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GET OUT THERE AND TAKE SOME DAMN PHOTOS!
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Guide To Metering Modes

With Printable Cheat Sheets



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PRINTABLE METERING MODE CHEAT SHEET

ZONE: Divides the scene into different zones and uses proprietary programming to determine which zone receives priority in the metering

Use For:

- All around shooting
- Landscapes
- Cityscapes
- Wide angle scenery
- Large Group Portraits

SPOT: Meters off the spot (1-5% at the center of the frame) and ignores everything else in the scene.

Use For:

- Portraits
- Close ups
- Macro work
- High Contrast Scenes (ex. bright sun behind your subject, concert photography)

AVERAGE: Meters off the entire scene with no preferences or exclusions given. Just a straight brightness average for the entire scene

Use For:

- Not recommended

CENTER WEIGHTED: Similar to zone in that the scene is divided into zones, but always gives priority to the center of the frame

Use For:

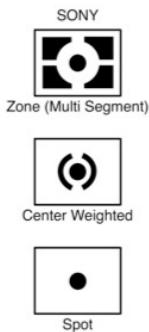
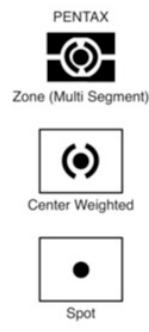
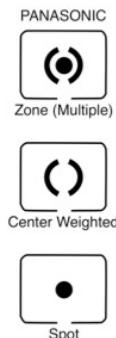
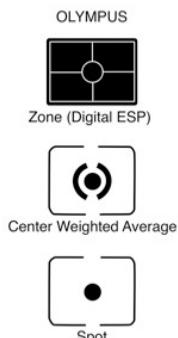
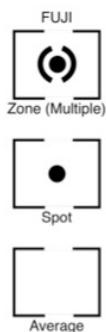
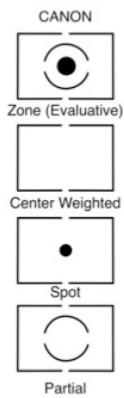
- All around shooting
- Landscapes
- Cityscapes
- Wide angle scenery
- Large Group Portraits

PARTIAL: Similar to spot, but with a larger (10-15% sized) spot at the center of the frame. Also ignores everything else in the scene.

Use For:

- Portraits
- Close ups
- Macro work
- High Contrast Scenes (ex. bright sun behind your subject, concert photography)

METERING MODES AND ICONS BY MANUFACTURER



A FEW NOTES ON THE CAMERA METER AND METERING MODES

- Changing the metering mode only changes how the camera meter evaluates the scene.
- It's important to remember that no matter what metering mode you choose, the camera meter is **ALWAYS** trying to achieve an average brightness of 50% for the area being metered.
- Changing the metering mode changes how much of the scene is evaluated to achieve the average brightness of 50%, and how that average is calculated.
- Every camera typically has three to four metering modes, and while the names will vary by manufacturer, they all are basically the same.

METERING MODES EXPLAINED

ZONE

Canon: Evaluative

Nikon: Matrix

Sony: Multi-Segment

Pentax: Multi-Segment

Olympus: Digital ESP metering (*who came up with that name???*)

Panasonic: Multiple

Fuji: Multi

Zone is typically the default metering mode on the camera. What Zone metering does is divide the entire scene up into different zones.

The number and shape of the zones varies from camera to camera, but regardless of the number of zones, the camera evaluates each zone as part of the averaging process.

Each camera maker has a proprietary way of calculating their average, but generally speaking the center zone, or the zone where the point of focus for is for that photo, is given greater weight in the averaging calculation.

Use Zone For:

- All around shooting
- Landscapes
- Cityscapes
- Wide angle scenery
- Large Group Portraits

CENTER WEIGHTED

Canon: Center Weighted Average

Nikon: Center Weighted

Sony: Center Weighted

Pentax: Center Weighted

Olympus: Center Weighted Average

Panasonic: Center Weighted

Fuji: N/A

Center weighted metering uses the same basic principle as Zone metering, in that a certain area is recognized as being more important than other areas.

The difference between center weighted and zone metering is that in zone metering, the camera can decide from shot to shot which zone is given priority.

With center weighted metering it's always the center of the photo that's calculated as the most important area of the photo, with the importance diminishing as you move away from the center towards the edge.

The advantage of Center Weighted over Zone is that it is very predictable, the calculation is consistent from shot to shot, always with preference given to the center.

Use Center Weighted For:

- All around shooting
- Landscapes
- Cityscapes
- Wide angle scenery
- Large Group Portraits

SPOT

ALL: Spot

Spot metering gives you the most control and precision over what in the scene is used to calculate the average.

Most, but not all cameras have spot metering*, so you'll have to check your camera to see if you have it.

Spot metering looks at one spot, and averages only that spot, completely ignoring everything else in the scene. The size of the spot varies from camera to camera, but it's typically an area between 1 and 5 percent of the entire scene.

On some cameras the spot is fixed in in the center of the frame (with the center focus point), while on other cameras the spot can move with the focus point**.

USE SPOT FOR:

- Portraits
- Close ups
- Macro work
- High Contrast Scenes (ex. bright sun behind your subject, concert photography)

*Some Canon Rebel Series cameras do not have spot metering. All other DSLRs that I've seen do.

**To find out if your camera links the spot metering point to your focus point, do a Google search for, "*your camera model link spot metering to focus point*", where "your camera model" is your actual camera model

PARTIAL

CANON: Partial

All Others: N/A

This is a metering mode unique to Canon cameras. It is very similar to spot metering. The only difference is the size of the area metered.

With Spot metering the area metered is typically between 1% and 5%. With Partial metering the area is between 10% and 15%. Also, Partial metering is always fixed at the center of the frame, and can not move with the focus point.

USE PARTIAL FOR:

- Portraits
- Close ups
- Macro work
- High Contrast Scenes (ex. bright sun behind your subject, concert photography)

AVERAGE

Fuji: Average

All Others: N/A

This mode is unique to Fuji cameras.

Average metering does no fancy slicing and dicing or spotting or anything else. Instead, Average metering takes a straight brightness average of the entire scene.

That's it, and to be honest, this is not a terribly useful metering mode, so if your camera does offer average, feel free to give it a try, but I wouldn't rely on it for everyday shooting.

USE AVERAGE FOR:

Not recommended for use.

How The Camera Meter Works

The camera meter is the brain inside your camera, and as the brain of the camera, it evaluates the scene and tells you how much light you need for a “correctly” exposed photo.

The meter communicates to us through the exposure indicator on the camera.

-3..2..1..0..1..2..3+
▲

(Most cameras show the graph, but some only show the positive/negative value)

What we want to understand is how the meter decides what amount of light is the “correct”* amount of light to obtain an exposure reading of 0 on the indicator.

To understand how this works, we need to take a step back from the camera and talk about brightness values.

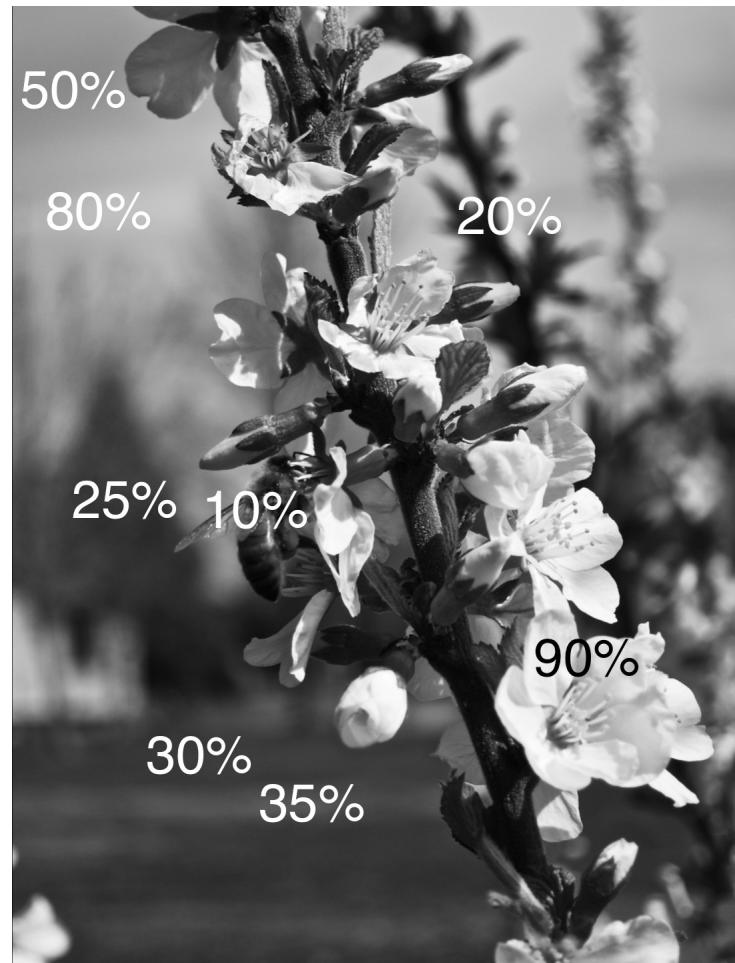
When your camera is pointed at a scene, the meter receives light from that scene, and as it receives that light, it's measuring the brightness of the entire scene.

If you look at the image at the left, you can see the examples of different brightness values across the image.

What the camera meter does is measure ALL the brightness values across the scene, and then it takes all those brightness values and it averages them.

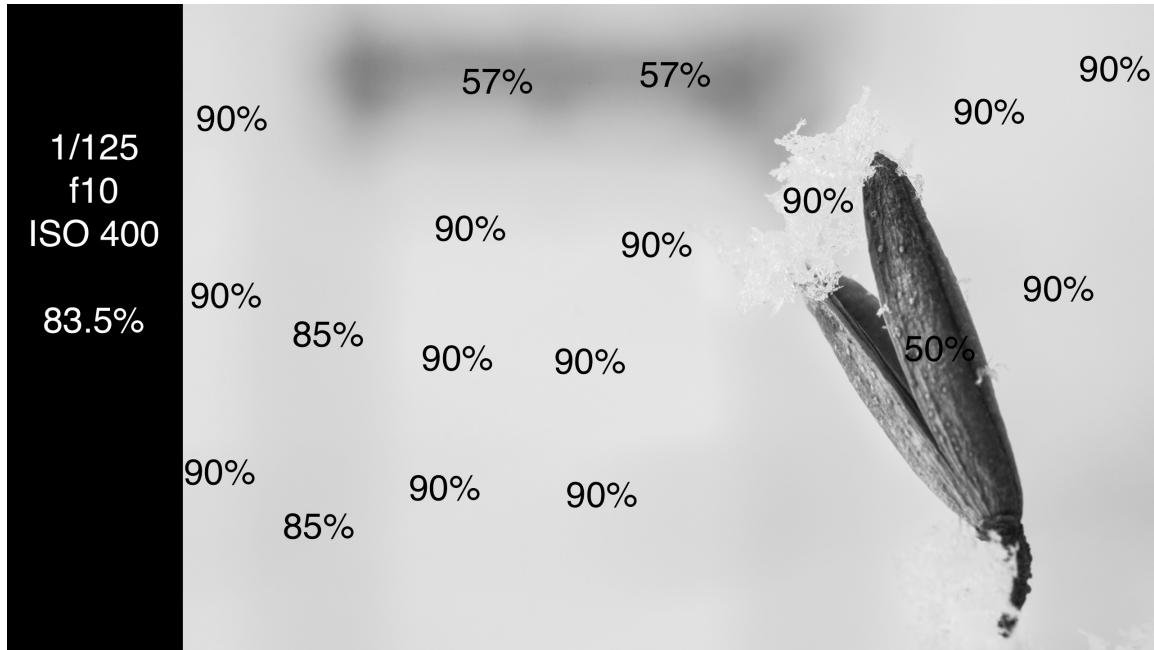
If we use the example values from the photo, we have eight values that total 340 which gives us an average of 42.5%

This is the average brightness of the entire scene, and this is an important number.



It's important because the goal for the camera meter is for the resulting photo to have an average brightness of 50%.

So what the meter does is it looks at the scene you are photographing, and based on your current ISO, Aperture and Shutter Speed settings, it calculates what the average brightness of the resulting photo will be.

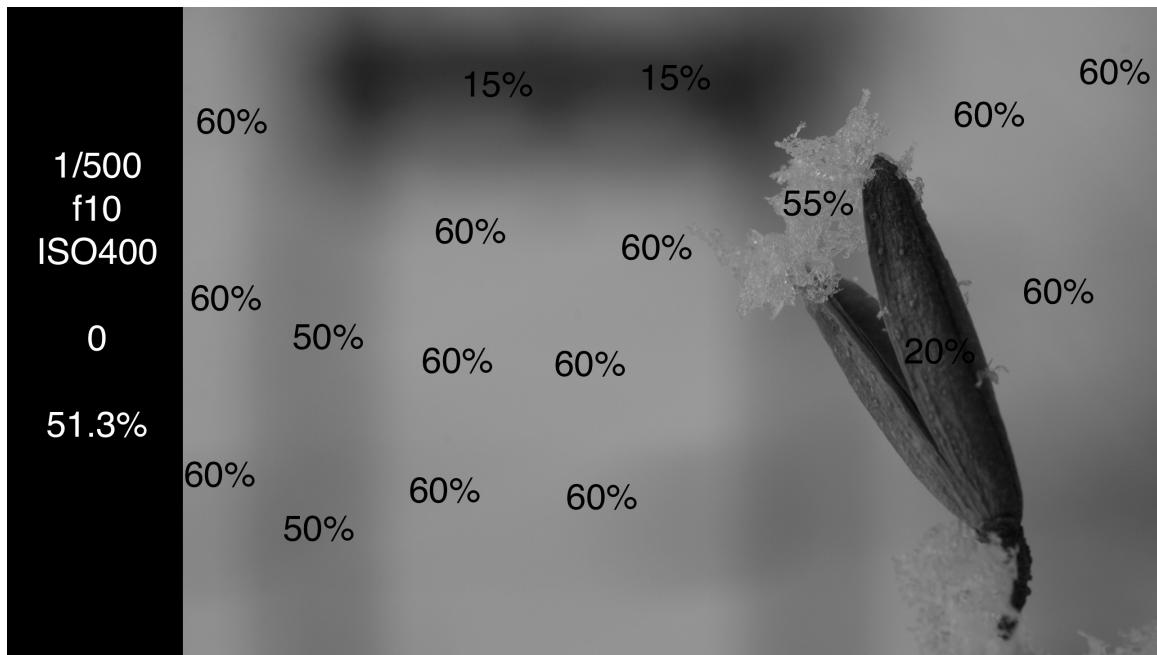


In the case of this photo, the settings were 1/125, f10 and ISO 400, and the average brightness of the scene was 83.5%

83.5% bright is much brighter than the 50% bright that the camera meter wants to get,

So with my settings at 1/125, f10 and ISO 400 the exposure indicator was telling me that the photo would be overexposed by +1 2/3 stops.

Now when I changed my settings so that the exposure indicator read 0, the settings were 1/500, f10 and ISO 400, and the resulting photo has an average brightness of 51.3%, which is almost exactly the 50% the camera meter aims for.



What this means is that the camera meter is kind of dumb.

The idea behind the meter averaging to 50% brightness is that average people taking average photos will be photographing scenes that will most likely have an average brightness of 50%.

It's not that going for 50% brightness is bad, in fact, it makes sense because for the camera meter to work it has to have some sort of target to aim to.

The issue is that like shooting in Auto mode sometimes gives you good results, but often fails, always trying to get an average brightness of 50% will sometimes give you good results, but will often fail you.

A perfect example of when this fails is the photo we've been looking at.



As I mentioned this was shot at 1/125, f10 and ISO 400, with the exposure indicator telling me I was over exposing by 1 and 2/3 stops.

In this photo I wanted the white snow to look bright white, I wanted good color and detail in the little flower, and I wanted detail and texture in the snow flakes resting on the flower.

A photo like this confuses the camera meter because it is not the average type of scene the camera meter expects.

The average brightness of this photo is well above 50%, but because it's a snow scene, I WANTED the average brightness of the photo to be above 50%.

What this means is that as a photographer, you have to know when you can trust the camera meter, and when you can't.

The good news is that it's fairly easy to figure out when you can or can't trust the camera meter.

Generally speaking, a scene that has a range of brightness, from dark to bright is going to be a situation where you can trust the camera meter.

Whereas a scene that has large areas that are very bright or very dark are likely to confuse your camera meter.

The important thing to remember is that it isn't what you are photographing, but what the average brightness of the scene you are photographing will be, and until you get it nailed down, you can print out page three of this guide and keep it in your bag as a quick reference.

Printable Exposure Adjustment Cheat Sheet

Exposure Adjustments For Scenes That Will Confuse The Camera Meter

SCENE	ADJUSTMENT
Snow scene/White subject filling frame	+2 Stops
Small subject against white/bright background	+2 Stops
Large subject against white/bright background	+1 Stops
Average scene w/ a range of brightness	0 Stops
Large subject against dark background	-1 Stops
Small subject against dark background	-2 Stops
Dark subject filling frame	-2 Stops

**All adjustments are approximate and will vary depending on the shooting situation.
Use your judgement to get the results that you want.*

Conclusion

Thank you very much for taking the time to read this guide. Selecting the right metering mode for the situation you're choosing in can make getting the shot you're looking for much easier, and I'm happy to have the opportunity to help you choose the metering mode that works best for you. If you'd like to learn more about how to use and take control of your camera so that you can reliably take photos that look exactly the way you want them to, check out my [Guide to Shooting in Manual Mode video course](#).

And then...

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