Benefits of Incident-Light Metering

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Published by Sekonic

Learn about how an incident-light meter works and how to interpret the data it supplies to fine-tune your exposures.

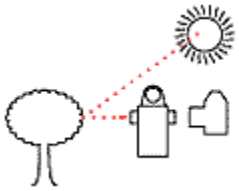
In order to accurately record any scene—whether it's a person's face, a piece of jewelry, or a landscape—you have to measure the amount of light that exists in a scene. There are two basic methods for measuring light: You can either take a reflected reading by measuring the light reflecting off of your subject, or you can take an incident reading by measuring the light as it falls on the subject. Both types of metering can produce precise exposures if you know how to interpret the data that your meter supplies. Many Sekonic meters give you both metering options—along with some sophisticated features not found in even the most advanced cameras with built-in meters.

The Neutral Gray Standard

All light meters, regardless of the type, are designed to measure light in a consistent way. Light meters presume all subjects are of average reflectance, or a neutral gray, often called "middle" gray because it falls in the middle of the zones between pure black and pure white. In the Zone system of exposure, this middle gray is known as Zone V.

The use of the neutral gray standard allows a reflected-light meter to render correct readings for "average" subjects in "average" lighting situations. Light meters, however, can't see subjects and interpret them the way you can. They measure only one thing: the intensity of light. That's fine if you're photographing a medium gray man in a medium gray suit on an average day, but not entirely accurate in other situations.

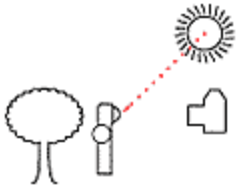
Using Reflected-Light Metering



Handheld reflected-light meters (including built-in camera meters) read the intensity of light reflecting off the subject. Because they measure the light after it hits the subject, however, they are affected by the reflectance of the subject's surfaces. Also, because most reflected readings are taken from the camera position, they generally take in a wide area that can include many different reflective surfaces and colors that can bias the meter reading. If you're photographing a person walking on a sandy beach on a bright day, for instance, the light reflecting off of the sand will overwhelm the reading and result in an underexposed image of the person.

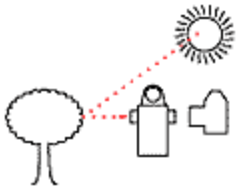
A reflected-light meter will take different readings for, say, a white cat and a black cat—but it will recommend an exposure that records both as the same middle gray. Similarly, a pristine, fresh-fallen snow and a black coal field will be recorded as the same color: medium gray. A reflected-light meter will also record a red apple and a green apple as the same tone, even though in reality they reflect vastly different amounts of light. You can improve the accuracy of your reflected readings by placing an 18% neutral gray test card in front of the important subject areas, but that's not always practical.

Advantages of Incident-Light Meters



With many scenes, a better alternative to reading the reflected light is to use an "incident" meter. Handheld incident meters read the intensity of light falling on the subject, and their readings are usually taken from the subject position. Because they are not affected by variances in subject color or reflectance, incident meters accurately record the amount of light falling on the subject. In the majority of situations, an incident reading is extremely accurate and records tones, colors, and values correctly.

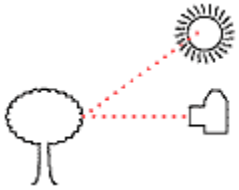
Advantages of Reflected-Light Spot Metering



Some reflected-light meters, known as "spot" meters, have the ability to take reflected-light readings of tiny areas of a subject from the camera position. Spot metering is an ideal solution in a lot of special situations where incident-light readings are impossible and normal reflected-light readings are unreliable. These can include metering subjects that are distant, backlit, highly reflective, or in motion, and metering scenes with an extreme brightness range.

Spot metering of an 18% gray midtone area allows you to make an exposure that will record detail, tonality, and color accurately. Once you get accustomed to "reading" scenes, you'll be able to tell which subject areas have an "average" reflectance, and even in the most contrasty situations, you'll be able to take spot readings from critical areas. By taking a spot reading of a tall green Saguaro cactus (a medium-toned subject) in the middle of a bright, sandy desert, for instance, you'll get an accurate reading of the important subject area. Spot meters also allow you to average readings from several brightness areas within a scene.

In-Camera Spot Meters versus Handheld Meters



Although a number of advanced SLRs offer spot-metering capability, the metering angle is directly related to the focal length of the camera lens in use. Every time the lens is changed, the effective spot-meter angle changes. With a normal lens in use, the spot-metering angle may be 15 degrees or more. A handheld 1-degree spot meter, on the other hand, allows the most selective measurement of distant subjects, as well as small areas in more complex scenes.

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