ALEXA SXT Plus - Technical Data

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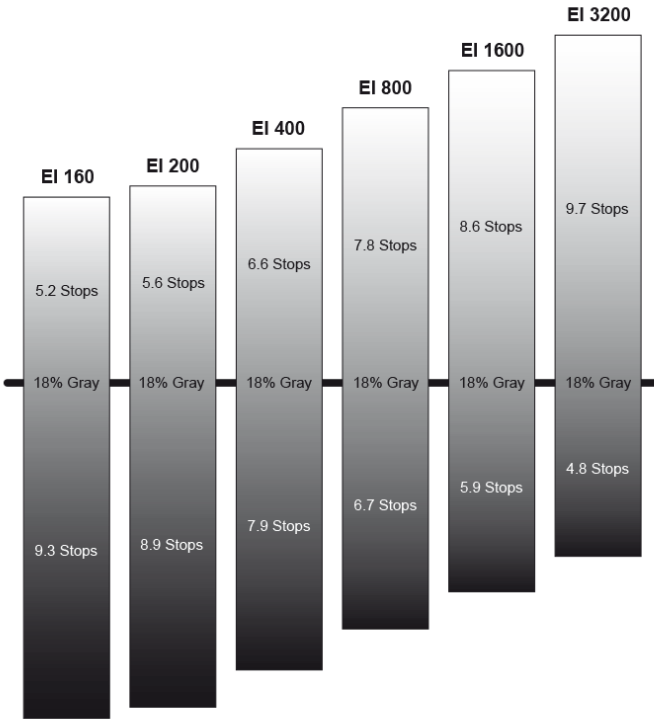|	
Camera Type	35 format film-style digital camera with an electronic viewfinder, a 16:9, 6:5, 4:3 or Open Gate switchable active sensor area, built-in support for the ARRI Wireless Remote System and the cmotion cvolution lens control system, built-in filter holder, Lens Data System, integrated shoulder arch and receptacles for 15 mm lightweight rods
Sensor	35 format ALEV III CMOS sensor with Bayer pattern color filter array.
Photo Sites	**Sensor Mode 16:9** 2880 x 1620 used for ARRIRAW 16:9 2880 x 1620 down sampled to 1920 x 1080 for HD-SDI, ProRes HD 16:9 and DNxHD HD 16:9 2868 x 1612 down sampled to 2048 x 1152 for ProRes 2K 16:9 3168 x 1778 used for ProRes 3.2K 16:9 **Sensor Mode 6:5** 2880 x 2160 used for ARRIRAW 4:3 Full 2868 x 2150 down sampled to 2048 x 1536 for ProRes 2K 4:3 **Sensor Mode 4:3** 2578 x 2160 used for ARRIRAW 4:3 Cropped **Sensor Mode Open Gate** 3414 x 2198 used for ARRIRAW Open Gate
Operating Modes	16:9, 4:3, 6:5 or Open Gate sensor modes. Switching takes approx. 60 seconds. All sensor modes available in ARRIRAW and ProRes.
Frame Rates	16:9 0.75 - 120 fps 6:5 0.75 - 96 fps 4:3 0.75 - 96 fps Open Gate 0.75 - 90 fps All speeds adjustable with 1/1000 fps precision. Some limitations based on recording media or recording format apply. For a detailed table of frame rates

Maximum Frame Rates
for ALEXA SXT EV and SXT Plus
with SUP 1.0 (ALEXA SXT)

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Recording Format				Maximum Frame Rate in fps [1]			
Sensor Mode	Recording File Type	Recording Resolution [2]	Recording File Setting	SxS PRO 64 GB SxS PRO+ 64 GB SxS PRO+ 128 GB [3]	LEXAR 3600x CFast 2.0 256 GB [4]	XR Capture Drive 512 GB [5]	SXR Capture Drive 1 TB and 2 TB [6]
16:9	ProRes	HD	422	120	120	120	120
			422 HQ	120	120	120	120
			4444	96	120	120	120
			4444 XQ	60	120	120	120
		2K	422	120	120	120	120
			422 HQ	120	120	120	120
			4444	80	120	120	120
			4444 XQ	50	120	120	120
		3.2K	422	72	72	72	72
			422 HQ	50	72	72	72
			4444	30	72	72	72
			4444 XQ	-	50	60	72
		4K UHD	422	50	50	50	50
			422 HQ	30	50	50	50
			4444	-	50	50	50
			4444 XQ	-	30	40	50
	ARRIRAW	2.8K		-	-	120	120
		3.2K		-	-	100	120
6:5	ProRes	2K Anamorphic	422	96	96	96	96
			422 HQ	96	96	96	96
			4444	96	96	96	96
			4444 XQ	70	96	96	96
		4K Cine Anamorphic	422	60	60	60	60
			422 HQ	40	60	60	60
			4444	25	60	60	60
			4444 XQ	-	40	50	60
	ARRIRAW	2.6K		-	-	96	96
4:3	ProRes	2.8K	422	60	60	60	60
			422 HQ	45	60	60	60
			4444	30	60	60	60
			4444 XQ	-	50	60	60
	ARRIRAW	2.8K		-	-	90	96
Open Gate	ProRes	3.4K	422	55	60	60	60
			422 HQ	35	60	60	60
			4444	25	60	60	60
			4444 XQ	-	40	50	60
		4K Cine	422	40	48	48	48
			422 HQ	25	48	48	48
			4444	-	40	48	48
			4444 XQ	-	25	30	48
	ARRIRAW	3.4K		-	-	75	90

(1) Minimum frame rate is always 0.75 fps
(2) The ‚recording resolution' determines the number of horizontal pixels that will be recorded (the number of vertical pixels is dependent on the recording file type and sensor mode). HD = 1920 / 2K = 2048 / 2.6K = 2578 / 2.8K = 2880 / 3.2K = 3168 / 3.4K = 3424
(3) Requires an SxS Adapter 2
(4) Requires a CFast 2.0 Adapter 2
(5) Requires a XR Adapter
(6) Requires a SXR Adapter

„-" = Not available

Shutter	Electronic rolling shutter, 5.0° - 358.0° up to 60 fps; 5.0° to 356° above 60 fps. Shutter angle adjustable with 1/10 degree precision.
Filters	Permanent filters in front of the sensor: optical low pass, UV, IR. Includes a built-in Internal Filter Module (IFM-1) filter holder that accepts one of eight Full Spectrum Neutral Density (FSND) filters through manual insertion/removal.
Exposure	14+ stops for all sensitivity settings from EI 160 to EI 3200, as measured with the ARRI Dynamic Range

Latitude	Test Chart (DRTC).
	For a graphic of how the exposure latitude shifts at different EIs,

Exposure Index	$EI\ 160\,^{+5.2}_{-9.3}$ $EI\ 200\,^{+5.6}_{-8.9}$ $EI\ 400\,^{+6.6}_{-7.9}$ $EI\ 800\,^{+7.8}_{-6.7}$ $EI\ 1600\,^{+8.6}_{-5.9}$ $EI\ 3200\,^{+9.7}_{-4.8}$ Values behind the exposure index are the number of stops above and below 18% grey.
White Balance	Presets for 3200 (tungsten), 4300 (fluorescent), 5600 (daylight) and 7000 (daylight cool). Automatic calculation or manual white balance for 2000 to 11000 Kelvin, adjustable in 100 K steps
Color Correction	While white balance changes the red/blue hue of the image, color correction changes green/magenta. Adjustable range from -12 to +12 CC. 1 CC corresponds to 035 Kodak CC values or 1/8 Rosco values.
Sound Level	Under 19 db(A) while recording ProRes 4444 16:9 HD @ 24 fps and ≤ +30° Celsius (≤ +86° Fahrenheit) with lens attached and fan mode set to 'Regular', measured 1 m/3 feet in front of the lens. Silent operation at higher temperatures possible with fan mode set to 'Rec low'.
Power In	Three possible inputs: BAT connector, optional battery adapter back or optional battery adapter top. All inputs accept 10.5 to 34 V DC. Approx. 90 W power draw for camera and EVF-1 in typical use recording ProRes at 24 fps to an SxS PRO card at room temperature, without accessories. Initial power draw during power up is higher.
Power Out	12 V connector: limited to 12 V, up to 2.2 A. RS, EXT and ETHERNET: input below 24 V is regulated up to 24 V; above 24 V: input voltage = output voltage. RS and EXT connectors combined are limited to 2.2 A. ETHERNET is limited to 1.2 A. Maximum power draw is also limited by the power source.
Weight	ALEXA SXT Plus body with PL mount: 6.9 kg/15.1 lbs. ALEXA SXT Plus body with PL mount, electronic viewfinder, viewfinder cable and handle: 8.4 kg/18.6 lbs.
Environmental	-20° C to +45° C (-4° F to +113° F) @ 95% humidity max, non-condensing. Splash and dust proof through sealed electronics. System cooling through radiator/single fan.

Lens Mount	54 mm stainless steel LDS PL mount, Super 35 centered. 52.00 mm nominal flange focal depth without FSND filters.
Viewfinder	Low latency (≤1 frame delay) electronic color viewfinder ARRI EVF-1 with 1280 x 784 F-LCOS micro display (image: 1280 x 720, status bars: 1280 x 32 above and 1280 x 32 below image) and ARRI LED illumination, both temperature controlled. Image can be flipped for use of viewfinder on camera left or right. Viewfinder Mounting Bracket allows movement of viewfinder forward/backwards, left/right, up/down, 360 degree rotation and placement on camera left or right. EVF-1 controls: viewfinder and basic camera settings, ZOOM button (2.25x magnification 'pixel to pixel'), EXP button (false color exposure check) and jog wheel.
Assistive Displays	For EVF-1 and MON OUT: preset and custom frame lines, user rectangles, surround view, 180° image rotation, camera status, false color exposure check, peaking focus check, compare stored image with live image, RETURN IN video and anamorphic de-squeeze. For MON OUT additionally: Reel & clip number. For a graphic of which false color indicates which exposure level

Color	Level	Description
red	99 – 100%	White clipping
yellow	97 – 99%	Just below white clipping/white shoulder
pink	52 – 56%	One stop over medium gray (Caucasian skin)
green	38 – 42%	18% neutral gray
blue	2.5 – 4.0%	Just above black clipping/black slope
purple	0 – 2.5%	Black clipping

Control	Camera right: Main user interface with a 3" transflective 400 x 240 pixel LCD color screen, illuminated buttons, button lock and jog wheel. Camera left: Operator interface with illuminated buttons and button lock. Camera acts as a web server, displaying the ALEXA Web Remote on web browsers of computers connected to ETHERNET connector. Optional accessory Remote Control Unit RCU-4 for cabled remote control via camera ETHERNET connector. Optional accessory Wireless Compact Unit WCU-4 for wireless remote control (UMC 3A or UMC-4 required).
Recording Codecs	Uncompressed and unencrypted ARRIRAW or compressed and unencrypted QuickTime/ProRes recording. All formats include embedded audio, timecode and metadata. For more details

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Data Rates
For in-camera recording with ALEXA SXT cameras
with SUP 1.0 (ALEXA SXT)

Sensor Mode	Recording File Type (1,2)	Recording Resolution	Recording File Setting	Output Resolution	Bit Depth	Target Data Rate @ 24 fps (3)	Data Volume @ 24 fps in GByte/h	Recording Time @ 24fps on					
								SXR Capture Drive 2 TB	SXR Capture Drive 1 TB	XR Capture Drive 512 GB	CFast 2.0 256 GB	SxS PRO+ 128 GB	SxS PRO+ 64 GB
16:9	ProRes	HD	422	1920 x 1080	10	132 Mbit/s	59 GB/h	968 min	484 min	242 min	258 min	123 min	65 min
			422 HQ	1920 x 1080	10	198 Mbit/s	89 GB/h	645 min	322 min	161 min	172 min	82 min	43 min
			4444	1920 x 1080	12	297 Mbit/s	134 GB/h	430 min	215 min	107 min	114 min	54 min	28 min
			4444 XQ	1920 x 1080	12	446 Mbit/s	201 GB/h	287 min	143 min	71 min	76 min	36 min	19 min
		2K	422	2048 x 1152	10	151 Mbit/s	68 GB/h	847 min	423 min	211 min	226 min	107 min	56 min
			422 HQ	2048 x 1152	10	226 Mbit/s	102 GB/h	565 min	282 min	141 min	150 min	71 min	37 min
			4444	2048 x 1152	12	340 Mbit/s	153 GB/h	376 min	188 min	94 min	100 min	47 min	25 min
			4444 XQ	2048 x 1152	12	510 Mbit/s	230 GB/h	251 min	125 min	62 min	66 min	31 min	16 min
		3.2K	422	3200 x 1800	10	369 Mbit/s	166 GB/h	347 min	173 min	86 min	92 min	44 min	23 min
			422 HQ	3200 x 1800	10	553 Mbit/s	249 GB/h	231 min	115 min	57 min	61 min	29 min	15 min
			4444	3200 x 1800	12	830 Mbit/s	374 GB/h	154 min	77 min	38 min	41 min	19 min	10 min
			4444 XQ	3200 x 1800	12	1244 Mbit/s	560 GB/h	102 min	51 min	25 min	27 min	-	-
		4K UHD	422	3840 x 2160	10	531 Mbit/s	239 GB/h	241 min	120 min	60 min	64 min	30 min	16 min
			422 HQ	3840 x 2160	10	797 Mbit/s	359 GB/h	160 min	80 min	40 min	42 min	20 min	10 min
			4444	3840 x 2160	12	1195 Mbit/s	538 GB/h	107 min	53 min	26 min	28 min	-	-
			4444 XQ	3840 x 2160	12	1791 Mbit/s	806 GB/h	71 min	35 min	17 min	19 min	-	-
	ARRIRAW	2.8K		2880 x 1620	12	1386 Mbit/s	624 GB/h	189 min	94 min	47 min	-	-	-
		3.2K		3168 x 1782	12	1668 Mbit/s	751 GB/h	157 min	78 min	39 min	-	-	-
6:5	ProRes	2K Anamorphic	422	2048 x 858	10	112 Mbit/s	50 GB/h	1138 min	569 min	284 min	303 min	144 min	76 min
			422 HQ	2048 x 858	10	169 Mbit/s	76 GB/h	756 min	378 min	189 min	201 min	96 min	50 min
			4444	2048 x 858	12	253 Mbit/s	114 GB/h	505 min	252 min	126 min	134 min	64 min	33 min
			4444 XQ	2048 x 858	12	380 Mbit/s	171 GB/h	336 min	168 min	84 min	89 min	42 min	22 min
		4K Cine Anamorphic	422	4096 x 1716	10	450 Mbit/s	203 GB/h	284 min	142 min	71 min	75 min	36 min	19 min
			422 HQ	4096 x 1716	10	675 Mbit/s	304 GB/h	189 min	94 min	47 min	50 min	24 min	12 min
			4444	4096 x 1716	12	1012 Mbit/s	455 GB/h	126 min	63 min	31 min	33 min	16 min	08 min
			4444 XQ	4096 x 1716	12	1519 Mbit/s	684 GB/h	84 min	42 min	21 min	22 min	-	-
	ARRIRAW	2.6K		2592 x 2160 (4)	12	1655 Mbit/s	745 GB/h	158 min	79 min	39 min	-	-	-
4:3	ProRes	2.8K	422	2880 x 2160	10	398 Mbit/s	179 GB/h	321 min	160 min	80 min	85 min	40 min	21 min
			422 HQ	2880 x 2160	10	597 Mbit/s	269 GB/h	214 min	107 min	53 min	57 min	27 min	14 min
			4444	2880 x 2160	12	896 Mbit/s	403 GB/h	142 min	71 min	35 min	38 min	18 min	09 min
			4444 XQ	2880 x 2160	12	1344 Mbit/s	605 GB/h	95 min	47 min	23 min	25 min	-	-
	ARRIRAW	2.8K		2880 x 2160	12	1834 Mbit/s	825 GB/h	142 min	71 min	35 min	-	-	-
Open Gate	ProRes	3.4K	422	3424 x 2202	10	481 Mbit/s	216 GB/h	266 min	133 min	66 min	71 min	33 min	17 min
			422 HQ	3424 x 2202	10	720 Mbit/s	324 GB/h	177 min	88 min	44 min	47 min	22 min	11 min
			4444	3424 x 2202	12	1081 Mbit/s	486 GB/h	118 min	59 min	29 min	31 min	15 min	07 min
			4444 XQ	3424 x 2202	12	1621 Mbit/s	729 GB/h	78 min	39 min	19 min	21 min	-	-
		4K Cine	422	4096 x 2636	10	691 Mbit/s	311 GB/h	185 min	92 min	46 min	49 min	23 min	12 min
			422 HQ	4096 x 2636	10	1037 Mbit/s	467 GB/h	123 min	61 min	30 min	32 min	15 min	08 min
			4444	4096 x 2636	12	1555 Mbit/s	700 GB/h	82 min	41 min	20 min	21 min	-	-
			4444 XQ	4096 x 2636	12	2333 Mbit/s	1050 GB/h	54 min	27 min	13 min	14 min	-	-
	ARRIRAW	3.4K		3424 x 2202	12	2214 Mbit/s	996 GB/h	117 min	58 min	29 min	-	-	-

(1) ProRes is a variable bit rate codec. While it is usually close to the target data rate, the actual data rate can vary with image content.
(2) The ALEXA ProRes target data rate is the Apple target data rate plus metadata and other overhead.
(3) The remaining time indicated by the camera is always calculated based on the theoretical maximum data rate, not the target data rate, to be on the safe side.
(4) The recording resolution is 2592 x 2160, although 2578 x 2160 pixel are used for image content. 14 pixels on the left and right of the recorded image do not belong to the image content and are stated as that in the metadata.

Recording Media	SxS PRO or SxS PRO+ cards (requires SxS Adapter 2) CFast 2.0 cards (requires CFast 2.0 Adapter 2) XR Capture Drives (requires XR Adapter) SXR Capture Drives (requires SXR Adapter) Note: XR Capture Drive Docks require Codex Production Suite to read XR Capture Drives recorded with ALEXA SXT.

Supported Media	SxS PRO 64 GB (SBP-64A) SxS PRO+ 64 GB (SBP-64B & SBP-64C) SxS PRO+ 128 GB (SBP-128B & SBP-128C) LEXAR 3600x CFast 2.0 cards 256 GB XR Capture Drives 512 GB SXR Capture Drives 1 TB SXR Capture Drives 2 TB
Monitor Outputs	4x MON OUT BNC connector for uncompressed 1.5 G HD-SDI video: 1920 x 1080 (16:9), 4:2:2 YCbCr; legal range HD video at 23.976, 24, 25, 29.97, or 30 fps. MON OUT 1b is a clone of MON OUT 1a. Embedded audio, time code, metadata and recording flag.
Image Processing	16 bit linear internal image processing in full ALEXA Wide Gamut/Log C color space. Target output color spaces: Log C, Rec 709 or Rec 2020. An ARRI Look File (ALF-2) containing the name of the target color space, CDL values and a 3D LUT can be applied to ProRes or MON OUT images and will be saved in metadata. Optional horizontal image mirroring.
Synchronization	Master/Slave mode for precision sync of settings, sensor, processing, HD-SDI outputs and ARRIRAW or ProRes recording for 3D applications. PHASE user button for shifting camera phase to move phase artifacts out of frame, i.e. when shooting a CRT monitor or rear screen projector (works in Rec Run TC mode).
Playback	Playback of ARRIRAW or ProRes recorded material visible on EVF-1 and MON OUT. Playback audio available over headphone jack and embedded in the MON OUT signal.
Audio	1x XLR 5 pin AUDIO IN for 2 channel, line level, balanced audio. 24 bit/48 kHz A/D conversion. Uncompressed PCM audio recording to ARRIRAW, ProRes and embedded in all HD-SDI outputs. Only available with same project/sensor speed at 23.976, 24, 25, 29.97 and 30 fps. Max of 2.5 dBm output from AUDIO OUT headphones connector.
Connectors	1x media slot 4x BNC monitoring out HD-SDI, 1.5G MON OUT 1x XLR 5-pin analog audio in AUDIO IN 1x BNC return video in HD-SDI, 1.5G RET/SYNC IN 1x LEMO 16-pin external accessory interface EXT 1x Fischer 2-pin 24 V power in BAT 3x Fischer 3-pin 24 V remote start and accessory power out RS 1x LEMO 2-pin 12 V accessory power out 12 V 1x LEMO 5-pin timecode in/out TC 1x TRS 3.5 mm headphone mini stereo jack AUDIO OUT 1x custom LEMO 16-pin electronic viewfinder EVF 1x custom LEMO 10-pin Ethernet with 24 V power ETHERNET 1x Fischer 5-pin Lens Data Display LDD 2x Fischer 5-pin Lens Control System LCS 1x Fischer 12-pin for CLM-2, CLM-3, CLM-4 or later IRIS 1x Fischer 12-pin for CLM-2, CLM-3, CLM-4 or later FOCUS 1x Fischer 12-pin for CLM-2, CLM-3, CLM-4 or later ZOOM BNC connectors are designed for fast exchange without camera disassembly. These connectors require a special tool (ALEXA Plus BNC Removal Tool, K5.72915.0).
SD Card	For importing and storing of ARRI Look Files, camera set up files, frame line files and user pixel masks and custom lens tables for the Lens Data Archive (LDA). Stores frame grabs in ARRIRAW (.ari, 12 bit), TIFF (.tif, 16 bit), DPX (.dpx, 10 bit) or JPEG (.jpg, 8 bit) format. Stores log files. Also used for installing Software Update Packets (SUPs).
Upgrades	The Storage Interface Module can be exchanged for future storage modules. The Electronics Interface Module (available as either regular ALEXA or ALEXA Plus versions) can be exchanged for future control

	electronics. An easily exchangeable lens mount allows other lenses beyond LDS PL mount lenses to be used. Simple camera software updates via free of charge Software Update Packets (SUPs).
Software Tools (apps)	ARRIRAW Converter (ARC) ARRI Color Tool ARRI Meta Extract
Software Tools (online)	ALEXA Camera Simulator Lens Illumination Guide ALEXA Frame Line Composer (AFLC) LUT Generator
	Note: Technical data based on SXT Software Update Packet SUP 1.0. All data subject to change without notice.