

Portrait Studio Lighting

Fundamental lighting setup to illuminate

There is a big difference between illuminating a subject or lighting it.

The purpose of a portrait photograph is to create a representative image of a person. The task can be as simple as capturing a mirror-like image, clearly identifying the person, as is needed for a passport, for example. Or, it can be as complex as having to portrait and express an individual's personality as part of the picture. Creating both images is made easier with a fundamental understanding of how different lights are effectively used to illuminate model and background.

Studio Lights

In a typical portrait studio, we differentiate between five different sources of illumination to provide the most suitable lighting for people photography: key light, fill light, rim light, backlight and 'kickers'.

Key Light: The key light is the main source of illumination and is normally the strongest and largest light, casting harsh shadows. Common equipment for this light is a small soft box, an umbrella, a diffused reflector or a so-called 'beauty dish'.

Fill Light: The fill light reduces the deep, strong shadows created by the key light. This light is often a large soft box or umbrella set to 1/4 of the key-light strength, but a large reflector may be all that is needed to sufficiently illuminate key-light shadows.

Rim Light: One or more small but strong reflectors from the back create a rim of light on hair and clothing, which separates the model from the background and enhances the illusion of three dimensions.

Backlight: The backlight separates a dark subject area from a dark background by illuminating the background



fig.1 Starting with the key light and then adding the other light sources one by one slowly builds up the standard three-point lighting setup, used for this classic three-quarter portrait.

a) The **key light** (right) is the main source of illumination. A diffused reflector provides a sufficient amount of light from above the model to illuminate one side of the face, while casting undesirable shadows onto the other.



b) A large **fill light** (far right) throws light into the shadows, cast by the key light, without eliminating them. A soft box, set to 1/2 or 1/4 of the key-light's power, illuminates the dark side of the face without adding intolerable shadows of its own.



c) Pointing a small but strong reflector at the back of the model's shadow-side creates a seam of light, or **rim light**, (right) lifting it from the background, while adding brilliance to the picture and enhancing the illusion of a three-dimensional image.

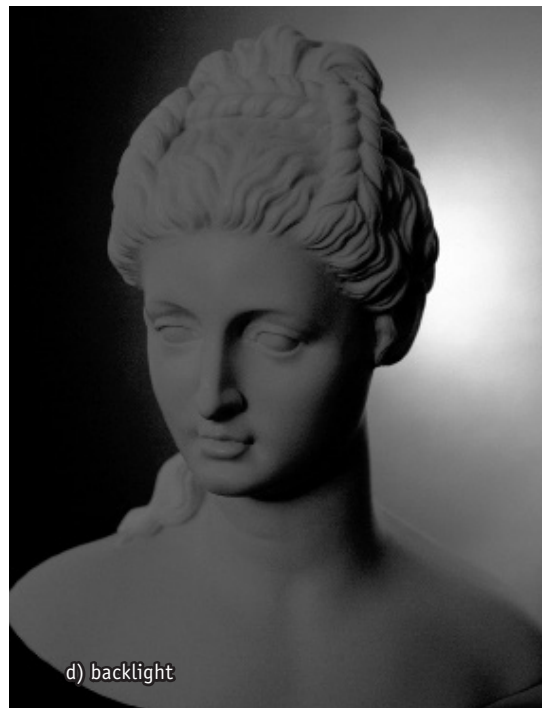
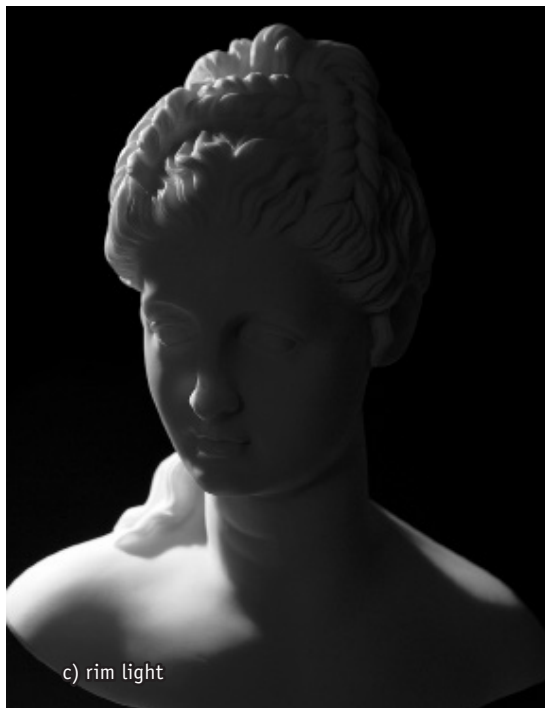




fig.2 Evaluating the four lights separately illustrates their individual contribution to the overall effect.

a) In this three-quarter portrait, the **key light** (far left) provides contrast and highlights the structure of the entire face without over-emphasizing skin imperfections. Start by positioning the key light 45° to your right and well above the model's head.

b) The **fill light** (left) is the soft opposite of the key light. Start by positioning it to your left and slightly above the model's eyes. To reduce the shadows cast by the fill light, move it closer to the camera or use a large reflector.



c) Using a **rim light** (far left) is similar to taking outdoor photographs against the sun. Start by positioning it as far and high as possible, and point it at the model's hair. Adjust until the model's contour is accentuated by a seam of light. Watch for disturbing hot spots on cheek and nose.



fig.3a-d (above) A dark-haired model, wearing dark clothes in front of a dark backdrop, can easily blend into the background, but three-point lighting can help to master this challenge by clearly separating all dark subject areas from each other.

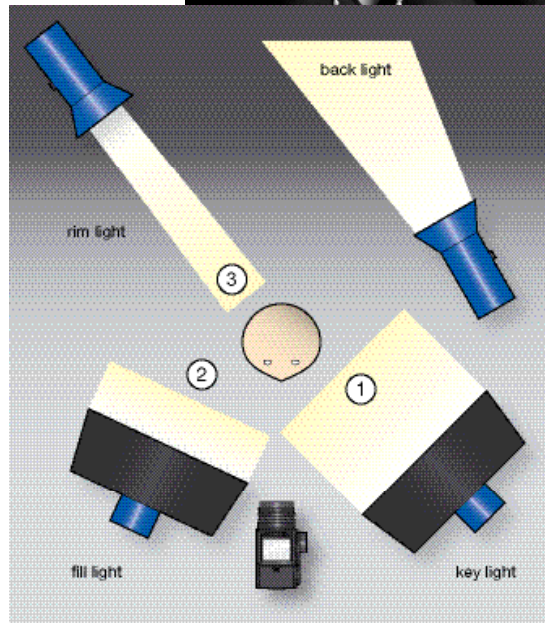


fig.4 (above) A three-point lighting setup is the ideal starting point for a frontal or classic three-quarter portrait, but it is also an effective way of providing successful lighting for product and table-top photography.

directly behind the subject with a small reflector of low to medium power.

Kicker: Kickers are small spotlight reflectors at various power settings, which are used to highlight important subject areas or to keep supporting shadow areas from disappearing into total darkness.

Three-Point Lighting

Many different and effective lighting setups for portrait photography are practiced. Nevertheless, it is sensible to start with three-point lighting (fig.4), which is easy to set up and provides the opportunity to explore more creative settings from there.

Most full-face portraits are taken with the head in a three-quarter position (see fig.1). When deciding which side of the face to feature, keep in mind that many people have a dominant eye, which is more open and appears bigger than the other. This difference is minimized if the less dominant eye is the closest to the camera. Positioning the key light on the same side as the visible ear is referred to as 'broad lighting'. If it is placed on the opposite side,

we refer to it as 'short lighting'. To choose between the two, one should always consider the features of the subject to be photographed. Short lighting makes a full face appear thinner and further minimizes the appearance of differently sized eyes. Broad lighting complements a thinner face and avoids potential reflections in eyeglasses. However, a single, small catchlight reflection in each eye itself is welcome, because it adds a spark of life to the subject (fig.3a).

The purpose of the fill light is to add detail to the shadows cast by the key light (fig.3b). This reduces the overall subject contrast and ensures that skin imperfections are not exaggerated. Selecting the largest fill light available and keeping it slightly above the model's eyes, close to the camera, prevents it from creating disturbing shadows itself. The amount of fill required depends on the subject and the desired effect. Typical lighting ratios between key and fill light range from 2:1 to 4:1. Too small and too strong of a fill light may add extra catchlights to the eyes, which some photographers find objectionable.

Rim and hair lights are used to illuminate the edges of the subject and produce a separate highlight, setting dark hair and clothing apart from the background (fig.3c). A



rim light is usually placed behind the subject and opposite to the key light, but hair lights can be anywhere behind the model. Nothing supports the illusion of three dimensions more than strategically positioned rim and hair lights.

An optional backlight, pointed at the background (fig.3d), surrounds the subject with a pleasing glow and helps to set its shadow areas apart from a dark background. Small additional spotlights, so-called kickers, can be used to add illumination to any part of the scene. Beyond these fundamental instructions, perfect lighting is not a mechanical textbook exercise but requires experience, patience, creativity and the willingness to experiment.

Specialty Lighting

Three-point-Lighting (top/right) is a very flexible and reliable lighting style and many photographers prefer it as a starting point at every portrait session from which the final and individual portrait lighting can efficiently be developed. Nevertheless, over their careers, they may develop their own representative styles, often as a variation of three-point lighting. Paramount or Beauty lighting (left) for example was developed by George Hurrell at Paramount studios during the 1930s and 40s. It is characterized by a very high main light, evenly illuminating the face. A variation of it is the so-called Butterfly lighting (top/left) where the shadow under the nose takes on the shape of a butterfly or moth. The famous Dutch painter Rembrandt favored to mimic a lighting style (top) as it may be created by a close-by large window, fully illuminating the short side of the face and casting a triangular-shaped light onto the broad side of the face. Examples can be found in many of his valuable paintings. I also suggest to start with three-point lighting and to develop your own style from there.

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