

# Specifications

As of June, 2017

## General

Power:	DC 7.28 V (when the battery is used) DC 12 V (when the AC adaptor is used)
Power Consumption:	19.7 W (when the LCD monitor is used)
Operating Temperature:	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity:	10 % to 80 % (no condensation)
Weight:	Body: Approx. 2.0 kg (4.41 lb) (body only, excluding lens hood, battery, and accessories) Shooting: Approx. 2.4 kg (5.29 lb) (including lens hood, battery, and eye cup)
Dimensions:	173 mm (W) x 195 mm (H) x 346 mm (D) (6-13/16 inches x 7-11/16 inches x 13-5/8 inches) (excluding protrusion and eye cup) 173 mm (W) x 195 mm (H) x 392 mm (D) (6-13/16 inches x 7-11/16 inches x 15-7/16 inches) (including eye cup, excluding protrusion)

## Camera Unit

Pickup Device:	1.0-type (effective size) MOS solid state image sensor
Effective Pixels:	8.79 megapixel: UHD/FHD 59.94p/29.97p/23.98p 9.46 megapixel: 4K 24p
Lens:	Optical image stabilizer lens, optical 20x motorized zoom F2.8 to F4.5 (f=8.8 mm to 176 mm) 35 mm equivalent: f=25.4 mm to 508.0 mm: UHD/FHD 59.94p/29.97p/23.98p f=24.0 mm to 480.0 mm: 4K24.00p Filter Diameter: 67 mm ND Filter: 4 Positions (OFF, 1/4, 1/16, 1/64) IR Filter: Incorporates the ON/OFF control function Shortest Shooting Distance (M.O.D.): Approx. 1.0 m from the front lens
Gain Setting:	L/M/H selector switch Standard mode: 0 dB to 24 dB (Adjustable in 1 dB steps) (Automatic setting can be assigned to L/M/H) Extended ON: -3 dB to 24 dB (Adjustable in 1 dB steps) (Automatic setting can be assigned to L/M/H) 30 dB and 36 dB switched (when assigning [S. GAIN] to the USER button)
Color Temperature Setting:	ATW, ATW LOCK, Ach, Bch, preset 3200 K/preset 5600 K/VAR (2000 K to 15000 K)
Shutter Speed:	When [SYSTEM MODE] = 59.94 Hz 60i/60p mode: 1/60 sec., 1/100 sec., 1/120 sec., 1/180 sec., 1/250 sec., 1/350 sec., 1/500 sec., 1/750 sec., 1/1000 sec., 1/1500 sec., 1/2000 sec., 1/3000 sec., 1/4000 sec., 1/8000 sec. 30p mode: 1/30 sec., 1/50 sec., 1/60 sec., 1/100 sec., 1/120 sec., 1/180 sec., 1/250 sec., 1/350 sec., 1/500 sec., 1/750 sec., 1/1000 sec., 1/1500 sec., 1/2000 sec., 1/3000 sec., 1/4000 sec., 1/8000 sec. 24p mode: 1/24 sec., 1/48 sec., 1/50 sec., 1/60 sec., 1/100 sec., 1/120 sec., 1/180 sec., 1/250 sec., 1/350 sec., 1/500 sec., 1/750 sec., 1/1000 sec., 1/1500 sec., 1/2000 sec., 1/3000 sec., 1/4000 sec., 1/8000 sec. When [SYSTEM MODE] = 50.00 Hz 50i/50p mode: 1/50 sec., 1/60 sec., 1/100 sec., 1/125 sec., 1/180 sec., 1/250 sec., 1/350 sec., 1/500 sec., 1/750 sec., 1/1000 sec., 1/1500 sec., 1/2000 sec., 1/3000 sec., 1/4000 sec., 1/8000 sec. 25p mode: 1/25 sec., 1/50 sec., 1/60 sec., 1/100 sec., 1/125 sec., 1/180 sec., 1/250 sec., 1/350 sec., 1/500 sec., 1/750 sec., 1/1000 sec., 1/1500 sec., 1/2000 sec., 1/3000 sec., 1/4000 sec., 1/8000 sec.
Shutter Speed: (Slow Shutter)	When [SYSTEM MODE] = 59.94 Hz 60i/60p mode: 1/2 sec., 1/4 sec., 1/8 sec., 1/15 sec., 1/30 sec., 30p mode: 1/2 sec., 1/4 sec., 1/8 sec., 1/15 sec. 24p mode: 1/2 sec., 1/3 sec., 1/6 sec., 1/12 sec. When [SYSTEM MODE] = 50.00 Hz 50i/50p mode: 1/2 sec., 1/3 sec., 1/6 sec., 1/12 sec., 1/25 sec. 25p mode: 1/2 sec., 1/3 sec., 1/6 sec., 1/12 sec.
Shutter Speed: (Synchro Scan)	When [SYSTEM MODE] = 59.94 Hz 59.94i/59.94p mode: 1/60.0 sec. to 1/249.7 sec. 29.97p mode: 1/30.0 sec. to 1/249.7 sec. 23.98p mode: 1/24.0 sec. to 1/249.6 sec. 24.00p mode: 1/24.0 sec. to 1/249.9 sec. When [SYSTEM MODE] = 50.00 Hz 50i/50p mode: 1/50.0 sec. to 1/250.0 sec. 25p mode: 1/25.0 sec. to 1/250.0 sec.
VFR Recording Frame Rate:	When [SYSTEM MODE] = 59.94 Hz 30p mode: 2, 15, 26, 28, 30, 32, 34, 45, 60 (fps) 24p mode: 2, 12, 20, 22, 24, 26, 28, 36, 48, 60 (fps) SYSTEM MODE = 50.00, Hz 25p mode: 2, 12, 21, 23, 25, 27, 30, 37, 50 (fps)
Super-Slow Motion Recording:	When [SYSTEM MODE] = 59.94 Hz Shooting frame rate FHD 120 fps, Slow motion effect 1/4 speed (when 30p mode), 1/5 speed (when 24p mode) When [SYSTEM MODE] = 50.00 Hz Shooting frame rate FHD 100fps, Slow motion effect 1/4 speed (when 25p mode)
Sensitivity:	When [HIGH SENS.] mode F11 (2000 lx, 3200 K, 89.9 % reflect, 1080/59.94i) F12 (2000 lx, 3200 K, 89.9 % reflect, 1080/50i)
Minimum Subject Illumination:	0.2 lx (F2.8, gain 18 dB, Manual slow shutter 1/2S, When [HIGH SENS.] mode)
Digital Zoom:	2x/5x/10x, i.Zoom (max. 30x)
Lens Hood:	Hood with lens cover

## Memory Card Recorder

Recording Media: <sup>*1</sup>	SDHC memory card (4 GB to 32 GB), SDXC memory card (48 GB to 128 GB), UHS-I supported
Recording Slot:	Slot x 2
System Format:	59.94 Hz/50 Hz
Motion Picture Recording:	Recording Format: MOV, MP4, AVCHD
Recording Mode:	Please see page 07 for the Recording Format table.
Recording Time:	Please see back cover for the Recording Time table.
2 Slot Functions:	Relay, Simultaneous, Background <sup>*2</sup> , Dual codec
Still Picture Recording Mode:	JPEG (DCF/Exif2.2)
Still Picture Recording:	Motion Picture Playback: 8.8M: 4096 x 2160 (17:9), 8.3M: 3840 x 2160 (16:9), 2.1M: 1920 x 1080 (16:9), 0.9M: 1280 x 720 (16:9)

## Digital Video

Video Signal for External Output:	8bit 4:2:2 <sup>*3</sup>
Recording Video Signal:	8bit 4:2:0
Video Compression Format:	MPEG-4 AVC/H.264 High Profile (MOV/MP4/AVCHD)

## Digital Audio

Recording Audio Signal:	48 kHz/16 bit 2CH
Audio Signal Format:	LPCM (MOV/MP4), Dolby Audio (AVCHD)
Headroom:	12 dB

## Dual Codec

Recording Method:	MOV, MP4
Video Compression Format:	MPEG-4 AVC/H.264 High Profile
Audio Signal Format:	LPCM
Recording Format:	Please see page 08 for the Dual Codec Recording table.
Recording Time:	FHD 50Mbps FHD 8Mbps 32 GB: Approx. 1 hour 20 min. Approx. 8 hours 30 min. 64 GB: Approx. 2 hour 40 min. Approx. 17 hours 10 min. 128 GB: Approx. 5 hours 20 min. Approx. 35 hours

## Video Input/Output

SDI OUT:	BNC x 1, 0.8 V [p-p], 75 Ω, 3 G/1.5 G, HD SDI, SD SDI supported Output format: 1080/59.94p LEVEL-A/50.00p LEVEL-A, 1080/29.97PsF/25.00PsF/24.00PsF/23.98PsF, 1080/59.94i/50.00i, 720/59.94p/50.00p, 480/59.94i, 576/50.00i
VIDEO OUT:	AV connector x 1
HDMI :	Type A connector x 1, VIERA Link not supported Output format: 2160/59.94p/50.00p/29.97p/25.00p/24.00p/23.98p, 1080/59.94p/50.00p/29.97p/25.00p/24.00p/23.98p/59.94i/50.00i, 720/59.94p/50.00p, 480/59.94p, 576/50.00p

## Audio Input

Built-in Microphone:	Stereo microphone
XLR Input:	XLR (3-pin) x 2 (INPUT1, INPUT2) Input high impedance, LINE/MIC/MIC+48V (switchable SW) LINE: +4 dBu/0 dBu (switchable menu) MIC: -40 dBu/-50 dBu/-60 dBu (switchable menu)

## Audio Output

SDI:	2 ch (LPCM) switchable gain: 0 dB/-6 dB/-12 dB
HDMI:	2 ch (LPCM)
AUDIO OUT:	AV connector x 1, Output level: 600 Ω, 251 mV
Headphone:	3.5 mm diameter stereo mini jack x 1
Speaker:	20 mm diameter, round x 1

## Other Input/Output

Camera Remote:	2.5 mm diameter super mini jack x1 (ZOOM, S/S) 3.5 mm diameter mini jack x1 (FOCUS, IRIS)
TC PRESET IN/OUT:	BNC x 1, Used as the input and output terminals Input: 1.0 V to 4.0 V [p-p] 10 KΩ Output: 2.0 V ± 0.5 V [p-p] low impedance
USB 3.0 HOST:	Standard-A connector, 9-pin, external media device connection <sup>*4</sup> , bus power supported
USB 3.0 DEVICE:	Micro-B connector, 10-pin, Mass storage function (read only)
DC IN 12V:	DC 12V (11.4V to 12.6V) EIAJ Type4

## Monitor/Viewfinder

LCD Monitor:	3.5 type LCD color monitor, Approx. 1,150,000 dots
Viewfinder:	0.39 type OLED (organic EL display) Approx. 2,360,000 dots, video display area: approx. 1,770,000 dots

## Included Accessories

Battery (AG-VBR59), Battery charger (AG-BRD50), AC adaptor, Microphone holder kit, AC cable, Eye cup, Lens hood, INPUT terminal cap, Operating instructions

<sup>\*1</sup>: An SD memory card with a capacity of UHS Speed Class 3 (U3) is required to shoot videos with a bit rate of 100 Mbps or higher. An SDXC memory card with a capacity of 64 GB or more and UHS Speed Class 3 (U3) is required to shoot UHD 2160/59.94p/50.00p videos with a bit rate of 150 Mbps or higher.

<sup>\*2</sup>: It supports in record mode less than 50 Mbps.

<sup>\*3</sup>: Output of UHD/59.94p/50.00p becomes 8 bit 4:2:0.

<sup>\*4</sup>: External media devices with a capacity of below 32 GB or a capacity above 2 TB cannot be used.