Exploring the 580EX and 430EX

CHAPTER 1

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As with any new camera equipment, it is important to know how everything works and where all the controls are. So, in this chapter you take a look at the main features and functions of the major components in the Canon Speedlite System, including the 580EX and the 430EX. Additionally, this chapter also touches on some features and functions of the ST-E2 wireless commander and the MT-24EX macro Speedlite kit. By the end of the chapter, you ought to have an in-depth knowledge of what all the buttons do and how they function with your Speedlite.

Features of the Canon Speedlite System

The components of the Canon Speedlite System are any Canon dSLR and the 580EX, 430EX Speedlites. Additional components include the ST-E2 commander unit, and the MT-24EX macro lighting kit. All Canon EOS dSLRs can be used with the Canon Speedlite system, and all features are available with every camera.

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In this section you also look at all of the available features of the Canon Speedlite System.

- **E-TTL II.** Canon's most advanced metering system, this metering system uses preflashes and flash metering algorithms to determine the proper flash exposure. The E-TTL II system reads information from all metering zones before and after the preflash. Areas with little change in brightness are then weighted for flash metering. This is done to avoid a highly reflective surface from creating a false reading thereby causing under-exposure. When using certain EF lenses, distance information is also entered into the equation.
- **Flash Exposure Lock (FEL).** The FEL enables you to meter the subject, getting a reading for the proper flash exposure. Pressing the FEL button enables you to meter the subject and then recompose the shot while maintaining the proper flash exposure for the subject.

Note

Some camera bodies have a separate FEL button, while some have a button that can be assigned to FEL function.

- **Wireless Lighting.** This feature enables you to use your Speedlites wirelessly. The master unit fires preflashes, which transmits information back and forth between the camera and the flash. When using this feature you need to have either a 580EX or an ST-E2 wireless transmitter as a *master unit*. The master unit can control multiple Speedlites wirelessly, allowing more creative lighting possibilities.
- **High-Speed Sync.** This feature allows you to use your flash at higher shutter speed than your camera body is rated for. You may want to use this feature when shooting outdoor portraits requiring a wide aperture and high shutter speed.
- **AF-Assist beam.** The 580EX and 430EX have a built-in LED that emits a light pattern to give the camera's autofocus (AF) something to lock onto.
- **Flash Color Information Communication.** As the flash duration gets longer, the color temperature changes a bit. The 580EX and 430EX transmit this change to the camera body ensuring a more accurate white balance.

580EX

The 580EX has many great features and offers a great deal of versatility when shooting with flash. As you no doubt already have the flash and have read the manual (or at least skimmed through it), you should know the basics about your Speedlite already. But, before you go much further, you should familiarize yourself with the Speedlite.

580EX specs and features

This section provides a brief look at different features that are available on the 580EX Speedlite.

- **Guide Number.** 118 at ISO 100 on the 35mm setting. See your owner's manual for more specifics on GNs for specific zoom ranges.

Understanding the Guide Number

Although the actual power of the flash is fixed, the Guide Number (GN) of the flash changes with the ISO setting of the camera and also varies with the zoom setting of the flash. This is due to the increased sensitivity of the sensor and the actual dispersion of the light when set to a specific zoom range. When the ISO is at a higher setting, the sensor is more sensitive to light, in effect making the flash more powerful, hence a higher GN.

Also, when the zoom is set to a wide-angle, the flash tube is set further back in the flash head, diffusing the light and giving it wider coverage. This makes the flash somewhat less bright, thereby warranting a lower GN.

Remember that the Guide Number is exactly that—a guide. In reality, it is nothing more than a number assigned by the manufacturer to assist you in obtaining the correct exposure (and also a means of comparing light output among different Speedlites). Refer to your owner's manual for a table with the GN of the Speedlite at the specific zoom ranges.

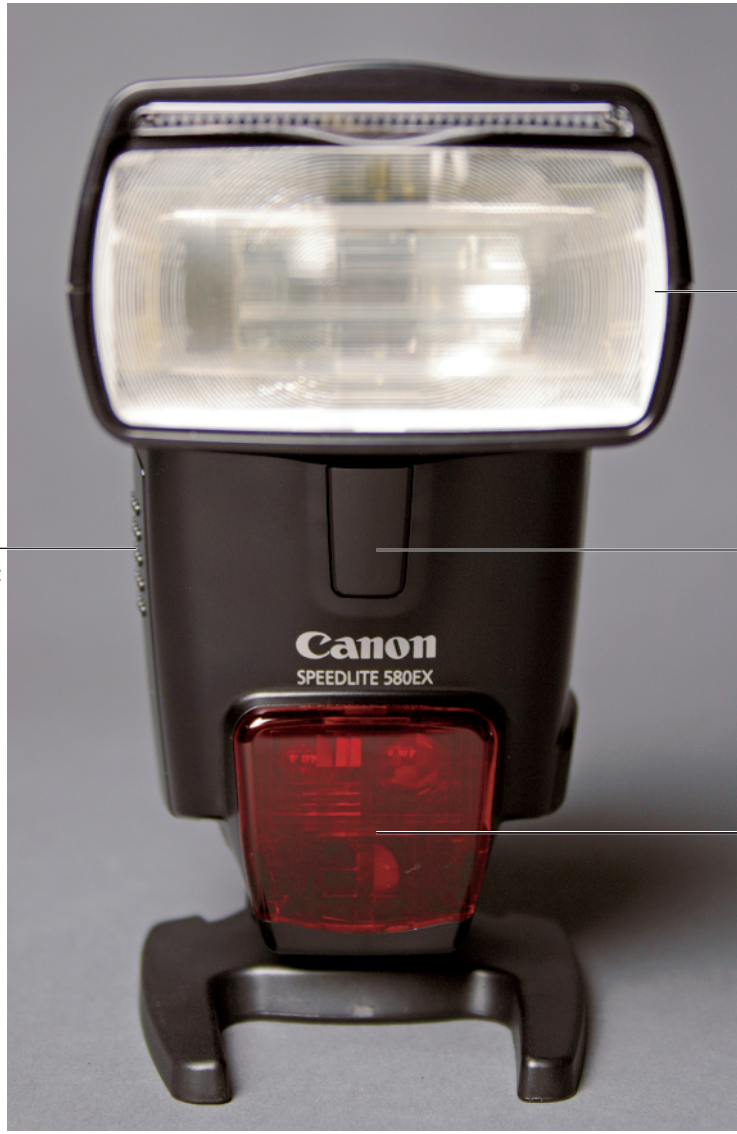
- **Automatic zooming flash head.** Provides lens coverage from 24mm up to 105mm. 14mm with the included wide-angle adaptor.
- **E-TTL.** Supports E-TTL II, E-TTL, and full Manual operation.
- **Wireless Lighting.** This enables you to control up to three different groups of Speedlites in E-TTL or M mode.
- **Slow Sync.** Enables you to match the ambient background lighting with the flash so the background doesn't end up black.
- **Second Curtain Sync.** This function fires the flash at the end of the exposure as opposed to at the beginning of the exposure. This helps with more natural images when shooting long exposures, as it causes a trail to be behind a moving subject and not in front of it as occurs when the flash is fired at the beginning of the exposure.
- **Red-eye reduction.** Fires off a preflash to contract the pupils to avoid that eerie red glow.
- **AF-Assist beam.** Emits an array of light from an LED to assist in focusing in low-light situations.
- **High-Speed Sync (FP flash).** This function allows you to shoot with a shutter speed higher than the rated sync speed of the camera. This feature is useful when shooting portraits in bright light using a wide aperture to blur the background.
- **Flash Exposure Lock (FEL).** Using the FEL lock, you can get a reading from your subject and then recompose the shot while retaining the original exposure.
- **Modeling flash.** Releases short burst of flashes allowing you to see what the light falling on your subject looks like.

- **Multi Stroboscopic Flash mode.** Fires off a specific amount of flashes like a strobe light.
- **Tilting/rotating flash head for bouncing flash.** Allows you to point the flash head up for bouncing light from the ceiling or to the side to bounce off of the wall. The 580EX also allows you to tilt the head downward -7° for close-up subjects.

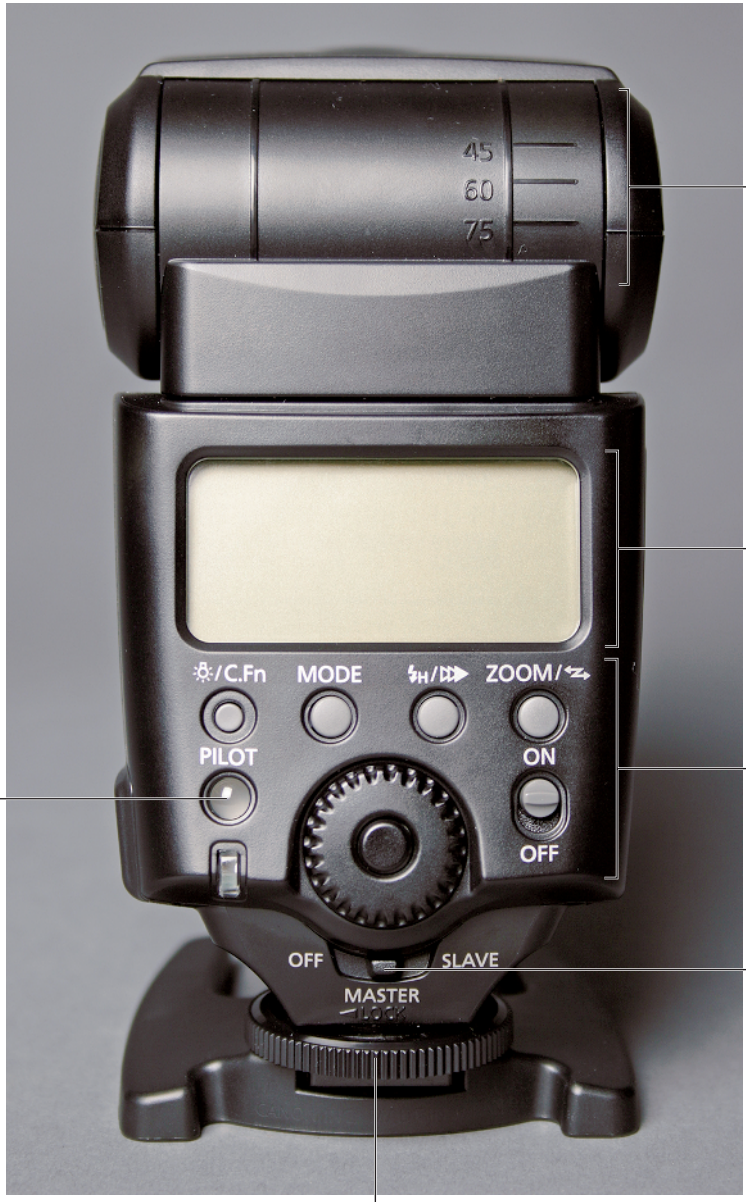
Main parts

The main parts of the 580EX Speedlite are identified and discussed in the following sections. Figures and explanations of each part and feature are included so that you have a clear understanding of how each is used.

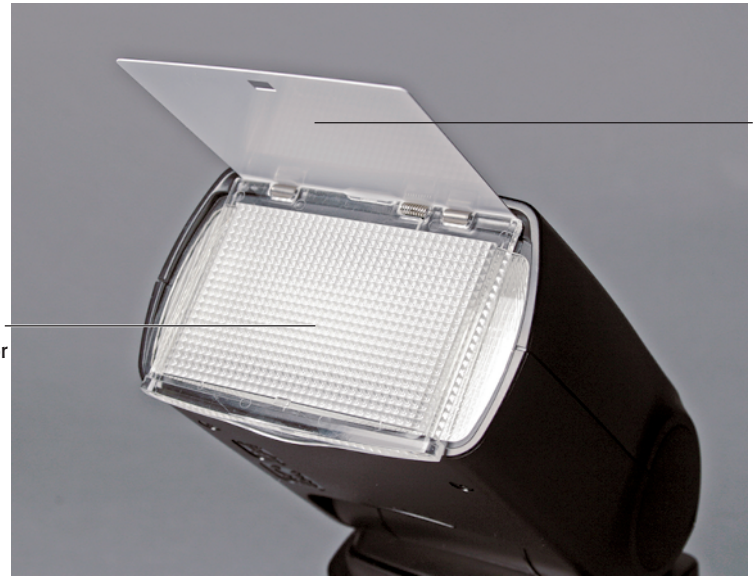
- **Flash head.** This is where the flashbulb is located. Inside is a mechanism that zooms the flashbulb back and forth to provide flash coverage for lenses of different focal lengths. The flash head is adjustable; it can be tilted upward to 90° and downward to -7°. It can also be adjusted horizontally 180° to the left or to the right.
- **Flash head lock release button.** This button releases the flash head lock allowing you to adjust the angle for bounce flash.
- **Battery compartment lid.** Slide this downward to open the battery compartment to change out the batteries.
- **Light sensor for E-TTL wireless flash.** This sensor reads signals from Master unit enabling wireless flash.
- **AF-assist beam.** Emits a LED light array to achieve focus in low-light situations.
- **Wireless remote ready light.** This works as a ready light when the Speedlite is being used as a remote flash.
- **Flash head tilting angle scale.** Allows you to set the flash head at 45°, 60°, 75°, or 90° tilt.
- **LCD panel.** This panel is where you view all of the Speedlite settings and controls.
- **Control buttons.** Use these buttons to set and change settings on the Speedlite.
- **Pilot light.** Lights up indicating the Speedlite is ready to fire. After the Speedlite is fired, this light blinks until the Speedlite is fully recycled and ready to fire again.
- **Master/Slave setting switch.** Used to switch between using the 580EX as a master, a slave, or in the off position, as an on camera flash.
- **Mounting foot locking wheel.** Locks the Speedlite into the hot shoe or the Speedlite stand.
- **Wide-angle lens adaptor.** This built-in diffuser provides you with the ability to use the Speedlite with a lens as wide as 14mm without having light fall-off at the edges of the image.
- **Bounce or catchlight card.** This white card reflects light down into the eyes providing a catchlight when the flash is used in the bounced position.



1.1 The front of the 580EX Speedlite

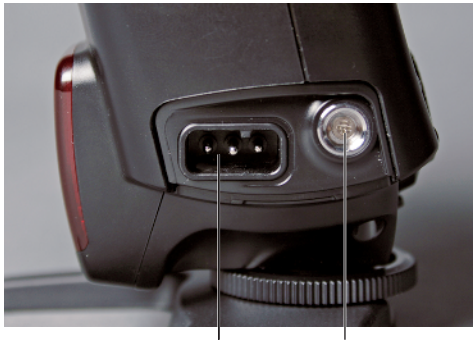


1.2 The back of the 580EX Speedlite

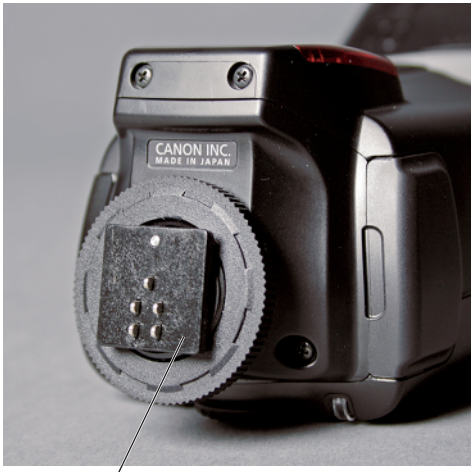


1.3 Wide-angle lens adaptor and built-in catchlight card

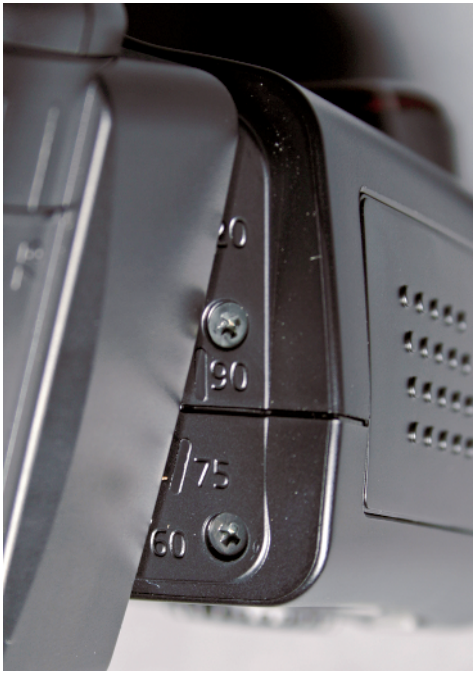
- **External power source terminal.** Canon's optional external power source can be plugged in to this terminal. This power supply is called the Compact Battery Pack CP-E3.
- **Speedlite bracket fitting.** This is used to attach the Speedlite to the Canon SB-E1 Speedlite Bracket. The SB-E1 allows the Speedlite to be attached to the side of the camera rather than to the hot shoe.
- **Hot shoe mounting foot.** This slides into the hot shoe on your camera body and locks down with the locking wheel.
- **Flash head rotating angle scale.** This enables you to rotate the flash head horizontally left 60°, 75°, 90°, 120°, 150°, and 180°. To the right it can be adjusted 60°, 75°, 90°, 120°, 150°, and 180°.



1.4 External power supply terminal (left) and Speedlite bracket fitting (right)



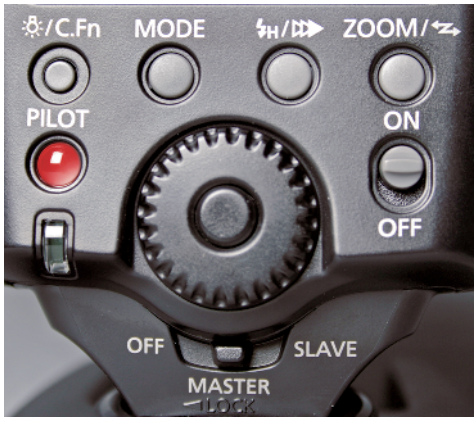
1.5 The hot shoe mounting foot



1.6 Flash head rotating angle scale

Control buttons

There are several control buttons on the 580EX, and you should know what each of them does in order to get the best results from your Speedlite. Some of them are obvious, such as the On/Off switch, but others control the menus you select. You need to know how to navigate your Speedlite.



1.7 580EX control panel

- ✦ **Select dial and the Select/Set button.** You can scroll the main button left or right and press the center button.
  - **Left and right.** When scrolled left or right, you use this button to change the zoom of the flash, flash exposure compensation, or flash bracketing settings.
  - **Select.** The center button is the Select/Set button. This button is used to select the flash exposure compensation settings. Pressing it a second time selects the settings for flash bracketing.

- **On/Off switch.** This button does just what it says it does. Slide it up or down to turn the Speedlite on or off.
- **Pilot Light button.** Press this lighted button to test fire the 580EX to ensure it is functioning properly or to take a test reading using a handheld flash meter. This button also lets you know when the flash is fully charged and ready to fire. When the light is red, the flash is ready to fire at full power.
- **Mode button.** The Mode button is used to cycle through the LCD menu among the different flash modes of the 580EX Speedlite. The different modes are:
  - **E-TTL.** The exposure is determined by the camera and matched with the ambient light.
  - **M (full Manual mode).** You determine the flash power by using the Guide Number of the flash and dividing this number by the distance of the Speedlite from the subject, with the quotient being the aperture to which you need to set your camera. You can also use a flash meter to determine the flash and camera settings.
  - **Multi Stroboscopic Flash.** This mode allows you to fire the flash multiple times for a single exposure.
- **LCD light/C.fn button.** Pressing this button once turns the LCD light on for viewing in dim light. Pressing and holding this button brings you to the Custom functions menu. The custom functions are set using the select dial.
- **High Speed sync/FEB button.** Pressing this button once allows you to set the flash to High Speed Sync. Pressing it a second time turns on the Flash Exposure Bracketing feature.
- **Zoom button.** Allows you to manually change the flash head zoom using the control dial.

580EX accessories

Along with the SS-800 soft case for storing and carrying your 580EX, it also includes a Speedlite stand that enables you to mount your 580EX to a stand or tripod, which also makes it easier to balance the Speedlite on a flat surface.

430EX

The 430EX, while not as feature-rich as the 580EX, still has most of the features that you will find useful when shooting with flash. As with the 580EX, you likely have the flash in hand and have at least skimmed through the manual. At this point, you are probably familiar with the basic features of your Speedlite. The material in the next few sections gives you a better idea of not only what the features are, but also why they are important.

430EX feature overview

The 430EX has fewer features and a lower Guide Number than the 580EX, but it's still a great flash. Most of the missing features are shooting modes that you may find aren't necessary to have. And, although the GN is lower, the 430EX is still a powerful flash. Firing the 430EX at full power using an aperture of f/2.8, it's possible to get a fairly well-lit shot at almost 200 feet.

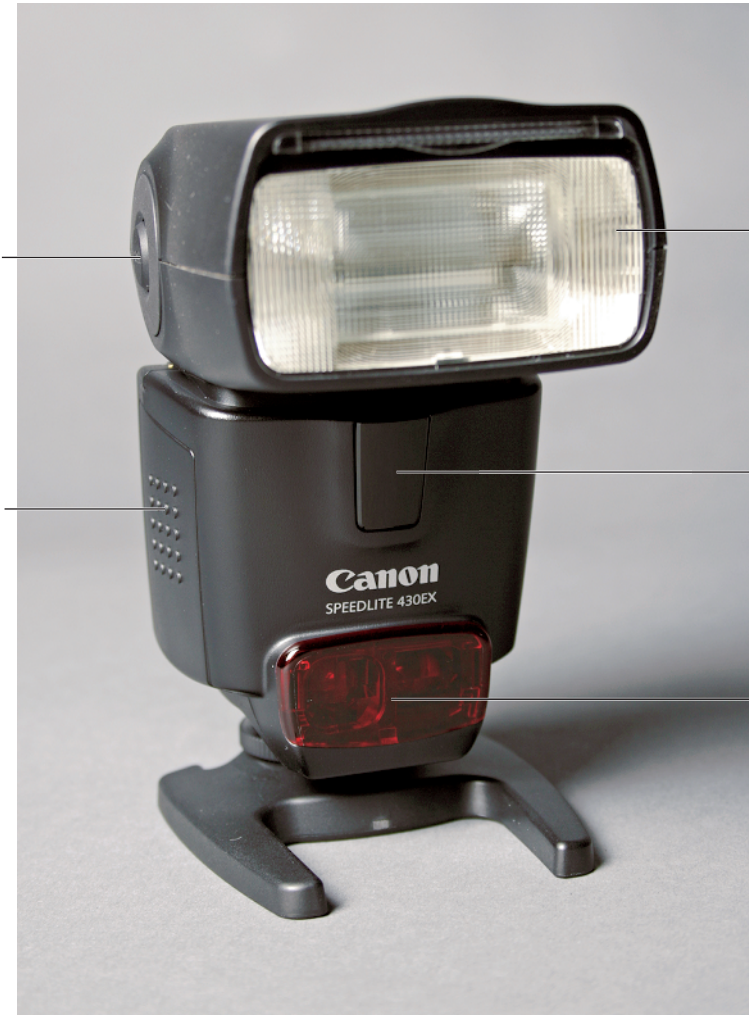
This section provides a brief look at different features that are available on the 430EX Speedlite. It is important to note, however, that some features may not be available to use depending on the camera body you are using.

- **Guide Number.** 101.7 at ISO 100 on the 35mm setting. See your owner's manual for more specifics on GNs for specific zoom ranges.
- **Automatic zooming flash head.** Provides lens coverage from 24mm up to 105mm. 14mm with the included wide-angle adaptor.
- **E-TTL.** Supports E-TTL II, E-TTL, TTL, and full Manual operation.
- **Slow Sync.** Enables you to match the ambient background lighting with the flash so the background doesn't end up black.
- **Red-eye reduction.** Fires off a pre-flash to contract the pupils to avoid red glowing eyes.
- **AF-Assist beam.** Emits an array of light from an LED to assist in focusing in low-light situations.
- **High-Speed Sync.** Allows you to shoot with a shutter speed higher than the rated sync speed of the camera. This is useful when shooting portraits in bright light using a wide aperture to blur the background.
- **Modeling flash.** Releases a short burst of flashes allowing you to see what the light falling on your subject looks like.
- **Tilting/rotating flash-head for bouncing flash.** Allows you to point the flash head up for bouncing light from the ceiling or to the side to bounce off of the wall.

Main parts

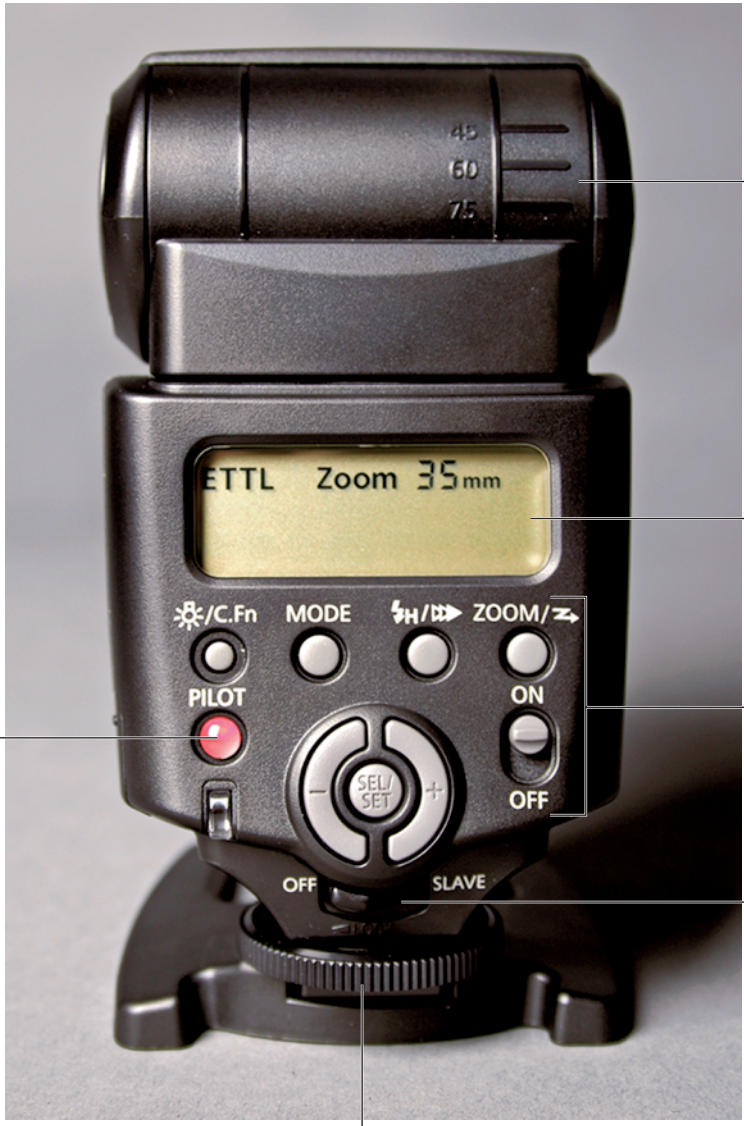
Even though the 430EX Speedlite is similar to the 580EX, it is still important to go over each of the important parts of the equipment. I include figures and explanations of the parts and features to give you a better understanding of how each is used.

- **Flash head.** This is where the flashbulb is located. Inside is a mechanism that zooms the flashbulb back and forth to provide flash coverage for lenses of different focal lengths. The flash head is adjustable; it can be tilted upward to 90°. It can also be adjusted horizontally 180° to the left or 90° to the right.
- **Flash head lock release button.** This button releases the flash head lock allowing you to adjust the angle for bounce flash.



1.8 The front of the 430EX Speedlite

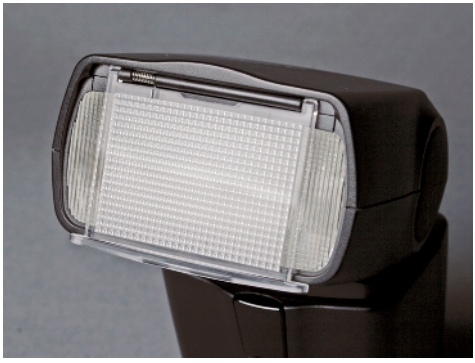
- **Battery compartment cover.** Slide this downward to open the battery compartment to change out the batteries.
- **Light sensor for TTL wireless flash.** This sensor reads signals from Commander units enabling wireless flash.
- **Wireless remote ready light.** This works as a ready light when the 430EX is being used as a remote flash.
- **AF-assist illuminator.** Emits an LED light array to achieve focus in low-light situations.



1.9 The back of the 430EX Speedlite

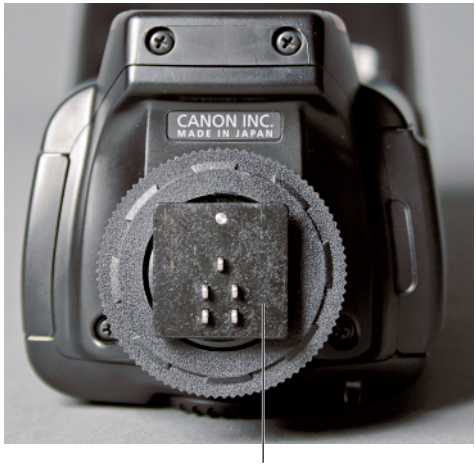
- **Flash head tilting angle scale.** Allows you to set the flash head at 45°, 60°, 75°, or 90° tilt.
- **LCD panel.** Where you view all the Speedlite settings and controls.

- **Pilot light button.** This button lights up indicating that the Speedlite is ready to fire. After the Speedlite is fired, this light blinks until the Speedlite is fully recycled and ready to fire again. This button can also be pressed to test fire the Speedlite to check the output levels.
- **Control buttons.** Used to set and change settings on the Speedlite.
- **Mounting foot locking wheel.** Locks the Speedlite into the hot shoe or the Speedlite stand.
- **Slave mode selector switch.** Used to put the 430EX in slave mode.
- **Wide-angle lens adaptor.** This built-in diffuser provides you with the ability to use the Speedlite with a lens as wide as 14mm without having light fall-off at the edges of the image.



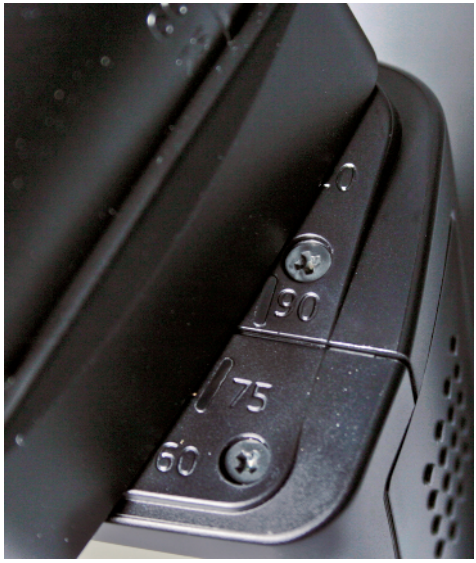
1.10 Wide-angle lens adaptor

- **Hot shoe mounting foot.** This slides into the hot shoe on your camera body and locks down with a lever.



1.11 Hot shoe mounting foot

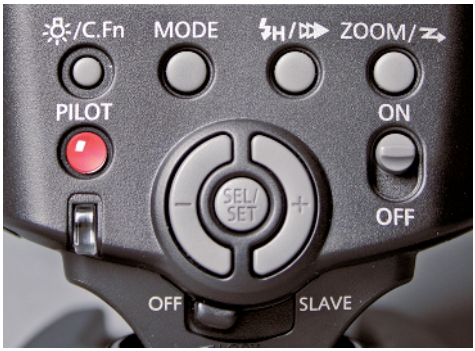
- **Flash head rotating angle scale.** The Speedlite flash head can rotate horizontally left 60°, 75°, 90°, 120°, 150°, and 180°. To the right it can be adjusted 60°, 75° and 90°.



1.12 Flash head rotating angle scale

Control buttons

You should know what each of the various control buttons on the 430EX Speedlite can do to get the best results. The following sections describe them.



1.13 430EX control panel

- **On/Off switch.** Slide the switch up or down to turn the 430EX on or off.
- **Pilot light/button.** Press this button to test fire the 430EX to check for output. This button is lit red when the flash is fully charged and ready to fire at full power.
- **Zoom button.** Pressing this button enables you to change the zoom of the flash head to adjust for different focal length lenses using the +/- buttons. It allows coverage for 24mm to 105mm lenses. 14mm coverage is achieved with the built-in wide-angle diffuser.
- **LCD light/C.fn button.** Pressing this button once turns the LCD light on for viewing in dim light. Pressing and holding this button brings you to the Custom functions menu. The custom functions are set using the +/- buttons.
- **High Speed sync/FEB button.** Pressing this button once allows you to set the flash to High Speed sync. Pressing it a second time turns on the Flash Exposure Bracketing feature.
- **+/- buttons.** The +/- buttons are used to change the flash head zoom settings when in the zoom menu and they also allow you to change the custom functions settings when in the C.fn menu.

Cross-Reference *Chapter 2 covers the Custom Settings menu in more detail.*

- **Mode button.** The Mode button allows you to switch between the available flash modes. The modes available with the 430EX are:
  - **E-TTL flash.** The exposure is determined by the camera and matched with the ambient light.
  - **M (full Manual mode).** You determine the flash power.

430EX accessories

The Speedlite 430EX comes with a soft case for storage and carrying as well as the Speedlite stand, which not only allows you to mount your 430EX to a stand or tripod, but you can also use it to balance the Speedlite on a flat surface.

Other Components of the Speedlite System

You have your 580EX and 430EX Speedlites, but what else might you need to round out your Speedlite system? Just having one or both Speedlites is a great start, but that isn't all there is to the Canon Speedlite system.

ST-E2 wireless transmitter

A Master unit is what tells the remote Speedlites when to fire. It also reads the data provided by the remote Speedlites pre-flashes and relays the information to the camera body for use in setting the exposure levels.

The ST-E2 is an infrared wireless Master unit for the Canon Speedlite system. It functions in much the same way as the 580EX does in Master mode except that it doesn't emit any visible light. The ST-E2 Commander has four independent channels, so if you are working near other photographers, you can work on different channels so someone else's ST-E2 Commander won't set off your flashes.

The ST-E2 Transmitter slides into the hot shoe of your camera like any other Speedlite and is used to wirelessly control the 580EX, 430EX, or MT-24EX flashes. Each channel can be used to control two groups of flashes. From the ST-E2 you can control the output of each group individually. You can set each group to TTL or M in order to fine-tune the lighting to suit your needs.

MT-24EX Speedlite

The MT-24EX is a dedicated macro Speedlite. With macro flash photography, getting your flash on axis or on the same level as the subject is best. In macro photography, your lens is usually very close to your subject, which ends up blocking the light from an on-camera, shoe-mounted flash. This is where lens-mounted flashes come in.

The MT-24EX Speedlite has two separate flash heads that are attached to your lens by a mounting ring. The flash heads can attach to the ring and rotate or they can be removed from the ring for more control of the lighting placement. The MT-24 EX has a master unit that controls each flash head. The master unit is similar to the ST-E2 wireless transmitter and can also be used to fire external groups of Speedlites.

Chapter 6 covers more macro lighting techniques.

MR-14EX ring lite

The MR-14EX ring lite is another type of Speedlite used for macro photography. It is very similar to the MT-24EX except that the flash heads can't be moved. Without being able to move the flash heads, the result of using this ring lite is often a very flat, even lighting that is common in most macro applications.

Like the ST-E2 and the MT-24EX the MR-14EX master unit can be used to trigger off-camera slave flashes such as the 580EX or the 430EX.