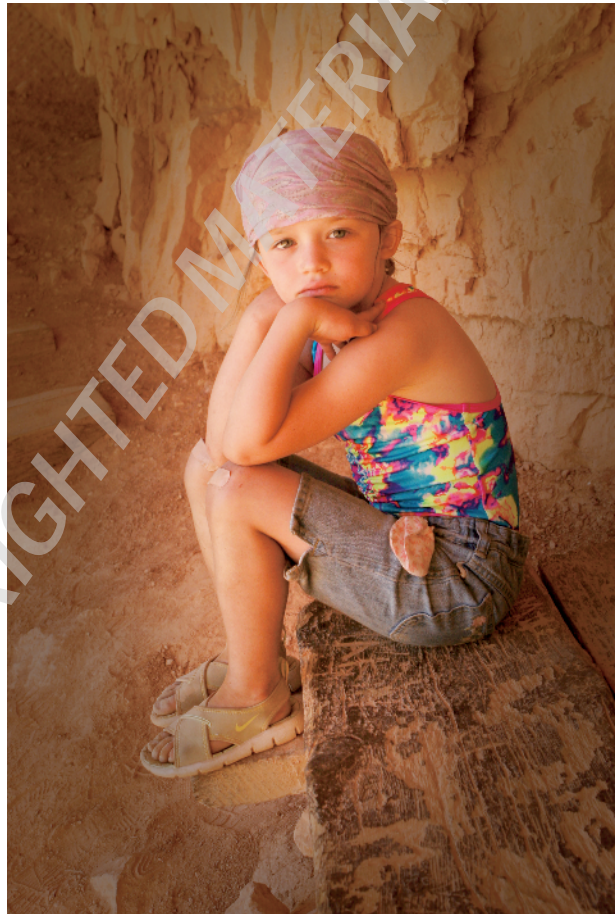


Anatomy of the Canon 5D Mark II

The long-awaited Canon EOS 5D Mark II is a revolutionary development in dSLR technology, offering photographers unprecedented capability in digital still imaging, and breaks new ground for a full-frame (35mm) camera. It retains many of its cool features from the 5D and some from the flagship Canon EOS 1Ds Mark III (including a similar full-frame, 21.1-megapixel sensor and a bright, full-coverage optical viewfinder). However, the 5D Mark II sensor is unique in that it offers an exciting feature found on no other dSLR to date — 30 frames per second (fps) full high-definition video recording at 1920 × 1080 pixels (1080p) resolution, with sound captured via either a built-in mono microphone or through an external microphone connected to the camera's stereo mic jack.

This chapter addresses the camera controls, buttons, terminals, the viewfinder, and the new Live View display as well as information on the CMOS sensor and DiG!C processor. Subsequent chapters discuss the other aspects of the 5D Mark II.



Brenna's look says it all after a long, hot hike in Escalante, Utah. ISO 100, f/16, 1/125 sec., with an EF 16-35mm f/2.8 USM lens.

Exploring the 5D Mark II

The 5D menus have been completely reconfigured while still keeping the same familiar groupings longtime Canon shooters have come to enjoy. Button locations have migrated slightly left to make room for the new multicoated, 3-inch (diagonal), 920,000-dot VGA rear LCD monitor, now equipped with a new auto-adjustment backlight sensor. The eight-direction Multi-controller has been given new duties for menu, focus point, and other shooting selections.

Shooting modes from the original 5D are back, including three new user-defined custom modes, as are the increasingly popular Picture Styles. With the large full-frame image sensor comes a redesign of the pixel shape and layout, yielding 21.1 megapixels that drive a 100-6400 ISO range, expandable from 50 to 25,600, giving you more choices for precise control in low-light situations.

Autofocus performance is improved with the addition of six hidden AF points to aid the nine user-adjustable AF points. Two new sensor-cleaning modes, along with manual cleaning and a Dust Delete Data function, help keep dust out of your images. A new, more powerful battery was needed to support the HD video capabilities, and the 5D Mark II reports its health in a new six-level indicator and Battery info area.

This chapter discusses the camera's external features as well as some of its internal functions and capabilities.

Camera Controls

The 5D Mark II groups commonly used functions into five main areas:

- ▶ **Mode dial.** This dial enables you to switch between seven Shooting modes — including two fully automatic modes — and three user-defined C modes, where you can register settings for distinct shooting situations. Turn the Mode dial until the icon you want lines up with the white tick mark to the side of the viewfinder. Each mode is detailed later in this chapter.
- ▶ **LCD panel and buttons.** This panel and the buttons are located on the top right of the camera. The buttons control the Metering mode, white balance, autofocus, Drive mode, ISO, and Flash Exposure Compensation, and the light button for the LCD has been relocated from the far left of the LCD panel to just behind the Main dial on the right. Each button except the light button controls two functions, as noted in Table 1.1. These settings don't have to be confirmed via the Set button, and they remain in effect until you change them, even if you turn off the camera.
- ▶ **Multi-controller.** Because of its convenient location in relation to the thumb when holding the camera, the Multi-controller has been given expanded usability and operates in eight directions, with a button at the center. You use the Multi-controller to select an AF point, adjust white balance, move an AF point or magnifying frame during Live View shooting,

scroll the playback image during magnified view, and operate the Quick Control screen selection. It can also be used to select and set most menu options.

Table 1.1 Main and Quick Control Dials

Button	Main dial	Quick Control dial
Metering mode/White Balance selection button	Metering modes: Evaluative (35-zone TTL full-aperture metering) Partial (8% at center frame) Spot (3.5% at center frame) Center-weighted average	White balance options: Auto (2500–10,000° Kelvin [K]) Daylight (5200 K) Shade (7000 K) Cloudy (6000 K) Tungsten (3200 K) Fluorescent (4000 K) Flash (6000 K) Custom (2000–10,000 K) K (2800–10,000 K) Note: All temperatures are approximate.
AF/Drive mode button	Autofocus modes: One Shot (locks focus with a half-press of the Shutter button) AI Focus AF (monitors subject movement and switches to AI Servo AF mode if the camera detects subject movement) AI Servo AF (full-time predictive focus)	Drive modes: Single Shot Continuous Self-timer (10 seconds; the default) Self-timer (2 seconds)
ISO selection/Flash Exposure Compensation button	ISO options: 50 (L; with C.Fn I-03 Expansion turned on) 100 125 160 200 250 320 400 500 640 800 1000 1250 1600 3200 6400 12,800 H1 25,600 H2 (L, H1 and H2 require C.Fn I-03 Expansion turned on)	Flash Exposure Compensation: +/- 2 stops EV (exposure value) in 1/3- or 1/2-stop increments (chosen by using C.Fn I-02)



The Multi-controller doesn't adjust any controls in combination with the top camera buttons.

- ▶ **Camera menus.** These are accessed by pressing the Menu button on the top-left-rear side of the camera. Nine menu screens organize camera functions into five color-coded groups.



For more on the 5D Mark II menus, see Chapter 2.

Top camera controls

Figure 1.1 shows the top camera controls, which provide ease of use so that the thumb and index finger of both the right and left hands control common adjustments quickly without taking the camera away from the shooting position. The top camera controls are:



1.1 The 5D Mark II top camera controls

- ▶ **Shutter button.** Pressing this button halfway down activates autofocus and automatic exposure metering that then sets the shutter speed and aperture (except in Manual and Bulb modes). Pressing down completely releases the shutter and takes the picture.

- ▶ **Main dial.** Located just behind the Shutter button, the Main dial selects a variety of settings, options, and menus, including making choices in conjunction with camera buttons.
- ▶ **Mode dial.** Turning this dial changes the Shooting modes. Shooting modes determine how much control you have over the final exposure. The dial offers Full Auto, Creative Auto, Program (P), Shutter Priority (Tv), Aperture Priority (Av), Manual (M), Bulb (B), and three customizable modes (C1, C2, and C3).
- ▶ **Hot shoe/Flash sync contacts.** The hot shoe contains the standard flash sync contacts for mounting a Canon EX-series Speedlite or can also be used to hold a stereo microphone when shooting video. The flash sync speed is 1/200 sec. or slower or it can be set to Auto in Av mode, 1/200-1/60 auto, or 1/200 sec. fixed by using C.Fn I-7.
- ▶ **Dioptric adjustment dial.** This small dial nestled slightly behind the rubber eyecup is used to make adjustments for viewfinder clarity to suit your eyesight. The range of dioptric adjustment is -3 to +1 diopters. A white mark in the center of the dial centers the movement within the range. To set the dioptric adjustment, focus the lens by pressing the Shutter button halfway down and then turn this dial until the image in the viewfinder is sharp. If you wear eyeglasses when shooting, be sure to wear them when setting the dioptric adjustment.
- ▶ **LCD panel and buttons.** Behind the Shutter button and the Main dial are the LCD panel buttons and the LCD panel. These control and display real-time exposure and metering settings and options. Table 1.1 shows which dial to use with which button to change the option you need for a particular shooting situation. These three buttons are:
 - **Metering mode/White Balance selection button.** This button allows you to choose the Metering modes and the white balance options.
 - **AF/Drive mode button.** This button allows you to choose the Autofocus and Drive modes.
 - **ISO selection/Flash Exposure Compensation button.** This button allows you to set the ISO and Flash Exposure Compensation.
- ▶ **LCD panel illumination button.** The LCD panel illumination button, conveniently relocated on the top-right side of the LCD panel, turns on an amber backlight so you can see the panel options in low-light or dark shooting situations. Pressing this button toggles the backlight on or off. Otherwise, it stays illuminated for 6 seconds before turning off automatically.

Rear camera controls

Figure 1.2 shows the rear camera controls, which provide quick access to the menus, various playback and image deletion controls, Picture Styles, and exposure information:

- ▶ **Live View shooting/Print/Share button.** Pressing this button prepares the camera for Live View shooting of still images or movies or returns the camera to standard viewfinder operation after using Live View. In addition, when a camera is connected to a PictBridge, Canon CP Direct, or Canon Bubble Jet Direct-enabled printer and the camera is set to Print/PTP, this button in conjunction with the Playback button can also display JPEG-only images for cropping, layout, and direct printing. When connected to a computer via the USB digital terminal, use this button to begin downloading images to the computer.
- ▶ **Menu button.** Press this button to display camera menus and then use the Main dial, the Quick Control dial, or the Multi-controller to scroll through the settings.
- ▶ **Picture Style button.** Pressing this button opens the Picture Style menu, applicable in all modes except Full Auto. Choose from six preset styles (Standard, Portrait, Landscape, Neutral, Faithful, and Monochrome) or create three user-defined custom modes (C1, C2, and C3). Press the Information button and then use the Quick Control dial or the Multi-controller to make adjustments to the Picture Style settings.



1.2 The 5D Mark II rear camera controls

- ▶ **Information button.** In normal viewfinder shooting, this button is used to display the standard Info screen and the new Quick Control screen, a handy, adjustable screen of all the main camera settings that can be adjusted by using the Multi-controller, the Quick Control dial, the Main dial, and the Set button. When an image appears on the LCD monitor, press this button one or more times to change how images appear on the LCD during image playback.

You can display images with only shutter speed, aperture, and filename information at the top (default display); with the image thumbnail, exposure histogram, and detailed shooting and file information; or with the image thumbnail, exposure histogram, and RGB histogram and detailed shooting and file information. In Live View mode for stills, pressing this button displays the AF points and then pressing again displays shutter speed, aperture, exposure level indicator/AEB range, remaining shots, ISO, and battery check. Pressing again adds screen settings, Picture Style, AF mode, Drive mode, color balance, movie-recording size, image-recording quality, brightness histogram, AE Lock, AEB icon, FEB icon, and Highlight tone priority, if any of those features were selected.

- ▶ **Playback button.** This button displays or turns off the playback display of the images on the LCD. Pressing the AE Lock/FE Lock/Index/Reduce button on the top-right back of the camera during playback displays nine images at a time in a 3 × 3 image grid. Movies show the Movie and Set icons in the top-left corner of the thumbnail. Use the Set button to control movie playback options and the Main dial to control playback volume, guided by the ascending green bar volume indicator found in the bottom right. You can also scroll through the Index display by using the Quick Control dial or the Main dial.
- ▶ **Erase button.** Press this button to display options to delete the current image or all images on the CF card. When you press the Erase button during single-image playback, the options are Cancel or Erase (currently displayed image only). Multiple erase settings can be chosen in Playback 1 under Erase images.
- ▶ **Power/Quick Control dial switch.** There are three positions on this switch. Off does what it says it does: It turns the camera off. In the On position, the camera limits the functionality of the Quick Control dial. This is a great feature I use often during fast-moving shoots where it's easy to bump the Quick Control dial with your thumb and inadvertently change your f-stop or other settings. The topmost position enables full functionality of the Quick Control dial.
- ▶ **Quick Control dial.** Turning this dial selects shooting-related settings and menu options.
- ▶ **Set button.** Inset within the Quick Control dial is this button, which serves as a menu selection and confirmation button.
- ▶ **Access lamp.** To the lower-right side of the Quick Control dial is an access light that glows red when images or movies are being written to the CF card.
- ▶ **Multi-controller.** The eight-way Multi-controller acts as a button when pressed and as a joystick when tilted in any direction, with a button in the center to make selections. You can use it to move an AF point or magnifying frame during Live View shooting, scroll around a playback image during magnified view, operate the Quick Control screen selection, and select and set most menu options. It can also be used to select an AF point in conjunction with the AF Point selection/Magnify button, select white balance correction, or move the trim frame when printing directly from the camera.
- ▶ **AF-ON button.** Pressing this button activates the autofocus system in standard shooting and Live View still and movie shooting. In Live View mode, hold this button down until the camera has achieved focus confirmation, signified by the center box momentarily turning green.

- ▶ **AE Lock/FE Lock/Index/Reduce button.** On the back-right side of the camera, the left button sets Autoexposure (AE) Lock or Flash Exposure (FE) Lock, displays Index mode during image playback, or reduces the size of an enlarged LCD image during playback.
- ▶ **AF Point selection/Magnify button.** This button turns on manual AF point selection or enlarges the playback image size. Both this button and the AE Lock button are press-and-hold buttons used in conjunction with the Main and Quick Control dials or the Multi-controller. For example, to manually select an AF point, you press and hold the AF Point selection/Magnify button and then turn the Main dial or the Quick Control dial or press the Multi-controller to select the AF point you want.
- ▶ **Speaker.** A small mono speaker is built in to the back of the 5D Mark II to review recorded sound of movies. When reviewing a movie, turn the Main dial to raise or lower the volume of this speaker. If you connect the camera to a TV set to playback a movie, use the TV volume control to adjust the sound. Turning the Main dial when connected to a TV doesn't adjust the sound volume.

Front camera controls

Figure 1.3 shows the front of the camera, which is one view that photographers usually see only in camera ads. But there are lamps and connections located there that you use often. From left to right, the buttons and lamps on the front of the 5D Mark II include the following:



1.3 The 5D Mark II front camera controls

- ▶ **Remote Controller sensor.** Remote triggering of the camera is possible by using the optional Remote Controllers RC-1 or RC-5 and aiming them at this sensor. It operates effectively up to approximately 16.4 feet but can be thrown off by certain types of fluorescent lights. RC-1 allows immediate or 2-second delay shooting, whereas RC-5 shoots with only a 2-second delay.
- ▶ **Self-timer lamp.** This red lamp flashes to count down the seconds to shutter release when the camera is set to one of the Self-timer modes.
- ▶ **DC coupler cord hole.** Lifting this rubber flap allows you to connect the camera to household power by using AC Adapter Kit ACK-E6, which provides a coupling unit that inserts into the battery compartment. This DC power option can come in handy for extended studio shooting, sensor cleaning, or in the unlikely event of battery failure or loss.
- ▶ **Depth of Field Preview button.** Pressing this button stops down the lens diaphragm to the aperture you've set to preview the depth of field in the viewfinder. The darker the image in the viewfinder, the more extensive the depth of field is. At the lens's maximum aperture, the Depth of Field Preview button can't be depressed because the diaphragm is fully open. The aperture can't be changed as long as the Depth of Field Preview button is depressed. Also, with Speedlites 580EX, 550EX, and 430EX, pressing this button emits a very handy modeling flash.
- ▶ **Lens Release button.** Pressing this button disengages the lens from the lens mount so you can turn the lens to the right to remove it. Because the 5D Mark II uses the Canon EF lens mount, all EF lenses are compatible with the camera. EF-S lenses with the short back focus are incompatible with the 5D Mark II, and mounting them on the camera shouldn't be attempted.
- ▶ **Mono microphone.** During Live View movie shooting, sound is recorded on the camera's on-board monaural microphone located just below the 5D nameplate. If another type of microphone is connected to the camera's external microphone IN terminal, this microphone is disabled.
- ▶ **EF lens mount index.** Use this red dot to line up with a corresponding red dot on EF lenses when mounting and removing lenses.
- ▶ **Lens lock pin.** This spring-loaded pin, controlled by the Lens Release button, fits into a hole in the back of the lens and locks the lens in place, preventing you from accidentally dismounting the lens.
- ▶ **Mirror.** Key to the 35mm reflex principle is the 45° mirror that bounces the image up into the viewfinder prism for viewing and focusing. The mirror swings up at the moment of exposure to allow the image to pass through the lens to be recorded on the image sensor.
- ▶ **Contacts.** These eight contacts provide various lens communication protocols and serial data communications between the camera and a host of EOS lenses. To operate properly, they should be kept clean and free of dust and residue.

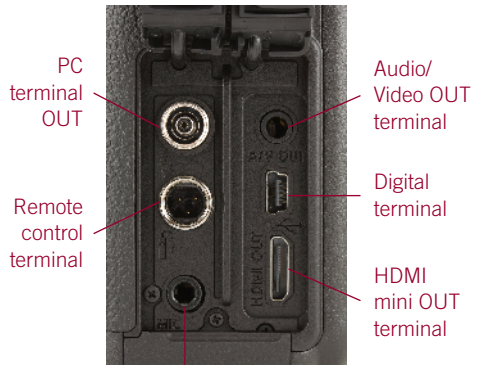


For more on EF lenses, see Chapter 6.

Camera Terminals

Figure 1.4 shows the interface terminals, which are located on the left side of the 5D Mark II under two rubber covers. Each cover is embossed with icons that identify the terminals underneath:

- ▶ **PC terminal OUT.** This threaded terminal connects a flash unit that uses a flash sync cord. The maximum sync speed with non-Canon flash units is 1/200 sec. This type of flash unit can be used in concert with a Speedlite attached to the camera's hot shoe. The PC terminal can also sync with various studio lighting systems. The recommended maximum sync speeds with studio lighting systems are 1/30 or 1/60 sec.
- ▶ **Remote control terminal.** This N3-type terminal connects with a remote control switch to fire the camera to avoid camera shake when shooting with telephoto and macro lenses as well as when using bulb exposures. The optional Remote Switch RS-80N3 replicates the functionality of the Shutter button, providing half and full depression of the Shutter button as well as the shutter-release lock to keep the shutter open for longer periods of time, such as when shooting time exposures.



External stereo microphone IN terminal

1.4 The 5D Mark II terminals

- ▶ **External stereo microphone IN terminal.** This terminal is for external stereo microphone recording. The terminal accepts a 3.5mm stereo mini-plug and automatically adjusts the sound recording level.
- ▶ **Audio/Video OUT terminal.** This terminal allows you to connect the camera to a television set by using the supplied video cable. To view images and movies on the camera's CF card on TV, turn off both the TV and the camera. Connect one end of the cable to the camera and the other end to the TV's Video IN terminal. Set the TV's line input to Video IN, turn on the camera, and then press the Playback button on the camera to view images, movies, Live View, or menus.
- ▶ **Digital terminal.** This terminal connects the camera to a computer for tethered remote shooting by using the Canon-supplied software or printing to a compatible printer. The cable for direct printing comes with the printer, and printer cables must support PictBridge, PictBridge and CP Direct, PictBridge and Bubble Jet Direct, CP Direct only, or Bubble Jet Direct only. Remote shooting uses the EOS Utility and Digital Photo Professional (DPP) and can also be set up to use Watched Folders in Lightroom.
- ▶ **HDMI mini OUT terminal.** The new HDMI mini OUT terminal connects the Type 2 HDMI HTC-100 cable to any television, monitor, or DVR unit with an HDMI input port. As more and more photographers realize the benefits and sales advantages of displaying their

photos on large HDTV screens or with high-resolution video projectors on larger screens, Canon equipped the 5D Mark II with HDMI connection jacks in addition to the regular A/V jacks. Using an optional HTC-100 HDMI cable, you can now display full HD videos with sound on HDTV systems and slideshows of still images at nearly 2.0-megapixel resolution (1920 × 1080 pixels) on HDTVs or on larger screens via HD-compatible video projectors. When connected, the camera automatically reads the maximum display resolution the HDTV or projector is capable of (720 × 1080p) and feeds it the appropriate signal format so you get the maximum sharpness from the display.

Side and Bottom Features

On the opposite side of the terminals is the CF card slot and CF card eject button with standard insertion and ejection functionality. The bottom of the camera includes the release latch for the battery compartment, the tripod socket, the extension system terminal for wireless shooting and remote capture, and the cover for the CR2016 lithium date and time battery. Figure 1.5 shows the side and bottom of the camera.



The estimated life of the CR2016 date and time battery is 5 years.



1.5 The 5D Mark II side and bottom camera covers, compartments, and sockets

Lens Controls

All Canon EF lenses provide both autofocus and manual focusing functionality via the AF/MF (Autofocus/Manual Focus) switch on the side of the lens. If you choose manual focusing, the 5D Mark II provides focus assistance to confirm sharp focus in the viewfinder. When sharp focus is achieved, the focus confirmation light in the viewfinder burns steadily, and the camera emits a focus confirmation beep, which you can turn off in the Shooting 1 menu. Figure 1.6 shows the lens controls.



1.6 The 5D Mark II lens controls

Depending on the lens, additional controls may include the following:

- ▶ **Focusing Distance Range selection switch.** This switch can be set to one of two settings to limit the range the lens uses when seeking focus and thereby speeding up autofocus-ing. The focusing distance range varies by lens.
- ▶ **Image Stabilization switch.** This switch turns optical image stabilization on or off. Optical Image Stabilization (IS) compensates for vibrations at any angle when you're handholding

the camera and lens. IS lenses typically allow sharp images up to 1 or 2 f-stops over the lens's maximum aperture. Always set this switch to off when using a tripod.

- ▶ **Image Stabilization mode switch.** Offered on some telephoto lenses, this switch offers two modes: one for standard shooting and one for use when panning at right angles to the camera's panning movement.
- ▶ **Focus and zoom rings.** The focus ring can be used at any time regardless of focusing mode. On zoom lenses, the zoom ring zooms the lens in or out at the focal lengths marked on the ring.
- ▶ **Distance scale and Infinity compensation mark.** This shows the lens's minimum focusing distance to infinity. The Infinity compensation mark compensates for shifting the infinity focus point resulting from changes in temperature. You can set the distance scale slightly past the Infinity mark to compensate.
- ▶ **Tripod mount.** This handy mount moves the camera's center of gravity forward to better balance and orient the camera when using a tripod or monopod. It's indispensable for shooting verticals, as the lens can be rotated inside this ring, keeping the camera balanced and directly over the main tripod shaft. It can also be removed from the lens for handheld shooting if you find it cumbersome or in the way.
- ▶ **Orientation locking knob.** This locks the camera/lens combination into the orientation you want when shooting with a tripod or a monopod.
- ▶ **Filter mount thread.** These threads located just inside the front edge of the lens barrel allow the mounting of screw-on filters and filter accessories. To keep these fine threads in clean and proper working order, store your lenses with either a Skylight or UV filter attached.
- ▶ **Lens mounting index.** Line this red dot up with the camera's EF lens mounting index to safely mount or remove an EF lens.

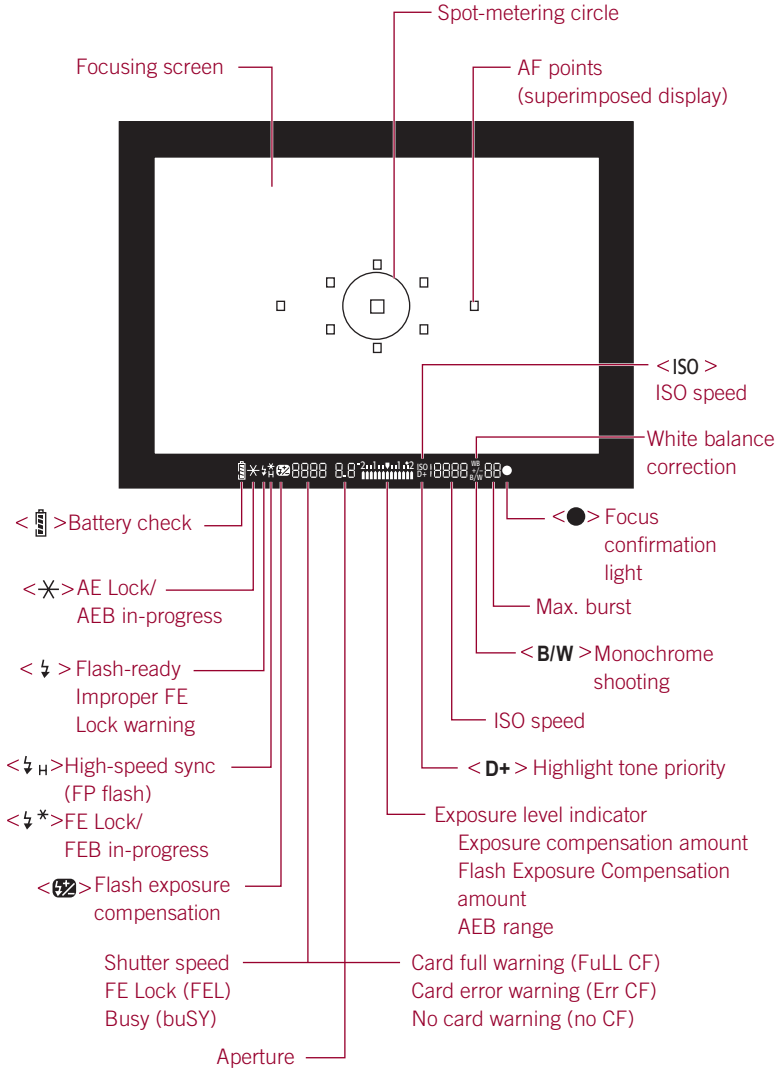


For more on Canon lenses, see Chapter 6.

Viewfinder Display

The 5D Mark II offers an eye-level pentaprism viewfinder that displays 98% of the vertical and horizontal coverage. Etched into the viewfinder are nine visible AF points in a diamond pattern. When you change AF points by using the Multi-controller or the Main dial or the Quick Control dial, the viewfinder displays each AF point in red. When you press the Shutter button halfway down to focus, the selected AF point appears in red in the viewfinder. Pressing the AF Point selection/Magnify button reveals which focus points are selected. The spot-metering circle, which is approximately 3.5% of the viewfinder at center, is also etched in the center of the focusing screen. Figure 1.7 shows the viewfinder display.

In all but Full Auto mode, the viewfinder displays pertinent exposure information, including battery check, AE Lock, Autoexposure Bracketing (AEB) progress, flash ready, Flash mode and bracketing progress, high-speed sync, Flash Exposure Compensation, shutter speed and FE Lock, aperture, ISO, the exposure level indicator with exposure compensation, Flash Exposure Compensation and AEB range, white balance correction, maximum burst, Monochrome indicator, CF card full and error warnings, and a focus confirmation light.



1.7 The 5D Mark II viewfinder display

Live View Display

Live View is an exciting new feature for the 5D Mark II many photographers may already be familiar with from point-and-shoot cameras where a live image appears on the LCD monitor and the viewfinder isn't used to take the picture. The mirror flips up to display the image from the camera sensor on the LCD monitor. Working in Live View allows compositional adjustments similar to shooting with a large format view camera where the image is projected onto the ground glass. It's best utilized when working with a tripod or when you'd rather not use the viewfinder and employ one of the optional grid overlays as compositional aids. It's the only mode you can shoot movies in.



For more on shooting video with the 5D Mark II by using Live View, see Chapter 8.



1.8 The Live View display

Canon CMOS Sensor

The camera's new 21.1-megapixel full-frame CMOS sensor is a single-plate sensor that delivers the highest performance of any sensor in the Canon dSLR lineup. It shares many features with the CMOS sensor found in the flagship EOS 1D Mark III, including its 35mm format 36 × 24mm size with a low-pass filter/sensor-cleaning design. However, the 5D Mark II sensor delivers increased sensitivity and improved noise-reduction circuitry that enables standard ISOs ranging from 100 to 6400 and expanded ISO ranges from 50 to 25,600.

The CMOS sensor's lower power consumption means that battery packs are smaller, recharge time is quicker, and batteries maintain their working voltages longer. Although CMOS offers the

advantages of low power consumption and high speed, the technology has inherent disadvantages, including fixed-pattern and random noise — problems that Canon has, over the course of several years, developed technologies to suppress.



For more on cleaning the CMOS sensor, see Appendix A.

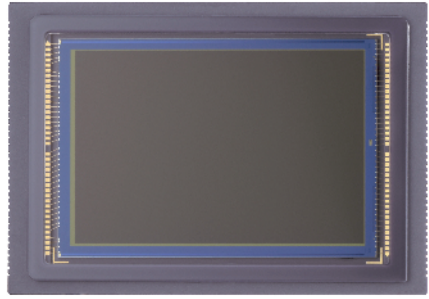


Image courtesy of Canon

1.9 The CMOS sensor

DiG!C 4 Image Processor

Between the capture and recording stages is image-processing that determines how the signals from the sensor are translated into a viewable image. In the 5D Mark II, the processing is performed by the DiG!C 4 image processor. Major advances responsible for the speed, advanced image-processing capabilities, and lower power consumption over the DiG!C II processor include lower noise image development at all ISOs, higher-speed image-processing, improved highlight and shadow details, extended dynamic range, more accurate colors that maintain fine details and improved performance, and zero loss of shooting speed while handling larger 14-bit RAW images.

High ISO noise reduction is also improved, yielding higher image quality and allowing cameras to maintain fast maximum shooting speeds and burst rates, expanding the functions and speed of the Auto Lighting Optimizer, and incorporating processing algorithms for Peripheral Illumination Correction data available for 80 Canon lenses. With storage capacity for up to 40 lenses, the camera ships with data for 26 of the most popular lenses from Canon. If need be, you can delete unused lens data via EOS Utility software included with the camera to make room for adding additional lenses. The new DiG!C 4 image processor significantly raises the bar with increased ISO ranges in normal and expanded modes and adds an Auto ISO range feature of 100-3200.