LUMIX GH5

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	20.30 Megapixels
		Color filter	Primary color filter
		Dust reduction system	Supersonic wave filter
IMAGE STABILIZATION SYSTEM			Image sensor shift type (5-axis / 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-FS12060 is used.
RECORDING SYSTEM	Recording file format	Still image	JPEG (DCF, Exif 2.31), RAW
		6K PHOTO*1 / 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		MOV: H.264/MPEG-4 AVC (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/AVCHD Progressive, AVCHD (Audio format: Dolby Audio 2ch)
System frequency		59.94Hz, 50.00Hz, 24.00Hz
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	04:03	5184x3888(L) / 3712x2784(M) / 2624x1968(S) / 4992x3744(6K PHOTO) / 3328x2496(4K PHOTO)
	03:02	5184x3456(L) / 3712x2480(M) / 2624x1752(S) / 5184x3456(6K PHOTO) / 3504x2336(4K PHOTO)
	16:09	5184x2920(L) / 3840x2160(M) / 1920x1080(S) / 3840x2160(4K PHOTO)
	01:01	3888x3888(L) / 2784x2784(M) / 1968x1968(S) / 2880x2880(4K PHOTO)
File size (Pixels) -Motion picture	AVCHD Progressive*2/ AVCHD*2-59.94Hz	<[Full HD] 1920x1080> 59.94p, 28Mbps (LongGOP) (Dolby)/<[Full HD] 1920x1080> 59.94i, 24Mbps (LongGOP) (Dolby) (Sensor output is 29.97fps)/<[Full HD] 1920x1080> 59.94i, 17Mbps (LongGOP) (Dolby) (Sensor output is 59.94fps)/<[Full HD] 1920x1080> 23.98p, 24Mbps (LongGOP) (Dolby)

AVCHD Progressive*2/ AVCHD*2-50.00Hz	<[Full HD] 1920x1080> 50.00p, 28Mbps (LongGOP) (Dolby)/<[Full HD] 1920x1080> 50.00i, 24Mbps (LongGOP) (Dolby) (Sensor output is 25.00fps)/<[Full HD] 1920x1080> 50.00i, 17Mbps (LongGOP) (Dolby) (Sensor output is 50.00fps)
Continuous recordable time (Motion picture)	AVCHD [FHD/60p]: Approx. 150 min (rear monitor), 150 min (LVF) with H-ES12060, Approx. 160 min (rear monitor), 150 min (LVF) with H-HSA12035 / H-FS12060/AVCHD [FHD/60i]: Approx. 150 min (rear monitor), 150 min (LVF) with H-ES12060, Approx. 160 min (rear monitor), 160 min (LVF) with H-HSA12035 / H-FS12060/MP4 [4K/60p]: Approx. 100 min (rear monitor), 100 min (LVF) with H-ES12060 / H-HSA12035 / H-FS12060/MP4 [4K/30p]: Approx. 110 min (rear monitor), 110 min (LVF) with H-ES12060 / H-HSA12035 / H-FS12060"
Actual recordable time (Motion picture)	AVCHD [FHD/60p]: Approx. 75 min (rear monitor), 75 min (LVF) with H-ES12060, Approx. 80 min (rear monitor), 75 min (LVF) with H-HSA12035 / H-FS12060/AVCHD [FHD/60i]: Approx. 75 min (rear monitor), 75 min (LVF) with H-ES12060, Approx. 80 min (rear monitor), 80 min (LVF) with H-HSA12035 / H-FS12060/MP4 [4K/60p]: Approx. 50 min (rear monitor), 50 min (LVF) with H-ES12060 / H-HSA12035 / H-FS12060/MP4 [4K/30p]: Approx. 55 min (rear monitor), 55 min (LVF) with H-ES12060 / H-HSA12035 / H-FS12060

WIRELESS	WiFi	IEEE 802.11a/b/g/n/ac * 5GHz Wi-Fi is not available in some countries./1-13, 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140 ch
	QR Code Connection	Yes
	Password-less connection	Yes (ON / OFF selectable)
	Bluetooth	Bluetooth® v4.2 (Bluetooth Low Energy (BLE))
VIEWFINDER	Type	OLED Live View Finder (3,680k dots)
	Field of view	Approx. 100%
	Magnification	Approx. 1.52x / 0.76x (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
	Eye sensor adjustment	High / Low
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 (by Joystick) and flexible AF position (by front/rear dial))
	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+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	EV0-18 (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 ±5EV (±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: 1/16,000 - 1/Motion picture: 59.94Hz: 1/16,000 - 1/30, 50.00Hz: 1/16,000 - 1/25, 23.98Hz: 1/16,000 - 1/24 (When using Synchro Scan)
	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)

6K PHOTO*1 / 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 4K burst file complies with EXIF.)
	Marking function	Yes (in 6K/4K Burst (S/S) mode)
	Loop rec function	Yes (in 6K/4K Burst (S/S) mode)

BRACKET	AE bracket	3, 5, 7 images in 1/3, 2/3 or 1 EV step, max. ±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 5 levels
	White balance bracket	3 exposures in blue/amber axis or in magenta/green axis, color temperature setting

BURST SHOOTING	Burst speed	[Mechanical shutter] AFS/MF: H: 12 frames/sec, M: 7 frames/sec (with Live View), L: 2 frames/sec (with Live View)/[Mechanical shutter] AFF/AFC: H: 9 frames/sec, M: 7 frames/sec (with Live View), L: 2 frames/sec (with Live View)/[Electronic shutter] AFS/MF: H: 12 frames/sec, M: 7 frames/sec (with Live View), L: 2 frames/sec (with Live View)/[Electronic shutter] AFF/AFC: H: 9 frames/sec, M: 7 frames/sec (with Live View), L: 2 frames/sec (with Live View)
	Number of recordable images	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)/(depending on memory card size, battery power, picture size, and compression)
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 ±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
REAR MONITOR	Type	TFT LCD monitor with static touch control
	Monitor size	Free-angle 3.2-inch (8.0cm) / 3:2 aspect / Wide viewing angle
	Pixels	Approx. 1,620k dots
	Filed of view	Approx. 100%
	Monitor adjustment	Brightness, Contrast, Saturation, Red-Green, Blue-Yellow
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	Direction Detection Function	Yes

| FUNCTION BUTTON | Fn1-20 | Wi-Fi / Q.MENU / LVF/Monitor Switch / LVF/Monitor Disp. Style / 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 / Cursor Button Lock / Dial Operation Switch / Photo Style / Filter Select / Aspect Ratio / Picture Size / Quality / AFS/AFF / Metering Mode / Burst Rate / 6K/4K Photo / Self Timer / Bracket / Highlight Shadow / i. Dynamic / i. Resolution / HDR / Shutter Type / Flash Mode / Flash Adjust. / Wireless Setup (Flash) / Ex. Tele Conv. / Digital Zoom / Stabilizer Sensitivity / ON/OFF of each item in White Balance / ON/OFF of each item in Photo Style / AF Mode/MF / Rec/Playback Switch / Off / 4K Live Crop / Motion Pic. Set / Picture Mode / Variable Frame Rate / Picture Mode / Synchro Scan / Time Code Display / Mic. Directivity Adjust / Color Bars / WFM/Vector Scope / LUT Monitor Display* / LUT HDMI Display* / Focus Transition / Silent Mode / Peaking / Histogram / Guide Line / Zebra Pattern / Monochrome Live View / Rec Area / Video-Priority Display / Step Zoom / Zoom Speed / Restore to Default *Upgrade Software Key DMW-SFU1 (sold separately) is required. |

PHOTO STYLE	Photo Style		Standard / Vivid / Natural / Monochrome / L. Monochrome / Scenery / Portrait / Custom 1, 2, 3, 4 / Cinelike D / Cinelike V / Like709* / V-LogL*/**/*When Creative Video Mode is selected. **Upgrade Software Key DMW-SFU1 (sold separately) is required.
CREATIVE CONTROL	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. **Not available in 4:2:2 10-bit video or 4K video recording.
CREATIVE VIDEO MODE	Exposure mode		Program AE/ Aperture-Priority / Sutter-Priority / Manual Exposure
	Variable frame rate	59.94Hz	2, 30, 56, 58, 60, 62, 64, 90, 120, 150, 180 fps/ 2, 15, 26, 28, 30, 32, 34, 45, 60 fps/ 2, 15, 26, 28, 30, 32, 34, 45, 60, 75, 90, 105, 120, 135, 150, 165, 180 fps/ 2, 12, 20, 22, 24, 26, 28, 36, 48, 60 fps/ 2, 12, 20, 22, 24, 26, 28, 36, 48, 60, 72, 84, 96, 108, 120, 132, 144, 156, 168, 180 fps
		50.00Hz	2, 25, 46, 48, 50, 52, 54, 75, 100, 150, 180 fps/ 2, 12, 21, 23, 25, 27, 30, 37, 60 fps/ 2, 12, 21, 23, 25, 27, 30, 37, 50, 62, 75, 87, 100, 125, 150, 175, 180 fps

	24.00Hz	2, 12, 20, 22, 24, 26, 28, 36, 48, 60 fps/ 2, 12, 20, 22, 24, 26, 28, 36, 48, 60, 72, 84, 96, 108, 120, 132, 144, 156, 168, 180 fps
MOTION PICTURE FUNCTION	LUT display	LUT Monitor Display / LUT HDMI Display *Upgrade Software Key DMW-SFU1 (sold separately) is required.
	Master pedestal level	31 steps
	Luminance level	8-bit: 0-255 / 16-235 / 16-255/10-bit: 0–1023 / 64–940 / 64–1023
	Wave form monitor / Vectorscope	Selectable
	Synchro scan	Yes
	Time code	Count Up: Rec Run/Free Run selectable, Time Code Mode: Drop frame/Non-drop frame selectable (When system frequency [59.94Hz] is selected.)
	SS/Gain operation	Shutter Duration/ISO / Angle/ISO / Shutter Duration/dB
	Color bars / 1kHz test tone	Yes (SMPTE / EBU / ARIB) / Yes
	Photo style for motion picture	Cinelike D / Cinelike V / Like709* / V-LogL*/**/*When Creative Video Mode is selected. **Upgrade Software Key DMW-SFU1 (sold separately) is required.
	Knee control	Yens (in Like709 mode)

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), Location Logging, RAW Processing, 4K PHOTO Bulk Saving, Light Composition, Clear Retouch, Title Edit, Text Stamp, Video Divide, Time Lapse Video, Stop Motion Video, Resize, Cropping, Rotate, Rotation Display, Favorite, DPOF Print Set, Protect, Face Recognition Edit, Picture Sort, Creating Still Pictures from a Motion Picture
IMAGE PROTECTION / ERASE		Protection	Single / Multi or Cancel
		Erase	Single / Multi / All / Except Favorite
PRINT		Direct Print	PictBridge compatible
INTERFACE	Headphone output		φ3.5mm for headphone
	USB		USB Type-C, Super Speed USB3.1 GEN1
	HDMI*3	Monitor-through	4:2:2 8-bit/4:2:2 10-bit (When [4K/60p] [4K/50p] mode is selected, it is not possible to record motion picture or still picture on the SD memory card in the camera unit.)/Auto / C4K / 4K / 1080p/Information display ON/OFF (selectable)/Automatic down-conversion (4K --> 1080p only)

		Playback	HDMI TypeA / VIERA Link, Audio: Stereo/59.94Hz: Auto / 4K/60p / 4K/30p / 1080p / 1080i / 720p / 480p/50.00Hz: Auto / 4K/50p / 4K/25p / 1080p / 1080i / 720p / 576p/24.00Hz: Auto / C4K / 4K/24p / 1080p
		Audio video output	No
		Remote input	φ2.5mm for remote
		External microphone input	φ3.5mm for external microphone/Stereo/Lens Auto/Shotgun/Super Shotgun/Manual is selectable when attaching DMW-MS2 (sold separately).
		Microphone	Stereo, Wind Noise Canceller: OFF / Low / Standard / High / AUTO
		Speaker	Monaural
		SD card slot	Slot 1, Slot 2
LANGUAGE		OSD language	Japanese, English, German, French, Italian, Spanish
POWER		Battery	Li-ion Battery Pack (7.2V, 1860mAh, 14Wh) (included)

	Battery life (CIPA standard)	Approx. 410 images (rear monitor), 400 images (LVF), 1,000 images (Power Save LVF mode*) with H-FS12060/Approx. 410 images (rear monitor), 390 images (LVF), 1,000 images (Power Save LVF mode*) with H-HSA12035/Approx. 400 images (rear monitor), 380 images (LVF), 1,000 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 3 sec.
	Battery grip	DMW-BGGH5 (sold separately)
DIMENSIONS / WEIGHT	Dimensions (W x H x D)	138.5 x 98.1 x 87.4 mm / 5.45 x 3.86 x 3.44 inch (excluding protrusions)
	Weight	Approx. 725g / 1.60 lb (SD card, Battery, Body)/Approx. 645g / 1.42 lb (Body only)/Approx. 935g / 2.06 lb (SD card x 1, Battery, H-FS12060 lens included)/Approx. 1030g / 2.27 lb (SD card x 1, Battery, H-HSA12035 lens included)/Approx. 1045g / 2.30 lb (SD card x 1, Battery, H-ES12060 lens included)
OPERATING ENVIRONMENT	Operating temperature*5	-10°C to 40°C (14°F to 104°F)
	Operating humidity	10%RH to 80%RH

STANDARD ACCESSORIES	Software	・ The software to edit and playback images on computer is not bundled with this camera. To do this, PHOTOfunSTUDIO 10.0XE is available for download at Panasonic website using computer connected to the Internet. 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	Battery Charger (AC 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, Cable Holder, Lens Cap*, Lens Hood*, Lens Rear Cap*/*Included with DC-GH5L kit, DC-GH5A kit and DC-GH5M kit.
INTERCHANGEABLE LENS-1	Weatherproof	Splash/Dust/Freezeproof
	Lens Name	LEICA DG VARIO-ELMARIT 12-60mm / F2.8-4.0 ASPH. / POWER O.I.S.
	Lens Construction	14 elements in 12 groups (4 aspherical lenses, 2 ED lenses)
	Nano Surface Coating	Yes

Mount		Micro Four Thirds mount
Optical Image Stabilizer		Yes (POWER O.I.S.)
Focal Length		f=12-60mm (35mm camera equivalent 24-120mm)
Aperture Type		9 diaphragm blades / Circular aperture diaphragm
Maximum Aperture		F2.8 (Wide) - F4.0 (Tele)
Minimum Aperture		F22
Closest Focusing Distance		0.20m/0.66ft (at focal length 12mm) / 0.24m/0.79ft (at focal length 60mm)
Maximum magnification		Approx. 0.3x / 0.6x (35mm camera equivalent)
Diagonal Angle of View		84°(Wide) - 20°(Tele)
General	Filter Size	φ62mm / 2.44inch
	Max. Diameter	φ68.4mm / 2.69inch
	Overall Length	Approx. 86mm / 3.39inch (from the tip of the lens to
	Weight [g]	Approx. 320g (excluding lens cap, lens rear cap and lens hood)
	Weight [oz]	Approx. 11.29oz (excluding lens cap, lens rear cap and lens hood)

*1 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.

*2 About motion picture recording / 6K PHOTO/4K PHOTO recording

- 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 [mov], [MP4] in [4K] or [6K PHOTO/4K PHOTO].

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

- 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.

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

*4 High-res audio is selectable only when using the DMW-XLR1 (sold separately).

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

・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.