

DC-BGH1 Specifications

TYPE / IMAGE SENSOR		
Type	Digital Single Lens Mirrorless camera	
Lens mount	Micro Four Thirds mount	
Image sensor	Live MOS sensor (17.3 x 13.0 mm)	
Camera effective pixels	10.28 megapixels	
STILL IMAGE <small>*Tethered photo shooting with LUMIX Tether for Multicam software.</small>		
Recording file format	JPEG (DCF, Exif 2.31)	
File size (Pixels)	3680x2760 (L) / 2592x1944 (M) / 1824x1368 (S)	
MOTION PICTURE		
Recording file format	MOV: H.264/MPEG-4 AVC, H.265/HEVC (LPCM (2ch 48kHz/16-bit, 48kHz/24-bit*, 96kHz/24-bit*)) MP4: H.264/MPEG-4 AVC, H.265/HEVC (AAC (2ch)) <small>*When attaching DMW-XLR1 (sold separately).</small>	
Latitude	13 stops (V-Log L)	
System frequency	59.94Hz / 50.00Hz / 24.00Hz	
FOCUS / EXPOSURE CONTROL		
Type	Contrast AF system with DFD technology	
Focus mode	AF / MF	
AF mode	Motion picture: Auto Detection (Face, Eye, Body, Animal) / Tracking / 225-Area / Zone (Oval) / 1-Area	
AF detectable range	EV -6 - 20 (F1.4, ISO100 equivalent, AF (still image))	
Metering range	EV 0 - 18 (F2.0 lens, ISO100 equivalent)	
Dual Native ISO	Normal Cinelike D2 Cinelike V2	Native ISO: 160, 800 Auto: Auto / 80* / 100* / 160-51200 / 102400* / 204800* Low: Auto / 80* / 100* / 160-800 High: Auto / 800-51200 / 102400* / 204800*
	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* Low: Auto / 320-1600 High: Auto / 1600-51200 / 102400* / 204800*
<small>*Extended ISO</small>		
Shutter speed	Motion picture: 1/16,000 - 1/2	
OTHER FUNCTIONS		
Luminance level	8-bit: 0-255 / 16-235 / 16-255 10-bit: 0-1023 / 64-940 / 64-1023	
LUT view assist	Rec / Playback: HDMI / SDI	
HLG 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	
SS/Gain operation	Shutter Duration/ISO / Angle/ISO / Shutter Duration/dB	

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". *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. ****The camera may stop recording when used in lower or higher than recommended operating temperature: -10 to 40 degrees. •QuickTime and the QuickTime logo are trademarks or registered trademarks of Apple Inc., used under license therefrom. •The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing, LLC in the United States and other countries. •USB Type-C™ and USB-C™ are trademarks of USB Implementers Forum. •The USB Type-C™ Charging Trident Logos are trademarks of USB Implementers Forum, Inc. •SDXC Logo is a trademark of SD-3C, LLC. •QR Code is a registered trademark of DENSO WAVE INCORPORATED. •IOS is a trademark or registered trademark of Cisco in the U.S. and other countries and is used under license. •Android and Google Play are trademarks or registered trademarks of Google Inc. •Other trademarks and trade names are those of their respective owners. •Design and specifications are subject to change without notice. •The use of recorded or printed materials that are protected by copyright for any purpose other than personal enjoyment is prohibited, as it would infringe upon the rights of the copyright holder.

INTERFACE		
USB	SuperSpeed USB 3.1 Gen1 Type-C	
DC IN	DC 12V (11.4-12.6V), EIAJ Type4	
HDMI**	HDMI TypeA, Audio: Stereo	
	Monitor-through 4:2:2 10-bit (Rec Quality setting: 4:2:2 10-bit or 4:2:0 10-bit) 4:2:2 8-bit (Rec Quality setting: 4:2:0 8-bit) Down Convert: Auto / 4K/30p/25p / 1080p / 1080i / OFF	
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 10-bit	
Ethernet	Remote control: LAN terminal (RJ-45) Power supply: PoE+ (IEEE802.3at compliant) <small>*Use an IEC60950-1 or IEC62368-1 compliant PoE+ (IEEE802.3at compliant) hub or power supplying device.</small>	
Remote input	φ2.5mm	
MIC jack / Headphone jack	φ3.5mm / φ3.5mm	
XLR microphone	Yes with DMW-XLR1 (sold separately)	
SD card slot	Slot 1, Slot 2 <small>*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.</small>	
TC IN/OUT	HDMI output	ON / OFF
	SDI output	ON / OFF
	External TC setting	TC Synchronization / TC Output Reference
Genlock IN	ON / OFF, Horizontal phase synchronization: -206 - +49	
Fan	Auto1 / Auto2 / Normal / Slow	
Wi-Fi / Bluetooth	Yes / Yes	
POWER		
Direct power supply	AC adaptor (12V, 3A) (bundled) Li-ion battery pack (7.28V) (sold separately) PoE+ (IEEE802.3at compliant) (sold separately)	
Li-ion battery pack	AG-VBR59 (7.28V, 5900mAh, 43Wh), AG-VBR89 (7.28V, 8850mAh, 65Wh), (sold separately) AG-VBR118 (7.28V, 11800mAh, 86Wh)	
Recordable time*** (approx.)	Continuous time	MP4 [4K/60p]: 560 min, MP4 [FHD/60p]: 640 min
	Actual time	MP4 [4K/60p]: 280 min, MP4 [FHD/60p]: 320 min
<small>*When using H-ES12060 and AG-VBR118 (sold separately). When the battery is fully charged.</small>		
DIMENSIONS / WEIGHT / OPERATING ENVIRONMENT / STANDARD ACCESSORIES		
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 temperature****	-10°C to 40°C (14°F to 104°F)	
Operating humidity	10%RH to 80%RH	
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	

Panasonic

Box-Style Mirrorless Camera and Lens System



#UnboxYourCreativity

LUMIX

Motion. Picture. Perfect.

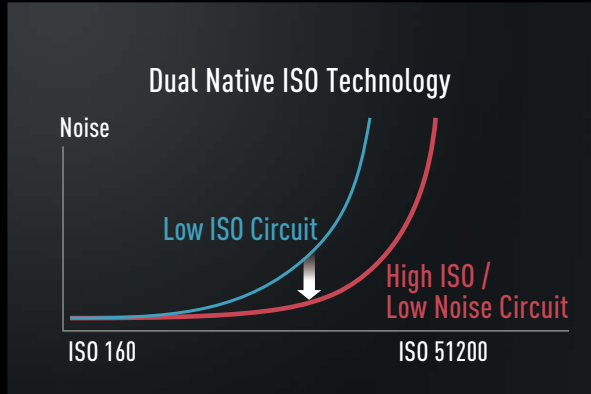
LUMIX BGH1

CINEMA IMAGE QUALITY

10.2MP Live MOS Sensor with Dual Native ISO Technology



A 10.2MP Live MOS sensor of the LUMIX BGH1 features the Dual Native ISO technology developed for Panasonic VariCam professional cinema cameras, leveraging a dual-base ISO setting to minimize noise and maximize image quality from low to high sensitivity. The sensor partnered with the Venus Engine delivers a maximum ISO 51200 / Extended ISO 204800 for minimal noise at high sensitivity and beautiful rendition of dark areas in the frame.

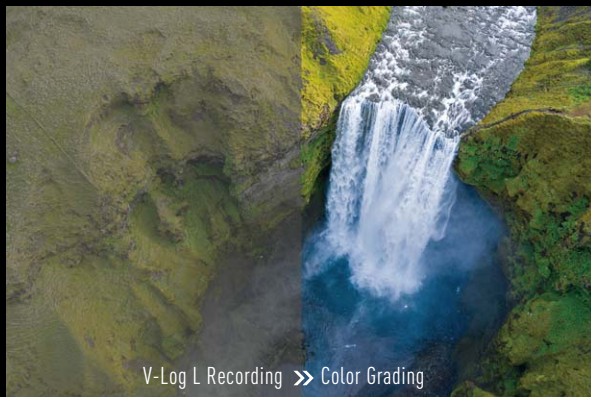


Wide Dynamic Range of 13 Stops with V-Log L



V-Log L comes preinstalled for 13 stops of dynamic range. Users will enjoy impressively accurate color reproduction with subtle gradations from dark areas to highlights. Since V-Log L has the same V-Gamut characteristics as V-Log, LUTs used with V-Log can be used in color grading. And footage from VariCam series cameras can be seamlessly included in the edit.

V-Log/V-Gamut and LUTs: https://pro-av.panasonic.net/en/cinema_camera_varicam_eva/support/lut/index.html



C4K/4K 60p/50p 10-bit Internal/External Simultaneous Recording

10-bit video recording capability provides robust color profiles for an advanced post-production workflow. The LUMIX BGH1 offers simultaneous C4K/4K 60p/50p 4:2:0 10-bit internal recording and C4K/4K 60p/50p 4:2:2 10-bit live output for external recording via HDMI. This compact, lightweight camera offers all the quality you would expect from a high-end digital cinema camera.



Video Autofocus Featuring AI Technology

Panasonic's advanced control technology encompasses sensor, engine, and LUMIX lenses helps to optimize optical and focusing performance. The sensor and lens communicate at high speed, when combined with the DFD (Depth From Defocus) technology to identify and lock onto your subject. Deep learning technology makes possible the recognition of human faces, eyes, heads, and bodies, as well as common animals (dogs, cats and birds).



Max. 10x Slow Motion / Max. 30x Quick Motion

VFR (variable frame rate) functionality supports both overcranking and undercranking. Users have access to 2.5x slow (24p/60 fps) in C4K/4K and 10x super-slow (24p/240 fps) in FHD.* It is also possible to capture sequences of footage to show the accelerated passing of time by up to 30x normal speed (60p/2 fps).

* Angle of view narrows if you select a frame rate of 201 fps or higher.



Anamorphic Recording

4K anamorphic video is captured in the 4:3 aspect ratio. Designed to accommodate anamorphic lenses in a wide range of magnification rates, including 1.3x, 1.33x, 1.5x, 1.8x, and 2.0x, the Anamorphic Desqueeze Display function means you can shoot while confirming the cinemascope-size image on an external monitor.*

* Playback only with HDMI output; both playback and recording with SDI output.



Various Internal Recording Modes

The LUMIX BGH1 offers the multiple recording modes utilized for cinema, broadcasting, and other professional applications. In addition to C4K/4K 60p/50p 4:2:0 10-bit and C4K/4K 30p/25p/24p 4:2:2 10-bit ALL-Intra 400Mbps recording, unlimited recording is offered on all settings.

								HLG	VFR	59.94Hz	50.00Hz	24.00Hz
								Yes	-	59.94p	50.00p	-
MOV	C4K 4096x2160	4:2:0 10-bit	LongGOP	H.265/HEVC	200Mbps	Yes	-	59.94p	50.00p	-	-	-
		4:2:0 8-bit	LongGOP	H.264	150Mbps	-	-	59.94p	50.00p	-	-	-
		4:2:2 10-bit	ALL-Intra	H.264	400Mbps	Yes	-	29.97p / 23.98p	25.00p	24.00p	-	-
		4:2:2 10-bit	LongGOP	H.264	150Mbps	Yes	-	29.97p / 23.98p	25.00p	24.00p	-	-
	4K 3840x2160	4:2:0 10-bit	LongGOP	H.265/HEVC	200Mbps	Yes	-	59.94p	50.00p	-	-	-
		4:2:0 8-bit	LongGOP	H.264	150Mbps	-	-	59.94p	50.00p	-	-	-
		4:2:2 10-bit	ALL-Intra	H.264	400Mbps	Yes	-	29.97p / 23.98p	25.00p	24.00p	-	-
		4:2:2 10-bit	LongGOP	H.264	150Mbps	Yes	-	29.97p / 23.98p	25.00p	24.00p	-	-
	4K-A (4:3) 3328x2496	4:2:0 10-bit	LongGOP	H.265/HEVC	200Mbps	Yes	-	-	50.00p	-	-	-
		4:2:0 8-bit	LongGOP	H.264	150Mbps	-	-	59.94p	50.00p	-	-	-
		4:2:2 10-bit	ALL-Intra	H.264	400Mbps	Yes	-	29.97p / 23.98p	25.00p	24.00p	-	-
		4:2:2 10-bit	LongGOP	H.264	150Mbps	Yes	-	29.97p / 23.98p	25.00p	24.00p	-	-
FHD 1920x1080	4:2:0 10-bit	ALL-Intra	H.264	200Mbps	Yes	-	59.94p / 29.97p / 23.98p	50.00p / 25.00p	24.00p	-	-	
	4:2:2 10-bit	LongGOP	H.264	100Mbps	Yes	-	59.94p / 29.97p / 23.98p	50.00p / 25.00p	24.00p	-	-	
	4:2:0 8-bit	LongGOP	H.264	100Mbps	-	Yes	59.94p / 29.97p / 23.98p	50.00p / 25.00p	24.00p	-	-	
	4:2:0 8-bit	LongGOP	H.264	100Mbps	-	Yes	59.94p / 29.97p / 23.98p	50.00p / 25.00p	24.00p	-	-	
MP4	4K 3840x2160	4:2:0 10-bit	LongGOP	H.265/HEVC	100Mbps	-	-	59.94p	50.00p	-	-	
		4:2:0 10-bit	LongGOP	H.265/HEVC	72Mbps	-	-	29.97p / 23.98p	25.00p	-	-	
		4:2:0 8-bit	LongGOP	H.264	100Mbps	-	-	29.97p / 23.98p	25.00p	-	-	
	FHD 1920x1080	4:2:0 8-bit	LongGOP	H.264	28Mbps	-	-	59.94p	50.00p	-	-	
		4:2:0 8-bit	LongGOP	H.264	20Mbps	-	-	29.97p	25.00p	-	-	
		4:2:0 8-bit	LongGOP	H.264	24Mbps	-	-	23.98p	-	-	-	

•The Micro Four Thirds™ name and logos are trademarks or registered trademarks of Olympus Corporation in Japan, the United States, the European Union, and other countries and regions. •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. 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.

FLEXIBLE SCALABILITY

A LUMIX First: Ethernet / PoE+ Compatible

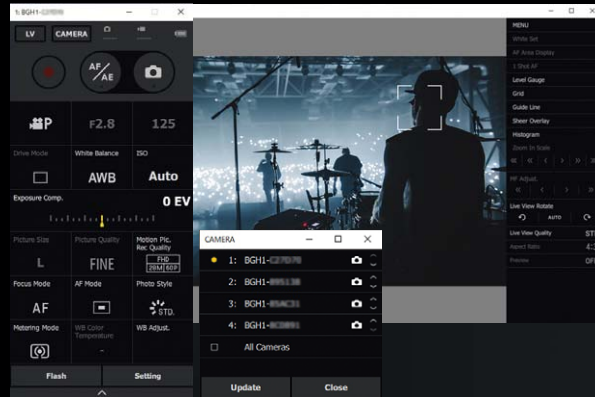
A LUMIX first, the BGH1 offers Ethernet compatibility. By simply connecting an Ethernet cable, it can be remotely controlled by the LUMIX Tether for Multicam software, and can even be powered with the devices that support PoE+ (IEEE802.3at compliant).

A future firmware update will provide IP video streams (RTP/RTSP) over Ethernet.



Remote Control with LUMIX Tether for Multicam

In addition to monitoring and remote control via USB tethering, you can control up to 12 BGH1 cameras remotely via an Ethernet LAN. Users can also capture still images. With the LUMIX Tether for Multicam software designed specifically for BGH1 workflows, video production is simpler and more powerful.



A LUMIX First: Simultaneous SDI/HDMI output

The BGH1 addresses the diverse needs of a wide range of video productions, it is the first LUMIX with an SDI terminal (3G-SDI). Supporting 1080p output, it offers a stable connectivity, compliance with extended cable runs, and external monitoring. With support for simultaneous external recording via HDMI output and remote control via USB or LAN tethering, it delivers a wide range of video production capabilities.



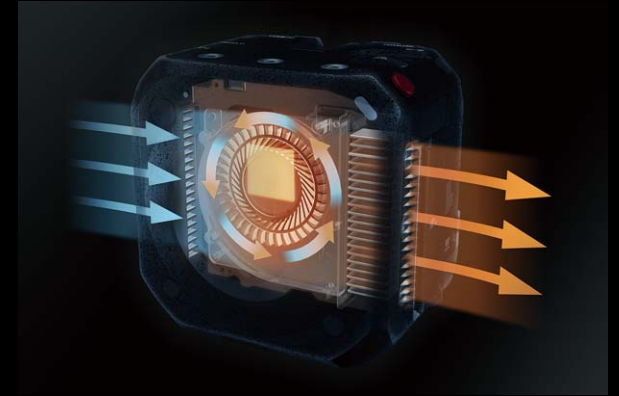
A LUMIX First: Genlock IN and Timecode IN/OUT

With multiple camera control and live streaming uses in mind, the BGH1 offers Genlock IN as a first for LUMIX. When used in combination with timecode, it enables high-precision editing. Synchronizing to the frame based on an externally input signal, Genlock IN allows for perfect synchronization of multiple cameras for live sports and other challenging applications. Even when using a video switcher, feeds connect seamlessly. And timecode is embedded directly in the video for high-precision drone shooting and other single-camera shoots.



Heat Management = Unlimited Recording

The LUMIX BGH1 realizes unlimited video recording in all modes. The rise in the camera's temperature can be suppressed with the cooling fan and can be used for an unlimited time within the guaranteed operating temperature range.



Compact, Lightweight and Durable Body

Drawing on technology developed for the LUMIX GH series, the minimal metal exterior provides uniform heat dissipation. The aluminum and magnesium alloy body frame offers heat dissipation, light weight of 545g, and durability. The result is superior functionality and a compact body.



3 Power Source Options: PoE+, AC Adapter and Battery Pack

For your convenience in various situations, three power source options are offered. An AC adapter is included for studio shoots and outdoor sets where the camera is set up on an ongoing basis. The battery pack (sold separately*) facilitates handheld shooting, drone shooting, and other kinds of mobile shooting. And when multiple cameras are controlled remotely, power can be stably supplied via Ethernet cable and PoE+.

* Battery Pack: AG-VBR59/89/118. Battery Charger: AG-BRD50. Max. 11800mAh (AG-VBR118) can be used for approximately 12 hours.



Wi-Fi / Bluetooth LUMIX Sync App

Installing the Panasonic LUMIX Sync Android or iOS app on a smartphone or tablet, you can connect to the BGH1 via Wi-Fi or Bluetooth 4.2 (Low Energy) to monitor images or remotely control the camera.

Higher Functionality Remote Control Compatibility

The remote terminal (2.5mm super mini jack) of the BGH1 offers compatibility with widely used high-functionality remote controls, a LUMIX first, which enables precise remote operation.

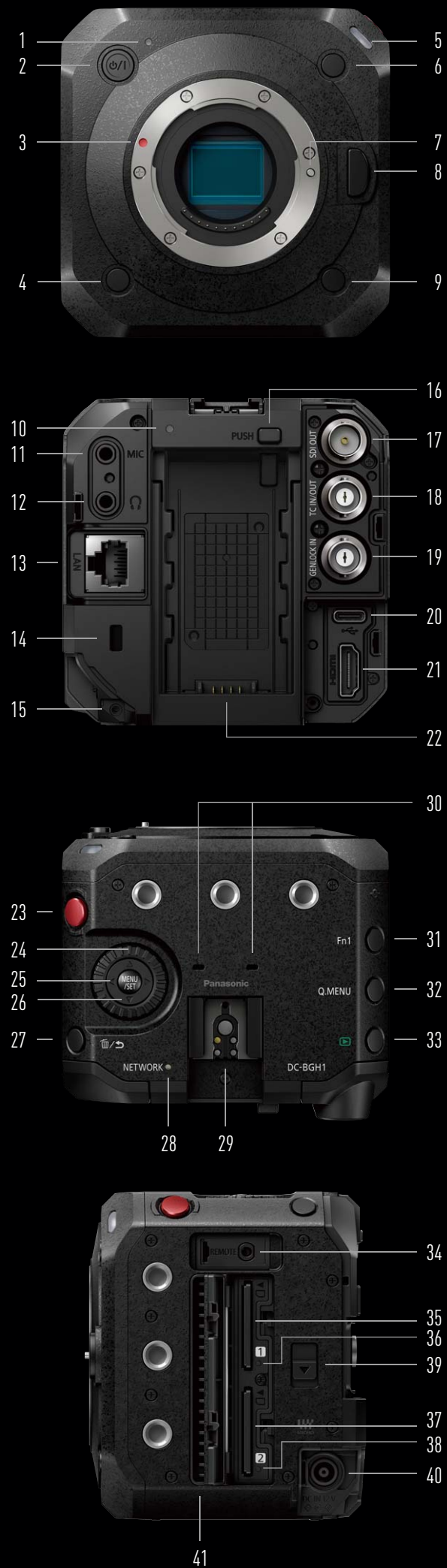
Dimensions and SDK (Software Development Kit) for camera control via USB is provided for free.



https://pro-av.panasonic.net/en/cinema_camera_varicam_eva/products/bgh1/index.html

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Main Parts & Controls



- | | |
|-------------------------------------|-----------------------------------|
| 1. Status indicator | 21. [HDMI] terminal |
| 2. Camera ON/OFF button | 22. Battery attachment part |
| 3. Lens fitting mark | 23. Video rec. button |
| 4. Fn button (Fn4) | 24. Control dial |
| 5. Front tally lamp | 25. [MENU/SET] button |
| 6. Fn button (Fn2) | 26. Cursor buttons |
| 7. Lens lock pin | 27. Delete button / Cancel button |
| 8. Lens release button | 28. [NETWORK] connection lamp |
| 9. Fn button (Fn3) | 29. Hot shoe |
| 10. Rear tally lamp | 30. Stereo microphone |
| 11. [MIC] terminal | 31. Fn button (Fn1) |
| 12. Headphone terminal | 32. [Q.MENU] button |
| 13. [LAN] terminal | 33. Playback button |
| 14. Security slot | 34. [REMOTE] terminal |
| 15. Cable lock band attachment part | 35. Card slot 1 |
| 16. Battery release button | 36. Card access light 1 |
| 17. [SDI OUT] terminal | 37. Card slot 2 |
| 18. [TC IN/OUT] terminal | 38. Card access light 2 |
| 19. [GENLOCK IN] terminal | 39. Card door release lever |
| 20. [USB] terminal | 40. [DC IN 12V] terminal |
| | 41. Fan outlet |

Front / Rear Tally Lamp — Visible from 4 Sides

Thanks to the clean lines of the body design, the tally lamps can be monitored from the front, top, side, or back, a welcome convenience on any shoot.



Cable Lock Band

To stop cables from accidentally disconnecting during a shoot, the bundled Cable Lock Band can be used to secure the HDMI, USB, and DC cables together at the back of the camera.



LUMIX G Series Lenses
 OLYMPUS / SIGMA / COSINA / KENKO TOKINA / KOWA / TAMRON Lenses
http://www.four-thirds.org/en/microft/lens_chart.html

R Mount Adaptor DMW-MA3R | M Mount Adaptor DMW-MA2M
 LEICA R Mount Lenses | LEICA M Mount Lenses
<http://panasonic.jp/support/global/cs/dsc/connect/mrma.html>

Lens Rear Cap Lens Cap | MC Protector PL Filter ND Filter

BNC Cable | BNC Cable
 Genlock Generator | Timecode Generator
 Body Cap DMW-BDC1

External Monitor | SDI Cable (3G-SDI)
 4KTV / HDTV | Blu-ray Disc™ Player
 External Monitor | External Recorder

LUMIX BGH1
Standard Accessories
 Hot Shoe Cover | REMOTE Terminal Cover
 BNC Terminal Cover | AUDIO Terminal Cover
 HDMI Terminal Cover | DC IN Terminal Cover
 Body Cap | LUMIX Tether for Multicam * Download
 Cable Lock Band | AC Adapter AC Cable

Unidirectional Microphone AG-MC200G | XLR Microphone
 XLR Microphone Adaptor DMW-XLR1 | LED Video Light VW-LED1
 Stereo Shotgun Microphone DMW-MS2 | Stereo Microphone VW-VMS10
 Headphones | Remote Control
 LAN Cable | Battery Charger AG-BRD50
 PoE+ Compatible Switching Hub / Injector | Battery Pack AG-VBR59 AG-VBR89 AG-VBR118

*1 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]. Use of SD Memory Card with Video Speed Class 60 or higher is recommended for C4K/4K ALL-Intra video recording. *2 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 SDXC/SDHC Memory Card can be used only if their logos are indicated on the equipment or in the operation manual. It cannot be used with equipment that supports only the SD Memory Card. • Batteries made by other companies which have been certified by Panasonic may be used with these units, but we offer no guarantee as to the quality, performance or safety of such batteries. • Exercise care when purchasing batteries. Many fake or imitation batteries have been found among those sold at unusually low prices and those which customers cannot check for themselves before purchasing. • Please confirm the latest information about batteries on the following website. <http://panasonic.jp/support/global/cs/info/battery.html> [English].



XLR Microphone Adaptor DMW-XLR1 (Sold Separately)

This accessory allows you to connect an XLR microphone and achieve high-quality stereo sound. High-res sound recording at 96 kHz/24-bit is also selectable in MOV recording. This accessory also supports the use of plug-in power.