NEX-FS700R

Full-HD Super Slow Motion NXCAM Camcorder

SONY
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* The HXR-IFR5 interface unit, the AXS-R5 RAW recorder and the battery are shown on the right of the photo. These are option for 4K recording.

4K

A new multi-purpose camcorder offering exceptional image quality ready to maximize your creative potential as a producer.

Sony's NEX-FS700R is an interchangeable lens camcorder capable of capturing super slow motion images in Full HD at 240fps. It features an 11.6M Exmor Super35mm CMOS sensor, the latest large format sensor, boasting high-speed readout and outstanding sensitivity. And thanks to the E-mount system, as well as Sony lenses, using a mount adapter lets you attach various other interchangeable lenses for extra shooting flexibility. A motorized zoom lens that covers a focal range from 18mm to 200mm (35mm equivalent, 30.6-340mm) is also provided as standard. This lets you enjoy smooth zooming for expressive results that are difficult to achieve with manual operation.
Other valuable features supporting professional video production include a built-in ND filter, a 3G HD-SDI out, an XLR audio input and simultaneous recording with a memory recording unit. Taking full advantage of the Exmor Super35mm CMOS sensor's capabilities, 4K recording is also possible with an optional interface and recorder (HXR-IFR5/AXS-R5). In addition to high-definition 4K recording, continuous shooting with 2K resolution at 240fps is possible with no time limit.
The NEX-FS700R is a camcorder designed to provide everything professionals need for more creative freedom when shooting in the field.

nxcam AVCHD Progressive MPEG2 SD Exmor Super35 CMOS MEMORY STICK SDXC

Full-HD 10x Super Slow Motion

240 fps in 1920 x 1080 High Speed Shooting

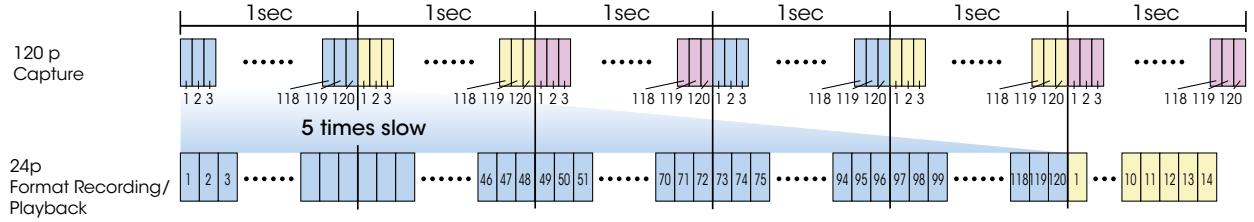
Thanks to the high-speed image data reading characteristics of the new Exmor Super35 CMOS sensor, the NEX-FS700R can capture full-HD images (1920 x 1080) at 120 or 240 fps of burst recording in 60Hz shooting mode. Using playback at 24 fps, the camcorder can simply and beautifully realize a maximum quality of full-HD 10x super slow motion pictures. For very high-speed shooting, you can choose 480- and 960-fps recording at a reduced resolution, widening your creative options.

As this table shows, the recording time depends on the frame rate.

Frame rate (60 Hz)	120 fps	240 fps	480 fps	960 fps
Recording time	16 sec	8 sec	9 sec	19 sec
Frame rate (50 Hz)	100 fps	200 fps	400 fps	800 fps
Recording time	19 sec	9 sec	12 sec	23 sec

The high sensitivity and the low-noise shooting capability of the NEX-FS700R make high-speed shooting more convenient – you won't need additional, large-scale equipment in various shooting environments.
The NEX-FS700R also enables Full HD (1920 x 1080) progressive slow and quick motion.
Frame rates are selectable from 60fps, 30fps, 15fps, 8fps, 4fps, 2fps and 1fps in 60 Hz shooting, 50fps, 25fps, 12fps, 6fps, 3fps, 2fps and 1fps in 50 Hz shooting.

Slow Motion Mechanism

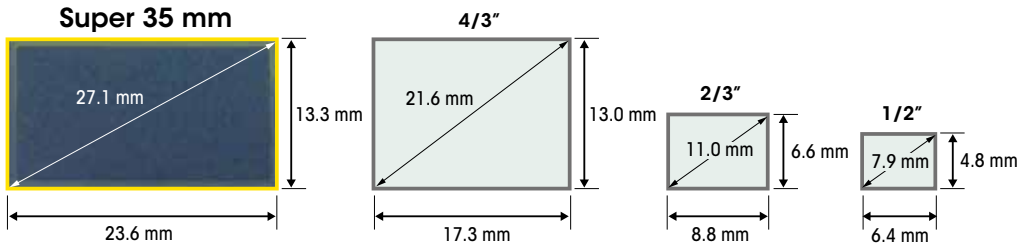


New 4K Exmor Super35 CMOS Sensor

High Speed Shooting, High Resolution and High Sensitivity

The NEX-FS700R is equipped with a newly developed 11.6M pixel Exmor Super35 CMOS sensor. This has a total of 4352 x 2662 pixels, and provides a future capability of 4K-size (4096 x 2160) motion picture shooting. Based on Exmor technology, this sensor has very high-speed image readout characteristics, such as a 240 fps reading in full-HD quality (1920 x 1080). Additionally, it has over 11M pixels in total, and the Exmor Super35 CMOS sensor realizes high sensitivity and a high signal-to-noise ratio (S/N). This means that the NEX-FS700R can shoot in minimum illumination (as low as 0.28*1 lux).

*1: When using a fixed shutter speed of 1/30, auto gain, and an iris setting of F1.4. The SELP18200 lens supplied with the NEX-FS700RH enables shooting in illumination as low as 1.5 lux when using a fixed shutter speed of 1/30, auto gain, and auto iris.



"Exmor" Super35 CMOS Sensor

Total pixels	Approx. 11.6M
Effective pixels of in moving shooting (16:9)	Approx. 8.3M
Effective pixels of in still picture shooting (16:9)	Approx. 8.4M
Effective pixels of in still picture shooting (3:2)	Approx. 7.1M

Sensitivity

Depth of Field

Interchangeable Lenses

E-Mount Interchangeable Lens System

The NEX-FS700R features Sony's E-mount Interchangeable Lens System. This accommodates the Super35mm-size sensor and is ideal for motion picture shooting because the mechanism is compact and silent. With this lens system, the camcorder can realize auto exposure and SteadyShot image stabilization during motion picture shooting.
Sony's E-mount interchangeable lenses let you enjoy a level of creative freedom with legacy and current camcorders. All of these lenses feature precision-crafted optics with aspherical glass elements for compact high performance, and a circular iris mechanism for smooth background defocusing. The SELP18200 (E 18–200 mm F3.5–6.3 OSS) lens supplied with the NEX-FS700RH boasts 11x motorized zoom, a quiet AF motor for silent recording, and Optical SteadyShot™ image stabilization with an advanced Active mode that lets you take steady handheld shots while walking around.
Thanks to the short 18 mm flange-back distance of E-mount interchangeable lenses, using a mount adaptor allows shooting with a wide range of existing lens resources. For example, with the optional A-mount adaptor, you can take advantage of the many available A-mount lenses. Sony's LA-EA2 A-mount lens adaptor allows you to use the wide range of high-quality alpha lenses and take advantage of the auto focus function for quicker and more convenient operation.

E-mount lens on
the NEX-FS700R

A-mount lens with
the LA-EA2 adaptor

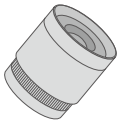
Another lens with
a third party adaptor

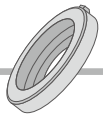
E-mount lenses

A-mount lenses

LA-EA2 mount adaptor

NEX-FS700R





Third party adaptor

Mount Adaptor LA-EA2 Compatible

The NEX-FS700R can attach A-mount lens via A-mount to E-mount adaptor LA-EA2. Thanks to Translucent Mirror Technology on LA-EA2, auto focus and one push auto iris functions are available during motion picture shooting with most of A-mount lenses

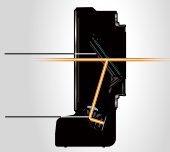
Mount Adaptor LA-EA2

Translucent Mirror Technology

Translucent Mirror Technology delivers responsive autofocus with A-mount lenses

Translucent mirror
An innovative translucent mirror simultaneously and continuously transmits light from the lens to both the CMOS image sensor and AF sensor.

AF sensor
Light from the mirror is continuously transmitted to the precision TTL phase detection AF sensor for instant focus lock-on, even with fast-moving subjects.



Still Picture Recording

The NEX-FS700R can capture high-quality 8.3M still images with beautiful shallow depth-of-field, thanks to the Exmor Super35 CMOS sensor. The aspect ratio of the still image is selectable from 16:9 to 3:2. This camcorder also includes a face detection function and auto focus, to help ensure subjects are always kept in focus.

Built-in ND Filters

With its built-in, ultra-thin ND filters, the NEX-FS700R offers exceptional shallow depth-of-field on highlights. This means you can expand your shooting styles in every different shooting situation, without requiring external ND filter equipment. The newly designed ND filter wheel that rotates across the sensor like a turret. The wheel includes positions for Clear, 1/4 (2 Stop), 1/16 (4 Stop), and 1/64 (6 Stop).

3G HD-SDI and HDMI Output

With 3G-SDI output, external output is possible in the same format as the camcorder's selected recording mode. When using HDMI output, native progressive signals can be output without pull-down, which is convenient when using an external recorder. Simultaneous HD-SDI and HDMI 4:2:2 uncompressed signal output is also possible, enabling generation of time codes and REC control signals.

Safe, Long-duration Recording in a One-piece Body

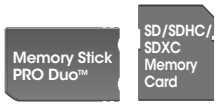
Hybrid Recording

Recording to the directly mountable HXR-FMU128 Flash Memory unit allows continuous recording for over 10 hours without changing the recording media. Simultaneous recording using a memory card and the HXR-FMU128 is also possible for secure backup when shooting footage that cannot be re-taken.

Note: HD footage and SD footage cannot be recorded separately on different recording media.

Compatible Memory Cards Type

*For more information please refer to the specification sheet on the back of this brochure.



Recording Time

HD MOVIE

		AVC HD 28M (PS)	AVC HD 24M (FX)	AVC HD 17M (FH)	AVC HD 9M (HQ)	AVC HD 5M (LP)
Linear PCM 2ch	1GB Memory Card	4 min	4 min	6 min	10 min	15 min
	2GB Memory Card	8 min	10 min	10 min	20 min	35 min
	4GB Memory Card	15 min	20 min	25 min	45 min	70 min
	8GB Memory Card	35 min	40 min	55 min	90 min	145 min
	16GB Memory Card	70 min	80 min	110 min	185 min	295 min
	32GB Memory Card	145 min	170 min	225 min	375 min	590 min
	HXR-FMU128 (128GB) [Optional]	600 min	700 min	940 min	1560 min	2460 min
Dolby Digital 2ch	1GB Memory Card	4 min	5 min	7 min	10 min	20 min
	2GB Memory Card	9 min	10 min	10 min	25 min	45 min
	4GB Memory Card	15 min	20 min	30 min	50 min	90 min
	8GB Memory Card	35 min	40 min	60 min	105 min	190 min
	16GB Memory Card	75 min	90 min	120 min	215 min	380 min
	32GB Memory Card	150 min	180 min	245 min	440 min	770 min
	HXR-FMU128 (128GB) [Optional]	640 min	750 min	1030 min	1830 min	3200 min

SD MOVIE

		SD 9M (HQ)
Dolby Digital 2ch	1GB Memory Card	10 min
	2GB Memory Card	25 min
	4GB Memory Card	55 min
	8GB Memory Card	110 min
	16GB Memory Card	225 min
	32GB Memory Card	460 min
	HXR-FMU128 (128GB) [Optional]	1910 min

Note: Recording time may vary depending on recording conditions.

HXR-FMU128 slot

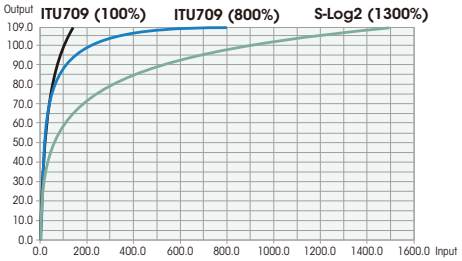
Memory Card slot

Picture Profile with S-Log2 Gamma Curve

For high light dynamic range

Picture Profile lets you make adjustments to the gamma curve, black level, color and other parameters that determine image characteristics. In the NEX-FS700R, S-Log2 has been added to the selection of gamma curves provided. S-Log2 is a gamma curve specifically designed to make the most of the sensitivity characteristics of the Exmor super 35 CMOS sensor. For more natural highlight rendition, S-Log2 extends dynamic range to 1300%. During shooting in S-Log2, although color grading is necessary, extremely wide latitude recording lets you capture highlights that would ordinarily be blown out. In addition, the FS700R matches the standard ITU709 gamma curve for low to mid-range luminance values, but extends dynamic range to ITU709 (800%) for high luminance values. This lets you maintain dynamic range for high luminance signals during shooting with minimal color grading.

* Since S-Log2 is designed for 10-bit recording, contrast of dark areas may be insufficient when recording 8-bit AVCHD



S-Log2 Grading Data

Exposure	
Shadow	-10%
Mid	+5%
Highlight	-4%
Color	
Mid	165°+1%
Highlight	352°-1%
Saturation	
Grobal	+49%
Mid	+66%
Highlight	+84%

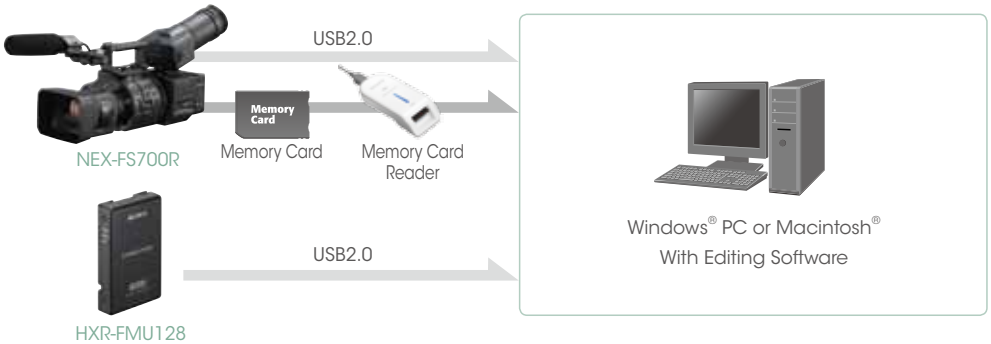
Editing Workflow

NXCAM Recording Format

Like other NXCAM Series camcorders, the NEX-FS700R uses the AVCHD format to enable stable operation using the same NXCAM workflow. AVCHD version 2.0 includes the shooting footage with a maximum frame rate of 1920 x 1080/60p (28 Mbps) for even higher-quality recording. For more flexibility, the MPEG-2 for SD recording format is also available.

For Windows® and Macintosh® users

Use Explore or Finder to ingest and use Editing Software to import.



Shooting Support Functions

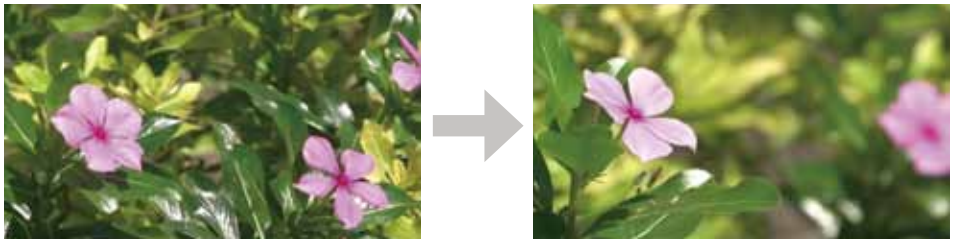
Convenient Features for Contents Creation

Selectable Magnification and Positioning of Expanded Focus

The camcorder has expanded focus improvement which allows for 4x and 8x magnification and provides a moveable area of expansion for easy focusing with shallow depth-of-field.

Focus Transition

When using E-mount lens, a focus transition function is available. You can memorize the two focusing positions by assigning setting buttons to each. After the two focusing position have been set, push the executing button and a smooth focus transition is realized automatically. You can also set the start time and transition duration time.



Face Detection in Auto Focus

In auto focus mode, the face detection function is useful for getting sharp focus continuously. When there are several faces in the same frame, you can set which face is the priority to keep in sharp focus.

Camera Profile Settings Storage on Memory Card

Up to 99 camera-profile settings can be stored, allowing rapid adaptation to multiple shooting environments without time wasted on adjusting parameters. Settings are also easily shared in multi-camera productions.

Marker Indication

Several types of marker help with shooting. Center, aspect ratio, safety zone, guide frame, and other markers can be displayed on the LCD.

For aspect ratio indication, seven types of ratio marker are available.

Moreover, you can select the units of measure: meter or feet, dB or ISO, and – for shutter speed – degree or second.

Switchable 50-Hz and 60-Hz Shooting

The NEX-FS700R is switchable between 50 Hz and 60 Hz to allow 24 p shooting in PAL areas, and to ensure no PAL/NTSC limitations.

Below table shows available recording frame rate.

Recording Frame rate

HD	PS (28Mbps) 1920 x 1080/60p, 50p
	FX (24Mbps) 1920 x 1080/60i, 50i, 30p, 25p, 24p 1280 x 720 /60p, 50p
	FH (17Mbps) 1920 x 1080/60i, 50i, 30p, 25p, 24p 1280 x 720 /60p, 50p
	HQ (9Mbps) 1440 x 1080/60i, 50i
	LP (5Mbps) 1440 x 1080/60i, 50i
SD	HQ (9Mbps) 720 x 480/60i, 720 x 576/50i

*Recording media formatted or recorded at 60i (50i) cannot be recorded or played back at 50i (60i), and vice versa.

RAW Recording Option

Expand 4K/2K RAW recording capability on AXS memory card

The genius of 4K and 2K RAW

Sony empowered the NEX-FS700R with a brilliant 4K image sensor featuring 4096 x 2160 resolution. Now you can unlock all that picture quality with the interface unit HXR-IFR5 and the RAW recorder AXS-R5 combination. 4K RAW delivers the sensor's full resolution and full exposure latitude. RAW recording preserves the integrity of the original camera signal for superlative image quality and amazing flexibility in post. And the 2K mode maintains your Super 35mm angle of view. 2K is particularly smart for an HD finish, delivering the quality of RAW with very manageable file sizes.

High speed 4K/2K RAW

In addition to pristine image quality, the NEX-FS700R was designed for Super Slow Motion. These benefits extend to RAW recording. Continuous 4K recording is available at 23.98, 25, 29.97, 50 and 59.94 frames per second. For higher speeds and longer durations, you can record continuous 2K RAW at 23.98, 25, 29.97, 50, 59.94, 100, 120, 200 and 240 fps. In continuous recording, there's no waiting for the data to spool from a buffer. You can also record super-long RAW clips all the way up to the full media capacity. A special burst mode records 4K to a buffer at 100 or 120 fps for up to approximately 4 seconds, providing up to 18 seconds of stunning high-speed playback at 24p.

* In RAW mode, no audio is recorded at frame rates above 59.94 fps.

Established post path

Sony RAW recording is proven, robust, and compatible with a world of third-party solutions for dailies, editing and grading. Thanks to free Sony plug-ins, leading NLEs can perform real-time, native editing of Sony RAW assets. The HXR-IFR5 connects to the same AXS-R5 outboard RAW recorder as used with Sony's popular F55 and F5 cameras. The recorder works in conjunction with Sony's rugged AXS-512S24 AXS memory card, the AXS-CR1 card reader for fast file transfers and Sony's RAW Viewer software (v1.1 or later). This is the same software used for RAW files from the F5, F55, and it enables you to play back RAW files, do a simple color grade, and even transcode to the SR Codec, DPX and OpenEXR formats.

Recording/playback time

4K (4096 × 2160)	Approx. 60 minutes (23.98P) or 24 minutes (59.94P)
2K (2048 × 1080)	Approx. 240 minutes (23.98P) or 96 minutes (59.94P)

(Using AXS-512S24 media)

AXSM

Simultaneous RAW/AVCHD recording

Simultaneous recording enables you to capture RAW to the outboard AXS-R5 while you record AVCHD files onto the camera's memory card as well as a clip-on HXR-FMU128 memory unit, sold separately. Using this method, you can record three versions simultaneously. Since the recorded AVCHD files will have the same time code as the RAW files, the AVCHD files can be used as proxies for off-line editing.

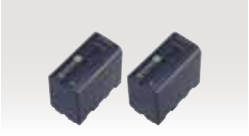
* AVCHD is not available during high-speed RAW recording.
* Recording duration is slightly different between RAW and AVCHD recording.

HD output for monitoring

HDMI/Component/Composite video outputs on the NEX-FS700R and the AUX OUT of the AXS-R5 can be used for monitoring purposes. In order to achieve accurate monitoring of the wide dynamic range of RAW recording, S-Log2 settings onto the picture profile of the NEX-FS700R.

* The gamma setting cannot be set individually for each video out/LCD panel/AVCHD recording.
* HD output or monitoring on FS700's LCD are 16:9 mode only.
* AUX OUT of the AXS-R5 is disabled during 2K recording mode. (It is able to output 2K playback mode.)

Available Accessories



2NP-F970/B
Rechargeable Battery Pack

ACC-L1BP
AC Adaptor/Charger/Battery Kit

HXR-FMU128
Flash Memory Unit

VCT-PG11RMB
Tripod with RM-1BP Remote Controller

LCS-G1BP
Soft Carrying Case

LCS-BP1BP
Soft Carrying Case

RM-1BP
Remote Commander

MS-HX32B
(32 GB, 16 GB, 8 GB)
Memory Stick PRO-HG Duo™

SF-32UX
(32 GB, 16 GB, 8 GB)
SD/SDHC Memory Card

MS-PX64
(64 GB, 32 GB, 16 GB)
Memory Stick PRO-HG Duo™
Mirroring Memory Stick

Recommended E mount Lenses

SEL1018
10-18mm F4 OSS

SEL35F18
35mm F1.8 OSS

SEL50F18
50mm F1.8 OSS

RAW recording related products

HXR-IFR5
Interface unit for AXS-R5

AXS-R5
2K/4K external 16bit RAW recorder

AXS-512S24
AXS Memory card, 512GB

AXS-CR1
Card reader for AXS media

BP-FL75
Olivine long-lasting battery

BC-L90
High speed battery charger for BP-FL75 and V-Mount batteries

Specifications

	NEX-FS700R/NEX-FS700RH
Camera	
Imager	Exmor Super35 CMOS sensor
Number of pixels	Total pixels approx. 11.6M Effective pixels in movie shooting (16:9) approx. 8.3M Effective pixels in still picture shooting (16:9) approx. 8.4M (3:2) approx. 7.1M
Built-in ND filters	Clear, 1/4, 1/16, 1/64
Color temperature	AUTO, ONE PUSH AB, INDOOR (3200K), OUTDOOR (5800K±7 positions), MANU WB TEMP (2300K–15000K, 100K step)
Zoom lens (supplied with NEX-FS700RH)	
SELP18200 E mount Lens	Approx. 11x zoom (Optical) f=18–200 mm, 35 mm equivalent 30.6–340 mm (16:9), 34.2–380 mm (3:2) F3.5–6.3 Filter diameter 67 mm Optical Steady Shot installed
Camera system	
Recording format	
Video recording format	HD MPEG-4 AVC/H.264 AVCHD Ver.2.0 SD MPEG-2 PS
Audio recording format	Linear PCM 2ch (48kHz 16-bits) (in HD) Dolby Digital 2ch (48 kHz 16-bits)
Recording mode (Recording bit rate is the total of video and audio)*	
HD	PS max 28 Mbps, 1920 × 1080/60p, 50p, 16:9 FX max 24 Mbps, 1920 × 1080/60i, 50i, 30p, 25p, 24p, 16:9 1280 × 720/60p, 50p, 16:9 FH approx. 17 Mbps (ave), 1920 × 1080/60i, 50i, 30p, 25p, 24p, 16:9 1280 × 720/60p, 50p, 16:9 HQ approx. 9 Mbps (ave), 1440 × 1080/60i, 50i, 16:9 LP approx. 5 Mbps (ave), 1440 × 1080/60i, 50i, 16:9
SD	HQ approx. 9 Mbps (ave), 720 × 480/60i, 720 × 576/50i, 16:9, 4:3
Recording media	Flash Memory Unit (HXR-FMU128), MS PRO Duo (Mark2 only), MS PRO-HG Duo, SD/SDHC/SDXC Class4 and higher
Input/output	
Memory card slot	MS PRO Duo, SD/SDHC/SDXC compatible ×1
3G HD-SDI OUT	BNC connecter ×1
HDMI OUT	HDMI connecter (type A) ×1
COMPONENTOUT	mini D terminal ×1
VIDEO OUT	RCA Pin ×1
AUDIO OUT	RCA Pin ×2
Headphone jack	Stereo mini jack (ø3.5 mm) ×1
USB jack	Mini-AB ×1
AUDIO INPUT 1/INPUT 2	XLR 3-pin (Female) ×2, LINE/MIC/MIC +48V selectable
Remote	Stereo mini-mini jack (ø2.5 mm) ×1
LCD screen	
Screen size	8.8 cm (3.5type, 16:9)
Total dots (H × W)	Approx. 921000 dots (1,920 × 480)
General	
Power supply	DC7.2 V (Battery Pack), DC7.6 V (AC-DC adaptor)
Power consumption	9.6 W (60i), 8.8 W (50i)
Operating temperature	0 ~ 40°C
Storage temperature	–20 ~ +60°C
Dimensions (W × H × D)	145.0 mm × 178.5 mm × 235.5 mm (including protrusions)
Body mass	1,680 g (3 lb 11 oz)
Total mass in recording	3,220 g (7 lb 2 oz) (Mass including SELP18200 [optional], Battery [NP-F770], VF w/ large eyecup, handle, ECM-XM1, grip)
Supplied accessories	
AC Adaptor (AC-PW10), Charger (AC-VL1), Rechargeable Battery Pack (NP-F770), Microphone (ECM-XM1), Remote Commander (RMT-845), Component video cable, A/V connecting cable, USB cable, USB Adaptor Cable (VMC-UAM1), Large eyecup, Lens hood with lens cover (Lens cap & Lens hood), Lithium Battery (CR2025), Clock Lithium (Installed)	

* Due to variable bit rate, 28Mbps is the maximum bit rate for HD PS mode, and 24Mbps for HD FX mode.The average bit rate is stated for FH, HQ and LP modes.

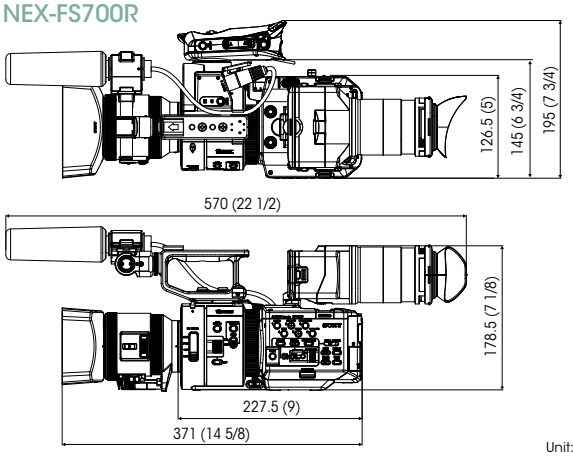
		HXR-IFR5
Mass (Body only)		910 g (2 lb)
Mass (including the AXS-R5, the battery pack BP-FL75 and the AXS memory card AXS-512S24)		2600 g (5 lb 11 oz)
Power Consumption		5.0 W
Power Requirements (AC adaptor / Battery)		DC11 V ~ 17 V
Dimension (W × H × D) (including protrusions / Body only)		115 mm × 189 mm × 127.5 mm
Dimension (W × H × D) (including the projecting parts, the AXS-R5 and the battery pack BP-FL75)		119 mm × 189 mm × 207 mm
Battery operating time (BP-FL75)	Continuous recording time	150 min
	Continuous playback time	165 min
Operating Temperature		0 ~ 40°C
Storage Temperature		-20 ~ +60°C

	AXS-R5
General	
Power supply	11V to 17V DC
Power consumption	Approx. 23 W (4K 23.98P)
Operating temperature	0 ~ 40 °C
Storage temperature	–20 ~ +60 °C
Dimensions (W x H x D)	106 mm x 124 mm x 65.5 mm
Mass (Body only)	0.7 kg (1 lb. 8.7 oz.)
Input/Output Connectors	
Extension interface connector	144-pin (1), supplies power
AUX OUT	connector BNC type (1)
DC IN connector	4-pin XLR, male (1)
DC OUT connector	4-pin round type, female (1)
Battery connector	5-pin (1)
Recording format	
Video	F55RAW format (16-bit linear)
Audio	Linear PCM (48 kHz/24 bit), 4-channel
Recording/playback time (Using AXS-512S24 media)	
4K	4K Approx. 60 minuts (23.98P) or 24 minutes (59.94P)
2K	2K Approx. 240 minutes (23.98P) or 96 minutes (59.94P)

* The recording and playback time will vary a little, depending on the usage conditions and the memory characteristics.

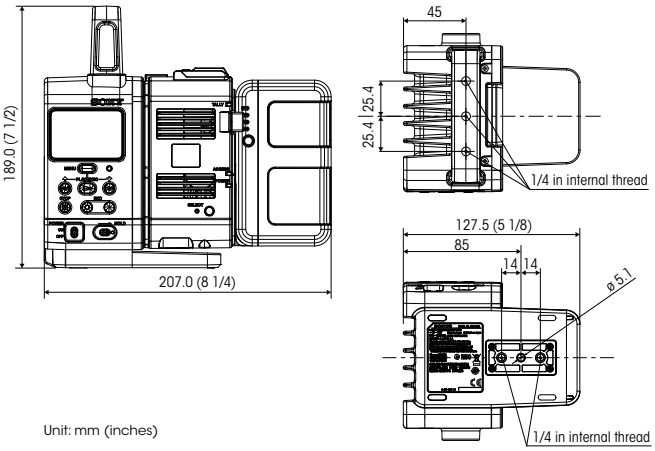
Dimensions

NEX-FS700R



Unit: mm (inches)

HXR-IFR5/AXS-R5/BP-FL75



Unit: mm (inches)

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