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lighting guide

α lighting and lighting accessories

the power of light

Photography. The literal meaning is "Writing" (graphy) with "light" (photo). When you press the shutter, you are capturing light. The more effectively you control that light, the better your photographs will be.

The pages within this guide are designed to provide examples and solutions to assist you in capturing light effectively in both natural and artificial light.

We will start with an overview of different types of natural light, lighting concepts and how you can make a dramatic difference to your photographs by adding artificial light in the form of a single flash. We will then explore using single and multiple wireless flash to further customize how light is captured.

Portraits, action, landscape, daytime, nighttime, close-ups and much more are here for you to discover, learn and hopefully implement.

capturing **light**

To capture a photograph, light has to be present in some shape or form. Used effectively, lighting can even become the subject or that supporting player that works behind the scenes elevating the quality of our image. When not used effectively, lighting will leave the image too light, too dark, blurry or even filled with poorly placed shadows.

Tackling light is one of the most challenging and rewarding things one will face as a photographer.

Learning how to include light effectively in our photographs will take them from simple snapshots to images you would be proud to share with anyone.

The following pages outline some considerations to think about when preparing for lighting and photography.

understanding **light**
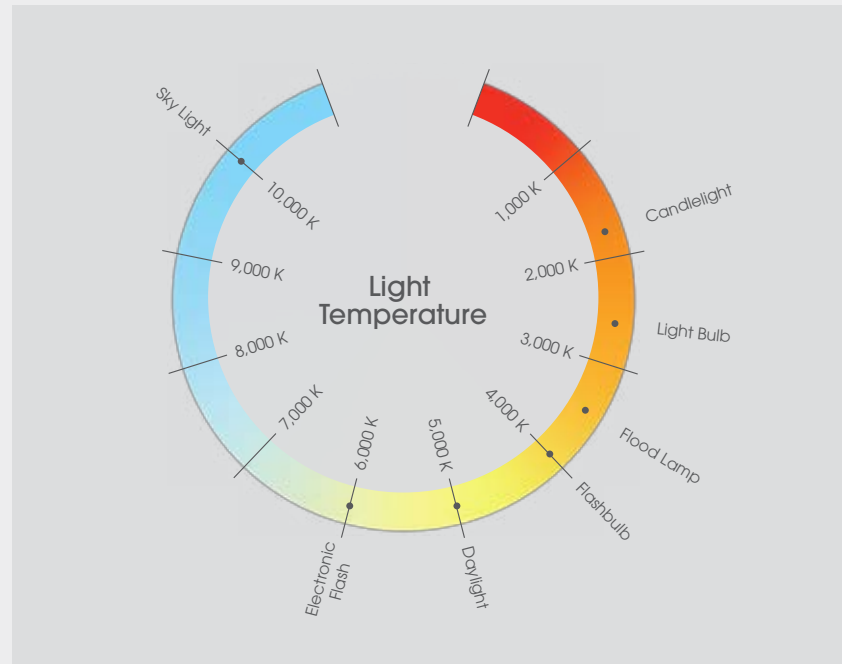
Light Temperature

Every light source—whether the sun, a candle or camera flash—emits a color temperature that can be measured in the Kelvin scale; named after physicist William Thomson, 1st Baron Kelvin.

In general, higher temperature objects (sun, sun through clouds) are referred to as cool, and contains more blue colors—while lower temperatures (candles and light bulbs) are referred to as warm, which contain more red and orange colors.

Objects absorb or reflect light rays to give us color. While our human eyes can recognize the changes in reflected color, digital cameras often "see" light differently. We may adapt to the yellow glow from a candle light on a white piece of paper, but your camera may see the paper as yellow. White Balance is a camera setting, which allows you to adjust the color tone to approximate what you see.

Direction of Light

We normally see objects in everyday life lit from above, whether the sun or a light fixture in the ceiling. Light can also come from different angles; front, side, left, right or even below. There are also times when multiple light sources can illuminate an object from different sides at the same time.

Pay close attention to where the light source is coming from as this can dramatically affect how your photograph will turn out. Further on in this guide we will discuss how to bounce light to get a natural look by lighting from above and adding multiple light sources to improve your image quality and open your creative freedom.


Time of Day

Consider the time of day when deciding to photograph outdoors. Distance, direction, quality/quantity of light will change throughout the course of the day and play an important role in how your images turn out.

Typically, the best time of day to shoot is sunrise or sunset. Also known as "The Golden Hours", they provide warmer color tones and long shadows which deliver a desirable photographic effect. "The Blue Hour" refers to dawn and dusk, one hour before sunrise and one hour after sunset. This is the time of day when the light is a clean, cold, blue in color and no shadows are cast.

At midday when the sun is highest, you often get dark shadows and your images can appear flat, lacking detail, color or dimension. On a cloudy day shadows will be diminished through diffusion, giving your photos a softer feel.
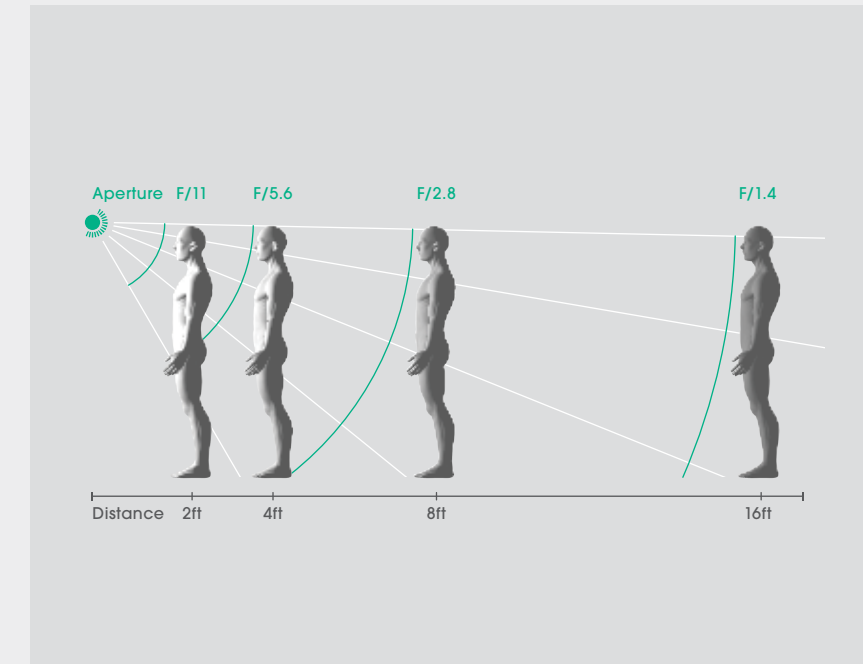
Distance of Light

It seems obvious to state, but light will be more powerful closer to the source and weaker farther away from it. In fact, an object that is twice the distance from a source of light will receive a quarter of the illumination. This is known as the "Inverse Square Law" which states; "The amount of light is inversely proportional to the square of the distance between the light source and subject".

In other words, a subject that is four feet from a light source will need four times as much light as a subject that is only two feet away. With this in mind, you will need to compensate for the changing amount of light by adjusting your camera's aperture, shutter speed or add more artificial lighting.

using
artificial light

Without light, we would not have photography. The lower the amount of light on our subject, the longer it will take to capture our photograph. While we sometimes can use this to our creative advantage, low levels of light make it very difficult to capture the subject without blur, especially if we are not using a tripod or other stabilizing device.

When natural light is diminished, we need to introduce artificial lighting to capture our image quickly. Lamps, streetlights, headlights are all examples of commonly seen artificial light. In photography, all of these can be used as well as adding artificial light with flash photography.

Many cameras have an on-camera flash. While an on-camera flash can be handy in a pinch, it limits our options due to the fact that the flash is attached at a single position to the camera, and has limited power. Adding an external flash provides us with a more powerful light with a flash head that can be aimed in multiple directions allowing us to position our light more creatively and effectively.

Some flashes can also be used wirelessly, which allows for even greater creative control. With wireless flash, our camera can trigger one or more flashes to fire, even when it is not attached to the camera. This allows us to add artificial lighting at a variety of locations and angles.

When we combine artificial and natural lighting, a new level of dynamic photography is achieved.
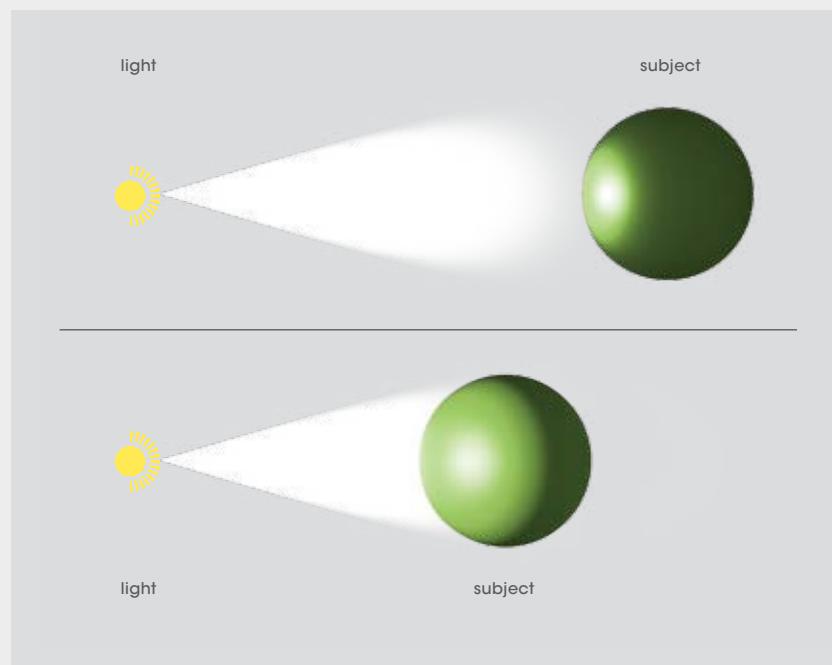
understanding artificial light
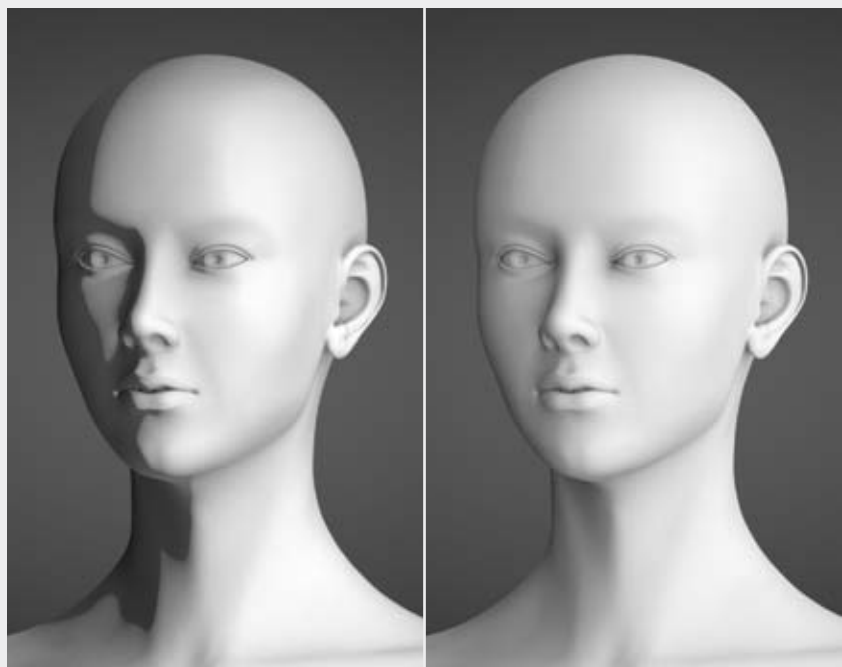
Hard vs. Soft

Hard light produces stark shadows and bright highlights. You will typically see hard light in your photographs when your main light source falls directly on your subject. A cloudless, midday sun produces hard light, as would a light-bulb or direct flash from a camera.

Soft light smooths hard lines and edges, reveals more shadow detail and produces softer highlights. You will typically see soft light in your photographs when your main light source is close to your subject, reflected off another surface or diffused. Sun hitting clouds first before hitting the subject, light from multiple sources and directions, light from a very large light source close to the subject or light passed through a diffuser are all examples of soft light.

Light Coverage

When using artificial light, you can control the amount of hard vs. soft light you want on your subject. If you move the subject further away, the light source becomes proportionally smaller, casting a harder light. If you move the subject closer, the light source becomes proportionally larger, casting a softer light.

Using a larger light source and diffusers have the same effect as moving your subject closer as the light source becomes proportionately larger. Conversely, using a smaller light source will have the same effect as moving your subject away from the light source.

Diffused Light

Light that has been scattered by first hitting a translucent property before hitting our subject is called "diffused light". Diffused light creates a soft light, which is more even, with softer shadows.

Diffusers can be anything from a window, white sheet, clouds or even an actual diffuser, which is commonly used in photography.
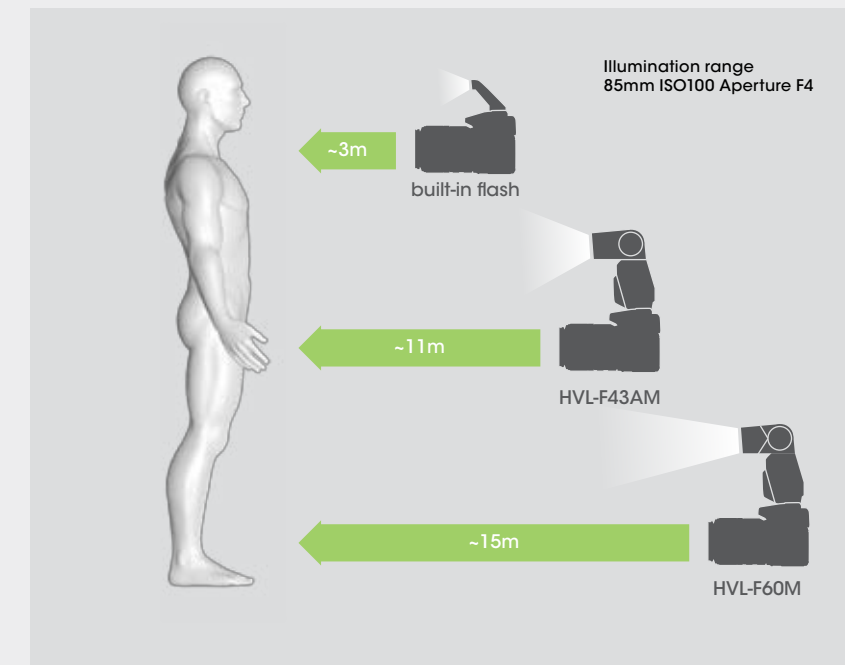
Guide Number (GN)

Every flash system has a guide number, or GN. It is used to measure the system's ability to illuminate the subject to be photographed. It's good to know the GN when deciding to buy a flash and how best to use it. The GN represents the output of illumination that is metered at a distance of 1 meter (3 feet) from the subject at ISO 100. The larger the GN, the larger the amount of illumination the flash produces.

The optimum aperture setting can be determined as:
(f-stop) = GN/(Illumination range between subject and flash in meters).

The optimum illumination range can be calculated as:
Illumination range (m) = GN/(f-stop)

For example, when the GN is 60 and the aperture is F4, the illumination range = 60/F4 = 15m (Approx.)

on-camera flash basics

An on-camera flash is either the built-in pop-up flash or an external flash that can be easily added to any camera that has a hot shoe.

On-camera flash provides the photographer with a more powerful light source and the ability to better control the direction of light being emitted.

On-camera flash works with most exposure modes. The most basic setting on the flash is **Auto**. Simply choose your camera mode then set your flash to **Auto**. The flash will use a built-in sensor to survey the surrounding light, fire the flash, and add additional light to properly illuminate the subject.

Adding flash when needed to your images adds control and creativity to your results. The Following are some common practices for using an on-camera flash.

using
bounce flash

Bounce flash should be used when trying to achieve a more natural look. We normally see the world with light from above, whether the sun or an overhead light fixture in the ceiling. Using the camera's built-in flash normally creates unnatural highlights on our subject or casts shadows on walls and surfaces behind our subject.

One of the simplest ways to cut back on harsh shadows in our photograph is to use a bounce flash.

Point the flash at any reflective surface instead of your subject. Ceilings, walls and white cards are commonly used. Light emitted from the flash will first hit the flat reflective object, which will then reflect diffused soft light onto the subject. This effectively makes our light source larger, which produces soft light and soft, more natural, shadows.
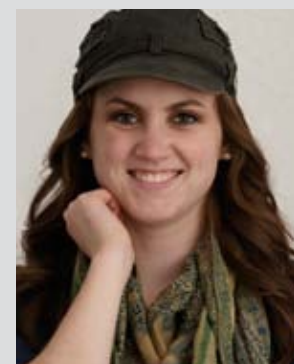
Bounce Sheet
Some flashes have a bounce sheet built into the camera. Bounce sheets make the subject look more vibrant. They also add catch lights in the subject's eyes. In this case, it also removed some of the shadows present under the subject's hat.
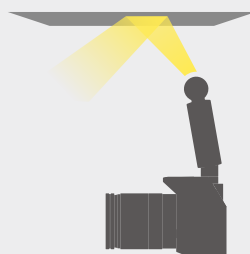
Without flash

With built-in camera flash

With external flash HVL-F20AM (bounce flash)

What is it?
Technique of reflecting light off of a nearby surface to change light direction and soften light source.

How to use it?
• Point your flash to any reflective surface instead of the subject

• The lighter the surface the more light will be diffused into your photo

• Experiment by bouncing your flash off of walls and different colored surfaces

Where to use it?
Use bounce flash to create more natural light and pleasing shadows.

Extras
Would you ever use direct flash? While used rarely, direct flash is effective when there is minimal ambient light and you do not have any items to bounce light off of. Photographing a subject with harsh shadows is better than not photographing the subject at all.

No Wall? No Ceiling? You can still bounce your flash when you do not have a wall or ceiling to work with. Simply use a large white surface instead. It can be a large card, reflector or even someone's white shirt.

quick shift bounce advantage

A unique feature—exclusive to Sony—Quick Shift Bounce* enables you to quickly pivot the flash head 180 degrees around the flash body. The head of the flash can also tilt forward for direct flash and backwards to bounce off surfaces behind you.

Not only does this give you faster creative control, it also allows you to set the same bounce flash position while holding your camera horizontally, as well as vertically.

Bouncing flash off walls and objects on either side of the camera is as easy as pivoting and pointing the flash to the object you want the light to bounce off.

*Quick Shift Bounce is available on the HVL-F43M, HVL-F58AM and HVL-F60M

Landscape: Direct Flash
Camera horizontal with flash pointed directly at the subject in the standard position.
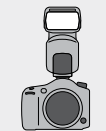
Landscape: Bounce Flash
Camera horizontal with flash tilted up 45 degrees to bounce light off the ceiling and further eliminate shadow and harsh light.

quick shift bounce

180° Left/Right   156° Front/Back   Proper orientation when shooting portrait compositions

What is it?
Exclusive range of motion offered on some Sony flashes that allows for the flash head to remain in proper orientation, regardless of camera position or angle.

How to use it?
Simply pivot the flash head around the body of the flash. You can move the camera horizontally or vertically and re-adjust the flash to keep your lighting results consistent.

Where to use it?
Use Quick Shift Bounce when you want to reposition the flash head or camera quickly and efficiently.

Taking it vertical
The great thing about Quick Shift Bounce is that it allows you to easily change and shoot in portrait orientation and still keep the light direction consistent. Previously that would have required a complicated bracket that attached to the camera. That functionality is now built into this type of flash.

Portrait: Direct Flash
Camera turned vertical with flash pointed directly at the subject in the standard position. The harsh shadow on the left is due to the flash now hitting the subject at an angle and not straight on.
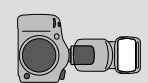
Portrait: Quick Shift Flash
Camera turned vertical with quick shift used so flash is still aimed directly at the subject, but is closer to the camera. By moving the Quick Shift Flash 90 degrees, we are able to tone down the harsh shadow behind the subject by positioning the flash closer to the camera, and in a more direct path to the subject.
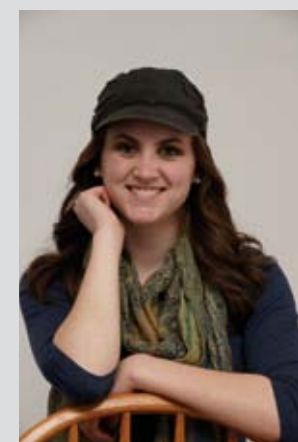
Portrait: Bounce
Camera turned vertical with flash tilted up 45 degrees to bounce light off the wall or reflective surface on the side. Bouncing Flash off of walls and objects on either side of the camera is as easy as pivoting and pointing the flash to the object you want to bounce off of. In this example, we pointed our flash to a wall on the right.

Portrait: Quick Shift Bounce
Camera turned vertical with quick shift used and flash tilted up 45 degrees to bounce light off the ceiling to further reduce shadows and harsh light.

16

17

fill **flash**

Fill flash is a technique used to brighten deep shadow areas, particularly when photographing backlit subjects. Fill flash is typically used outdoors on sunny days, though the technique is useful any time the background is significantly brighter than the subject, or your subject has harsh shadows caused by an overhead light (like the sun).

To use fill flash, the aperture and shutter speed are adjusted to correctly expose the background, and the flash is fired to lighten the foreground.

In the first sample image (1) a tree shades our subject, but the rocks behind her are directly in the sunlight. Changing our camera settings to properly expose for our subject makes the rocks behind her overexposed.

The second image (2) is the same scene, but this time we have adjusted our exposure for the rocks in the background. Now our subject standing in the shade of the tree is grossly underexposed.

Since we now have the rocks properly exposed, all we have to do is add flash. We used the same settings for the final image as used in shot (2), the only difference is that the flash fired.

We were able to use the natural light to illuminate our background as well as use artificial fill flash to illuminate our subject in the foreground.

Set it up in advance.
When photographing a person, do a test shot before the model is in the scene to get the exposure spot-on in advance.

1. Over-exposed background
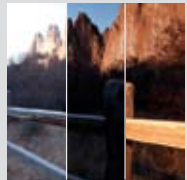
2. Under-exposed subject

Properly exposed with fill flash on subject

F5.6, 1/125 SEC, ISO 100
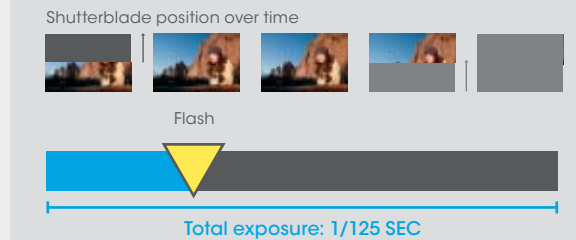
What is it?
Technique used to add light to shadows to balance exposure between the foreground and background.

How to use it?
Fill flash works with any flash in any camera mode. For a flash built into a camera, make sure you are at least 10ft or closer to the item you want to illuminate.

Where to use it?
• To remove unwanted shadows from your subject

• Balance lighting by adjusting for an overexposed background and use fill flash to illuminate an underexposed foreground

• Landscapes where you want to illuminate the foreground

Split-second Breakdown

Shutterblade position over time

Flash

Total exposure: 1/125 SEC

high speed sync (HSS)

A sunny day gives us the ability to take nice fast photos, but chances are we might also have to deal with shadows and shade and need to use a fill flash. We may also want to maintain a nice defocused background at the same time.

In normal fill flash mode we would be limited to a shutter speed of 1/160 to 1/250 sec. depending on our camera, in turn, this would limit our aperture which would be forced to a high f-stop and result in not much of a defocused background.

In normal flash photography, an instantaneous flash illuminates the subject when the shutter is fully open. At shutter speeds up to 1/160 or 1/250 sec. the first curtain shutter opens to completely reveal the sensor before the second curtain starts moving. When the sensor is fully exposed your flash can fire to illuminate your subject. However, in faster shutter speeds the second curtain starts moving while the first curtain is still in motion. If your fill flash had to fire, only a portion of your image would be illuminated.

In "High-Speed Synchronization" mode (HSS), the flash will emit multi-bursts of light, illuminating each sliver of sensor exposed while high-speed shutters are open as slits. This enables flash synchronization up to 1/4000 sec. high-speed shutters.
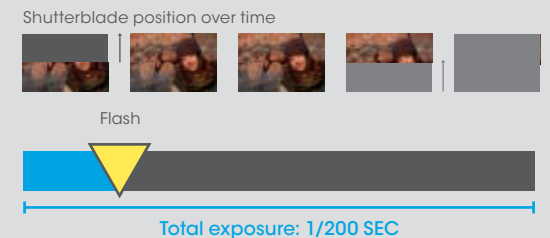
▶ **Standard Sync Fill Flash**


F14, 1/200 SEC, ISO 160

▶ **High Speed Sync Fill Flash**

F2.8, 1/4000 SEC, ISO 160

What is it?
Allows for use of flash on bright days with fast shutter speeds that would normally not sync, avoiding shutter curtain shadows.

How to use it?
- High Speed Sync can be found in the Custom Settings of your Flash. It is usually labeled HSS

- Set your camera to wireless flash mode for High Speed Sync to work or attach an off-camera flash cord

- Activating High Speed Sync gives you access to the entire range of shutter speeds that your camera offers

Where to use it?
Portraits where the available light is so abundant that exposing for your subject leaves too much depth of field or an overexposed background.

Split-second Breakdown

Shutterblade position over time

Flash

Total exposure: 1/200 SEC

This photo is a perfect example. To minimize shadows and shade, a flash was used. However, the goal was to have the rocks defocused. We can see that did not happen. Why? With a flash set to a standard setting, it could not sync with a shutter speed faster than 1/160 to 1/250 sec. With this in mind, the camera adjusted the aperture accordingly. In this case, in manual mode, we were limited to an aperture of F16, which allowed in enough light to give undesired detail to the rocks.
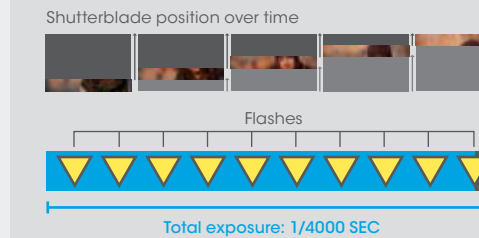
In this photo, High Speed Sync allowed us to use our flash throughout the entire shutter speed/aperture range of the camera. This works in both Aperture Priority and Manual Mode. For the above photo, we turned on High Speed Sync, put the camera in Manual Mode set an aperture of F2.8* and a shutter speed of 1/4000 sec. The flash fired, illuminating our subject. Aperture F2.8 gave the rocks behind our subject a soft focus and the fast shutter speed made sure the rocks were not overexposed.

*It is important to note that lenses vary in aperture settings and while our lens was able to set an aperture of 2.8, your lens might not. Refer to your lens owners manual for its specifications.

Split-second Breakdown

Shutterblade position over time

Flashes

Total exposure: 1/4000 SEC

HSS allowed for use of flash to fill-in shadows from sun in bright conditions

slow sync
flash

Recreate what your eyes see and tell the whole story.

It's a lovely evening and you're out for a stroll when you come across the perfect setting for a photograph, but you face a problem. Your camera will either need a long exposure to capture the ambient detail of the lights which would leave your subject in the foreground in the dark, or your fill flash will illuminate your subject leaving the background dark and lacking the mood you originally wanted to capture.
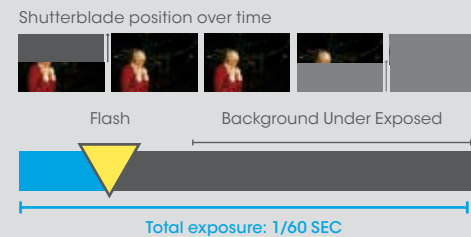
▶ **Standard Fill Flash**

F5, 1/60 SEC, ISO 320

Split-second Breakdown

Shutterblade position over time

Flash   Background Under Exposed

Total exposure: 1/60 SEC

Most of the time, capturing a moment at night will require a flash to illuminate the image. However, if you simply fire the flash you will not be telling the entire story.

The main goal of a flash is to illuminate what is directly in front of it. At night, this is useful for capturing the subject but not for capturing what is happening beyond the range of your flash.

▶ **Slow Sync Flash**

F5, 1/8 SEC, ISO 320
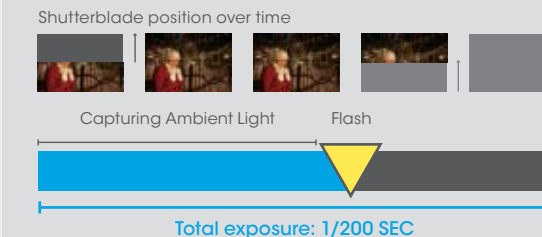
Slow Sync flash allows you to capture both the subject as well as the background. How? Slow Sync flash will slow down your shutter speed as well as fire the flash later in the exposure. A slower shutter speed will allow more ambient light to be captured and the flash will ensure your subject and the background behind them are properly lit.

Split-second Breakdown

Shutterblade position over time

Capturing Ambient Light   Flash

Total exposure: 1/200 SEC

What is it?
Creates a long exposure with flash to allow ambient light to be seen and balance natural light with flash light.

How to use it?
• Set your camera to Slow Sync Mode

• Place your camera down or use a tripod to keep it stable

• Set the self-timer or use the optional wired or wireless remote control so you are not moving the camera while it is capturing the image

• If photographing a person, have them remain still for the duration of the photo

Where to use it?
Nighttime shots where the background is important to the overall image. Great for capturing ambient light from decorations or city lights, while keeping your subject sharp.

rear sync
flash

Adding motion to your image presents an added level of creativity. Being able to capture some blur followed by freezing the action allows you to tell a story about the direction your subject was moving in. To do this; activate the Rear Sync function in your flash settings and select a slow shutter speed.

In these photographs, we wanted to capture a runner in motion. The photo 1 shows the correct use of Rear Sync. Photo 2 shows what happens when the standard flash settings are used such as Auto, Fill-Flash or Slow Sync. As you can see, it looks like the runner is running backwards. Why? A flash set to a standard setting will fire right after the shutter has been released freezing the action at the beginning of the motion and capturing the light trail during the long exposure. This will create an interesting effect that almost looks like reversed motion.
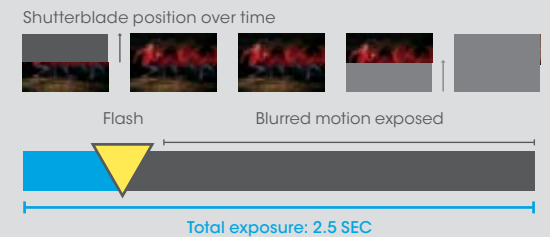
1. Without Rear Sync Flash

F5.6, 2 1/2 SEC, ISO 250

2. With Rear Sync Flash

F5.6, 2 1/2 SEC, ISO 250

What is it?
Triggers flash at end of exposure instead of beginning to allow for ambient light to be captured.

How to use it?
• Rear Sync Flash is found within the flash options of your camera menu and can be used with a built in or external flash

• You will need to use a longer shutter speed so keep the camera still by using a tripod or other stabilizing device

• Consider using a remote shutter release to cut back on-camera movement

Where to use it?
Use it when you want to capture the trail of an object in motion or flowing light more naturally.

Split-second Breakdown

Shutterblade position over time

Flash   Blurred motion exposed

Total exposure: 2.5 SEC

Manual Mode. Flash set to Fill Flash. 2.5 seconds F5.6 250 ISO. Because the flash fires first, the remaining exposure time captures an unnatural trail of light.

With Rear Sync, the flash does not fire when the shutter has been released. The flash fires as the shutter closes at the end of the exposure. This will create a blur of motion during the exposure and then capture the subject at the very end creating a more natural trailing light.

Split-second Breakdown

Shutterblade position over time

Blurred motion exposed   Flash

Total exposure: 2.5 SEC

multi flash, stopping motion

To capture the subject in motion, you can set your flash to trigger multiple times during a single exposure when the subject is moving.

Multi Flash will only work in Manual Mode, you should set your shutter speed based on the speed that your subject is moving and the desired number of times you want to freeze the action in a single exposure.

When setting the Flash to Multi, set the number of times you want the flash to fire and the hertz (time delay) between each flash. For the photo to the left, the flash was set to fire 5 times at 3hz, which gave us a shutter speed of 1.6 seconds.

Split-second Breakdown

Flash

3Hz   3Hz   3Hz   3Hz

Total exposure: 1.6 SEC
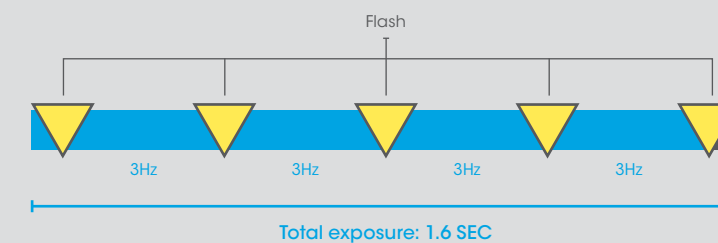
How to calculate:
5/3hz = 1.6 seconds (Frequency/Hz = shutter speed)

Final Shot
Elegant sequence showing progression of an athlete.

F8, 1.6 SEC, ISO 100. Flash at 1/8 power.

What is it?
Fires flash multiple times in same exposure to capture movement.

How to use it?
• Use a tripod

• Set your camera to Manual

• Press the MULTI function on your flash (check the manual as flash setting change by model). Then set the number of flashes you want to fire and the duration between each flash.

• Set a longer shutter speed based on the number of flashes/Hz

• Shoot this in a dark room or outside at night with minimal ambient light

Where to use it?
Use it when you want to capture multiple images showing your subject in motion.

off-camera
flash basics

Sometimes you need light to come from an angle that the on-camera flash just cannot create, even with bounce. Or, you need multiple light sources to create the masterpiece you envision.

Off-camera flash, either wired or wireless, allows us to fire the flash at the precise moment, intensity and duration required.

In this section, we'll cover various off-camera flash basics, show you how to get multiple light sources from one flash and dive into wireless ratio control

on-camera vs. off-camera **flash effect**

Using the on-camera flash has many advantages such as providing more light where there isn't enough, or filling in shadows to highlight detail. Although good to have, on-camera flash is still limited to a single light source close to the lens.

Off-camera flash increases your creative control and greatly improves the images we can get by enabling us to move the flash away from the camera. This allows us to get the angle shot we need, as well as the desired lighting angle—which can be different.

The examples on these pages show how a good image using on-camera flash with bounce can become a great image by taking the flash off the camera and lighting the subject from the side.

▶ **On-Camera with Bounce Flash**
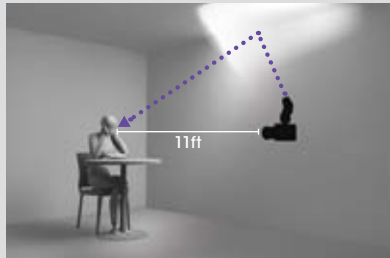
The flash is on the camera, which is 11ft from the subject. The photographer used bounce flash to soften the light on subject.

F7.1, 1/125 SEC, -0.3 EV, ISO 200

▶ **Wired Off-Camera Flash**
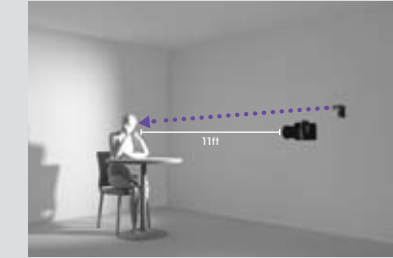
Same distance, but this time, the photographer moved slightly to the left of the subject and placed the wired flash 4ft right of the camera.

F7.1, 1/125 SEC, -0.3 EV, ISO 200

What is it?
A technique used to move flash off-camera and change light direction. Wired flashes use a physical sync cable to connect to the camera. Wireless flashes give you more flexibility than a wired flash.

How to use it?
• Wired: Attach the wired flash cable for one flash and use the flash to flash cable for each additional flash. Your flash will work with the flash settings in your camera

• Wireless: Set the camera and flash setting to wireless. Place the flash within line-of-sight of the camera

Where to use it?
When you need to light your subject from different angles than where you're taking the photograph from.

one flash,
two lights

Being able to place the flash separate from the camera opens a world of creative possibilities. We now have better control over the location, amount and direction of the artificial light added to our images. With the flash on the camera, this photograph looks flat with harsh shadows.

Now, let's remove the flash from the camera and position if elsewhere.

The cloth diffuser was able to reduce the shadows, but the right side of the subject's face is not as illuminated as her left side. To address this, we simply placed a white reflective card on the right of the subject. We now have a single wireless flash illuminating a white cloth to create diffused light on one side of the subject, which then reflects off of a white card to illuminate both sides of the subject's face. This gives us a nice soft light with depth and costs no more than a single flash and a bit of ingenuity.

2:1 Light ratio
Different levels of light on your subject can highlight detail and make your photograph more interesting. These are expressed as ratios. In this photograph there are two light sources; one direct (Key Light) and one reflected (Fill Light). The direct light is about twice as strong as the reflected light. Therefore we have a light ratio of 2:1.

▶ **On-camera flash**

▶ **Off-camera bounce flash, diffuser, reflector**

SETUP

01 Flash
HVL-60M for adjustable power and Quick Shift maneuverability. Attached to included stand for easy wireless positioning.

02 Diffuser
White linen tablecloth. Translucent quality allows for diffused soft light to pass through and increase the size of our light source.

03 Bounce Card
3' x 2' sheet of white foam core board.

What is it?
A technique used to create a studio looking shot with two indirect light sources.

How to use it?
• Set the camera and flash to wireless

• Position the flash on one side of your subject

• Aim the flash at your subject through a white diffuser or simply use a piece of white linen with translucent qualities like a tablecloth

• Place a reflector or reflective surface on the other side of your subject

Where to use it?
When you only have one flash, but want to create a studio looking shot with two indirect light sources. Commonly used for portrait or product shots to get a 2:1 ratio.

Off-camera Setup
For an even softer light, we moved the position of both the flash and white cloth. The flash still hits the white cloth first, but then it bounces off of the reflective surface behind it.

one flash,
three lights

Adding a rim light to our subject creates a halo glow around her helping define our subject from the background. We now have the flash sitting on a shelf behind the subject. The flash is backlighting her hair but not much else.

With the flash in the same position we added two white cards in front and to the sides of the subject at an angle towards the light. The flash now backlights her hair and then reflects off the white cards to illuminate each side of her face. The result is a well composed image lit from three sides with one flash.

2:1:1 Light ratio
This photograph has a 2:1:1 ratio where the direct light (Rim Light) from the back is twice as strong as the two reflected light sources (Key Light, Fill Light).

▶ **Off-camera as rim light**

▶ **Off-camera as rim light with bounce cards**

SETUP

① **Flash**
HVL-F60M for adjustable power and Quick Shift maneuverability. Attached to included stand for easy wireless positioning.

② **Bounce Card**
3' x 2' sheet of white foam core board.

What is it?
A technique used to create a studio looking shot with three indirect light sources.

How to use it?
•Set the camera and flash to wireless

•Position the flash above and behind your subject

•Aim the flash at your subject, this will create the rim light

•Place two reflectors or reflective surfaces in front of your subject on either side. These will reflect the light back creating a nice fill light

Where to use it?
When you only have one flash, but want to create a studio looking shot with three light sources. Commonly used for portrait shots to get a 2:1:1 ratio.

Off-camera Setup
For this photograph, the flash was placed above and behind the subject pointing down at them. Two white cards were placed at an angle in front of the subject to bounce the light back at her, illuminating her from three sides.

SETUP

01

14ft

03   6ft →   ← 6ft   02

01 Background

A flash is placed 14ft away to illuminate the water behind the subject and is controlled from the secondary remote channel of the flash–RMT2.

02 Camera Right Full

With the flash off behind the subject, we focus on setting the two flashes slightly in front and on each side. Here, the right flash was set to a ratio of 8 while the left flash was set.

03 (1+2) Left/right balanced

Two flashes are 6ft away on each side of the subject. Here is the result of all three flashes firing at equal power of 16.

▶ Getting Creative
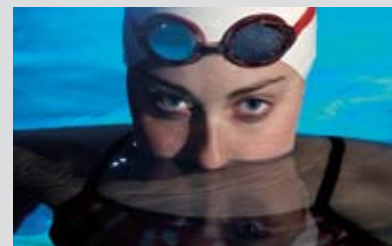
Because we were able to change the Flash Ratio from our on camera flash we were able to quickly experiment with different ratios until we achieved the desired result.

wireless
ratio control

The light ratio represents how much stronger one light source is compared to another. A direct light source could be twice as strong as that same light from a reflected surface. Therefore, we would have a 2:1 ratio of direct light vs. reflected light.

Wireless Ratio Control allows us to control the volume of light that is emitted from each flash or set of flashes wirelessly. Each set can include more than one flash.

This is easy to do and allows us to set the ratio of the control flash on the camera plus two more flashes or sets of flashes. Being able to control all of our flashes from one source saves time while also allowing for more creativity.
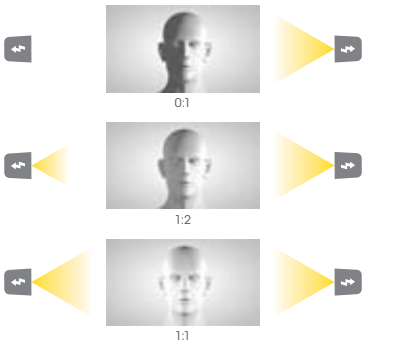
Final Shot

In this three flash setup, we want to add some dramatic lighting to the subject's face. We could move one flash further or closer to the subject adjusting the amount of light hitting one side of her face but that would be cumbersome. Instead we used Wireless Ratio Control from the flash on our camera.

F7.1, 1/160 SEC, ISO 125

What is it?
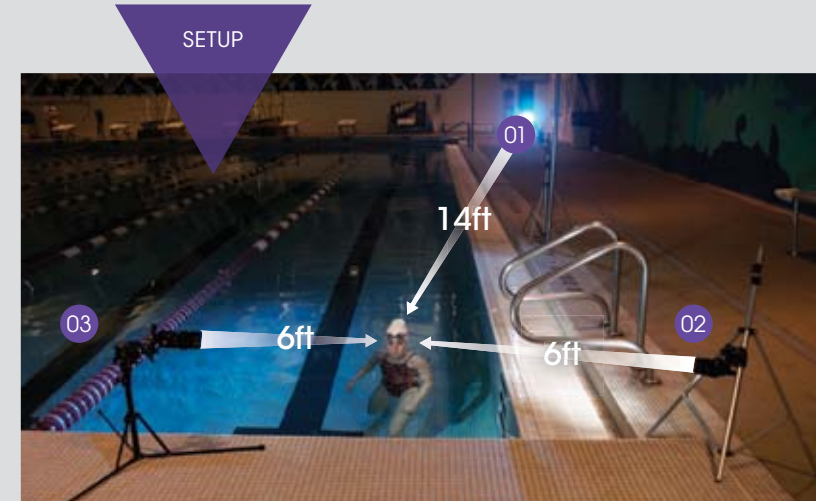Dynamically control the volume of light that is emitted from each flash in a multiple light setup.

How to use it?
Set all your flashes in wireless mode (WL). Set your flash on the camera to control (CTL) and the other flashes to one of the wireless zone settings (RMT1 or RMT2). Then set the Ratio Control in the "control" flash settings. Here you can set the ratio of the control flash on the camera plus two more flashes or sets of flashes. (Refer to Instruction Manual for more details)

Where to use it?
Use this when you want to control the amount of light emitted from your wireless flashes.

isolate the **subject**

Put the focus on the subject. Using a wireless flash is also a great way to minimize a background. This photo was captured at a pool with a white wall 8 feet behind the subject. Firing the flash directly at the subject would also illuminate the wall behind her. We were able to direct the light away from the background by placing a wireless flash on each side of the swimmer. The flashes emit a more powerful light than the ambient light, to effectively minimizing the background behind the swimmer. The resulting shot is a creative way to capture just the subject without a distracting background.
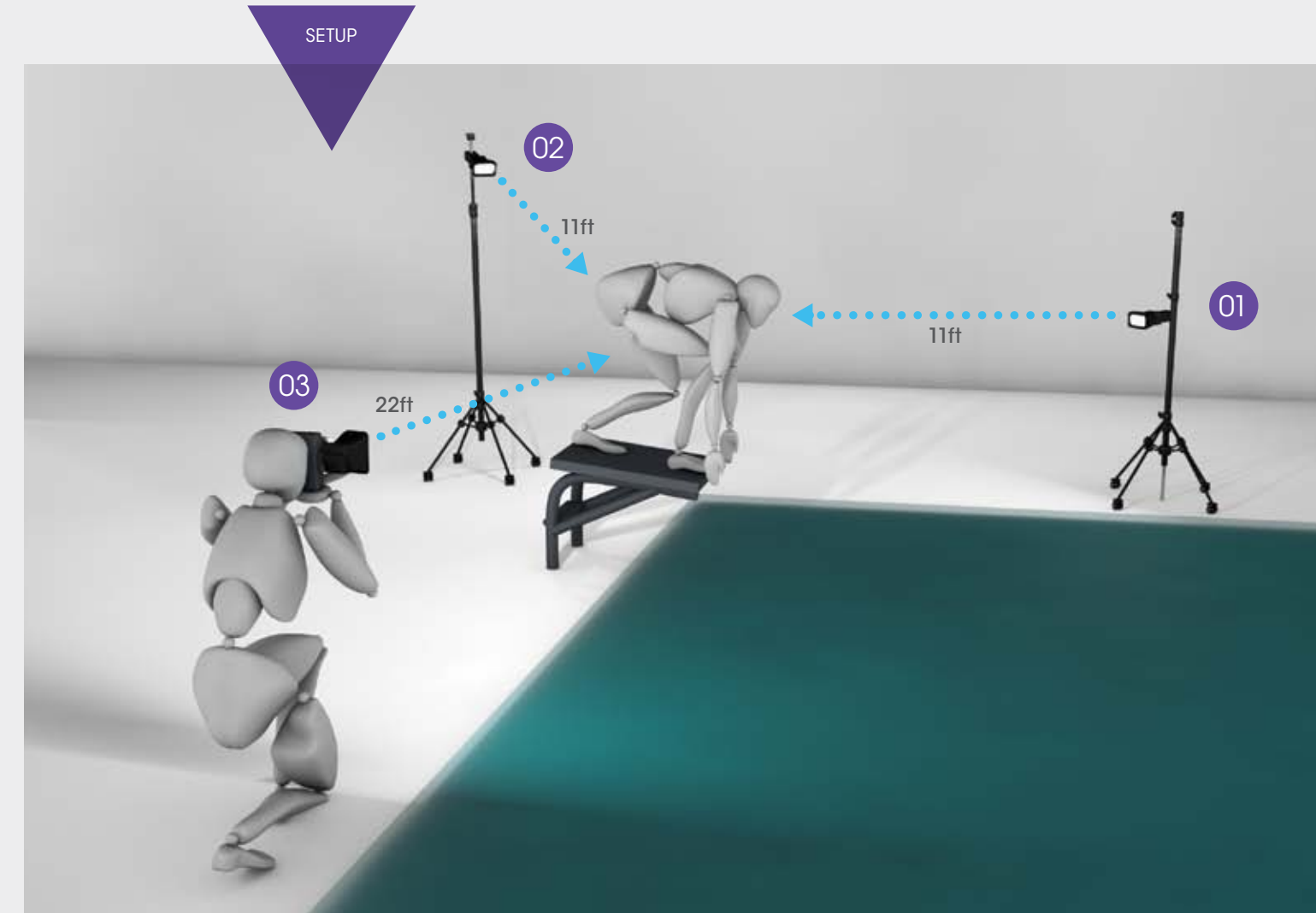
Final Shot
A bucket of water was poured over the subject to add drama and a sense of action. The flash froze the droplets in time, adding a narrative to this image.

F9, 1/200 SEC, ISO 400

SETUP

02
11ft
01
11ft
03
22ft

01 Key Light

The key light, or primary light, is the main light that defines the image. It is the first light setup and is generally the brightest, giving definition to the subject of the image.

02 Rim Light

The rim light is added for a finishing highlight that gives definition to an edge, or rim of an object or subject. It gives an additional stylistic element that helps add detail. It is usually placed above or behind a subject at a sharp angle, creating a small but very intense highlight.

03 Fill Light

The fill light is added to reduce the intensity of the shadows cast by the key light. It is usually added second and is less intense than the key light, providing detail in areas that would normally be too dark with just a key light.

What is it?
A technique used to isolate the subject and drop out the background. This is achieved by exposing only for the subject and overpowering the surrounding ambient light that hits the background.

How to use it?
Aim any and all light sources at the subject and avoid light spill onto the background. Avoid any direct flash when shooting.

Where to use it?
• Any image where the background is not important to the overall image. Use this technique when highlighting the subject's role in the image

• To illuminate boring or distracting backgrounds

Creative lighting removes this busy background from the final image

01

15ft

10ft

02

mixing light

A new world of creative photography emerges when we can turn night into day.

Freezing action in a photograph is simple when we have a lot of available light. However, trying to capture movement when there is minimal available light usually results in the subject being blurry. Using wireless flash in an environment with minimal ambient light will help us capture our subject in motion while cutting back on the amount of blur.

In this scenario, we want to illuminate the bicycle rider. We are too far away (20ft) from the subject to illuminate him with on-camera flash. Also, we want to increase the light coverage by lighting him from the front and back. Knowing that we will be adding flash to this image, we work on our camera settings to properly capture the clouds and sky behind him.

Once we are happy with the background we add two wireless flashes. One is 10ft behind the subject and the other is 15ft away directly in front of the subject. If we wanted, we could change the power of each flash or use wireless ratio control to customize the amount of flash being added to the image.

01 Key Light

The main light is placed 15 feet away to light up the entire subject and surrounding scene.

02 Rim Light

A second flash is placed to the rear of the subject to give a defining highlight and help separate him from the background and add depth.

Set the tone.

The night sky plays a key role in establishing the mood and drama in this shot. The flash is used to light the subject after we have exposed the scene for the night sky. This gives a beautiful background for a properly lighted bicycle rider in action.

F7.1, 1/160 SEC, -0.3 EV, ISO 125 DAYLIGHT

Final Shot

Exposing for the background creates a beautiful contrast with the bicyclist's yellow uniform and the flash freezes the motion in place.

F5.6, 1/15 SEC, ISO 400

What is it?

Multiple flashes synced wirelessly to allow for freedom of movement and lighting techniques not possible with wired flashes.

How to use it?

- Set your camera to Wireless Flash Mode

- With your Flash in TTL, press the Mode button to display WL

- Set the on-camera flash to control (CTL)

- Set your Flash to RMT1 or RMT2 which are two unique channels your flashes can operate on

- A red blinking light will be displayed at the base of the flash showing you it is in wireless mode

- Make sure the blinking red light is in the direction of your camera to ensure the camera can see and operate the wireless flash effectively

Where to use it?

In this situation, a wireless flash helped us capture motion in a low ambient light environment. However, wireless flash can be used anytime you want to add creative artificial lighting to your image.

HVL-F60M

The Sony® HVL-F60M is the flagship flash with LED light features the "Quick Shift Bounce" system, "Quick Navi" interface and Wireless Ratio Control for advanced lighting in still/movie.

High-illumination output
Delivers high-illumination output in a compact, lightweight body, with an effective range of more than 90ft (28m) and guide number 60. (Guide number measures the illumination capability of the flash; the higher the number, the higher the light output. Tested at ISO100, 105mm).

New LED video light
With the new built-in LED video light it has never been easier to switch between stills and movie shooting even in low-light conditions. LED enables checking and setting the light and shadow conditions before shooting still image or movie with live view function of EVF equipped camera. Maximum luminance of 1200 lux/(0.5m), with illuminating distance of approximately 6-1/2ft (2m) at ISO 3200/F5.6.

Quick Shift Bounce
Sony's patented "Quick Shift Bounce" system allows the HVL-F60M to quickly orbit 90 degrees left and right, allowing you to maintain horizontal light distribution even when shooting vertically. In addition to pivoting side-to-side, the flash unit can also tilt down 10 degrees or back 150 degrees, ensuring customers the lighting freedom they need to capture that perfect shot.

Quick Navi and Large Dot Matrix LCD
Quick Navi control is the intuitive User Interface from Sony α camera bodies that make it a snap to locate and change settings. A large dot matrix LCD display is easy-to see and intuitive button layout makes it easy to configure the HVL-F60M for a variety of shooting needs.

Wireless Ratio Control
Wireless Ratio Control allows customers to wirelessly control up to three groups of flashes, as well as specify the luminosity ratio for each group, so they can enjoy multiple-flash lighting techniques without the need for special equipment or tedious exposure settings.

Specifications

Flash
• Flash Type: Auto electronic flash (clip-on type)

• Flash Modes: Automatic Light Control (TTL), Continuous (10 flashes/sec., up to 40), pre-flash control, manual control

• Flash Coverage: Covers the angle of view at focal length between 24mm and 105mm. Automatically switched at changes in focal length. Manual 24/28/35/50/70/105mm. Covers the angle of view of at 15mm focal length with the wide panel

• Flash Metering System: Direct TTL

• Guide Number: 60

• Modes: High-Speed sync, Wireless, Bounce, Modeling, Multi-burst

• Function: LED light

• Number of Flashes: 10/sec. up to 40 total

• Recycling Time: 2.6 sec. Ni-MH/3.5 sec. Alkaline

Weights and Measurements
• Dimensions (Approx.): (W x H x D) 3-1/4 x 6 x 4-1/8" (80 x 150 x 102mm)

• Weight (Approx.): 450g (15.9 oz) (excluding AA batteries)

Power
• Battery Type: AA Alkaline /AA Ni-MH-requires 4

General
• Material: Poly-carbonate plastic

HVL-F43AM

Sony α System HVL-F43AM Flash Unit. Powerful range, fast recharging, versatile bounce angles, intelligent features like auto WB, auto zoom, wireless operation (guide number: 43).

Specifications

Flash
• Flash Type: Auto electronic flash (clip-on type)
• Flash Modes: Automatic Light Control (TTL), Continuous (10 flashes/sec., up to 40), pre-flash control, manual control
• Flash Coverage: Bounce angles: Upward - 150 degrees; Left - 90 degrees; Right - 90 degrees; Down - 8 degrees
• Flash Metering System: Direct TTL
• Guide Number: 43
• Modes: Wireless, Bounce, Modeling, Multi-burst
• Number of Flashes: 10/sec. up to 40 total
• Recycling Time: 2.9 sec.

Advanced Features
• Smooth Slow Rec

Weights and Measurements
• Dimensions (Approx.): (W x H x D) 3 x 5-1/8 x 3-1/2" (75 x 129 x 87mm)
• Weight (Approx.): 12oz (340g) (excluding AA batteries)

Power
• Battery Type: AA Alkaline /AA Ni-MH-requires 4

General
• Material: Poly-carbonate plastic

Operating Conditions
• Storage Temperature: -4 to +140°F (-20 to +60°C)

High-power illumination
High-power illumination (guide number: 43)

Longer effective range
Longer effective range of over 30ft (10.5m)

"Quick Shift Bounce"
The innovative "Quick Shift Bounce" system allows the HVL-F43M to orbit 90 degrees left and right, allowing you to maintain horizontal light distribution even when shooting vertically. In addition to pivoting side-to-side, the flash unit can also tilt down 8 degrees or back 150 degrees, ensuring customers the lighting freedom they need to capture that perfect shot.

Versatile bounce angles
Versatile bounce angles: 90° up, 90° left. This allows the flash head to be rotated while maintaining the set bounce angle, so you can quickly switch between horizontal and vertical format without changing the light angle.

Built-In Bounce sheet
The built-in bounce sheet can be used even when shooting in a vertical position without changing the angle of reflected light.

Auto white balance
Auto white balance (signals color temp. to camera)

Auto zoom
Auto zoom optimized for camera sensor size

Dust and Moisture resistant design
Sealing materials are set at joints of outer materials (body, LCD panel, Mounting Foot etc.) and around movement/operating parts thereby increasing the life of your flash unit.

Modeling light capability
Modeling light capability allows the HVL-F43M to pulse, helping photographers determine where shadows will fall before taking the picture, so they can alter lighting or subject positioning as necessary.

HVL-F20AM

Expand your creativity with the revolutionary HVL-F20AM compact external flash, which extends illumination range beyond the camera's built-in flash. Intuitive operation, bounce capability and TTL auto metering.

Extends flash range beyond camera's built-in flash
Though compact and lightweight, the HVL-F20AM has a maximum range twice that of the built-in flash units on 230, 330 and 380 cameras. This is represented as the guide number (GN) of 20 with a 50mm focal distance at ISO 100.

Bounce flash enables shadowless indirect lighting
When set to "indoor" shooting mode, the flash points up to bounce light off the ceiling for shadowless illumination of your subject. When set to the "outdoor" shooting mode, the flash directs light directly at your subject.

Built-in diffuser for wide and telephoto shooting
With the built-in diffuser the flash illumination covers an angle of view of 27mm at the default Standard Position setting. If users want to shoot at a greater distance, they can rotate the dial on the side of the flash unit to the "Tele" Position. Although this reduces flash coverage to an angle of view of 50mm, it extends the range to illuminate more distant subjects.

Easy intuitive operation
Unlike most external flash units, the HVL-F20AM has no dedicated ON/OFF switch. Instead, power is automatically switched on simply by raising the flash unit into the shooting position. In addition, a switch on the side of the unit offers Indoor and Outdoor settings, making it easy to obtain flash illumination that suits the shooting situation. A charging lamp indicates when the flash is ready to fire.

**Light (90g/3.2oz), slim (24mm/1")
ultra-compact design**
With a weight of only 90g (Approx.) and a thickness of only 24mm (1 inch), the HVL-F20AM is so compact it can simply be folded down and left mounted on the camera when it is not in use, or detached and carried in a shirt pocket. When removed from the camera, the flash unit's hot shoe can be folded to the side, making the body even more compact.

Specifications

Flash
• Flash Type: Auto electronic flash (clip-on type)
• Flash Modes: Automatic Light Control (TTL), Continuous (10 flashes/sec., up to 40), Re-flash Control, Manual Control
• Flash Coverage: Bounce angles: Upward - 150 degrees; Left - 90 degrees; Right - 90 degrees; Down - 8 degrees
• Flash Metering System: Direct TTL
• Guide Number: 43
• Modes: Wireless, Bounce, Modeling, Multi-burst
• Number of Flashes: 10/sec. up to 40 total
• Recycling Time: 2.9 sec.

Advanced Features
• Smooth Slow Rec

Weights and Measurements
• Dimensions (Approx.): (W x H x D) 3 x 5-1/8 x 3-1/2" (75 x 129 x 87mm)
• Weight (Approx.): 12oz (340g) (excluding AA batteries)

Power
• Battery Type: AA Alkaline /AA Ni-MH-requires 4

General
• Material: Poly-carbonate plastic

Operating Conditions
• Storage Temperature: -4 to +140°F (-20 to +60°C)

HVL-F20S

Designed exclusive for Sony E-mount cameras, the HVL-F20S external flash is the perfect accessory for extending illumination range and includes bounce capability and TTL auto metering.

Specifications

Flash
• Flash Coverage: F4: 1m–5m

• Guide Number: 20

Weights and Measurements
• Dimensions (Approx.): (W x H x D) 2-3/8 x 2-7/8 x 2-1/8"; (60 x 71 x 53mm)

• Weight (Approx.)(Main unit only): 2.3oz (63g)

Extends flash range beyond camera's included flash
Though compact and lightweight, the HVL-F20S has a maximum range twice that of the included flash units of the NEX-3, NEX-5 and NEX-C3 cameras. This is represented as the guide number (GN) of 20 with a 50mm focal distance.

Bounce flash enables shadowless indirect lighting
When set to "indoor" shooting mode, the flash points up to bounce light off the ceiling for shadowless illumination of your subject. When set to the "outdoor" shooting mode, the flash directs light directly at your subject.

Built-in diffuser for wide and telephoto shooting
With the built-in diffuser, the flash illumination covers a wider angle of view or if users want to shoot at a greater distance, they can rotate the dial on the side of the flash unit to the "Tele" Position. While the "Tele" setting reduces the width of flash coverage, it extends the range to illuminate more distant subjects.

Easy intuitive operation
Unlike most external flash units, the HVL-F20S has no dedicated ON/OFF switch. Instead, power is automatically switched on simply by raising the flash unit into the shooting position. In addition, a switch on the side of the unit offers Indoor and Outdoor settings, making it easy to obtain flash illumination that suits the shooting situation. A charging lamp indicates when the flash is ready to fire.

ADI Flash Metering System
The ADI (Advanced Distance Integration) flash metering system offers the optimum flash metering and automatic white-balance compensation regardless of the background conditions or the subject's reflectance. ADI flash metering works in combination with cameras and lenses that incorporate a distance encoder. When used with these lenses, the camera calculates a guide number to control TTL (through the lens) flash metering. This guide number is calculated according to distance from the subject, ambient light and pre-flash reflectivity of the subject and the background.

lighting for macro photography

Macro photography most often refers to capturing extreme close-ups of small objects. Normally the size of the resultant image is equal to or larger than the subject itself.

Even though macro lenses are often capable of a large aperture and very shallow depth of field, which may be good for portrait photography, is not always good for macro photography. Depth of field is extremely shallow when focusing on close objects which means you may need to use a smaller aperture like F11 to get the entire subject in focus. This will require either a slow shutter speed, high ISO or brilliant lighting. That's where specialized lighting for macro photography can help us take better macro photographs.

Adding a flash or ring light will introduce additional light and reduce the time needed to take the photo. Using a flash or ring light will also allow us to remove the need for a tripod allowing you to position the camera easier for more creative results. We can also move quickly and effectively to capture our image.

Adding a flash or ring light also allows us to highlight our subject and remove the background from our photographs.

Final Shot
Utilizing a twin flash, we added precise lighting giving a soft dynamic mood, and capturing a beautiful floral macro shot.

F9, 1/200 SEC, ISO 100

What is it?
Photographing small items very close to bring out minute details.

How to use it?
• Get Close

• Stabilize the camera if not using a flash

• Aperture Priority F11 but experiment with different numbers. Remember the larger your aperture the less of your subject will be in focus

Where to use it?
• Flowers

• Objects

• Insects

• Anything where getting closer to the subject will uncover things you never knew were there

ring light

A Ring Light actually surrounds the entire lens with constant light. This allows us to illuminate the entire subject evenly from all directions. Our resulting photo will have even lighting with minimal shadows. Ring Lights are used frequently in Macro Photography due to the amount of detail they are able to capture.

The intensity of the powerful LED light can also be varied with the dimmer. In addition we can chose to light only one side of our subject for dramatic affect or to highlight detail. Adjust the switching from either having the entire ring light on or have only the left side, right side on.

Direct Flash
Hard directional light, casts strong shadows and obscures detail.

F16, 1/100 SEC, -0.3 EV, ISO 320

What is it?
Lens mounted ring of light that evenly lights close items with uniform light.

How to use it?
• Attach the Ring Light and set light intensity with the dimmer to get the exposure you are looking for in your selected aperture

• You can also set the Ring Light to only illuminate the left or right side of your subject

Where to use it?
• Macro photography with minimal shadows

• Portrait photography where you want a ring of light in the subject's eyes

01 Left side solo

F16, 1/8 SEC, -0.3 EV, ISO 320

02 Both sides active

F16, 1/8 SEC, -0.3 EV, ISO 320

03 Right side solo

F16, 1/8 SEC, -0.3 EV, ISO 320

HVL-RL1

Capture even and well-lit macro photography with this ring light attachment and your compatible Sony α camera. It's the perfect tool for creating compelling close-up artwork.

The HVL-RL1 offers highly effective illumination of small subjects for macro shooting. Its powerful 700 lx/0.3m (Approx.) LED performance is approximately 4 times brighter than conventional models. The brightness can also be dimmed with a control dial to achieve creative lighting that subtly reflects your intentions. Extremely smooth lighting effects can also be achieved without clearly revealing the source of light.

• Full-ring illumination for shadowless lighting

• Half-ring illumination for shadows and contrast

• Continuous illumination allows lighting to be checked at any time

• Filter diameter: 49mm, 55mm

• Shoe Adaptor (ADP-AMA) is included for usage with Auto-lock Accessory Shoe cameras

Specifications

Ring Light
• Flash Type: Auto electronic ring light (clip-on type)

• Lighting Modes: Full, 50% Left, 50% Right

• Luminance: 700 lux (at 0.3m)

Advanced Features
• Dimmer for precise control

Weights and Measurements
• Dimensions (Approx.): (W x H x D) 4-7/8 x 5-1/2 x 15/16" (124 x 141 x 24mm)

• Weight (Approx.): 6.9oz (195g)(excluding AA batteries)

Power
• Battery Type: AA Alkaline /AA Ni-MH-requires 4

General
• Material: Poly-carbonate plastic

Operating Conditions
• Operating Temperature: 32 to +104°F (0 to +40°C)

twin flash

A Twin Flash is exactly that—two flashes. They give you far greater control when photographing objects close-up.

The Twin Flash attaches to the front of the lens. Each flash is on its own individual arm, which can be adjusted in a variety of angles. You can also move the flash arms around the ring attachment itself which gives you a multitude of lighting possibilities. The output level on each individual Twin Flash can also be adjusted to create an even more dramatic lighting effect.

Using a Twin Flash in your close up photography will give your photos additional detail, texture and dimension.

Direct Flash
Makes petals appear flat and lacking dimension. Blows out color and contrast.
....

F18, 1/200 SEC, ISO 100

Twin Flash in use
By switching to a twin flash not only were we were able to direct the location of our light more effectively, we were able to do this with two light sources allowing us to capture more depth and detail. Both flashes were extended the full seven inches from the lens and were set at the 10 o'clock and 2 o'clock position. The background is eliminated as the flash only highlights the orchid in the foreground.

What is it?
Dual lens-mounted flashes which can be extended, moved, positioned and adjusted for close up photography.

How to use it?
• Simply attach the twin flash to your camera lens

• You can physically change the length and the position of each flash as well as change the mode and coverage using the included accessory shoe

• Keep changing the distance and location of the flashes to discover a variety of lighting effects

Where to use it?
For macro photography, when adding dimension as well as minimizing backgrounds.

The arms of the twin flash allow for precise lighting of small objects that a larger flash would miss or overpower

HVL-MT24AM

Capture impeccably lit macro photographs every time with the HVL-MT24AM macro twin flash kit and your α DSLR camera. Take your extreme close-up photography to the next level by easily arranging the twin adjustable flash heads in countless configurations.

Twin flashes
Twin flashes: 45° vertical, 60° horizontal. When wide panel is mounted: 60° vertical, 78° horizontal. When diffuser (1 flash) is mounted: 90° vertical, 90° horizontal

Wide coverage
Covers fields of view of 24mm lenses

Auto locking
Auto locking foot

Specifications

Flash
• Flash Modes: Wide Panel lighting angle: Approx. 60 degrees (Vertical), Approx. 78 degrees (Horizontal)

• Flash Coverage: Guide Number: 24 (Power level 1/1)

Convenience Features
• Media/Battery Indicator: READY Lamp

Interface
• Accessory Shoe: Intelligent Accessory Shoe

Weights and Measurements
• Dimensions (Approx.): (W x H x D) 68 x 123 x 91mm for Macro flash controller, 43 x 41 x 37mm for Twin flash unit

• Weight (Approx.): 8.3oz (235g) for Macro flash controller, 1.2oz (33g) for Twin flash unit

Power
• Battery Type: AA Alkaline/AA Ni-MH [Weight (Approx.): AA Alkaline 23g x 4, AA Ni-MH 29g x 4]

• Power Requirements: 4 batteries required

General
• Material: Poly-carbonate plastic

Operating Conditions
• Color Temperature Control: Approx. 5700K

• Storage Temperature: -4 to +140°F (-20 to +60°C)

HVL-LE1

Solves lighting issues quickly with the HVL-LE1 and see an instant difference in the way things appear. Wide choice of battery options—AA Alkaline, AA Ni-MH, NPFV or NP-FM50 Sony lithium-ion batteries.

Don't let low lighting ruin your shoot. Solve lighting issues quickly by attaching a battery powered LED video light and see an instant difference in the way things appear. Choose from a variety of battery options—AA Alkaline, AA Ni-MH, NPFV or NP-FM50—to power up this light. With a handy battery life indicator, you'll know ahead of time if power is running low so you won't miss that crucial shot. Ships with diffuser, color conversion filter (3200K), barn door, α shoe adaptor and ISO shoe adaptor.

Advanced Features
- Supplied 3200K color diffuser, barn door
- Swivel-able shoe, 180 degrees left or right, 80 degrees forwards or backwards
- Includes Auto-lock and cold-shoe adapters for maximum versatility

Specifications

Battery LED Video Light
- Light Type: Auto electronic light (clip-on type)
- Lighting Modes: Adjustable brightness control (10–100%)
- Max. Luminance: 1800 lux/0.5m, 450 lux/1m

Weights and Measurements
- Dimensions (Approx.): (W x H x D) 4-3/4 x 3 x 2-1/2" (120 x 75 x 63mm)
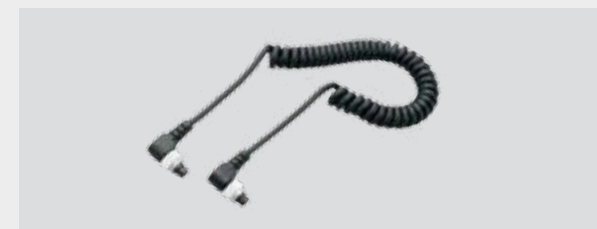- Weight (Approx.): 8.9oz (250g) (excluding AA batteries)

Power
- Battery Type: AA Alkaline /AA Ni-MH-requires 4, NP-FV50/FV70/FV100, NP-F50 Sony Lithium-ion batteries

General
- Material: Poly-carbonate plastic
- Operating Conditions
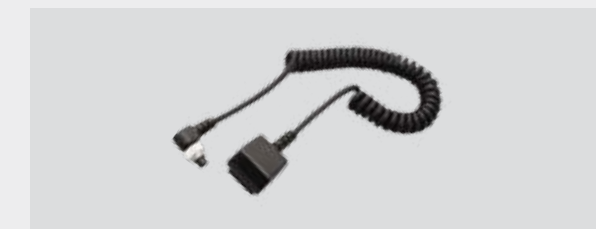- Operating Temperature: 32 to +104°F (0 to +40°C)

lighting accessories

Multi Flash Cable - FA-MC1AM
- Connector cable enables flash illumination from multiple flash units

Extension Cable for Flash - FA-EC1AM
- Approx. 1.5m extension for off-camera cable FA-CC1AM (sold separately)

Off-Camera Cable - FA-CC1AM
- Connector cable for external flash units (HVL-58AM/HVL-F56AM: connects directly. HVL-F42AM/HVLF20AM: requires off camera shoe FA-CS1AM.)

External Battery Adaptor - FA-EB1AM
- External battery pack for HVL-F56AM

Triple Connector for Flash - FA-TC1AM
- Enables synchronized operation of up to 3 external flash units

Off-Camera Shoe - FA-CS1AM
- Allows for easily mounting the external flash onto the off-camera shoe and connecting to the camera body via the off-camera-cable

Macro light adaptor - FA-MA1AM
- Adaptor for connecting Macro Light and lens
- Easy to attach and detach

Shoe Adapter - ADP-MAA
- This shoe adapter allows you to use auto-lock shoe-compatible accessories with cameras and camcorders that feature a new multi-interface shoe

Shoe Adapter - ADP-AMA
- This shoe adapter allows you to use new multi-interface accessories with your Alpha DSLR camera's auto-lock accessory shoe

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