

Understanding Your DSLR

Welcome to module 6 – Lenses, Focusing & Metering Modes

Types of Lens

With a DSLR camera we are able to select different lenses to suit the image we want to capture. Every lens is defined in millimetres, and this measurement is called its focal length. This measurement is the distance between the sensor and the optical centre of the lens when the lens is focused on infinity. The higher the number, the closer you can get to distant subjects. Most DSLR's come with an 18 – 55mm lens as standard, these lenses have the ability to fill the frame with close up subjects whilst things in the background seem further away than normal. To capture close up shots of objects in the distance we need to use a lens with a longer focal length something like 300mm or 400mm, these lenses are known as telephoto lenses and telephoto zoom lenses which cover a range of distances, something like a 70 -300mm for example.

Lenses are also available in fixed focal lengths, a 50mm lens is a popular example of this. A lens that has the ability to capture wide angle views is known as a wide angle lens and these tend to have a focal length between 10mm and 24mm.

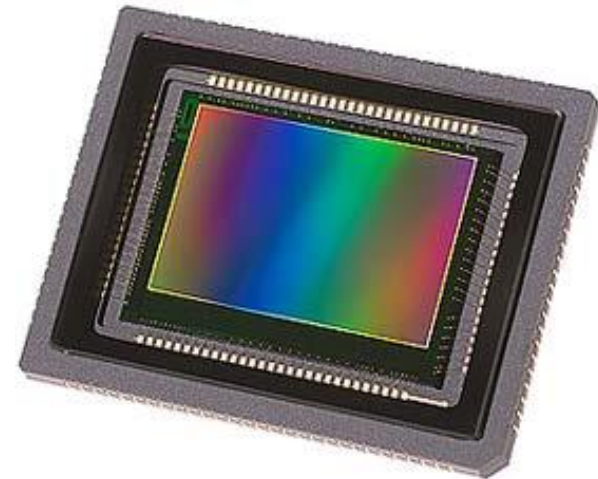
A macro lens is used to fill the frame with subjects that are small in size a ladybird on a leaf for example. They are available in various focal lengths but along with having the ability to focus exceptionally close to a subject they also magnify it.



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Camera Sensors and their effect on focal length

Most professional DSLR cameras come equipped with a full frame digital sensor which is the same size as an old film negative, while most consumer models are fitted with a smaller sized sensor as they are easier and cheaper to manufacture. The sensor size of your camera will affect the focal length of your lenses. Without getting technical when you place a 50mm lens on a camera equipped with a smaller sensor you will see further than you would if fitted to a full frame camera. Sensors are usually referred to as either full frame or APS. It is important when purchasing lenses that you acquire the correct type for your camera. Nikon name lenses suitable for a full frame camera as FX lenses and DX for those equipped with a smaller sensor. As a general rule of thumb a 50mm lens attached to a consumer camera will see roughly one and a half times further into a shot than when fixed to a full frame camera.



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Focusing and Autofocus Modes

One of the most common mistakes novice photographers make is not focusing correctly and it's something that you will need to practice. Cameras are equipped with various focussing methods and modes which you will find in your camera handbook.

Autofocus is probably the best place to start, you simply point your camera at a subject and half depress the shutter release button and the lens will automatically focus. Autofocus, when it works is great but can sometimes on occasions be a real pain. When you check out your handbook you will find that most DSLR's have autofocus modes for focusing on a moving subject and a stationary subject, AFS and AFC on a Nikon, ONE SHOT and AI SERVO on a Canon. Other models will have similar settings. If we are trying to autofocus on a moving subject we need to set our focus mode to AFC or AI SERVO, this mode will track our moving subject as it moves closer or further away from us. When we want to use autofocus on a stationary subject we need to use AFC or ONE SHOT, these modes will prevent the autofocus hunting/searching for a moving subject and should lock onto your stationary object immediately. You will also have the option of setting the autofocus to AFA or AI FOCUS, these modes try to do both of the above but can prove a bit slower in the time it takes to respond.

There is also the option to select MANUAL FOCUS, in this mode we simply turn the focusing ring on the lens to focus on our subject. Manual focus should be considered when photographing subjects up close.



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Focusing and Autofocus Area Modes

When using autofocus we have the option of selecting various autofocus area modes, these are the areas in the viewfinder in which the camera searches for an object to focus and lock onto. By default your camera will usually be set to see a number of black dots or squares that turn red when the autofocus has locked onto an object, similar to the image below. We have the option to allow the camera to search for an object or we are able to select a single point autofocus area and manually move the box around the screen and point it at the object we want to be sharp and in focus.

In the images on the right we have chosen single point autofocus mode and in the top image have focused on the yellow daisy. In the image below this one we have chosen to focus on the no fishing sign, again using the single point autofocus mode. We have decided what we want to be in focus in both images rather than allowing the camera to decide. It is very important that you read the autofocus section of your handbook and understand the various methods available to you in your specific model.



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Metering Modes

By selecting the appropriate metering mode we are able to tell the camera where to measure the light in the image we are going to take. By default we need to ensure that our metering mode is set to EVALUATIVE on a Canon or MATRIX on a Nikon. Check your handbook for other models. When we are taking an image in difficult lighting situations we are able to change mode to tell the camera to only concentrate on certain areas of the image. An example of when to use centre weighted or spot metering would be when taking an image of a person standing on a beach with a bright blue sky behind them. On most of these occasions when shooting in matrix or evaluative mode the sky would appear fine in the shot although the person may appear underexposed. If we set the mode to centre weighted or spot the camera will concentrate on whatever we are pointing the lens at and ignore most of the background so what normally happens in this situation is the person now appears correctly exposed whilst the background becomes overexposed.

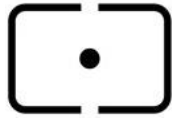
SPOT METERING



MATRIX/EVALUATIVE METERING

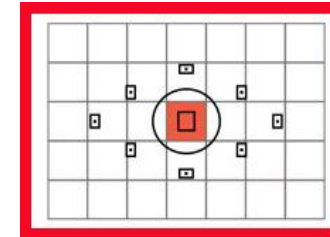
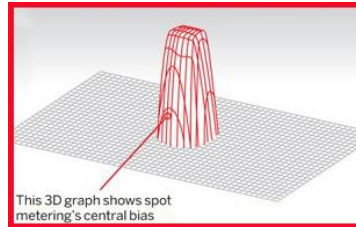


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Spot Metering

Spot metering only measures the intensity of light over a small circular area in the centre of the viewfinder. The average is then calculated by measuring just 2-4% of the picture area.

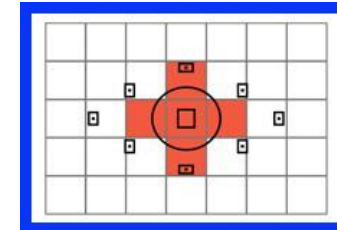
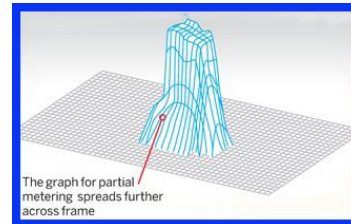


The centre circle in the viewfinder gives a rough guide to a spot meters coverage



Partial Metering

This metering mode measures the intensity of the light over a larger circular area than in Spot mode. The average is then calculated by measuring 8-13% of the picture area.

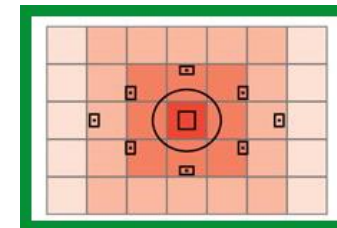
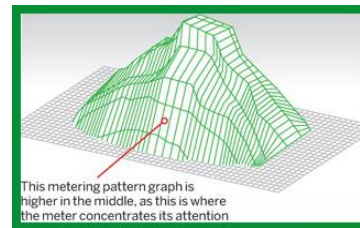


The coverage of the partial meter spreads out slightly beyond the viewfinders centre circle.



Centre-Weighted average metering

This light metering mode measures the light across the whole picture area, but strongly biases the reading to the centre of the viewfinder area. Unlike with Evaluative, it does not take the focus into account, so uses the same averaging

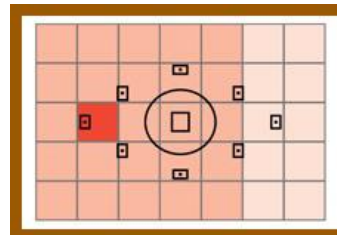
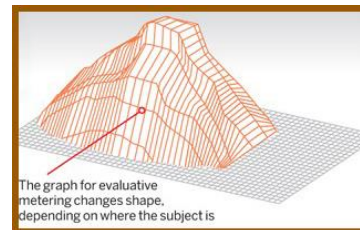


Main metering zone is bounded by the seven central focus points (DSLRs with nine AF Points)



Evaluative metering

The default metering mode on many DSLRs, and the only option if you choose one of the basic automatic exposure modes. Measures light across the whole frame, but strongly biases the reading to the area around the autofocus point currently being used.



Main zone of interest will depend on which of the autofocus points been used