

Panasonic

GH4U

SYSTEM PROPOSAL

This model is not available in some areas.



Lens is optional.



LUMIX G



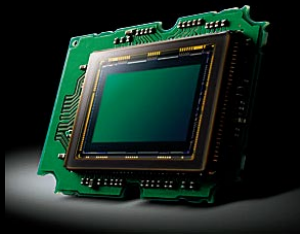
AG-GH4U Features

The world's first* single-lens mirrorless camera with 4K video capability and professional interfaces.

* As of June 2014, according to a Panasonic survey.

Recording 4K videos onto an SD memory card

The AG-GH4U can record super-high-definition 4K videos with four times the resolution of Full-HD, such as C4K (Cinema 4K): 4096 x 2160, 24.00p and 4K (QFHD): 3840 x 2160, 23.98p/24.00p/25.00p/29.97p onto an SD memory card (U3-compatible SDXC/SDHC Memory Card) in MOV/MP4 file format.



Newly developed Live MOS sensor

Recording Video Formats and Recording Times

(Examples)

Recording Video Format	32GB SDHC Memory Card	64GB SDXC Memory Card
MP4/MOV C4K (Cinema 4K) 24.00p 100Mbps	approx. 40 min.	approx. 1 hrs. 25 min.
MP4/MOV 4K (QFHD) 29.97p 100Mbps		
MP4/MOV FHD 59.94p 200Mbps	approx. 18 min.	approx. 40 min.
MP4/MOV FHD 59.94p 100Mbps	approx. 40 min.	approx. 1 hrs. 20 min.
MP4/MOV FHD 59.94p 50Mbps	approx. 1 hrs. 20 min.	approx. 2 hrs. 45 min.
AVCHD Progressive FHD 59.94p 28Mbps	approx. 2 hrs. 30 min.	approx. 5 hrs.
AVCHD FHD 59.94i 17Mbps	approx. 4 hrs. 5 min.	approx. 8 hrs. 15 min.

Extracting 4K photos from video

Thanks to the super-high resolution of 4K, a still image with approximately 8 million pixels can be extracted from a video frame. This lets you obtain pictures of critical moments that cannot be easily captured by a conventional still camera.



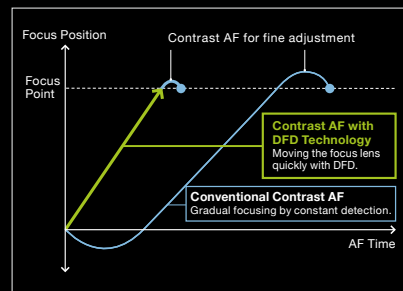
Full-HD video recorded at a high 200 Mbps bit rate

Even for Full-HD (1920 x 1080, 23.98p/24.00p/25.00p/29.97p/50.00p/59.94p) video recording, the AG-GH4U offers a high bit rate of 200 Mbps maximum by using the MOV/MP4 file format and All-Intra compression system. When the IPB compression system is used, the AG-GH4U can record at 100 Mbps maximum (4K/FHD recording). Recorded images provide the high quality required for full-fledged video production. The AG-GH4U also supports AVCHD Progressive (28 Mbps max.) and AVCHD file format recording.



Newly developed DFD AF for high-speed, high-precision focusing

The original Depth From Defocus (DFD) technology instantly calculates the distance to the subject from among all of the subjects in the frame, and proceeds to instantaneously drive the lens to the focus area. Then, the high-precision Contrast AF makes fine adjustment. The AG-GH4U has achieved an auto-focus speed of approximately 0.07 seconds.



* The space recognition AF is not supported by lenses manufactured by other companies.

VFR (Variable Frame Rate) of 2 to 96 fps

The AG-GH4U supports a VFR recording function to enable slow-motion or quick-motion recording. It allows overcranking of 96 fps maximum for slow-motion videos, or undercranking of 2 fps maximum for quick-motion videos.

Expansion interface unit compatible with SDI output and XLR input

The expansion interface unit provided with the camera enables the use of AG-GH4U for professional applications. The output of a 4:2:2/10-bit* SDI video signal via Quad Link 4K (SDI x 4, Square Division) allows connection to a professional 4K recorder or 4K monitor. The expansion interface unit also features XLR audio input (LINE/MIC/+48V selectable, 2 channels), audio manual dial and level meter. It enables recording of sound from an external mic or line, and comes with a time code input (BNC x 1).

* Motion pictures cannot be recorded onto the memory card in the camera when 4:2:2/10-bit output is selected



Motion picture functions meet full-fledged video production needs

- Display of peaking, zebra pattern and center marker.
- Nine gamma curve types, including Cinelike D and Cinelike V.
- Auto white balance and master pedestal.
- Variable shutter speed, with synchro scan function.
- Motion picture control panel designed with video camera users in mind.
- Outputs color bars and a 1-kHz test tone.

Remote operation from smartphone/wired remote controller

- The built-in Wi-Fi® (IEEE 802.11 b/g/n) function enables remote operation from a smartphone or tablet which application software "Panasonic Image App" is installed.
- Also supports the use of a wired remote controller (other manufacturer's product) for remote operation (Zoom, Rec).



Panasonic Image App
Camera Control

System Application 1 — Aerial Shooting, On-Vehicle Shooting



**Compact, lightweight body
allows new shooting styles
such as aerial shooting
or on-vehicle shooting.**

- The camera body weighs approximately 560 g (19.75 oz). Even with the lens mounted, it weighs about 825 g (29.10 oz). It is light enough to mount on a drone for aerial shooting of super-high-resolution 4K video.
- Thanks to its light camera body, an HD live transmission unit or external recorder can be mounted together on a drone.
- The interchangeable lens system allows the use of various lenses according to shooting needs.
- The small body and wide-angle interchangeable lens enables wide-angle shooting even in a limited space such as a car.

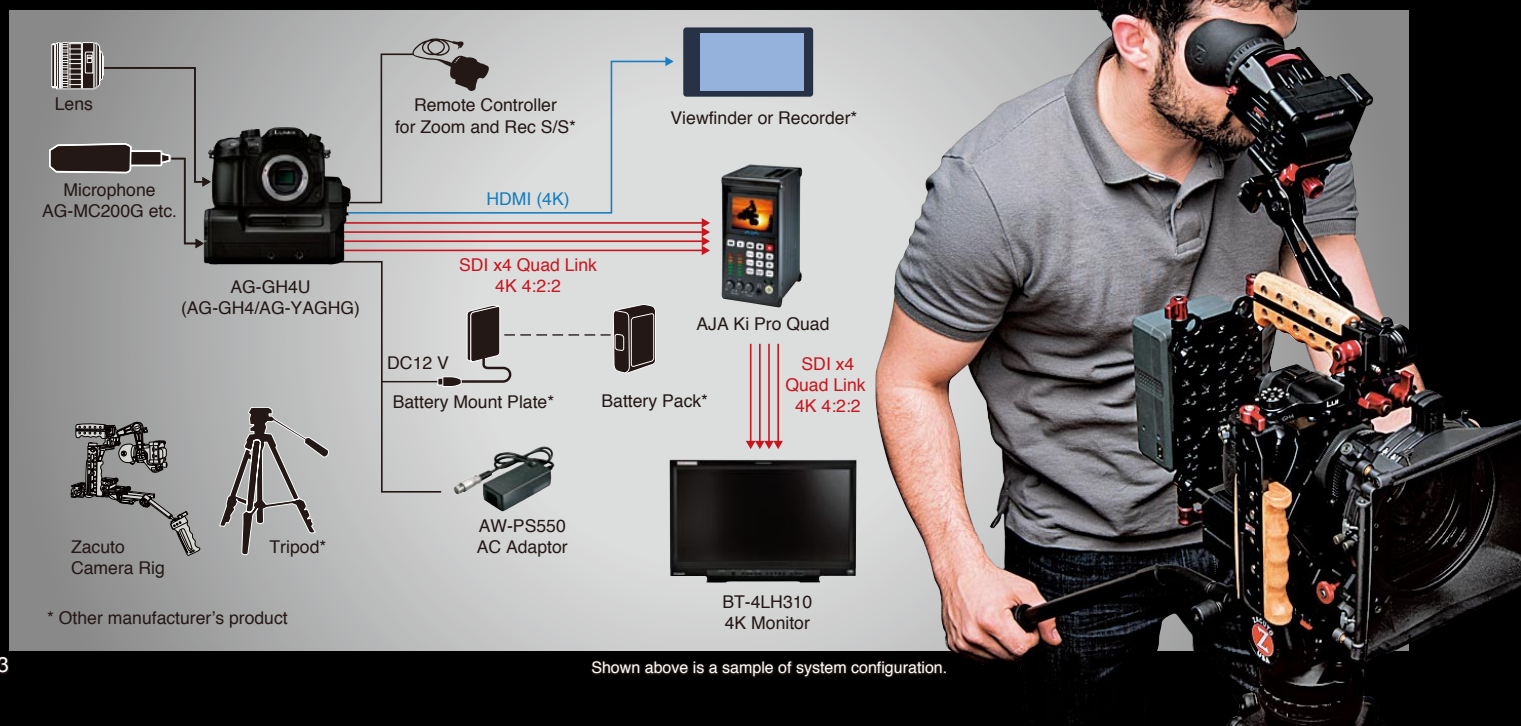


System Application 2 — TV Series, Movie Production



10-Bit 4K video recording for high-quality video production

- Outputs 4:2:2/10-bit 4K images via Quad Link (SDI x 4). When combined with the AJA Ki Pro Quad external recorder, high-quality 4:2:2/10-bit 4K recording (Apple ProRes) is possible.
- Cinelike gamma and VFR (Variable Frame Rate) enables the use of the AG-GH4U as a sub-camera in movie production using Varicam, etc.
- Using professional 4K monitor BT-4LH310, image quality can be managed accurately.
- SDI (coaxial cable, BNC connector) ensures reliable connection and allows the extension of cable to up to 100 m (328 ft).
- Equipped with HDMI output, an external backup recorder or a viewfinder can be connected.



System Application 3 — Weddings, Events



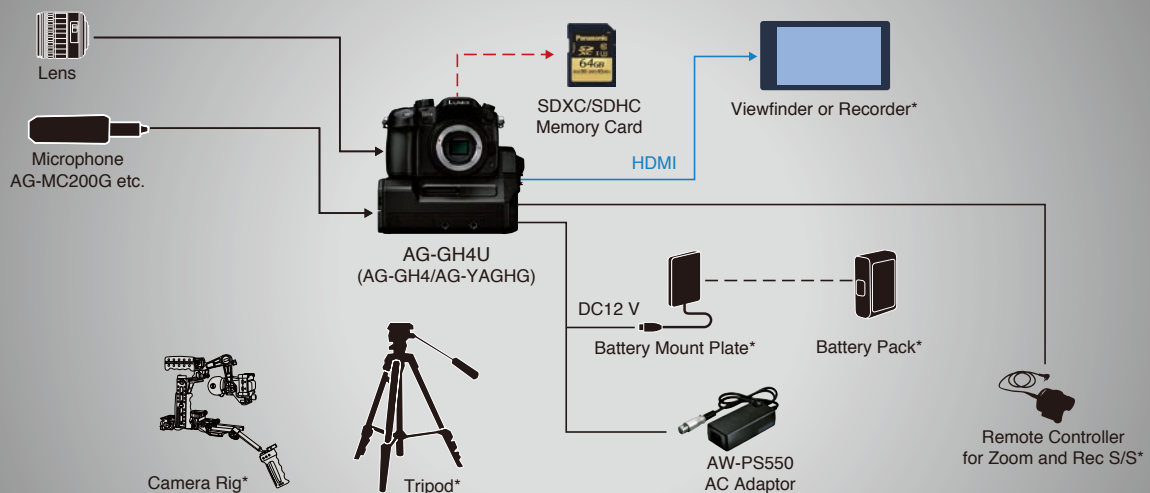
PHOTO

- 4K photos equivalent of 8 million pixels can be extracted from a 4K video. The extraction operation can be performed with the camera, so there is no need for separate processing using a PC or other device.
- 4K photos gives continuous shooting of 30fps in 4K. The AG-GH4U lets you capture critical scenes without missing shooting opportunities, and continuous pictures can be used for producing albums.

* Increasing the shutter speed to 60 fps or faster for the sake of 4K photos results in unnatural, flickering movement. Therefore, post processing, such as motion blur processing, will be required.

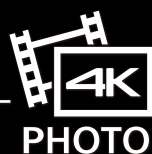
Capturing special moments in high-quality 4K videos and 4K still images

- A wide range of available interchangeable lenses and the large-size sensor achieve a beautiful defocusing effect, while the Cinelike gamma expresses soft tones. They help create images with rich texture similar to those of movies and video clips.
- The connected external HD recorder can be used for backup recording while the camera records 4K images. An existing HD editing system can also be used.
- The AG-GH4U can be provided with an external XLR mic. This enables the recording of high-quality sounds as well as interviews using a handheld mic.



* Other manufacturer's product

System Application 4 — News Gathering



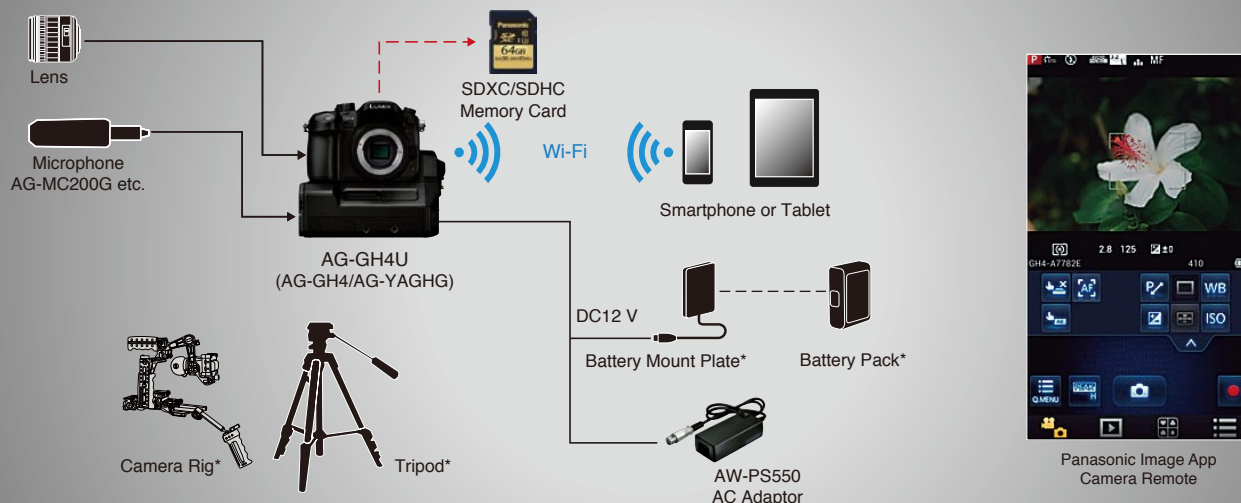
New workflow — shooting 4K video and use 4K photos extracted from video

- 4K photos equivalent of 8 million pixels can be extracted from 4K video. Both video and still images can be obtained by using a single camera operated by one person.*¹
- 4K photos gives continuous shooting of 30fps in 4K. The AG-GH4U lets you capture critical scenes without missing shooting opportunities.

*1: Increasing the shutter speed to 60 fps or faster for the sake of 4K photos results in unnatural, flickering movement. Therefore, post processing, such as motion blur processing, will be required.

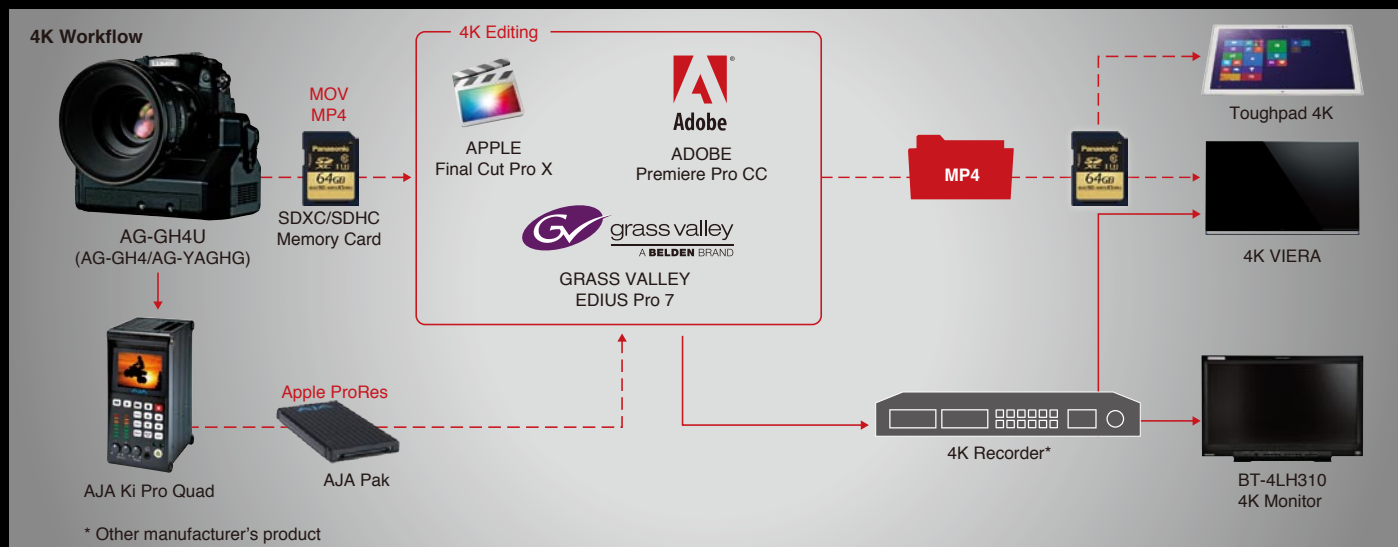
- The compact, lightweight single-lens mirrorless camera brings greater mobility to news gathering.
- The Wi-Fi function allows remote operation from a smartphone or tablet. Operations and functions such as the shutter, zoom, aperture, shutter speed, ISO and white balance can be controlled remotely.*²
- An external XLR mic can be connected for use in interviews.

*2: The dedicated application, Panasonic Image App, must be installed in the smartphone or tablet.



* Other manufacturer's product

AG-GH4U System Equipment



AC Adaptor



AW-PS550

Power Source: AC 100V—240V,
1.3 A, 50 Hz / 60 Hz
Output: DC 12 V / 3.5 A, 42W

Microphone



AG-MC200G

XLR Microphone

4K Monitor



BT-4LH310

787.4mm (31 inches) LCD Monitor
DCI 4K IPS LCD panel,
DCI 4K/QFHD/2K/HD/SD Display
Input: 3G SDI x4, HDMI 1.4 x 2,
Display Port x2, AC/DC

AG-YAGHG Interface Unit



Other Manufacturer's Products

10 bit 4K Recorder



AJA Ki Pro Quad

Input: SDI x 4 (4K Quad Link)
Codec: Apple ProRes, 4444, 422
(HQ), 422/422 (LT),
422 (Proxy)
Media: AJA Pak SSD

Camera Rig



ZACUTO

DSLR Recoil Rig, Half Cage,
Zacuto EVF*, and etc.
*EVF is not available 4K video via
HDMI input.

Remote Controller



LIBEC ZC-3DV

Control: Zoom*, Rec S/S,
*Panasonic zoom lens only

Battery



IDX

Battery mount plate and battery
charger are required.



Anton Bauer

Battery mount plate and battery
charger are required.

AG-YAGHG Interface Unit Specifications

GENERAL	
Power source	DC 12 V (11 V - 17 V), 1.4 A (DC 12 V) *including digital camera
Operating Temperature	0°C to 40°C (32°F to 104°F)
Operating Humidity	10% to 80% (non condensing)
Weight	Approx. 750 g (1.65 lbs.)
Dimensions	160 mm (W) x 64 mm (H) x 91 mm (D), (6-19/64 inches x 2-33/64 inches x 3-37/64 inches) *excluding protrusion and HDMI connection terminal
DIGITAL VIDEO	
Resolution	Cinema4K: 4096 x 2160 [24p] 4K (QFHD): 3840 x 2160 [29.97p] 3840 x 2160 [25p] 3840 x 2160 [24p] 3840 x 2160 [23.98p] FHD: 1920 x 1080 [59.94p] (3G-SDI Level-A/B) 1920 x 1080 [50p] (3G-SDI Level-A/B) 1920 x 1080 [59.94p] 1920 x 1080 [50i] 1920 x 1080 [24PsF] 1920 x 1080 [23.98PsF] HD: 1280 x 720 [59.94p] 1280 x 720 [50p]
Sampling	Y: Cb: Cr = 4: 2: 2
Bit depth	8 bit / 10 bit
DIGITAL AUDIO	
Sampling frequency	48 kHz (video sync)
Quantization	16 bit
Headroom	12 dB
INPUT / OUTPUT	
TC IN	BNC x 1, 1.0 V [p-p] to 4.0 V [p-p], 10 kΩ
AUDIO IN	XLR (3 pin) x 2, high impedance, LINE/MIC/+48 V (switchable) LINE: 0 dBu MIC: -50 dBu +48 V: +48 V phantom supported, -50 dBu
SDI OUT	BNC x 4, 0.8 V [p-p], 75Ω Audio output: SDI OUT 1 Embedded audio: 2 channel Timecode output: SDI OUT 1 Embedded LTC
HDMI	HDMI TypeA (VIERA Link not supported), 2 channel audio (linear PCM)

* There are some products not available in some areas.

AG-GH4 Digital Camera Specifications

As of June, 2014

IMAGE SENSOR	Type		Digital Single Lens Mirrorless camera			
	Recording media		SD Memory Card, SDHC Memory Card, SDXC Memory Card (Compatible with UHS-I UHS Speed Class 3 standard SDHC / SDXC Memory Cards)			
	Lens mount		Micro Four Thirds mount			
	Type		4/3 type Live MOS Sensor			
	Total pixels		17.20 Megapixels (Effective pixels: 16.05 Megapixels)			
	Aspect ratio		4:3			
RECORDING SYSTEM	Color filter		Primary color filter			
	Dust reduction system		Supersonic wave filter			
	Recording file format	Still Image	JPEG (DCF, Exif 2.3), RAW, MPO (When attaching 3D lens)			
		Motion picture	MP4/MOV/AVCHD Progressive/AVCHD			
		Audio format	MP4: LPCM 2ch/AAC 2ch MOV: LPCM 2ch, AVCHD: Dolby Digital 2ch			
	System frequency		59.94Hz, 50.00Hz, 24.00Hz			
	Aspect ratio		4:3, 3:2, 16:9, 1:1			
	Still Image		[4:3]	4608 × 3456 (L), 3264 × 2448 (M), 2336 × 1752 (S), 1824 × 1368 (with 3D lens)		
			[3:2]	4608 × 3072 (L), 3264 × 2176 (M), 2336 × 1560 (S), 1824 × 1216 (with 3D lens)		
			[16:9]	4608 × 2592 (L), 3840 × 2160 (M), 1920 × 1080 (S), 1824 × 1024 (with 3D lens)		
			[1:1]	3456 × 3456 (L), 2448 × 2448 (M), 1744 × 1744 (S), 1712 × 1712 (with 3D lens)		
	Color space		sRGB / Adobe RGB			
	Image quality		Fine, Standard, RAW, RAW+Fine, RAW+Standard, MPO+Fine / MPO+Standard (with 3D lens)			
	Motion picture	MOV	59.94 Hz	•3840 x 2160: 29.97p, 100Mbps (IPB), LPCM •3840 x 2160: 23.98p, 100Mbps (IPB), LPCM •1920 x 1080: 59.94p, 200Mbps (ALL-Intra) / 100Mbps (IPB) / 50Mbps (IPB), LPCM •1920 x 1080: 29.97p, 200Mbps (ALL-Intra) / 100Mbps (IPB) / 50Mbps (IPB), LPCM •1920 x 1080: 23.98p, 200Mbps (ALL-Intra) / 100Mbps (IPB) / 50Mbps (IPB), LPCM		
				50.00 Hz	•3840 x 2160: 25.00p, 100Mbps (IPB), LPCM •1920x1080: 50.00p, 200Mbps (ALL-Intra) / 100Mbps (IPB) / 50Mbps (IPB), LPCM •1920x1080: 25.00p, 200Mbps (ALL-Intra) / 100Mbps (IPB) / 50Mbps (IPB), LPCM	
					24.00 Hz	•4096 x 2160: 24.00p, 100Mbps (IPB), LPCM •3840 x 2160: 24.00p, 100Mbps (IPB), LPCM •1920 x 1080: 24.00p, 200Mbps (ALL-Intra) / 100Mbps (IPB) / 50Mbps (IPB), LPCM
MP4*			59.94 Hz	•3840 x 2160: 29.97p, 100Mbps (IPB), LPCM / AAC •3840 x 2160: 23.98p, 100Mbps (IPB), LPCM •1920 x 1080: 59.94p, 200Mbps (ALL-Intra) / 100Mbps (IPB) / 50Mbps (IPB), LPCM •1920 x 1080: 29.97p, 200Mbps (ALL-Intra) / 100Mbps (IPB) / 50Mbps (IPB), LPCM •1920 x 1080: 23.98p, 200Mbps (ALL-Intra) / 100Mbps (IPB) / 50Mbps (IPB), LPCM •1920 x 1080: 59.94p, 28Mbps (IPB), AAC •1920 x 1080: 29.97p, 20Mbps (IPB), AAC •1280 x 720: 29.97p, 10Mbps (IPB), AAC •640 x 480: 29.97p, 4Mbps (IPB), AAC		
				50.00 Hz	•3840 x 2160: 25.00p, 100Mbps (IPB) / 100Mbps (IPB), LPCM / AAC •1920 x 1080: 50.00p, 200Mbps (ALL-Intra) / 100Mbps (IPB) / 50Mbps (IPB), LPCM •1920 x 1080: 25.00p, 200Mbps (ALL-Intra) / 100Mbps (IPB) / 50Mbps (IPB), LPCM •1920 x 1080: 50.00p, 28Mbps (IPB), AAC •1920 x 1080: 25.00p, 20Mbps (IPB), AAC •1280 x 720: 25.00p, 10Mbps (IPB), AAC •640 x 480: 25.00p, 4Mbps (IPB), AAC	
					24.00 Hz	•4096 x 2160: 24.00p, 100Mbps (IPB), LPCM •3840 x 2160: 24.00p, 100Mbps (IPB), LPCM •1920 x 1080: 24.00p, 200Mbps (ALL-Intra) / 100Mbps (IPB) / 50Mbps (IPB), LPCM
		AVCHD Progressive/AVCHD	59.94 Hz	•1920 x 1080: 59.94p, 28Mbps (IPB), Dolby Digital •1920 x 1080: 59.94i, 24Mbps (IPB), Dolby Digital (Sensor output is 29.97fps) •1920 x 1080: 59.94i, 17Mbps (IPB), Dolby Digital (Sensor output is 59.94fps) •1920 x 1080: 23.98p, 24Mbps (IPB), Dolby Digital		
				50.00 Hz	•1920x1080: 50.00p, 28Mbps (IPB), Dolby Digital •1920x1080: 50.00i, 24Mbps (IPB), Dolby Digital (Sensor output is 25.00fps) •1920x1080: 50.00i, 17Mbps (IPB), Dolby Digital (Sensor output is 50.00fps)	
VIEWFINDER			Type	Aspect ratio 4:3 / OLED Live View Finder (Approx. 2,359K dots)		
			Field of view / Magnification	Approx. 100% / Approx. 1.34x / 0.67x (35 mm camera equivalent) with 50 mm lens at infinity; ~1.0 m ⁻¹		
			Eye point/Diopter adjustment	Approx. 21 mm from eyepiece lens / ~4.0 to +4.0 [dpt]		
FOCUS	Type	Contrast AF system				
	Focus mode	AFS [Single] / AFF [Flexible] / AFC [Continuous] / MF				
EXPOSURE CONTROL	AF detective range		EV -4 to 18 (ISO 100 equivalent)			
	AF mode		Face/Eye Detection / Tracking / 49-Area / Custom Multi / 1-Area / Pinpoint (Full area touch is available), Continuous AF (during motion picture recording), MF Assist, Touch MF Assist, Focus Peaking, Touch AF/AE Function, Touch Pad AF, Touch Shutter			
	Light metering system		1,728-zone multi-pattern sensing system			
	Light metering mode		Multiple / Center Weighted / Spot			
	Metering range		EV0 to 18 (F2.0 lens, ISO 100 equivalent)			
	Exposure mode		Program AE, Aperture Priority AE / Shutter Priority AE / Manual exposure (M)			
	ISO sensitivity [Standard Output Sensitivity]		Auto / Intelligent ISO / 100 (Extended) / 200 / 400 / 800 / 1600 / 3200 / 6400 / 12800 / 25600 (Changeable to 1/3 EV step) (Up to ISO 6400 in motion picture recording) (ISO Auto in M mode), Creative Control			
	Exposure compensation		1/3 EV Step ±5EV (±3 EV for motion image)			
	AE bracket		3, 5, 7 frames in 1/3, 2/3 or 1 EV Step, Max. ±3 EV, single/burst			
	WHITE BALANCE	White balance		Auto White Balance / Daylight/Cloudy / Shade/Incandescent lights / Flash / White set1 / White set2 / White set3 / White set4 / White Balance K set		
Type		Focal-plane shutter				
SHUTTER	Shutter speed		Still image: Bulb (Max. 60 minutes), 1/8,000 to 60 Motion picture: 59.94Hz: 1/16,000 to 1/30, 50.00Hz: 1/16,000 to 1/25, 23.98Hz: 1/16,000 to 1/24 (When using Synchro Scan)			
	Shutter life		Approx. 200,000 images			
	Self timer / Remote control		2 sec or 10 sec, 3 images / 2 sec / 10 sec, DMW-RSL1 (Optional)			
	BURST SHOOTING		Mechanical shutter: 12 frames/sec (with AFS) / 7 frames/sec (with AFC) Electronic shutter: 40 frames/sec			
BURST SHOOTING	Burst speed (In case SDHC Memory Card is used)		Approx. 100 Images (when there are no RAW files) Approx. 40 Images (when there are RAW files with the particular speed) Approx. 120 Images (when using electronic shutter) (depending on memory card size, battery power, picture size, and compression)			
	Number of recordable images		Approx. 100 Images (when there are no RAW files) Approx. 40 Images (when there are RAW files with the particular speed) Approx. 120 Images (when using electronic shutter) (depending on memory card size, battery power, picture size, and compression)			
MINIMUM ILLUMINATION				Approx. 6 lx [when L-Low light is used, the shutter speed is 1/30th of a second (When [System Frequency] is set to [59.94 Hz (NTSC)]) or 1/25th (When [System Frequency] is set to [50.00 Hz (PAL)])] [When the Interchangeable lens (H-HS12035) is used]		

MONITOR	Typ / Field of view		3.0 inches OLED Monitor (3:2) (Approx. 1,040,000 dots) (field of view ratio about 100%) Touch screen		
FLASH	Built in flash type		TTL Built-in-Flash, GN12 equivalent (ISO100 × m) / GN17 equivalent (ISO200 × m), Built-in Pop-up (Reference) Lighting angle: 24mm (35mm camera equivalent)		
	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.		
	Flash output adjustment		1/3EV Step ±3EV		
	Synchronization speed		Less than 1/250 second		
DIGITAL ZOOM			2x, 4x		
EXTRA TELE CONVERSION	Still image		Max. 2x (Aspect ratio sets at 4:3. Not effective with L size recording. Magnification ratio depends on the recording pixels and aspect ratio.)		
	Motion picture		2.4x (FHD), 3.6x (HD), 4.8x (VGA)		
DIRECTION DETECTION FUNCTION			Yes		
CREATIVE VIDEO MODE	Exposure Mode		Program AE/ Aperture-Priority / Shutter-Priority / Manual Exposure		
	Variable frame rate	59.94 Hz	MOV / FHD / 100Mbps / 29.97p, MP4(LPCM) / FHD / 100Mbps/29.97p: 2 / 15 / 26 / 28 / 30 / 32 / 34 / 45 / 60 / 75 / 90 / 96 fps MOV / FHD / 100Mbps/23.98p, MP4(LPCM) / FHD / 100Mbps / 23.98p: 2 / 12 / 20 / 22 / 24 / 26 / 28 / 36 / 48 / 60 / 72 / 84 / 96 fps AVCHD / FHD / 24Mbps / 29.97p: 2 / 15 / 26 / 28 / 30 / 32 / 34 / 45 / 60fps AVCHD / FHD / 24Mbps / 23.98p: 2 / 12 / 20 / 22 / 24 / 26 / 28 / 36 / 48 / 60fps		
			50.00 Hz	MOV / FHD / 100Mbps / 25.00p, MP4(LPCM) / FHD / 100Mbps / 25.00p: 2 / 12 / 21 / 23 / 25 / 27 / 30 / 37 / 50 / 62 / 75 / 96fps AVCHD / FHD / 24Mbps / 25.00p: 2 / 12 / 21 / 23 / 25 / 27 / 30 / 37 / 50fps	
	24.00Hz	MOV / FHD / 100Mbps / 24.00p, MP4(LPCM) / FHD / 100Mbps / 24.00p: 2 / 12 / 20 / 22 / 24 / 26 / 28 / 36 / 48 / 60 / 72 / 84 / 96fps			
		PHOTO STYLE			Standard / Vivid / Natural / Monochrome / Scenery / Portrait / Custom / Cinelike D* / Cinelike V* *When Creative Video Mode is selected.
	MICROPHONE / SPEAKER			Yes (stereo) /Yes (monaural)	
LANGUAGE			English, German, French, Italian, Spanish, Polish, Czech, Hungarian, Russian, Chinese (Traditional), Chinese (Simplified), Dutch, Thai, Korean, Turkish, Portuguese, Arabic, Persian, Japanese, Swedish, Danish, Finnish, Greek, Vietnamese *Check the website of Panasonic sales company in your country / region or ask customer support for details of the OSD language available on the products sold in your country / region.		
INTERFACE	USB		USB 2.0 High Speed Multi		
	HDMI**		micro HDMI TypeD		
	AV output		NTSC/PAL Composite (Switched by [System Frequency]) Audio line output (monaural)		
	Remote input		φ2.5 mm for remote, DMW-RSL1 (option)		
	External microphone input		φ3.5 mm for external microphone		
Headphone output			φ3.5 mm for headphone		
Wi-Fi/NFC			Yes (IEEE 802.11b/g/n) / Yes (ISO/IEC 18092, NFC-F (Passive Mode))		
POWER	Battery		Li-ion Battery Pack (7.2 V, 1860mAh) (Included), Battery Charger		
	Battery life [CIPA standard]		Approx. 530 images with H-HS12035, Approx. 530 images with H-FS14140		
	Continuous recordable time (Motion picture)		4K: Approx. 180 min with H-FS14140		
	Actual recordable time (Motion picture)		4K: Approx. 90 min with H-FS14140		
DIMENSIONS / WEIGHT	Dimensions (W × H × D)		132.9 mmx 93.4 mmx 83.9 mm / 5.23 inchesx 3.68 inches x 3.30 inches (excluding protrusions)		
	Weight		Approx. 560g / 19.75 oz (SD card, Battery, Body) Approx. 480g / 16.93 oz (Body only) Approx. 825g / 29.10 oz (SD card, Battery, H-FS14140 lens included)		
OPERATING ENVIRONMENT	Operating temperature		0°C to 40°C (32°F to 104°F)		
	Operating humidity		10% to 80%		
STANDARD ACCESSORIES	Software		PHOTOfunSTUDIO 9.5 PE (Windows XP / Vista / 7 / 8), SILKYPIX® Developer Studio 4.1 SE (Windows XP / Vista / 7 / 8, Mac OS X v10.5 / v10.6 / v10.7 / v10.8), LoLoScope (trial version) (Windows XP / Vista / 7 / 8)		
	Standard accessories		Battery Charger (AC Cable included), Battery Pack, Body Cap, Hot Shoe Cover, USB Connection Cable, Shoulder Strap, DVD		

About motion picture recording

- Motion picture can be recorded up to 29 min 59 sec depending on the recording format and the camera's sales area.
- Use a card with SD Speed Class with "UHS-I Speed Class 3 (U3)" when recording motion pictures in [4K/100Mbps] [C4K/100Mbps] [FHD/100Mbps] or [FHD/200Mbps].
- Use a card with SD Speed Class with "UHS-I Speed Class 1 (U1)" or higher when recording motion pictures in [FHD/50Mbps].
- Use a card with SD Speed Class with "Class 4" or higher when recording motion pictures in [FHD/28Mbps].
- (SD speed class is the speed standard regarding continuous writing.)
- The actual recordable time refers to the time that is recorded when repeatedly starting/stopping recording, turning the unit on/off, moving the zoom lever etc. The continuous recordable time refers to the recordable time when recording without pause, powering on/off etc. (They change according to environment and conditions.)

** For [4K] or [C4K] video output, use an HDMI cable that has the HDMI logo on it, and that is described as "4K compatible".

About the performance of Face Recognition function

Recognition performance varies greatly depending on shooting conditions, i.e., according to factors such as angles, facial expression and lighting, so operation under all conditions cannot be guaranteed. Because the camera searches for faces that are similar to registered faces, there are cases where the faces are not correctly recognized when the registered image and the shooting image varies much. When facial characteristics are similar, particularly between parents and their children or brothers and sisters, the camera may not distinguish the faces.

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