

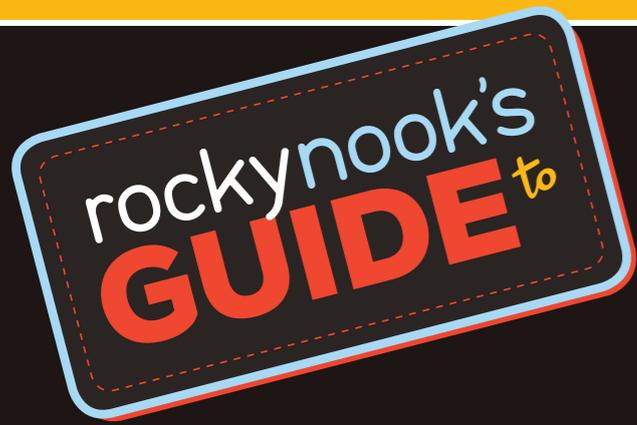


rockynook's  
**GUIDE** to

# Flash Terminology

A PRACTICAL LOOK AT SMALL FLASHES,  
DIFFUSERS, AND MORE!

DERRICK STORY



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## Introduction

Existing light photography is beautiful. But there are situations when you need to add more illumination than what's already there. An efficient way to do so is by turning on the flash.

Because these photo accessories are so prevalent, an entire vocabulary has emerged around them. This eBook strives to explain the language of flash in practical terms.

My goal is twofold. First, I want to help you become familiar with the anatomy and application of the common hot shoe flash. The hot shoe flash is actually quite useful once you get the hang of it. And second, I hope that you find our time together entertaining, as well as informative.

Nothing would make me happier than if you read this guide from virtual cover to cover. Then keep it handy on your favorite mobile device. Sure, your owner's manual defines "slow sync flash"... somewhere. But I'm hoping that my definition will be easier to understand, and more delightful. Let's jump in.



## Ambient Light

This is the light illuminating the scene before you showed up with your speedlights and LEDs. Sometimes we say “natural light” when we’re outdoors and setting up a shot beneath a tree. In your home, it would be the existing room lighting.

The phrase you might hear is, “I want to balance the flash output with the ambient lighting.” In such a situation, the photographer aims to blend the different light sources into a pleasing scene.

## Automatic Flash

Boy, this could mean a lot of things. Probably the most common usage is the setting on many consumer cameras that allows the device to determine when the flash fires, and when it does not. Some photographers will derogatorily refer to this as “idiot mode.” That’s not really fair (it’s certainly not very nice) because automatic flash does get it right about half the time.

Since it’s the default mode on many amateur cameras, you have to turn it off if you want to control when it fires. Look for the letter “A” paired up with the “Flash Bolt” icon.

The classic automatic flash gaffe happens at evening sporting events when you see hundreds of lights go off in the stands at a big moment in the contest. Since most built-in flashes only have a range of about eight feet, essentially what everyone is doing is illuminating the backsides of those sitting in front of them.

## Bounce Card

Any portable surface that’s reflective can serve as a bounce card. It could be a sheet of white cardboard or foam core. The concept is to “bounce” light off the surface and onto the subject. Typically you position the bounce card on the opposite side of the main light.

Photographers will call anything that reflects light a bounce card, or sometimes they will simply order their assistant to get that “white thingie over there.” “White thingie” is an acceptable alternate term for bounce card.

## Bounce Flash

Just to be clear, this term refers to a technique and not the device itself. Flash units do not bounce. But you can angle the flash head up toward the ceiling and “bounce” the light off the ceiling surface. This creates a much softer illumination of the subject compared to pointing the flash head directly at them.

There are a few caveats, however. The technique works best on ceilings that are around 10 feet high. Massive cathedral ceilings are black holes for bounce flash. The light will never make it back down from the rafters to the person being photographed. Also,



**Bounce card:** Canon flash with 3x5 bounce card and rubber band.



**Bounce flash:** This type of flash provides soft, diffused lighting. But the eyes can go dark unless you use a bounce card or other method to direct light into the face.

beware of colored ceilings. They will bathe your subject in a unique and often unflattering hue.

Former billiards champs make the best bounce flash photographers. Their skill at bank shots pays off handsomely when calculating the best angle for the flash head. Ideally, the light will land just in front of the subject. But unlike the game of pool, the margin for error is far more generous in bounce flash photography.

## Brolly

Because the term “photographic umbrella” is a mouthful, the nickname “brolly” has gained some traction. Admittedly, it’s not a particularly melodic word, but it’s economical in its use of syllables.

Outside of the photo studio, you can use brolly when referring to a collapsible rain umbrella. The term can be used fondly or with disdain, depending on the performance of the device during precipitation.



**Brolly:** A photo umbrella, or brolly, with flash.

## Catchlight

Eyes are good reflectors. The twinkle that sometimes results from using a flash is referred to as a catchlight. Generally speaking, we don’t think about this specular highlight reflected in the subject’s eyes. But the reality is that a bit of added sparkle creates a pleasing effect.



**Catchlight:** Light from both the flash and a window in the room are catchlights in the subject’s eyes.

I once heard a photographer refer to this as “obies.” I didn’t know what he was talking about. It’s probably safer to stick with “catchlight.”

## Cold Shoe

Photographers like to mount their speedlights on light stands, flexible tripods, and C-clamps for off-camera flash photography. If the mount doesn't have an electrical contact to trigger the flash, it's called a "cold shoe." (Spoiler alert: if it does have electrical contacts, it's called a hot shoe.)

In use, you slide the foot of the flash into the cold shoe (I just figured out how the term was coined!), then attach the tandem to anything with a tripod mount. The tripod screw goes into the threaded hole on the bottom of the cold shoe.

Yes, I know what you're thinking: this is the only time that a hole in the bottom of a shoe is a useful thing.

## Correction Filter

Those who are picky about balancing the color of the ambient lighting with the output from their flash can use correction filters to do so.

For example, if you want to "warm up" your flash output to better match the tungsten room lighting, you can place



**Cold shoe:** A cold shoe can attach a flash to a light stand, but it doesn't have any electrical contacts.



**Correction filter:** Correction filters for a flash.



**Diffuser:** Diffusers provide soft, even lighting for portraits. The closer the diffused light to the subject, the softer the light.

a CTO filter over the flash head. CTO stands for Color Temperature Orange, and it's a common correction filter.

Creatively, you could also use a CTO filter outside to give your subject a fake suntan. This is a less common application of correction filters, but noteworthy nonetheless.

## Diffuser

Photographers say that diffusers soften the light. This creates more consistent tonality with fewer hot spots. It's good for portraits.

One way to visualize this is to compare the light from a bright, sunny day to one with cloud cover. Think of those clouds as a giant diffuser. That's why slightly overcast days are good for people shots.



**Fill flash:** Using a flash outdoors helps balance the illumination of the subject with the ambient lighting.

Diffusers for flashes are typically made of translucent material. The larger the diffuser (and the closer it's placed to the subject), the softer the light. A diffuser could be a softbox, umbrella, or a plastic cover for the flash head.

Keep in mind that the improved quality of portrait light does come at a cost. You will usually lose between one and two stops of light when using a diffuser.

## Fill Flash

Portable flashes are often at their best when they're complementing the ambient light instead of serving as the only source of illumination. Photographers refer to this application as "fill flash."

A good example is when you're taking pictures outside on a bright day. The harsh sun produces unflattering hot spots and deep

shadows, which are not ideal for photographing your favorite auntie. If you point a flash directly at the subject, you can mitigate the contrasty light.

This example also highlights a shortcoming of auto flash. In auto flash mode, the camera reads the scene and determines that there's plenty of light available. The camera thinks that no flash is required when, in fact, forcing the flash to fire (in manual mode; also see "forced flash") will indeed improve the portrait substantially.

Fill flash is a godsend at outdoor summer weddings.

## Fill Light

Any light source that complements the ambient or main lighting can be referred to as a fill light. So, in addition to using a flash in this manner, a photographer could employ a reflector or LEDs. The goal of fill light is to augment the main light in a pleasing manner. Usually this involves illuminating the eyes or taming harsh shadows.

## FlashBender

A lighting accessory manufactured by Rogue Photographic Design that attaches to a speedlight for the purpose of modifying its output to create more pleasing highlights and shadows. Compared to most other modifiers, FlashBenders take up little space in the



**FlashBender:** A FlashBender attached to a strobe.



**FlashBender:** Here's the result of a simple FlashBender modifier creating a more pleasing light for portraits than straight flash.

camera bag yet provide a substantial reflective surface. The larger size also works as a handy reflector for closeup photography.

## Flash Bracket

This device attaches to your camera via its tripod socket and provides an easy way to elevate the flash above the lens. The flash and the camera require a dedicated extension cord to maintain communication when using this type of rig.

There are two big advantages to using a flash bracket. First, it eliminates red eye when photographing people in dimly lit rooms. Second, it lowers the shadows



**Flash bracket:** A flash bracket enables the photographer to move the flash off the camera to prevent red eye.

cast on walls so they don't appear in the frame. (Raise the flash, lower the shadows...) This is especially helpful for event photography where you don't have much say about where people stand.

Interestingly enough, you don't see flash brackets used as much today as in the past. Yes, they do have a bit of a station wagon look. But there's no denying their effectiveness or the added comfort they provide while holding your camera and flash over the course of a long event.

## Flash Exposure Compensation

Much in the same way that photographers want to adjust their exposure when shooting scenes with extreme highlights and shadows using exposure compensation, they can also tweak the output from their automated speedlight using flash exposure compensation.

If, for example, the flash is overexposing your subjects at an evening party, you can tame its output by setting the flash exposure compensation to -1 to instruct the unit to cut down its output by one stop of light. By the same token, when photographing brides in white wedding dresses, flashes tend to underexpose their faces. This is a case where you use flash exposure compensation to increase the light output by choosing a setting of +1 or even +1.5.

You usually have the option of making this adjustment via the camera menu or by using a control on the flash itself. It's worth practicing this before covering a big event. The ability to adjust the flash output quickly yields better illuminated shots and reduces time in post production.

## Flash Sync

When you take a picture using a flash, you want to make sure that the strobe fires while the shutter is open. This typically isn't a problem at slower shutter speeds, such as 1/15th and 1/30th of a second. But when you set a faster shutter speed, such as 1/500th of a second, the shutter may not be fully open when the flash fires. Flash sync is when the flash and the shutter are synchronized, allowing the flash to illuminate the subject while the shutter is fully open.

Many of today's cameras can synchronize with speeds as fast as 1/200th or 1/250th of a second. Refer to your owner's manual to ensure that you have the proper settings for flash photography.

## Flash Trigger

Normally, you'll hear the term "flash trigger" when a photographer is using off-camera lighting. Two components are involved here. First, there's the transmitter that's connected to the camera, most



**Flash trigger:**  
A transmitter (left)  
and receiver for a  
radio flash trigger.

commonly in its hot shoe. It sends out a signal when you take a picture. A receiver is attached to the flash unit. It receives the signal from the transmitter and fires the flash.

Using a trigger system allows the photographer to move the flash away from the camera yet still control it. Most trigger systems are wireless, and they communicate using radio frequencies or infrared signals.

## Forced Flash

Automated flash systems don't always fire when you want them to. A perfect example is when you're using fill flash outside on a bright day to help offset contrasty lighting. In these cases, you need to override the automated system to force the flash to fire.

On compact camera systems, you can change the flash setting from auto to forced flash. With DSLRs and hot shoe speedlights, you simply have to turn on the flash unit to press it into action. Either way, forcing the flash to fire can really improve your outdoor portraits.

## Gobo

Okay, so this isn't the prettiest term in our guide, but gobos do have their place in creative photography...depending on how you define them. One camp thinks of them as a sort of holiday cookie cutter that modifies the shape of the light emitted from the flash. (Yes, like holding a tin outline of Santa over the flash head.) A gobo can be any shape. And when one is placed over the flash head, it projects that pattern onto the subject or another area in the composition (such as the background).



**Gobo:** This type of gobo serves as a flag to keep stray light from the flash away from the camera lens.

But wait, there's more!

Another school of thought refers to gobo as a shortened term that stands for "goes between optics." In this case, gobo refers to a modifier that is placed between the flash and your camera. As you may have figured out, this would only work with off-camera flash. Sometimes these are called flags. The idea is to protect the lens from stray light emitted from the flash. Why they don't call them flash shades, I don't know.

In a more general sense, gobo has come to mean just about anything that modifies or redirects the light output. So much so, that if someone asks you to place a gobo over the fill light, you're probably going to have to ask for further clarification.

## Grid

You could argue that a grid is a type of gobo. Of course, that depends on your definition of a gobo. Fortunately, grids are easier to understand. A grid is a modifier that creates a more narrow beam of light that photographers use for dramatic effects.



**Grid:** This grid modifier narrows the radius of flash output for lighting specific parts of a scene.

If, for example, you want a beam of light to illuminate the subject without spilling over onto other parts of the scene, you could use a grid to focus the light. You can think of a grid as the opposite of a diffuser.



**Grid:** Here, the grid modifier was used to illuminate the subject on the photographer's left side without too much spillover to other areas of the composition.

Remember that cloudy-day metaphor discussed for the term “diffuser”? Well, if a narrow hole opened up in the clouds allowing a beam of light to illuminate a single house below, that would be an effect similar to that of a grid. It could also be a “snoot,” which creates a similar effect in a different way. We’ll get to that later.

## Guide Number

The standard definition for “guide number” is this: “the light output of an electronic flash is equal to the distance of the flash unit from the subject multiplied by the lens f/stop.”

Wait, come back!

The good news is that we’ve replaced old-fashioned math calculation with modern electronics. So you don’t have to calculate the proper aperture anymore using a guide number formula. Just switch your flash unit to TTL (Through The Lens metering).

Guide numbers are somewhat useful for understanding how powerful your flash is compared to other units. If, for example, your flash has a GN of 56, that means that it has more output than the other guy’s unit with its GN 40 rating.

Why? Because your flash requires you to stop down your aperture to f/5.6 to properly illuminate a subject 10 feet away using an ISO setting of 100 ( $GN = 10 \text{ feet} \times f/5.6 = 56$ ). Whereas your underpowered friend needs to open up his aperture to f/4 at ISO 100 at a distance of 10 feet ( $10 \times 4 = 40$ ). So your flash is brighter. He needs a bigger aperture because his flash isn’t as powerful.

There I go again with the numbers. Let’s just stick with the good news that we don’t have to calculate guide numbers with



**Hairlight:** When shooting dark-haired subjects against a dark background, you might want to add a highlight to help separate the two.

automated flashes to get good exposures. Put GNs in the same category as slide rules and sundials.

## Hair Light

After a while, it starts to feel like many of these terms are close relatives of one another. An example is “hair light.” Basically it means that the photographer has aimed a light source at the hair of the subject, providing additional illumination. This is particularly useful for dark-haired subjects against a dark background.

Many times photographers will use a grid or snoot to modify the flash to create that focused beam. But just about any light source can serve as a hair light. Outside, you could position the subject with their back to the sun so that the sun illuminates the hair

and shoulders, then use a fill light for their face. Yes, fill lights, hair lights—they all seem to end up at the same party.

## Hot Shoe

This is the connector on the top of a camera that provides both a mount for the flash and contacts for communication between the camera and the strobe. If you want to use TTL metering (Through The Lens), you'll need to check that the flash is compatible with your camera. An easy way to do that is to compare the metal contacts on the bottom of the flash and see if they line up with the contacts in the hot shoe. If they do, then you're in business.



**Hot shoe:** Shown here on top of the camera body. The electrical contacts allow the flash and camera to communicate.

The large contact in the center of the hot shoe is the standard sync. It causes the flash to fire when you press the shutter button. If you just need that, and don't require TTL metering, then a variety of flashes will work with your camera, even if they are a different brand.

## Light Stand

If you want to use off-camera flash but don't have an assistant to hold your speedlight, then a light stand is just what you need.

Unlike their three-legged cousin, the tripod, light stands have shorter legs and support less weight. Most stands have a tripod screw on the end of the center pole to make it easy to attach a flash. You can also purchase accessories, such as an adjustable bracket, that allow you to angle the flash up and down and attach various modifiers.



**Light stand:** Three legs, like a tripod, but designed much differently, and it holds less weight.

## Main Light

Photographers who use multi-light setups will establish one of the units as the main light and the others as fill lights. The main light serves as the brightest, since it's the primary light source. A typical approach for setting up lighting is to decide where the main light should be positioned, then build around it with fill lighting.



**Main light:** Here, the main light is coming from the photographer's right. Generally speaking, a fill light would be placed on the other side to soften the shadows.

In reality, any light source can be the main light, including the sun. If you're taking an outdoor portrait using a white wall to one side of the subject, the sun could be the main light, and the wall could be used as the fill.

## Manual Output

Some flash units allow you to disable the automatic mode and switch to manual output. This could be just one option—full power—or you may have multiple settings such as full, half, and quarter. The advantage of using manual settings is that the light output is the same every time. So you can “lock down” your camera and flash settings for very predictable results.



**Manual output:** You can see the scale to control the manual output on the back of this flash. It's currently set to 1/8th power.

## Off-Camera Flash

When you're using a speedlight for lighting, but it isn't mounted in the camera's hot shoe, that's off-camera flash. The biggest challenge with this approach is communication between the camera and light. How does it know when to fire? Most speedlights today accommodate wireless communication. This simplifies remote firing. If you want to go old school, you can use wired connectivity too.



**Off-camera flash:** When the flash is not mounted on the camera, you can better control the lighting. With this Canon setup, the DSLR's popup flash wirelessly triggers the off-camera Speedlite.

Off-camera flash is particularly helpful for outdoor portraits. You can place the flash near the subject at the precise angle you want, then stand back with the camera and use a flattering telephoto lens for the capture. It takes a little practice, but the results are often excellent.

## Overexposure

Flashes do this to us all the time. You're at a party, the lights are down, you want to capture a picture of your best friend coming off the dance floor...and bam! In the picture, she looks whiter than a ghost. That's overexposure. The flash is fooled by the darkened



**Overexposure:** The portrait in the upper-left corner is overexposed.

surroundings and is trying to illuminate the whole scene. Your dear friend becomes collateral damage in this miscalculation.

Overexposure is probably the single most cited reason for flash hatred. Fortunately, you can mitigate the damage by using Flash Exposure Compensation to dial down the output. Start with -1 to restore life to your friend.

## PC Terminal

Sometimes called a PC connector, this 1/8" electrical socket on the front of some enthusiast and pro cameras provides another method for syncing a flash. PC cords are relatively inexpensive, at least compared to other photo accessories, and they can be used for off-camera flash photography.

One note of caution, however: Some older flashes have high voltage output when synced via this method. Be sure to check the specs for your camera and the flash just to be safe.

That being said, if you have these connectors on your gear, carrying a PC cord can be a bit of insurance in case your primary method of syncing off-camera flash fails.



**PC terminal:** An Olympus OM-D E-M5 Mark II connected to a Sunpak 383 flash via a PC sync cord (male to male connector version).



**PC terminal:** On this OM-D mirrorless camera, the PC terminal is located in the upper right corner.

## Pop-Up Flash

Many consumer and enthusiast DSLRs have pop-up flashes that are convenient for adding a little fill light or serving as a main light in a pinch. They are part of the camera. So their biggest advantage is that you'll never lose a pop-up flash.



**Pop-up flash:** A pop-up flash on a Canon 70D.

## Red Eye

In certain dimmed environments, the flash can cause the subject's pupils to turn red. This happens when the flash is too close to the camera lens, causing an

unflattering reflection from inside the eye.

The best cure is to reposition the flash such that it fires up or to the side. A flash bracket is a great tool you can use to prevent this phenomenon.

Also, fortunately most image-editing programs have a tool that fixes red eye.

## Reflector

Any surface that's used to bounce light onto a photo subject is a reflector. There are commercial models that can be purchased from photo specialty stores. Or you can use your car's sun shade if

that's all you have handy at the moment.

## Rim Light

When the subject is illuminated from behind, creating a highlight on the shoulders and hair, that's a rim light. A common practice is to position the model with their back to the sun (creating the rim light), then use a flash or reflector to illuminate the face.



**Reflector:** A large reflector.



**Rim light:** Lighting from the back that's illuminating the arm and hair. You'll need a fill light on the front to make this kind of shot work.



**Ring light:** Ring lights are excellent for fashion photography and closeups. The illumination is very flattering.

## Ring Light

Used for both macro photography and fashion portraits, a ring light looks like a glowing doughnut that is attached to the outside of the lens barrel. The advantage of a ring light is that the output is circular and at the same axis as the lens. As a result, shadows are minimized. It also produces a distinctive look that's quite flattering. Not bad for a design that was originally created for dental work.



**Ring light:** A ring light attachment for a hot shoe flash.

## Second Curtain Flash

In normal flash photography, the flash fires at the beginning of the exposure. That's fine for normal pictures in reasonable conditions. But when you want to add a flash to a long exposure (such as a 30-second exposure), you'll probably want to change your settings to second curtain flash, which means that the flash fires near the end of the exposure, not the beginning.

Why would you care? Well, if there's any motion in your shot, it will be displayed naturally: flowing behind the subject. First curtain flash displays motion in front of the subject, which just looks weird.

## Slow Sync Flash

Imagine standing on a bluff overlooking the Golden Gate Bridge as it's illuminated at twilight. You think to yourself, "This is a great portrait opportunity." And indeed it is. So you position your mate in the composition, steady the camera with a tripod, and enable slow sync flash.

Wait! What's that last thing? "Slow sync flash" offers the best of both worlds. You capture the beautiful low-light composition of the bridge at twilight, and your mate is illuminated with the flash, rendering a beautiful, artistic portrait.

By setting your camera to slow sync flash, sometimes labeled as Night Portrait mode, you can dazzle your friends with your photographic prowess. Just remember to steady the camera with a tripod, because chances are good that the shutter will be open for a second or two.



**Slow sync flash:** By combining slow sync flash with a longish shutter speed, both the sunset and portrait are recorded.

## Snoot

This modifier usually looks like a cone that you place over the flash head to narrow the radius of light illuminating the subject. A snoot is great if you want a flash to light a person but not the surrounding environment.

## Softbox

When you need diffused light on a subject but you want to control its direction, a softbox is quite useful. This box-shaped modifier is lined with reflective material and has a translucent panel over the front.

The flash goes inside the softbox. When it fires, light bounces off and around the reflective surfaces, then is directed toward the subject through the front panel. The result is a diffused light that is

perfect for product photography. Softboxes may be used for portraits also, although some photographers don't like the square shape reflected in the subject's eyes.

## Specular Highlight

When you direct a flash at a shiny object—such as a car's chrome bumper—you may see a very bright reflection, usually in the shape of a dot. This is a specular highlight. Because they're so bright, specular highlights are difficult to tone down in post-production. If you decide you don't like that reflection in your shot, you should either reposition the flash or plan on using the cloning tool in Photoshop to remove it.

## Speedlight/Speedlite

Speedlight is often used as a generic term that's interchangeable with the word "flash." This is particularly common with authors writing eBooks about flash terminology, who become weary of using the word flash multiple times in every paragraph.

Canon refers to its flashes as "Speedlites." Nikon uses "Speedlight" for its family of strobes. This is a great trivia question when socializing with photographers.



**Softbox:** A softbox modifier for a hot shoe flash.



**Speedlight/Speedlite:** A Canon Speedlite.

## TTL Metering

“Through The Lens” (TTL) flash metering refers to a system where the light from the speedlight is measured inside the camera body after passing through the lens, then the camera determines, based on that measurement, what the flash power should be. This differs from older technology, where the strobes had a metering window on the device itself to manage auto flash mode. TTL metering is considered to be quite accurate.

## Umbrella

For those who don’t like the term “brolly,” an umbrella is a flash modifier that’s shaped like, well, an umbrella. The difference between umbrellas designed for photography and those used as rain protectors is that, in photography, the material is reflective and translucent. So you can bounce light off the umbrella toward the subject, or you can fire the flash through it.

Photographers choose umbrellas when they don’t care about light spill, as the modified light covers a wide area. If they want illumination that is more narrow but still soft, then a softbox can be used instead.

Umbrellas are affordable, easy to use, and effective. It’s often the first modifier studio photographers purchase.

## Underexposure

Subjects that appear dark as a result of not enough light reaching the camera sensor are said to be underexposed. You can compen-



**Underexposed:** The image on the bottom is underexposed.

sate for this by increasing exposure compensation (+1, +1.5, etc.), upping the ISO setting, slowing down the shutter, or opening up the aperture. Oh, and you can turn on the flash, too!

## Wireless Flash

When you move the flash off the camera and control its operation via radio waves or infrared signal, then it’s said to be in wireless mode. Most enthusiast flashes have this functionality built in, but check the specs to make sure it’s compatible with your camera. The safe way to go is purchase Canon flashes for Canon cameras, Nikon for Nikons, and on down the line.

## Author's Note

I wrote this e-book for two reasons. The first is because I want you to have a good understanding of basic flash terminology. I hope I've helped.

Here's the second reason, which I also feel strongly about. Rocky Nook is a terrific publisher of photo books with many great authors. And I want more people to be exposed to their catalog. I'm hoping that this e-book will help with that.

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—*Derrick Story*

# Rocky Nook's Guide to Flash Terminology: A Practical Look at Small Flashes, Diffusers, and More!

**Derrick Story**

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Layout and Design: Charlene Charles-Will

Rocky Nook, Inc.  
802 East Cota St., 3rd Floor  
Santa Barbara, CA 93103  
[www.rockynook.com](http://www.rockynook.com)

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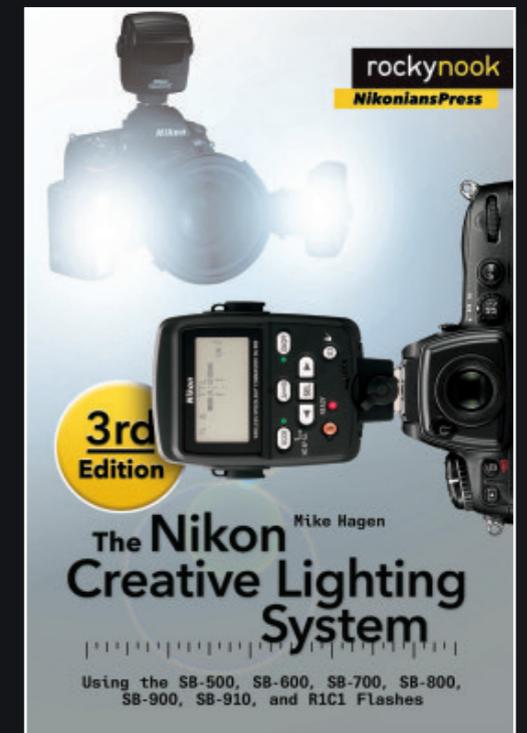
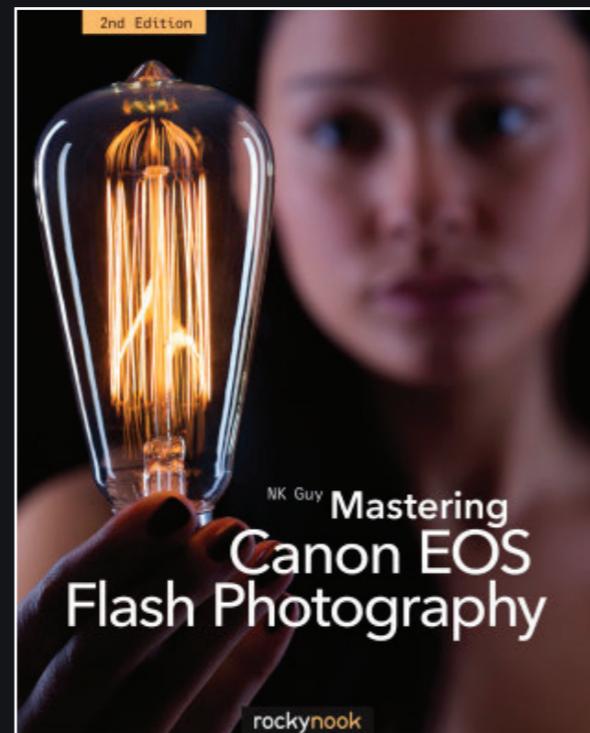
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