Topic 2 – Introduction To Lenses

Learning Outcomes

By the end of this topic you will have a basic understanding of what lenses you need for specific types of shot. You will also be able to distinguish between prime lens and zoom lenses and have a better understanding of the language used in conversations between photographers when discussing lenses.

Components of a lens

The structure of a lens.

Lens Mount – This is the area of the lens that we attach to the camera body. It is a hugely sensitive area and when you dismount a lens from a body, always ensures that you cover this with a lens cap.

Zoom Ring – This applies to lenses that have a ranging focal length. The zoom ring adjusts the focal length of the lens, allowing you to move closer or further away from your subject.

Distance Scale – The distance scale is simply an accurate reading of what your zoom ring is doing. It will tell you what focal length you are at if you are unsure.

Autofocus/ Manual Focus Switch – This is simply a switch which allows you to shoot your subject using autofocus or it gives you the opportunity to manually control focus yourself.

Manual Focusing Ring – This ring will help you to adjust the focus of your subject, but only if you are using the manual focus mode. On a zoom lens, this ring will adjust the focus at whatever focal length you are zoomed into.

Bayonet For Lens Hood – This is simply the opposite to the lens cap. The lens hood is another cap which protects the glass on the lens from dust or any unwanted fingerprints or scratches.

Front Lens Element – This is simply the glass on the front of the lens that I just mentioned. The lens hood covers this. This element is what allows light to enter the camera.

Thread For Lens Filters – This thread is used for applying lens filters to your lens.

Types of Lenses

Kit Lenses – These days the lens that is offered as a package with the DSLR is generally called the 'kit lens'. It is generally an entry level quality zoom lens. They are usually a general-purpose lens designed for everyday shooting. They are perfectly fine to use as an introduction to photography but they will struggle in low light conditions and lack the dynamism of other quality lenses that are available to you.

Normal Standard Lens – A normal or standard lens is a lens that matches the angle of view of human vision that is in focus (50 degree view). On a full frame DSLR a 50mm lens gives us this 50 degree view of the world. The lens that gives us this view varies slightly in mm depending on your sensor size.

Wide Angle Lens – A lens with field of view wider than the angle of focused human vision or standard lenses (50mm). Lenses with a focal length between 24mm and 50mm are considered Wide Angle.

Telephoto Lens – A lens with field of view narrower than the angle of focused human vision or standard lenses (50mm). Lenses with a focal length from 50mm up to 1000mm are considered telephoto.

Zoom Lens – A lens with a variable focal length. Zooms lenses can be wide, telephoto or cross both the wide and telephoto range. Example of a wide zoom lens 14mm- 24mm. Example of a telephoto zoom lens 100mm to 400mm. Example of a zoom lens that goes from wide to telephoto 24mm to 105mm.

Prime Lens – A lens with a fixed focal length. This is a lens that cannot zoom and only has one view. Examples of prime lenses include17mm, 24mm, 100mm, 300mm.

Super Wide Angle Lens – A lens with a focal length wider than 24mm. Examples of super wide lenses 10mm, 14mm, 16mm.

Fish Eye Lens – A lens with an angle of view of about 180 degrees. Recognisable for their extremely curved front glass. They give us an extremely wide view of the world. In order to achieve this wide view the images are very heavily distorted which is very prominent around the edges.

Macro Lens – A lens that allows you to get extremely close to subject while still maintaining its ability to focus on the subject. You'll often see this used in wildlife photography that focuses on minute insects.

Fast Lenses – The speed of a lens and how 'fast' it is refers to the maximum aperture of the lens in question. The larger the maximum aperture, the faster the lens is going to be.

When a lens is talked about it, it generally is described with its focal length (for example it could be a 50mm lens or a 90mm lens). We also talk about its maximum aperture (usually it will be a number with an 'f' in front of it – for example f/1.8 or f/4 or f/5.6). As we've seen, the smaller the number is, the bigger the maximum aperture is.

Why would you want a fast lens?

Fast lenses can be really advantageous over slower ones in certain shooting conditions and types of photography. They really shine on their own when there is either low light (for example if you need to shoot indoors but can't use a flash) or where you need to use a fast shutter speed (for example in sports or even wildlife photography). They are especially useful when you need both a fast shutter speed in low light (ie indoor sports). In general – a fast lens is any lens with a maximum aperture of f/4 or more (ie f/2.8, f/1.8, f/1.4 etc.).

What have we learned today? A Summary

We have had a goof introduction to the types of lenses on the market and we have learned all about what these lenses are used for. We have also revised the various parts on a lens's body and how important it is to keep the rear and front element of the lens covered when not using the lens.