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English Edition

SERVICE MANUAL

By Portable Document Format

EOS 40D

C12-6171

Preface

General

Technical

Repair

Adjustments

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Circuit Diagrams

Software

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Canon

EOS 40D

REF. NO. C12-6171

SERVICE MANUAL

PREFACE

This manual contains information for servicing the product, and has the following sections:

General Information

Provides the basic information needed to understand the product.

(Operating instructions are not included. Refer to the product's instruction book if necessary.)

Technical Information

Provides technical information about the mechanism and electronics of the product.

Repair Information

Provides information about disassembly and assembly, as well as tools and expendables to be used.

Adjustments

Provides information about adjustment items and procedures, as well as tools to be used.

Parts Catalog

Circuit Diagrams

Software Information

Appendix

General Information

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1. FEATURES

(Features superior to EOS 30D in blue.)

1.1 Fine Detail and High Image Quality

- Effective pixels: Approx. 10.1 megapixels for fine detail and high image quality
- Newly-developed, large, single-piece 22.2 × 14.8mm CMOS sensor
 - * Lens crop factor: Approx. 1.6x the lens focal length
- DIGIC III for fine-detail, and natural color processing at high speed
- 14-bit A/D conversion for fine gradation
- Picture Styles optimized for the photographic subject and intention
 - * Picture Style button provided
- Six JPEG recording quality modes and RAW, sRAW, RAW+JPEG, and sRAW+JPEG simultaneous recording
- Accurate white balance
- WB correction and WB bracketing provided
- Excellent noise reduction
 - * Noise reduction for long exposures
 - * Noise reduction for high ISO speeds
- Highlight tone priority
- Automatic brightness and contrast correction
 - * Functions in Basic Zone modes
- Complies to Design rule for Camera File System 2.0 and Exif 2.21 which support Adobe RGB

1.2 Fast Shooting

- Nine cross-type AF points with center AF point sensitive to vertical and horizontal lines at f/2.8
 - * AF Start button provided
- Approx. 6.5 fps maximum continuous shooting speed
- Maximum burst during continuous shooting: Approx. 75 shots in JPEG Large/Fine or 17 shots in RAW
 - * Based on Canon's testing standards and 1GB CF card in high-speed continuous shooting mode.

1.3 Ease of Use

- **High-magnification viewfinder and interchangeable focusing screens**
 - * 0.95x viewfinder magnification
 - * Interchangeable focusing screens: One with grid lines and one with easy-to-see point of focus
- **EOS Integrated Cleaning System incorporated**
 - * Self Cleaning Sensor Unit enables Dust Delete Data to be obtained and appended to images
- **Live View shooting with the camera or PC**
 - * Silent shooting also possible
- **3.0-in., 230,000-pixel LCD monitor with wide viewing angle**
 - * Vertical and horizontal viewing angle approx. 140°, and larger menu text size
 - * Seven brightness levels
 - * LCD panel-like shooting information display also provided
- **Startup time approx. 0.15 sec.**
- **Data writing continues even if you open the CF card slot cover while data is being written to the CF card**

1.4 EOS 30D's Outstanding Features Retained

- **1/8000 sec. - 30 sec. shutter speed, Bulb, 1/250 sec. X-sync**
- **Shooting modes, metering modes, AF modes, and other shooting features retained**
- **Compatible with all EF lenses including EF-S lenses**
- **Shooting-priority operation**
- **High degree of customization**
 - * Up to three sets of camera user settings can be registered
 - * 24 Custom Functions with 62 settings
 - * My Menu
 - * Flash Custom Functions
- **USB 2.0 Hi-Speed for high-speed image transfers**
- **More advanced PictBridge features**
 - * Preview of printing effects, tilt correction ($\pm 10^\circ$ in 0.5° increments)

1.5 Expandable Shooting System

- **Wireless/wired LAN for image transfers (via WFT-E3)**
- **Compatible with external recording media and GPS device (via WFT-E3)**
 - * With external recording media, the image recording can switch automatically between different recording media or images can be recorded separately to different media. Images can also be recorded simultaneously to multiple recording media and images in the CF card can be backed up to external recording media.
- **Original data verification system (via OSK-E3)**
- **Set Speedlite settings with the camera (with SPEEDLITE 580EX II)**

2. OVERVIEW

2.1 EOS 40D body

The major differences in features compared to the EOS 30D are outlined below.

Table 001 Specifications Comparison of EOS 40D and EOS 30D (1/2)

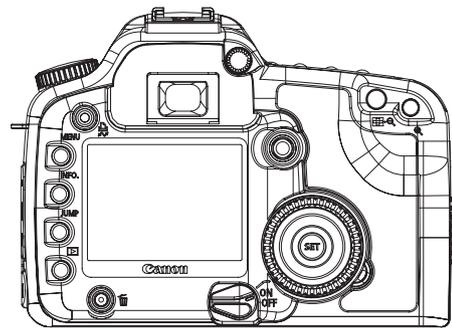
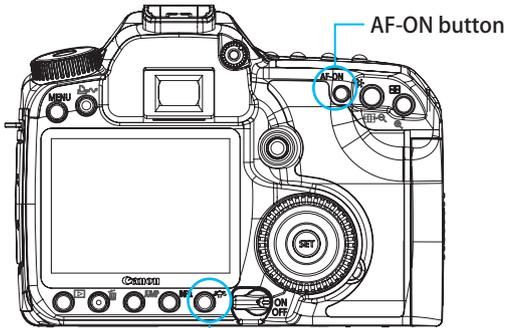
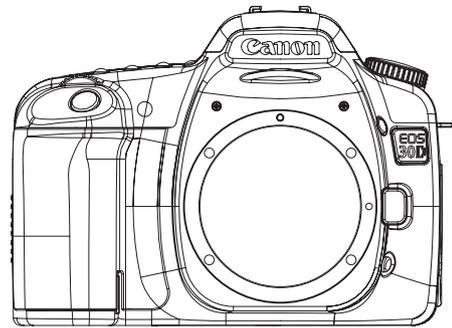
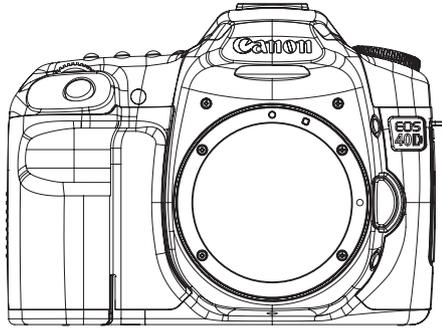
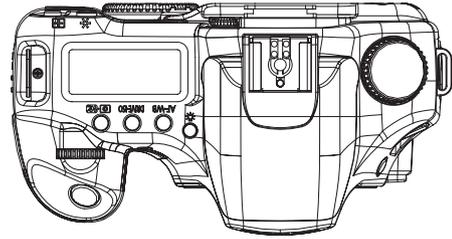
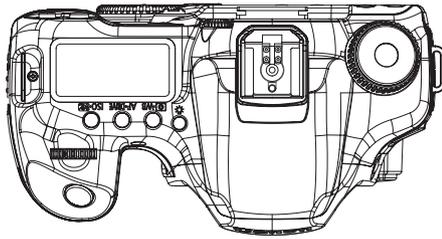
Item		EOS 40D	EOS 30D	
Image sensor	Image sensor	CMOS		
	Effective pixels [Approx. megapixels]	10.10	8.20	
	Image sensor size [mm]	22.2×14.8	22.5×15.0	
	Lens Crop Factor [Approx. magnification]	1.6		
	Pixel size [µm square]	5.7	6.4	
	Color filter	Primary colors		
Recording System	Cleaning system (EICS)	Yes	—	
	A/D conversion [bits]	14	12	
	Image type	JPEG	Large, Medium, Small Fine and Normal provided for each	
		RAW	sRAW, RAW	RAW
	RAW+JPEG	RAW+JPEG and sRAW+JPEG enabled in all combinations	RAW+JPEG enabled in all combinations	
	Recording pixels [Approx. megapixels]	Large	10.10	8.20
		Medium	5.30	4.30
		Small	2.50	2.00
		RAW	10.10	8.20
		sRAW	2.50	—
	Highlight tone priority	Provided	—	
	Picture Styles	Yes (6 presets, 3 custom sets)		
	Brightness and contrast auto correction	Yes (Basic Zone modes)	—	
	Color space	sRGB / Adobe RGB		
	Noise reduction	Long exposures	Off / Auto / On	
		High ISO speed	Yes	—
Recording Media	Recording media	Compact Flash		
	Slot/Qty	CF Type I, II/1		
	External recording media	Enabled with WFT-E3 (Auto switch media / Rec. separately / Rec. to multiple / Backup)	—	
	Max. images per folder	9999		
	File No.	Continuous / Auto Reset / Manual Reset		
Compatible card capacity	2 GB and higher			
Imaging engine	DIGIC III	DIGIC II		
White Balance	Settings	1. Auto / 2. Daylight / 3. Shade / 4. Cloudy, Twilight, Sunset 5. Tungsten light / 6. White Fluorescent light / 7. Flash / 8. Custom / 9. Color temperature		
	WB correction [levels]	Blue/amber bias: ±9, Magenta/green bias: ±9		
	WB bracketing	Amount	±3 levels in 1-level increments	
		Direction	Blue/amber bias, Magenta/green bias	
	Shutter Release	3 images with one shot		
Color Temp. Spec. [Range/Increments, K]	2500 - 10000/100	2800 - 10000/100		
Viewfinder	Coverage [Approx.]	95% vertical, 95% horizontal		
	Magnification [magnification]	0.95	0.9	
	Eye point [mm]	22	20	
	Angle of view [°]	26.4	25.1	
	Dioptric adjustment [dpt]	-3 - +1		
	Focusing Screen	Interchangeable (Standard, grid lines, point of focus)	Fixed	
Information display	ISO speed, B/W, 2-digit maximum burst	—		
Live View shooting	Yes	—		
Autofocus	AF Points	9		
	Cross-type AF points	9	1	
	f/2.8 sensor at center	Vertical/horizontal-line sensitive	Vertical-line sensitive only	
	AF point selection	Multi-controller		
	Focusing brightness range [EV]	-0.5 - 18		
	AF mode	One-Shot / AI SERVO / AI Focus		
	Superimposed display	Yes (LED)		
	50 kph predictive AF [EF300mm f/2.8L IS USM, approx. m]	8		
	AF start button	Yes	—	
	AF-assist beam	Method	Stroboscopic flash	
Effective Range [m]	Center: 4, Periphery: 3.5			
Exposure Control	Sensor Zones	35		
	Metering range [EV]	1 - 20		
	Metering Modes	Evaluative / Partial / Spot / Center-weighted average		
	Shooting Modes	Basic Zone	1. Full Auto 2. Portrait 3. Landscape 4. Close-up 5. Sports 6. Night Portrait 7. Flash Off	
		Creative Zone	Program AE / Shutter-priority AE / Aperture-priority AE / Manual exposure / Automatic Depth-of-field AE / Camera user setting 1 - 3	Program AE / Shutter-priority AE / Aperture-priority AE / Manual exposure / Automatic Depth-of-field AE
	ISO Speed	Basic Zone	Auto 100 - 800	Auto 100 - 400
		Creative Zone	Auto, 100 - 1600 (1/3-stop), H:3200	100 - 1600 (1/3-stop), H:3200
	Exposure Compensation [increments and range]	1/3, 1/2, ±2		
AEB [increments and range]	1/3, 1/2, ±2			

Table 001 Specifications Comparison of EOS 40D and EOS 30D (2/2)

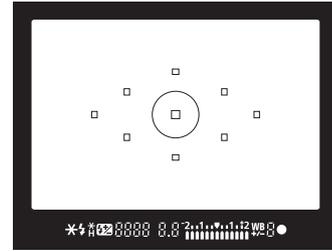
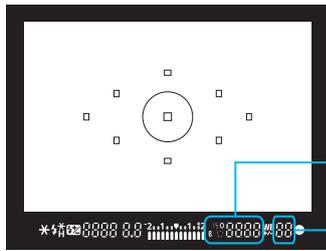
Item		EOS 40D	EOS 30D
Shutter	Speeds [sec.]	1/8000 - 30, bulb	
	X-sync [sec.]	1/250	
	Durability	100,000	
	Release time lag [Approx.]	59 ms	65ms
	Shoot → Press Shutter Button Halfway → Shoot [Single shooting]	Enabled	—
Silent shooting		Enabled during Live View shooting	
Drive	Drive Modes	Single / Continuous L / Continuous H / Self-timer (10 sec. or 2 sec.)	Single / Continuous L / Continuous H / Self-timer
	Continuous shooting [Approx. fps]	High-speed: 6.5 / Low-speed: 3	High-speed: 5 / Low-speed: 3
	Max. Burst	JPEG (L/F) 75	30
	[High-speed]	RAW 17 RAW+JPEG 14	11 9
Built-in Flash	Flash Exposure Control	E-TTL II	
	GNo. [ISO100-m]	13	
	Flash Coverage [mm]	17	
	Recycling Time [Approx. sec.]	3	
	Red-eye Reduction	Lamp	
	Flash Exposure Compensation [increments and range]	1/3, 1/2 · ±2	
	FE Lock	Yes	—
	Flash settings with menu	Yes	—
External Flash	Flash Exposure Control	E-TTL II	
	FP Flash/FE Lock/ Flash Exposure Compensation/FEB	Yes	
	Wireless Multiple Flash Control	Yes (for 3 groups)	
	Flash settings with menu	Yes	—
LCD Monitor	Screen Size [in.]	3	2.5
	Pixels displayed [Approx.]	230,000	
	Brightness [Levels]	7	Yes (5, Gray chart)
	LCD panel-like shooting info screen	Yes	—
Playback	Display Modes	Single image	2
	[Types]	Index	4
	Index	4-image / 9-image index	9-image index
	Histogram	Brightness / RGB	
	Highlight alert	Yes	
	AF point display	Yes	
	Zoom-in magnification	1.5x - 10x (15 levels)	
	Magnification of Image Displayed Immediately after Shooting	—	Yes (C.Fn-17-1)
	Rotate image [°]	90, 270	
	Image protect [unit]	1	
Image jump	By 10 shots / 100 shots / Index 1 screen / date	By 10 shots / 100 shots / date	
Video OUT	NTSC/PAL		
Erase Image	Single / Erase selected images / All images on card	Single / All images on card	
Menu Languages	18	15	
Camera direct/ Printing	Direct Print	Yes	Yes
	PictBridge (PTP) Compatibility	Yes (Extended functions + advanced futures)	Yes (Extended functions)
	CP/BJ Direct Compatibility	—	Yes
Digital Camera Standards	Design rule for Camera File System Ver. 2.0 / Exif Ver. 2.21 / DPOF Ver. 1.1		
Direct Image Transfer	Yes		
Customization	Custom Functions [Qty/settings]	24/62	19/53
	Register camera settings	Yes	—
	My Menu	Yes	—
Original image verification data	Yes		
Error Warning	LCD monitor / LCD panel		
External Interface	USB [Ver.]	2.0 Hi-Speed	
	Video OUT	Yes	
	Remote Control Terminal	Yes (N3-type)	
	PC Terminal	Yes	
	Extension system terminal	Yes	—
Power Source	Possible Shots [23°C/73°F, FA50%, BP-511A]	800	750
	Batteries	BP-511A/BP-511/BP-514/BP-512	
	AC Power	Yes	
	Date/Time Backup Battery	CR2016	
	Battery Grip	BG-E2N / BG-E2 (size-AA batteries compatible)	
	Battery check	Auto (4 levels)	
	Return from Auto Power Off	Pressing shutter button halfway / PLAY / MENU / AEL	
Exterior	Material	Magnesium	
	Exterior Color	Black	
	LCD Panel Illumination	Yes	
	EF-S lens compatible	Yes	
Chassis Material	Stainless steel		
Startup time [Approx. sec.]	0.15		
Dimensions [W×H× D]	145.5 x 107.8×73.5mm	144 x 105.5×73.5mm	
Weight [g]	740	700	
Ambient temperature	0 - 40°C/32-104°F		
Ambient humidity	85% or less		

EOS 40D

EOS 30D

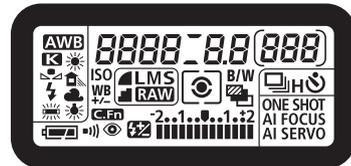
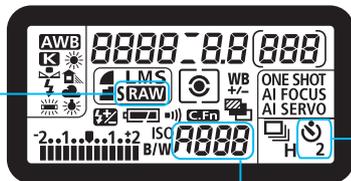


Picture Style button



ISO speed
Monochrome shooting

2-digit display for
continuous shooting
max. burst



Small RAW

Self-timer 2 sec.

ISO speed always displayed

Camera user
settings

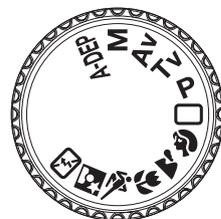
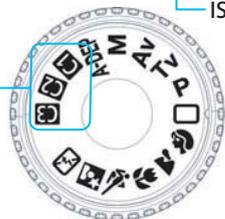


Fig. 001 EOS 40D: Exterior comparison with EOS 30D

1) Image recording

(1) Large, single-piece CMOS sensor with approx.

10.1-megapixels (=EOS DIGITAL REBEL XTi / 400D DIGITAL)

The same 10.1-megapixel* CMOS sensor (Fig. 002) used in the EOS DIGITAL REBEL XTi / 400D DIGITAL is incorporated. With an image sensor size of 22.2 mm × 14.8 mm, the effective angle of view is approx. 1.6 times the lens focal length.

* Effective pixels.

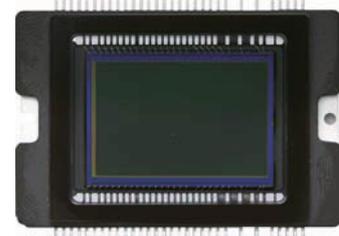


Fig. 002 CMOS sensor (actual size)

(2) DIGIC III (=EOS-1D Mark III)

While retaining the DIGIC II's features for fine image detail, natural colors, and high speed, the new DIGIC III imaging engine attains faster signal processing speed.

(3) 14-bit A/D conversion (=EOS-1D Mark III)

The analog output signal from the imaging element is converted into a digital signal with 14-bit (16384 colors) processing instead of the previous 12-bit (4096 colors). This creates digital data with finer gradation.

With RAW/sRAW images recorded with 14-bit processing, you can use DPP to post process and save the image as a 16-bit TIFF image. This brings out the maximum range of colors afforded by 14-bit processing. Also, since images recorded in JPEG (8 bits per color) are also generated from 14-bit RAW data, they have fewer blown highlights than before and the gradation is excellent.

(4) Image-recording quality

In addition to the image-recording quality modes provided by EOS 30D, the new small RAW* is provided. Small RAW can also be recorded simultaneously with any JPEG recording quality (Fig. 003). Table 002 shows the pixels for the respective image-recording quality.

As with the EOS-1D Mark III, even if you open the CF card slot cover while data is being written to the CF card, the data writing still continues with the EOS 40D.

* The recorded number of pixels is about one-fourth that of a normal RAW image, and the file size is about half the size of RAW.



Fig. 003 Image-recording quality selection screen

Table 002 Recorded Pixels

Image-recording quality	Recorded Pixels
Large	3888 × 2592 (Approx. 10.10 megapixels)
Medium	2816 × 1880 (Approx. 5.30 megapixels)
Small	1936 × 1288 (Approx. 2.50 megapixels)
RAW	3888 × 2592 (Approx. 10.10 megapixels)
sRAW	1936 × 1288 (Approx. 2.50 megapixels)

(5)ISO speed

As with the EOS 30D, the ISO speed range is 100-1600, settable in 1/3-stop or whole-stop increments. ISO 3200 extension can also be set. The ISO speed is now always displayed in the viewfinder and on the LCD panel.

●Auto ISO speed enabled in Creative Zone modes

With the EOS 40D, you can now set auto ISO speed even in the Creative Zone modes (Fig. 004). When the ISO speed is set to [Auto], ISO 400 is initially set. Then depending on the lighting conditions, the ISO speed is set automatically as shown in Table 003. The automatically-set ISO speed is displayed in the viewfinder and on the LCD panel while the metering is active.

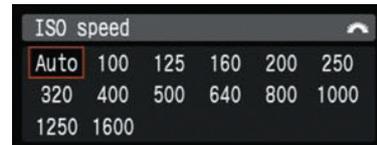


Fig. 004 ISO speed setting screen

In the Basic Zone modes, the automatically-set ISO speed range is 100-800 which is 1 stop higher on the high end than the EOS 30D.

Table 003 [Auto] ISO Speed Settings

Shooting mode		ISO Speed Settings
Creative Zone modes	P/Av/ A-DEP	Set within ISO 400-800 so that the respective shutter speed will not cause camera shake under the current lighting conditions. If overexposure will result at ISO 400, a lower ISO speed, as low as ISO 100, is set.
	Tv	If overexposure or underexposure will result at ISO 400, the ISO speed is shifted within 100-800. (=EOS-1D Mark III's C.Fn I-8-2)
	M	Fixed at ISO 400.
Basic Zone modes		Automatically set within ISO 100-800, according to the brightness.
		Automatically set within ISO 400-800, according to the brightness.
		Fixed at ISO 100.
With flash		Set to ISO 400 in all shooting modes. If overexposure would result in fill-in flash, a lower ISO speed, as low as ISO 100, will be set.

2) Image processing (=EOS 30D)

(1)Picture Styles

The Picture Styles have the same specifications as the EOS 30D's Picture Styles. The EOS 40D has a separate Picture Style selection button to make the selection easier.



Fig. 005 Picture Style selection screen

(2)Noise reduction

●Long exposures noise reduction (=EOS 30D)

[Off], [Auto], or [On] can be selected.

● **High ISO speed noise reduction (C.Fn II-2)**

This is noise reduction for images taken at a high ISO speed as in the EOS-1D Mark III. Although noise reduction is applied at all ISO speeds, it is particularly effective at high ISO speeds. At low ISO speeds, the noise in the shadow areas is further reduced. Also, when [High ISO speed noise reduction] is set, the maximum burst during continuous shooting will decrease to 8, regardless of the image-recording quality.

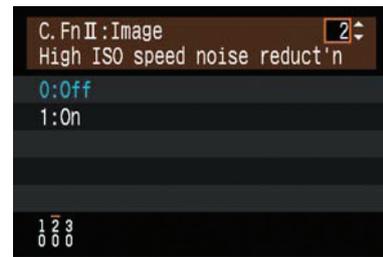


Fig. 006 C.Fn II-2

(3) **Highlight tone priority (C.Fn II-3)** (=EOS-1D Mark III)

This function seeks to improve the highlight detail. The range is extended between 18% gray and the maximum highlight tone. This makes the gradation finer from the grays to the highlights and reduces blown highlights.

This function also limits the settable ISO speed range to 200-1600.



Fig. 007 C.Fn II-3

(4) **White balance**

The white balance settings are the same as the EOS 30D's. Only the color temperature (K) as a preset WB is new (Fig. 008). The minimum color temperature has been lowered from 2800K to 2500K in order to cover tungsten light.

You can now register the personal white balance (1 setting) under <WB> with the provided software.

The WB correction and WB bracketing settings can now all be canceled with the INFO. button.

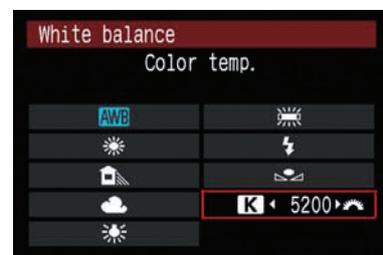


Fig. 008 White balance setting screen

(5) **Automatic brightness and contrast correction**

In Basic Zone modes, the image is now adjusted automatically during processing to obtain the best brightness and contrast, due to the shooting results (brightness and contrast).

(6) **Compatible with external recording media** (=EOS-1D Mark III)

With the WFT-E3 attached to the camera and external recording media such as a portable hard drive attached via USB, the external media can be selected as the recording media.

● **Image recording function**

As with the EOS-1D Mark III, the image recording can be set to [Standard], [Auto switch media], [Rec. separately], or [Rec. to multiple] (Fig. 009).



Fig. 009 Recording function

● **Shooting backup**

Images in the CF card can be backed up to external media. Besides the quick backup feature also found in the EOS-1D Mark III, the folder to back up the images can be created or selected. Only checkmarked images can also be backed up (Fig. 010).

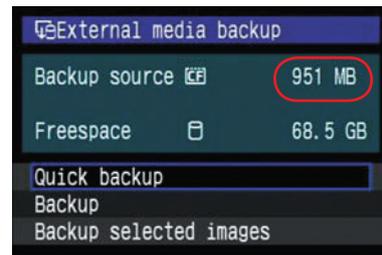


Fig. 010 Backup

3) **EOS Integrated Cleaning System** (=EOS-1D Mark III)

The Self Cleaning Sensor Unit is the same type as in the EOS-1D Mark III (Fig. 011). The specifications for acquiring and appending Dust Delete Data to the image are the same as with the EOS-1D Mark III.

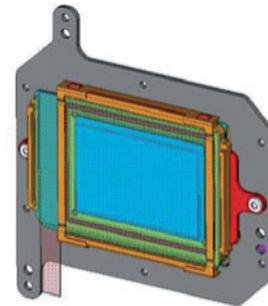


Fig. 011 Self Cleaning Sensor Unit

4) **Shooting functions**

(1) **Autofocus**

● **Nine cross-type AF points (center AF point sensitive to vertical and horizontal lines at f/2.8).**

The newly-developed AF sensor (Fig. 012) with nine cross-type AF points greatly boosts AF performance. The AF sensitivity is EV -0.5 - EV 18.

• **Nine cross-type AF points**

All AF points work as cross-type points at f/5.6. High-precision AF is attained with fewer AF failures with hard-to-focus subjects.

• **First EOS with cross-type AF sensitive to f/2.8**

The center AF point has a cross-type AF sensor sensitive to vertical and horizontal lines at f/2.8.

*The f/2.8 sensor is a diagonal, cross-type sensor so that it does not obstruct the f/5.6 sensor positioned vertically at the center.

• **Handles extreme defocus**

The sensor can handle extreme defocus. It can still focus even when the scene is way out of focus.

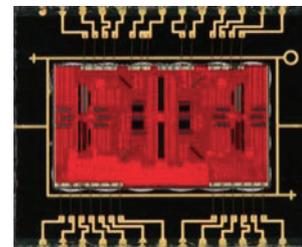


Fig. 012 AF sensor

● **AF Start button** (=EOS-1D Mark III)

Like the EOS-1D Mark III, the <AF-ON> button is provided.

● **AF mode selection** (=EOS 30D)

Like the EOS 30D, the AF mode (One-Shot AF, AI Focus AF, AI SERVO AF) is selectable even in the Creative Zone modes.

● **AF point selection** (=EOS 30D)

Like the EOS 30D, you can use the Multi-controller or Main/Quick Control dial to select the AF point while looking at the superimposed AF point in the viewfinder or the LCD panel's AF point selection display.

(2)Drive

Continuous shooting speed at approx. 6.5 fps (maximum) and approx. 3 fps. The drive mode selection loop now includes 2-sec. self-timer.

The maximum burst during continuous shooting is approx. 75 Large/Fine shots and approx. 17 RAW shots (both during high-speed continuous shooting). Despite the higher number of megapixels due to the larger image size, continuous shooting is still fast.

(3)Shutter (=EOS 30D)

The shutter unit is the same as the EOS 30D's. The shutter speed range is 1/8000 sec. to 30 sec. with Bulb and X-sync at 1/250 sec.

(4)Exposure control (=EOS 30D)

The shooting modes, 35-zone metering sensor, and metering modes (evaluative, partial, spot, and center-weighted average) are all the same as the EOS 30D.

(5)Viewfinder

●Viewfinder optics

To make the viewfinder clearer to see, 0.95x magnification, 26.4° angle of view, and 22mm eyepoint are provided. (The EOS 30D's viewfinder gave 0.9x magnification, 25.1° angle of view, and 20mm eyepoint.)

●Focusing screen

Interchangeable. Besides the standard focusing screen, there is one to make it easier to see the point of focus and one with grid lines.

●Viewfinder display

Besides the EOS 30D's viewfinder's display items, the EOS 40D's viewfinder display now includes the ISO speed (always displayed) and B/W shooting icon. Also, the maximum burst is now displayed in 2 digits instead of only 1 digit.

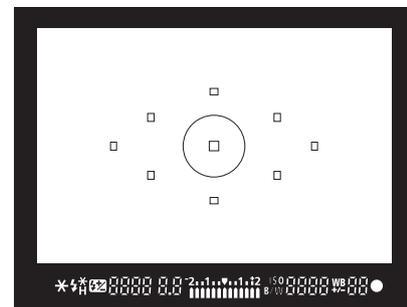


Fig. 013 Viewfinder information

(6)Live View shooting mode

Compared to the EOS-1D Mark III's Live View shooting mode, the following improvements have been incorporated:

●Shorter shutter-release time lag and silent shooting mode

The EOS 40D's CMOS sensor has an electronic 1st-curtain shutter function. It enables shooting with the mechanical shutter completely open. As a result, the [Silent shoot.] (Fig. 014) Mode 1 and Mode 2 make the shutter-release time lag shorter and reduce the shutter-cocking noise.

With Mode 2, the shutter cocking does not occur after shutter release. It occurs only when the shutter button is SW-2 OFF. When the shot is taken, only the shutter curtains make noise so the shooting is quiet.

*Live View shooting with EOS-1D Mark III had the shutter closing after the shutter release before the start of the exposure. This caused shutter-release time lag and shutter-cocking noise.

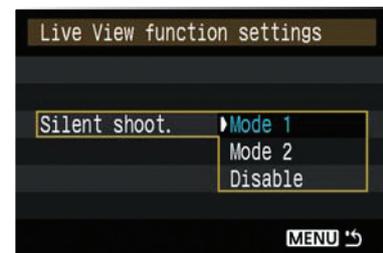


Fig. 014 Silent shooting screen

● AF function (C.Fn III-6)

Pressing the AF-ON button pauses the Live View shooting (reflex mirror goes down) and executes AF. Letting go of the AF-ON button resumes the Live View shooting. (C.Fn)

(7)Flash

The built-in flash unit is basically the same as the EOS 30D's. The EOS 30D's Custom Functions "Flash firing," "E-TTL II," and "Shutter curtain sync" have been consolidated into the menu's [Built-in flash func. setting] (Fig. 015).

Also, with the SPEEDLITE 580EX II, the camera can be used to set the SPEEDLITE 580EX II's settings as with the EOS-1D Mark III.

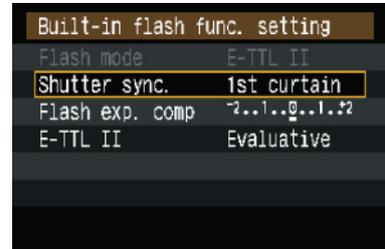


Fig. 015 Built-in flash func. screen

(8)Compatible with EF-S lenses

The camera is compatible with all EF lenses, including EF-S lenses.

5) Large LCD monitor

This is a 3.0-in. TFT liquid-crystal color monitor (Fig. 016) with approx. 230,000 pixels and a wide viewing angle. It displays a very fine image and the brightness is adjustable to one of seven levels.



Fig. 016 Comparison with EOS 30D screen

(1)Camera setting display modes

Press the INFO. button to change the screen as follows: 1. Camera settings display, 2. LCD panel-like display, 3. Display off (Fig. 017).

With the LCD panel-like display, pressing the ISO speed button, etc., will display the respective setting screen as with the EOS DIGITAL REBEL XT_i / 400D DIGITAL (Fig. 018).



Fig. 017 INFO display

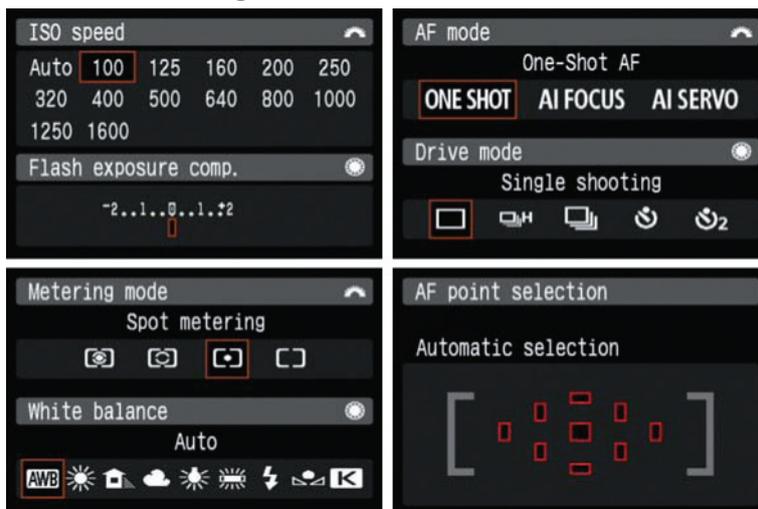


Fig. 018 Setting screens

Since the EOS 40D does not have a display-off sensor, press the INFO. button to turn on/off the INFO display.

* If auto power off is [Off] and the camera is left idle, the LCD monitor will turn off automatically after 30 min. (The camera power does not turn off.)

(2) Menu display

As with the EOS-1D Mark III, turn the Main Dial to select the menu tab and turn the Quick Control Dial to select the menu option (Fig. 019). You can also use the Multi-controller for menu operations.



Fig. 019 Menu options

(3) Playback display

● Single-image playback (=EOS-1D Mark III)

During single-image playback, pressing the <INFO.> button switches the shooting information screen like the EOS-1D Mark III. You can also set the menu option to display the overexposed highlight warning and AF point which achieved focus.

● Index display (=EOS-1D Mark III)

In addition to the 9-image index display, a 4-image index display is provided.

● Jump display

Press the <JUMP> button, then turn the Quick Control Dial to select the jump method (jump by 1 image, 10 images, 100 images, 1 screen, or shooting date). It is now similar to the EOS-1D Mark III's jump operation with the Main Dial. (Fig. 020)

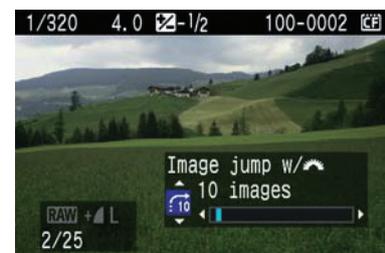


Fig. 020 Jump display

●Erasing images

With the [Erase images] menu, select [Select and erase images] and checkmark the images to be erased. Then all the checkmarked images can be erased at one time. (Fig. 021)

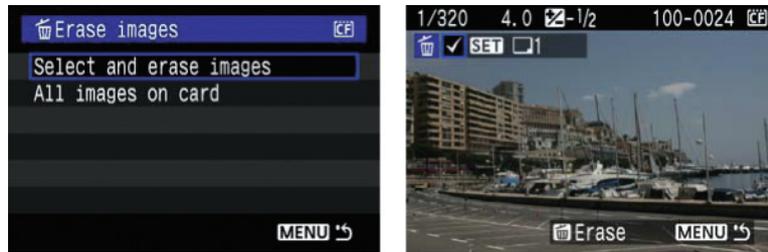


Fig. 021 Erase images screen

6) Design and operation ease

(1)Design

The camera design is based on the following three concepts:

●New-generation design for advanced amateurs

A revamping of the old EOS 20D-series design.

●Joy of ergonomics

The successive steps of holding the camera, framing the subject, turning a dial, and pressing a button all feel good.

●Joy of ownership

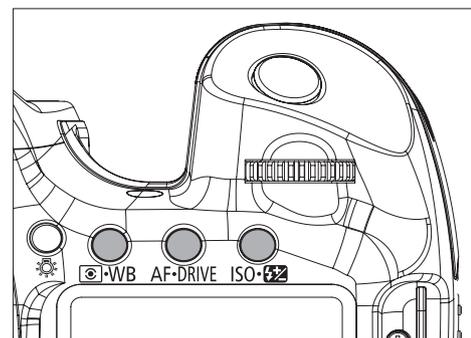
Cool-looking camera, making you a proud owner.

Key words: Heavy-duty, great design, nice shape, suited to adult tastes.

(2)Operation ease

Shooting functions are now assigned to three buttons above the LCD panel. Through these buttons, the most frequently-changed settings are now accessible near the Main Dial (Fig. 022). Similar to the EOS-1D Mark III, you use the Main Dial to change the ISO speed, AF mode, and metering mode. And you use the Quick Control Dial to change the flash exposure compensation, drive mode, and white balance.

Also, the menu operation method is now the same as with the EOS-1D Mark III. The camera operation method is being made uniform as much as possible among the professional and advanced amateur cameras.



operation: ISO/AF/ [eye icon]
operation: [flash icon]/DRIVE/WB

Fig. 022 Layout of shooting buttons

7) Customization

(1) Register camera user settings

The camera's shooting function settings and menu settings can be registered to the Mode Dial's C1, C2, or C3 (Fig. 023). Except for the date/time and other settings which need not be registered, almost all the camera settings can be registered.

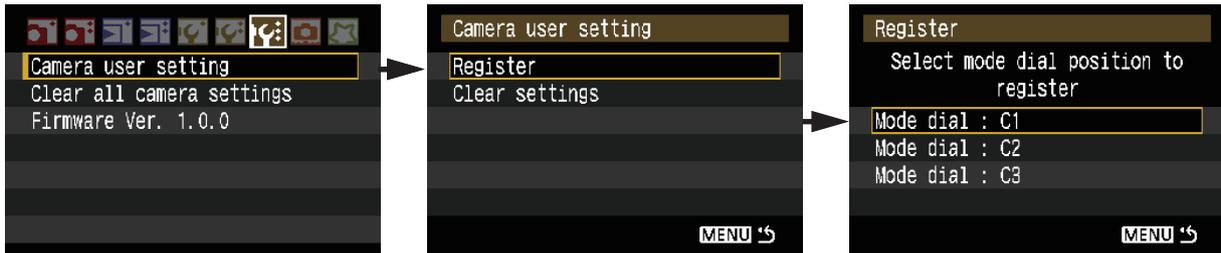


Fig. 023 Register camera user settings

(2) Custom Functions

The 24 Custom Functions are categorized according to basic function make it faster to find and set the desired Custom Function. (Fig. 024)

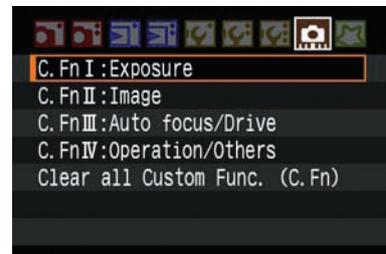


Fig. 024 Custom Functions

(3) Flash Custom Functions

With the SPEEDLITE 580EX II attached to the camera, you can set or cancel the Speedlite's Custom Function settings (C.Fn-0 to 13) with the camera (Fig. 025).

* With an EX-series Speedlite other than the SPEEDLITE 580EX II, the camera cannot be used to set the Speedlite's Custom Functions.

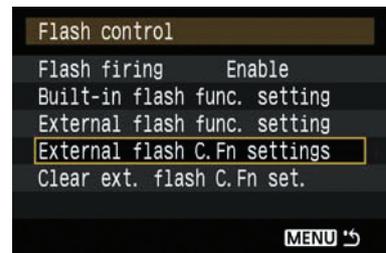


Fig. 025 External flash Custom Functions

(4) My Menu (=EOS-1D Mark III)

Like the EOS-1D Mark III, you can register up to six of the most frequently-set menu options and Custom Functions under My Menu.

Also, when [Display from My Menu: Enable] is set, pressing the Menu button will first display the My Menu screen (tab).

You can also use EOS Utility to set My Menu and register it to the camera.

8) Camera Direct Printing

(1) Direct printing

As with the EOS-1D Mark III, RAW and sRAW printing and Red-Eye 1 are provided. Compatible only with PictBridge. BubbleJet Direct and CP Direct are not supported. Also, the following features are new.

● Printing effects preview

Printing effects like B/W, Vivid, Brightness, and Adjust levels are now reflected in the displayed image so you can see the effect. (Fig. 026. Excluding Face Brightener and Red-eye corr.)

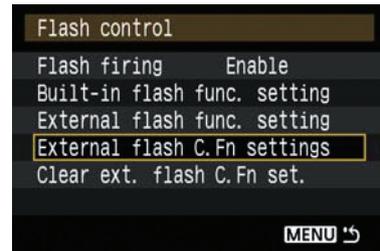


Fig. 026 Printing effects

● Tilt correction

With the trimming screen, turn the Quick Control Dial to tilt the image up to ± 10 degrees in 0.5° increments. (Fig. 027)



Fig. 027 Tilt correction

(2) Print order (DPOF) and direct image transfer

Same as with EOS 30D.

9) Interface

USB 2.0 Hi-Speed is provided for the interface with personal computers and camera direct printing. As shown in Fig. 028, the other terminals are the same as EOS 30D.

Also, the camera bottom has an extension system terminal (Fig. 029).



Fig. 028 Terminals



Fig. 029 Extension system terminal

10) Power source and shooting performance

The power source system is the same as the EOS 30D's with Battery Pack BP-511A. With a fully-charged battery pack, the number of possible shots without flash use is about 1100 shots at 23° C/73° F. With 50% flash use, it is about 800 shots.

As with the EOS 30D, the date/time backup battery is the CR2016 lithium battery installed in the battery compartment.

Detaching and attaching the battery compartment cover is now easier. You can pull it out or put it on at the slanted (45-degree) angle (Fig. 030).

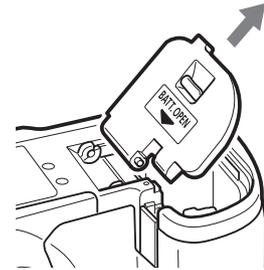


Fig. 030 Battery compartment cover

11) Dimensions and weight

Dimensions (W×H×D): 145.5×107.8×73.5 mm / 5.7×4.2×2.9 in.,
 Weight: 740 g / 26.1 oz.

2.2 New System Accessories

1) Battery Grip BG-E2N

A new grip was made from Battery Grip BG-E2 with the new sealing material around battery compartment cover to better resist water and dust.

Battery Grip BG-E2 is also compatible with EOS 40D.

The BG-E2N is also compatible with EOS 30D.

2) WFT-E3

New accessory having the same wireless/wired LAN functions as WFT-E2 and a USB host function for connecting external storage media and GPS device. It is attached to the camera bottom and also has vertical-grip camera controls (shutter button, Main Dial, AF point selection button, AE lock button, AF start button, vertical-grip control ON/OFF switch). (Fig. 031)



Fig. 031 WFT-E3

To power the WFT-E3 (but not the EOS 40D), it also accommodates BP-511A×1.

3) Interchangeable focusing screens

Besides the standard focusing screen, there is a focusing screen making it easier to see the point of focus and one with grid lines (Fig. 032).

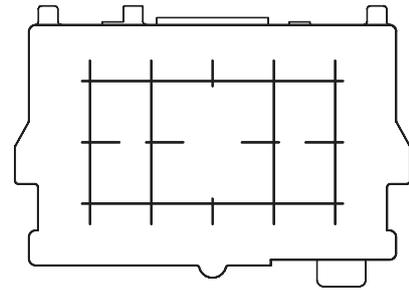


Fig. 032 Focusing screen with grid lines

2.3 EOS 40D software (=EOS-1D Mark III)

The EOS 40D is bundled with the EOS DIGITAL SOLUTION DISK Ver.15 containing the programs below. Picture Style Editor 1.0 (Win/Mac) has been newly developed to create Picture Style files. Otherwise, the bundled programs are the same as with EOS-1D Mark III.

- EOS Utility 2.1 (Win/Mac)
- Digital Photo Professional 3.1 (Win/Mac)
- [Picture Style Editor 1.0 \(Win/Mac\)](#)
- ZoomBrowser EX 5.8 (Win)
- ImageBrowser 5.8 (Mac)
- RAW Image Task 2.7 (Win/Mac)
- PhotoStitch 3.1 (Win/Mac)
- CameraWindow MC 6.4 (Win) /6.5 (Mac)
- WFT-E1 Utility 3.1 (Win/Mac)
- WFT-E2 Utility 3.1 (Win/Mac)
- WFT Pairing Software 1.1 (Win/Mac)
- Original Data Security Utility 1.1 (Win)
- Original Data security Administrator 1.1 (Win)
- Win 2000 Driver (with Vista/XP, the OS is used)

3. SPECIFICATIONS

(Specifications different from EOS 30D are in blue.)

1. Type
 - 1-1 Type: Digital AF/AE single-lens reflex camera with built-in flash
 - 1-2 Compatible lenses: Canon EF lenses (including EF-S lenses)
 - 1-3 Lens mount: Canon EF mount
 - 1-4 Lens restrictions: None
 - 1-5 Lens focal length: Equivalent to 1.6x the normal lens focal length

2. Image Sensor
 - 2-1 Type: High-sensitivity, high-resolution, single-plate, CMOS sensor
 - 2-2 Image sensor size: 22.2 mm × 14.8 mm
 - 2-3 Effective pixels: Approx. 10.10 megapixels: 3904 (H) × 2598 (V) pixels
 - 2-4 Total pixels: Approx. 10.50 megapixels: 3996 (H) × 2620 (V) pixels
 - 2-5 Pixel unit: 5.7 μm square
 - 2-6 Aspect ratio: 2:3 (Vertical:Horizontal)
 - 2-7 Color filter type: RGB primary color filters
 - 2-8 Low-pass filter: Fixed position in front of the image sensor
 - 2-9 Dust delete feature:
 - 1) Self Cleaning Sensor Unit
 - * Removes dust adhering to the low-pass filter.
 - * Can be executed automatically when power on/off (approx. 1 sec. operation time) or manually (approx. 2.5 sec. operation time).
 - 2) Dust Delete Data acquisition and appending
 - * The coordinates of the dust adhering to the low-pass filter are detected by a test shot and appended to subsequent images.
 - * The dust coordinate data appended to the image is used by the provided software to automatically erase the dust spots.
 - 3) Manual cleaning

3. Recording System
 - 3-1 Image type: JPEG, RAW (14 bit)

Image-recording Quality	Pixels	Image Type
 L,  L	3888 × 2592 (Approx. 10.10 megapixels)	JPEG
 M,  M	2816 × 1880 (Approx. 5.30 megapixels)	
 S,  S	1936 × 1288 (Approx. 2.50 megapixels)	
RAW	3888 × 2592 (Approx. 10.10 megapixels)	Lossless RAW
sRAW	1936 × 1288 (Approx. 2.50 megapixels)	
 - 3-2 RAW+JPEG simultaneous recording: Same as above for JPEG

3-3 File size and recording capacity:

Image-recording Quality	Image File Size [Approx. MB]	Possible Shots [Approx.]	Max burst [Approx.]	
			High-speed	Low-speed
L	3.5	274	75	205
L	1.8	523	171	523
M	2.1	454	140	454
M	1.1	854	303	854
S	1.2	779	271	779
S	0.7	1451	625	1451
RAW	12.4	76	17	20
RAW + L	12.4+3.5	59	14	16
RAW + L	12.4+1.8	66	14	16
RAW + M	12.4+2.1	65	14	16
RAW + M	12.4+1.1	70	14	16
RAW + S	12.4+1.2	69	14	16
RAW + S	12.4+0.7	72	14	16
sRAW	7.1	135	20	34
sRAW + L	7.1+3.5	90	17	21
sRAW + L	7.1+1.8	107	17	22
sRAW + M	7.1+2.1	103	17	22
sRAW + M	7.1+1.1	116	17	23
sRAW + S	7.1+1.2	115	17	24
sRAW + S	7.1+0.7	124	17	25

* The number of possible shots and maximum burst apply to a 1GB CF card based on Canon's testing standards

* The single-image size, number of possible shots, and maximum burst during continuous shooting will vary depending on the subject, CF card brand, ISO speed, Picture Style, etc.

3-4 Highlight tone priority:

Enabled (C.Fn II-3-1)

3-5 Image recording format:

Complies with Design rule for Camera File system 2.0 and Exif 2.21

3-6 Extension:

JPEG: JPG, RAW: CR2 (Canon Raw 2nd edition)

3-7 File No.:

The following three types of file numbers can be set:

1) Continuous numbering

* The continuous numbering of captured images will continue even after you replace the camera's CF card. (The numbering continues even when the folder changes.)

2) Auto reset

* When you replace the camera's CF card, the numbering will be reset to start from 0001. If the new CF card already contains images, the numbering will continue from the last recorded image in the CF card.

3) Manual reset

* Resets the file number to 0001, and creates a new folder automatically.

- 3-8 **Picture Style:**
- 1) Standard
 - 2) Portrait
 - 3) Landscape
 - 4) Neutral
 - 5) Faithful
 - 6) Monochrome
 - 7) User Defined 1-3
- *If the Basic Zone's Portrait mode is set, "Portrait" is set automatically.
And if the Basic Zone's Landscape mode is set, "Landscape" will be set automatically. In other Basic Zone modes, "Standard" will be set automatically.
- *In the Creative Zone modes, you can select and set the desired Picture Style.

3-9 **Picture Style settings:**

Item	Selections / Settings
Base style	Standard / Portrait / Landscape / Neutral / Faithful / Monochrome / Picture Style file
Sharpness	0 / 1 / 2 / 3 / 4 / 5 / 6 / 7
Contrast	-4 / -3 / -2 / -1 / 0 / +1 / +2 / +3 / +4
Color saturation	-4 / -3 / -2 / -1 / 0 / +1 / +2 / +3 / +4
Color tone	-4 / -3 / -2 / -1 / 0 / +1 / +2 / +3 / +4
Filter effect	N: None, Ye: Yellow, Or: Orange, R: Red, G: Green
Toning effect	N: None, S: Sepia, B: Blue, P: Purple, G: Green

- 3-10 **Color space:** Selectable between sRGB and Adobe RGB
- 3-11 **Noise reduction:**
- 1) Long exposure noise reduction (C.Fn II-1)
Functions with exposures 1 sec. or longer. [Auto] or [On] (Always applied) settable.
 - 2) High ISO speed noise reduction (C.Fn II-2)
[Off] or [On] can be selected.

4. **Recording Media Drive**

- 4-1 **Recording media:** CF card
*Accepts CF card Types I and II
*With WFT-E3, external recording media can also be used.
- 4-2 **Format:** CF card standard formatting
*Compatible with 2GB and higher-capacity CF cards.
- 4-3 **CF card access indicator:** Access lamp blinking
- 4-4 **Read error warning:** The respective error warning is displayed in the viewfinder and on the LCD monitor, and the shutter release locks.
- 4-5 **CF card formatting:** Enabled
- 4-6 **No CF card warning:** Provided

- 4-7 **Recording functions via WFT-E3:** With a CF card in the camera and external recording media connected via WFT-E3, the following recording functions are possible:
- 1) Standard
 - * No automatic switching of recording media.
 - 2) Automatic switching of recording media
 - * When the current recording media becomes full, it switches to another recording media automatically and continues recording.
 - 3) Separate recording
 - * Each recording media can be set to record a specific image-recording quality (L , L , M , M , S , S , **RAW** , **sRAW**) for each shot.
 - 4) Recording of identical images
 - * Images can also be recorded at the same size to both recording media (**RAW**+JPEG or **sRAW**+JPEG).
 - 5) Backup to external recording media
 - * Selected images, all images, and quick backup are possible.

5. White Balance

- 5-1 **Type:** Auto white balance with the image sensor
 5-2 **Modes:**

WB Mode	Color Temperature (Kelvin)
① Auto (AWB)	Approx. 3000-7000
② Daylight	Approx. 5200
③ Shade	Approx. 7000
④ Cloudy, twilight, sunset	Approx. 6000
⑤ Tungsten light	Approx. 3200
⑥ White fluorescent light	Approx. 4000
⑦ Flash	Approx. 6000
⑧ Custom (Custom WB)	Approx. 2000-10000
⑨ Color Temperature	Approx. 2500-10000

* In Basic Zone modes, Auto (AWB) is set automatically.

- 5-3 **White balance correction:**
- Blue/amber bias: ± 9 levels
 - Magenta/green bias: ± 9 levels
- * Corrected in reference to the current WB mode's (any mode listed in 5-2 above) color temperature.
- 5-4 **White balance bracketing:**
- ± 3 levels, in single-level increments
- * With the current WB mode's (any mode listed in 5-2 above) color temperature as the standard, one image each for "Set value/Blue bias/Amber bias" or "Set value/Magenta bias/Green bias" is created.
- * Both "Blue bias/Amber bias" and "Magenta bias/Green bias" cannot be set together.
- * White balance correction and AEB can also be set in combination.

6. Viewfinder

- 6-1 **Type:** Eye-level SLR (with fixed pentaprism)
 6-2 **Focusing screen:** **Ef-A provided as the standard focusing screen (Interchangeable. Ef-D: Grid lines, Ef-S: Point of focus)**
 6-3 **Dioptric adjustment:** Adjustable from -3.0 dpt to $+1.0 \text{ m}^{-1} \text{ (dpt)}$
 6-4 **Eye point:** **22 mm**
 6-5 **Coverage:** Approx. 95% vertically and horizontally

6-6	Magnification:	Approx. 0.95x (with 50mm lens at infinity, -1 m ⁻¹ (dpt))
6-7	Viewfinder information:	1) AF information AF points and focus confirmation light 2) Exposure information Shutter speed, aperture, ISO speed (Always displayed), AE lock, exposure level, spot metering circle, exposure warning 3) Flash information Flash ready, flash exposure compensation, high-speed sync, FE lock, red-eye reduction light 4) Image information Monochrome shooting, maximum burst (2-digit display), white balance correction, CF card information
6-8	Mirror:	Quick-return half mirror (Transmittance:reflectance ratio of 40:60)
6-9	Viewfinder blackout time:	Approx. 0.1 sec. at 1/60 sec. or faster speeds.
6-10	Mirror lockup:	Enabled with C.Fn III-7-1
6-11	Mirror cut-off:	No mirror cut-off with lenses up to EF600mm f/4L IS USM
6-12	Depth-of-field preview:	Enabled with depth-of-field preview button
6-13	Eyepiece shutter:	None (Eyepiece cover attached to strap)
6-14	Misc.:	Eyecup Ef provided

7. Live View Shooting

7-1	Type:	Electronic viewfinder with imaging sensor
7-2	Coverage:	Approx. 100% vertically and horizontally
7-3	Frame rate:	30 fps
7-4	Focusing:	1) Manual focus * Magnify the image by 5x or 10x and focus manually. 2) Autofocus * With C.Fn III-6, press the <AF-ON> button and the reflex mirror will go back down (Live View shooting interrupted). The same phase difference as during normal shooting is executed. After focus is achieved, let go of the <AF-ON> button and Live View shooting will resume.
7-5	Metering:	Real-time evaluative metering with the imaging element * AE lock possible. * Metering range: EV 0 - EV 20 (At 23° C/73° F, 50mm f/1.4 lens, ISO 100) * The active metering time can be changed.
7-6	Exposure confirmation:	Exposure compensation and AEB simulation possible (C.Fn IV-7-1)
7-7	Depth-of-field preview:	Possible with Depth-of-field preview button
7-8	Magnified view:	Magnify by 5x or 10x at the AF point position
7-9	Grid display:	Two vertical and two horizontal lattice lines displayable

- 7-10 **On-screen information display:** 1) Focus information
AF point
2) Exposure information
Shutter speed, aperture, AE lock, ISO speed, exposure level
3) Captured image information
Picture Style, histogram, shots remaining
4) Battery check icon
- 7-11 **Silent shooting:** Provided (Mode 1 and Mode 2)
- 7-12 **Number of possible shots:** With Battery Pack BP-511A

Temperature	Shooting Conditions	
	AE 100%	AE 50%, FA 50%
At 23°C /73°F	Approx. 180	Approx. 170
At 0°C /32°F	Approx. 140	Approx. 130

* Based on CIPA (Camera & Imaging Products Association) testing standards.

- 7-13 **Shutter-release time lag:** 1) With SW-1 ON, time lag from SW-2 ON to the start of the exposure: 0.059 sec.
2) With SW-1 and SW-2 pressed simultaneously, time lag until the start of the exposure: 0.126 sec.
* Time lag figures above apply with the aperture stopped down by up to 3 stops (reflex mirror operation time excluded).

- 7-14 **Remote Live View shooting:** Enabled with EOS Utility

8. Autofocus

- 8-1 **Type:** TTL-CT-SIR AF-dedicated CMOS sensor
- 8-2 **AF points:** Nine cross-type AF points (f/2.8 at center)
- 8-3 **Focusing modes:** 1) Autofocus
(1) One-Shot AF
* Set automatically in the Portrait, Landscape, Close-up, and Night Portrait modes.
(2) Predictive AI Servo AF
* Set automatically in Sports mode.
(3) AI Focus AF (Switches between One-Shot AF and AI SERVO AF automatically)
* Set automatically in Full Auto and Flash Off modes.
- 2) Manual focus
- 8-4 **Focusing point selection:** 1) Manual selection
* With C.Fn III-3-1/2, the Multi-controller or Quick Control Dial can be used to select the AF point directly.
2) Automatic selection
* Set automatically in Basic Zone and A-DEP modes.
- 8-5 **Selected AF point display:** Indicated by superimposed display in the viewfinder and on the LCD panel
- 8-6 **AF activation:** Press the shutter button halfway or press the AF start button
- 8-7 **Focus confirmation:** Indicated by superimposed display in viewfinder, focus confirmation light, and beeper
- 8-8 **AF working range:** EV -0.5 - 18 (at 23° C/73° F and ISO 100, under Canon's testing standards)

- 8-9 AF-assist beam: Intermittent firing of built-in flash.
 Effective range: Approx. 4 m/13.1 ft at center, approx. 3.5 m/
 11.5 ft at periphery.
 * With an EOS-dedicated Speedlite attached, the Speedlite's AF-assist beam is emitted instead.

9. Exposure Control

- 9-1 Type: Max. aperture TTL metering with 35-zone SPC with the following selectable modes:
 1) Evaluative metering (linked to all AF points)
 2) Partial metering (center, approx. 9% of viewfinder)
 3) Spot metering (center, approx. 3.8% of viewfinder)
 4) Center-weighted average metering
- 9-2 Exposure modes:
 1) Program AE (shiftable)
 2) Shutter-priority AE (Safety shift possible: C.Fn I-6-1)
 3) Aperture-priority AE (Safety shift possible: C.Fn I-6-1)
 4) Depth-of-field AE
 5) Full Auto
 6) Programmed Image Control modes (6)
 * Portrait, Landscape, Close-up, Sports, Night Portrait, Flash OFF
 7) Manual exposure (including bulb)
 8) E-TTL II autoflash program AE
 * Evaluative metering, Averaged metering
- 9-3 Metering range: EV 0-20 (at 23° C/73° F with 50mm f/1.4 lens at ISO 100, under Canon's testing standards)
- 9-4 Exposure beyond range warning: Shutter speed or aperture reading blinks on the LCD panel and in the viewfinder
- 9-5 Exposure metering: Activated when shutter button is pressed halfway (SW-1 ON)
- 9-6 ISO Speed (Recommended exposure index): **Automatically set**, 100 - 1600 (in 1/3-stop or whole-stop increments)
 * ISO 100-800 set automatically in Basic Zone modes.
 * ISO 3200 extension settable with C.Fn I-3-1.
 * With [Highlight tone priority], the settable ISO speed range will be 200 - 1600.
- 9-7 Exposure Compensation: ±3 stops in 1/3-stop or 1/2-half increments. Manual and AEB correction factor

Shooting Mode	Factor	
	Shutter Speed	Aperture
① Shutter-priority AE	—	Yes
② Aperture-priority AE	Yes	—
③ Program AE	Yes	Yes
④ Manual	Yes	—

- * Manual exposure compensation and AEB can be combined.
 * The AEB shooting sequence will be correct exposure, underexposure, and overexposure.
 * With the self-timer, three continuous shots will be taken regardless of the current drive mode.

- 9-8 AE Lock: 1) Auto AE lock
* In the One-Shot AF mode with evaluative metering, AE lock takes effect when focus is achieved.
2) Manual AE lock
* With AE lock button. (AE lock is updated each time you press the button.)
Enabled in all metering modes.
- 9-9 Multiple exposures: Not possible
10. Shutter
- 10-1 Type: Vertical-travel, mechanical, focal-plane shutter with all speeds electronically-controlled
- 10-2 Shutter speeds: 1/8000 sec. to 30 sec. (1/3-stop increments) X-sync at 1/250 sec.
- 10-3 Shutter release: Soft-touch electromagnetic release
- 10-4 Shutter-release time lag: 1) During SW-1 ON, time lag between SW-2 ON and start of exposure: **Approx. 0.059 sec.**
2) Time lag between simultaneous SW-1/SW-2 ON and start of exposure: **Approx. 0.126 sec.**
* Time lag with the aperture stopped down by 3.5 stops or less. Excludes AF operation time.
- 10-5 Self-timer: 10-sec. or **2-sec.** delay
- 10-6 Self-timer operation indicator:
 - Red-eye reduction lamp (blinks for the first 8 sec., then lights for the remaining 2 sec.)
 - Countdown displayed on LCD panel
 - Beeper (Beeps at 2 Hz for the first 8 sec., then at 8 Hz for last 2 sec.)
- 10-7 Camera shake warning: Provided in Full Auto and Basic Zone modes
* If the shutter speed (Tv-auto) is 0 to 0.5 stops slower than the reciprocal of the lens focal length $\times 1.25$, the shutter speed display blinks.
11. Built-in Flash
- 11-1 Type: Auto pop-up, retractable, built-in flash in the pentaprism
- 11-2 Guide No.: Guide No. 13/43 (at ISO 100 in meters/feet)
- 11-3 Recycling time: Approx. 3 sec.
- 11-4 Flash coverage: Up to 17mm focal length (equivalent to 27mm in 135 format)
- 11-5 Firing conditions: 1) Creative Zone modes: After pop-up, fires at all times
2) Basic Zone modes (except Landscape, Sports, Flash off):
Auto pop-up and firing under low-light and backlit conditions
- 11-6 Flash sync speed: Max. X-sync speed 1/250 sec.
- 11-7 Autoflash system: E-TTL II autoflash (Evaluative, Average), FE lock
- 11-8 Flash exposure compensation: Up to ± 2 stops in 1/3- or 1/2-stop increments
* Flash exposure compensation for built-in flash and Speedlite can be set with the camera.