



LUMIX S1H (DC-S1H)
Full-Frame Mirrorless Camera

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.
Lens mount	L-Mount

IMAGE SENSOR

Type	35mm full-frame (35.6mm x 23.8mm) CMOS sensor
Camera effective pixels / Total pixels	24.20 megapixels / 25.28 megapixels
Aspect ratio / Color filter	3:2 / Primary color filter
Dust reduction system	Supersonic wave filter

LATITUDE

LATITUDE	14+ stops (V-Log)
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STILL IMAGE

Recording file format	Still image	JPEG (DCF, Exif 2.31), RAW, HLG Photo (CTA-2072)
	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)) Extracted still images: JPEG (DCF, Exif 2.31)

Aspect ratio	Aspect ratio	4:3 / 3:2 / 16:9 / 1:1 / 65:24 / 2:1
File size (Pixels)	When using full-frame lenses, 3:2	6000x4000(L) / 4272x2848(M) / 3024x2016(S) / 12000x8000(XL)* *High Resolution Mode. RAW file. 5184x3456(6K PHOTO) / 3504x2336(4K PHOTO) / 5984x4000(HLG PHOTO, Full-Res.) / 3232x2160(HLG PHOTO, 4K-Res.)
	When using full-frame lenses, 4:3	5328x4000(L) / 3792x2848(M) / 2688x2016(S) / 10656x8000(XL)* *High Resolution Mode. RAW file. 4992x3744(6K PHOTO) / 3328x2496(4K PHOTO) / 5312x3984(HLG PHOTO, Full-Res.) / 2880x2160(HLG PHOTO, 4K-Res.)
	When using full-frame lenses, 16:9	6000x3368(L) / 4272x2400(M) / 3024x1704(S) / 12000x6736(XL)* *High Resolution Mode. RAW file. 3840x2160(4K PHOTO) / 5888x3312(HLG PHOTO, Full-Res.) / 3840x2160(HLG PHOTO, 4K-Res.)
	When using full-frame lenses, 1:1	4000x4000(L) / 2848x2848(M) / 2016x2016(S) / 8000x8000(XL)* *High Resolution Mode. RAW file. 2880x2880(4K PHOTO) / 4000x4000(HLG PHOTO, Full-Res.) / 2144x2144(HLG PHOTO, 4K-Res.)
	When using full-frame lenses, 65:24	6000x2208(L)
	When using full-frame lenses, 2:1	6000x3000(L)
	When using Super 35mm (APS-C) lenses, 3:2	3888x2592(L) / 2784x1856(M) / 1968x1312(S) / 3504x2336(4K PHOTO)
	When using Super 35mm (APS-C) lenses, 4:3	3536x2656(L) / 2560x1920(M) / 1840x1376(S) / 3328x2496(4K PHOTO)
	When using Super 35mm (APS-C) lenses, 16:9	4064x2288(L) / 2816x1584(M) / 1920x1080(S) / 3840x2160(4K PHOTO)
	When using Super 35mm (APS-C) lenses, 1:1	2656x2656(L) / 1920x1920(M) / 1376x1376(S) / 2880x2880(4K PHOTO)
Image quality	RAW / RAW+Fine / RAW+Standard / Fine / Standard	
Color space	sRGB, AdobeRGB	

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)) AVCHD Progressive, AVCHD (Audio format: Dolby Audio (2ch))
System frequency	59.94Hz / 50.00Hz / 24.00Hz

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

59.94Hz Full-frame

[6K] 5952x3968 (3:2) 23.98p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[5.4K] 5376x3584 (3:2) 29.97p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[5.9K] 5888x3312 29.97p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[5.9K] 5888x3312 23.98p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[C4K] 4096x2160 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.
[C4K] 4096x2160 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.
[4K] 3840x2160 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.
[4K] 3840x2160 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.
[FHD] 1920x1080 119.88p, 150Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[FHD] 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.
[FHD] 1920x1080 59.94i, 100Mbps (4:2:2 10-bit ALL-Intra)* / 50Mbps (4:2:2 10-bit LongGOP)* (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.
[FHD] 1920x1080 47.95p, 100Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[FHD] 1920x1080 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.
[FHD] 1920x1080 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.

59.94Hz Super 35mm / Pixel by Pixel

[C4K] 4096x2160 59.94p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[C4K] 4096x2160 59.94p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio)
[C4K] 4096x2160 47.95p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[C4K] 4096x2160 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.
[C4K] 4096x2160 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.
[4K] 3840x2160 59.94p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[4K] 3840x2160 59.94p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio)
[4K] 3840x2160 47.95p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[4K] 3840x2160 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.
[4K] 3840x2160 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) 47.95p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[Anamorphic 4K] 3328x2496 (4:3) 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.
[Anamorphic 4K] 3328x2496 (4:3) 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.
[FHD] 1920x1080 119.88p, 150Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *When Super 35mm is selected. HLG is selectable.
[FHD] 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.
[FHD] 1920x1080 59.94i, 100Mbps (4:2:2 10-bit ALL-Intra)* / 50Mbps (4:2:2 10-bit LongGOP)* (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.
[FHD] 1920x1080 47.95p, 100Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[FHD] 1920x1080 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.
[FHD] 1920x1080 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.

50.00Hz Full-frame

[5.4K] 5376x3584 (3:2) 25.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[5.9K] 5888x3312 25.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[C4K] 4096x2160 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.
[4K] 3840x2160 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.
[FHD] 1920x1080 100.00p, 150Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[FHD] 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.
[FHD] 1920x1080 50.00i, 100Mbps (4:2:2 10-bit ALL-Intra)* / 50Mbps (4:2:2 10-bit LongGOP), (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.
[FHD] 1920x1080 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.

50.00Hz Super 35mm / Pixel by Pixel

[C4K] 4096x2160 50.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[C4K] 4096x2160 50.00p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio)
[C4K] 4096x2160 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.

[4K] 3840x2160 50.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[4K] 3840x2160 50.00p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio)
[4K] 3840x2160 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.
[Anamorphic 4K] 3328x2496 (4:3) 50.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[Anamorphic 4K] 3328x2496 (4:3) 50.00p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio)
[Anamorphic 4K] 3328x2496 (4:3) 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.
[FHD] 1920x1080 100.00p, 150Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *When Super 35mm is selected. HLG is selectable.
[FHD] 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.
[FHD] 1920x1080 50.00i, 100Mbps (4:2:2 10-bit ALL-Intra)* / 50Mbps (4:2:2 10-bit LongGOP)* (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.
[FHD] 1920x1080 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.

24.00Hz Full-frame

[6K] 5952x3968 (3:2) 24.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[5.9K] 5888x3312 24.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[C4K] 4096x2160 24.00p, 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.
[4K] 3840x2160 24.00p, 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.
[FHD] 1920x1080 48.00p, 100Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[FHD] 1920x1080 24.00p, 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.

24.00Hz Super 35mm / Pixel by Pixel

[C4K] 4096x2160 48.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[C4K] 4096x2160 24.00p, 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.
[4K] 3840x2160 48.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
[4K] 3840x2160 24.00p, 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.
[Anamorphic 4K] 3328x2496 (4:3) 48.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable
[Anamorphic 4K] 3328x2496 (4:3) 24.00p, 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.

[FHD] 1920x1080 48.00p, 100Mbps (4:2:0 10-bit LongGOP)*

(H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.

[FHD] 1920x1080 24.00p, 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.

MP4***

59.94Hz Full-frame

[4K] 3840x2160 29.97p, 72Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, AAC)

[4K] 3840x2160 23.98p, 72Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, AAC)

[4K] 3840x2160 29.97p, 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

[4K] 3840x2160 23.98p, 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

[FHD] 1920x1080 59.94p, 28Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

[FHD] 1920x1080 29.97p, 20Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

[FHD] 1920x1080 23.98p, 24Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

59.94Hz Super 35mm / Pixel by Pixel

[4K] 3840x2160 59.94p, 100Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, AAC)

[4K] 3840x2160 29.97p, 72Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, AAC)

[4K] 3840x2160 23.98p, 72Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, AAC)

[4K] 3840x2160 29.97p, 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

[4K] 3840x2160 23.98p, 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

[FHD] 1920x1080 59.94p, 28Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

[FHD] 1920x1080 29.97p, 20Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

[FHD] 1920x1080 23.98p, 24Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

50.00Hz Full-frame

[4K] 3840x2160 25.00p, 72Mbps (4:2:0 10-bit LongGOP)(H.265/HEVC, AAC)

[4K] 3840x2160 25.00p, 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

[FHD] 1920x1080 50.00p, 28Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

[FHD] 1920x1080 25.00p, 20Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

50.00Hz Super 35mm / Pixel by Pixel

[4K] 3840x2160 50.00p, 100Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, AAC)

[4K] 3840x2160 25.00p, 72Mbps (4:2:0 10-bit LongGOP) (H.265/HEVC, AAC)

[4K] 3840x2160 25.00p, 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

[FHD] 1920x1080 50.00p, 28Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

[FHD] 1920x1080 25.00p, 20Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)

	24.00Hz Full-frame / Super 35mm / Pixel by Pixel	-
AVCHD Progressive*** / AVCHD***	59.94Hz Full-frame / Super 35mm / Pixel by Pixel	[FHD] 1920x1080 59.94p (Sensor output is 59.94fps), 28Mbps (4:2:0 8-bit LongGOP) (Dolby) [FHD] 1920x1080 59.94i (Sensor output is 59.94fps), 17Mbps (4:2:0 8-bit LongGOP) (Dolby) [FHD] 1920x1080 59.94i (Sensor output is 29.97fps), 24Mbps (4:2:0 8-bit LongGOP) (Dolby) [FHD] 1920x1080 23.98p (Sensor output is 23.98fps), 24Mbps (4:2:0 8-bit LongGOP) (Dolby)
	50.00Hz Full-frame / Super 35mm / Pixel by Pixel	[FHD] 1920x1080 50.00p (Sensor output is 50.00fps), 28Mbps (4:2:0 8-bit LongGOP) (Dolby) [FHD] 1920x1080 50.00i (Sensor output is 50.00fps), 17Mbps (4:2:0 8-bit LongGOP) (Dolby) [FHD] 1920x1080 50.00i (Sensor output is 25.00fps), 24Mbps (4:2:0 8-bit LongGOP) (Dolby)
	24.00Hz Full-frame / Super 35mm / Pixel by Pixel	-
Continuous recordable time	Continuous recordable time (Motion picture)***	AVCHD [FHD/60p]: Approx. 160 min (Full-frame), 140 min (Super 35mm), 150 min (Pixel by Pixel) *When using S-R24105. When the battery is fully charged. MP4 [4K/60p]: Approx. 120 min (Super 35mm, Pixel by Pixel) *When using S-R24105. When the battery is fully charged. MOV [C4K/24p/4:2:2 10-bit/ALL-Intra]: Approx. 130 min (Full-frame, Super 35mm, Pixel by Pixel) *When using S-R24105. When the battery is fully charged.
Actual recordable time	Actual recordable time (Motion picture)***	AVCHD [FHD/60p]: Approx. 80 min (Full-frame), 70 min (Super 35mm), 75 min (Pixel by Pixel) *When using S-R24105. When the battery is fully charged. MP4 [4K/60p]: Approx. 60 min (Super 35mm, Pixel by Pixel) *When using S-R24105. When the battery is fully charged. MOV [C4K/24p/4:2:2 10-bit/ALL-Intra]: Approx. 65 min (Full-frame, Super 35mm, Pixel by Pixel) *When using S-R24105. When the battery is fully charged.

VARIABLE FRAME RATE

MOV***	59.94Hz Full-frame	[FHD] 1920x1080 59.94p (Maximum output of sensor is 180fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)* [FHD] 1920x1080 29.97p (Maximum output of sensor is 180fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)* [FHD] 1920x1080 23.98p (Maximum output of sensor is 180fps), 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 151 or more.
	59.94Hz Super 35mm	[C4K] 4096x2160 29.97p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM) [C4K] 4096x2160 23.98p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM) [4K] 3840x2160 29.97p (Maximum output of sensor is 60fps), 100Mbps

(4:2:0 8-bit LongGOP) (LPCM)
[4K] 3840x2160 23.98p (Maximum output of sensor is 60fps), 100Mbps
(4:2:0 8-bit LongGOP) (LPCM)
[Anamorphic 4K] 3328x2496 (4:3) 29.97p (Maximum output of sensor is
60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[Anamorphic 4K] 3328x2496 (4:3) 23.98p (Maximum output of sensor is
60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[FHD] 1920x1080 59.94p (Maximum output of sensor is 180fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)*
[FHD] 1920x1080 29.97p (Maximum output of sensor is 180fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)*
[FHD] 23.98p (Maximum output of sensor is 180fps), 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
151 or more.

59.94Hz Pixel by Pixel

[C4K] 4096x2160 29.97p (Maximum output of sensor is 60fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[C4K] 4096x2160 23.98p (Maximum output of sensor is 60fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[4K] 3840x2160 29.97p (Maximum output of sensor is 60fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[4K] 3840x2160 23.98p (Maximum output of sensor is 60fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[Anamorphic 4K] 3328x2496 (4:3) 29.97p (Maximum output of sensor is
50fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[Anamorphic 4K] 3328x2496 (4:3) 23.98p (Maximum output of sensor is
48fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[FHD] 1920x1080 29.97p (Maximum output of sensor is 60fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[FHD] 1920x1080 23.98p (Maximum output of sensor is 60fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)

50.00Hz Full-frame

[FHD] 1920x1080 50.00p (Maximum output of sensor is 180fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)*
[FHD] 1920x1080 25.00p (Maximum output of sensor is 180fps), 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
151 or more.

50.00Hz Super 35mm

[C4K] 4096x2160 25.00p (Maximum output of sensor is 60fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[4K] 3840x2160 25.00p (Maximum output of sensor is 60fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[Anamorphic 4K] 3328x2496 (4:3) 25.00p (Maximum output of sensor is
50fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[FHD] 1920x1080 50.00p (Maximum output of sensor is 180fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)*
[FHD] 1920x1080 25.00p (Maximum output of sensor is 180fps), 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
151 or more.

50.00Hz Pixel by Pixel

[C4K] 4096x2160 25.00p (Maximum output of sensor is 60fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[4K] 3840x2160 25.00p (Maximum output of sensor is 60fps), 100Mbps
(4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
[Anamorphic 4K] 3328x2496 (4:3) 25.00p (Maximum output of sensor is
50fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)

		[FHD] 1920x1080 24.00p (Maximum output of sensor is 180fps), 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 151 or more.
	24.00Hz Full-frame	[FHD] 1920x1080 24.00p (Maximum output of sensor is 180fps), 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 151 or more.
	24.00Hz Super 35mm	[C4K] 4096x2160 24.00p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM) [4K] 3840x2160 24.00p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM) [Anamorphic 4K] 3328x2496 (4:3)24.00p (Maximum output of sensor is 48fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM) [FHD] 1920x1080 24.00p (Maximum output of sensor is 180fps), 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 151 or more.
	24.00Hz Pixel by Pixel	[C4K] 4096x2160 24.00p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM) [4K] 3840x2160 24.00p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM) [Anamorphic 4K] 3328x2496 (4:3) 24.00p (Maximum output of sensor is 48fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM) [FHD] 1920x1080 24.00p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
AVCHD Progressive*** / AVCHD***	59.94Hz Full-frame / Super 35mm / Pixel by Pixel	[FHD] 1920x1080 59.94i (Maximum output of sensor is 60fps), 24Mbps (4:2:0 8-bit LongGOP) (Dolby) [FHD] 1920x1080 23.98p (Maximum output of sensor is 60fps), 24Mbps (4:2:0 8-bit LongGOP) (Dolby)
	50.00Hz Full-frame / Super 35mm / Pixel by Pixel	[FHD] 1920x1080 50.00i (Maximum output of sensor is 60fps), 24Mbps (4:2:0 8-bit LongGOP) (Dolby)

HDMI RAW DATA OUTPUT

Compatible external devices	Compatible external devices	ATOMOS Ninja V 4K HDR Monitor-Recorder (AtomosOS 10.52 or higher)***** Blackmagic Video Assist 5" 12G HDR, Blackmagic Video Assist 7" 12G HDR (version 3.4 or higher)***** *This does not guarantee all of the capabilities that the compatible external recorder may have.
Rec quality	NTSC (59.94Hz) Full-frame	[5.9K] 5888x3312 29.97p, 12-bit (LPCM, High-Res Audio) [5.9K] 5888x3312 23.98p, 12-bit (LPCM, High-Res Audio)
	NTSC (59.94Hz) Super 35mm	[4K] 4128x2176 (17:9) 59.94p, 12-bit (LPCM, High-Res Audio) [4K] 4128x2176 (17:9) 29.97p, 12-bit (LPCM, High-Res Audio) [4K] 4128x2176 (17:9) 23.98p, 12-bit (LPCM, High-Res Audio) [Anamorphic 3.5K] 3536x2656 (4:3) 29.97p, 12-bit (LPCM, High-Res Audio)

[Anamorphic 3.5K] 3536x2656 (4:3) 23.98p, 12-bit (LPCM, High-Res Audio)

PAL (50.00Hz) Full-frame

[5.9K] 5888x3312 25.00p, 12-bit (LPCM, High-Res Audio)

PAL (50.00Hz) Super 35mm

[4K] 4128x2176 (17:9) 50.00p, 12-bit (LPCM, High-Res Audio)

[4K] 4128x2176 (17:9) 25.00p, 12-bit (LPCM, High-Res Audio)

[Anamorphic 3.5K] 3536x2656 (4:3) 50.00p, 12-bit (LPCM, High-Res Audio)

[Anamorphic 3.5K] 3536x2656 (4:3) 25.00p, 12-bit (LPCM, High-Res Audio)

Audio format

LPCM (2ch 48kHz/16-bit, 48kHz/24-bit*, 96kHz/24-bit*) *High-res audio is selectable only when using the DMW-XLR1 (sold separately).

VIEWFINDER

Type

OLED Live View Finder

Pixels

Approx. 5.76 million dots

Field of view / Magnification

Approx. 100% / Approx. 0.78x with 50 mm lens at infinity; -1.0 m-1, when the aspect ratio is set to 3:2

Eye point / Diopter adjustment

Approx. 21 mm at infinity; -1.0 m-1 / -4.0 - +2.0 (dpt)

Eye sensor

Yes

Display speed

120fps / 60fps

Display time lag

Approx. 0.005sec

REAR MONITOR

Type

TFT LCD monitor with static touch control

Monitor size

Tilt free-angle, 3.2-inch (8.0cm), 3:2 aspect

Pixels

Approx. 2.33 million dots

Field of view

Approx. 100%

STATUS LCD

STATUS LCD

1.8-inch, 303 x 230 dots (effective pixels 287 x 214 dots), Monochrome LCD monitor

FOCUS

Type

Contrast AF system

DFD technology	Yes
Focus mode	AFS (Single) / AFC (Continuous) / MF
AF mode	Auto Detection (Face, Eye, Body, Animal) / Tracking / 225-Area / Zone (Vertical/Horizontal) / Zone (Square) / Zone (Oval) / 1-Area+* / 1-Area* / Pinpoint / Custom 1, 2, 3 (Full area touch is available) (Scalable AF frame size and flexible AF position) *Human/Animal Detection AF can be set ON or OFF.*****
AF detective range	EV -6 - 20 (F1.4, ISO100 equivalent, AFS)
AF custom setting	AF Sensitivity, AF Area Switching Sensitivity, Moving Object Prediction
AF assist lamp	Yes
AF lock	Set the Fn button in custom menu to AF lock
Post Focus / Focus Stacking	Yes / Yes
Others	AF-ON, Shutter AF, Half Press Release, Focus/Shutter Priority, Quick AF, Continuous AF (during motion picture recording), Eye Sensor AF, AF-Point Scope Setting, AF+MF, MF Guide, MF Assist, Touch MF Assist, Focus Peaking, Touch AF/AE Function, Touch Pad AF, Touch Shutter, Focus Switching for Vert/Hor, Focus Ring Lock, Show/Hide AF Mode, 1-Area AF Moving Speed, Loop Movement Focus Frame, AFC Start Point (225-Area), Lens Focus Resume, Focus Ring Control

EXPOSURE CONTROL

Light metering system	1,728-zone multi-pattern sensing system
Light metering mode	Multiple / Center Weighted / Spot / Highlight Weighted
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 / 50* / 100 / 200 / 400 / 800 / 1600 / 3200 / 6400 / 12800 / 25600 / 51200 / 102400* / 204800* (Changeable to 1/3 EV step) *Extended ISO
Dual Native ISO	<p>[Normal] Native ISO: 100, 640 Auto: Auto / 50* / 100-51200 / 102400* / 204800* *Extended ISO Low: Auto / 50* / 100-800 *Extended ISO High: Auto / 320* / 640-51200 / 102400* / 204800* *Extended ISO</p> <p>[V-Log] Native ISO: 640, 4000 Auto: Auto / 320* / 640-51200 *Extended ISO Low: Auto / 320* / 640-5000 *Extended ISO High: Auto / 2000* / 4000-51200 *Extended ISO</p> <p>[HLG] Native ISO: 400, 2500 Auto: Auto / 400-51200 / 102400* / 204800* *Extended ISO</p>

Low: Auto / 400-3200
High: Auto / 2500-51200 / 102400* / 204800* *Extended ISO

[Cinelike D2 / Cinelike V2]
Native ISO: 200, 1250
Auto: Auto / 100* / 200-51200 / 102400* / 204800* *Extended ISO
Low: Auto / 100* / 200-1600 *Extended ISO
High: Auto / 640* / 1250-51200 / 102400* / 204800* *Extended ISO

Exposure compensation	1/3 EV step ± 5 EV (± 3 EV for motion picture)
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AE lock	Set the Fn button in custom menu to AE lock
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IMAGE STABILIZATION SYSTEM

IMAGE STABILIZATION SYSTEM	Image sensor shift type (5-axis / 6.0-stop*) *Based on the CIPA standard [Yaw/Pitch direction: focusing distance $f=50$ mm when S-X50 is used.] Dual I.S. (6.5-stop* Dual I.S. 2 compatible) *Based on the CIPA standard [Yaw/Pitch direction: focusing distance $f=105$ mm when S-R24105** is used. focusing distance $f=200$ mm when S-R70200** is used.] **Firmware must be updated to the latest version.
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WHITE BALANCE

White balance	AWB / AWBc / AWBw / Daylight / Cloudy / Shade / Incandescent / Flash / White Set 1, 2, 3, 4 / Color temperature setting 1, 2, 3, 4
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White balance adjustment	Blue/Amber bias, Magenta/Green bias
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Color temperature setting	2500-10000K in 100K
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SHUTTER

Type	Focal-plane shutter
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Shutter speed	Still image: Bulb (Max. 30 minutes), 1/8,000 - 60 Electronic front curtain shutter: Bulb (Max. 30 minutes), 1/2,000 - 60 Electronic shutter: Bulb (Max. 60 sec), 1/8,000 - 60 Motion picture: 1/16,000 - 1/25 (When using Synchro Scan) Creative Video M mode / MF mode: 1/16,000 - 1/2
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Shutter life	Approx. 400,000 images
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Self timer	10sec, 3 images / 2sec / 10sec
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Remote control	Remote control by DMW-RS2 (sold separately)
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Silent mode / Shutter type	Yes / Yes (Auto / Mechanical / Electronic front curtain / Electronic / Electronic+NR)
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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 10 levels
White balance bracket	3 images in blue/amber axis or in magenta/green axis, color temperature setting

BURST SHOOTING

Burst speed	Mechanical shutter / Electronic front curtain shutter	AFS/MF: H: 9 frames/sec, M: 5 frames/sec (with Live View), L: 2 frames/sec (with Live View) AFC: H: 6 frames/sec (with Live View), M: 5 frames/sec (with Live View), L: 2 frames/sec (with Live View)
	Electronic shutter	AFS/MF: H: 9 frames/sec, M: 5 frames/sec (with Live View), L: 2 frames/sec (with Live View) AFC: H: 5 frames/sec (with Live View), M: 5 frames/sec (with Live View), L: 2 frames/sec (with Live View)
Number of recordable images	RAW / RAW+JPEG: More than 60 images JPEG: More than 999 images (When using a card with SD Speed Class with "UHS-II UHS Speed Class 3 (U3)".) * Until the burst shooting speed slows. When recording is performed under the test conditions specified by Panasonic.	

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.)

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 only.
Flash synchronization	1st Curtain Sync, 2nd Curtain Sync.
Flash output adjustment	1/3EV step ±3EV
Synchronization speed	Less than 1/320 second *The guide number decreases at 1/320 second. Only when set to M mode or S mode.
Wireless control	Yes (When using DMW-FL200L / FL360L / FL580L (sold separately)), Wireless Channel: 1ch/2ch/3ch/4ch
Flash sync socket	Yes

EXTRA TELE CONVERSION

EXTRA TELE CONVERSION 2.0x (EX S) (When using full-frame lenses), 1.9x (EX S) (When using Super 35mm (APS-C) lenses), 1.4x (EX M)
*Only for still image recording.

PHOTO STYLE

Photo Style Standard / Vivid / Natural / Flat / Landscape / Portrait / Monochrome / L. Monochrome / L. Monochrome D / Cinelike D2 / Cinelike V2 / Like709 / V-Log / Standard (HLG) / Monochrome (HLG) / Like2100 / My Photo Style 1-10

Picture adjustment Contrast / Highlight / Shadow / Saturation / Color Tone / Hue / Filter Effect / Grain Effect / Sharpness / Noise Reduction / Dual Native ISO Setting / ISO / WB
*Adjustable settings vary depending on the Photo Style mode.

FILTER

FILTER 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.

MOTION PICTURE FUNCTION

Vertical Position Information ON / OFF

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

LUT display LUT View Assist (Monitor) / LUT View Assist (HDMI)

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

Knee control Yes (in Like709 mode)

FUNCTION BUTTON

REC

Exposure Comp. / Dual Native ISO Setting / Sensitivity / White Balance / Photo Style / Metering Mode / Aspect Ratio / Picture Quality / Picture Size / HLG Photo / High Resolution Mode / 1 Shot Spot Metering / Long Exposure NR / Min. Shutter Speed / 1 Shot RAW+JPG / i.Dynamic Range / Filter Effect / One Push AE / Touch AE / Exposure Mode / Synchro Scan / AF Mode / AF Custom Setting(Photo) / AF Custom Setting(Video) / Focus Peaking / Focus Peaking Sensitivity / 1-Area AF Moving Speed / Focus Ring Lock / AE LOCK / AF LOCK / AF/AE LOCK / AF-ON / AF-ON: Near Shift / AF-ON: Far Shift / AF-Point Scope / Focus Area Set / Flash Mode / Flash Adjust. / Wireless Flash Setup / Drive Mode / 1 Shot "6K/4K PHOTO" / Bracketing / Silent Mode / Image Stabilizer / Shutter Type / Ex. Tele Conv. / Flicker Decrease (Photo) / Post-Focus / Motion Pic. Rec Format / Motion Pic. 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 / Mic. Directivity Adjust / Image Stabilizer / E-Stabilization (Video) / Boost I.S. (Video) / Image Area of Video / Focus Transition / Live Cropping / Q.MENU / Rec / Playback Switch / Video Record / LVF/Monitor Switch / LVF Magnification / Dial Operation Switch / Preview / Preview Aperture Effect***** / Constant Preview / Level Gauge / Histogram / Luminance Spot Meter / Video Frame Marker / Photo Grid Line / Live View Boost / Monochrome Live View / Night Mode / LVF/Monitor Disp. Style / Video-Priority Display / Status-LCD Display (Video) / Zebra Pattern / LUT View Assist (Monitor) / LUT View Assist (HDMI) / LUT Select / HLG View Assist(Monitor) / HLG View Assist (HDMI) / Sheer Overlay / I.S. Status Scope / WFM/Vector Scope / Anamorphic Desqueeze Display / Color Bars / Focus Ring Control/ Zoom Control / Destination Card Slot / Wi-Fi / Fan Mode / No Setting / Off (Disable Press and Hold)***** / Restore to Default

PLAY

Magnify from AF Point / LUT View Assist (Monitor) / HLG View Assist (Monitor) / Anamorphic Desqueeze Display / RAW Processing / 6K/4K PHOTO Bulk Saving / Delete Single / Protect / Rating 1, 2, 3, 4, 5 / Copy / Rec/Playback Switch / LVF/Monitor Switch / Video Record / Night Mode / Card Slot Change / Wi-Fi / Fan Mode / Send Image (Smartphone) / LUT View Assist (HDMI) / HLG View Assist (HDMI) / 6K/4K Photo Play / No Setting / Off (Disable Press and Hold)***** / Restore to Default

LEVEL GAUGE

LEVEL GAUGE

Yes

OSD LANGUAGE

OSD LANGUAGE

Japanese, English, German, French, Italian, Spanish, Polish, Czech, Hungarian, Romanian, Netherlandic, Turkish, Portuguese, Finnish, Danish, Swedish, Greek

PRINT

PRINT

PictBridge compatible

INTERFACE

USB

SuperSpeed USB 3.1 Gen1 Type-C

HDMI*****

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].)
Info Display: ON / OFF (selectable)
Down Convert: Auto / 4K/30p/25p / 1080p / 1080i / OFF
HLG View Assist (HDMI): AUTO / MODE1 / MODE2 / OFF (selectable)

Playback

HDMI TypeA / VIERA Link, Audio: Stereo
59.94Hz: Auto / C4K/60p / C4K/30p / 4K/60p / 4K/30p / 1080p / 1080i / 720p / 480p

50.00Hz: Auto / C4K/50p / C4K/25p / 4K/50p / 4K/25p / 1080p / 1080i / 720p / 576p
24.00Hz: Auto / C4K/24p / 4K/24p / 1080p

Remote input	φ2.5mm
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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).
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Headphone output	φ3.5mm
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Microphone	Stereo, Wind Noise Canceller: OFF / Low* / Standard / High *When attaching DMW-MS2 (sold separately).
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XLR microphone	Yes with DMW-XLR1 (sold separately)
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Speaker	Monaural
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SD card slot	Slot 1, Slot 2
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TC IN/OUT	Yes with BNC Converter Cable (bundled)
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Fan	Auto1 / Auto2 / Normal / Slow
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Tally lamp	Yes (front/rear)
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WIRELESS

Wi-Fi	2.4GHz (STA/AP) (IEEE802.11b/g/n) 5GHz (STA) (IEEE 802.11a/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
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Bluetooth	Bluetooth® v4.2 (Bluetooth Low Energy (BLE))
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DUST AND SPLASH RESISTANT*

DUST AND SPLASH RESISTANT*	Yes. *Dust and Splash Resistant does not guarantee that damage will not occur if this camera is subjected to direct contact with dust and water.
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POWER

Battery	Li-ion Battery Pack (7.4V, 3050mAh, 23Wh) (bundled) USB power supply, USB power charging
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Battery life (CIPA standard)	Approx. 400 images (rear monitor), 380 images (LVF), 1,150 images (Power Save LVF mode*) with S-R24105 *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.
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Battery grip	DMW-BGS1 (sold separately)
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DIMENSIONS / WEIGHT

Dimensions (W x H x D) Approx. 151.0 x 114.2 x 110.4 mm / 5.94 x 4.50 x 4.35 inch (excluding protrusions)

Weight Approx. 1,164g / 2.57 lb (SD Memory Card x 1, Battery, Body)
Approx. 1,052g / 2.32 lb (Body only)

OPERATING ENVIRONMENT

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

Operating humidity 10%RH to 80%RH

STANDARD ACCESSORIES

Software	Recording	LUMIX Tether · available for download on 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)
	Playback / Editing	· available for download with this camera. To do this, PHOTOfunSTUDIO 10.1PE is available for download at Panasonic website using computer connected to the Internet. https://panasonic.jp/support/global/cs/soft/download/d_pfs1001pe.html (For Windows) · A 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 Body Cap, Hot Shoe Cover, Eye Cup, Flash Synchro Socket Cap, Cover for the Battery Grip Connector, Shoulder Strap, Battery Pack, Battery Charger, AC Adaptor, AC Mains Lead, USB Connection Cable (C-C), USB Connection Cable (A-C), BNC Converter Cable, Cable Holder

· A 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)

NOTE

NOTE *** 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], [MOV], [VFR], [6K PHOTO] or [4K PHOTO].
(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 [6K] [5.9K] [5.4K] [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.

***** Firmware must be updated to version 2.0 / 2.1 or later.

***** Firmware must be updated to version 2.2.

***** Firmware must be updated to version 2.4.