

Clifton Cameras Product Specification

Panasonic DC-BS1H Full-Frame Camcorder Full Spec

TYPE	Type		Digital Single Lens Mirrorless camera		
	Lens mount		L-Mount		
	Recording media		SD Memory Card / SDHC Memory Card* / SDXC Memory Card* *Compatible with UHS-I/UHS-II UHS Speed Class 3 standard SDHC/SDXC Memory Cards and UHS-II Video Speed Class 90 standard SDXC Memory Cards.		
IMAGE SENSOR	Type		35mm full-frame (35.6mm x 23.8mm) CMOS sensor		
	Camera effective pixels / Total pixels		24.20 megapixels / 25.28 megapixels		
	AR (Anti Reflection) coating		Yes		
	Aspect ratio / Color filter		3:2 / Primary color filter		
	Dust reduction system		-		
LATITUDE		14+ stops (V-Log)			
STILL IMAGE	Recording file format		JPEG (DCF, Exif 2.31) *Tethered photo shooting with LUMIX Tether for Multicam software		
	Aspect ratio		3:2		
	File size (Pixels)	When using full-frame lenses		6000x4000(L) / 4272x2848(M) / 3024x2016(S)	
		When using APS-C/Super 35mm lenses		3888x2592(L) / 2784x1856(M) / 1968x1312(S)	
	Image quality		Fine / Standard		
	Color space		sRGB		
MOTION PICTURE	Recording file format		MOV: H.264/MPEG-4 AVC, H.265/HEVC (Audio format: LPCM (2ch 48kHz/16-bit, 48kHz/24-bit*, 96kHz/24-bit*)) *When attaching DMW-XLR1 (sold separately). MP4: H.264/MPEG-4 AVC, H.265/HEVC (Audio format: AAC (2ch))		
	System frequency		59.94Hz / 50.00Hz / 24.00Hz		
	MOV (*1)	59.94 Hz	FULL	[6K] 5952x3968 (3:2)	23.98p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.
	High-res audio is selectable only when using the DMW-XLR1 (sold separately).			[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 (16:9)	29.97p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable. 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. 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] 3840x216 0	29.97p, 400Mbps (4:2:2 10-bit ALL-Intra)* / 150Mbps (4:2:2 10-bit LongGOP)* / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable. 23.98p, 400Mbps (4:2:2 10-bit ALL-Intra)* / 150Mbps (4:2:2 10-bit LongGOP)* / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.
				[FHD] 1920x108 0	119.88p, 150Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable. 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. 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. 47.95p, 100Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable. 29.97p, 200Mbps (4:2:2 10-bit ALL-Intra)* / 100Mbps (4:2:2 10-bit LongGOP)* / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable. 23.98p, 200Mbps (4:2:2 10-bit ALL-Intra)* / 100Mbps (4:2:2 10-bit LongGOP)* / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.
			S35mm / PIXEL/PIXEL	[C4K] 4096x216 0	59.94p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable. 59.94p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) 47.95p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable. 29.97p, 400Mbps (4:2:2 10-bit ALL-Intra)* / 150Mbps (4:2:2 10-bit LongGOP)* / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable. 23.98p, 400Mbps (4:2:2 10-bit ALL-Intra)* / 150Mbps (4:2:2 10-bit LongGOP)* / 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) *HLG is selectable.
				[4K] 3840x216 0	59.94p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable. 59.94p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio) 47.95p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.

					<p>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.</p> <p>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.</p>
				[Anamorphic 4K] 3328x2496 (4:3)	<p>47.95p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.</p> <p>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.</p> <p>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.</p>
				[FHD] 1920x1080	<p>119.88p, 150Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *When S35mm is selected. HLG is selectable.</p> <p>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.</p> <p>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.</p> <p>47.95p, 100Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.</p> <p>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.</p> <p>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.</p>
	50.00 Hz	FULL	[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 (16:9)	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.	

				<p>[FHD] 1920x1080</p> <p>100.00p, 150Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.</p> <p>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.</p> <p>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.</p> <p>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.</p>
			S35mm / PIXEL/PIXEL	<p>[C4K] 4096x2160</p> <p>50.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.</p> <p>50.00p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio)</p> <p>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.</p>
				<p>[4K] 3840x2160</p> <p>50.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.</p> <p>50.00p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio)</p> <p>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.</p>
				<p>[Anamorphic 4K] 3328x2496 (4:3)</p> <p>50.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable.</p> <p>50.00p, 150Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM, High-Res Audio)</p> <p>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.</p>
				<p>[FHD] 1920x1080</p> <p>100.00p, 150Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *When S35mm is selected. HLG is selectable.</p> <p>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.</p> <p>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.</p> <p>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.</p>

		24.00 Hz	FULL	[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 (16:9)	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. 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.		
		S35mm / PIXEL/PI XEL				[C4K] 4096x2160	48.00p, 200Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, LPCM, High-Res Audio) *HLG is selectable. 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. 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. 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. 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 (*1)	59.94 Hz

					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) 29.97p, 20Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC) 23.98p, 24Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)
			S35mm / PIXEL/PI XEL	[4K] 3840x2160	59.94p, 100Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, AAC) *HLG is selectable. 29.97p, 72Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, AAC) *HLG is selectable. 23.98p, 72Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, AAC) *HLG is selectable. 29.97p, 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC) 23.98p, 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)
				[FHD] 1920x1080	59.94p, 28Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC) 29.97p, 20Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC) 23.98p, 24Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)
		50.00 Hz	FULL	[4K] 3840x2160	25.00p, 72Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, AAC) *HLG is selectable. 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) 25.00p, 20Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)
			S35mm / PIXEL/PI XEL	[4K] 3840x2160	50.00p, 100Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, AAC) *HLG is selectable. 25.00p, 72Mbps (4:2:0 10-bit LongGOP)* (H.265/HEVC, AAC) *HLG is selectable. 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) 25.00p, 20Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, AAC)
		24.00 Hz	FULL	-	-
			S35mm / PIXEL/PI XEL	-	-
VARIABLE FRAME RATE	MOV (*1)	59.94 Hz	FULL	[FHD] 1920x1080	59.94p (Maximum output of sensor is 180fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)* 29.97p (Maximum output of sensor is 180fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)*

				<p>23.98p (Maximum output of sensor is 180fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)*</p> <p>*Angle of view narrows if you select a frame rate with a number of frames 151 or more.</p>
		S35mm	<p>[C4K] 4096x2160</p>	<p>29.97p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p> <p>23.98p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p>
			<p>[4K] 3840x2160</p>	<p>29.97p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p> <p>23.98p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p>
			<p>[Anamorphic 4K] 3328x2496 (4:3)</p>	<p>29.97p (Maximum output of sensor is 50fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p> <p>23.98p (Maximum output of sensor is 48fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p>
			<p>[FHD] 1920x1080</p>	<p>59.94p (Maximum output of sensor is 180fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)*</p> <p>29.97p (Maximum output of sensor is 180fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)*</p> <p>23.98p (Maximum output of sensor is 180fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)*</p> <p>*Angle of view narrows if you select a frame rate with a number of frames 151 or more.</p>
		PIXEL/PIXEL	<p>[C4K] 4096x2160</p>	<p>29.97p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p> <p>23.98p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p>
			<p>[4K] 3840x2160</p>	<p>29.97p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p> <p>23.98p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p>
			<p>[Anamorphic 4K] 3328x2496 (4:3)</p>	<p>29.97p (Maximum output of sensor is 50fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p> <p>23.98p (Maximum output of sensor is 48fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p>
			<p>[FHD] 1920x1080</p>	<p>29.97p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)</p>

					23.98p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
		50.00 Hz	FULL	[FHD] 1920x1080	50.00p (Maximum output of sensor is 180fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)* 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.
			S35mm	[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)* 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.
			PIXEL/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	25.00p (Maximum output of sensor is 60fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4 AVC, LPCM)
		24.00 Hz	FULL	[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.
			S35mm	[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]	24.00p (Maximum output of sensor is 48fps), 100Mbps (4:2:0 8-bit LongGOP) (H.264/MPEG-4

				3328x2496 (4:3)	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.	
				PIXEL/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)
				HDMI RAW DATA OUTPUT	Compatible external devices	
Rec quality	59.94 Hz	FULL	[5.9K] 5888x3312 (16:9)	29.97p, 12-bit (LPCM) 23.98p, 12-bit (LPCM)		
			S35mm	[4K] 4128x2176 (17:9)	59.94p, 12-bit (LPCM) 29.97p, 12-bit (LPCM) 23.98p, 12-bit (LPCM)	
		[Anamorphic 3.5K] 3536x2656 (4:3)		29.97p, 12-bit (LPCM) 23.98p, 12-bit (LPCM)		

		50.00 Hz	FULL	[5.9K] 5888x3312 (16:9)	25.00p, 12-bit (LPCM)	
			S35mm	[4K] 4128x2176 (17:9)	50.00p, 12-bit (LPCM) 25.00p, 12-bit (LPCM)	
				[Anamorphic 3.5K] 3536x2656 (4:3)	50.00p, 12-bit (LPCM) 25.00p, 12-bit (LPCM)	
	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).		
IP STREAMING	Protocol			RTP / RTSP		
	Streaming quality	59.94Hz	[4K] 3840x2160	59.94p, 50Mbps / 25Mbps (H.265) 59.94p, 50Mbps / 25Mbps (H.264) 29.97p, 25Mbps / 12.5Mbps (H.265) 29.97p, 25Mbps / 12.5Mbps (H.264)		
			[FHD] 1920x1080	59.94p, 20Mbps / 16Mbps (H.265) 59.94p, 16Mbps / 8Mbps (H.264) 29.97p, 12Mbps / 6Mbps (H.265) 29.97p, 6Mbps / 3Mbps (H.264)		
			[HD] 1280x720	59.94p, 6Mbps (H.264) 29.97p, 4Mbps (H.264)		
			[4K] 3840x2160	50.00p, 50Mbps / 25Mbps (H.265) 50.00p, 50Mbps / 25Mbps (H.264) 25.00p, 25Mbps / 12.5Mbps (H.265) 25.00p, 25Mbps / 12.5Mbps (H.264)		
		50.00Hz	[FHD] 1920x1080	50.00p, 20Mbps / 16Mbps (H.265) 50.00p, 16Mbps / 8Mbps (H.264) 25.00p, 12Mbps / 6Mbps (H.265) 25.00p, 6Mbps / 3Mbps (H.264)		
			[HD] 1280x720	50.00p, 6Mbps (H.264) 25.00p, 4Mbps (H.264)		
			RTSP Port			Change (Up to 65535) / Default (554)
VIEWFINDER			-			
REAR MONITOR			-			
STATUS LCD			-			
FOCUS	Type			Contrast AF system		
	DFD technology			Yes		
	Focus mode			AF / MF		
	AF detective range			EV -6 - 20 (F1.4, ISO100 equivalent, AF)		
	AF mode			Motion picture: Auto Detection (Face, Eye, Body, Animal) / Tracking / 225-Area / Zone (Oval) / 1-Area Still image: Auto Detection (Face, Eye, Body, Animal) / 225-Area / 1-Area *Tethered photo shooting with LUMIX Tether for Multicam software		
	AF custom setting (Video)			AF Speed, AF Sensitivity		
	AF lock			Set the Fn button in custom menu to AF lock		
	Focus ring control			Nonlinear / Linear* (90° / 120° / 150° / 180° / 210° / 240° / 270° /		

		300°/ 330°/ 360°/ 720°/ 1080°/ Maximum) *When a compatible lens is attached.
	Others	AF-ON, Continuous AF, AF+MF, MF Assist, MF Guide, 1-Area AF Moving Speed, Focus Ring Lock, Focus Peaking, Lens Focus Resume
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
	Exposure compensation	Motion picture: 1/3 EV step ±3EV Still image: 1/3 EV step ±5EV *Tethered photo shooting with LUMIX Tether for Multicam software
	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	[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 [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 [HLG] Native ISO: 400, 2500 Auto: Auto / 400-51200 / 102400* / 204800* *Extended ISO 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
	AE lock	Set the Fn button in custom menu to AE lock
IMAGE STABILIZATION SYSTEM	Body I.S.	-
	Boost I.S. (Video)	Yes *When a compatible lens equipped with O.I.S. is attached.
WHITE BALANCE	White balance	AWB / AWBc / AWBw / Daylight / Cloudy / Shade / Incandescent / White Set 1, 2, 3, 4 / Color temperature setting 1, 2, 3, 4
	White balance adjustment	Blue/Amber bias, Magenta/Green bias
	Color temperature setting	2500-10000K in 100K
SHUTTER	Type	-

	Shutter speed	Motion picture: 1/16,000 - 1/2 Still image: 1/8,000 - 1 *Tethered photo shooting with LUMIX Tether for Multicam software
BURST SHOOTING		-
FLASH		-
PHOTO STYLE	Photo Style	Standard / Vivid / Natural / Flat / Landscape / Portrait / Monochrome / L. Monochrome / L. Monochrome D / Cinelike D2 / Cinelike V2 / Like709 / V-Log / Like2100 (HLG) / My Photo Style 1-10
	Picture adjustment	Contrast / Highlight / Shadow / Saturation / Color Tone / Hue / Filter Effect / Sharpness / Noise Reduction / Dual native ISO / ISO / WB *Adjustable settings vary depending on the Photo Style mode.
FILTER		Expressive / Retro / Old Days / High Key / Low Key / Sepia / Monochrome / Dynamic Monochrome / Impressive Art / High Dynamic / Cross Process / Toy Effect / Toy Pop / Bleach Bypass / Miniature Effect / Fantasy / One Point Color
OTHER FUNCTIONS	Vertical Position Information	ON / OFF
	SS/Gain operation	Shutter Duration/ISO / Angle/ISO / Shutter Duration/dB
	Luminance level	8-bit: 0-255 / 16-235 / 16-255 10-bit: 0-1023 / 64-940 / 64-1023
	Synchro scan	Yes
	Master pedestal level	31 steps
	Knee control	Yes (in Like709 mode)
	Level Gauge	Yes
	V-Log 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
	Color bars / 1kHz test tone	Yes (SMPTE / EBU / ARIB) / Yes
Other functions	Red REC Frame Indicator, Streaming Blue Frame Indicator	
FUNCTION BUTTON	REC	Exposure Mode / Aperture Value / Shutter Speed / Exposure Comp. / Dual Native ISO Setting / Sensitivity / White Balance / Photo Style / Metering Mode / i.Dynamic Range / Filter Effect / One Push AE / Synchro Scan / Focus Mode / AF Mode / AF Custom Setting (Video) / Focus Peaking / Focus Peaking Sensitivity / 1-Area AF Moving Speed / Focus Ring Lock / AE LOCK / AF LOCK / AF/AE LOCK / AF-ON / AF-ON: Near Shift / AF-ON: Far Shift / Focus Area Set / Rec File Format / Rec Quality / Rec Quality (My List) / Variable Frame Rate / Time Code Display / HDMI RAW Data Output / Sound Rec Level Disp. / Mute Sound Input / Sound Rec Level Adj. / Sound Rec Level Limiter / XLR Mic Adaptor Setting / Special Mic. Directivity Adjust / Image Stabilizer / E-Stabilization (Video) / Boost I.S. (Video) / Image Area of Video / Focus Transition / Live Cropping / Q.MENU / Rec/Playback Switch / Video Record / Display Information / Level Gauge / Histogram / Luminance Spot Meter / Frame Marker / Zebra Pattern / LUT View Assist (HDMI) / LUT View Assist (SDI) / LUT Select / HLG View Assist (HDMI) / HLG View Assist (SDI) / Anamorphic Desqueeze Display / Color Bars / Focus Ring Control / Destination Card Slot / LAN/Wi-Fi / Info

		Display (HDMI/SDI) / Fan Mode / No Setting / Off (Disable Press and Hold) / Restore to Default	
	PLAY	Anamorphic Desqueeze Display / Delete Single / Protect / Rating 1, 2, 3, 4, 5 / Copy / Rec/Playback Switch / Video Record / Display Information / Card Slot Change / LAN/Wi-Fi / Info Display (HDMI/SDI) / Fan Mode / LUT View Assist (HDMI) / LUT View Assist (SDI) / HLG View Assist (HDMI) / HLG View Assist (SDI) / No Setting / Off (Disable Press and Hold) / Restore to Default	
OPERATION LOCK		Yes with Operation Lock Switch	
OSD LANGUAGE		Please refer to "OSD" Sheet	
INTERFACE	USB	SuperSpeed USB 3.1 Gen1 Type-C	
	DC IN	DC 12V (11.4-12.6V), EIAJ Type4	
	HDMI (*2)	HDMI	HDMI TypeA Audio: Stereo
		Monitor-through	4:2:2 10bit (When [Rec Quality] is set to [4:2:2 10bit] or [4:2:0 10bit].) 4:2:2 8bit (When [Rec Quality] is set to [4:2:0 8bit].) Down Convert: Auto / 4K/30p/25p / 1080p / 1080i / OFF
		Playback	59.94Hz: Auto / C4K/59.94p / C4K/29.97p / C4K/23.98p / 4K/59.94p / 4K/29.97p / 4K/23.98p / 1080/59.94p / 1080/29.97p / 1080/23.98p / 1080/59.94i / 720/59.94p / 480/59.94p 50.00Hz: Auto / C4K/50.00p / C4K/25.00p / 4K/50.00p / 4K/25.00p / 1080/50.00p / 1080/25.00p / 1080/50.00i / 720/50.00p / 576/50.00p 24.00Hz: Auto / C4K/24.00p / 4K/24.00p / 1080/24.00p
	SDI	SDI	BNC Terminal, 0.8V [p-p], 75Ω, 3G-SDI Level-A / HD-SDI Audio: Stereo, SDI Sound Output Gain Adj.: 0dB / -6dB / -8dB
		Monitor-through	4:2:2 10bit *The bit accuracy is 8 bits when the 8-bit recording mode is selected.
		Playback	59.94Hz: 1080/59.94p LEVEL-A / 1080/29.97p / 1080/23.98p / 1080/59.94i / 1080/29.97PsF / 1080/23.98PsF / 720/59.94p 50.00Hz: 1080/50.00p LEVEL-A / 1080/25.00p / 1080/50.00i / 1080/25.00PsF / 720/50.00p 24.00Hz: 1080/24.00PsF
	Ethernet	Remote Control: LAN Terminal (RJ-45) Power Supply: PoE+ (IEEE802.3at compliant) *Use an IEC60950-1 or IEC62368-1 compliant PoE+ (IEEE802.3at compliant) hub or power supplying device.	
	Remote input	φ2.5mm	
	Microphone	Stereo, Wind Noise Canceller: OFF / Low* / Standard / High *When attaching DMW-MS2 (sold separately).	
	Speaker	-	
External microphone / external audio device input	φ3.5mm for external microphone / external audio device MIC (Plug-in Power) / MIC / LINE is selectable. Stereo/Lens Auto/Shotgun/Super Shotgun/Manual is selectable when attaching DMW-MS2 (sold separately).		

	XLR microphone	Yes with DMW-XLR1 (sold separately)	
	Headphone output	φ3.5mm	
	SD card slot	Slot 1, Slot 2	
	TC IN/OUT	Count up	Rec Run / Free Run
		Time code mode	Drop Frame / Non-Drop Frame (When system frequency [59.94Hz] is selected.)
		HDMI time code output	ON / OFF
		SDI time code output	ON / OFF
		External TC setting	TC Synchronization / TC Output Reference
	Genlock IN	Genlock IN	ON / OFF
		Horizontal phase synchronization	-206 - +49
	Fan	Auto1 / Auto2 / Normal / Slow	
Lamp	Tally Lamp (front/rear) / Card Access Lamp / Power LED / Network LED		
WIRELESS	Wi-Fi	2.4GHz (STA/AP), IEEE 802.11b/g/n, 2412 MHz - 2462 MHz (1-11 ch), Wi-Fi / WPA / WPA2, Infrastructure mode	
	Bluetooth	Bluetooth® v4.2 (Bluetooth Low Energy (BLE))	
POWER	Direct power supply	AC Adaptor (12V, 3A) (bundled) Li-ion Battery Pack (7.28V) (sold separately) PoE+ (IEEE802.3at compliant) (sold separately)	
	Battery	Li-ion Battery Pack AG-VBR59 (7.28V, 5900mAh, 43Wh) (sold separately) Li-ion Battery Pack AG-VBR89 (7.28V, 8850mAh, 65Wh) (sold separately) Li-ion Battery Pack AG-VBR118 (7.28V, 11800mAh, 86Wh) (sold separately)	
	Continuous recordable time (Motion picture) (*1)	MP4 [4K/60p]: Approx. 230 min (S35mm), MP4 [FHD/60p]: Approx. 300 min (FULL) *When using S-R24105 and AG-VBR59 (sold separately). When the battery is fully charged. MP4 [4K/60p]: Approx. 360 min (S35mm), MP4 [FHD/60p]: Approx. 470 min (FULL) *When using S-R24105 and AG-VBR89 (sold separately). When the battery is fully charged. MP4 [4K/60p]: Approx. 480 min (S35mm), MP4 [FHD/60p]: Approx. 630 min (FULL) *When using S-R24105 and AG-VBR118 (sold separately). When the battery is fully charged.	
	Actual recordable time (Motion picture) (*1)	MP4 [4K/60p]: Approx. 115 min (S35mm), MP4 [FHD/60p]: Approx. 150 min (FULL) *When using S-R24105 and AG-VBR59 (sold separately). When the battery is fully charged. MP4 [4K/60p]: Approx. 180 min (S35mm), MP4 [FHD/60p]: Approx. 235 min (FULL) *When using S-R24105 and AG-VBR89 (sold separately). When the battery is fully charged. MP4 [4K/60p]: Approx. 240 min (S35mm), MP4 [FHD/60p]: Approx. 315 min (FULL) *When using S-R24105 and AG-VBR118 (sold separately). When the battery is fully charged.	
DIMENSION S / WEIGHT	Dimensions (W x H x D)	Approx. 93.0 x 93.0 x 78.8 mm / 3.66 x 3.66 x 3.1 inch (excluding protrusions)	
	Weight	Approx. 585g / 1.29 lb (Body only)	
OPERATING ENVIRONMENT	Operating temperature (*3)	-10°C to 40°C (14°F to 104°F)	
	Operating humidity	10%RH to 80%RH	

ENT		
STANDARD ACCESSORIES	Software	<p>LUMIX Tether for Multicam</p> <ul style="list-style-type: none"> This software is used to control a Panasonic digital camera from a PC. It allows you to change various settings of the camera, perform remote recording, and save remotely recorded images to the PC. Check the site below to download and install the software. <p>http://panasonic.jp/support/global/cs/soft/download/d_lumixtether.html (For Windows / Mac)</p>
	Standard accessories	<p>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</p> <ul style="list-style-type: none"> The DC-BS1H Operating Instructions for advanced features is available for downloaded at Panasonic LUMIX Customer Support Site using PC, smartphone or tablet connected to the Internet.
<p>(*1) About motion picture recording</p> <ul style="list-style-type: none"> - Use a card with SD Speed Class with "Class 4" or higher when recording motion pictures in [MP4(under 28Mbps)]. - Use a card with SD Speed Class with "UHS-I / UHS-II UHS Speed Class 3 (U3)" when recording motion pictures with [MP4] in [4K] or [MOV]. (SD speed class is the speed standard regarding continuous writing.) - Video Speed Class 60 or higher is required for ALL-Intra 400Mbps recording. Use of SD Memory Card with Video Speed Class 60 or higher is recommended for C4K/4K ALL-Intra video recording. - MP4 motion pictures with [MP4] in [4K]: <ul style="list-style-type: none"> - 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]: <ul style="list-style-type: none"> - 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. <p>(*2) 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".</p> <p>(*3) The camera may stop recording when used in lower or higher than recommended operating temperature: -10 to 40 degrees.</p>		