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GET OUT THERE AND TAKE SOME DAMN PHOTOS!
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Guide To Light



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Light Is Light

There's No Such Thing As Artificial Light

It doesn't matter the source, light is light, and all that really matters is understanding the qualities of light so that you can evaluate it and harness it to your purposes!

Qualities of Light

This is what's important. Light has four key qualities, and I'm included two additional qualities that are key to photography. That is:

- Type
- Intensity
- Direction
- Color Temperature
- Size
- Specularity

Let's get to it.

The Qualities Of Light

Type

There are two types of light sources.

- Continuous
- Instantaneous

A continuous light source is a source that is always on, continuously emitting light throughout the entirety of the time you are taking a photograph.

Meaning that for the entire time your shutter is open, light from that source is entering the camera and being recorded for the photo.

Continuous light sources are things like the sun, and LED light panels, lamps, headlights, street lamps, etc...

Instantaneous light sources exist for a very brief period of time. When you take a photograph using an instantaneous light source, you only record that light for that brief moment that it existed. During the rest of the duration of your photo, you get no additional light from that source.

Instantaneous light sources are typically strobes and speedlights specifically for photography purposes.

Intensity

The intensity refers to how bright or how powerful the light is.

Generally speaking, for a continuous light source you cannot change the intensity of the light coming from the source itself. (e.g. You can't make the sun brighter).

However, for continuous sources you can control the effective intensity of the light source by changing your ISO, Aperture and Shutter Speed settings to control exactly how much of the continuous light you record in your photo.

On the other hand, instantaneous light sources light flashes typically have a power setting that you can change, allowing you to make the source itself more or less bright.

In addition to changing the intensity on the flash itself, through the adjustment of your Aperture and ISO settings, you can also control how much of the flash's intensity is recorded for the photo.

However with instantaneous light sources, you cannot affect how much of that light you record through adjustment of the shutter speed. This is because of the brief existence of the light. For example, the duration of a flash might be something like 1/10,000 of a second.

Because that light exists for such a brief time, changing your shutter speed from say 1/250 of a second (a typical flash sync speed*) to 1/50 of a second just makes no difference.

The light is here and gone long before either one of those shutter speeds ends, so changing that will have no affect on the amount of light you record in a photo from a flash

[click here to learn more about flash sync speed](#)*

Direction

The direction the light is coming from has such a huge affect on the end look of a photo, and one of the best ways to get a better understanding of this is to do the the following:

- Get an egg or a ball or a small figurine and set it up on a table or other surface
- Turn off all the lights in the room you are in
- Turn on your phone's flashlight, and move the light all around the subject, studying how it looks as the light changes direction.

Light can obviously come from any point in space around a subject, however, the following are four common directionalities with examples:

Top Light



Light coming from above like this is not super flattering and often does not make for great photos.

It tends to put highlights where you don't want them, right on the top of a subject, and it also tends to throw shadows downwards, often obscuring parts of the subject that you may want lit.

That being said, top light can be good light, for example, this subject was lit with a light coming from mostly above (though not directly above):



The mood and feel I was going for in this was complimented by a top down light source.

Backlight



Backlight is great if you want a silhouette like this, but is awful if you do not want a silhouette.

This is because the difference in brightness between the light source and your subject is so great that it exceeds the camera's ability to maintain detail in the highlight and shadow areas of the image.

When you're trying to take a non-silhouette photo of a backlit subject, you often end up with photos that look like this:



By exposing for the subject, the background becomes entirely over exposed, and you get a ton of spill from the backlight washing out the subject.

Side Light



This direction is often quite flattering and desirable. It tends to create pleasing highlights and shadows on the subject, putting highlights into places we want to see detail in, and creating shadows that highlight textures and additional details of the subject.

Front Light



Light from this direction can make for good photos, but it tends to reduce texture on the subject and eliminate most of the shadows, creating flat, even light.

Keep in mind that no one direction is the “right” light. What’s important is understanding what the directionality will do to the look of your photo and then being able to use that to create photos that look the way you want them to look.

Color Temperature

Different light sources produce different wavelengths of light, giving that light different color casts.

And sometimes sources (like the sun) change color temperature over time. For instance, at noon on a cloudless day, the sun is typically clean “white” light, with little to no color cast at all.

However towards sunset, the light from the sun takes on a warmer cast due to the changes to how the light travels through the atmosphere. This gives it coloration from orange to all the other gorgeous colors of the sunset.

There are two things to consider with color temperature:

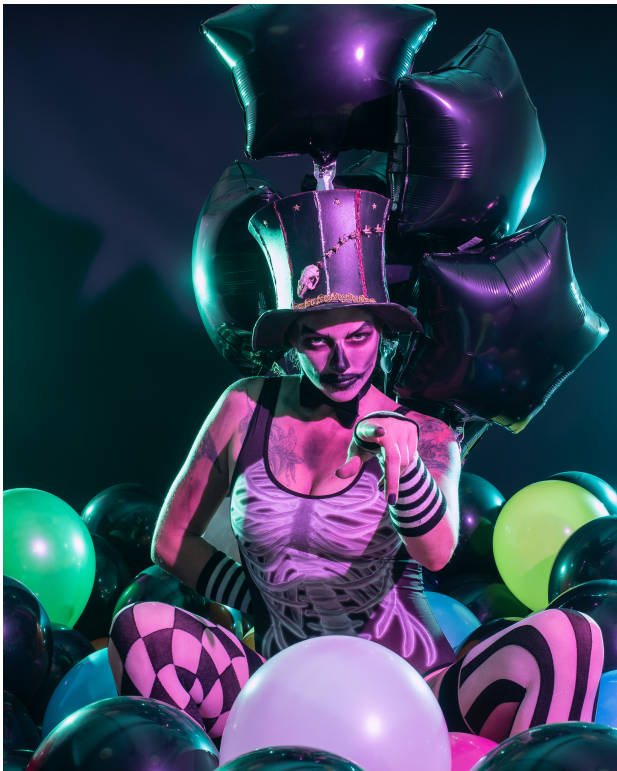
- Correcting for it to remove color casts entirely
- Using it to add mood, color and/or style to your photos.

Correcting for color temperature is exactly what the white balance function of your camera is for, which is pretty straightforward, but if you’re ever struggling to remove a color cast from a tricky light source, [check out this video here.](#)

Using color casts to add mood and atmosphere to your photos is amazing, and it can be as simple as incorporating a warmer or cooler temperature to your photos like these:



To using gels on flashes, creative white balance settings or color lens filters to add crazy colors to your photos like this:



There's no right or wrong way to use color in your photos!

Size

When you change the size of the light source, you dramatically change the quality of the light. This breaks down to “hard” and “soft” light.

Now most people confuse soft light with “diffused” light, which is sort of true, but also not true.

When you diffuse a light, you generally take a light source like a flash and pass it through an opaque material like that of an umbrella or a softbox.

And when you do that, what you are actually doing is changing the size of the light source by spreading it across the entirety of that material!

And changing the size of a light source changes how that light illuminates the subject.

With a small light source, you get what’s commonly referred to as “hard light”, which has the following qualities:

- Very dark shadows
- Very bright highlights
- Very abrupt transitions between highlight and shadow areas
- Less falloff/gradation of the light over the subject, creating higher contrast in the image

An example of hard light:



With a larger light source, you get what’s commonly referred to as “soft light”, which has the following qualities:

- Lighter shadows
- Less intense highlights
- Smooth transitions between highlight areas and shadow areas
- More falloff/gradation of light over the subject, reducing contrast in the image.

An example of soft light:



One of the very important things to remember about the size of the light source is that the size of the light itself isn't the determining factor as to whether or not the light will be hard or soft.

What matters is the size relative to the subject, which means the distance between the light and the subject is just as important.

Here's what I mean.

The sun has a diameter of over 864,000 miles, which is objectively huge.

But, the sun is also nearly 93 million miles from earth.

So when you're taking a photograph of something on earth in direct sun, you get very hard light because even though the sun is huge, it is also so far away from the subject that relative to the subject, the sun is tiny.

On the other hand, take a flash with a 48 inch / 1.2 meter umbrella that's positioned 3 feet / 1 meter from the subject.

That light is quite large relative to most subjects, and will produce a nice, soft light.

Then take same flash with umbrella and move it so that it's 6 inches / 15.2 cm from the subject, and though the umbrella is still 48 in / 1.2 m, because it's significantly closer to the subject, the light will be even softer than it was when it was positioned 3 feet / 1 meter from the subject.

Both hard and soft light can make for great photographs. Some photographers get caught in the soft light trap, thinking that everything must be lit with big, soft lights, but don't discount hard light, it can make for some amazing photos!

Specularity

Specularity is the glare of light reflecting off of a surface. Despite it being a “glare” or reflection, not all specularity is bad.

Some of it is, like reflections off a person’s eyeglasses, but specularity is good too, as it helps add definition and shape to a subject.

If you’re dealing with specularity you want to remove entirely, it’s all about the angle of the light.

If you get reflection off of eyeglasses, that’s light that’s reflecting at an angle that’s lining right up with your camera lens.

Eliminating that reflection is super easy. All you have to do is change any or all of the following:

- The angle of the light
- The angle of the camera
- The angle of the reflective surface

This typically takes a bit of experimentation and adjustment, but is actually a very easy fix.

Now sometimes you have good specularity, but it’s a little too harsh on the subject. This is also a pretty easy fix. For this you have 2 options:

- Change the size of the light source
- Pass the light through additional diffusion material

Here’s an example of some harsher specularity, look particularly at the right eye of the figure:



Glare like that comes from the intensity of the reflection, and when you have a smaller light source, the full intensity of that light is packed into the small area that the light is reflecting off of.

This makes the reflection brighter both because of the intensity of it, and because of the extreme contrast between the bright reflection and the dark shadows.

By making the light source larger, you spread the intensity of that light over a larger area, reducing the intensity of the reflection.



Additionally, by making that light larger, you allow more light to get into the shadows, which makes them brighter

With a specular highlight that is not as bright, and shadows that are brighter, you reduce the contrast, helping to make the highlight appear even less bright.

And, if you pass the light through an additional diffusion surface, it doubles of the effect, softening the highlight further, and evening out the light across the subject even more, further reducing the overall contrast in the image.



Qualities Of Light Quick Reference (Printable)

Intensity: How bright is the light source, and how can I control this light? (through your camera settings, and/or through the light's power settings)

Type:

Is this a continuous light? (Controllable through ISO, Aperture, and Shutter Speed)

Is this an instantaneous light? (Controllable through the light's power setting, as well as the ISO and Aperture settings)

Direction: What direction is the light coming from and how will it affect my photo? Common directionalities are:

Front (flat light)

Back (good for silhouettes but difficult otherwise)

Top (not great but can be good for certain moods)

Side (usually flattering and easy to work with)

Color Temperature:

What's the light source and can I identify the color temperature?

Do I want to use the color cast creatively or correct it?

Size: What's the size of this light, and can I modify it? (diffuse the light or remove diffusion, move it closer or farther from the subject)

Hard light: high contrast, dark shadows, bright highlights, abrupt transitions

Soft light: lower contrast, brighter shadows, less bright highlights, smooth transitions

Specularity: What do the reflections look like, and do I want to eliminate or diminish them?

Eliminate reflections by changing:

- The angle of the light
- The angle of the camera
- The angle of the reflective surface

Reduce glare by:

- Changing the size of the light source
- Passing the light through additional diffusion material

Conclusion

Understanding light is a huge step in improving your photography and creating great photographs and I am excited to help you achieve that.

One of the greatest steps you can take in better understanding light is to learn flash photography.

Whether or not you end up using flash regularly, working with and learning about flash will make you a better photographer.

The biggest reason this is true is because when you're working with flash, you're working with light you fully and completely control.

Because you control every aspect of the light, you have to learn to think about light in an entirely different way.

You have to think about every one of the qualities of light covered in this guide, and how you want to harness those qualities to create an image.

Having to do that changes your thinking, and as you learn, you start to see the light all around you differently, and you start to see how you can *create that light yourself!*

If you'd like to take the step to learn flash and truly understand and master light, check out my [Understanding Flash Photography Video Course](#).

The course will help you learn exactly how to use flash photography, and how to harness all of these qualities of light!

So go [check out the course](#), and then...

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