

EOS Ra

The Full Frame Mirrorless Camera For Astrophotography

The EOS Ra has been created to enhance transmission of H α rays (wavelength 656.28 nm), making it roughly four times more sensitive than the EOS R to capture high-precision images of the deep-red wavelengths emitted by nebulae, without any special camera alterations.



Canon

EOS Ra

30.3 MEGA
PIXELS
CMOS

**FULL
FRAME**
CMOS



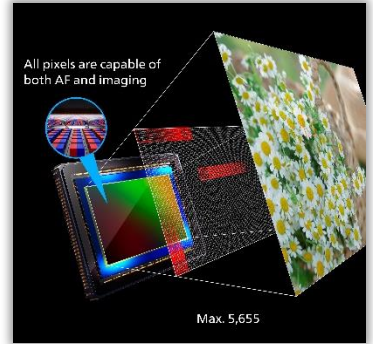
A 30.3 megapixel Full Frame Canon CMOS sensor delivers incredible image quality and detail from highlights and shadows

OLED
EVF
3,690,000
dots



Never take your eyes off the shot thanks to a 3.69 million dot 0.5" OLED Electronic viewfinder which is designed for more immersive shooting

Dual Pixel CMOS **AF**



Canon's Dual Pixel CMOS AF delivers Auto Focus in as little as 0.05 secs with 5655 available AF point positions. Plus, experience smooth AF transitions and exceptional tracking performance in 4K movie mode.

Wi-Fi / NFC  **Bluetooth®**



Bluetooth maintains a connection with your phone after initial pairing and switches smartly to Wi-Fi for image download or remote shooting via the Canon Camera Connect app

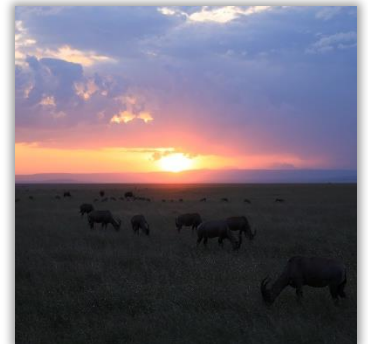


Vari angle LCD



The high resolution 2.1 million dot, 3.15" vari-angle LCD screen with full touch control, helps you find new angles, review images and control auto focus with ease


EOS Movie
4K+FULL HD



Capture cinematic 4K 30p movies with Canon Log and 10-bit output via HDMI in 4K with 4:2:2 compression for flexible editing and easy colour matching with Cinema EOS cameras.

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EOS Ra Specifications	
Type	
Type:	Digital single-lens non-reflex AF/AE camera
Recording media:	SD/SDHC/SDXC memory card * UHS-II and UHS-I cards supported.
Image sensor size:	Approx. 36.0x24.0 mm
Compatible lenses:	Canon RF and EF lens product groups * EF/EF-S lenses supported with a mount adapter attached (EF-M lenses not supported)
Effective angle of view:	With RF/EF lenses: Approximately equivalent to the indicated focal length With EF-S lenses: Approx. 1.6 times the indicated focal length
Lens mount:	Canon RF mount
Image Sensor	
Type:	CMOS sensor (supports Dual pixel CMOS AF)
Effective pixels:	Approx. 30.3 megapixels * Rounded to the nearest 100,000.
Astrophotography Features:	Enhanced transmission of H α rays (wavelength 656.28 nm)
Aspect ratio:	3:02
Dust deletion:	Auto/Manual, Appending Dust Delete Data
Recording System	
Recording format:	Design rule for Camera File System (DCF) 2.0
Image type:	JPEG, RAW (CR3, a Canon 14-bit RAW format) RAW+JPEG simultaneous recording possible
Pixels recorded:	L (Large): Approx. 30.1 megapixels (6720x4480) M (Medium): Approx. 13.3 megapixels (4464x2976) S1 (Small 1): Approx. 7.5 megapixels (3360x2240) S2 (Small 2): Approx. 3.8 megapixels (2400x1600) RAW: Approx. 30.1 megapixels (6720x4480) C-RAW: Approx. 30.1 megapixels (6720x4480) * Rounded to the nearest 100,000.
Dual Pixel RAW setting:	Available
Crop/aspect ratio:	Cropped shooting and an aspect ratio can be set: Full-frame, Approx. 1.6x (crop), 1:1 (aspect ratio), 4:3 (aspect ratio), 16:9 (aspect ratio)
Folder creation and selection:	Available
File name:	Preset code, User setting 1, User setting 2
File numbering:	Continuous, Auto reset, Manual reset
Image Processing During Shooting	
Picture Style:	Auto, Standard, Portrait, Landscape, Fine Detail, Neutral, Faithful, Monochrome, User Defined 1–3
White balance:	Auto (Ambience priority), Auto (White priority), Preset (Daylight, Shade, Cloudy, Tungsten light, White fluorescent light, Flash), Custom, Color temperature setting (approx. 2500–10000 K) White balance correction and white balance bracketing features provided *Flash color temperature information transmission possible
Automatic image brightness correction:	Auto Lighting Optimizer provided
Noise reduction:	Applicable to high ISO speed shots and long exposures
Highlight tone priority:	Available
Lens aberration correction:	Peripheral illumination correction, Distortion correction, Digital Lens Optimizer, Chromatic aberration correction, Diffraction correction

Autofocus	
Focus method:	Dual pixel CMOS AF
AF method:	Face+Tracking, 1-point AF, Expand AF area (vertically/horizontally), Expand AF area (around), Zone AF, Large Zone AF (vertical), Large Zone AF (horizontal)
Available AF point positions:	Max. 5,655
Available AF areas when automatically selected:	Max.143
Touch & drag AF:	Available
Magnified view:	Approx. 5x/10x
Focus distance display:	With RF lenses
Manual focus (MF):	MF peaking, focus guide
[Still photo shooting]	
AF operation:	One-Shot AF, Servo AF
Auto AF operation switching:	In Scene Intelligent Auto mode; can be set from a menu
Eye Detection AF:	Available
Continuous AF:	Available
AF area:	Horizontal: Approx. 88%, Vertical: Approx. 100% Horizontal: Approx. 80%, Vertical: Approx. 80% * Varies depending on factors such as the lens and aspect ratio used
Focusing brightness range:	EV -6 to 18 (at room temperature, ISO 100, One-Shot AF)
Servo AF characteristics:	Tracking sensitivity, Acceleration/deceleration tracking, and AF point auto switching
AF-assist beam:	Built-in LED lamp
[Movie recording]	
AF area:	[4K] Horizontal: Approx. 80%, Vertical: Approx. 100% [Full HD/HD] Horizontal: Approx. 88%, Vertical: Approx. 100%
Focusing brightness range:	EV -4 to 18 (at room temperature, ISO 100, One-Shot AF)
Movie Servo AF:	Available
Movie Servo AF characteristics:	Tracking sensitivity, AF speed
Exposure Control	
Metering mode:	Real-time metering using the image sensor 384-zone (24x16) metering Still photo shooting: · Evaluative metering (linked to all AF points) · Partial metering (approx. 6.1% of screen, at center) · Spot metering (approx. 2.7% of screen, at center) · Center-weighted average metering Movie recording: Center-weighted average and Evaluative metering with the image sensor * Automatically set by the focus method
Focusing brightness range:	Still photo shooting: EV -3 to 20 (at room temperature, ISO 100) Movie recording: EV -1 to 20 (at room temperature, ISO 100, center-weighted average metering)
Shutter:	Electronically-controlled, focal-plane shutter
Shutter speed:	1/8000 sec. to 30 sec. (total shutter speed range; available range varies by shooting mode), Bulb, X-sync at 1/200 sec. * Setting range differs when recording movies

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Exposure Control (continued)	
Shooting mode:	Still photo shooting: Scene Intelligent Auto, Flexible-priority AE, Program AE, Shutter-priority AE, Aperture-priority AE, Manual exposure, Bulb exposure, Custom shooting modes (C1/C2/C3)
	Movie recording: Scene Intelligent Auto, Program AE, Shutter-priority AE, Aperture-priority AE, Manual exposure, Custom shooting modes (C1/C2/C3)
ISO speed (recommended exposure index):	Still photo shooting:
	Scene Intelligent Auto: Automatically set within ISO 100–12800
	Fv/P/Tv/Av/M/BULB: ISO Auto, manually set within ISO 100–40000 (in 1/3- or 1-stop increments), expandable to L (equivalent to ISO 50), H1 (equivalent to ISO 51200), or H2 (equivalent to ISO 102400)
	* With highlight tone priority set, the minimum limit will be ISO 200.
	Movie recording:
	[4K]
	Scene Intelligent Auto: Automatically set within ISO 100–12800
	P/Tv/Av: Automatically set within ISO 100–12800, expandable to H2 (equivalent to ISO 102400)
	M: ISO Auto (automatically set within ISO 100–12800), manually set within ISO 100–12800 (in 1/3- or 1-stop increments), expandable to H2 (equivalent to ISO 102400)
	[Full HD/HD]
	Scene Intelligent Auto: Automatically set within ISO 100–25600
	P/Tv/Av: Automatically set within ISO 100–25600, expandable to H2 (equivalent to ISO 102400)
	M: ISO Auto (automatically set within ISO 100–25600), manually set within ISO 100–25600 (in 1/3- or 1-stop increments), expandable to H2 (equivalent to ISO 102400)
	* With highlight tone priority set, the minimum limit will be ISO 200
	* Setting range differs when recording time-lapse movies
ISO speed settings:	Still photo shooting: ISO speed range, Auto range, Minimum shutter speed
	Movie recording: ISO speed range, Range for 4K, ISO Auto, 4K ISO Auto, Time-lapse ISO Auto
Exposure compensation:	Still photo shooting: Manual: ± 3 stops in 1/3- or 1/2-stop increments
	AEB: ± 3 stops in 1/3- or 1/2-stop increments (can be combined with manual exposure compensation)
	Movie recording: ± 3 stops in 1/3- or 1/2-stop increments
AE lock:	Still photo shooting: Auto: AE lock when focus is achieved can be enabled or disabled for each metering mode with a Custom Function
	Manual: With AE lock button
	Movie recording: With AE lock button
Flicker reduction:	Available in still photo shooting
Bulb timer:	Bulb exposure time settable
HDR shooting:	Dynamic range adjustment: Auto, ± 1 , ± 2 , ± 3
	Effects: Natural, Art standard, Art vivid, Art bold, Art embossed
	Auto image alignment: Available
Multiple exposures:	Shooting options: Function/control priority, Continuous shooting priority
	Number of multiple exposures: 2 to 9 exposures
	Multiple-exposure control: Additive, Average, Bright, Dark
Silent shutter:	Available
Touch shutter:	Available
Av 1/8-stop increments:	Available in movie recording

Drive System	
Drive mode:	Single shooting, High-speed continuous shooting, Low-speed continuous shooting, Self-timer: 10 sec./remote control, Self-timer: 2 sec./remote control
Continuous shooting speed:	High-speed continuous shooting: Max. approx. 8.0 shots/sec.
	* Lower continuous shooting speed when reducing flicker, when set to Dual Pixel RAW or Servo AF, or during flash photography.
	* The continuous shooting speed for high-speed continuous shooting may be lower, depending on conditions such as these: battery level, temperature, flicker reduction, Dual Pixel RAW shooting, Silent LV shooting, shutter speed, aperture, subject conditions, brightness, AF operation, type of lens, use of flash, and shooting settings.
Max. burst:	Low-speed continuous shooting: Max. approx. 3.0 shots/sec.
	JPEG Large/Fine: Approx. 100 shots (Approx. 100 shots)
	RAW: Approx. 34 shots (Approx. 47 shots)
	RAW+JPEG Large/Fine: Approx. 34 shots (Approx. 39 shots)
	* Measured under conditions and with an SD card conforming to Canon testing standards (32 GB standard/UHS-II card, High-speed continuous shooting, Full-frame still photo cropping/aspect ratio, ISO 100, without Dual Pixel RAW, Standard Picture Style).
High-speed display:	* Figures in parentheses are the number of shots when a Canon's standard testing UHS-II SD card is used.
	Available
External Speedlite	
Compatible Speedlites:	EL/EX series Speedlites
Flash metering:	E-TTL II autoflash
Automatic firing:	Available with Speedlites equipped with this feature
Safety FE:	Available
Flash exposure compensation:	± 3 stops in 1/3- or 1/2-stop increments
FE lock:	Available
Continuous shooting priority mode:	Available with Speedlites equipped with this feature
PC terminal:	Not provided
Flash control:	Flash function settings, Flash Custom Function settings
Movie Recording	
Recording format:	MP4
Video:	MPEG-4 AVC/H.264, variable (average) bit rate
Audio:	For editing (ALL-I): linear PCM
	Standard (IPB), Light (IPB): AAC
Movie recording size:	4K (3840x2160), Full HD (1920x1080), HD (1280x720)
	High Frame Rate movies: HD
	HDR movies:
	· With RF/EF lenses: Full HD
	· With EF-S lenses and movie cropping: HD
Frame rate:	Time-lapse movies: 4K/Full HD
	119.9p/59.94p/29.97p/24.00p/23.98p (with NTSC)
	100.0p/50.00p/25.00p/24.00p (with PAL)
Compression method:	* 119.9p/100.0p used for High Frame Rate movies
	For editing (ALL-I), Standard (IPB), Light (IPB)
Bit rate/Card performance requirements (writing/reading speed):	4K (29.97p/25.00p/24.00p/23.98p)/For editing (ALL-I)
	: Approx. 480 Mbps/UHS-II, Video Speed Class 60 or higher
	4K (29.97p/25.00p/24.00p/23.98p)/Standard (IPB)
	: Approx. 120 Mbps/UHS-I, UHS Speed Class 3 or higher
	Full HD (59.94p/50.00p)/For editing (ALL-I)
	: Approx. 180 Mbps/UHS-I, UHS Speed Class 3 or higher
	Full HD (59.94p/50.00p)/Standard (IPB)
	: Approx. 60 Mbps/SD Speed Class 10 or higher
	Full HD (29.97p/25.00p/24.00p/23.98p)/For editing (ALL-I)
	: Approx. 90 Mbps/UHS-I, UHS Speed Class 3 or higher
	Full HD (29.97p/25.00p/24.00p/23.98p)/Standard (IPB)
	: Approx. 30 Mbps/SD Speed Class 4 or higher
	Full HD (29.97p/25.00p)/Light (IPB)
	: Approx. 12 Mbps/SD Speed Class 4 or higher
	HD (119.9p/100.0p)/For editing (ALL-I)
	: Approx. 160 Mbps/UHS-I, UHS Speed Class 3 or higher
	HD (59.94p/50.00p)/For editing (ALL-I)
	: Approx. 80 Mbps/SD Speed Class 10 or higher
	HD (59.94p/50.00p)/Standard (IPB)
	: Approx. 26 Mbps/SD Speed Class 4 or higher
	HD (29.97p/25.00p)/Standard (IPB)
	: Approx. 13 Mbps/SD Speed Class 4 or higher

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Movie Recording (cont)	
Sound recording:	Built-in stereo mics, external stereo mic jack provided Sound-recording level adjustable, wind filter provided, attenuator provided
Headphone:	Headphone terminal provided, volume adjustable
Cropped movies:	Available
Movie digital IS:	Available (Enable/Enhanced)
HDR movies:	Available
Time-lapse movies:	4K or Full HD
Time code:	Can be appended
Canon Log:	Available for card recording (when set to 8-bit) and HDMI output (when set to 8-bit/10-bit)
HDMI output:	Image output without information display available * 4K output supported; Auto/1080p selectable
Remote control shooting:	Available
Still photo shooting:	Not available during movie recording
Screen	
Type:	TFT color, liquid-crystal monitor
Screen size and dots:	Approx. 8.01 cm (3.15 in.) (3:2) with approx. 2.1 million dots
Field of view (coverage):	Still photo shooting: Approx. 100% vertically/horizontally (when set to JPEG Large) Movie recording: Approx. 100% vertically/horizontally
Angular adjustment:	Opening: Approx. 0–175° Rotation: Approx. 0–90° forward, approx. 0–180° backward
Brightness adjustment:	Manual (7 levels)
Color adjustment:	Warm tone, Standard, Cool tone 1, Cool tone 2
Display performance:	Power saving, Smooth
Interface languages:	29
Touch-screen panel:	Capacitive sensing
Viewfinder	
Type:	OLED color electronic viewfinder
Screen size and dots:	0.5-inch (4:3) with approx. 3.69 million dots
Field of view (coverage):	Still photo shooting: Approx. 100% vertically/horizontally (eyepoint: approx. 23 mm; set to JPEG Large) Movie recording: Approx. 100% vertically/horizontally
Magnification:	Approx. 0.76x (-1 m ⁻¹ with 50mm lens at infinity)
Eyepoint:	Approx. 23 mm (from eyepiece lens center at -1 m ⁻¹)
Dioptric adjustment range:	Approx. -4.0 to +2.0 m ⁻¹ (dpt)
Brightness adjustment:	Manual (5 levels)
Color adjustment:	Warm tone, Standard, Cool tone 1, Cool tone 2
Playback	
Image display format:	Single-image display (without shooting information), Single-image display (with basic information), Single-image display (Shooting information displayed: Detailed information, Lens/histogram, White balance, Picture Style 1, Picture Style 2, Color space/noise reduction, Lens aberration correction 1, Lens aberration correction 2, Image transfer information, GPS information, IPTC information), Index display (4/9/36/100 images) * Customizable shooting information display
Highlight alert:	Overexposed highlights blink
AF point display:	Available
Grid display:	3 types
Magnified view:	Approx. 1.5x–10x, initial magnification and position settable
Image search:	Search conditions settable (by rating, date, folder, protected, file type)
Image browsing method:	1 image, 10 images, Specified number, Date, Folder, Movies, Stills, Protect, Rating
Image rotation:	Available
Image protection:	Available
Rating:	Available
Movie playback:	Available
Start/end movie scene editing:	Available
4K movie frame grab:	Extraction of specified movie frames and saving as JPEG images
Slide show:	All images or images matching the search conditions are played back automatically.
In-camera RAW image processing:	RAW and C-RAW image processing possible Brightness adjustment, White balance, Picture Style, Auto Lighting Optimizer, High ISO speed noise reduction, JPEG image-recording quality, Color space, Lens aberration correction (Peripheral illumination correction, Distortion correction, Digital Lens Optimizer, Chromatic aberration correction, Diffraction correction)
Resizing:	Available
Cropping:	Available
Print ordering:	DPOF version 1.1 compatible

Customization Features	
Custom Functions:	19 functions, customization of button, dial, and M-Fn bar operation
Custom shooting modes:	Still photo C1/C2/C3 modes, movie C1/C2/C3 modes
My Menu:	Up to 5 screens can be registered
Copyright information:	Text entry and appending possible
IPTC information:	Can be appended
Interface	
Digital terminal:	SuperSpeed USB (USB 3.1 Gen 1) equivalent, USB Type-C Computer communication, charging with USB Power Adapter PD-E1
HDMI mini OUT terminal:	Type C (auto switching of resolution) 3.5 mm diameter stereo mini-jack
External microphone IN terminal:	Directional Stereo Microphone DM-E1 or commercially-available external microphone connectable
Remote control terminal:	Compatible with Remote Switch RS-60E3
Wireless remote control:	Compatible with Wireless Remote Control BR-E1 (via Bluetooth)
Wireless Features	
[Wi-Fi]	
Standards compliance:	IEEE 802.11b/g/n
Transmission method:	DS-SS modulation (IEEE 802.11b), OFDM modulation (IEEE 802.11g/n)
Transmission frequency (central frequency):	Frequency: 2412 to 2462 MHz Channels: 1–11
Connection method:	Camera access point mode, infrastructure* * Wi-Fi Protected Setup supported
Security:	Authentication method: Open system, Shared key, WPA/WPA2-PSK Encryption: WEP, TKIP, AES
Compatible devices/services:	Smartphones, computers, Wi-Fi printers, Web services
[Bluetooth]	
Standards compliance:	Bluetooth Specification Version 4.1 compliant (Bluetooth low energy technology)
Transmission method:	GFSK modulation
Compatible devices:	Smartphones, wireless remote controls
Power	
Battery:	Battery Pack LP-E6N/LP-E6, quantity 1 *AC power usable with household power outlet accessories. *USB Power Adapter PD-E1 enables in-camera charging of LP-E6N.
Battery information:	Power source, Battery level, Shutter count, Recharge performance, Battery registration possible
Number of possible shots:	Approx. 370 shots at room temperature (+23°C/73°F), approx. 350 shots at low temperatures (0°C/32°F) *Using a fully charged Battery Pack LP-E6N, with display set to [Smooth] Total approx. 2 hr. 20 min. at room temperature (+23°C/73°F) Total approx. 2 hr. 10 min. at low temperatures (0°C/32°F) *With a fully-charged Battery Pack LP-E6N, Movie Servo AF enabled, and 4K/Full HD set.
Dimensions and Weight	
Dimensions (WxHxD):	Approx. 135.8x98.3x84.4 mm / 5.35x3.87x3.32 in.
Weight:	Approx. 660 g / 23.28 oz. (including battery pack and card)/Approx. 580 g / 20.46 oz. (body only)
Operating Environment	
Working temperature range:	0–40 °C (32–104 °F)
Working humidity:	85 % or less
<ul style="list-style-type: none"> ● All the data above is based on Canon's testing standards and CIPA (Camera & Imaging Products Association) testing standards and guidelines. ● Dimensions and weight listed above are based on CIPA Guidelines (except weight for camera body only). ● Product specifications and the exterior are subject to change without notice. ● If a problem occurs with a non-Canon lens attached to the camera, consult the respective lens manufacturer. 	