Canon

EOS C200
EOS C200B

Digital Cinema Camera

Firmware ver. 1.0.3.1.00

Instruction Manual

Specifications

C200 / C200B

System

- **Recording System**
  Movies:
      RAW
          Video format: Cinema RAW Light
          Audio format: Linear PCM, 16 or 24 bit, 48 kHz, 4 channels
          File format: CRM (Canon RAW Movie; Canon proprietary file format)
      MP4
          Video compression: MPEG-4 AVC/H.264
          Audio format: MPEG-4 AAC-LC, 16 bit, 48 kHz, 2 channels
                      Linear PCM, 16 bit, 48 kHz, 4 channels
          File format: MP4
     XF-AVC
          Video compression: MPEG-4 AVC/H.264
          Audio format: Linear PCM, 24 bit, 48 kHz, 4 channels
          File format: MXF

  Photos: DCF (Design rule for Camera File system), compatible with Exif Ver. 2.3, JPEG compression

- **Video Configuration[1] (recording/playback)**
  Primary clips:
      RAW
          Bit rate: 1 Gbps
          Resolution: 4096x2160
          Color depth: 10 bit or 12 bit (depending on the frame rate)
          Frame rate: 59.94P, 50.00P, 29.97P, 23.98P, 25.00P, 24.00P
      MP4
          Bit rate: 150 Mbps, 35 Mbps
          Resolution: 3840x2160, 1920x1080
          Color sampling: 4:2:0, 8 bit
          Frame rate: 59.94P, 50.00P, 29.97P, 23.98P, 25.00P, 24.00P
      XF-AVC
          Bit rate: 160 Mbps, 45 Mbps
          Resolution: 3840x2160, 1920x1080
          Color sampling: 4:2:0, 8 bit
          Frame rate: 59.94P, 59.94i, 50.00P, 50.00i, 29.97P, 23.98P, 25.00P, 24.00P
  Proxy clips:
      MP4
          Bit rate: 35 Mbps (Long GOP)
          Resolution: 2048x1080
          Color sampling: 4:2:0, 8 bit
          Frame rate: 59.94P, 50.00P, 29.97P, 23.98P, 25.00P, 24.00P
      XF-AVC
          Bit rate: 45 Mbps (Long GOP)
          Resolution: 2048x1080
          Color sampling: 4:2:0, 8 bit
          Frame rate: 59.94P, 50.00P, 29.97P, 23.98P, 25.00P, 24.00P

[1] Available options may differ depending on the system frequency currently in use.

- **Recording Media (not included)**
  For approximate recording times, refer to the *Reference Tables* ($\square$ 226)
  Primary clips: CFast 2.0 card, SD card[2] (2 slots)
  Proxy clips and photos: SD card[2] (proxy clips: 2 slots, photos: SD card B)
  [2] SD, SDHC (SD High Capacity) or SDXC (SD eXtended Capacity) memory card. Custom picture files and camera settings can be saved on and read from the SD card as well.

- **Image Sensor** Super-35mm-equivalent CMOS sensor
  Effective pixels (approximate):
  > When the resolution is 4096x2160, 2048x1080: 8,850,000 pixels (4096x2160)
  > When the resolution is 3840x2160, 1920x1080: 8,290,000 pixels (3840x2160)

- **C200** Viewfinder: 1.18 cm* (0.46 in.) organic LED display, approx. 1,770,000 dots*, 100% coverage
  > * When the language is set to simplified Chinese, the values with an asterisk are as follows:
  > 1.09 cm (0.43 in.), approx. 1,555,000 dots.

- **Lens Mount**
  Canon EF mount compatible with Canon EF lenses (including EF-S lenses and EF Cinema lenses)
  Lens multiplication factor for 35mm equivalent focal length (approximate):
  > When the resolution is 4096x2160, 2048x1080: 1.460
  > When the resolution is 3840x2160, 1920x1080: 1.534

- **Lens Correction**
  Peripheral illumination/chromatic aberration correction is available for Canon EF lenses[3]
  [3] 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-tuning), push auto iris, automatic aperture

- **ISO Speed**
  ISO 100[4], ISO 125[4], ISO 160 to ISO 25600, ISO 32000[4] to ISO 102400[4] (1-stop or 1/3-stop increments)
  [4] With extended ISO/Gain range.

- **Gain**
  [Normal]: –6 dB to 54 dB (3-dB increments)
  [Fine]: –2 dB to 54 dB (0.5-dB increments)

- **ND Filter:** Built-in (Off, 2, 4, 6, 8[5] or 10[5] stops), motor operated
  [5] 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 K[6] and incandescent lamp, 3,200 K[6]) ; automatic white balance (AWB); color temperature setting (2,000 K to 15,000 K)
  Color temperature and color compensation (CC) adjustment available for all settings except custom white balance and AWB.
  [6] Color temperatures are approximate and given for reference purposes only.

- **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); 50.00 Hz: F11 (2048x1080 at 50.00P)

- **S/N Ratio (ISO 800, using Canon Log 3 gamma, HDMI output)**
  53 dB (typical, 3840x2160, at 29.97P (59.94 Hz) or 25.00P (50.00 Hz))

- **Subject Illumination (ISO 25600, with a f/1.2 lens, 100% output)**
  59.94 Hz: 0.45 lux (shutter speed 1/30)
  50.00 Hz: 0.38 lux (shutter speed 1/25)

- **Built-in microphone:** Monaural electret condenser microphone

- **Size of Photos:** 3840x2160, 2048x1080, 1920x1080

Wi-Fi

- **Wireless Standard:** IEEE802.11b/g/n (2.4 GHz band), IEEE802.11a/n (5 GHz band)

- **Connection Methods:** Infrastructure (Wi-Fi Protected Setup (WPS), search for access points, manual), Camera Access Point

- **Authentication Methods:** Open, shared key; WPA-PSK, WPA2-PSK

- **Encryption Methods:** WEP-64, WEP-128, TKIP, AES

Terminals

- **SDI Terminal**
  BNC jack, output only, 0.8 Vp-p / 75 Ω, unbalanced
  3G-SDI: SMPTE 424, SMPTE 425, SMPTE ST 299-2
  HD-SDI: SMPTE 292, SMPTE ST 299-1
                   Embedded audio, time code (VITC/LTC)
  HDR output (HLG, PQ), LUT (BT.709, ACESproxy) and supplemental displays (superimposed onscreen displays, magnification, waveform monitor) can also be output.

- **HDMI OUT Terminal**
  HDMI connector, output only
  HDR output (HLG, PQ)
  Time code and supplemental displays (superimposed onscreen displays, magnification) can also be output.

- **INPUT Terminals (INPUT 1 and INPUT 2)**
  XLR 3-pin jack (pin1: shield, pin2: hot, pin3: cold), 2 sets, balanced
  Analog Inputs
      Sensitivity:
      MIC setting: –60 dBu (volume center, full scale –18 dB) / 600 Ω
      LINE setting: 4 dBu (volume center, full scale –18 dB) / 10 kΩ
      Microphone attenuator: 20 dB
  Digital Inputs (AES/EBU)
      AES3 standard (48 kHz, 24 bit, 2ch) / 110 Ω

- **MIC Terminal**
  ∅ 3.5 mm stereo mini-jack, -72 dBV (volume center, full scale -18 dB) / 5.6 kΩ
  Microphone attenuator: 20 dB

- **Ω (Headphone) Terminal**
  ∅ 3.5 mm stereo mini-jack, -∞ to -8 dBV (16 Ω load, volume range Min to Max) / 50 Ω or less

- **USB Terminal**
  mini-B, Hi-Speed USB, output only

- **REMOTE Terminal**
  ∅ 2.5 mm stereo sub-mini jack

- **品 (Ethernet) Terminal**
  Ethernet, 1000BASE-T compatible

- **VIDEO Terminal**
  Proprietary connector for the LM-V1 LCD Monitor[1] or optional EVF-V70 Electronic Viewfinder; output only

- **Camera Grip Connection Terminal**
  Proprietary connector for the camera grip unit[1] connection plug
  [1] Supplied accessory for the C200; optional accessory for the C200B.

Power/Others

- Power Supply (rated)
  14.4 V DC (battery pack), 16.7 V DC (DC IN)

- Power Consumption
  C200 with the SDI terminal, LCD screen and viewfinder active
  19.3 W (recording at 59.94P; MP4/XF-AVC: 3840x2160, RAW: 4096x2160)
  18.5 W (recording at 50.00P; MP4/XF-AVC: 3840x2160, RAW: 4096x2160)

  C200B with the SDI terminal active
  17.5 W (recording at 59.94P; MP4/XF-AVC: 3840x2160, RAW: 4096x2160)
  16.6 W (recording at 50.00P; MP4/XF-AVC: 3840x2160, RAW: 4096x2160)

- Operating Temperature
  0 – 40 °C (32 – 104 °F)

- Dimensions (W x H x D)[1]
  C200
  Camera unit only: 144 x 153 x 179 mm (5.7 x 6.0 x 7.0 in.)
  Configuration with camera grip: 178 x 153 x 204 mm (7.0 x 6.0 x 8.0 in.)
  Configuration with camera grip, handle unit, LCD monitor, LCD attachment unit and microphone holder:
  335 x 275 x 275 mm (1.1 ft. x 10.8 in. x 10.8 in.)

  C200B
  Camera unit only: 144 x 146 x 137 mm (5.7 x 5.7 x 5.4 in.)
  Configuration with thumb rest and microphone holder: 169 x 209 x 137 mm (6.7 x 8.2 x 5.4 in.)
  [1] All dimensions are approximate.

- Weight[2]
  C200
  Camera unit only: 1430 g (3.2 lb.)
  Camera with handle unit, LCD monitor, LCD attachment unit, camera grip, microphone holder, eye cup and
  hex socket head bolt (x1)[3]: 2,745 g (6.1 lb.)

  C200B
  Camera unit only: 1,335 g (2.9 lb.)
  Configuration with thumb rest and microphone holder[3]: 1,630 g (3.6 lb.)
  [2] All weights are approximate.
  [3] Working configuration includes also battery pack (BP-A30), recording media (CFast card), and unit cable (**C200** only).

- Approximate continuous recording time with a fully charged battery pack:
  C200
  Recording at 59.94P; MP4/XF-AVC: 3840x2160, RAW: 4096x2160
                               125 min. (supplied BP-A30 battery pack),
                               270 min. (optional BP-A60 battery pack)
  Recording at 50.00P; MP4/XF-AVC: 3840x2160, RAW: 4096x2160
                               130 min. (supplied BP-A30 battery pack),
                               280 min. (optional BP-A60 battery pack)

  C200B
  Recording at 59.94P; MP4/XF-AVC: 3840x2160, RAW: 4096x2160
                               145 min. (supplied BP-A30 battery pack),
                               310 min. (optional BP-A60 battery pack)
  Recording at 50.00P; MP4/XF-AVC: 3840x2160, RAW: 4096x2160
                               155 min. (supplied BP-A30 battery pack),
                               325 min. (optional BP-A60 battery pack)

`C200` Modular Units

LM-V1 LCD Monitor

Includes the LCD panel (touch panel).

- **LCD Screen:** 10.1 cm (4.0 in.) color LCD, 16:9 aspect ratio, approx. 1,230,000 dots, 100% coverage, capacitive touch screen operation
- **VIDEO Terminal**
  Proprietary connector for connection to the camera; input only
- **Dimensions (W x H x D):** 120 x 75 x 37 mm (4.7 x 3.0 x 1.5 in.)
- **Weight:** Approx. 185 g (6.5 oz.)

LA-V1 LCD Attachment Unit

Includes pivots that allow for rotation

- **Dimensions (W x H x D):** 143 x 117 x 75 mm (5.6 x 4.6 x 3.0 in.)
- **Weight:** Approx. 255 g (9.0 oz.)

GR-V1 Camera Grip

Modular unit can be attached at any of 24 positions (6° intervals); includes limited recording controls.

- **Dimensions (W x H x D):** 60 x 124 x 75 mm (2.4 x 4.9 x 3.0 in.)
- **Weight:** Approx. 260 g (9.2 oz.)

HDU-2 Handle Unit

Offers sockets for attaching additional accessories to the camera.

- **Dimensions (W x H x D):** Approx. 44 x 81 x 156 mm (1.7 x 3.2 x 6.1 in.)
- **Weight:** Approx. 220 g (7.8 oz.)

CA-A10 AC Adapter

- **Rated Input:** 100 – 240 V AC, 50/60 Hz, 100 VA (100 V AC) – 124 VA (240 V AC)
- **Rated Output:** 16.7 V DC, 3.0 A
- **Operating Temperature:** 0 – 40 °C (32 – 104 °F)
- **Dimensions (W x H x D):** Approx. 73 x 40 x 139 mm (2.9 x 1.6 x 5.5 in.)
- **Weight:** Approx. 450 g (15.9 oz.)

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)
- **Dimensions (W x H x D):** 100 x 24 x 100 mm (3.9 x 0.9 x 3.9 in.)
- **Weight:** Approx. 145 g (5.1 oz.)

CA-CP200B 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)

- **Dimensions (W x H x D):** 67.5 x 37 x 134 mm (2.7 x 1.5 x 5.3 in.)

- **Weight:** Approx. 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

- **Operating Temperature:** 0 – 40 °C (32 – 104 °F)

- **Rated Battery Capacity:** 3100 mAh / 45 Wh

- **Dimensions (W x H x D):** 41.5 x 45.1 x 69.7 mm (1.6 x 1.8 x 2.7 in.)

- **Weight:** Approx. 225 g (7.9 oz)

Weight and dimensions are approximate. Errors and omissions excepted.

Appendix: 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, consult a Canon Service Center.

Lens	Iris control from the camera			Zoom control from the camera
	Manual	Push auto iris	Automatic	
EF lenses	●	●	–	–
EF lenses compatible with auto iris	●	●	●	●*
EF Cinema lenses				
CN20x50 IAS H/E1	●	●	●	●
CN7x17 KAS S/E1 CN-E18-80mm T4.4 L IS KAS S CN-E70-200mm T4.4 L IS KAS S	●	●	●	●
Prime lenses compatible with Dual Pixel Focus Guide	–	–	–	–

* Only for lenses compatible with the optional PZ-E1 Power Zoom Adapter.

Lens	Focus control from the camera					Focus guide
	Manual	One-shot AF	Continuous AF	Face AF	Tracking	
EF lenses	●	●	●	●	●	●
EF lenses compatible with auto iris	●	●	●	●	●	●
EF Cinema lenses						
CN20x50 IAS H/E1	●	–	–	–	–	–
CN7x17 KAS S/E1 CN-E18-80mm T4.4 L IS KAS S CN-E70-200mm T4.4 L IS KAS S	●	●	●	●	●	●
Prime lenses compatible with Dual Pixel Focus Guide	–	–	–	–	–	●

- EF lenses compatible with auto iris:

EF-S10-18mm f/4.5-5.6 IS STM	EF-S18-135mm f/3.5-5.6 IS STM
EF-S18-55mm f/3.5-5.6 IS STM	EF-S55-250mm f/4-5.6 IS STM
EF24-105mm f/3.5-5.6 IS STM	EF-S18-135mm f/3.5-5.6 IS USM
EF70-300mm f/4-5.6 IS II USM	EF-S18-55mm f/4-5.6 IS STM
EF-S35mm f/2.8 MACRO IS STM	EF85mm f/1.4L IS USM

- Prime lenses compatible with the Dual Pixel Focus Guide function:

CN-E14mm T3.1 L F	CN-E50mm T1.3 L F
CN-E24mm T1.5 L F	CN-E85mm T1.3 L F
CN-E35mm T1.5 L F	CN-E135mm T2.2 L F

Reference Tables

Approximate Recording Time on Recording Media

Primary clips (CFast card; RAW clips)

Bit rate → CFast card capacity ↓	1 Gbps
64 GB	5 min.
128 GB	15 min.
256 GB	30 min.

Primary/Proxy clips (SD card)*

Format→	MP4		XF-AVC	
Bit rate → SD card capacity ↓	150 Mbps	35 Mbps	160 Mbps	45 Mbps
8 GB	5 min.	25 min.	5 min.	20 min.
16 GB	10 min.	55 min.	10 min.	45 min.
32 GB	25 min.	120 min.	25 min.	90 min.
64 GB	55 min.	240 min.	50 min.	185 min.
128 GB	110 min.	485 min.	105 min.	375 min.

* Times are based on a single recording that continues until the SD card is full.

Charging Times
Use the supplied CG-A20 Battery Charger to charge battery packs. The charging times given in the following table are approximate and vary according to charging conditions and initial charge of the battery pack.

BP-A30	BP-A60
170 min.	300 min.

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