image quality	Fine / Standard		
	Color space	sRGB		
MOTION PICTURE	Recording file format	MOV: H.264/MPEG-4 AVC, H.265/HEVC (Audio format: LPCM (2ch 48kHz/16-bit, 48kHz/24-bit*, 96kHz/24-bit*)) *When attaching DMW-XLR1 (sold separately). MP4: H.264/MPEG-4 AVC, H.265/HEVC (Audio format: AAC (2ch))		
	System frequency	59.94Hz / 50.00Hz / 24.00Hz		
	MOV**	59.94Hz	[C4K] 4096x2160	59.94p, 200Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable. 59.94p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) 29.97p, 400Mbps (4:2:2 10-bit ALL-Intra) / 150Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable. 23.98p, 400Mbps (4:2:2 10-bit ALL-Intra) / 150Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.
	High-res audio is selectable only when using the DMW-XLR1 (sold separately).	59.94Hz	[4K] 3840x2160	59.94p, 200Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable. 29.97p, 400Mbps (4:2:2 10-bit ALL-Intra) / 150Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable. 23.98p, 400Mbps (4:2:2 10-bit ALL-Intra) / 150Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.
			[Anamorphic 4K] 3328x2496 (4:3)	59.94p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) 29.97p, 400Mbps (4:2:2 10-bit ALL-Intra) / 150Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable. 23.98p, 400Mbps (4:2:2 10-bit ALL-Intra) / 150Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.
	50.00Hz	[FHFD] 1920x1080	59.94p, 200Mbps (4:2:2 10-bit ALL-Intra) / 100Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable. 29.97p, 200Mbps (4:2:2 10-bit ALL-Intra) / 100Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable. 23.98p, 200Mbps (4:2:2 10-bit ALL-Intra) / 100Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.	
		[C4K] 4096x2160	50.00p, 200Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable. 50.00p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) 25.00p, 400Mbps (4:2:2 10-bit ALL-Intra) / 150Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.	
	24.00Hz	[4K] 3840x2160	50.00p, 200Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable. 50.00p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) 25.00p, 400Mbps (4:2:2 10-bit ALL-Intra) / 150Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.	
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	MP4**	59.94Hz	[FHFD] 1920x1080	50.00p, 200Mbps (4:2:2 10-bit ALL-Intra) / 100Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable. 25.00p, 200Mbps (4:2:2 10-bit ALL-Intra) / 100Mbps (4:2:2 10-bit LongGOP) / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.
			[4K] 3840x2160	59.94p, 100Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, AAC) 29.97p, 72Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, AAC) 23.98p, 72Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, AAC) 29.97p, 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC) 23.98p, 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)
	50.00Hz	[FHFD] 1920x1080	59.94p, 28Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC) 29.97p, 20Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC) 23.98p, 24Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)	
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	24.00Hz	[FHFD] 1920x1080	50.00p, 28Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC) 25.00p, 20Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)	
		-	-	-
VARIABLE FRAME RATE	MOV**	59.94Hz	[C4K] 4096x2160	29.97p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM) 23.98p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
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			[FHFD] 1920x1080	59.94p (Maximum output of sensor is 240fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)* 29.97p (Maximum output of sensor is 240fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)* 23.98p (Maximum output of sensor is 240fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)* *Angle of view narrows if you select a frame rate with a number of frames 201 or more.
			[C4K] 4096x2160	25.00p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM) 25.00p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
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VIEWFINDER	-			
REAR MONITOR	-			
STATUS LCD	-			
FOCUS	Type	Contrast AF system		
	DFD technology	Yes		
	Focus mode	AF / MF		
	AF mode	Motion picture: Auto Detection (Face, Eye, Body, Animal) / Tracking / 225-Area / Zone (Oval) / 1-Area Still image: Auto Detection (Face, Eye, Body, Animal) / 225-Area / 1-Area *Only the PTP command using the software "LUMIX Tether" for still image shooting.		
	AF detectable range	EV -6 - 20 (F1.4, ISO100 equivalent, AF (Still image))		
	AF custom setting (Motion picture)	EV Speed, AF Sensitivity		
	AF lock	Set the Fn button in custom menu to AF lock		
	Others	AF-ON, Continuous AF, AF+MF, MF Assist, Focus Peaking, Focus Ring Lock, 1-Area AF Moving Speed, Lens Focus Resume		
	Light metering system	1,772-zone multi-pattern sensing system		
	Light metering mode	Multiple / Center Weighted / Spot / Highlight Weighted		
EXPOSURE CONTROL	Metering range	EV0-18 (F2.0 lens, ISO100 equivalent)		
	Exposure mode	Program AE / Aperture Priority AE / Shutter Priority AE / Manual Exposure		
	ISO sensitivity (Standard output sensitivity)	Auto / 80* / 100* / 160 / 200 / 400 / 800 / 1600 / 3200 / 6400 / 12800 / 25600 / 51200 / 102400* / 204800* (Changeable to 1/3 EV step) *Extended ISO		
	Dual Native ISO	[Normal] Native ISO: 160, 800 Auto: Auto / 80* / 100* / 160-51200 / 102400* / 204800* *Extended ISO Low: Auto / 80* / 100* / 160-800 *Extended ISO High: Auto / 800-51200 / 102400* / 204800* *Extended ISO		
		[V-Log L] Native ISO: 400, 2000 Auto: Auto / 400-25600 Low: Auto / 400-2000 High: Auto / 2000-25600		
		[HLG] Native ISO: 320, 1600 Auto: Auto / 320-51200 / 102400* / 204800* *Extended ISO Low: Auto / 320-1600 High: Auto / 1600-51200 / 102400* / 204800* *Extended ISO		
		[Cineline D2 / Cinelike V2] Native ISO: 160, 800 Auto: Auto / 80* / 100* / 160-51200 / 102400* / 204800* *Extended ISO Low: Auto / 80* / 100* / 160-800 *Extended ISO High: Auto / 800-51200 / 102400* / 204800* *Extended ISO		
	Exposure compensation	Motion picture: 1/3 EV step ±3EV Still image: 1/3 EV step ±5EV *Only the PTP command using the software "LUMIX Tether" for still image shooting.		
	AE lock	Set the Fn button in custom menu to AE lock		
	IMAGE STABILIZATION SYSTEM	-		
WHITE BALANCE	White balance	AWB / AWBc / AWBw / Daylight / Cloudy / Shade / Incandescent / 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	-		
	Shutter speed	Motion picture: 1/16,000 - 1/2 Still image: 1/16,000 - 1 *Only the PTP command using the software "LUMIX Tether" for still image shooting.		
BURST SHOOTING	-			
FLASH	-			
PHOTO STYLE	Photo Style	Motion picture: Standard / Vivid / Natural / Landscape / Portrait / Monochrome / L. Monochrome / L. Monochrome D / Cinelike D2 / Cinelike V2 / Like709 / V-Log L / Hybrid Log Gamma / My Photo Style 1-10 Still image: Standard *Only the PTP command using the software "LUMIX Tether" for still image shooting.		
	Picture adjustment	Contrast / Highlight / Shadow / Saturation / Color Tone / Hue / Filter Effect / Sharpness / Noise Reduction / Dual Native ISO Setting / ISO / WB *Adjustable settings vary depending on the Photo Style mode.		
FILTER	Expressive / Retro / Old Days / High Key / Low Key / Sepia / Monochrome / Dynamic Monochrome / Impressive Art / High Dynamic / Cross Process / Toy Effect / Toy Pop / Bleach Bypass / Miniature Effect / Fantasy / One Point Color			
OTHER FUNCTIONS	Master pedestal level	31 steps		
	Luminance level	8-bit: 0-255 / 16-255 / 16-255 10-bit: 0-1023 / 64-940 / 64-1023		
	LUT view assist	Rec / Playback: HDMI / SDI		

	H/LG view assist	Rec / Playback: HDMI (AUTO / MODE1 / MODE2 / OFF) / SDI (MODE1 / MODE2 / OFF)
	Anamorphic desqueeze display	2.0x / 1.8x / 1.5x / 1.33x / 1.30x / OFF Rec: SDI Playback: HDMI / SDI
	Synchro scan	Yes
	SS/Gain operation	Shutter Duration/ISO / Angle/ISO / Shutter Duration/DB
	Color bars / 1kHz test tone	Yes (SMPT-E / EBU / ARIB) / Yes
	Knee control	Yes (in Like709 mode)
	Level Gauge	Yes
FUNCTION BUTTON	REC	Exposure Mode / Aperture Value / Shutter Speed / Exposure Comp. / Dual Native ISO Setting / Sensitivity / White Balance / Photo Style / Metering Mode / Dynamic Range / Filter Effect / One Push AE / Synchro Scan / Focus Mode / AF Mode / AF Custom Setting (Video) / Focus Peaking / Focus Peaking Sensitivity / 1-Area AF Moving Speed / Focus Ring Lock / AE LOCK / AF LOCK / AF/ON / AF-ON / AF-ON: Near Shift / AF-ON: Far Shift / Focus Area Set / Rec File Format / Rec Quality / Rec Quality (My List) / Variable Frame Rate / Time Code Display / Sound Rec Level Disp. / Mute Sound Input / Sound Rec Level Adj. / Sound Rec Level Limiter / XLR Mic Adaptor Setting / Special Mic. Directivity Adjust / Image Stabilizer / E-Stabilization (Video) / Image Area of Video / Digital Zoom / Focus Transition / Live Cropping / O.MENU / Rec/Playback Switch / Video Record / Cursor Button Lock / DISP. / Level Gauge / Histogram / Luminance Spot Meter / Frame Marker / Monochrome Live View / Zebra Pattern / LUT View Assist (HDMI) / LUT View Assist (SDI) / LUT Select / H/LG View Assist (HDMI) / H/LG View Assist (SDI) / Anamorphic Desqueeze Display / Color Bars / Zoom Control / Step Zoom / Zoom Speed / Destination Card Slot / LAN/Wi-Fi / Info Display (HDMI/SDI) / Fan Mode / No Setting / Off (Disable Press and Hold) / Restore to Default
	PLAY	Anamorphic Desqueeze Display / Delete Single / Protect / Rating 1, 2, 3, 4, 5 / Copy / Rec/Playback Switch / Video Record / DISP. / Card Slot Change / Wi-Fi / Info Display (HDMI/SDI) / Fan Mode / LUT View Assist (HDMI) / LUT View Assist (SDI) / H/LG View Assist (HDMI) / H/LG View Assist (SDI) / No Setting / Off (Disable Press and Hold) / Restore to Default
OSD LANGUAGE		Please refer to "OSD" Sheet
INTERFACE	USB	SuperSpeed USB 3.1 Gen1 Type-C
	DC IN	DC 12V (11.4-12.6V), EIAJ Type4
	HDMI***	HDMI Type4 Audio: Stereo
	Monitor-through	4:2:2 10bit (When [Rec Quality] is set to [4:2:2 10bit] or [4:2:0 10bit]) 4:2:2 8bit (When [Rec Quality] is set to [4:2:0 8bit]) Down Convert: Auto / 4K/30p/25p / 1080p / 1080i / OFF
	Playback	59.94Hz: Auto / C4K/59.94p / C4K/23.97p / C4K/23.98p / 4K/59.94p / 4K/23.97p / 4K/23.98p / 1080/59.94p / 1080/23.97p / 1080/23.98p / 1080/59.94 / 720/59.94p / 480/59.94p 50.00Hz: Auto / C4K/50.00p / C4K/25.00p / 4K/50.00p / 4K/25.00p / 1080/50.00p / 1080/25.00p / 1080/50.00 / 720/50.00p / 576/50.00p 24.00Hz: Auto / C4K/24.00p / 4K/24.00p / 1080/24.00p
	SDI	SDI BNC Terminal, 0.8V [p-p], 75Ω, 3G-SDI Audio: Stereo, SDI Sound Output Gain Adj.: 0dB / -6dB / -8dB
	Monitor-through	4:2:2 10bit
	Playback	59.94Hz: 1080/59.94p / 1080/23.97p / 1080/23.98p / 1080/59.94i / 1080/23.97PsF / 1080/23.98PsF / 720/59.94p 50.00Hz: 1080/50.00p / 1080/25.00p / 1080/50.00i / 1080/25.00PsF / 720/50.00p 24.00Hz: 1080/24.00PsF
	Ethernet	Remote Control: LAN Terminal (RJ-45) Power Supply: PoE+ (IEEE802.3 compliant) * Use an IEEE802.3-1 or IEEE62368-1 compliant PoE+ (IEEE802.3 compliant) hub or power supplying device.
	Remote input	φ2.5mm
	Microphone	Stereo, Wind Noise Canceller: OFF / Low* / Standard / High *When attaching DMW-MS2 (sold separately).
	Speaker	-
	External microphone / external audio device input	φ3.5mm for external microphone / external audio device MIC (Plug-in Power) / MIC / LINE is selectable. Stereo/Lens Auto/Shotgun/Super Shotgun/Manual is selectable when attaching DMW-MS2 (sold separately).
	XLR microphone	Yes with DMW-XLR1 (sold separately)
	Headphone output	φ3.5mm
	SD card slot	Slot 1, Slot 2
	TC IN/OUT	Count up Time code mode HDMI time code output SDI time code output External TC setting
	Genlock IN	Genlock IN ON / OFF -206 ~ +49
	Fan	Auto1 / Auto2 / Normal / Slow
	Lamp	Tally Lamp (front/rear) / Card Access Lamp / Power LED / Network LED
WIRELESS	Wi-Fi	IEEE 802.11b/g/n, 2412 MHz - 2462 MHz (1-11 ch), Wi-Fi / WPA / WPA2, Infrastructure mode
	Bluetooth	Bluetooth® v4.2 (Bluetooth Low Energy (BLE))
POWER	Direct power supply	AC Adaptor (12V, 3A) (bundled) Li-Ion Battery Pack (7.28V) (sold separately) PoE+ (IEEE802.3 compliant) (sold separately)
	Battery	Li-Ion Battery Pack AG-VBR59 (7.28V, 5900mAh, 43Wh) (sold separately) Li-Ion Battery Pack AG-VBR89 (7.28V, 8850mAh, 65Wh) (sold separately) Li-Ion Battery Pack AG-VBR118 (7.28V, 11800mAh, 86Wh) (sold separately)
	Continuous recordable time (Motion picture)**	MP4 [4K/60p]: Approx. 270 min, MP4 [FHD/60p]: Approx. 300 min *When using H-ES12060 and AG-VBR59 (sold separately). When the battery is fully charged. MP4 [4K/60p]: Approx. 400 min, MP4 [FHD/60p]: Approx. 480 min *When using H-ES12060 and AG-VBR89 (sold separately). When the battery is fully charged. MP4 [4K/60p]: Approx. 560 min, MP4 [FHD/60p]: Approx. 640 min *When using H-ES12060 and AG-VBR118 (sold separately). When the battery is fully charged.
	Actual recordable time (Motion picture)**	MP4 [4K/60p]: Approx. 135 min, MP4 [FHD/60p]: Approx. 150 min *When using H-ES12060 and AG-VBR59 (sold separately). When the battery is fully charged. MP4 [4K/60p]: Approx. 210 min, MP4 [FHD/60p]: Approx. 240 min *When using H-ES12060 and AG-VBR89 (sold separately). When the battery is fully charged. MP4 [4K/60p]: Approx. 280 min, MP4 [FHD/60p]: Approx. 320 min *When using H-ES12060 and AG-VBR118 (sold separately). When the battery is fully charged.
DIMENSIONS / WEIGHT	Dimensions (W x H x D)	Approx. 93.0 x 93.0 x 78.0 mm / 3.66 x 3.66 x 3.07 inch (excluding protrusions)
	Weight	Approx. 545g / 1.2 lb (Body only)
OPERATING ENVIRONMENT	Operating temperature****	-10°C to 40°C (14°F to 104°F)
	Operating humidity	10%RH to 80%RH
STANDARD ACCESSORIES	Software	LUMIX Tether - This software is used to control a Panasonic digital camera from a PC. It allows you to change various settings of the camera, perform remote recording, and save remotely recorded images to the PC. Check the site below to download and install the software. http://panasonic.jp/support/global/cs/soft/download_d_lumixtether.html (For Windows / Mac)
	Standard accessories	AC Adaptor, AC Cable, Cable Lock Band, Body Cap, Hot Shoe Cover, AUDIO Terminal Cover, DC IN Terminal Cover, BNC Terminal Cover, HDMI Terminal Cover, REMOTE Terminal Cover * The DC-BGGH1 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

- Use a card with SD Speed Class with "Class 4" or higher when recording motion pictures in [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 [MOV]. (SD speed class is the speed standard regarding continuous writing.)
- Video Speed Class 60 or higher is required for ALL-Intra 400Mbps recording. Use of SD Memory Card with Video Speed Class 60 or higher is recommended for C4K/4K ALL-Intra video recording.
- 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 continue recording without interruption even if the file size exceeds 96 GB or 3 hours 4 minutes in length, but the motion picture file will be divided and recorded/played back separately.
- MP4 motion pictures with [MP4] in [FHD]:
 - You can continue recording without interruption even if the file size exceeds 4 GB or 30 minutes in length, but the motion picture file will be divided and recorded/played back separately.
- 4:2:2 10-bit recording is a recording mode for film production and the video needs to be processed on PC.
The original video cannot be played on standard TV, Blu-ray Disc™ recorder and Blu-ray Disc™ player.
It may cause problems such as freezing when played on these devices.
- 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 [C4K/60p] [C4K/50p] [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.