
Essential Knowledge for Basic Lighting

Lighting is at its essence a visual experience. To help develop your visual sensitivity to light, it is very helpful to know the vocabulary of light and some basic rules to the control and manipulation of light.

- Intensity of all artificial light drops off greatly as distance increases. A subject twice as far away (from the light source, *not* the meter and/or camera!) has the light falling upon it decrease 4x (1/4 as much light.) The amount of light is inversely proportional to the square of the distance. This is called the inverse square law. This can also be expressed as follows:

$$\text{change in intensity} = 1/(\text{change in light to subject distance})^2$$

Thus, a subject four times as far from the light source - say, eight feet instead of two - will receive only 1/16th of the light falling on the closer subject.

This makes no real difference if your light source is the sun, but for flash, artificial or fixed ambient light (in a studio, or house lights in your living room Christmas morning) the difference can be dramatic!

- **Basic Approach:** When possible, always examine existing light before adding light to a scene. If there is enough existing light, it can often capture a sense of mood more successfully than artificial light sources.
- When metering tungsten (incandescent light sources), over exposures are generally needed. With black and white films, this is due to the dip in sensitivity in that area of the spectrum. With both films and digital, it is the inverse square law that can cause underexposures: the light falls off from incandescent light sources so dramatically, that, like in a back lighting situation, the meter will give you a false reading that may not be sufficient for your subject. One solution is to be aware and not include the light source in your meter reading. The other solution is to bracket!
- Backlit subjects will almost always silhouette when shot with an averaging meter. Your options are as follows:
 - a. Shoot the silhouette.
 - b. Walk up to your subject and fill the frame with **ONLY** the subject. Lock in that meter reading (either by using manual exposure or auto exposure lock.) Walk back, recompose your picture and shoot.
 - c. Use fill flash.
- When approaching a scene to photograph, it can be helpful to squint discover the essential attributes of a lighting situation. Notice the parts that are dark and light and be aware of the underlying patterns of composition. Consistently looking with care leads to seeing.