

## Topic 023

### Sunny Rule f/16

#### What is the Sunny f/16 Rule?

The Sunny 16 Rule is a way to meter for correct exposure during daylight without using the camera's meter.

The basic rule of thumb states that if you have a clear, sunny day and your aperture is at f/16, whatever ISO you are using, your shutter speed will be the reciprocal value of that ISO value (ISO X = 1/X seconds shutter speed)

So for example, if your ISO is 200 at f/16, then your shutter speed will be 1/200 seconds. If your ISO is 100, then your shutter speed will be 1/100 seconds.

Have you ever heard of the sunny 16 rule? It seems to have all but disappeared in most modern discussions of photography. As a matter of fact, it's one of many rules that photographers seem to have forgotten. That's a shame because the sunny 16 rule serves as a nice way to check your current exposure settings. Let's have a look at how it works.

Long before the time of digital cameras, photographers invented rules to help them navigate their camera's manual settings. Photographers had to carry light meters with them everywhere they went, and they were virtually lost without them. But if you didn't have time to take a light reading, or you didn't want to bother with carrying the equipment, you could resort to these rules. They were the next best thing.

And it's still pretty handy to know what manual mode settings to use with your camera.

#### How does the sunny 16 rule work?

The sunny 16 rule works like this:

- On a clear and sunny day, at an aperture of F/16, you will get a correct exposure if you use a shutter speed that's the inverse of the ISO speed you're using.
- The second part is probably the one that's confusing you (if any of it is). You have to know what ISO speed is in order to decipher what's going on. So allow me to explain.

The easiest way to explain is with an example. If it's a sunny day, and have your aperture set to F/16 and ISO set to 200, to correctly expose your image the shutter speed needs to be set to 1/200 (the inverse of the ISO number).

ISO speed is your camera's sensitivity to light. A bigger ISO speed means a larger sensitivity. If your camera is more sensitive to light, it takes less light to make a picture brighter. Most cameras start out at an ISO speed of 100, and some models go as high as ISO 1600. That's 16 times more

sensitive than the default, meaning you'd need to expose the camera to 16 times less light in order to get the same picture. I

The rule says you need to use the inverse of the ISO speed. That's interesting because as you increase your ISO speed, you effectively have to increase your shutter speed to compensate. At ISO 200, your camera is twice as sensitive to light, so you need to use a shutter speed of 1/200 of a second to let in less light and balance it out.

Let's use another example. Let's say it's a sunny day, and your camera is set to ISO 400. According to the sunny 16 rule, if you use an aperture of F/16 and a shutter speed of 1/400 s, you will have an evenly balanced image that is neither too bright nor too dark.

That's interesting, but it seems like the rule can only help us out when it's sunny.

- The snowy/sandy F/22 rule.
- The overcast F/8 rule.
- The slightly overcast F/11 rule.
- The heavy overcast F/5.6 rule.
- The sunset F/4 rule.



Depending on the weather, you can use a different version of the sunny 16 rule to get an accurate exposure.

Photo By [Jason Rogers](#)

But wait. It gets ever better than this. You don't always have to use F/16 on a sunny day or F/8 on an overcast day. These are merely starting places. As long as you compensate by adjusting your shutter speed along with your aperture, you can use any aperture you want under any lighting condition.

So, let's go back to the drawing board and imagine another situation. What if it's a bright sunny day, and there's a landscape you want to photograph? You could use F/16, but you want to use an aperture that really gets the entire depth of field in front of you. You really want to use F/22. What can you do?

**Start with a pair and move forward from there**

Let's also assume you've set your ISO to the minimum of 100. According to the sunny 16 rule, we've got a pair. You know that F/16 at shutter speed 1/100s will work. Now we simply need to find a similar pair by adjusting the aperture and balancing it out with the shutter speed.

Thankfully, apertures and shutter speeds work on a system of stops. **Every time you adjust your shutter speed up by one stop, your camera lets in exactly half as much light.** The same is true for apertures. Every time you adjust your aperture either up or down, your camera lets in or blocks out half as much light.

Well, that's not entirely true. Some cameras allow you to adjust the aperture and shutter speeds by half or quarter stops. But let's ignore that for now.

So all we really need to do is keep moving our aperture up one stop and our shutter speed down one stop until we get to F/22. Let's give that a try.

On my Nikon D40x, the next aperture stop up is F/18. The next shutter speed stop down is 1/80s.

It then goes to F/20, 1/60s

And finally, it arrives at F/22 shutter speed 1/50s. You'll notice that the shutter speed is exactly half of what it was at F/16. That makes sense because we've just closed the aperture by one half, so we need twice as much light to take the same picture.

You'll also notice that the D40x works on a system of quarter stops. It's a little different from the standard in photography, but the same rules apply. Every time you adjust the aperture up, you need to adjust the shutter speed down. Every time you adjust the aperture down, you need to increase the shutter speed by one stop. Keep doing this until you get to the aperture or shutter speed you want to use.

Even with all this expensive gear, the sunny 16 rule can still come in handy. Sure, you can use your camera's light meter, but it isn't always the most accurate. I like to do the sunny 16 calculations in my head so I at least know what the ballpark shutter speed and aperture values will be. If I'm close to those numbers, I'm usually pretty happy.



The sunny 16 rule is just a starting point. Use it come up with any aperture and shutter speed combination. In this case, the photographer picked a smaller aperture to capture a larger depth of field.

Photo By [Michael Kirwan](#)

The sunny 16 rule isn't an end all be all. I wouldn't allow it to supplant good old trial and error. Keep checking your LCDs and histograms. It's much more valuable than knowing the sunny 16 rule, the overcast F/8 rule, or whichever rule you need for a given day. There is no such thing as a "correct" exposure, after all. It really does come down to your own aesthetic sense. This is just a guide to help you get there.