

Designed and written by

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What is ISO to a Photographer?

This information sheet is designed as a supplement to the GC2 Photo Club video on the same subject. It is provided to help reinforce learning and as a reference document for you to keep.

ISO is an abbreviation of International Standards Organisation.

For Photographers, ISO set a method of standardising the light sensitivity of a cameras sensor or film speed.



Figure 2

With a traditional film camera you have a roll of film that has a set film speed for the whole roll, such as ISO 100, also sometimes measured in ASA (American Standards Association) (ISO 100 and ASA 100 are the same, there are also other standards

A table with four columns: ISO, ASA, DIN, and GOST. It lists various ISO speeds and their corresponding ASA, DIN, and GOST values.

ISO	ASA	DIN	GOST
100	100	21°	90
200	200	24°	180
400	400	27°	360
800	800	30°	720
1600	1600	33°	1440
3200	3200	36°	2700

Figure 1

organizations). This is a way of knowing what exposure you will get for your image when you set the aperture and shutter speed on your camera.

With a digital camera, ISO measures the light sensitivity of your cameras sensor in the same way as with film (if you set ISO 100 on your digital camera, you will get the same exposure as you would with a camera film that is ISO 100 with the same shutter speed/aperture combination).

One advantage of a digital camera is that you can change the ISO or 'film speed' for each individual shot, as shown in Figure 3. This gives you great flexibility for getting correct exposures and creative effects, particularly in changing light situations.



Figure 3

See the manufacturer's instructions for changing the ISO setting on your camera.

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So why do we have different film speeds or ISO's and what do the numbers represent ?



Figure 4

The numbers indicate how sensitive to light your film or camera's sensor is. The lower the ISO number, the less sensitive to light the sensor or film is. For instance, ISO 100 is much less sensitive to light than ISO 3200 (In photography terms that means that in a low light situation ISO 100 may give you a very underexposed image, as in Figure 4, however if you change your setting to ISO 400 you get a correct exposure, as in Figure 5.



Figure 5

To understand the different ISO numbers and how they relate to each other just remember that ISO 200 is twice as sensitive to light as ISO 100 and ISO 400 is twice as sensitive to light as ISO 200, and so on.

When setting an exposure manually on your camera that means that if you open your Aperture 1 stop (for instance F8 to F5.6) to let in more light (twice as much) you will need to half the ISO number (for instance ISO 200 instead of ISO 400) to get the same exposure.



Figure 6

Although we can change the ISO for every shot, there are drawbacks for using high ISO's such as ISO 3200.

As you increase the ISO numbers, so digital noise will increase in your image. For a high ISO, such as 3200, it can be very significant. Try varying your ISO settings in a single shoot to see the differences each setting makes.

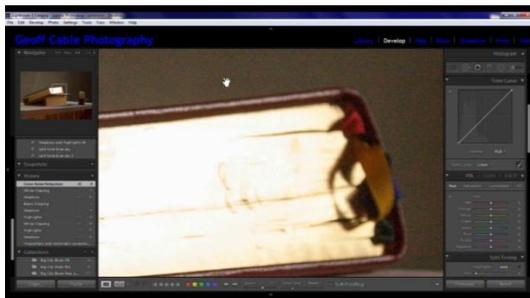


Figure 7

Digital noise appears as small coloured or grey circles in your image, particularly visible in shadow areas, as you can see in Figure 7. On film this appears as grain (see Figure 8)

You can reduce the effect of digital noise in camera RAW in Photoshop or in Lightroom, although you can't remove it completely and it can soften your image, however this is a subject for another video tutorial.

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Figure 8

Important note: You cannot remove film grain using this method.

We hope you found this information sheet useful, visit our web site at www.gc2photoclub.com for more tutorials and information.

Don't forget to subscribe to our newsletter for the latest updates.

Bye for now

Geoff and Gary