







	BM URSA MINI PRO (2017) 	SONY PXW-FS5 (2015) 	SONY A7S II (2015) 	PANASONIC LUMIX GH5 (2017) 
PRICE	\$5995.00 via Amazon (body only)	\$5470.00 via Amazon (body only)	\$2598.00 via Amazon (body only)	\$1997.99 via Amazon (body only)
BACKGROUND	Blackmagic Design has been a disruptive force ever since it announced its first Cinema Camera in 2012, putting Hollywood-grade images in the hands of indie filmmakers at astonishingly affordable prices. Their latest release, the URSA Mini Pro, is arguably the company's most professional and versatile iteration to date, adding ND filters, physical knobs for important features, improved audio preamps, dual SD card slots, and more.	Sony continues to support the indie-friendly FS5, a lightweight, compact, handheld camera costing considerably less than 2014's FS7 and 2017's updated FS7 II. It offers a robust feature set including a variable ND system with Auto ND, as well as upgrades that enable outboard 4K/2K RAW recording, MPEG-2 recording, and continuous 120fps FHD recording. Review firmware and upgrade details here .	Sony's a7S II is a low-light beast that improves upon its predecessor, especially with the addition of onboard 4K and 5-axis image stabilization. Firmware provides continued technical support.	The GH5 updates Panasonic's legendary DSLM powerhouse favored by many indie filmmakers, the GH4, with impressive specs and features, including onboard 10 bit 4:2:2 DCI 4K, no recording time limit, 5-axis image stabilization, weather sealing, dual SD card slots, a full-sized HDMI port, and more.
WEIGHT	5.1 lbs/2.3 kg (body only)	1.83 lbs/0.83 kg (body only)	1.29 lbs/0.58 kg (body only)	1.59 lbs/0.73 kg (body only)
LENS MOUNT	EF Mount; interchangeable with optional PL and B4 Mounts	E Mount	E Mount	MFT Mount
SENSOR TYPE	Super 35mm CMOS	11.6 MP Super 35mm CMOS	12.2 MP 35mm Full Frame CMOS	20.3MP Digital Live MOS sensor
FORMATS & RESOLUTIONS	CINEMADNG RAW, RAW 3:1, RAW 4:1 <ul style="list-style-type: none"> 4.6K - 4608x2592; 2.40:1 (4608x1920) 4K - 16:9 (4096x2304); DCI (4096x2160) 3K - Anamorphic (3072x2560) 2K - 16:9 (2048x1152); DCI (2048x1080) PRORES (.MOV) <ul style="list-style-type: none"> 4.6K - 4608x2592; 2.40:1 (4608x1920) 4K - 16:9 (4096x2304); DCI (4096x2160); UHD (3840x2160) 3K - Anamorphic (3072x2560) 2K - 16:9 (2048x1152); DCI (2048x1080) FHD - 1920x1080 	XAVC-L (.MXF) <ul style="list-style-type: none"> 4K - UHD (3840x2160) FHD - 1920x1080 XAVC Proxy (.MP4) <ul style="list-style-type: none"> HD - 1280x720 VGA - 640x360 AVCHD (.MTS) <ul style="list-style-type: none"> HD - 1280x720 VGA - 640x360 	XAVC-S (.MP4) <ul style="list-style-type: none"> 4K - UHD (3840x2160) FHD - 1920x1080 MPEG-4 AVC/H264 (.MP4) <ul style="list-style-type: none"> FHD - 1920x1080 HD - 1280x720 AVCHD (.MTS) <ul style="list-style-type: none"> FHD - 1920x1080 	MPEG-4 AVC/H264 (.MOV) <ul style="list-style-type: none"> 4K - DCI (4096x2160); UHD (3840 x 2160); Anamorphic (4:3) Mode FHD - 1920x1080 MPEG-4 AVC/H264 (.MP4) <ul style="list-style-type: none"> 4K - DCI (4096x2160); UHD (3840 x 2160); 4K Photo Mode; Anamorphic (4:3) Mode FHD - 1920x1080 HEVC/H265 (.MP4) <ul style="list-style-type: none"> 6K Photo Mode AVCHD (.MTS) <ul style="list-style-type: none"> FHD - 1920x1080
=IMAGE PROCESSING	CINEMADNG RAW <ul style="list-style-type: none"> Uncompressed or lossless 3:1/4:1 compressed - up to 12 bit PRORES (.MOV) <ul style="list-style-type: none"> All flavors of ProRes - up to 10 bit ProRes 4444 XQ 	XAVC-L (.MXF) <ul style="list-style-type: none"> 4K - 8 bit 4:2:0 FHD - 10 bit 4:2:2 AVCHD (.MTS) <ul style="list-style-type: none"> 8 bit 4:2:0 	8 bit 4:2:0	MPEG-4 AVC/H264 (.MOV & .MP4) <ul style="list-style-type: none"> 4K 23.98, 24, 25, 29.97 - 10 bit 4:2:2 4K and FHD - 8 bit 4:2:0 FHD - 10 bit 4:2:2 AVCHD (.MTS) <ul style="list-style-type: none"> 8 bit 4:2:0
FRAMERATES	Progressive only. Maximum sensor framerate dependent on resolution and codec selected. Project framerates of 23.98, 24, 25, 29.97, 30, 50, 59.94 and 60 fps supported. Off-speed frame rates up to 60p in 4.6K, 120p in 2K windowed.	PROGRESSIVE <ul style="list-style-type: none"> 4K - Up to 60 (burst mode) FHD - Up to 240 (burst mode), 960 (reduced-resolution) HD - Up to 59.94 INTERLACED <ul style="list-style-type: none"> AVCHD's HD - Up to 59.94 	XAVC-S (.MP4) <ul style="list-style-type: none"> 4K - Up to 29.97 FHD - Up to 120 MPEG-4 AVC/H264 (.MP4) <ul style="list-style-type: none"> FHD - 25, 29.97, 60 HD - 25, 29.97 AVCHD (.MTS) <ul style="list-style-type: none"> FHD - Up to 59.94 (progressive & interlaced) 	PROGRESSIVE <ul style="list-style-type: none"> 4K DCI - 23.98, 24 4K UHD - 23.98, 24, 25, 29.97, 50, 59.94 4K Photo Mode - 60 Anamorphic (4:3) Mode - 23.98, 24, 25, 29.97, 50, 59.94 FHD - 23.98, 24, 25, 29.97, 50, 59.94 6K Photo Mode - 30 VFR up to 60 in 4K/180 in FHD INTERLACED <ul style="list-style-type: none"> AVCHD's FHD - 50, 59.94
RECORDING LIMIT	No	No	29 minutes	No
RECORDING MEDIA	<ul style="list-style-type: none"> 2x CFAST 2.0s 2x SD Accepts SDHC, SDXC 	<ul style="list-style-type: none"> 1x MS/SD 1x SD Accepts Memory Stick PRO Duo, Memory Stick PRO-HG Duo, SD, SDHC, SDXC 	<ul style="list-style-type: none"> 1x MS/SD Accepts Memory Stick PRO Duo, Memory Stick PRO-HG Duo, Memory Stick Micro, SD, SDHC, SDXC, MicroSD, MicroSDHC, MicroSDXC 	<ul style="list-style-type: none"> 2x SD Accepts SD, SDHC, SDXC
SHUTTER	Rolling	Rolling	Rolling	Rolling
ISO	200, 400, 800, 1600; base is 800	1000-32000; base is 3200	100-102400 (Extended Mode: 50-409600); base is 1600	200-25600 (Extended ISO: 100-25600); base is 800
DYNAMIC RANGE	15 stops	14 stops	14 stops	12 stops (via V-Log upgrade)
WHITE BALANCE	Automatic or manual white balance for 2500-8000K. Presets for daylight, tungsten, fluorescent, mixed lighting, overcast	Automatic or manual white balance for 2300-15000K; default is 6500. Presets for outdoor & indoor	Automatic or manual white balance for 2500-9900K; Presets for daylight, shade, cloudy, incandescent, fluorescent (warm white/cool white/day white/daylight), flash, underwater	Automatic or manual white balance for 2500-10000K. Presets for daylight, cloudy, shade, incandescent, flash
AUDIO	<ul style="list-style-type: none"> LPCM 2 ch 24 bit 48Khz 1x built-in stereo microphone 2x XLR switchable between mic & line levels. Phantom power support 1x 3.5mm stereo headphone jack 	<ul style="list-style-type: none"> 1x built-in microphone for stereo recording 2x XLR switchable between mic & line levels. Phantom power support 1x 3.5mm stereo headphone jack XAVC-L (.MXF) <ul style="list-style-type: none"> LPCM 2 ch 24 bit 48Khz AVCHD (.MTS) <ul style="list-style-type: none"> LPCM 2 ch 16 bit 48kHz Dolby Digital 2 ch 16 bit 48kHz 	<ul style="list-style-type: none"> 1x 3.5mm stereo/mono mini-jack for external microphone 1x built-in monaural microphone 1x XLR switchable between mic & line level, via XLR-K2M XLR Adapter Kit 1x 3.5mm stereo headphone jack XAVC-S (.MP4) <ul style="list-style-type: none"> LPCM 2 ch 48kHz 16 bit MPEG-4 AVC/H264 (.MP4) <ul style="list-style-type: none"> AAC-LC 2 ch 16 bit 48 kHz AVCHD (.MTS) <ul style="list-style-type: none"> Dolby Digital 2 ch 16 bit 48kHz 	<ul style="list-style-type: none"> 1x 3.5mm stereo mini-jack for external microphone 1x built-in stereo microphone 2x XLR switchable between mic & line level w/ Phantom power support and high-resolution recording formats up to 24 bit 96kHz, via DMW-XLR1 XLR Microphone Adapter 1x 3.5mm stereo headphone jack MPEG-4 AVC/H264 (.MOV) <ul style="list-style-type: none"> LPCM 2 ch 48kHz 16 bit MPEG-4 AVC/H264 (.MP4) <ul style="list-style-type: none"> LPCM 2 ch 48kHz 16 bit AVCHD (.MTS) <ul style="list-style-type: none"> Dolby Digital 2 ch 16 bit 48kHz
OUTPUT	<ul style="list-style-type: none"> 1x 12G-SDI, 1x 3G-SDI (monitoring) Up to 2160p60 10 bit 4:2:2 24 bit 48 kHz audio 	<ul style="list-style-type: none"> 1x 3G-SDI, 1x HDMI 4K RAW DCI (4096x2160) up to 59.94/120 fps (burst mode) & 2K RAW up to 240 fps, outboard recording via CBKZ-FS5RIF software license and compatible external recorder Up to 4K UHD 8 bit 4:2:2 24 bit 48 kHz audio 	<ul style="list-style-type: none"> 1x Micro-HDMI 4K UHD 8 bit 4:2:2 up to 30p, FHD 8 bit 4:2:2 up to 60p 16 bit 48 kHz audio 	<ul style="list-style-type: none"> 1x HDMI 4K 10 bit 4:2:2 at 60p 16 bit 48 kHz audio