



### EF Lenses

You have a Canon SLR camera, now it's time to give your shots an extra dimension. Canon's constantly expanding array of EF (Electro-Focus) lenses and accessories let you do just that. And when you look through a Canon lens you're looking through 60 years of expertise. Have a look through this section and see just how far you can take your photography.



#### Rodolfo Benitez Photographer

"Studio photography is all about choices. Styling, composition, lighting... everything plays a part. But in the end, it's the lens that brings it all together."

*Rodolfo chooses exclusively  
Canon EF lenses.*

## Beauty to behold

Photographer Rodolfo Benitez has a different take on fashion photography. Hairstyles and hemlines come and go, but Canon EF lenses are always in style.

Flip through the pages of any fashion magazine and most people see a sea of supermodels. Rodolfo Benitez sees focal lengths and F stops. As a professional photographer, he knows how to make people look good. And it's not all about hair and make-up. Rodolfo has an eye for beauty and he sees the world through Canon lenses.

Canon's EF Lens system – the world's most comprehensive – is the product of more than six decades at the forefront of optical innovation. From the 14mm extreme wide angle to the 600mm super telephoto, each of the more than 60 lenses in the EF series brings a unique dimension to your photographic vision.

Every element of every EF lens is designed meticulously. Its materials are painstakingly inspected and its surface ground precisely, all to create an interchangeable lens of uncompromising quality that reaches beyond human limitations. Our pursuit of optical perfection continues, driving ever-faster performance, wider angles, longer focal lengths and a level of accuracy that knows no equal.

Chosen by professionals the world over, the L series represents the crystallisation of Canon's long optical heritage. L-series lenses incorporate the highest quality optical materials, each lens engineered to withstand demanding environments in the field. The EF-S series of lenses opens up wider angles of view to EOS photographers with digital SLR cameras, such as the EOS 40D or EOS 400D.

Pioneering developments have been incorporated throughout the entire range. The world's first lens-based Image Stabilizer system. Smaller, lighter telephoto lenses using diffractive optical (DO) elements. Rapid, silent auto focus through ultrasonic motors (USM). All these innovations are now found in almost every EF lens.

They say that beauty is in the eye of the beholder. Rodolfo Benitez knows exactly what to look for. And he knows Canon lenses are the best way to find it.



# Lens Technology

For more than half a century, Canon's commitment to research has consistently raised the bar for SLR lens specifications. This promise of innovation is embodied in every one of the more than 60 EF lenses now available.

### IMAGE STABILIZER

Some Canon EF lenses incorporate an Image Stabilizer (IS) to reduce camera shake. This is particularly useful with close-ups telephoto lenses, slow shutter speeds and when a tripod can't be used. Optical shake is detected by gyro sensors which provide data to neutralise it. Some EF lenses have an additional IS mode for panning shots. Each Canon lens with Image Stabilizer is optimised for its focal length, providing the most accurate correction for that specific lens. With an IS lens attached to your camera, you get a shake-free image in the viewfinder for accurate viewing of the scene you are shooting.

### ULTRASONIC MOTOR (USM)

The world's first lens-based motor that harnesses ultrasonic oscillation energy to drive virtually noiseless auto focus, which on some lenses is literally faster than the human eye. The USM can stop without overshooting the instant focus is achieved.

### ASPHERICAL ELEMENTS

Unless corrected, light rays entering conventional lens elements converge at slightly different focal points. Known as spherical aberration, this phenomenon produces soft, low contrast images that look as if covered with a thin veil. Canon was the first company in the world to correct this error in an SLR lens by incorporating an aspherical lens element. Now found in nearly every EF lens, these special elements help deliver corner-to-corner sharpness and clarity.

### SUPER SPECTRA COATING

Light reflecting off lens elements and a digital camera's sensor can result in significant light loss and cause ghosting (secondary images) and flare (washed out image). To eliminate harmful reflections, the latest EF lenses are treated with Canon's patented multi-layer Super Spectra coating, which absorbs light rather than reflecting it.

### FLUORITE AND UD LENS ELEMENTS

Canon has pioneered the development of Fluorite and UD lens elements for correcting chromatic aberrations. These aberrations are defects caused by different wavelengths or colors of light refracting by different amounts as they pass through conventional optical glass elements. With their special diffraction properties, Fluorite and UD lens elements correct such aberrations to deliver high contrast, sharpness and accurate colour reproduction.



### DIFFRACTIVE OPTICAL ELEMENT

Canon's EF 400mm f/4 DO IS USM and EF 70-300mm f/4.5-5.6 DO IS USM are the only two camera lenses in the world to incorporate multi-layer diffractive optical (DO) elements. Developed by a small team of young Canon engineers, DO lens elements have special optical properties that pave the way for extremely light and seriously compact telephoto lenses.

# Making sense of EF lens codes

Each EF lens is identified by a series of codes which provide important information about its unique characteristics.

## EF 100-400mm f/4.5-5.6L IS USM

**100-400mm** – refers to focal length, which relates to a lens' angle of view. The lower the number, the wider the lens' angle of view; the higher the number, the more powerful it is at bringing distant objects closer. If there is only one number, the lens has a fixed focal length. A number range indicates a zoom lens.

**f/4.5-5.6** – refers to the lens' minimum 'F number', a function of the lens' aperture diameter. The lower the number, the 'brighter' and generally more useful the lens. A number range indicates the minimum F number at each of the extremes of the lens' zoom range.

**L** – indicates a professional L-series lens – the ultimate in image performance and operability. L-series lenses may include protection against weather and aging, as well as special optical materials such as fluorite, ultra-low-dispersion (UD) or super UD elements.

**IS** – refers to Image Stabilizer. Image Stabilizer lenses detect and compensate for unwanted movement, allowing for the use of shutter speeds up to four stops slower than would otherwise be possible.

**USM** – indicates an Ultra Sonic Motor. Technology pioneered by Canon to produce highly responsive, super fast focusing with excellent holding torque.



Bas Meelker - 'Oehoe'

## Other lens codes you may come across:

**DO** – indicates the use of multi-layer Diffractive Optical elements. This revolutionary technology, unique to Canon, enables the manufacture of smaller, lighter and outstanding performance photo lenses.

**EF-S** – EF lenses designed to fit EOS models with the EF-S mount.

**MP-E** – lens specially designed for macro photography.

**Macro** – or "close-up". Captures your subject with a magnification ratio of 1:1, so the image recorded is truly life-size. When printed or viewed on screen, image appears larger than life.

**II or III, etc.** – indicate the version of the lens. Existing lenses are often redesigned to improve their performance or operability.

**TS-E** – specialist tilt/shift lenses that allow correction of perspective distortion and control over the angle of the focal plane. These lenses are often used for architectural interiors and exteriors.

**Extender** – lenses that fit between the camera body and master lens to deliver focal length magnification.

# Fixed Focal Length Lenses

Fixed focal length lenses generally offer a wider maximum aperture than zoom lenses.

**EF 15mm f/2.8 Fisheye**

180° angle of view captures a wide-area in a single frame.

**EF 14mm f/2.8 II USM**  
**EF 20mm f/2.8 USM**

Extreme wide angle, ideal for shooting indoors in cramped spaces or for creative effects outdoors.

**EF 24mm f/1.4L USM**  
**EF 24mm f/2.8**

Wide angle lenses, particularly useful for landscape photography. Also useful for many other subjects, including portraits.

**EF 28mm f/1.8 USM**  
**EF 28mm f/2.8**

**EF 35mm f/1.4L USM**  
**EF 35mm f/2**

Wide angle lenses, particularly useful for landscape photography. Also useful for many other subjects, including interior photography.

**EF 50mm f/1.2L USM**  
**EF 50mm f/1.4 USM**  
**EF 50mm f/1.8 II**

Standard lenses to suit most subjects.

**EF 85mm f/1.2L II USM**

**EF 85mm f/1.8 USM**

**EF 100mm f/2.0 USM**

**EF 135mm f/2.0L USM**

Short telephoto lenses, ideal for portraits and many other subjects.



**EF 135mm f/2.8 with Soft Focus**

This unusual lens can be used as a normal 135mm, but it is also suitable to set different strengths of soft focus. Designed for portrait work but also suitable for other subjects.



**EF 200mm f/2.8 II USM**



**EF 400mm f/5.6L USM**

These longer telephoto lenses are used extensively by wildlife, sports and news photographers.



**EF 24-70mm f/2.8L USM**  
**EF 24-85mm f/3.5-4.5 USM**



**EF 28-90mm f/4-5.6 III**  
**EF 28-105mm f/3.5-4.5 II USM**  
**EF 28-105mm f/4-5.6**



**EF 28-105mm f/4-5.6 USM**  
**EF 28-200mm f/3.5-5.6 USM**

Canon's biggest group of lenses, referred to as standard zooms (a standard zoom is any lens with 50mm in its zoom range). Most EOS owners will own at least one.



## Zoom Lenses

Zoom lenses offer the equivalent of two or more fixed focal length lenses in one unit. The maximum aperture of some zoom lenses can change as you alter the focal length, but Through-The-Lens (TTL) metering takes this into account to give correct exposure.



**EF 16-35mm f/2.8L II USM**



**EF 17-40mm f/4L USM**



**EF 20-35mm f/3.5-4.5 USM**

Wide angle zooms, ideal for interiors and landscapes.



**EF 55-200mm f/4.5-5.6 II USM**  
**EF 70-200mm f/2.8L USM**  
**EF 70-200mm f/4L USM**



**EF 75-300mm f/4-5.6 III**  
**EF 75-300mm f/4-5.6 III USM**  
**EF 90-300mm f/4.5-5.6**



**EF 90-300mm f/4.5-5.6 USM**  
**EF 100-300mm f/4.5-5.6 USM**

Telephoto zooms are good general purpose lenses. Add a standard zoom such as the EF 24-85mm f/3.5-4.5 USM to your photographic arsenal and you'll have most of the focal lengths you're likely to need.

## EF-S: Special lenses for compact sensors

The compact sensor found on EOS models with the EF-S lens mount has the effect of magnifying the focal length of attached lenses by 1.6x. To provide this category of camera owners more wide angle choice, Canon developed a new range of lightweight EF-S lenses.



### EF-S 55-250mm f/4-5.6 IS

A high-performance lens that combines powerful zoom with Canon's latest Image Stabilizer technology.

With an equivalent focal length range of 88-400mm, the EF-S 55-250mm f/4-5.6 IS is an ideal telephoto zoom for handheld travel, nature and sports photography. For outstanding shake suppression, Canon's latest optical Image Stabilizer offers up to 4-stop compensation, dramatically extending low light performance: photographers normally shooting handheld at 1/250 can obtain equivalent results at just 1/15. And since the Image Stabilizer is placed within the lens, images can be accurately framed through the viewfinder, with optimum quality maintained at every focal length.

## Image Stabilised Lenses

Built-in gyro sensors control an Image Stabilizer within the lens. These shift in response to movement and reduce the effects of camera shake. When you're shooting hand-held it's possible to use a shutter speed two to three stops slower than normal without any increase in image blur.



## Diffractive Optical Lenses

Diffraction Optical (DO) lenses represent a new level in professional telephoto lenses. New technology delivers optical characteristics unavailable in traditional lenses, dramatically decreasing size and weight. Lens coatings are optimised to minimise the ghosting and flare that sometimes can occur when the lens is used with a digital camera.



**EF 70-300mm f/4.5-5.6 DO IS USM**      **EF 400mm f/4 DO IS USM**

Ideal for long range photographic applications such as sports and wildlife.

## Tilt-and-shift Lenses

These lenses can be tilted at an angle to the camera body, and the lens axis can be shifted away from the centre of the frame. This allows correction of perspective distortion and the manipulation of depth-of-field.



**TS-E 24mm f/3.5L**      **TS-E 45mm f/2.8**      **TS-E 90mm f/2.8**


Ideal for architectural work and close-up photography. No auto-focusing.



Rodolfo Benitez – 'Hot dog buns'


## Macro Lenses

Macro lenses are designed for close-up photography. Although most of them focus to infinity, their optimum performance is at close focusing distances.




**EF 50mm f/2.5 Compact Macro**  
**Life-size Converter EF**

Gives a maximum magnification of 0.5x (half life-size).  
Life-size Converter EF allows life size image capture when used with EF 50mm f/2.5 Compact Macro.



**MP-E 65mm f/2.8 1-5x Macro**

This specialist lens only focuses between magnifications of 1x and 5x. Particularly useful for wildlife photography enthusiasts.  
No auto-focusing.




**EF 100mm f/2.8 Macro USM**  
**EF 180mm f/3.5L Macro USM**

These lenses focus close enough to provide life-size images.

## Extenders

Extender is Canon's name for a teleconverter. These high performance accessories multiply the effective focal length of an attached lens by 1.4x or 2x. For example, a 200mm lens with a 1.4x Extender has an effective focal length of 280mm. With a 2x Extender, this increases to 400mm.

Extenders are only compatible with selected EF lenses, including the EF 70-200mm f/2.8L USM, EF 70-200mm f/2.8L IS USM, EF 70-200mm f/4L USM, EF 100-400mm f/4.5-5.6L IS USM, EF 400mm f/4 DO IS USM and fixed focal length L-series lenses of 135mm or higher.















**Extender EF 1.4x II**      **Extender EF 2x II**

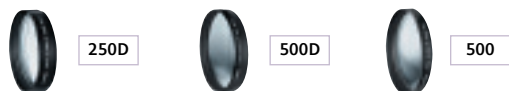


The extenders decrease the effective apertures of lenses to which they are attached by just one or two stops respectively.

# Accessories



## Filters

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|  <p><b>Protect Filter</b><br/>This neutral filter protects your lens while maintaining perfect colour balance. Super Spectra coating prevents harmful light reflections. For general photography.</p> <p>Available sizes: 52mm, 58mm, 67mm, 72mm, 77mm, 82mm</p>  |  <p><b>UV Filter</b><br/>This colourless filter absorbs ultraviolet light without cutting visible light. It's most effective on sunny days for cutting haze in distant landscape shots, especially when using black-and-white film. The filter has no effect on exposure and minimal effect on colour temperature. UV filters can also be used as protective filters for general photography.</p> <p>Available sizes: 52mm, 58mm, 72mm</p>                                   |  <p><b>ND4L Filter</b><br/>Neutral Density (ND) filters are used with colour and black-and-white film to reduce light entering the lens to a quarter (two f/stops) the original level at all wavelengths. The surface of this high-quality L-class filter features a vacuum-deposited light-absorbent material.</p> <p>Available sizes: 52mm, 58mm, 72mm</p>            |  <p><b>Softmat Filters No. 1 &amp; No. 2</b><br/>Softmat filters soften focus, making them ideal for flattering portraits and dreamy landscapes. They utilise the diffraction that occurs between light passing through the filter's transparent and coated part. Softmat No. 1 filter gives gentle soft focus, Softmat No. 2 a stronger effect.</p> <p>Available sizes: 52mm, 58mm</p>      |
|  <p><b>Skylight Filter</b><br/>This light amber skylight filter can be used for both black-and-white and colour film for daylight exposures on sunny days. It reduces the blue cast that occurs with sky and water reflections and when photographing subjects in shadows. By blocking short wavelengths on sunny days, it warms colour temperature slightly without altering exposure. For general photography.</p> <p>Available sizes: 52mm, 58mm, 72mm</p> |  <p><b>PL-C Filter</b><br/>This Polarising filter enhances image quality by blocking harmful reflected light. It reduces polarised light reflections from the surface of glass and water, and also improves colour saturation. Simple to use, Circular Polarising filters (such as Canon's PL-C) polarise light circularly rather than linearly. This means that auto-focus and TTL light metering is not affected.</p> <p>Available sizes: 52mm, 58mm, 67mm, 72mm, 77mm</p> |  <p><b>ND8L Filters</b><br/>This filter reduces light entering the lens to 1/8 (three f/stops) the original level. Invaluable for large-aperture and slow-shutter-speed photography.</p> <p>Available sizes: 52mm, 58mm, 72mm</p>   |  <p><b>Gelatin Filter Holder E</b><br/>One holder, allowing up to three gelatin filters to be fitted.</p> <p>Available sizes: 52mm, 58mm, 72mm, 77mm</p>   |
|  <p><b>Drop-in Filters PL-C</b><br/>Drop-in filters PL-C can be rotated from the outside without removing them from the lens, allowing precise control. The 52mm PL-C filter can be used with the EF 300mm f/2.8L IS USM, EF 400mm f/2.8L IS USM, EF 500mm f/4L IS USM and EF 600mm f/4L IS USM lenses.</p> <p>Available sizes: 48mm, 52mm</p>  |  <p><b>Drop-in Screw Filter Holders with Protect Filters</b><br/>This device allows regular Protect filters (supplied) to be exchanged with other commercially available screw-type filters. Note that only filters with the correct filter frame thickness can be mounted on the lens.</p> <p>Available sizes: 48mm, 52mm</p>   |  <p><b>Drop-in Gelatin Filter Holders</b><br/>These glass-backed holders accept up to three commercially available cut-to-size gelatin filters for rear-insertion lenses. A 52mm holder is provided as standard with the EF 300mm f/2.8L IS USM, EF 400mm f/2.8L IS USM, EF 500mm f/4L IS USM and EF 600mm f/4L IS USM lenses.</p> <p>Available sizes: 48mm, 52mm</p> |  <p><b>Gelatin Filter Holders III &amp; IV</b><br/>Gelatin Filter Holder III uses 3 x 3 inch gelatin filters. Gelatin Filter Holder IV uses 4 x 4 inch gelatin filters. Both Holders provide extension hoods and Ø 52mm, 58mm, 67mm, 72mm and 77mm adapters. Refer to the EF Lens Accessory Table for information on lens combinations.</p> <p>Available sizes: 52mm, 58mm, 72mm, 77mm</p> |

## Close-up Accessories

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|  <p><b>Close-up Lenses</b><br/>Close-up lenses screw to the filter mount at the front of the lens, providing a simple, inexpensive method of increasing subject magnification. There is no loss of light and all camera and lens functions are retained. However, auto-focusing is not always effective and manual focusing is recommended.</p> <p>Three Canon close-up lenses are available. The close-up lenses 250D and 500D both use two lens elements to reduce colour aberrations. The close-up lens 500 is a one-element accessory for low-cost close-up photography. The 250D is recommended for lens focal lengths from 38mm to 135mm and is available with a 52mm or 58mm filter thread. The 500D and 500 lenses are recommended for focal lengths from 75mm to 300mm and are available with a filter thread of 52mm, 58mm, 72mm or 77mm.</p> |  <p><b>EF Extension Tubes</b><br/>Extension tubes fit between the lens and the camera body and allow the lens to focus much closer than normal, giving increased magnification. The larger the amount of extension and the shorter the focal length of the lens used, the greater the increase in magnification. However, especially when using wide angle lenses to obtain high magnifications, working distances can get very short.</p> |  <p><b>EF Extenders</b><br/>Extenders increase the effective focal length of lenses while retaining the minimum focusing distance. The focal length is increased by the factor indicated. Extenders are only compatible with a selected range of EF telephoto and they can also be combined with extension tubes and close-up lenses for close-up and macro photography.</p> |
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## Loupes

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|  <p><b>Loupe 4x and 8x</b><br/>Canon Loupe 4x and 8x are high-performance magnifiers for viewing film in high resolution with colour-aberration. Super Spectra coating ensures a clear image which is fully effective for work such as final checking of film shot with an EF lens.</p> |  <p><b>Lens Hoods</b><br/>Shield your lenses from extraneous light and prevent flare spoiling your images.</p> <p><b>Lens Cases</b><br/>Functional, rugged and well designed. Indispensable for protecting valuable lenses.</p> |
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Bas Meelker – 'Early Morning Cold'

