



Free on-line tutorial #3 What is ISO?

Photography On-line Tutorial #3: What is ISO?

Overview:

Unlock the mystery of ISO. Get off Auto and increase the varied lighting environments you can shoot under.

Video

Welcome back! Know what this ISO? Know what this is? Don't laugh we now have many who come to our workshops here at Bluedog that have never seen, let alone, used a roll of film. So for those that's the case that's what this.

For those that did use one of these, do you remember going into a shop and asking for a roll of film and the person serving you asking 'What do you want to photograph?' and you answered 'the kids playing sport' and they replied 'You need a 400 ASA film.' Most probably you politely nodded, thanked them and paid your money.

ASA stands for American Standards Association and a few years ago there was a change across the world and anyone that had anything ASA rated changed to ISO: International Standards Organisation.

It was an easy conversion. What was film rated 100 ASA simply became 100 ISO; 200 ASA 200 ISO; 400 ASA become 400 ISO and so on.

Now these numbers refer to how reactive the film was or today in our digital cameras how reactive the sensor (our new film) is to light.

Back in the dark ages when film was made, thank fully some are still making it, it was made by the emulsion or base being sprinkled with a chemical called Silver Halides. Now these chemicals reacted to light and changed their appearance. A bit like placing a banana out in the sun: its colour changes from yellow to black.

When we use a higher ASA and now ISO, our digital sensor reacts to light more quickly. A lower number it reacts to light less quickly and means it's a slower speed.

For example

ISO/ASA 100 reacts to light a lot slower than ISO/ASA 400. A banana rated at ISO 400 will turn blacker sooner than a Banana rated at ISO 100.

When we sprinkled the emulsion with a large chemical we got a faster reacting film such as 400 with an smaller chemical we got a slower reacting film such as 100.



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One of the great things about digital is that we don't lose a roll of film because we want to change the sensors rating. We can do one image at 100ISO and the next at 400 ISO.

Do you remember people saying images were noisy? Back in the film days we achieved this by using a faster film - that grain is actually the outline of the chemical. These are a great few examples.

But today we are working in the digital world and our sensor is made up of pixels coloured Red, green, Blue. We no longer have silver halides and we no longer use the word grain, in the digital world it's referred to as noise.

The biggest problem with noise it's far different to film grain in that it can literally be red, green and blue dots through your image. Especially at long exposure times. Not exactly what we want when shooting an awesome pre dawn or moon lit landscape.

Digital noise is very different to film grain. Where possible we suggest you work at your optimum ISO. For Canon that's 160 and Nikon 200.

Top Tip: Turn ON noise reduction in your camera's menu system. This will mean each image will take the same time to expose to write to the memory card however it will reduce digital noise. Maybe not as useful if you are photographing sport for instance for the local paper - the image is being printed on to be honest again crappy paper. You need to get the image so wind that ISO up. It's about making a choice. There are also noise reduction programs out there being developed each day.

So what to do? First look into your camera's manual and find out how to turn Auto ISO off. From there play. Some cameras show digital noise at a lot lower setting than others: another usual price comparison reason in camera brands and models.

Know your camera's capabilities. The sensor reacts to light. If your camera produces significant noise at 400 ISO be aware of that. If I want to get a shot of the kids playing in door sport at night and I know my camera has noise at 400 and I need 1600 to freeze them then that is what I will get. The level of noise again depends on your camera. And all cameras give noise to some extent at present.

An overview of Tutorial #3

Which lens should I use?

- Every lens has a focal length. If it has only one number it's a fixed focal length lens. If it has two numbers it's a zoom lens.
- As the focal length increases the angle of view decreases. As the focal length goes down the angle of view we have increases.
- Lenses have a minimum aperture which you will find on the lens.

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- As we zoom our lenses to a high number the less our Depth of Field (DOF) is at any given aperture.
- For landscapes a wide angle lens will always give us a larger DOF.
- For portraits a zoom lens will help us blur the back ground. You may have to move back yourself.
- Top Tip: Remember that the further your subject is away from the background the more blur you will achieve. Light has different properties. It can be harsh, soft, different colours, reflective, from a different direction etc.