

# Creative Lighting Techniques

The basic principles of lighting are relevant to all motion picture work whether commercial, industrial, documentary news or feature films. They apply equally to still, motion picture and video. While the principles are universal, the tools and techniques may differ greatly. In addition, the element of motion (composing and lighting in time) does introduce some significant differences and approaches.

**Essence of Lighting.** The most basic function of lighting is to reveal the subject. But it can do so in various ways: subtly, dramatically, frighteningly, voluptuously, humorously and more.

An important part of revealing the subject has to do with separation of the planes. Photography involves “translating” the three-dimensional world into two-dimensional images, with the inevitable loss of real depth, and often, separation of objects. A major purpose of lighting is to provide the illusion of depth, volume and roundness of objects. In other words, the illusion of a third dimension.

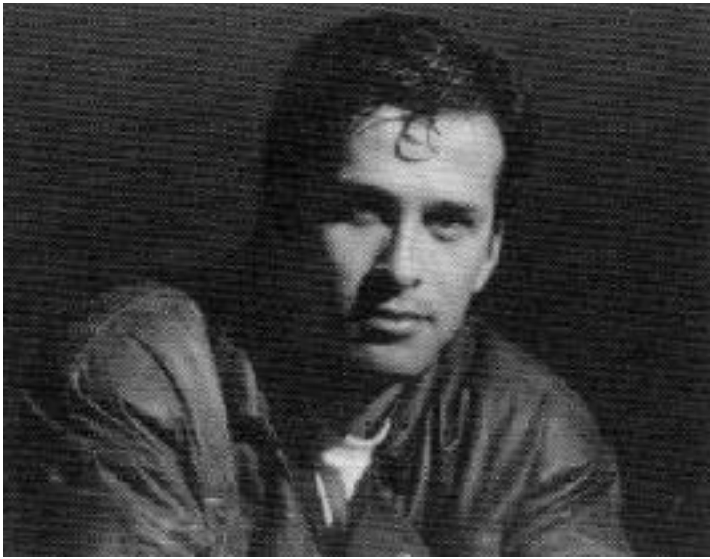
**Light Characteristics.** Every source has six basic characteristics. 1) Intensity. 2) Quality (such as hard or soft source). 3) Size of source (at the front where the light is emitted). 4) Color of light emitted. 5) Direction (in relation to subject and camera). 6) Distance (from subject, not camera). These characteristics are all interrelated. For example, size and distance will influence both intensity and quality.

**Terminology:** Don’t just call them “lights.” The wire that emits the light is called a **filament**. It is housed in a glass envelope with electrical contacts called a **lamp** (not a “bulb”). The lamp is held by a housing — which may include a reflector, a lens, and adjusting controls — called an **instrument**. Different kinds of instruments give off light with different qualities. A **spot** light gives off relatively **hard** light, distinctly directional, producing crisp, edged shadows. A **flood** light gives off relatively **soft** light, more diffuse, producing soft-edged, often indistinct shadows.

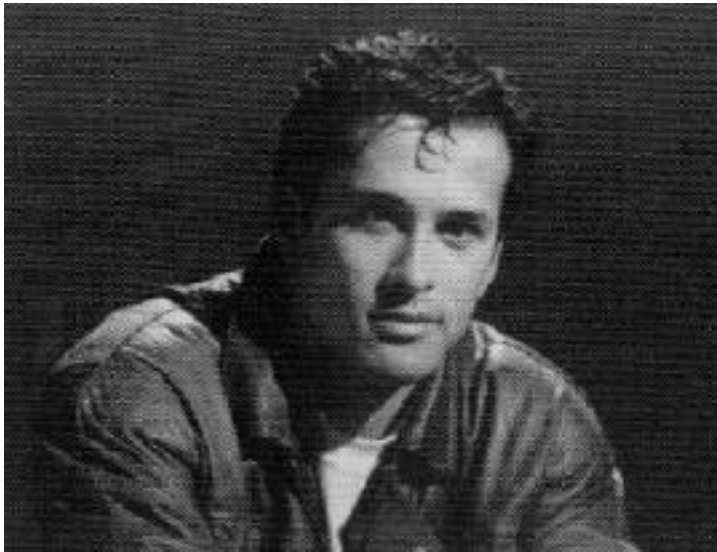
**3-Point Lighting.** Traditionally, there are four primary lighting positions, each of which has a function and a direction. This is called 3-point lighting, because the subject is illuminated from three different positions (the fourth position illuminates the background).

1. **Key:** main light, establishes general character of subject.
2. **Fill:** fills in shadows created by key, reduces contrast.
3. **Backlight:** outlines and separates subject from background.
4. **Background Light:** lights wall or area behind subject.

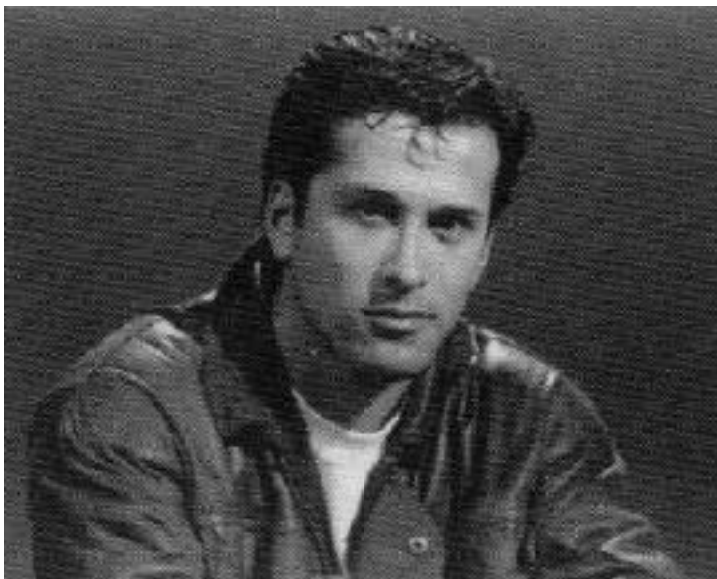
*Don’t put the key near the camera.* If your main light (or your only light) is close to the lens, you lose modeling, character and texture. Worse yet, foreground is washed out, middle ground has ugly shadows and distant background is probably black, Invariably this is where the news light and the amateur’s light is placed. As the key is moved away from the lens, interesting things begin to happen to shapes, textures, highlights and shadows. There’s no perfect position for all subjects or all situations, but frequently the key ends up somewhere around 45° to the side of the camera and 30° - 40° above it, when lighting people. Food, and many objects, on the other hand, often look irresistible when lit with a soft source from overhead and slightly behind. Like all lighting, learn to trust results (as seen on the screen)—not formulas.



key light only: deep shadows, subject looks flat against background



key and back light: back light separates subject from background



3 point: key, back and fill: Fill softens, but does not eliminate shadows cast by key, which are necessary to give the image 3 dimensional modeling. If the key/fill ratio is too even, the image looks flat.

*Key light—left or right.* It may seem unimportant, but faces keyed from the right have a subtly disquieting effect. Perhaps this is because for hundreds of years painters have positioned their canvases so that light comes over their left shoulder. This makes sense when you realize that artists, like most of us, are right handed and don't want to shadow their work. It may also be connected with our experience, in the West, of reading from left to right.

*Low angle key.* Light placed below a subject's eye level is commonly used for lighting monsters and villains. But low angle lighting loses its mysteriousness when the source is motivated and the subject appropriate.

*Fill light should be soft.* Hard fill light creates new shadows on subject and background which requires another fill light, which only makes more shadows. . . . If you don't have a softlight, bounce any light off a white card, a wall or whatever is handy and neutral in color.

*Best place for fill.* Usually, fill light goes on the opposite side of the camera from the key and fairly close to the lens. However, with certain faces and subjects, and especially using softlights, it may be more effective to move the fill around to the side.

*Be Careful With Backlight.* Backlight is, so to speak, the icing on the cake. It's one of the most useful "tools" we have, but its excessive, inappropriate, or unmotivated use can look very hoaky. In other words, don't be afraid of backlight, but don't use it automatically.

*Backlighting effects.* Backlighting is ideal for emphasizing steam, smoke, mist, fog, ice, dew drips, transparent and translucent objects. Keep the background as dark as possible to maximize the effect. As an only source, backlight can be very dramatic. Position backlights high enough to keep them out of the lens but not so high that they become top lights.

*Background light.* Background light illuminates all or part of the area behind the subject. Generally it shouldn't be too flat.

Lighting from an angle increases character, depth and texture. But try to motivate it by sources in the scene, such as windows and lamps. The more backlight you use, the less background image you may need. If you light your subject with softlights, under some circumstances there may be enough spill on the background. Don't let the B.G. go completely black, with rare exceptions, because you will lose the sense of depth, location and motion. If you want the mood to be somber or mysterious, use very little light in small areas of the background.

**Less than 3-point lighting.** You may be limited by the practicalities of your location and equipment., and unable to set up as many instruments as you would like. Background light is usually the first to go—the background will probably get some illumination by spill from your other lights anyway. Backlight can also usually be sacrificed. In most cases though, you will want to have both key and fill lights to create natural modeling of facial features. You may be able to achieve this with only a single instrument, as available light (window, overhead lighting) may provide the other source, though in this case you will need to place your subject and light carefully to achieve a proper key/fill balance.

The presence of a little existing fill light can also allow a two instrument setup where one spot instrument is used as a key light, and a flood is placed behind the subject as a combination background and back light. This can produce an image with more dramatic shadows on the foreground subject, and a contrasting pool of light in the background.

Finally, when you're looking for a unique effect, don't overlook single-source lighting. It may not look "natural," or may not give full illumination to facial features, but it can produce a variety of dramatic and even beautiful effects that would be destroyed by the introduction of additional lights. Again, careful placement is the key.

**Two extremes in light quality.** Although there are all kinds of sources, most tend to be either hardlight or softlight sources. Each is best for creating a particular look or mood for solving certain problems. And each has its disadvantages.

*Soft-Light.* Soft-Light is a self-contained bounce source, with no direct light reaching the subject. The quality can be both stark and voluptuous. Shadows tend to be soft edged and less dense, highlights larger and softer. It does some of its own filling when used as a key. It tends to look like daylight coming through a window. Softlights are sometimes referred to as "shadowless" lights. But they are only relatively shadowless or soft shadowed. The larger they are, or the more you use together, the closer they are to the subject and the smaller the object or set, the softer the shadows and highlights will be. Umbrella rigs can be considered soft lights.

*Soft light is not necessarily flat light.* Lighting is flat when the source is close to the lens. A softlight, or any light, at the camera will provide flat light. However, with the soft light between 45° and 90° away from the camera, the effect is dramatic.

*Hard Light.* The term refers to both the type of fixture and the effect it has on the subject. Since most hard light sources are relatively small with concentrated, direct light falling on the subject, the shadows they produce are quite sharp and dense. For the same reason, the highlights are small and intense. The general effect can be very dramatic.

Hard lights are easier to control—focusing, blocking spill light, and shading— than are soft light sources. They are also easier to keep out of the shot, can be used at greater distances from the subject, and require more fill light than do soft lights. Hard lights should not be used for overall fill illumination.

**Realism calls for natural lighting.** In conventional storytelling, good lighting, like good acting, should not call attention to itself. With few exceptions, it should seem to be motivated by actual or possible sources within the shot or the setting. It often takes a lot of skill and time to make artificial light look natural.

*Motivate the key.* The key, or main light, should look like it is coming from some natural source, such as a window, skylight, table lamp, overhead fluorescent, moonlight, firelight, streetlight and so forth. This is even more important if the source is included in the shot or in the sequence. Avoid a key direction that contradicts the light sources apparent in the scene (in a cave, with the entrance at left, the subject is illuminated from the right.) Even if the fictional “source” is not in the scene, there are some directions of light that will be logical and some illogical (there *could* be a window on the left in this room, but we know there’s only a door to the cellar on the right), depending on the nature of the space (real or fictional) that you are working in.

**Using available light.** Sometimes available light is just right. But there are a few things to check before depending on it—especially for video. 1) Enough for proper exposure? 2) Is the quality and mood right? 3) If it’s all overhead light, will the subject’s eyes be too dark? 4) Are there too many different color sources? 5) If it’s window light, will it change too much before you finish shooting? 6) If you’re scouting a location ahead of time, will it work if the weather changes when you shoot? 7) Is it necessary and possible to supplement or improve the available light with lights or reflectors?

**Keep subjects away from background.** It’s difficult to work with a subject too close to walls. The key light throws its shadow on the background. Without adequate space, it’s hard to use backlight or background light. You’ll be surprised how much simpler it is once you move subjects and furniture.

**Rehearse first.** If the scene is to be rehearsed before you shoot—then by all means, rehearse *before* you light. This will give you a chance to see where people move, how long they stay there, and in which direction they will look. It will help you plan the lighting scheme, and give the director and actors a chance to make changes *before* your lights are positioned.

**Lighting for movement.** Here are some general do’s and don’ts:

1) Observe movements during rehearsal or the actions of non-actors doing what they normally do.

2) Light areas that subjects will be moving into or through.

3) If action is uncontrollable and unpredictable, use lights as far away as possible to reduce the problem of subjects “burning up” as they approach lights and becoming too dark as they move away.

4) Don’t strive for absolute evenness of illumination. It’s difficult to accomplish and not even desirable. Not only does it look more natural if people move through somewhat darker areas, but it helps to convey the sense of movement. This is particularly important if movement is toward or away from the lens because two-dimensional media cancel out almost all sense of movement on this axis, except for size change and lighting changes.

5) Area where subjects pause (for example in a doorway) should be in shadow, silhouette, partial light or full light depending upon mood, realism and practical considerations.

6) After lights are roughed in, let actors or stand-ins walk through just for lights.

7) *Don’t pan the light.* Those who are new to video and film may try to cover a moving subject with a moving light. But this results in moving shadows of stationary objects. The effect is distracting and unnatural, unless used for a special lighting effect such as an actor moving a flashlight.

**Keep foreground objects dark.** The foreground should be darker than the middle ground if:

- 1) Objects are near edges or corners (otherwise the viewer's eye will be drawn out of the frame).
- 2) Objects are out of focus (too distracting if bright).

Scenes that are lighter toward the distance provide a greater sense of depth.

**Close one eye.** Study the scene with one eye. The loss of the third dimension in photography not only affects the final image but also our judgement of it prior to shooting. The best way to anticipate and appraise the two-dimensional image is to close one eye when choosing the angle and when evaluating the lighting.

**White reference.** When shooting primarily for TV, try to include an area of white that represents about 10% of the frame. This allows the automatic gain control mechanisms to do their job.

**Shadows are as important as light.** Shadows can simplify the composition, emphasize or exaggerate objects, leave something to the imagination, dramatize or stylize. Badly used, they can add to the confusion.

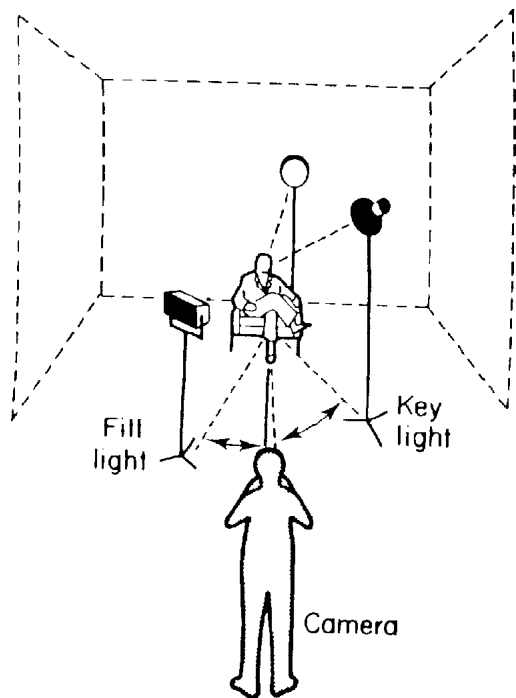
**Silhouettes.** Silhouettes are similar to shadows in that they emphasize form and suppress color, texture and detail. They simplify the composition and emphasize action. Small figures are lost on the television screen unless they are silhouetted.

**Glaring errors.** Glare, to some photographers, is what weeds are to home owners—something they spend a lot of time trying to get rid of. But, in fact, glare can add sparkle, emphasize shape and movement or create a dramatic scene. But too much can cause contrast problems. On exteriors, you can reduce it or eliminate it with a properly rotated Polaroid filter—if the surface isn't metallic. On interiors, shift your camera angle or diffuse the light. On small areas use dulling spray. If the glass in a picture frame reflects your lights back, just change the angle by placing a small object behind it.

**Flare.** Glare is something that happens to the subject but flare happens in the lens, on the filter or on the film. Glare can cause flare but so can the sun, and excessively bright sky or lights on the edges of the frame. It can be controlled with an extendible matte-box or, in tricky situations, with a flag. But, if you really like the effect—use it. Flare will be most pronounced in the darkest areas of the scene.

**Translating watts into amps.** If you plug in too many instruments into a circuit, you'll blow the fuse or circuit breaker. Lamps are measured in Watts, and circuits in Amps. Wattage = voltage X amperage. Since household current is 120 volts, divide the number of watts of each lamps by 120 to find out how many amps it will pull. 1000 Watt lamps pull 8.3 amps. Most household circuits have 15 amp fuses or breakers. Thus, if you're doing 3 point lighting, don't try to run all your lights from the outlets in one room. They're likely to be on the same circuit, and you're likely to blow a fuse. Always take extension cords with you when you need to do lighting. Use the cords to run at least one of your instruments from a distant room—the kitchen is usually on different circuits from bedrooms for example.

The field of lighting is vast and the preceding thoughts merely skimmed the surface. Perhaps, they will have helped to “shed some light” on a subject which is both a confusing and exciting mixture of science, draft and occasionally, even art.



SOFT SOURCE

HARD SOURCE

soft light: more diffuse rays—>  
lighter, softer shadows

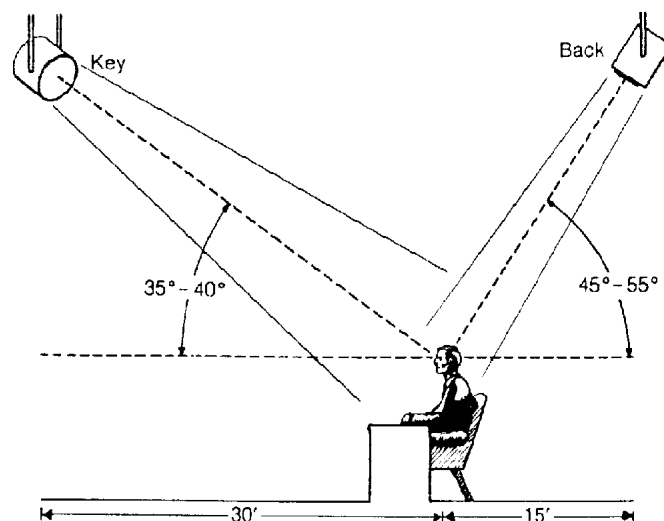
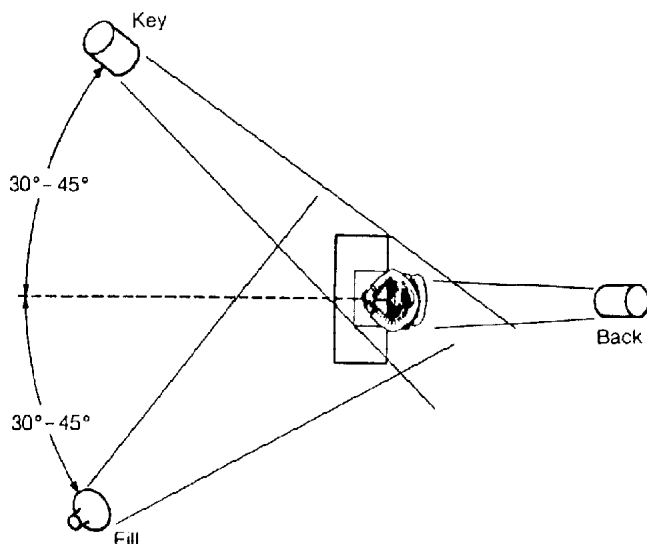
hard light: more direct rays—>  
darker, more hard edged shadows

In general, key = hard light, fill = soft light

The diagram shows a vertical rod on a surface. A 'SOFT SOURCE' (a lamp with a diffuser) is positioned to the left, casting a wide, light grey shadow to the right. A 'HARD SOURCE' (a candle) is positioned to the right, casting a narrow, dark shadow to the left.

In the field: Light intensity is adjusted by moving the instruments closer to or farther from the subject to achieve the proper key/fill ratio. Note the key light is approx. 35° elevated and 45° to the side, and the the fill is positioned closer to eye level and closer to the camera in comparison.

# 3 point lighting



In the studio: Instruments are hung on battens of more or less fixed height. The angles of key and fill are similar. Intensity is controlled by dimmer circuits.