

EOS C70

Digital Cinema Camera

Firmware ver. 1.0.1.1

Specifications

C70

System

- Recording System

Clips:

XF-AVC

Video compression: MPEG-4 AVC / H.264
 Audio format: Linear PCM, 24 bit, 48 kHz, 4 channels
 File format: MXF

MP4

Video compression: H.265 / HEVC, MPEG-4 AVC / H.264
 Audio format: Linear PCM, 16 bit, 48 kHz, 2 channels
 MPEG-2 AAC-LC, 16 bit, 48 kHz, 2 channels
 File format: MP4

WAV (audio files for slow & fast motion clips)

Audio format: Linear PCM, 24 bit, 48 kHz, 4 channels
 File format: BWF

Photos: DCF (Design rule for Camera File system), compatible with Exif Ver. 2.31, JPEG compression

- Video Configuration (recording/playback)

Primary clips:

XF-AVC

Bit rate: 410 Mbps, 310 Mbps, 160 Mbps / Intra-frame,
 260 Mbps, 160 Mbps, 50 Mbps, 24 Mbps / Long GOP
 Resolution: 4096x2160, 3840x2160, 2048x1080, 1920x1080, 1280x720
 Color sampling: YCbCr 4:2:2, 10 bit
 Frame rate: 59.94P, 59.94i, 50.00P, 50.00i, 29.97P, 25.00P, 24.00P, 23.98P

MP4

Bit rate: 225 Mbps, 170 Mbps, 150 Mbps, 135 Mbps, 100 Mbps, 50 Mbps, 35 Mbps,
 12 Mbps, 9 Mbps, 8 Mbps / Long GOP
 Resolution: 4096x2160, 3840x2160, 2048x1080, 1920x1080, 1280x720
 Color sampling: YCbCr 4:2:2, 10 bit, 4:2:0, 10 bit, 4:2:0, 8 bit
 Frame rate: 59.94P, 50.00P, 29.97P, 25.00P, 24.00P, 23.98P

Sub recording clips:

XF-AVC

Bit rate: 160 Mbps / Intra-frame,
 160 Mbps, 50 Mbps, 24 Mbps / Long GOP
 Resolution: 4096x2160, 3840x2160, 2048x1080, 1920x1080, 1280x720
 Color sampling: YCbCr 4:2:2, 10 bit
 Frame rate: 59.94P, 59.94i, 50.00P, 50.00i, 29.97P, 25.00P, 24.00P, 23.98P

MP4

Bit rate: 150 Mbps, 100 Mbps, 50 Mbps, 35 Mbps, 12 Mbps, 9 Mbps,
 8 Mbps / Long GOP
 Resolution: 4096x2160, 3840x2160, 2048x1080, 1920x1080, 1280x720
 Color sampling: YCbCr 4:2:2, 10 bit, 4:2:0, 10 bit, 4:2:0, 8 bit
 Frame rate: 59.94P, 50.00P, 29.97P, 25.00P, 24.00P, 23.98P

Proxy clips:

XF-AVC

Bit rate: 24 Mbps / Long GOP
 Resolution: 2048x1080, 1920x1080, 1280x720
 Color sampling: YCbCr 4:2:0, 8 bit
 Frame rate: 59.94P, 59.94i, 50.00P, 50.00i, 29.97P, 25.00P, 24.00P, 23.98P

- **Recording Media (not included)**
SD, SDHC (SD High Capacity) or SDXC (SD eXtended Capacity) cards
- **Image Sensor**
Super 35mm-equivalent CMOS sensor
Effective pixels (approximate, with [Super 35mm] sensor mode):
8,850,000 pixels (4096x2160) when the resolution is 4096x2160 or 2048x1080
8,290,000 pixels (3840x2160) when the resolution is 3840x2160 or 1920x1080
- **LCD Touch Screen**
8.8 cm (3.5 in.) color LCD, 16:9 aspect ratio, approx. 2,760,000 dots, 100% coverage, capacitive touch screen operation
- LUTs can be applied (BT.709, HDR Assist. 1600% or 400%) and assistance displays can be output (onscreen displays, peaking, zebra pattern, magnification, B&W image, video scope, false color, anamorphic desqueeze).
- **Lens Mount**
Canon RF lens mount compatible with Canon RF and EF¹ lenses
¹ One of the available Canon EF-EOS R Mount Adapters is required for using EF lenses (including EF-S and EF Cinema lenses).
- **Approximate lens multiplication factor (for 35mm equivalent focal length)**
[Super 35mm] sensor mode:
1.460 when the horizontal resolution is 4096 or 2048
1.534 when the horizontal resolution is 3840 or 1920
[Super 16mm (Cropped)] sensor mode:
2.920 when the horizontal resolution is 2048
3.069 when the horizontal resolution is 1920
- **Lens Correction**
Peripheral illumination/chromatic aberration/diffraction correction is available for Canon RF, EF and EF Cinema lenses²
Distortion aberration correction is available only for Canon RF lenses²
² Some lenses are not compatible with in-camera correction.
- **Shutter Speed**
Speed (1/3-stop increments, 1/4-stop increments), angle, clear scan, slow, off
- **Iris**
Manual (1/2-stop increments, 1/3-stop increments, fine adjustment available), push auto iris, automatic aperture
- **ISO Speed/Gain**
Manual, automatic adjustment
ISO Speed: ISO 100³, ISO 160 to ISO 25600, ISO 51200³, ISO 102400³
Gain: -6 dB³ to -3 dB³, -2 dB to 42 dB, 45 dB³ to 54 dB³
³ With extended ISO/Gain range and 1 stop increments (ISO speed) or [Normal] increments (gain).
- **ND Filter**
Built-in (Off, 2, 4, 6, 8⁴ or 10⁴ stops), motor operated
⁴ With extended ND range.
- **Exposure**
AE shift, light metering modes (standard, spotlight, backlight)
- **White Balance**
Custom white balance (two sets, A and B); two preset settings (daylight, 5,600 K⁵ and tungsten lamp, 3,200 K⁵); color temperature setting (2,000 K to 15,000 K); automatic white balance (AWB)
Color temperature and color compensation (CC) adjustment available for all settings except custom white balance and AWB.
⁵ Color temperatures are approximate and given only as a reference.

- **Focus**
Manual focus, autofocus (one-shot AF, AF-boosted MF, continuous AF, Face AF); face detection and subject tracking available
AF type: Dual Pixel CMOS AF, contrast-detection AF
- **Sensor Sensitivity (ISO 800, 2000 lux, 89.9% reflection)**
59.94 Hz: F10 (2048x1080 at 59.94P), F14 (1920x1080 at 29.97P)
50.00 Hz: F11 (2048x1080 at 50.00P), F16 (1920x1080 at 25.00P)
- **Built-in Microphone**
Stereo electret condenser microphone
- **Size of Photos**
4096x2160, 3840x2160, 2048x1080, 1920x1080

Terminals

- **HDMI OUT Terminal**
HDMI connector, output only
- Assistance displays can be output (onscreen displays, peaking, zebra pattern, magnification, B&W image, video scope, false color, anamorphic desqueeze).
- **INPUT Terminals (INPUT 1 and INPUT 2)**
Mini XLR 3-pin jack (pin1: shield, pin2: hot, pin3: cold), 2 sets, balanced
Sensitivity:
MIC setting: -60 dBu (volume center, full scale -18 dB) / microphone attenuator: 20 dB
LINE setting: 4 dBu (volume center, full scale -18 dB)
- **MIC Terminal**
Ø 3.5 mm stereo mini-jack
Sensitivity:
[MIC], [MIC (with Power Supply)] setting:
-72 dBV (volume center, full scale -18 dB) / microphone attenuator: 20 dB
Plug-in power supply: 2.4 V DC
[LINE] setting: -12 dBV (volume center, full scale -18 dB)
- **Ω (Headphone) Terminal**
Ø 3.5 mm stereo mini-jack, -17 dBV (32 Ω load, Max volume)
- **TIME CODE Terminal**
BNC jack, input/output
Input setting: 0.5 Vp-p to 18 Vp-p / 100 kΩ; Output setting: 1.3 Vp-p / 50 Ω or less
- **USB Terminal**
USB Type-C receptacle
- **REMOTE A Terminal**
Ø 2.5 mm stereo sub-mini jack

Power/Others

- **Power Supply (rated)**
14.4 V DC (battery pack), 24.0 V DC (DC IN)
- **Power Consumption and Approximate Continuous Recording Times**
Values are listed in the following order: Power consumption / Continuous recording time with a BP-A30 battery / Continuous recording time with a BP-A60 battery. The values were measured using normal recording (second card recording function turned off), with an RF35mm F1.8 MACRO IS STM lens and LCD luminance set to [Normal].
XF-AVC/MP4
Approx. 14.6 W / 170 min. / 350 min. ([Super 35mm] sensor, 4096x2160 at 59.94P)
Approx. 14.1 W / 175 min. / 360 min. ([Super 35mm] sensor, 4096x2160 at 50.00P)
Approx. 12.4 W / 200 min. / 410 min. ([Super 16mm (Cropped)] sensor, 2048x1080 at 59.94P)
Approx. 12.2 W / 205 min. / 415 min. ([Super 16mm (Cropped)] sensor, 2048x1080 at 50.00P)
- **Operating Temperature**
0 – 40 °C (32 – 104 °F)
- **Dimensions (W x H x D)⁶**
Camera body only: 160 x 130 x 116 mm (6.3 x 5.1 x 4.6 in.)
Camera with handle unit, microphone holder: 260 x 266 x 171 mm (10.2 x 10.5 x 6.7 in.)
- **Weight⁶ (including tape measure hook and grip belt)**
Camera body: 1,190 g (2.6 lb.)
Camera with BP-A30 battery, 2 cards: 1,420 g (3.1 lb.)
Camera with handle unit, microphone holder, BP-A30 battery, 2 cards: 1,620 g (3.6 lb.)

Accessories

CG-A20 Battery Charger

- **Rated Input:** 24 V DC, 1.8 A
- **Rated Output:** 16.7 V DC, 1.5 A
- **Operating Temperature:** 0 – 40 °C (32 – 104 °F)
- **Dimensions⁶ (W x H x D):** 100 x 24 x 100 mm (3.9 x 0.9 x 3.9 in.)
- **Weight⁶:** 145 g (5.1 oz.)

CA-CP200 L Compact Power Adapter

- **Rated Input:** 100 – 240 V AC, 50/60 Hz, 90 VA (100 V AC) – 120 VA (240 V AC)
- **Rated Output:** 24 V DC, 1.8 A
- **Operating Temperature:** 0 – 40 °C (32 – 104 °F)
- **Dimensions⁶ (W x H x D):** 67.5 x 37 x 134 mm (2.7 x 1.5 x 5.3 in.)
- **Weight⁶:** 290 g (10.2 oz.)

BP-A30 Battery Pack

- **Battery Type:** Rechargeable lithium ion battery, compatible with Intelligent System
- **Rated Voltage:** 14.4 V DC
- **Rated Battery Capacity:** 3,100 mAh / 45 Wh
- **Operating Temperature:** 0 – 40 °C (32 – 104 °F)
- **Dimensions⁶ (W x H x D):** 41.5 x 45.1 x 69.7 mm (1.6 x 1.8 x 2.7 in.)
- **Weight⁶:** 225 g (7.9 oz)

⁶ All dimensions and weights are approximate.

Compatible Lenses and Functions

Following is a list of lenses compatible with this camera and the various functions that can be used depending on the lens. Depending on the lens's purchase date, you may need to update the lens's firmware to use these functions. For details, visit your local Canon website or consult a Canon Service Center.

Lens	Iris control from the camera			Zoom control from the camera
	Manual	Push auto iris	Automatic	
RF lenses	●	●	● ¹	–
EF lenses ²	●	●	–	–
EF lenses compatible with auto iris	●	●	●	● ³
EF Cinema lenses ²				
CN7x17 KAS S/E1 ⁴ CN10x25 IAS S/E1 ⁴ CN20x50 IAS H/E1 ⁴	●	●	●	●
CN-E18-80mm T4.4 L IS KAS S, CN-E70-200mm T4.4 L IS KAS S	●	●	●	●
Manual focus lenses compatible with focus guide				
CN-E15.5-47mm T2.8 L S CN-E15.5-47mm T2.8 L SP CN-E30-105mm T2.8 L S CN-E30-105mm T2.8 L SP	–	–	–	–

¹ Except for the RF600mm F11 IS STM, RF800mm F11 IS STM.

² One of the available Canon EF-EOS R Mount Adapters is required for using EF lenses (including EF-S and EF Cinema lenses).

³ Only lenses with the PZ-E1 Power Zoom Adapter attached.

⁴ The AE response setting (☑ 163) is not supported (not applicable).

- EF lenses compatible with auto iris:

EF24-105mm f/3.5-5.6 IS STM
 EF70-200mm f/4L IS II USM
 EF70-300mm f/4-5.6 IS II USM
 EF85mm f/1.4L IS USM
 EF400mm f/2.8L IS III USM
 EF600mm f/4L IS III USM

EF-S10-18mm f/4.5-5.6 IS STM
 EF-S18-55mm f/3.5-5.6 IS STM
 EF-S18-55mm f/4-5.6 IS STM
 EF-S18-135mm f/3.5-5.6 IS STM
 EF-S18-135mm f/3.5-5.6 IS USM
 EF-S35mm f/2.8 MACRO IS STM
 EF-S55-250mm f/4-5.6 IS STM

Lens	Focus control from the camera					Focus guide
	Manual	One-shot AF	Continuous AF	Face AF	Tracking	
RF lenses / EF lenses ¹	●	●	●	●	●	●
EF lenses not compatible with autofocus while slow & fast motion recording is activated	●	-	-	-	-	●
EF Cinema lenses ¹						
CN7x17 KAS S/E1 CN10x25 IAS S/E1	●	●	●	●	●	●
CN20x50 IAS H/E1	●	-	-	-	-	-
CN-E18-80mm T4.4 L IS KAS S, CN-E70-200mm T4.4 L IS KAS S	●	●	●	●	●	●
Manual focus lenses compatible with focus guide	-	-	-	-	-	●

¹ One of the available Canon EF-EOS R Mount Adapters is required for using EF lenses (including EF-S and EF Cinema lenses).

- Manual focus lenses compatible with focus guide:

CN-E14mm T3.1 L F

CN-E50mm T1.3 L F

CN-E20mm T1.5 L F

CN-E85mm T1.3 L F

CN-E24mm T1.5 L F

CN-E135mm T2.2 L F

CN-E35mm T1.5 L F

- EF lenses not compatible with autofocus while slow & fast motion recording is activated:

EF24-105mm f/3.5-5.6 IS STM

EF-S18-135mm f/3.5-5.6 IS STM

EF70-300mm f/4-5.6 IS II USM

EF-S18-135mm f/3.5-5.6 IS USM

EF-S10-18mm f/4.5-5.6 IS STM

EF-S35mm f/2.8 MACRO IS STM

EF-S18-55mm f/3.5-5.6 IS STM

EF-S55-250mm f/4-5.6 IS STM

EF-S18-55mm f/4-5.6 IS STM

- Lenses compatible with automatic retraction when the camera is turned off (📖 172).

RF35mm F1.8 MACRO IS STM

EF50mm f/1.8 STM

EF40mm f/2.8 STM

EF-S24mm f/2.8 STM

Reference Tables

Approximate Recording Time on a Card

Main recording format and bit rate		32 GB	128 GB	512 GB
XF-AVC	410 Mbps	9 min.	39 min.	156 min.
	310 Mbps	12 min.	51 min.	207 min.
	260 Mbps	15 min.	61 min.	246 min.
	160 Mbps	25 min.	100 min.	401 min.
	50 Mbps	80 min.	321 min.	1,284 min.
MP4 (HEVC)	225 Mbps	16 min.	71 min.	285 min.
	170 Mbps	23 min.	94 min.	377 min.
	135 Mbps	29 min.	118 min.	475 min.
	100 Mbps	40 min.	160 min.	642 min.
	50 Mbps	80 min.	321 min.	1,284 min.
MP4 (H.264)	150 Mbps	25 min.	107 min.	428 min.
	35 Mbps	114 min.	458 min.	1,834 min.

Charging Times

Charging times are approximate and vary according to charging conditions, ambient temperature and initial charge of the battery pack.

Battery pack	BP-A30	BP-A60
Charging time using the supplied CG-A20 Battery Charger	170 min.	300 min.