



WHAT IS ISO?

Quick Guide
By Kent DuFault

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WHAT IS ISO?



WHAT IS ISO?

During my days as a salesman at a camera store, I discovered something- many, Many, MANY, **MANY**.... (*Let me say that one more time*) MANY... people are taking advantage of the digital revolution and getting into photography.

Let's face it, cameras are getting better and cheaper.

For those who never had the photography bug in the past, it's getting easier to plop down a little hard earned cash and start taking pictures.

But, (and this is a **BIG** but), many of these folks have little understanding of the basic principles of photography, digital imaging, or how a camera functions.



I can't tell you the number of times a customer came in and spent a fair amount of money-only to return a week later with steam boiling out of their ears.

“This camera stinks!” They would scream. **“You said this was a great camera.”**

They would then glare at me as they displayed some blurry pictures.

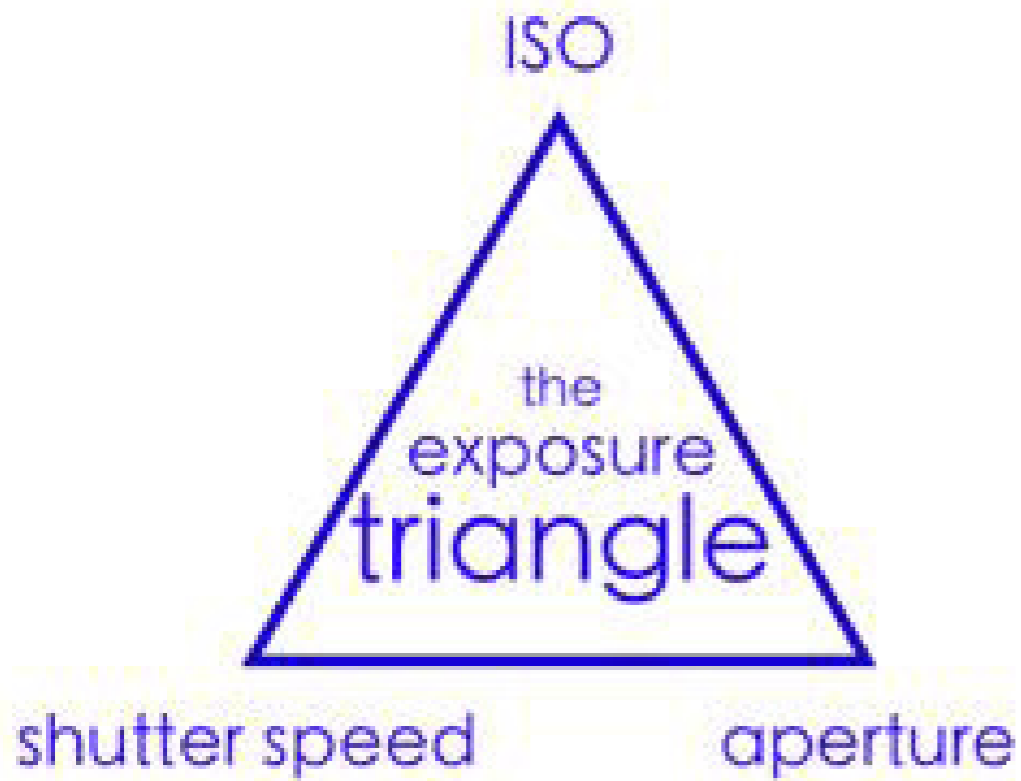
And you know what, chances are, it was a great camera! With very few exceptions, almost any camera you can buy today is a great camera, especially if you compare it to what was available just a few years ago.

But here is where the problem lies.

A camera is not a human brain.

And these customers didn't have a clue as to how a camera creates an image.





On top of that, camera manufacturers are **dumbing** down cameras, adding more **automatic** features, and marketing these features as freeing(you) the photographer from worrying about anything other than letting your creativity soar.

Well... that's all well and good- if you just want to take snapshots.

But that's not why you're here, is it?

The automation of some cameras has gotten to the point of being ridiculous. I mean... a smile detector of all things-

You're here because you don't want to take better snapshots; you want to create award-winning photographs.

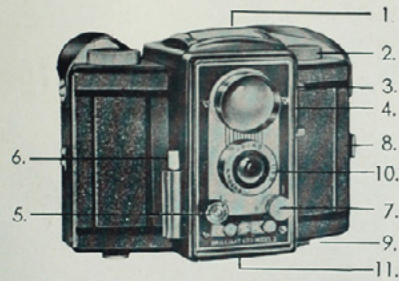
Let's start with a little bit of **terminology** and **nomenclature**.

Whoa! (I can hear you saying, "Those are some BIG words!") Don't be frightened.



ROSKO

Brilliant 620 Mod. II



- "ROSKO" Camera
1. Reflecting finder field lens.
 2. Film winding knob.
 3. Shoe for "ROSKO" flash-gun.
 4. Electric terminal for flash synchronization circuit.
 5. Diaphragm adjusting knob.
 6. Shutter release button.
 7. Shutter speed adjusting knob.
 8. Slide lock for back lid.
 9. Stud for releasing roll-film spool.
 10. Picture taking lens.
 11. Tripod bushing.

1. Reflect
2. Flash
3. Batter
4. Push B
5. Screws
6. Electri

LENS: "ROSKO" F 6.3 70 m/m
SHUTTER: Eveready B. I. (1/25 sec.)
DIAPHRAGM: 1 (f:6.3) 2 (f:8) 3 (f:11)
FILM: No. 620 rollfilm
PICTURE SIZE: 6x6 c/m (2½x2½") 12 pictures on one roll.

Even vintage cameras had terminology and nomenclature.

It's really quite simple. You can't create great photographs if you don't understand the settings on your camera.

Terminology: buzz words of an industry (in this case, cameras and photography).

Nomenclature: symbols, buttons and menus that indicate certain functions of an object (in this case a camera).

Today, we're going to discuss **ISO**.

(Just seeing it written on the page makes it appear mysterious and frightening.)

(Buzz word or nomenclature? Both really!)

ISO.... is an acronym! It stands for *International Standards Organization* (that part isn't important).

What is important to you is how ISO affects your ability to **create better photographs!**



For film cameras, the ISO is the sensitivity rating of the film. In the above picture, it's ISO 400. This number is then set on the camera, which tells the internal meter what type of film (light sensitivity) is going to be used.

One of the reasons ISO is so important is that this function is on virtually every camera: unless you have a “really” basic film camera.

Look at your camera, and find the ISO acronym.

For DSLR's - the button (to set the ISO) might be located on the exterior of the camera body. If it's not located there, it will be in the sub-menu.

For Point & Shoot cameras, it's generally located in a sub-menu.

You found it?

Now, what is ISO?

Simply put, it is a **unit of measurement**.



A high ISO number indicates high sensitivity to light and allows you to take photographs in low light situations.

Let's put this in terms we can all understand.

You're going on a picnic, and you wonder to yourself, "Do I need a coat?"

What do you do?

You look at a thermometer (a reference scale)! If the thermometer reads 90 F or 32 C (for my friends outside the United States), you know... nope! No coat! It's hot outside. Conversely, if the thermometer reads 45 F or 7 C, well- that's a little chilly and a coat is probably needed...

(Or perhaps you skip the picnic and go to a movie!)

So what does this have to do with ISO?



The ISO scale creates a benchmark (just like a thermometer), so that we can make a determination in our minds as to what we can expect as a result!

Plant this in your brain... A thermometer measures temperature on a scale we recognize and therefore we make a judgment based on a recognizable number.

ISO is like a thermometer, except it measures “sensitivity to light” according to a recognized scale.

“Fine! But what does that mean to me as a photographer?”

GOOD QUESTION!

See, you’re learning already.

LX3
f2.8
1/2000
iso 3200



LX7
f2.8
1/2000
iso 3200

Some digital cameras perform better than others at higher ISO ratings. While having the ability to use a high ISO in low light, doing so creates visible electronic noise in a photograph.

LX3
f2.8
1/50
iso 80



LX7
f2.8
1/50
iso 80

The lower the ISO setting on your digital camera, the less noise that will be generated in your photograph.

ISO 2500

A digital camera will create noise even when the photograph is created in a completely black environment.


ISO 250

Most modern cameras will show minimal noise between ISO 100 to 400. Above 400, it depends on your camera model as to how much noise is generated.

For film people, ISO is a **measurement of light sensitivity for a particular roll of film**. That's why we have 100-speed film, 400-speed film, and 800-speed film, etc. A higher ISO film will produce more grain in the final photograph.

For the digital folks, it's the electronic chip inside the camera that increases or decreases in sensitivity based on the ISO setting.

Why do they call the ISO measurement "speed" (the speed of the film)? I don't know. To confuse people I think.



The higher the ISO number, the more sensitive the film or digital sensor is to light, and conversely, the lower the ISO number the less sensitive to light.

What you do need to know is that **the higher the ISO number, the more sensitive the film or digital sensor is to light**, and conversely, **the lower the ISO number the less sensitive to light**. For film this number is fixed. For digital this number is a variable setting on your camera.

OK, so now you understand what ISO is and where to adjust it on your camera.

What does it mean to you?

I know you're probably thinking, **"I just want to take better pictures! Is this really necessary?"**

And the answer is yes. If you put your camera in Full Auto Mode, it's going to raise and lower that ISO number as it sees fit.

Your shiny digital camera is a modern wonder. There are many things going on inside of it when you snap the shutter.

Sure... you could put your camera on Auto Everything and snap away.



Sometimes you'll get a great photograph, and more often than not, the photos will suck pond water.

Remember, the camera is not a human brain. Therefore, in an Auto setting, it will create an image based on a set of parameters and nothing more. It can't make intelligent decisions.

IT CAN BE FOOLED!

Back to **ISO...**

I want you to hold your two hands out in front of you with your fingers spread wide.

Now slowly bring your hands together and let your fingers intertwine.





Look at the solid mass your fingers have formed. That's what it takes for your camera to create a photograph.

Each of your fingers represent an element of what is going on inside the camera to form the image.

ISO is one of those fingers.

All those elements are intertwined and interconnected. If you change one (for example the **ISO setting**), it affects all the other elements, and therefore, the final image.

If you would like to read more on how these intertwined relationships work, you should check out Photzy.com's [FREE Quick Guide to Metering & Exposure](#).

OK... so now I'm going to cut to the chase about **ISO**.



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What do you really need to know?

1. If you really want to Create photographs- take your camera off the Auto ISO Setting. You need to know what the ISO setting is when you're creating photographs.
2. Most digital cameras have an **ISO** range of 100-6400. A good rule of thumb is to use the lowest number possible for your picture-taking situation. I almost **never** set my **ISO** above 400. Why?

Because of Noise, and noise isn't good for our precious photographs. Noise can be dealt with in post-production. But isn't our goal to create the best original possible?

You can learn more about noise in [Photzy.com's "Metering & Exposure" Guide.](#)

Follow these general guidelines; in bright sun, or cloudy bright, or by a bright window; use **ISO** 100 to 200.

In cloudy, to cloudy dark, post-sunset, or pre-sunrise, or by a window with low indirect light; use **ISO** 200 to 400.

During night Shots, or on dark interiors; use **ISO** 400 to 800.

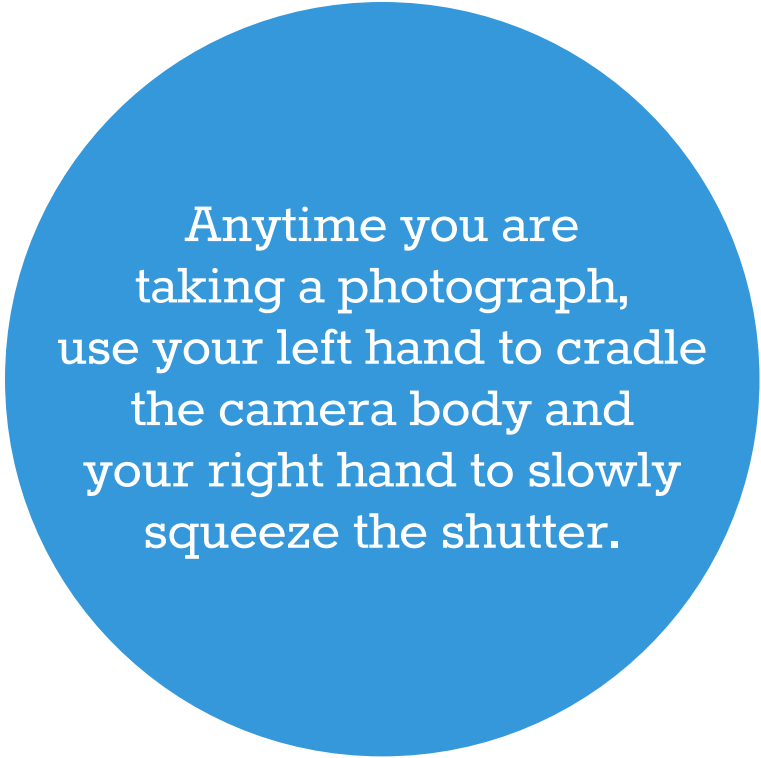
If it's darker than a coalmine or a cemetery in Transylvania at midnight; use an **ISO** above 800. (Of course if you own a professional level DSLR, say in the \$2500 USD or above category, you can definitely get away with higher ISO settings.

Test your camera at different ISO settings and see where the noise becomes apparent.)

Finally, a simple photo tip- Anytime you are taking a photograph, use your left hand to cradle the camera body and your right hand to slowly squeeze the shutter.

Press the camera to your face. Don't use LiveView. Brace your left elbow against your chest and upper stomach. This is good technique for supporting a camera; it will help you hold the camera steady. By developing good technique, you can use a lower ISO setting(even in lower lighting conditions).

Keep Shooting!



Anytime you are taking a photograph, use your left hand to cradle the camera body and your right hand to slowly squeeze the shutter.



Hey there!

Let's get real for a minute... Learning photography can be super challenging! But we're here to help you every step of the way! Here are 3 of our most useful (*and FREE!*) photography resources:



3 Free Photography Cheat Sheets

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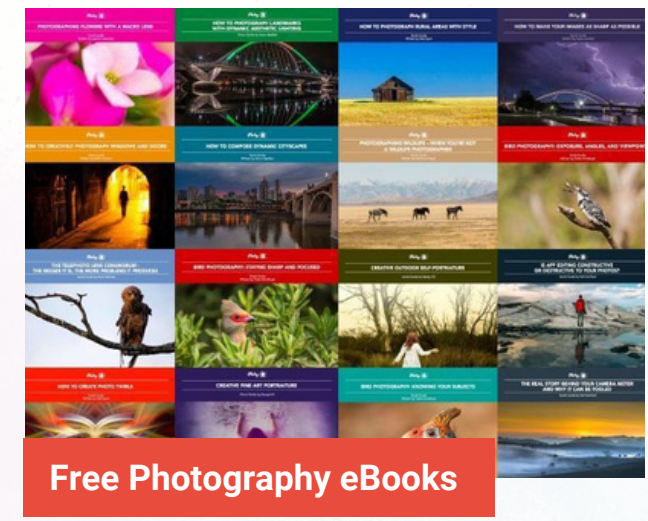
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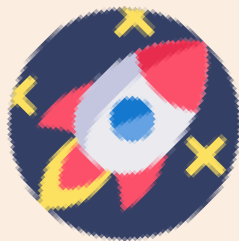
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