

LIGHTING 101

ON-CAMERA LIGHT SHAPING



The logo for SLR Lounge, featuring the letters 'SLR' in a stylized font with a camera lens icon integrated into the 'L', followed by the word 'Lounge' in a clean, sans-serif typeface.

CHAPTER ONE

GETTING OVER THE FEAR, HYPE & MYTHS



Why Just One On-Camera Flash
5 Reasons to Use Flash
Common Flash Myths
What Makes Flash Challenging

ONE ON-CAMERA FLASH? WHY?

MASTER LIGHTING, AND UNDERSTANDING THE GEAR WILL COME EASY



TYPICAL WORKSHOP APPROACH



LEARN THE FOUNDATION

Learning lighting is a massive topic in and of itself. With just a single on-camera flash, we can focus on techniques, and light shaping rather than focusing on simply learning multiple pieces of gear.



PRACTICE THE PRINCIPLES

There is only one way to truly master lighting, PRACTICE! We want to use gear that you already own, or gear that is easily accessible so you can practice these techniques right away! If we started Lighting 101 with \$5k or \$10k of lighting gear, it would be impossible for most people to acquire the gear needed to practice. Most of you already have on-camera flashes, and the accessories we use are inexpensive and very accessible.



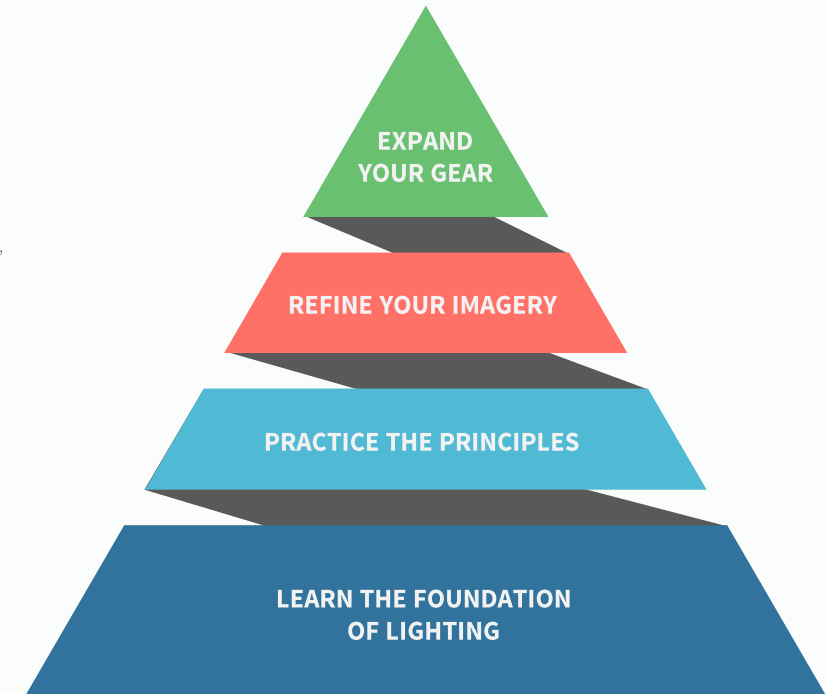
REFINE YOUR IMAGERY

As you practice these techniques, from shoot to shoot you will realize how you can better refine your lighting techniques. It will amaze you just how much you can do with your on-camera flash and a bit of modification. From there, as you run into these limitations, you will know exactly what gear you will need to move beyond your limitations.



EXPAND YOUR GEAR

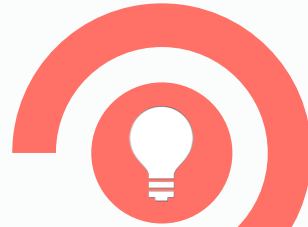
It takes an understanding of lighting, and a knowledge of your limitations before going out and expanding your gear collection. Otherwise, you stand a high chance of simply buying gear that doesn't fit within your style or workflow.



SLR LOUNGE WORKSHOP APPROACH

5 REASONS TO USE FLASH

JUST BECAUSE FLASH IS AWESOME ISN'T ONE, BUT IT SHOULD BE!



CONTROL OF LIGHT

To provide the photographer with additional control, but control over what?

CONTROL THE AMOUNT OF LIGHT

Add light to a dark scene, overpower the sun, or simply enhance existing light



CONTROL THE DIRECTION OF LIGHT

Modify the direction of light on a subject for varying stylistic and creative effects



CONTROL THE QUALITY OF LIGHT

Hard and gritty light vs soft and flattering light, there is no "correct or right light"



CONTROL THE COLOR OF LIGHT

Modify the color temperature of light for stylistic and creative purposes



CONTROL THE AMOUNT OF LIGHT

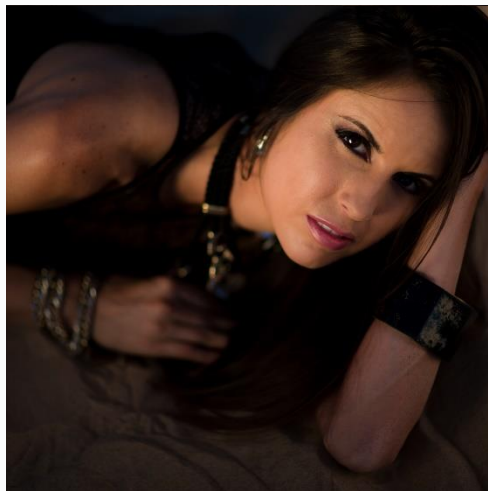
THE RIGHT QUALITY AND INTENSITY OF LIGHT FOR ANY SCENE AND ANY LOOK



**ADD LIGHT TO FILL AND MODIFY
EXISTING LIGHT**



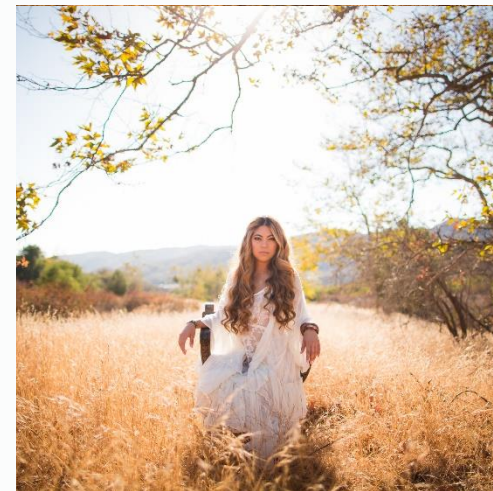
**ADD LIGHT TO ENHANCE STRENGTHEN
EXISTING LIGHT**



**ADD LIGHT TO EXPOSE A SUBJECT FOR A
DARK SCENE**



**ADD LIGHT TO OVERPOWER THE SUN OR
OTHER LIGHT SOURCE**





CONTROL THE DIRECTION OF LIGHT

WHEN EXISTING LIGHT ISN'T WORKING, MODIFY!



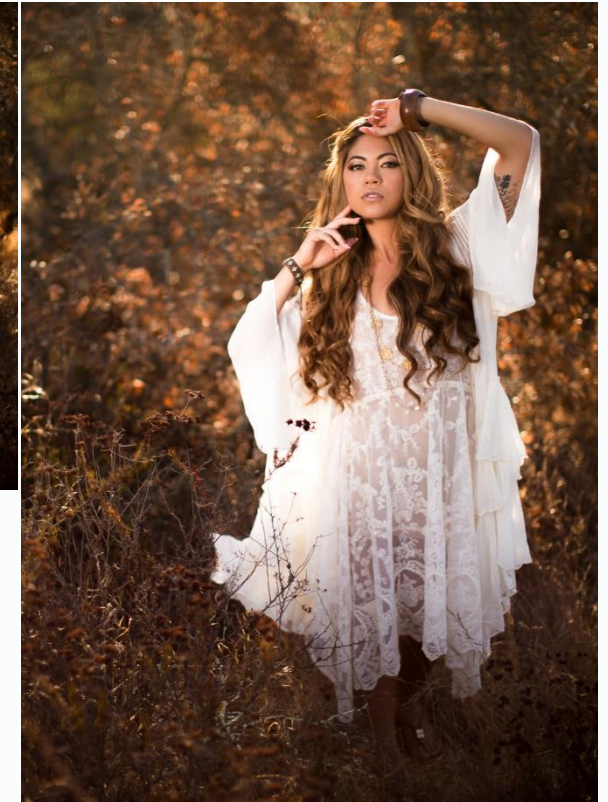
POOR LIGHT DIRECTION

Not only is the light dark, its coming from above and to the right of the camera leaving eyes in the shadows.



FLAT LIGHT DIRECTION

Adding to scenes with flat light direction, or light coming from above is another great way to add dimension.



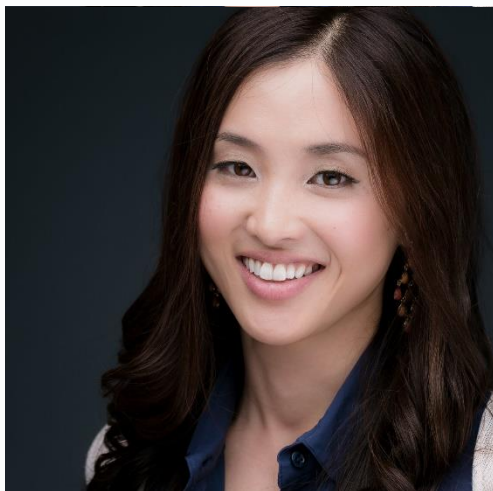


CONTROL THE QUALITY OF LIGHT

THERE IS NO "RIGHT" LIGHT, JUST THE RIGHT TYPE FOR THE PURPOSE & EFFECT



SOFT AND DIFFUSED LIGHTING FOR FLATTERING PORTRAITS



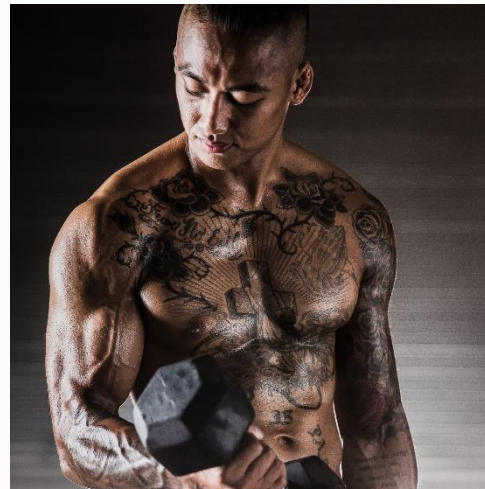
HARD AND DIRECT FLASH FOR EDITORIAL PORTRAITS AND EFFECTS



SPECULAR LIGHT FOR DRAMA AND STYLISTIC EFFECTS



DIFFUSED DIRECTIONAL LIGHT TO ENHANCE EXISTING LIGHT





CONTROL THE COLOR OF LIGHT

LIGHT COLOR CAN BE MODIFIED FOR STYLISTIC OR CORRECTIVE PURPOSES



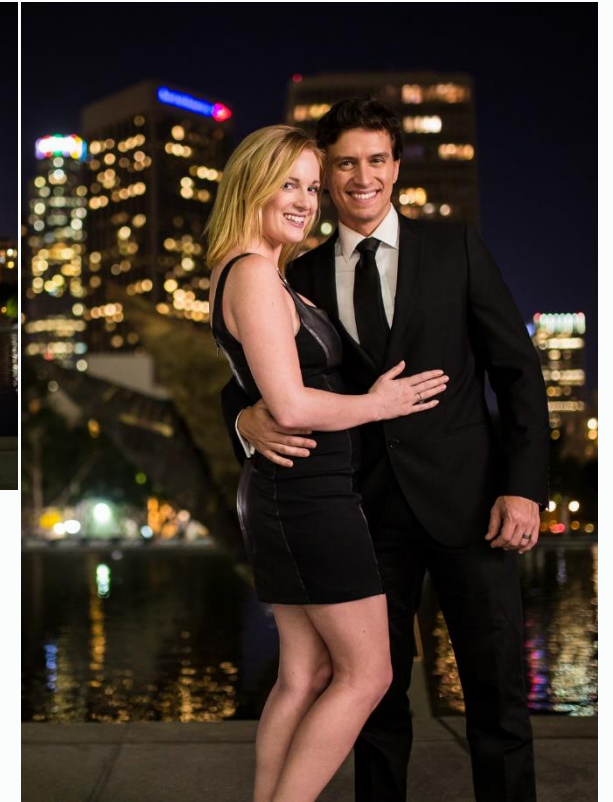
STYLISTIC COLOR MODIFICATION

By using flash, we can add gels to modify the color of light for stylistic and creative effect.



CORRECTIVE COLOR MODIFICATION

In addition to creative effects, flash with gel modification can also be used to correct for poor ambient light color.



4 MYTHS ABOUT FLASH

DON'T LISTEN TO THEM, THEY ARE FALSE!



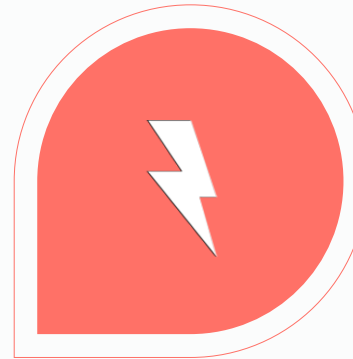
Flash is difficult to learn, complicated, and time consuming to use in practice

01



Flash can't look natural, your images will always look like they are flashed

02



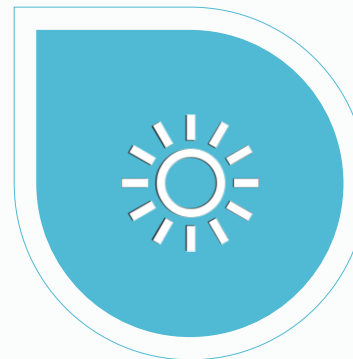
Flash photography is expensive and requires too much gear

03



Flash is only needed when working in dark, or when dealing with subjects in shadows

04





FLASH IS COMPLICATED

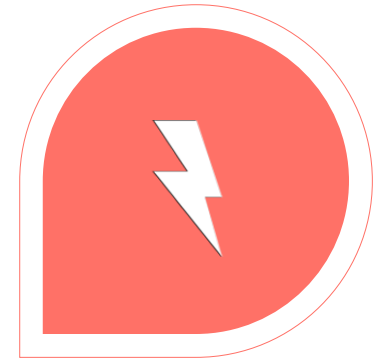
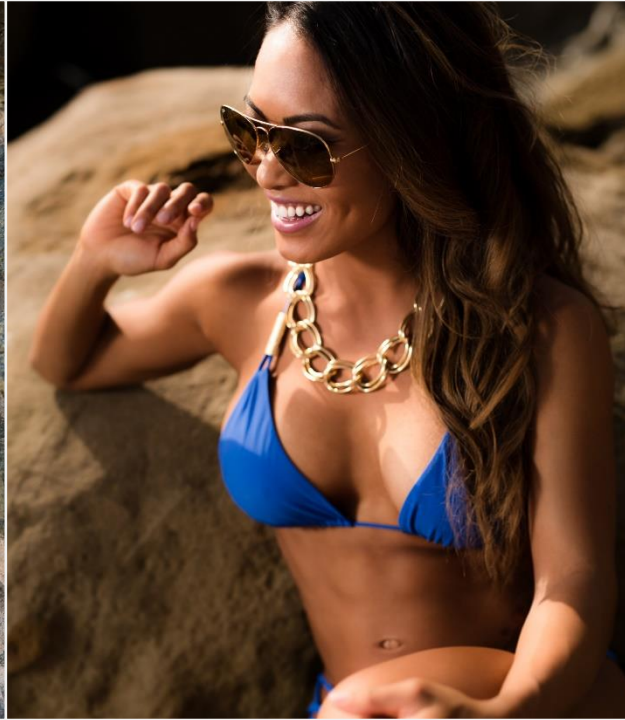
It's true that there is more to learn, but every one of these principles is actually quite simple and easily understood when broken down.

What's difficult is trying to learn everything, lighting, flash, off-camera flash, studio strobes, modifiers and so forth all at the same time.

For this reason, we are going to help you build a strong foundation so that flash won't seem any more complicated than natural light.

From there, we will build and grow into additional modifiers, setups and eventually more lights!

E-TTL, TTL, MANUAL?
FLASH POWER?
AMBIENT vs FLASH
EXPOSURE?
INVERSE
SQUARE HUH?
SYNC SPEED/HSS?



FLASH CAN'T LOOK NATURAL

That's just hogwash! Flash can look natural, it can look stylistic, it can look however you want it to look once you understand how it works.

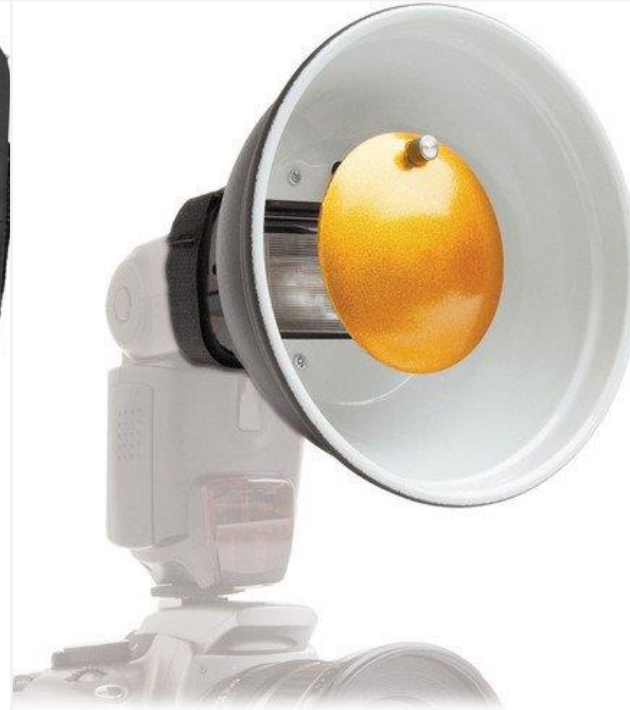


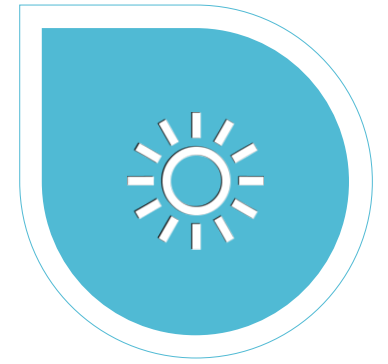


FLASH IS TOO EXPENSIVE

It's true that flash requires more gear than simply natural light photography. But, that doesn't mean it has to be expensive!

In fact, throughout this entire course we are simply using our camera, lens and on-camera flash with the addition of inexpensive light modifiers. Most of which are \$50 or well under.





FLASH IS ONLY FOR THE DARK

Yet another completely false myth. Sure, flash can be used in dark environments. But, it can also be used for so much more!

We can use it during the day to improve the existing light quality or light direction.

We can use it inside or outside when we want to create stylistic looks and effects.

And yes, we can use it in situations where it is dark and we simply need to add light.

Bottom line is, flash is for so much more than just adding light in dark scenes, its for adding and creating the type of light that will make your image more powerful.

4 REASONS FLASH IS CHALLENGING

HEY, AT LEAST THERE AREN'T 40 REASONS



CAN'T SEE IT W/O MODELING LIGHT

Studio strobes use a modeling light allowing you to see where the light falls, flashes don't

1

UNDERSTANDING EXPOSURE

Exposing for flash versus exposing for ambient or constant light is different

2

3

LIGHT MODIFICATION

Flash must be modified for amount, direction, quality and color to best suite your scene and desired look

4

LEARNING THE GEAR

Flash requires more gear than natural light, not expensive gear, just more

CHAPTER TWO

THE BASICS OF FLASH



Strobe vs Constant Light
Exposing for Flash vs Constant Light
Flash vs Constant Light Demo
Flash Balancing for Natural Effect
Flash Balancing for Dramatic Effect
Flash Balancing for Creative Effect
Flash Duration

FLASH/STROBE vs AMBIENT/CONSTANT LIGHT

ONE ISN'T BETTER THAN THE OTHER, THEY ARE SIMPLY DIFFERENT



01

VISIBLE TO EYE

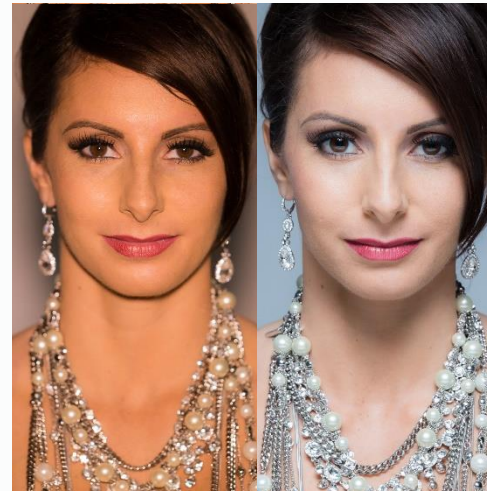
Constant or ambient light is the visible light present in a scene. Strobe is only present for the split second it fires



02

LIGHT INTENSITY

In general, strobe or flash light sources are far more powerful for their relative size than constant light sources



03

WHITE BALANCE

White Balance for ambient or constant lights vary, flash/strobe lights are typically always around 5500K



04

CAMERA EXPOSURE

Exposing for flash/strobe is different than ambient/constant light. Shutter speed and flash power are the primary differences which we will discuss in detail

FLASH vs AMBIENT LIGHT EXPOSURE

SOME EXPOSURE COMPONENTS DIFFER, SOME STAY THE SAME



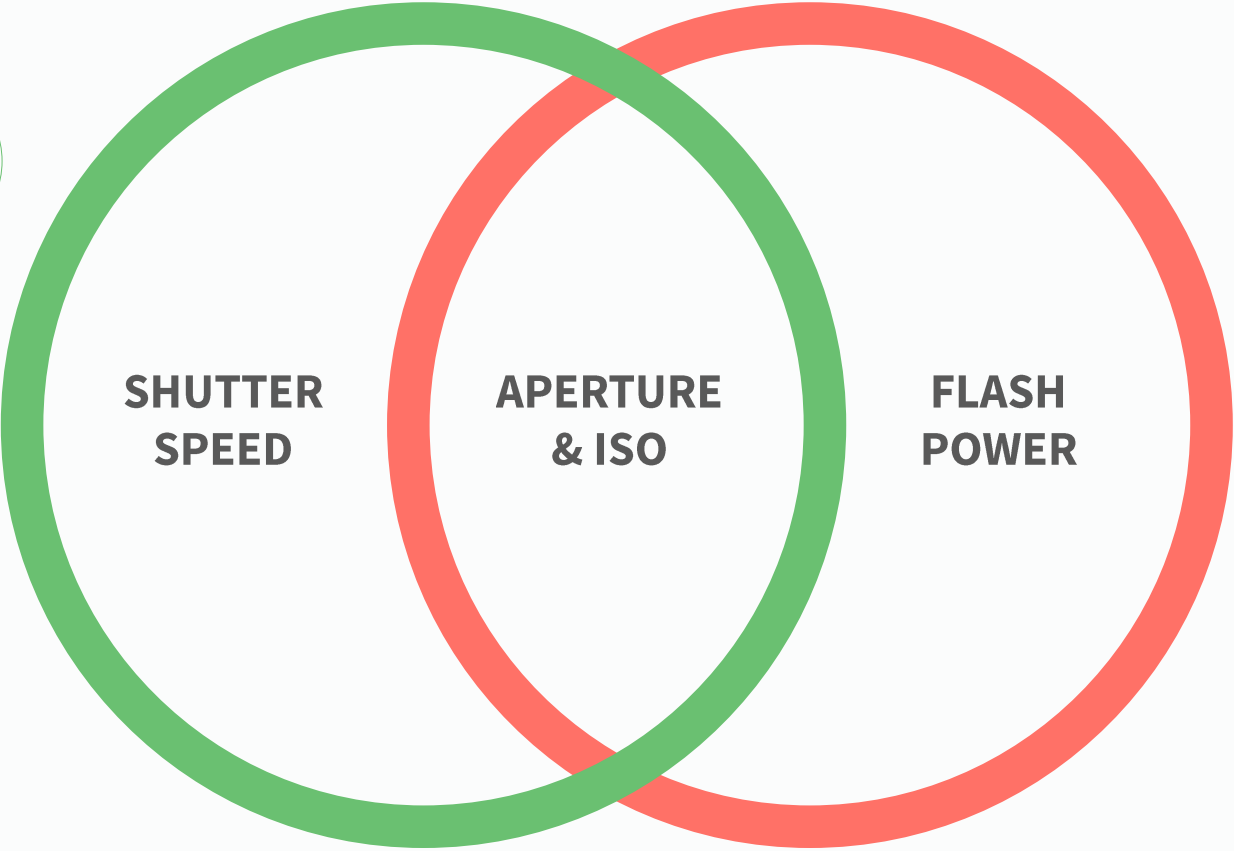
AMBIENT EXPOSURE



Light stays constant throughout the exposure, hence the exposure equation for ambient light is simply

- Shutter Speed
- Aperture
- ISO

Also remember that wherever your flash lands, it will also affect ambient exposure



FLASH EXPOSURE



Flash fires within a split second, therefore it doesn't matter how long your shutter is open, it won't affect the strength of the flash exposure.

Meaning, whether your shutter is open for 1/100th of a second, 1/10th of a second or 1 second, when the flash fires, it fires once during that time and for a split second. So while Shutter Speed affects the ambient light exposure, it has no impact over the strength and exposure of the flash.

So the exposure components of flash are

- Aperture
- ISO
- Flash Power

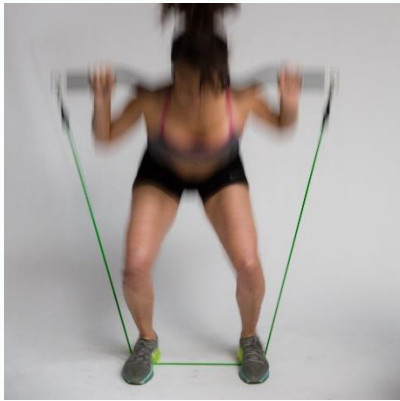
FLASH vs AMBIENT DEMO

ONE ISN'T BETTER THAN THE OTHER, THEY ARE SIMPLY DIFFERENT



◀ 100% AMBIENT

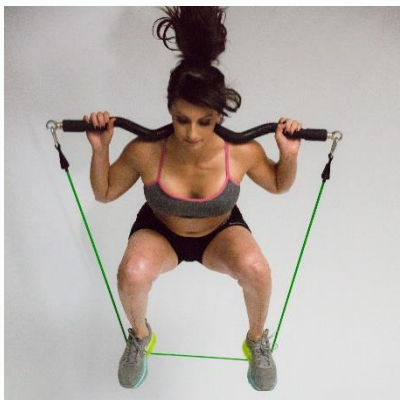
100% FLASH ▶



01

ABOVE - AMBIENT
1/30th, f/2.8, ISO 1600

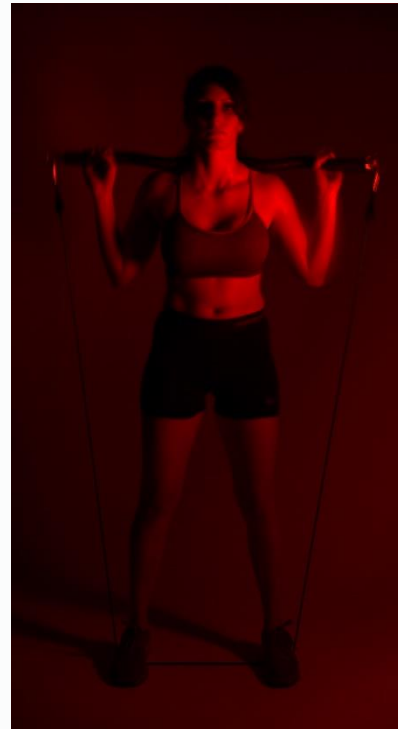
BELOW - AMBIENT
1/200th, f/2.8, ISO 12800



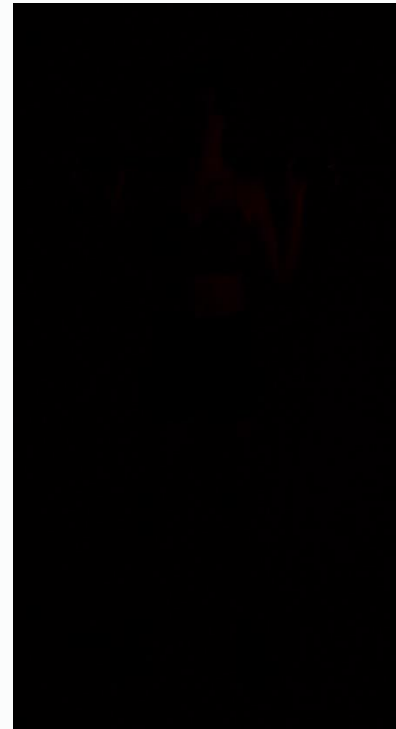
REMOVING AMBIENT - PART I
1/10th, f/2.8, ISO 800



REMOVING AMBIENT - PART II
5 seconds, f/2.8, ISO 800



REMOVING AMBIENT - PART III
5 seconds, f/2.8, ISO 800



02

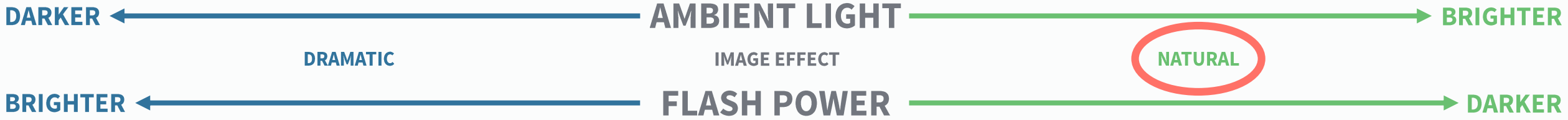
ABOVE - FLASH
1/25th, f/2.8, ISO 800

BELOW - FLASH
5 seconds, f/2.8, ISO 800



FLASH + AMBIENT BALANCING FOR NATURAL EFFECT

THE AMBIENT VERSUS FLASH MIXTURE IS WHAT WILL DETERMINE WHETHER THE IMAGE LOOKS "NATURAL" VS "DRAMATIC"



01 **AMBIENT - NO FLASH**
1/100th, f/1.2, ISO 100 + 5 Stop ND

02 **AMBIENT + FLASH**
1/100th, f/1.2, ISO 100 + 5 Stop ND



01 **AMBIENT - NO FLASH**
1/100th, f/2.8, ISO 800

02 **AMBIENT + FLASH**
1/100th, f/2.8, ISO 800



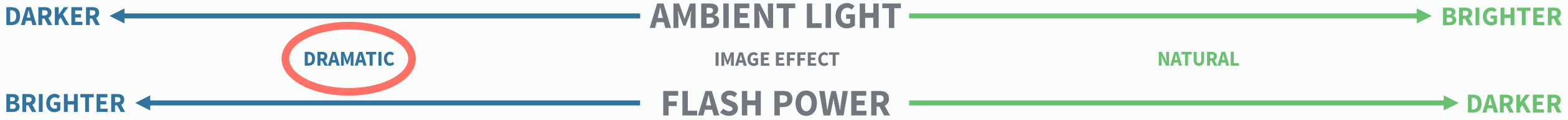
01 **AMBIENT - NO FLASH**
1/100th, f/2.8, ISO 800

02 **AMBIENT + FLASH**
1/100th, f/2.8, ISO 800



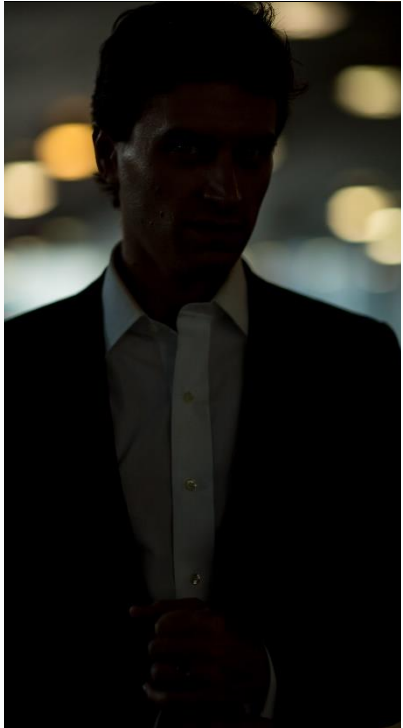
FLASH + AMBIENT BALANCING FOR DRAMATIC EFFECT

THE AMBIENT VERSUS FLASH MIXTURE IS WHAT WILL DETERMINE WHETHER THE IMAGE LOOKS "NATURAL" VS "DRAMATIC"



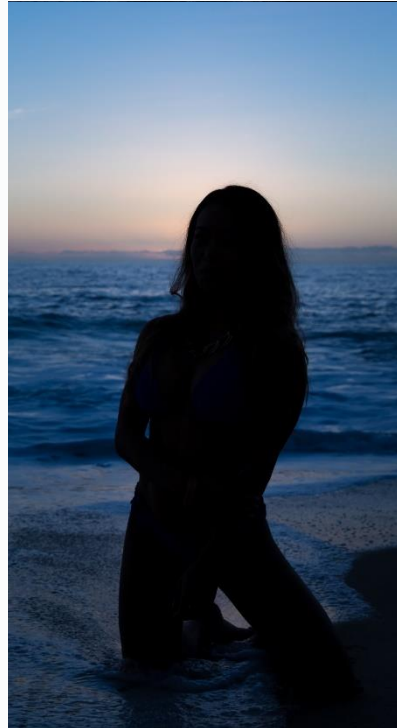
01 **AMBIENT - NO FLASH**
1/50th, f/1.6, ISO 200

02 **AMBIENT + FLASH**
1/50th, f/1.6, ISO 200



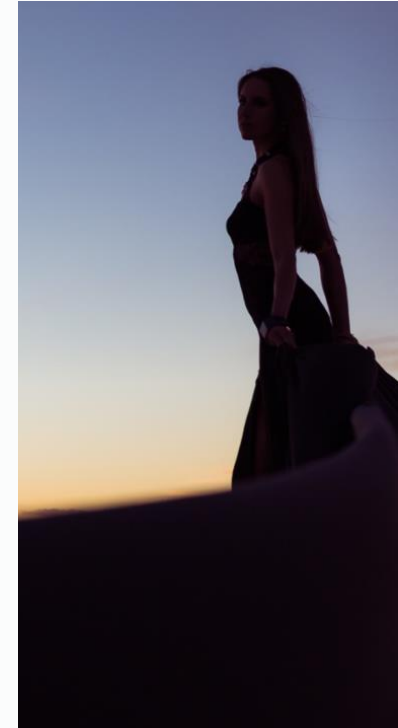
01 **AMBIENT - NO FLASH**
1/200th, f/5.6, ISO 100

02 **AMBIENT + FLASH**
1/200th, f/5.6, ISO 100



01 **AMBIENT - NO FLASH**
1/200th, f/2.8, ISO 100

02 **AMBIENT + FLASH**
1/200th, f/2.8, ISO 100



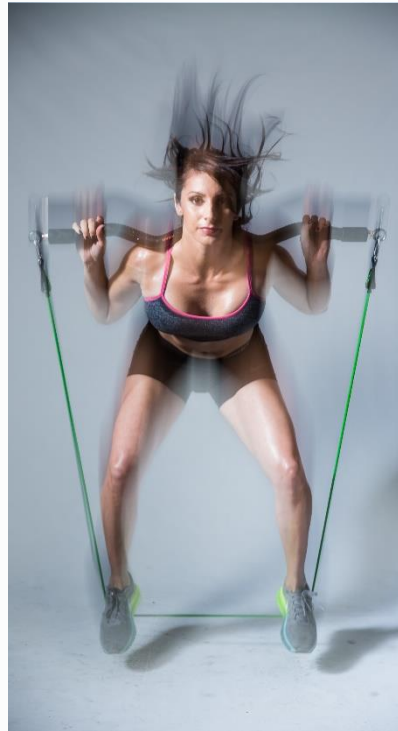
FLASH + AMBIENT BALANCING FOR CREATIVE EFFECT

MIXING FLASH WITH AMBIENT LIGHT PROVIDES A LOT OF OPPORTUNITY FOR CREATIVITY



01

CAMERA SETTINGS w/o RCS
1/10th, f/2.8, ISO 200



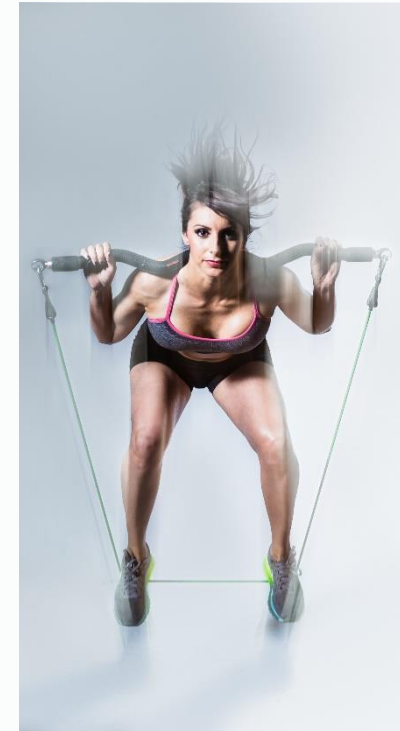
02

CAMERA SETTINGS
1/40th, f/2.8, ISO 200



03

CAMERA SETTINGS w/ RCS
1/10th, f/2.8, ISO 200



UNDERSTANDING FLASH DURATION

FLASHES LOOK LIKE THEY FIRE INSTANTANEOUSLY, BUT THE REALITY IS DIFFERENT

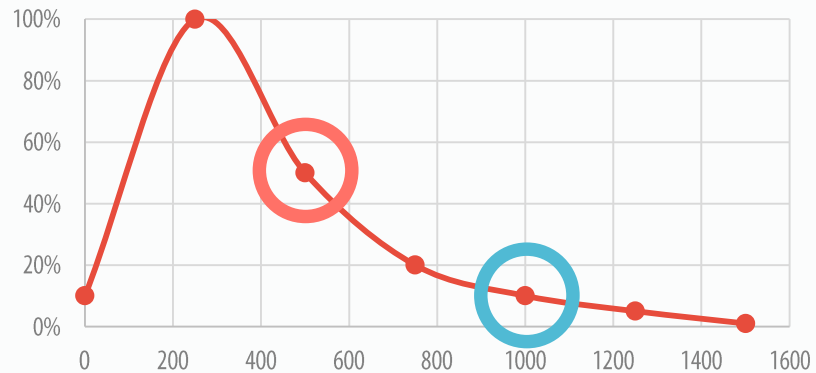


t.5

Time for 50% dissipation

t.1

Time for 90% dissipation



t.5 = 500ms or 1/2 second

t.1 = 1000ms or 1 second



FLASH DURATION

Flash duration is measured by a “t” number. Simply put, the t number defines the amount of time it takes for the flash power to dissipate. “t.5” would be the time taken for 50% of the flash power to dissipate while a “t.1” time would be the amount of time for 90% of the flash power to dissipate.

KEY POINTS

1. Every flash differs, model, make, type, etc.
2. The t.1 time is the best measurement of the flashes ability to freeze a subject
3. Higher the power, the slower the t.1 time
4. Lower the power, the faster the t.1 time
5. Pocket strobes are generally faster than studio strobes

SAMPLE t.1 TIMES (From Andy Gock at gock.net)

Canon 580EX: 1/1 @ 1/250th, 1/2 @ 1/919th... 1/64 @ 1/13,966th
Nikon SB80: 1/1 @ 258th, 1/2 @ 1/1157th... 1/64 @ 1/15,823th
PCB Einstein E640: 1/1 @ 1/391th, 1/2 @ 1016th... 1/64 @ 1/3731th
Generic eBay Light: 1/1 @ 1/140th, 1/2 @ 1/126th... 1/32 @ 1/98th

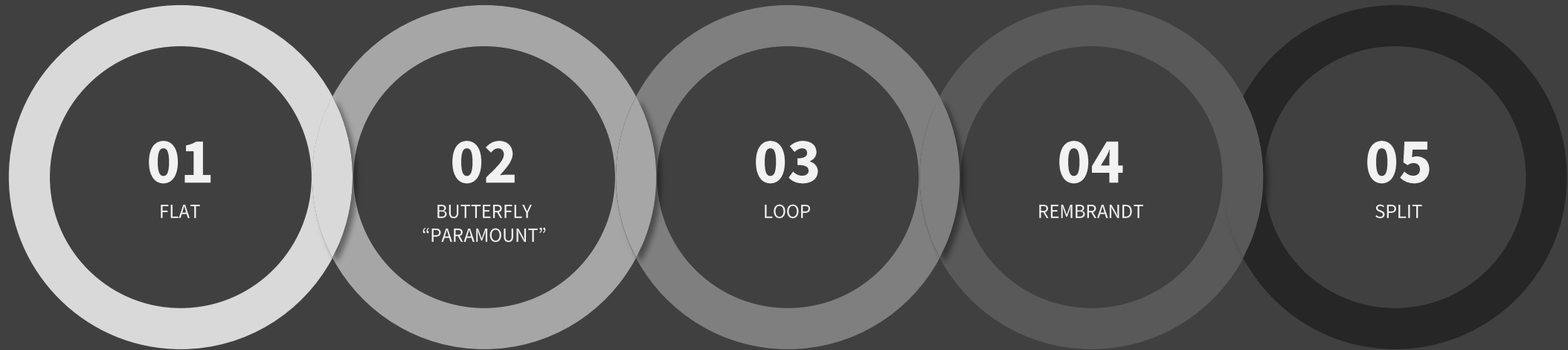
See more at <http://www.gock.net/2012/01/flash-durations-small-strobes/>

CHAPTER THREE

UNDERSTANDING LIGHT



Key Light Direction
Secondary Light Patterns
Subject Positioning
Light Qualities
Inverse Square Law
Light Temperature



01

FLAT

FLAT LIGHTING

Light faces directly into the subject from the angle of the lens

02

BUTTERFLY
"PARAMOUNT"

BUTTERFLY LIGHTING

Light comes from directly in front and above the subjects face

03

LOOP

LOOP LIGHTING

Light above subject (25-50°), angled to the subject's face (25-50°)

04

REMBRANDT

REMBRANDT LIGHTING

Light from above subject and at a stronger angle than Loop

05

SPLIT

SPLIT LIGHTING

Light comes directly 90° to right or left of subjects face

5 COMMON KEY LIGHT PATTERNS

SHADOWS/DRAMA

LESS ←

→ MORE

CHARACTERISTICS

Minimal shadows. Shadows are present under the chin, and increase based on depth

CHARACTERISTICS

Shadows are created directly below facial features, most notable characteristic is the "butterfly" shadow created under the nose

CHARACTERISTICS

Slight directional light, light still falls onto both sides of the face however the shadow of the nose is extended to one side

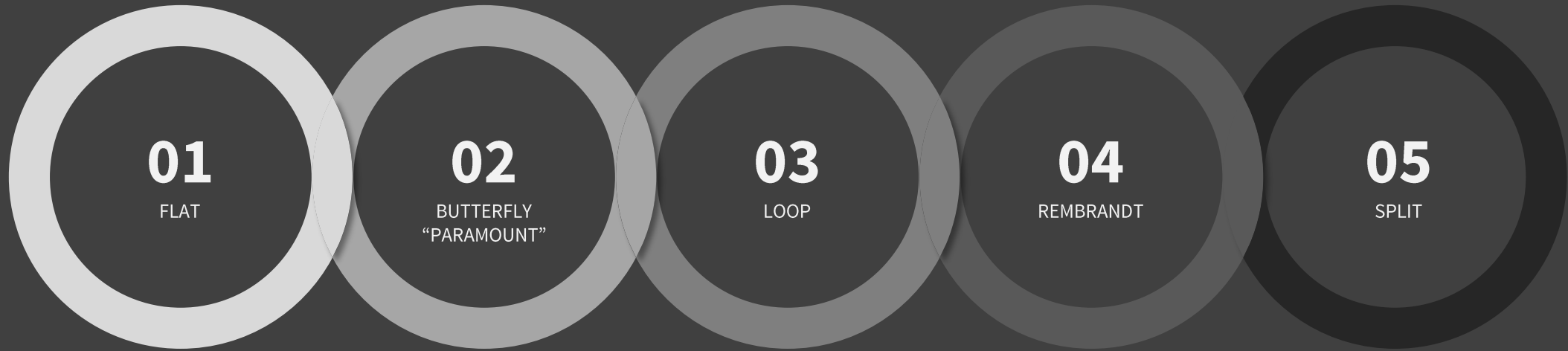
CHARACTERISTICS

Leaves one side of the face primarily in shadow with exception of the cheek bone and eye

CHARACTERISTICS

Leaves one side of the face completely in shadow with the bridge of the nose and forehead as the diving or split line





01

FLAT

FLAT LIGHTING

Light faces directly into the subject from the angle of the lens

02

BUTTERFLY
"PARAMOUNT"

BUTTERFLY LIGHTING

Light comes from directly in front and above the subjects face

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LOOP LIGHTING

Light above subject (25-50°), angled to the subject's face (25-50°)

04

REMBRANDT

REMBRANDT LIGHTING

Light from above subject and at a stronger angle than Loop

05

SPLIT

SPLIT LIGHTING

Light comes directly 90° to right or left of subjects face

5 COMMON KEY LIGHT PATTERNS w/ DIFFUSION + FILL

LESS



MORE

CHARACTERISTICS

Minimal shadows. Shadows are present under the chin, and increase based on depth

CHARACTERISTICS

Shadows are created directly below facial features, most notable characteristic is the "butterfly" shadow created under the nose

CHARACTERISTICS

Slight directional light, light still falls onto both sides of the face however the shadow of the nose is extended to one side

CHARACTERISTICS

Leaves one side of the face primarily in shadow with exception of the cheek bone and eye

CHARACTERISTICS

Leaves one side of the face completely in shadow with the bridge of the nose and forehead as the diving or split line





01

FILL

02

KICKER, RIM, EDGE

03

HAIR

04

BACK

05

BACKGROUND

FILL LIGHT

Light that is simply added to fill in shadow areas of a subject or scene

KICKER, RIM, EDGE LIGHT

Light that is designed to create an edge on a subject

HAIR LIGHT

Light that is placed directly above the head to brighten and add texture to hair

BACK LIGHT

Light placed directly behind to create an even highlight around the subject

BACKGROUND LIGHT

Light used to add light to areas of a background or scene

5 COMMON SECONDARY LIGHT PATTERNS

LESS



SHADOWS/DRAMA

MORE

USAGE

Opens up and add detail in deep areas of shadow that might otherwise turn black

USAGE

Creates shape and dimension on the subject for dramatic effect or where edges might blend into a darker background

USAGE

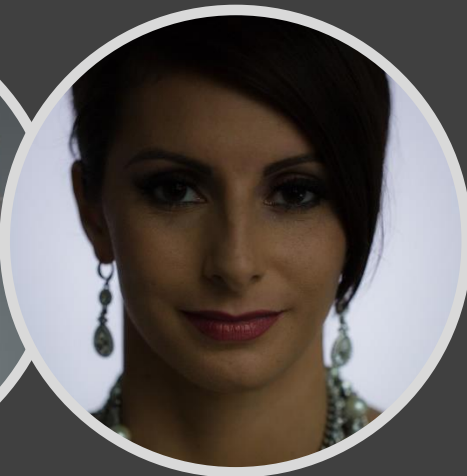
Add additional interest via brightening and adding texture to hair, also helps to separate dark hair from a dark background

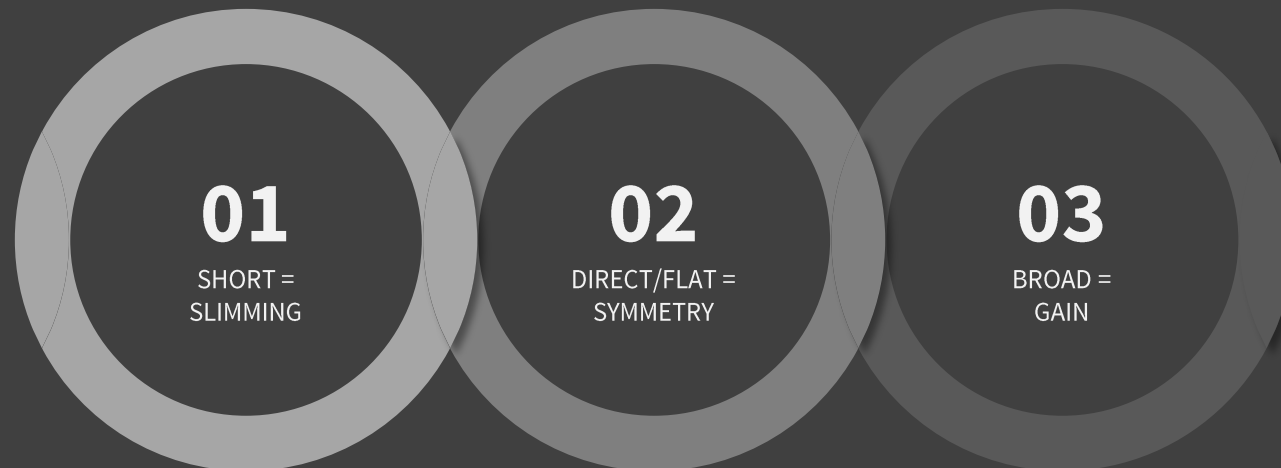
USAGE

Creates separation from the subject to the background, particularly when the subject blends into the background

USAGE

Brighten areas of the background where detail might be lost, or where needed for artistic or compositional effect





01

SHORT =
SLIMMING

02

DIRECT/FLAT =
SYMMETRY

03

BROAD =
GAIN

SHORT LIGHTING

Lighting into the “short” or far side of the face leaving shadows on the “broad” or near side of the face

DIRECT/FLAT

Subject looks directly into camera, light with a variety of techniques (flat lighting shown here)

BROAD LIGHTING

Lighting into the “broad” or near side of the face leaving shadows on the “short” or far side of the face

3 PRIMARY SUBJECT POSITIONS (IN RELATION TO THE KEY LIGHT)

SLIM ←

EFFECT ON SUBJECT

→ GAIN

USAGE

“Slimming” effect on the face. Generally the most flattering for most situations (with the exception of those who have extremely narrow faces to begin with)

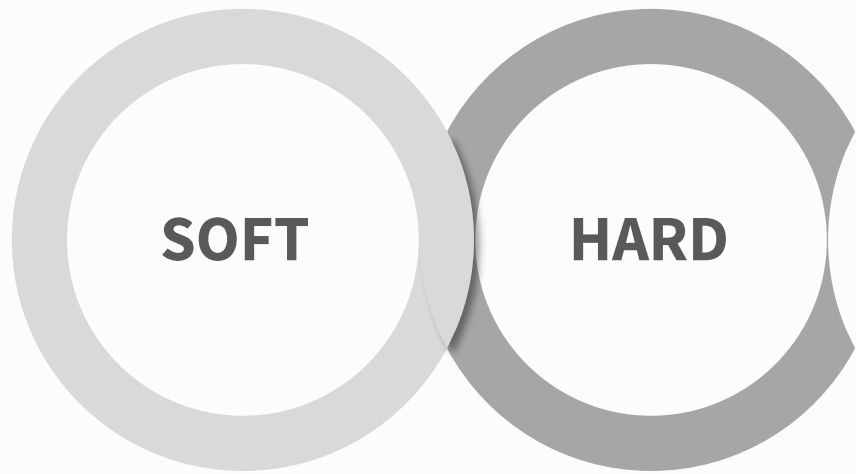
USAGE

Fantastic for showing “symmetry.” Favor using symmetrical light when trying to show symmetry (Paramount, flat, clamshell, square, etc)

USAGE

“Broadening” effect on the face. Generally isn’t as flattering as short light in most situations (with the exception of those that have narrow faces which may benefit)





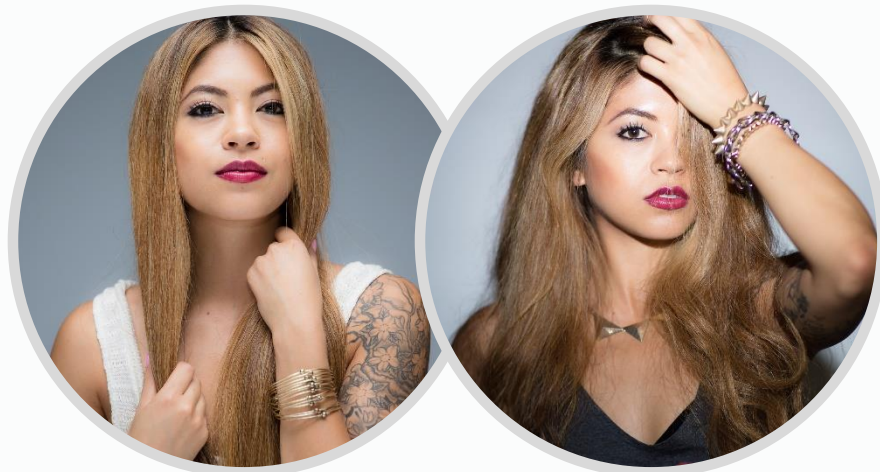
LARGE ← → **SMALL**

DEFINITION

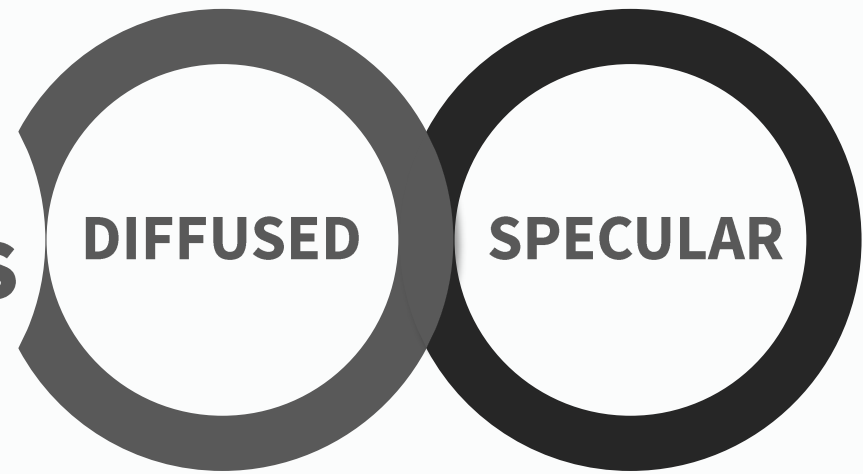
A light is soft or hard depending on graduation of the “falloff.” The quicker a light falls off from areas of light into areas of shadow, the “harder” the light. The more gradual the transition from areas of light to areas of shadow the “softer” the light.

CREATED BY

A light is soft or hard based on one simple factor. The size of the light in relation to the subject matter. The larger the light source, the softer the light, the smaller the light source the harder the light.



LIGHT QUALITIES



MATTE ← → **REFLECTIVE**

DEFINITION

A “specular” creates stronger and brighter highlights on the subject. A “diffused” light is the exact opposite, it creates more subtle and gradual highlights.

CREATED BY

A light’s specularity is based upon its reflective nature. The more reflective a surface, the more specular the light. So a silver or even a glossed white reflective surface will create a more specular light while white or non-glossy matte surfaces will create a more diffused light.



THE INVERSE SQUARE LAW

DON'T WORRY, IT REALLY ISN'T AS COMPLICATED AS IT SOUNDS



IN LAYMAN'S TERMS (MY KIND OF TERMS)

Your light loses power as you increase distance from the light to the subject, duh! Only catch is that it loses power at a greater rate than the distance. Hence 2x the distance = ¼ the power.

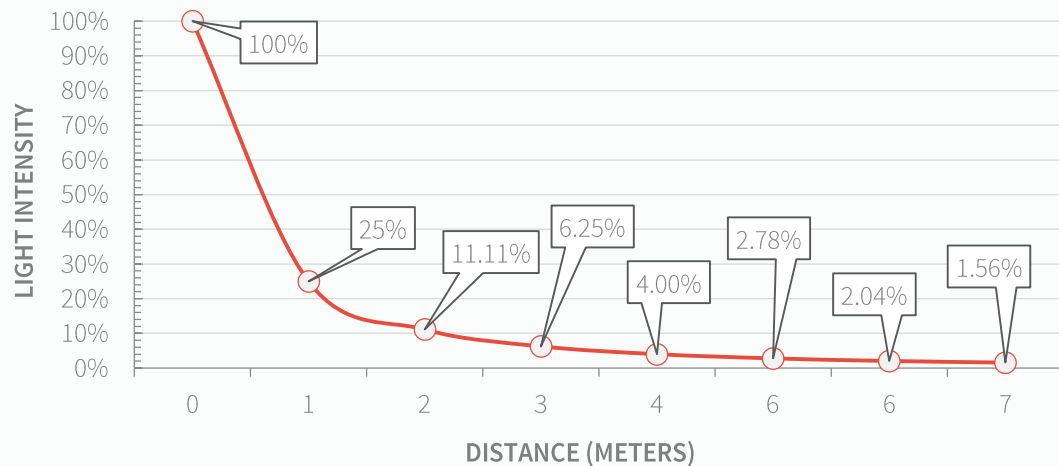
IN PRACTICE

If you want an equal exposure across more than 1 person in a photo, each person's relative distance to the light needs to be similar. So, move the light back! Just remember that moving the light back will also affect the quality of the light as well as the power.

THE FORMULA

Intensity = $1 / \text{Distance}^2$

See, even the formula is simple!



INVERSE SQUARE PAC.. PYE-MAN

SEEING THE INVERSE SQUARE LAW IN THE REAL WORLD... OR IN PYE'S WORLD RATHER



6 FEET @ 2%

5 FEET @ 2.8%

4 FEET @ 4%

3 FEET @ 6.3%

2 FEET @ 11%

1 FEET @ 25%

0 FEET @ 100%



INVERSE SQUARE LAW IN PRACTICE

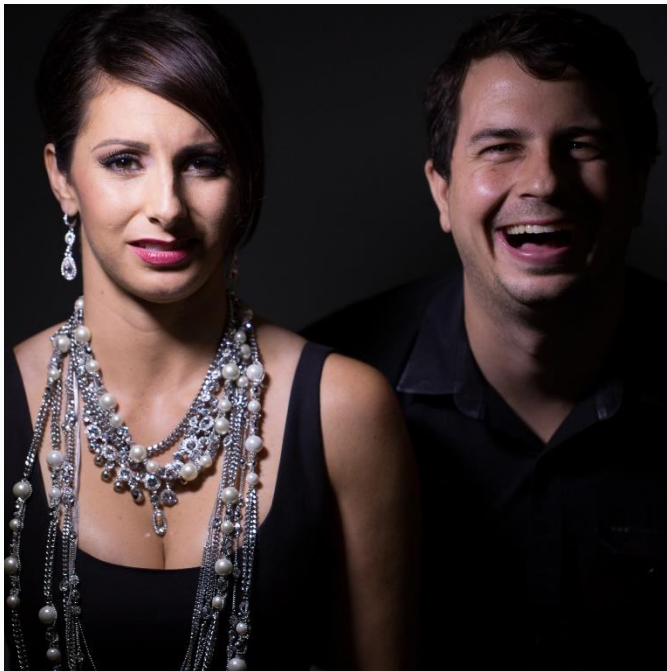
FOUR SIMPLE RULES TO FOLLOW WHEN WORKING WITH LIGHTING GROUPS

01

ISL STILL APPLIES TO INDIVIDUALS

When shooting an individual person or subject, the Inverse Square Law still applies. A light placed close to the subject will be able to highlight certain features for artistic/compositional effect

1 FOOT FROM MODEL

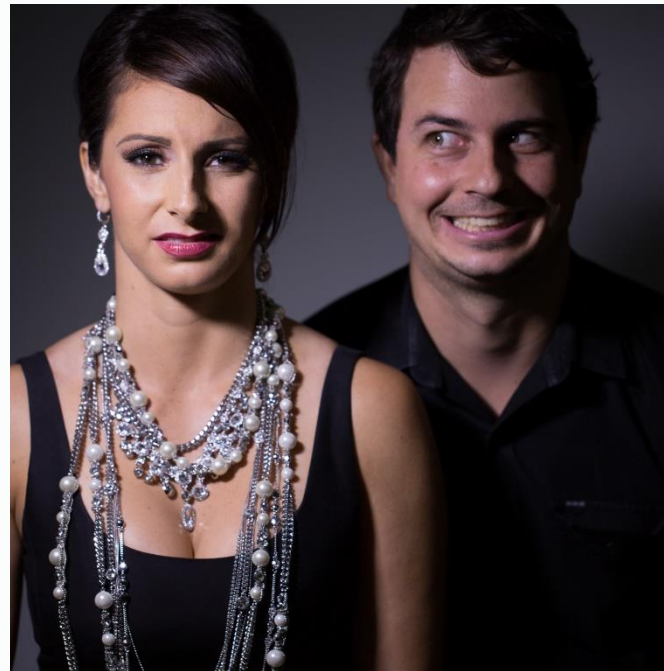


02

MORE PEOPLE = MORE DISTANCE

When lighting and shooting groups, the larger the group, the further the light source needs to be in order to light the group evenly

4 FEET FROM MODEL



03

SAME DISTANCE FROM LIGHT

The rule of thumb is that each individual should be roughly the same distance from the light source in order to be equally lit

8 FEET FROM MODEL



04

MORE DRAMATIC > DISTANCE

Flat or less directional light will be roughly the same distance from each person in a group. Dramatic or directional light is going to favor one side far more than the other, therefore the light must be placed much further away

CORRECTIVE WHITE BALANCE

From the Photography 101 Workshop series we know that each type of light has its own color or “Color Temperature” measured in degrees Kelvin.

Strobe/flashes come default at 5,500K which is set to match that “neutral” mid-day noon sunlight at 5,500K.

When ambient or the “dominant” light doesn’t match that color, then you end up with mixed light which will result in bad lighting and thus it will compromise image quality.

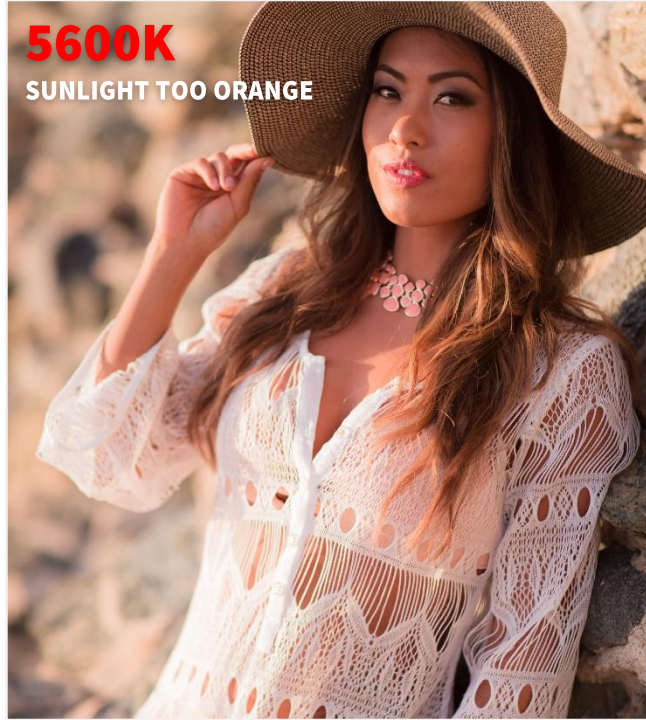
You can change the color temperature of Flash by simply gelling to match virtually any type of ambient light.

PRIMARY TIPS

1. Gel to match the dominant light
2. Most commonly needed gel is a CTO gel
3. Remember gelling reduces power
4. Cover entire flash head with the gel
5. Gels can be stacked to further alter color

GEAR LIST

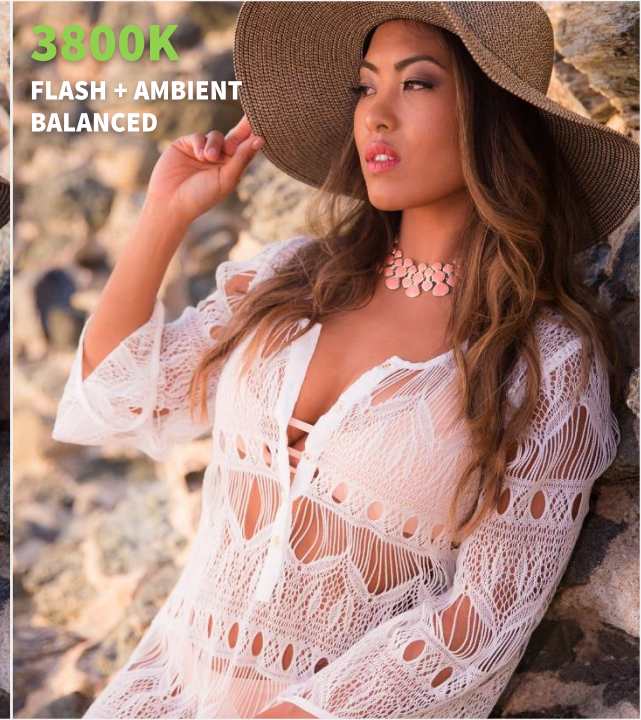
1. Budget Gel – Gel Sheet (\$10) + Velcro
2. Favorite Gel – Mag Mod System (\$90)



5600K
SUNLIGHT TOO ORANGE



4600K
FLASH TOO BLUE



3800K
FLASH + AMBIENT
BALANCED

INDOOR

1,700° - 1,900°K
MATCH/FLAME/CANDLE LIGHT

3,000°K
HALOGEN

5,500°K
FLASH/LED/LCD/CRT

2,500°K
HOUSEHOLD TUNGSTEN

4,200°K
CFL/FLOURESCENT

2,000° - 3,000°K
SUNRISE/SUNSET

5,500°K
AVERAGE NOON

7,500° - 10,000°K+
BLUE SKY/TWILIGHT/NIGHT

3,500° - 4,500°K
EARLY MORNING to MID AFTERNOON

6,000° - 7,000°K
CLOUDY/OVERCAST/SHADE

OUTDOOR

CREATIVE WHITE BALANCE

Beyond gelling and adjusting White Balance for "corrective" purposes, don't forget that gelling and modifying Color Temperature is also huge for creative purposes!

Creatively modifying Color Temperature is a fantastic way to add extra dimension and interest into your images.

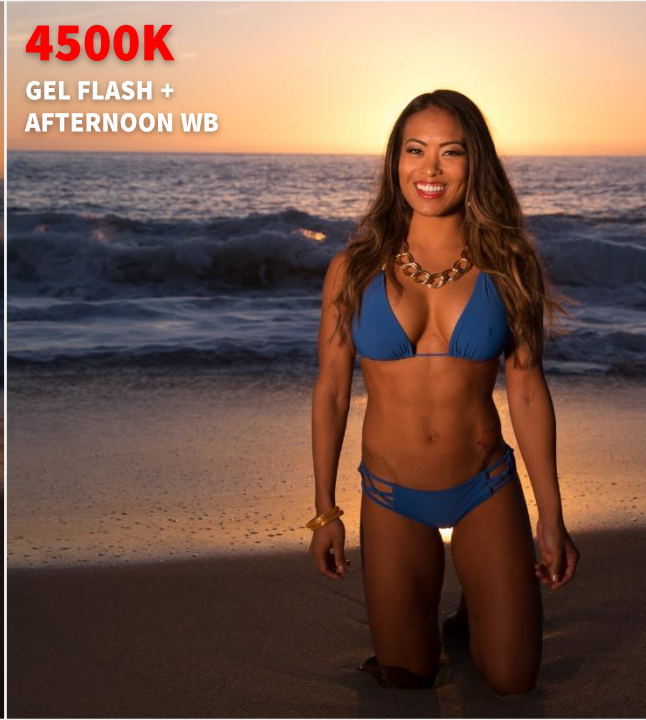
It also yields the "HOW DID YOU DO THAT!?" reaction from clients when you show them in-camera what you just did!

PRIMARY TIPS

1. Don't light the same subject with light sources of different colors
2. Create a clear separation between light colors, don't allow different colors to bleed over one another
3. Gelling reduces power
4. Cover entire flash head with the gel
5. Most commonly used gels for creative lighting are CTO, Red and Blue gels
6. Gels can be stacked to further alter color

GEAR LIST

1. Budget Gel – Gel Sheet (\$10) + Velcro
2. Favorite Gel – Mag Mod System (\$90)



CHAPTER FOUR

ON-CAMERA FLASH GEAR BASICS



On-Board vs Hot Shoe Flash
Full Feature vs Manual Flashes
TTL vs Manual
TTL vs Manual Recycle Times
Flash Power and Zoom
HSS vs ND Filters
FCS vs RCS
Our Favorite Pocket Strobes
Our Favorite On-Camera Modifiers

ON BOARD VS HOT SHOE FLASH

JUST BITE THE BULLET AND GET A HOT SHOE FLASH!



ON BOARD

PROS

1. Great Works in a pinch
2. Always with you

CONS

1. Difficult to modify
2. Limited functionality
3. Limited power
4. Red-eye is frequent



HOT SHOE

PROS

1. Modify direction
2. Modify quality
3. More power
4. More functionality
5. Models/prices
6. Red-eye is very rare

CONS

1. Additional cost
2. More to carry



FULL FEATURE VS MANUAL FLASHES

EACH HAVE THEIR PROS AND CONS



FULL FEATURE

PROS

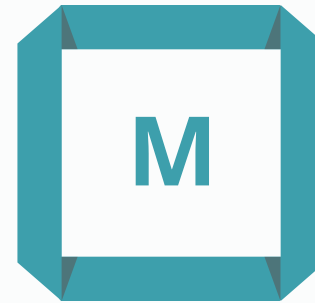
1. Focus assistance
2. TTL & Manual control
3. HSS (High Speed Sync)
4. RCS (Rear Curtain Sync)
5. Pulse modes
6. Infrared triggering
7. Radio triggering (some)
8. Radio control (some)
9. Off-camera TTL (some)

CONS

1. Expensive
2. More complicated

OUR FAVORITES

1. Phottix Mitros+ (\$399)
2. Canon 600EX-RT (\$499)
3. Nikon SB910 (\$549)



MANUAL

PROS

1. Inexpensive
2. Simple to use

CONS

1. Just a flash, no advanced features shown on full feature flashes to the left

OUR FAVORITES

1. LumoPro LP180 (\$199)

HONORABLE MENTIONS

1. *Neewer TT850 (\$105)
2. Vivitar 285HV (\$100)
3. *YongNuo 560 III (\$75)



*It is worth noting that we have had quite a bit of experience with the YongNuo YN560-III and the Neewer TT850. While these flashes offer a lot of features and “bang for the buck” quality control and consistency is an issue. Bottom line, these are great flashes to play with, but you get what you pay for. I wouldn't recommend these for professional shoots.

TTL vs MANUAL CONTROL

FIRST CURTAIN SYNC vs REAR CURTAIN SYNC



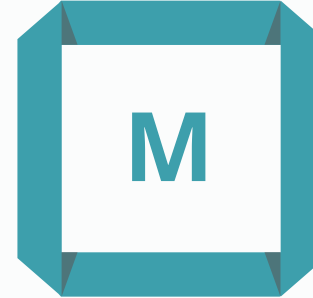
THROUGH THE LENS

PROS

1. Simple, automated

CONS

1. Less control/precision
2. Lack of consistency
3. Modifiers/unique compositions can confuse the flash
4. More power consumption
5. Slower recycle times



MANUAL CONTROL

PROS

1. More control/precision
2. Exposure consistency
3. Same settings regardless of modifier/composition
4. Less power consumption
5. Better recycle time

CONS

1. More effort, not-automated



TTL vs MANUAL RECYCLE TIMES

ANOTHER BENEFIT OF MANUAL MODE VS TTL

TEST PROCEDURES

FLASH

Canon 580EX II

BATTERIES

Standard Duracell

Eneloop Rechargeable

TEST PROCEDURES

1. Clamshell lighting setup
2. Camera on tripod
3. Manual & TTL exposures identical
4. Manual test first
5. TTL test second
6. Manual test third
7. Ran test 3x w/ same results

CAMERA SETTINGS

1/100th, f/7.1, ISO 100

FLASH SETTINGS

TTL + 1 & 2/3

Manual between 1/2 and 1/4th power

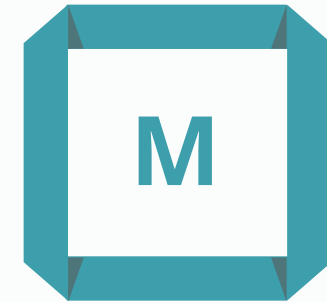


THROUGH THE LENS

> MANUAL TEST

TIMES

1. 1.05
2. 1.68
3. 1.80
4. 2.03
5. 2.16
6. 2.18
7. 2.25
8. 2.28
9. 2.31
10. 2.33
11. 2.43
12. 2.51



MANUAL CONTROL

TIMES

1. 0.58
2. 0.73
3. 1.08
4. 1.23
5. 1.23
6. 1.25
7. 1.28
8. 1.33

< TTL TEST

1. 0.66
2. 0.88
3. 1.38
4. 1.45
5. 1.46
6. 1.58
7. 1.56
8. 1.60
9. 1.61
10. 1.66

FLASH POWER & ZOOM

FLASHES ARE NOT CREATED EQUAL



01 FLASH POWER IN TTL

Controlled via + or - EVs

FLASH POWER IN MANUAL

Measured by total output

- 1/1
- 1/2
- 1/4
- 1/8
- 1/16
- Etc...

GUIDE NUMBER

The measurement for total possible output on flashes/pocket strobes. Not all guide number measurements are done equally

02 ZOOM IN TTL

Sometimes controlled automatically, sometimes it will allow you to switch and control manually

ZOOM IN MANUAL

1. Lower the number, the more "wide" traveling shorter distance
2. Higher the number, the more "throw" traveling further distance

ZOOM LENGTH

Some flashes are capable of further zooms than others

HSS vs ND FILTERS

THE TWO WAYS OF SYNCING FLASH IN BRIGHT SCENES



HIGH SPEED SYNC

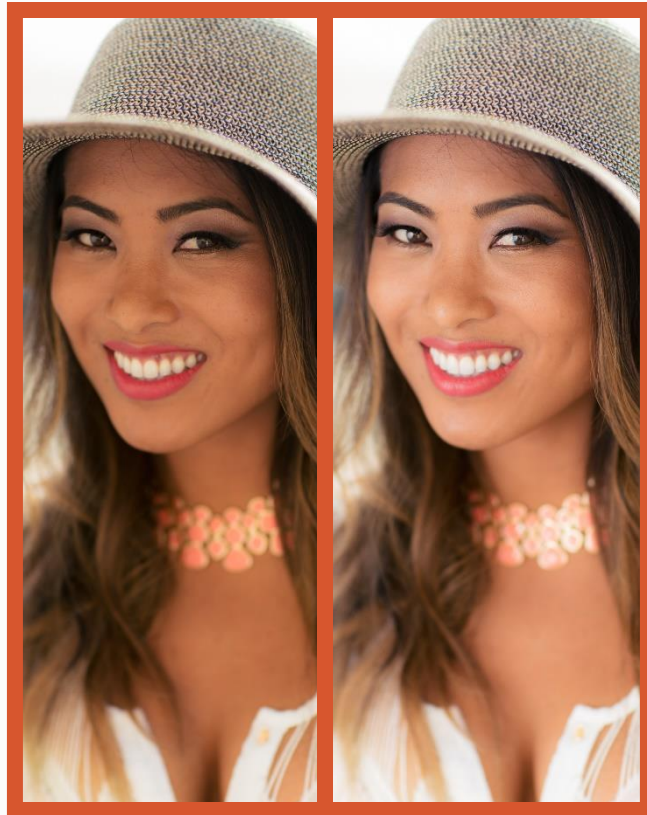
1/400th, f/2.0, ISO 50

HSS PROS

1. No extra gear

HSS CONS

1. Heavy light loss (4-5 stops)
2. Loss of image quality when raising ISO + Shutter
3. Worse battery life



ND FILTERS

1/200th, f/1.2, ISO 200 + 5 Stop ND

ND PROS

1. More flash power (negated by ND)
2. Better image quality
3. Better battery life

ND CONS

1. Requires more gear
2. Can be inconvenient
3. Nice NDs are expensive
4. Reduction of color/image quality with poor NDs



FCS vs RCS

FIRST CURTAIN SYNC vs REAR CURTAIN SYNC



FIRST CURTAIN SYNC

Settings - 1/10th, f/2.8, ISO 200

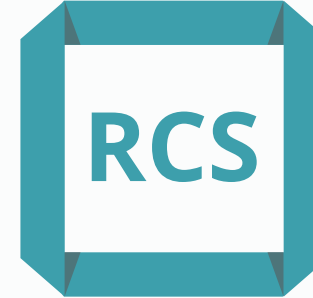
HOW IT WORKS

Flash fires as soon as the first curtain opens, shutter stays open for the duration of the Shutter Speed, second curtain closes.

WHEN IT MATTERS

When dragging the shutter, or shooting objects in motion, FCS will fire the flash as soon as the first curtain opens. This gives your subject time to move after the flash is fired and until the rear curtain closes.

This results in an image where the subject isn't as "frozen" by the flash, and where the motion occurs after the flash is fired, and thus looks like the motion elements move away from the subject.



REAR CURTAIN SYNC

Settings - 1/10th, f/2.8, ISO 200

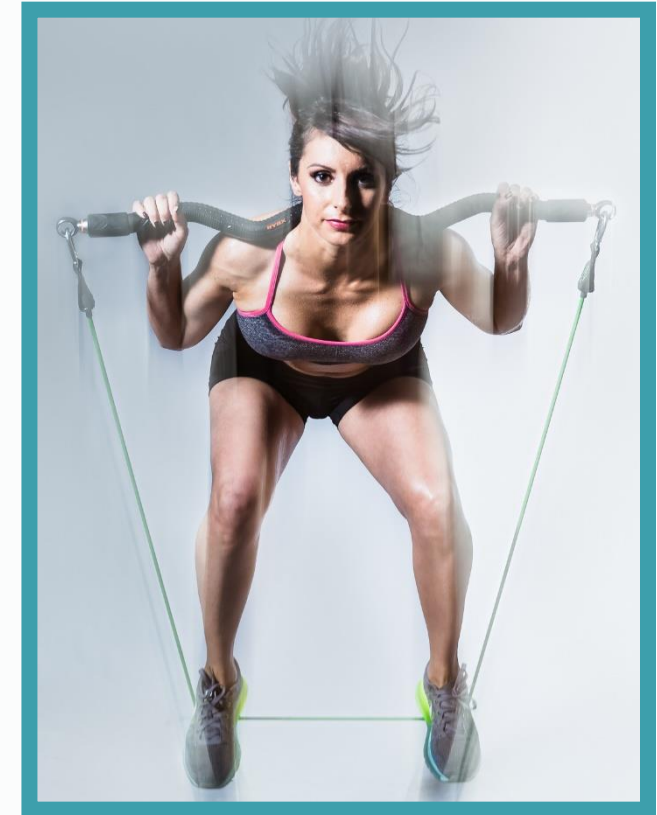
HOW IT WORKS

First curtain opens, shutter stays open for the duration of the Shutter Speed, flash fires just before the second curtain closes.

WHEN IT MATTERS

When dragging the shutter or shooting objects in motion, RCS will capture motion then fire the flash at the end of the shot allowing you to freeze the subject at the end of the frame.

The result is an image where the motion leads into the subject and since the flash fired just before the rear curtain closes, the subject is better frozen.



OUR 3 FAVORITE FULL FEATURE FLASHES

IF IT'S IN THE BUDGET, THESE ARE FANTASTIC OPTIONS



01 PHOTTIX MITROS+ (\$399)

Fantastic full feature 3rd party flash that is currently available for Canon, Nikon and Sony systems.

In addition to the standard features of a FF flash including RCS, HSS, AF assist, etc. This flash also comes with a built-in wireless radio system.



02 CANON 600EX-RT (\$499)

Canon's answer to the radio + flash problem. The 600EX-RT includes all the primary FF functionality of the 580-EX II and like the Mitros+ it also comes with its own built-in Canon wireless radio system.

*This is a great native option for Canon users, but it does come at a \$100 premium over the Mitros+ (when purchasing multiple flashes for OCF, that can add up).



03 NIKON SB-910 (\$549)

Unfortunately, we are still waiting for Nikon to update their flash line up with a wireless radio system.

However, even without the wireless radio system, the SB-910 is still one of the most advanced FF flashes available.

*Recommend the Mitros+ at least until Nikon releases an update to their SB flash systems as these flashes are a bit outdated.

OUR 5 FAVORITE MANUAL FLASHES

IF IT'S IN THE BUDGET, THESE ARE FANTASTIC OPTIONS



01 LUMOPRO LP-180 (\$199)

PROS

1. Excellent build quality
2. Fantastic and simple interface
3. 1/4" - 20 built onto the flash
4. Fantastic wireless range
5. Good recycle time
6. External power input
7. Metal hot shoe

CONS

1. More expensive
2. Requires 3rd party radio system



02 NIKON SB-24, 28, 80 (\$99 - \$200+)

PROS

1. Excellent build quality
2. Simple interface
3. Great wireless range
4. Good recycle time

CONS

1. Expensive! Up to \$200+
2. No warranty/used
3. Requires 3rd party radio system
4. Plastic hot shoes



03 NEEWER TT850 (\$105)

PROS

1. Simple interface
2. Great 3rd party wireless range
3. Fantastic recycle times
4. Factory wireless system available
5. Factory wireless system controls power
6. Metal hot shoe

CONS

1. Battery quality control
2. No AA battery slots
3. Build quality is average
4. Wireless system is a bit clunky and cheap



04 YONGNUO YN560-III (\$75)

PROS

1. Built-in wireless system
2. Wireless control of power
3. Very inexpensive
4. External power input
5. Metal hot shoe

CONS

1. Cheap build quality
2. Poor 3rd party wireless range
3. Menu systems are clunky



05 VIVITAR 285HV (\$95)

PROS

1. Simple
2. Fantastic wireless range
3. Works

CONS

1. Clunky old school interface
2. Terrible 1/1 recycle time
3. Looks like a tank
4. Modifiers don't easily fit head
5. Plastic hot shoe
6. Requires 3rd party radio system
7. Requires special cable for 3rd party radio system
8. Plastic hot shoe

OUR FAVORITE ON-CAMERA FLASH MODIFIERS

YOU DON'T NEED TO BUY AND TRY EVERYTHING OUT THERE, USE YOUR JUDGEMENT!



01 GRID + GELS

FAVORITE
Mag Mod System (\$80)

BUDGET
Vello Grid (\$20)



02 REFLECTORS

FAVORITE
Westcott 40" 5 in 1 (\$40)
Westcott Omega 10 in 1 (\$100)
Fotodiox 40"x60" 5 in 1 (\$40)



03 BOUNCE/MINI BEAUTY

FAVORITE
Fstoppers Flash Disc (\$50)

BUDGET
Impact Strobros (\$24)



04 SNOOTS

FAVORITE
XP Portaflex (\$10)



05 RING FLASH

FAVORITE
Expolmaging Ray Flash 2 (\$140)

BUDGET
DIY Photography Ring Flash Kit (\$25)



06 DOME

FAVORITE
Gary Fong (\$60)

BUDGET
EzFoto Dome (\$20)

CHAPTER FIVE

DIRECT FLASH DONE RIGHT!



How to Use Direct Flash in a Pinch
On-Board vs Hot Shoe Flash
Full Feature vs Manual Flashes
TTL vs Manual
Flash Power and Zoom
Our Favorite Pocket Strobes
Our Favorite On-Camera Modifiers

4 TIPS WHEN YOU MUST USE DIRECT FLASH

FOR WHEN YOU ABSOLUTELY HAVE NO CHOICE BUT TO USE DIRECT FLASH



NATURAL LIGHT - NO FLASH



01 First tip, don't use direct flash!



HEAVY FLASH



02 Start by exposing the image for the desired level of ambient light. Brighter the better



MEDIUM FLASH



03 Use the lowest flash power possible when filling light, or when used as a main light



LIGHT FILL FLASH



04 Soften the direct flash with a bit of modification for slightly better results

“BARE BULBING” DONE RIGHT!

Bare bulb direct flash is absolutely fantastic for a more “edgy” and hard editorial look. It is a look frequently associated with photographs in fashion and the music industry. When combined with the right subject and pose, it looks awesome!

GEAR LIST

Bracket – Vello Speedy Bracket \$20

TTL Cable – Vello TTL Cable \$15 (Canon \$70)

PRIMARY TIPS

1. Get the flash above the camera using a bracket
2. Use a TTL cable if you want to retain TTL functionality
3. Adjust angle of flash and use the zoom to control where the light lands

CAMERA SETTINGS

TL - 85mmL @ 1/200th, f/1.2, ISO 3200

Ambient light only

TM - 85mmL @ 1/200th, f/2.8, ISO 400

V-Flat bounce

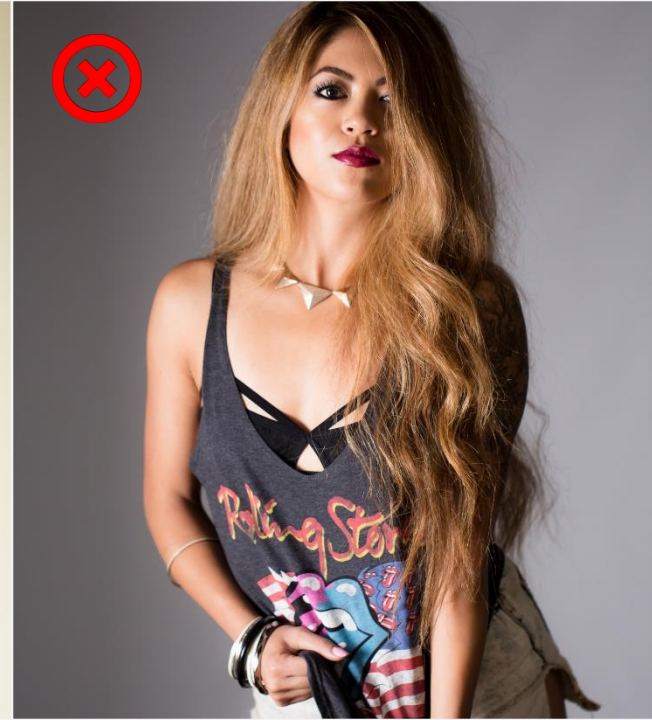
OTHERS - 85mmL @ 1/200th, f/2.0, ISO 100

Direct Flash @ TTL via Vello Cable

PROCESSING TIPS

Lightroom - Processed to be warm, bright and high contrast. Fades also work well for these types of images

Photoshop - Process to fix hard highlights, red eye and retouch skin if needed





GRID 

VS

 BARE BULB



GRID/SNOOT + DIRECT FLASH

Grids and snoots control light spill. They are fantastic tools for adding even more drama into a scene, or simply controlling exactly where you want to place the light.

GEAR LIST

- Budget Grid – Vello Grid \$20
- Favorite Grid – MagMod Grid \$80
- Budget Snoot – DIY it! \$0
- Favorite Snoot – XP Portaflex \$10
- Bracket – Vello Speedy Bracket \$20
- TTL Cable – Vello TTL Cable \$15 (Canon \$70)

PRIMARY TIPS

1. Bracket still needed to keep the flash above the camera
2. Tighter the grid, tighter the light spread
3. Snoots can be used to throw light longer distances, and create tighter spread patterns than grids
4. Place the light on what you want featured. For example, clothing vs expression

CAMERA SETTINGS

85mmL @ 1/200th, f/2.0, ISO 200
Flash @ TTL via Vello Cable

PROCESSING TIPS

Lightroom - Processed to be warm, bright and high contrast

Photoshop - Process to fix hard highlights, red eye and retouch if needed



MINI BEAUTY + DIRECT FLASH

If you want that bright and hard look of direct flash, but perhaps you just want to soften up the light a little, then a mini beauty dish or similar diffuser can really create a wonderful look.

While we used a mini beauty dish, any small direct flash diffuser will create similar results. Just remember the size and color of the diffuser will affect the light quality and specularity.

GEAR LIST

Budget Beauty Dish – Impact Strobros \$24
Favorite Beauty/Diffuser – Fstoppers Flash Disc \$49

PRIMARY TIPS

1. Larger modifier = Softer/more diffused
2. Softer/more diffusion = more flash power
3. Flash above the camera still applies when shooting portrait aspect ratio

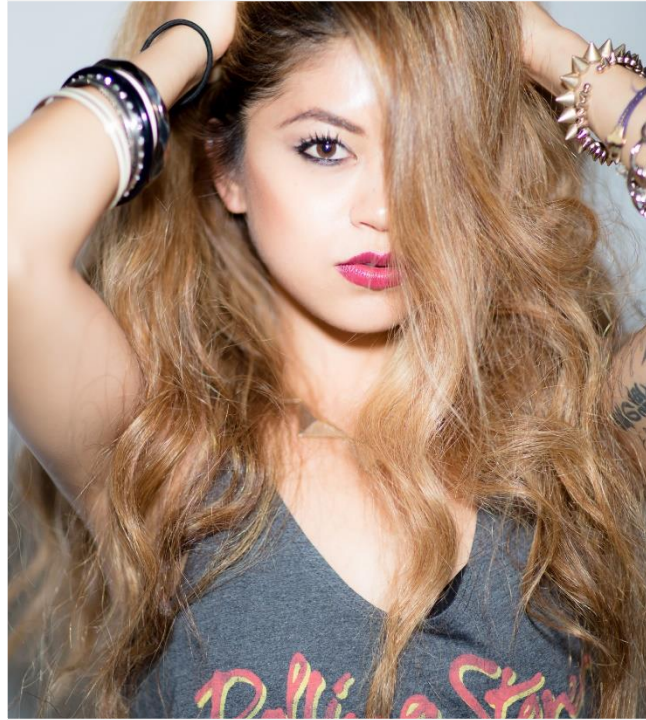
CAMERA SETTINGS

85mmL @ 1/200th, f/1.2, ISO 200
Flash @ TTL via Vello Cable

PROCESSING TIPS

Lightroom - Processed to be warm, bright and high contrast

Photoshop - Process to fix hard highlights, red eye and retouch if needed





RING FLASH 
VS
 **BARE BULB**



RING + DIRECT FLASH

Ring lights are known for their distinctive shadow and catch light effect. They are another fantastic direct flash modifier for a more editorial look.

GEAR LIST

Budget Ring Flash – DIYP Ring Flash \$25
Favorite Ring Flash – Ray Flash \$140

PRIMARY TIPS

1. Make sure the ring flash is placed correctly, otherwise your shadows will be off due to light spill
2. Likelihood of red-eye is increased since the light source is coming from the same angle as the lens as seen in the last image here
3. Ring flashes that modify direct flash like the Ray Flash tend to have heavier shadow on one side than the other
4. Stand alone ring flashes provide a better and more consistent look to the light and shadows, however can cost \$500+
5. Add some production value with a fan for hair, or just grab a leaf blower =)

CAMERA SETTINGS

100mmL @ 1/200th, f/4, ISO 400
Flash @ TTL

PROCESSING TIPS

Lightroom - Processed to be warm, bright and high contrast

Photoshop - Process to fix hard highlights, red eye and retouch if needed

UNDERSTANDING MODIFIERS

You don't need to buy and try every modifier out there. The basics of light modification apply across the board. By understanding them, you can guess what a flash modifier will do before purchasing.

GEAR LIST

Interfit STR110 Strobes \$12
Fstoppers Flash Disc \$49

PRIMARY TIPS

1. Silver/reflective = Strong & Specular
2. White/matte = Light & Diffused
3. Large = Softer transition
4. Small = Harder transition

CAMERA SETTINGS

TOP - 85mmL @ 1/125th - f/1.6 - ISO200 Singh-Ray 5-Stop ND
FSTOPPERS FLASH DISC @ 1/1 (1/3 stop light loss from tests)

BOT - 85mmL @ 1/125th - f/1.6 - ISO200 Singh-Ray 5-Stop ND
INTERFIT STROBIES @ 1/1 (1/3 stop more powerful from tests)



DIRECT FLASH + SHUTTER DRAGS

Just because you are using direct flash doesn't mean you can't get creative! This is one of my favorite tricks to use on the dance floor at weddings and events to create very unique and "in-action" dance floor images.

The whole point, imperfection adds interest!

PRIMARY TIPS

1. Dial in the shutter speed based on the scene, ideally around 1/10 to 1/2 second
2. Adjust the Aperture and ISO to arrive at ambient light exposure
3. Using TTL, aim your flash directly at your subject
4. Add motion to the camera while shooting, different motion = different effects
5. Shoot lots of images to make sure you got a good expression and action
6. Use a fan for the hair if you happen to be in the studio =)

CAMERA SETTINGS

TL - 100mmL @ 1/5th, f/4.0, ISO 100
No flash

TM - 100mmL @ 1/5th, f/4.0, ISO 100
Direct Flash @ TTL but no motion

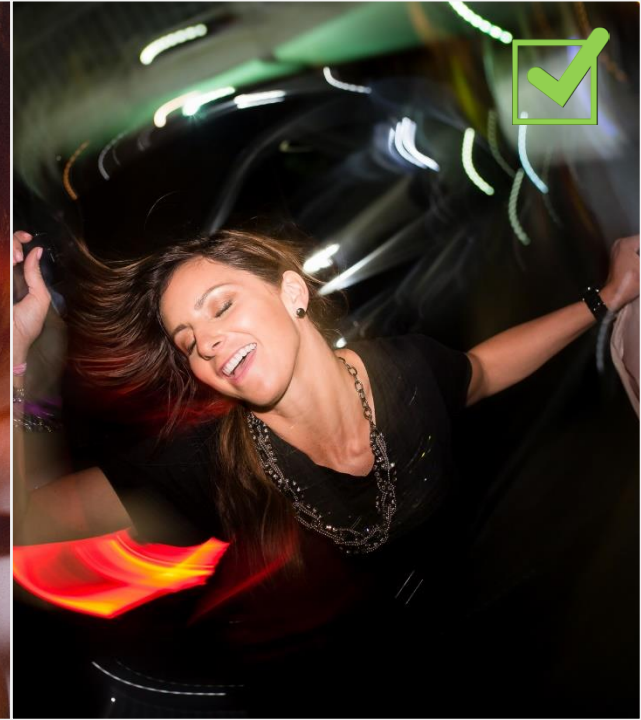
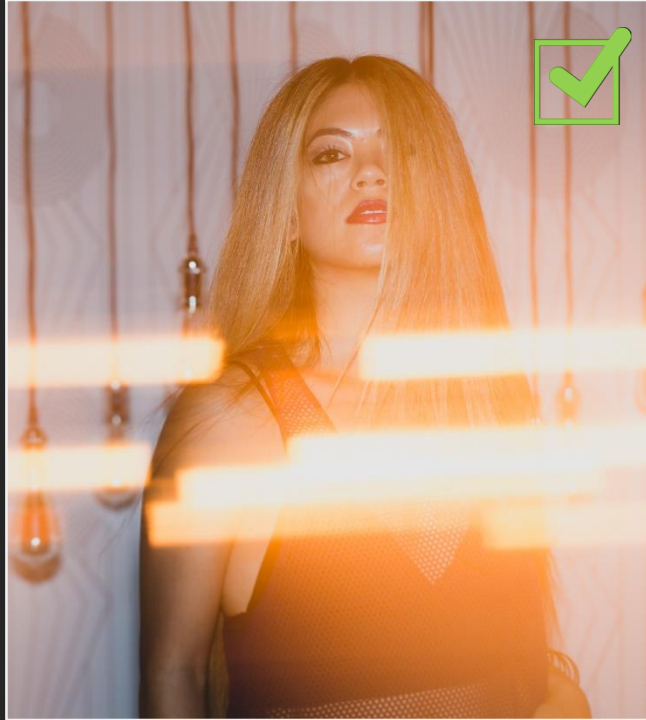
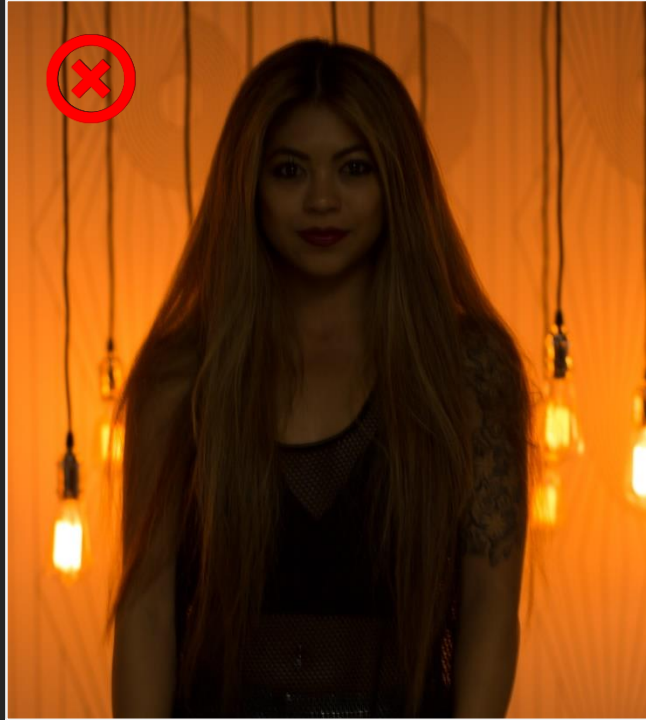
TR - 100mmL @ 1/5th, f/4.0, ISO 100
Direct Flash @ TTL but motion is bad, didn't work

BOTTOM - 100mmL @ 1/5th, f/4.0, ISO 100
Direct Flash @ TTL

PROCESSING TIPS

Lightroom - Processed to be warm, bright and have a slight fade to mask/hide direct flash

Photoshop - Process to fix or smooth hard highlights or red eye if needed (rarely need to)



CHAPTER SIX

STUDIO LIGHT? JUST BOUNCE IT!



Direct Flash vs Bounce Flash
Silver Bounce
More Light, Silver > White
Soft White Bounce
Overhead Bounce
Event Bounce

AMBIENT vs DIRECT FLASH vs BOUNCE FLASH

Studio quality light is simple to create, that's why we say, "don't use direct flash unless you absolutely must, or unless it is for creative effect." Soft studio light can be created by simply turning the flash head and bouncing off of a neutral colored surface.

GEAR LIST

V-Flat

- Budget – Home Depot insulation \$13
- Favorite – White/black foam core \$20-\$35

PRIMARY TIPS

1. Bounce off of neutral colored surfaces
2. Brighter the color of the surface, the more light that comes back
3. Silver = Specular, Matte = Diffused
4. Further distance, far less light (remember inverse square law)
5. Aperture for composition/DoF
6. Shutter speed for ambient up to 1/200th
7. ISO for image quality and for flash power

CAMERA SETTINGS

TL - 24-70mmL II @ 1/100th, f/2.8, ISO 3200
No flash, ambient only

TM - 24-70mmL II @ 1/200th, f/2.8, ISO 400
Direct Flash @ TTL

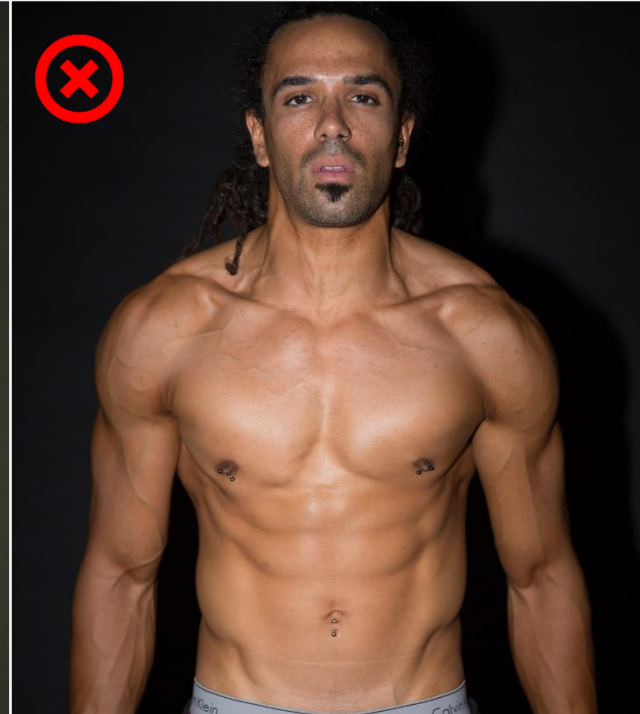
OTHERS - 24-70mmL II @ 1/80th, f/2.8, ISO 800
V-flat bounce + silver fill @ TTL or 1/8th to 1/16th power

PROCESSING

Lightroom - Processed for drama by lifting highlights and dropping shadows. Use brush/filters to burn around edges and pull attention into center.

Photoshop – Retouch skin and dodge/burn as needed.





SILVER BOUNCE

Silver reflectors bounce more light and a different quality of light, which is great for two reasons. When you need a hard and edgy light quality, or when you simply need more power (or both).

GEAR LIST

Reflector

- Westcott 40" 5 in 1 - \$40
- Fotodiox 40"x60" 5 in 1 - \$30
- Fotodiox 48"x72" 5 in 1 - \$60

ND Filter (or high speed sync)

- Budget – Tiffen 82mm 3 Stop \$35
- Mid – Hoya 82mm 5 Stop \$100
- Favorite – Singh-Ray 82mm 5 Stop \$300

PRIMARY TIPS

1. Use silver for a stronger and more specular light, as well as a harder edge
2. Larger the reflector, the more light and the easier to bounce
3. When indoors, aim your reflector and light via the flash test button
4. When outdoors, aim your reflector and light by imagining it is a mirror

CAMERA SETTINGS

TL - 24-70mmL II @ 70mm - 1/100th, f/2.8, ISO 3200
No flash, ambient only

TM - 24-70mmL II @ 70mm - 1/200th, f/2.8, ISO 200
Direct Flash @ TTL or 1/64th

TR - 24-70mmL II @ 70mm - 1/200th, f/2.8, ISO 200
Silver bounce @ TTL or 1/8th to 1/16th

BL - 24mmL II - 1/200th, f/1.4, ISO 50 + 5 Stop ND
No flash

BM - 24mmL II - 1/200th, f/1.4, ISO 400 + 5 Stop ND
No flash, exposed for skin tones

BR - 24mmL II - 1/200th, f/1.4, ISO 400 + 5 Dstop ND
Silver bounce @ 1/1, exposed for highlights



MORE LIGHT! SILVER > WHITE

Often times when you are outdoors and bouncing flash, you will need to use a silver reflector simply to throw more light.

GEAR LIST

Grid/Snoot/Gel

- Budget - Vello Grid \$20
- Budget - XP Portaflex Snoot \$10
- Budget - CTO Gel Sheet DIY \$10
- Favorite - Mag Mod Grid + Gels \$80

Reflector

- Westcott 40" 5 in 1 - \$40
- Fotodiox 40"x60" 5 in 1 - \$30
- Fotodiox 48"x72" 5 in 1 - \$60

ND Filter

- Budget - Tiffen 82mm 3 Stop \$35
- Mid - Hoya 82mm 5 Stop \$100
- Favorite - Singh-Ray 82mm 5 Stop \$300

PRIMARY TIPS

1. 5 Stop ND Filter for sync speed
2. High speed sync can be used, but you will run into ISO + Shutter Speed limitations
3. Snoots can be used to throw light longer distances, and create tighter spread patterns than grids
4. Place the light on what you want featured. For example, clothing vs expression

CAMERA SETTINGS



85mmL @ 1/200th, f/2.0, ISO 200 + 5 Stop ND
Silver bounce @ 1/1

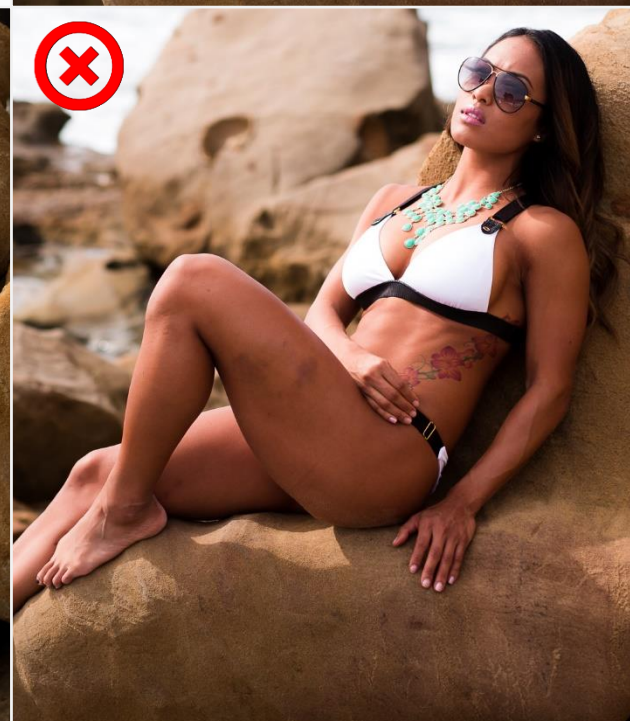
PROCESSING TIPS

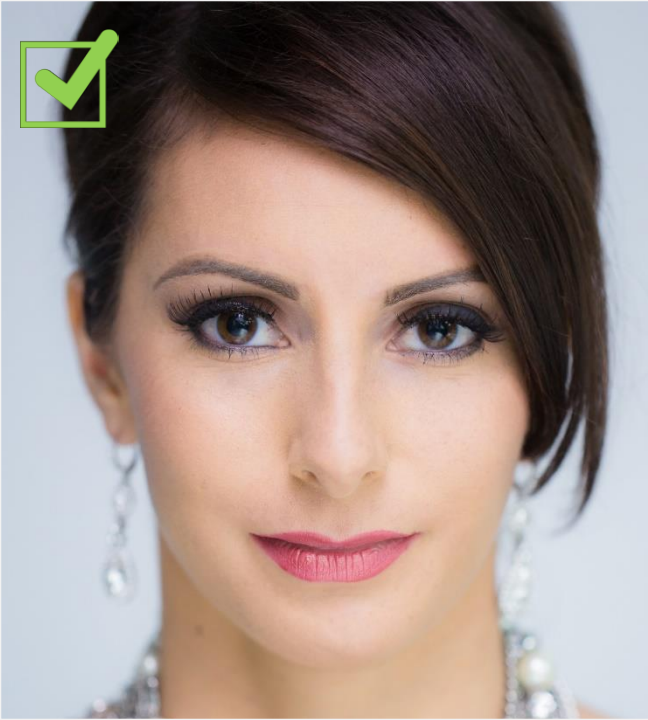
Lightroom - Very lightly processed for natural color and a slight lift in shadows.

Photoshop - Retouched skin, dodged/burned to add soft highlights/shadows for definition.



SILVER 
VS
 AMBIENT





SOFT WHITE BOUNCE

White surfaces and modifiers create a more diffused and less specular quality of light. White is fantastic for a diffused light quality that is more flattering, and minimizes potentially oily/sweaty areas of skin.

GEAR LIST

Grid/Snoot/Gel

- Budget - Vello Grid \$20
- Budget - XP Portaflex Snoot \$10
- Budget - CTO Gel Sheet DIY \$10
- Favorite - Mag Mod Grid + Gels \$80

Reflector

- Westcott 40" 5 in 1 - \$40
- Fotodiox 40"x60" 5 in 1 - \$30
- Fotodiox 48"x72" 5 in 1 - \$60

PRIMARY TIPS

1. White will provide a more diffused light, but the cost to that is lower intensity/output
2. When bouncing outdoors, you will need to be fairly close to your subject due to less light intensity
3. For a little extra kick of light, use a white over a silver reflector
4. White modifiers are fantastic when you want a more flattering and less "edgy" look to the images.

CAMERA SETTINGS

TL - 100mm f/2.8 II @ 1/20th, f/2.8, ISO 800
LED light only (specular)

BL - 100mm f/2.8 II @ 1/13th, f/2.8, ISO 800
LED light through white + white fill (diffused)

TM - 50mm f/1.2L @ 1/200th, f/2.0, ISO 50
No flash, exposed for desired background

BM - 50mm f/1.2L @ 1/200th, f/2.0, ISO 50
White over Silver @ TTL or 1/2 to 1/4th power

TR - 85mm f/1.2L @ 1/50th, f/1.6, ISO 200
No flash, exposed for desired background

BR - 85mm f/1.2L @ 1/50th, f/1.6, ISO 200
White over Silver @ TTL or 1/8th to 1/16th power

OVERHEAD BOUNCE

Rembrandt, split, loupe and flat lighting. We have covered several directions of lighting via your on-camera flash. Now, let's take the light overhead.

Overhead lighting is fantastic for beauty and general portraiture, but also for fitness photography!

GEAR LIST

Grid/Snoot/Gel

- Budget - Vello Grid \$20
- Budget - XP Portaflex Snoot \$10
- Budget - CTO Gel Sheet DIY \$10
- Favorite - Mag Mod Grid + Gels \$80

V-Flat or white ceiling

- Budget - Home Depot insulation \$13
- Favorite - White/black foam core \$20-\$35

PRIMARY TIPS

1. Ceiling or v-flat height is going to affect the amount and spread of light dramatically
2. Use your zoom, grid and/or snoot to control the spread of light
3. Same rules apply, neutral non-colored surfaces, brighter = more light, reflective = specular light

CAMERA SETTINGS

TL - 24-70mmL II @ 70mm and 1/100th, f/2.8, ISO 3200
No flash, ambient only

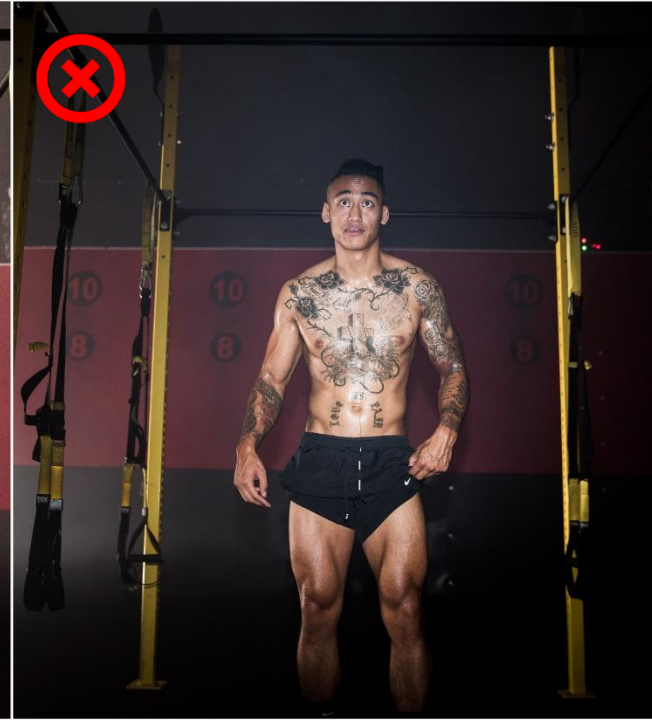
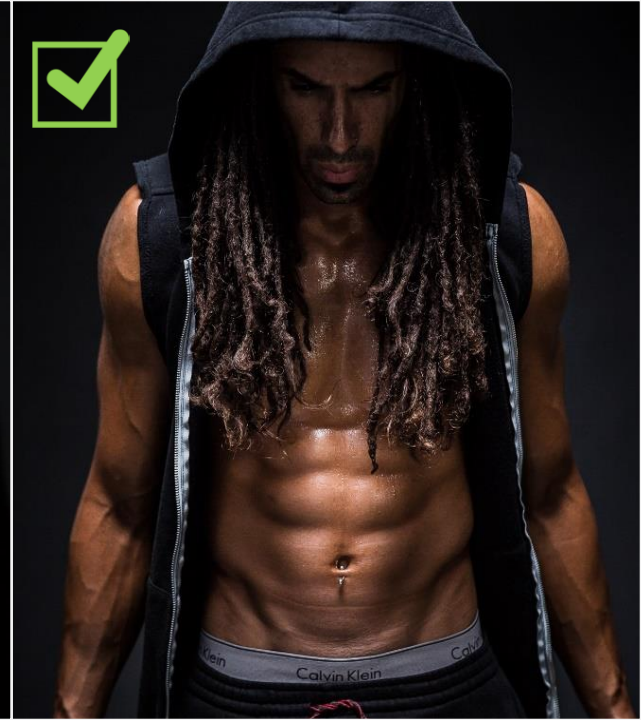
TM - 24-70mmL II @ 70mm and 1/200th, f/2.8, ISO 200
Direct flash @ TTL

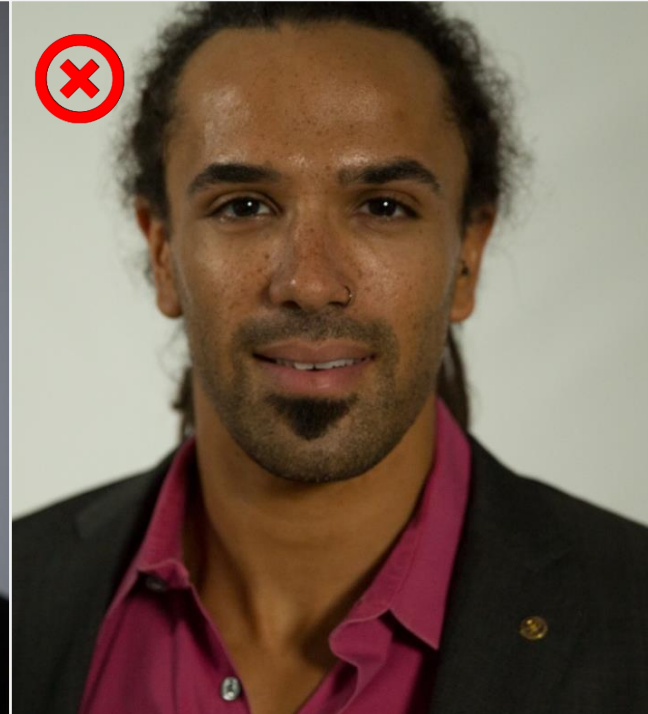
TR - 24-70mmL II @ 70mm and 1/200th, f/2.8, ISO 800
V-flat bounce @ TTL or 1/8th to 1/16th power

BL - 24-70mmL II @ 30mm and 1/30th, f/2.8, ISO 3200
No flash, ambient only

BM - 24-70mmL II @ 30mm and 1/30th, f/2.8, ISO 800
Direct flash @ TTL

BR - 24-70mmL II @ 1/30th, f/2.8, ISO 800
V-flat bounce @ TTL or 1/8th to 1/16th power





OVERHEAD BOUNCE + FILL

White surfaces and modifiers create a more diffused and less specular quality of light. White is fantastic for a diffused light quality that is more flattering, and minimizes potentially oily/sweaty areas of skin.

GEAR LIST

Multiple Reflectors

- 4x Westcott 40" 5 in 1 - \$40

Stand and Reflectors

- 3-4x Fotodiox 3-in-1 Boom Stand \$80 (comes with reflectors)

PRIMARY TIPS

1. White will provide a more diffused light, but the cost to that is lower intensity/output
2. When bouncing outdoors, you will need to be fairly close to your subject due to less light intensity
3. For a little extra kick of light, use a white over a silver reflector
4. White modifiers are fantastic when you want a more flattering and less "edgy" look to the images.

CAMERA SETTINGS

TL - 100mm f/2.8 II @ 1/20th, f/2.8, ISO 800

LED light only (specular)

BL - 100mm f/2.8 II @ 1/13th, f/2.8, ISO 800

LED light through white + white fill (clamshell)

TM - 24-70mm f/2.8 II @ 1/80th, f/2.8, ISO 1600

Ambient light only

BM - 24-70mm f/2.8 II @ 1/200th, f/2.8, ISO 200

4x silver flat/square @ TTL or 1/4th to 1/8th power

TR - 50mm f/1.2L @ 1/160th, f/2.8, ISO 100

Direct flash @ TTL

BR - 50mm f/1.2L @ 1/160th, f/4.0, ISO 200

4x white flat/square @ TTL or 1/8th to 1/16th power



EVENT BOUNCE

On-camera flash bounce is going to be one of your primary lighting techniques as an event photographer. Most of the time bounce techniques are quite simple, so we are going to cover some of the more difficult bounce situations that you will encounter.

GEAR LIST

Flash Dome

- Budget – EzFoto Clear Dome \$20
- Favorite – Gary Fong Light Sphere \$60

Flash Bounce

- Budget – Vello Light Shaper \$10
- Favorite – Fstoppers Flash Disc \$50

Reflector

- Westcott 40" 5 in 1 - \$40

PRIMARY TIPS

1. Best bounce comes from walls to the left and right, if you would like, angle up slightly with the flash head
2. Ceiling bounce requires a fill, otherwise eyes will end up in the shadows, domes work great in this situation
3. When working outside in the dark, or in venues with overly dark/colored walls, then BYOB! Bring Your Own Bounce!
4. Use something small like a FS Flash Disc for smaller groups, or to stay incognito. Have an assistant hold a reflector for larger groups, or when you simply want the best quality light

CAMERA SETTINGS

TL - 24-70mmL II @ 30mm and 1/100th, f/2.8, ISO 1600
Flash dome, bouncing from wall/ceiling

TM & TR - 24-70mmL II @ 30mm and 1/60th, f/4, ISO 1600
White over silver bounce @ TTL or 1/4th to 1/16th power

BL - 24-70mmL II @ 50mm 1/160th, f/2.8, ISO 400
White over silver bounce @ TTL or 1/8th to 1/16th power, watch out for reflective surfaces!

BM & BR - 24-70mmL II @ 35mm and 1/160th, f/2.8, ISO 1600
Fstoppers Flash Disc bounce @ TTL or 1/16th to 1/32nd power



CHAPTER SEVEN

MORE LIGHTS, REFINEMENT AND CREATIVITY



Natural vs Dramatic Light
Filling and Refining Existing Light
Multi-Point Light/Bounce Setups
Coloring Light for Corrective Effect
Coloring Light for Creative Effect

DRAMATIC VS NATURAL

It's time to talk about dramatic versus natural lighting once again. Why? Because now that you know the basics, it is all about refinement! It is all about lighting to get to the exact effect you need.

So, let's talk through some images.

PRIMARY TIPS

1. Dramatic = Key Light > Ambient
2. Natural = Key Light < Ambient
3. Refining/Corrective = Key Light + Ambient
4. Start with what you want the scene to look like, then add light for the effect you desire

GEAR LIST

Grid or Snoot \$10 - \$20

Reflectors

- Westcott 40" 5 in 1 - \$40
- Fotodiox 40"x60" 5 in 1 - \$30
- Fotodiox 48"x72" 5 in 1 - \$60

ND Filter

- Budget – Tiffen 82mm 3 Stop \$35
- Mid – Hoya 82mm 5 Stop \$100
- Favorite – Singh-Ray 82mm 5 Stop \$300

CAMERA SETTINGS

TL – 24mm f/1.4L II @ 1/200th, f/1.4, ISO 100
5 Stop ND, Silver @ TTL or 1/1 power

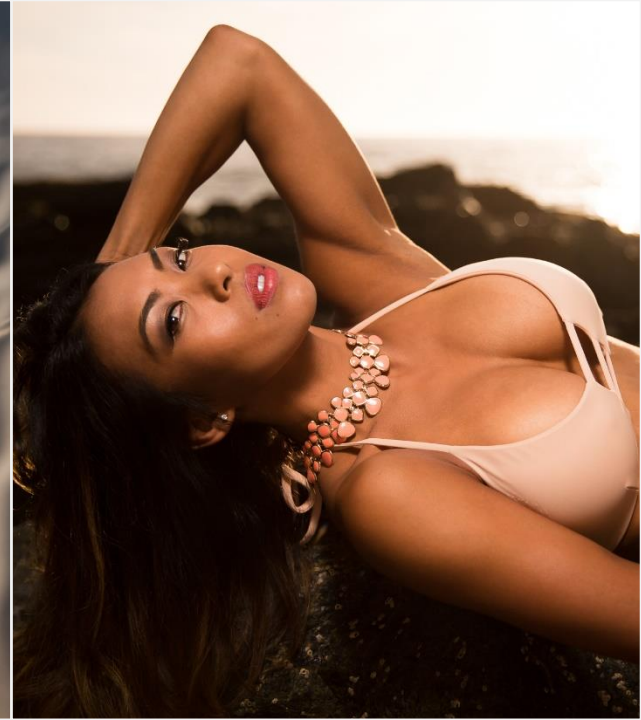
TM – Sigma Art 50mm f/1.4 @ 1/100th, f/2.0, ISO 100
5 Stop ND, Silver @ TTL or 1/2 to 1/1 power

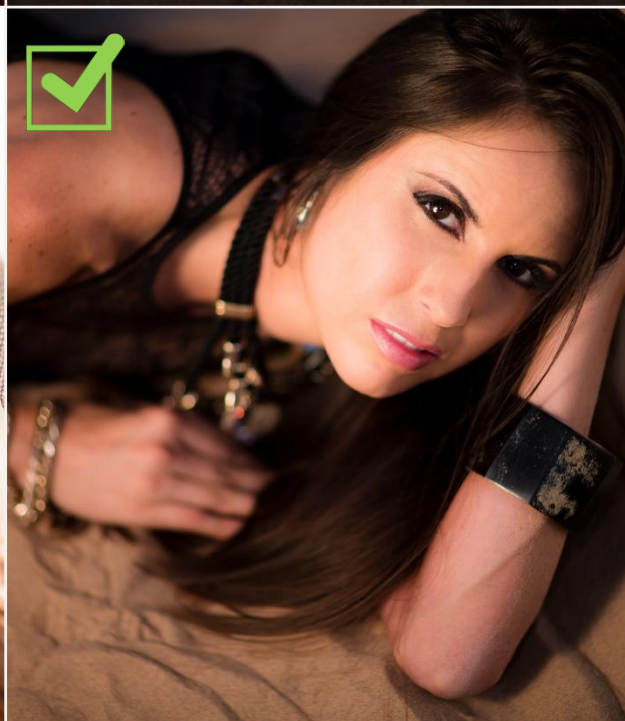
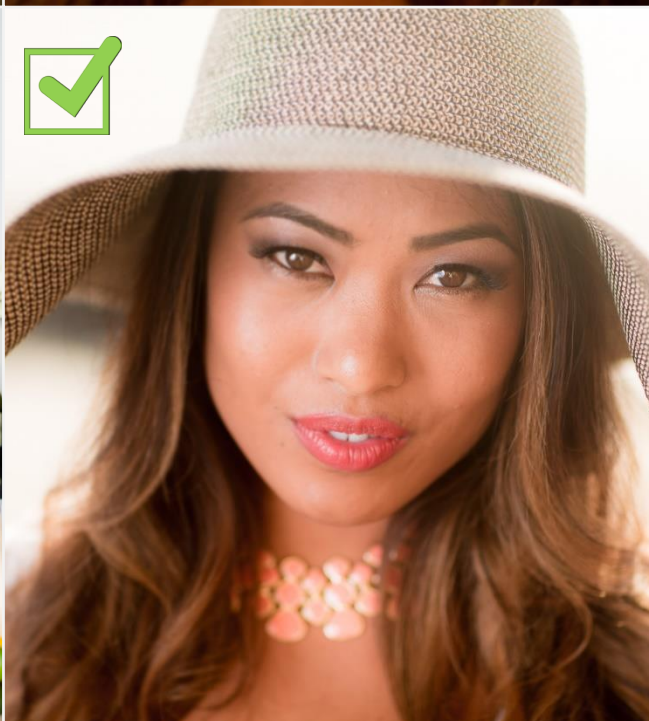
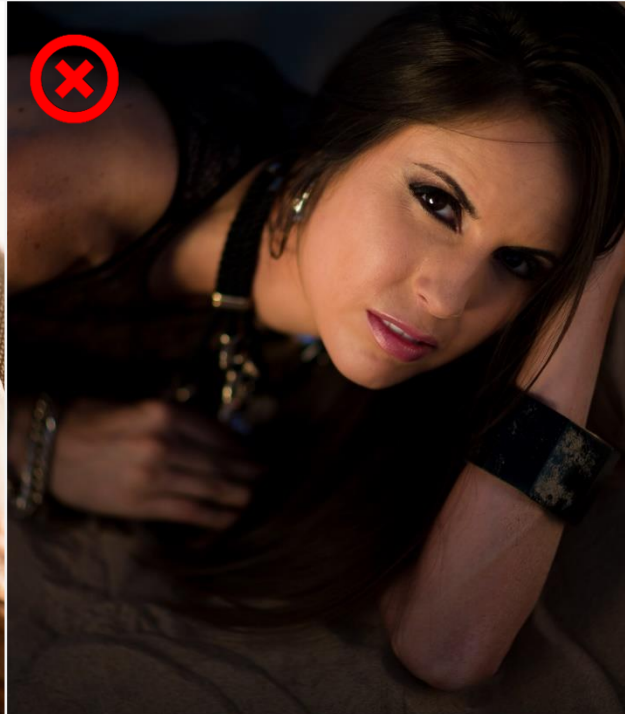
TR – 24-70mmL II @ 39mm, 1/200th, f/2.8 ISO 200
3 Stop ND, Silver overhead @ TTL or ½ to 1/1 power

BL – 50mm f/1.2L @ 1/200th, f/1.2, ISO 50
Dusk w/ white over silver @ TTL or 1/4th to 1/8th power

BM – 50mm f/1.2L @ 1/100th, f/1.2, ISO 50
Dusk w/ white over silver @ TTL or 1/4th to 1/8th power

BR – 50mm f/1.2L @ 1/50th, f/1.2, ISO 50
Dusk w/ white over silver @ TTL or 1/4th to 1/8th power





FILL/REFINING BOUNCE

One of my favorite reasons to add light to a scene is to refine existing light. It can be to fill, add direction, refine color or even amplify the strength of existing light.

PRIMARY TIPS

1. Soft fill can be used to refine the quality or direction of existing light
2. Light from the same direction as existing light if you want to amplify and adjust light quality
3. Just as before, expose first for the background, then analyze your subject and add light to refine

GEAR LIST

Grid/Snoot/Gel

- Budget - Vello Grid \$20
- Budget - XP PortaFlex Snoot \$10
- Budget - CTO Gel Sheet DIY \$10
- Favorite - Mag Mod Grid + Gels \$80

Reflectors

- Westcott 40" 5 in 1 - \$40
- Fotodiox 40"x60" 5 in 1 - \$30
- Fotodiox 48"x72" 5 in 1 - \$60

Reflector Stand

- 3-4x Fotodiox 3-in-1 Boom Stand \$80 (comes with reflectors)

ND Filter

- Budget - Tiffen 82mm 3 Stop \$35
- Mid - Hoya 82mm 5 Stop \$100
- Favorite - Singh-Ray 82mm 5 Stop \$300

CAMERA SETTINGS

LEFT - 50mm f/1.2L @ 1/200th, f/2.0, ISO 400

TL - Ambient light only, fill to clean/refine color

LB - Bounced white over silver @ TTL or 1/8th to 1/16th power

MIDDLE - 85mm f/1.2L II @ 1/200th, f/2.0, ISO 50

TM - Ambient light only, looks nice, but can fill to add direction

BM - White over silver @ TTL or 1/4th to 1/8th power

RIGHT - 85mm f/1.2L II @ 1/160th, f/1.2, ISO 100 + 5 Stop ND

TR - Ambient light only w/ silver reflector bouncing sunlight

BM - Gelled flash bouncing into reflector to amplify @ TTL or 1/2 to 1/4th power

MULTI-POINT LIGHT SETUPS

Want to start experimenting with multiple lights? Don't worry, we can still do that with just a single on-camera flash by setting up multi-point bounce lighting setups. Using these techniques, you can simulate 2 or 3 light setups with just some reflectors, and your on-camera flash.

PRIMARY TIPS

1. Always, always, always (wait, did I already say always?) start with 1 light first!
2. After dialing in your camera settings, and setting up your key light, look to where you need additional light
3. Remember, just because you can add more light, doesn't mean you should. Highlights, and more importantly shadows are key to creating a compelling image

GEAR LIST

Grid/Snoot/Gel

- Budget - Vello Grid \$20
- Budget - XP Portaflex Snoot \$10
- Budget - CTO Gel Sheet DIY \$10
- Favorite - Mag Mod Grid + Gels \$80

Reflectors

- Westcott 40" 5 in 1 - \$40
- Fotodiox 40"x60" 5 in 1 - \$30
- Fotodiox 48"x72" 5 in 1 - \$60

Reflector Stand

- 1-2x Fotodiox 3-in-1 Boom Stand \$80 (comes with reflectors)

Ambient Effect

- Rosco Mini-V \$449 (or just rent for \$20-\$30)

CAMERA SETTINGS

TOP - 24-70mm f/2.8L II @ 63mm and 1/200th, f/2.8, ISO 200

TL - Silver, TM - Silver + V-Flat, TR - Silver + V-Flat + Silver

BL - 24-70mm f/2.8L II @ 65mm and 1/200th, f/2.8, ISO 200

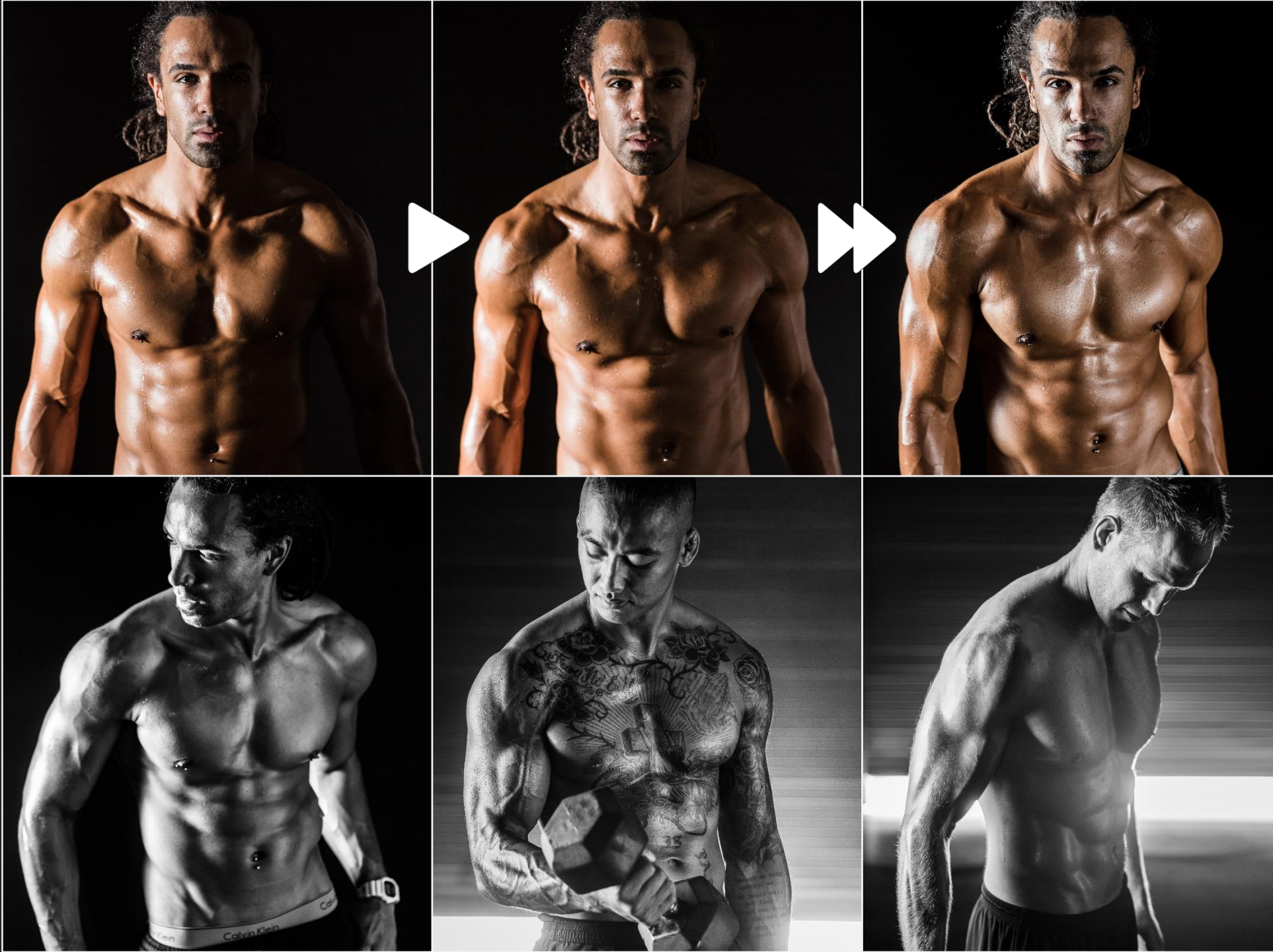
Silver bounce, V-Flat fill, Silver kick to abs @ TTL or 1/4th to 1/8th power

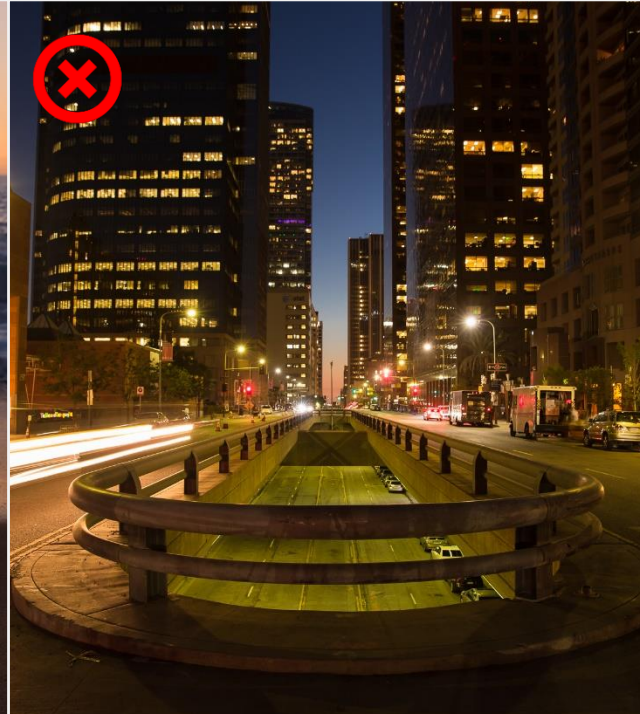
BM - 24-70mm f/2.8L II @ 70mm and 1/50th, f/2.8, ISO 400

V-Flat bounce w/ silver kick to abs @ TTL or 1/2 to 1/4th power

BR - 24-70mm f/2.8L II @ 70mm and 1/50th, f/2.8, ISO 400

V-Flat bounce w/ silver kick to abs @ TTL or 1/2 to 1/4th power





COLOR/GEL BOUNCE

One of my favorite reasons to add light to a scene is to refine existing light. It can be to fill, add direction, refine color or even amplify the strength of existing light.

PRIMARY TIPS

1. Soft fill can be used to refine the quality or direction of existing light
2. Light from the same direction as existing light if you want to amplify and adjust light quality
3. Just as before, expose first for the background, then analyze your subject and add light to refine

GEAR LIST

Grid/Snoot/Gel

- Budget - Vello Grid \$20
- Budget - XP Portaflex Snoot \$10
- Budget - CTO Gel Sheet DIY \$10
- Favorite - Mag Mod Grid + Gels \$80

Reflectors

- Westcott 40" 5 in 1 - \$40
- Fotodiox 40"x60" 5 in 1 - \$30
- Fotodiox 48"x72" 5 in 1 - \$60

CAMERA SETTINGS

LEFT - 24-70mm f/2.8L II @ 41mm, f/5.6, ISO 100
TL - 4.5K, CTO, silver bounce @ TTL or 1/2 to 1/1 power
BL - 3.5K, CTO, silver bounce @ TTL or 1/2 to 1/1 power

MIDDLE - 24-70mm f/2.8L II @ 24mm, f/4.0, ISO 100
TM - 5500K plate image, ambient light only
BM - 3900K CTO gelled flash, white over silver bounce

RIGHT - Sigma 35mm Art f/1.4 @ 1/30th, f/1.4, ISO 1600
TR - 3950K, Ambient light only, heavy green tint
BM - 3800K, CTO, white over silver bounce to correct color @ TTL or 1/8th to 1/16th power

CHAPTER EIGHT

CASE STUDIES & ANALYSIS



CASE STUDY 1

DRAMATIC SUNSET

THOUGHTS & APPROACH

Our sunset on this day was amazing, but as always as a photographer you need to decide how to shoot it. Do you want a more bright and slightly blown look to the image which yields a more “natural” look, or do you prefer a more underexposed and “dramatic” feel to the image?

Typically, I will take a test shot of each style to see which I prefer which is what you see in the first shot.

Neither is right or wrong, they are simply different and thus convey a different emotion and feel. Jill was an absolutely gorgeous model with smoky eyes, and a perfect “smolder” look when she gazed into the camera. Combined with her beautiful bikini and her perfect athletic figure, I thought a dramatic/underexposed look would best complement the model and scene.

I took a test shot with Jill in the scene (middle top shot) and immediately felt that cooling the image down would create a beautiful blue color in the ocean and sky that would match her bikini and add that “wow” factor into an image that I felt was a little boring with warm tones.

GEAR LIST

Grid/Snoot/Gel

- Budget - CTO Gel Sheet DIY \$10
- Favorite - Mag Mod Grid + Gels \$80

Reflectors

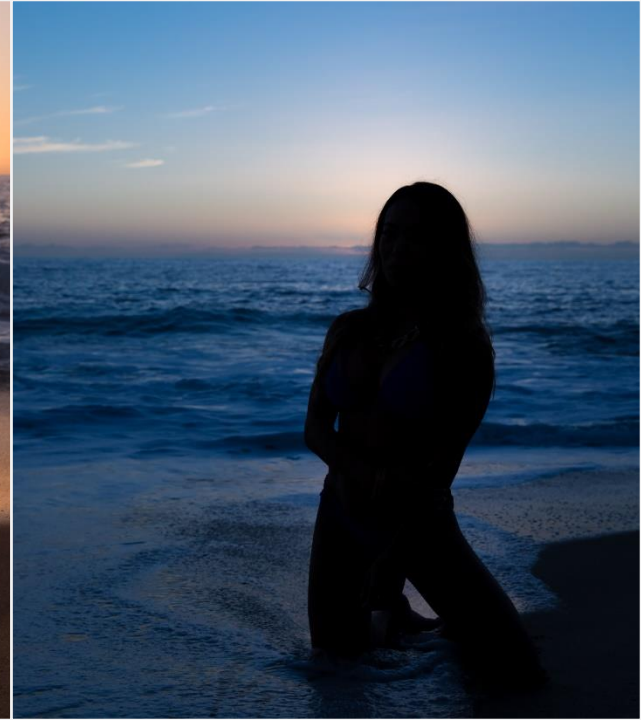
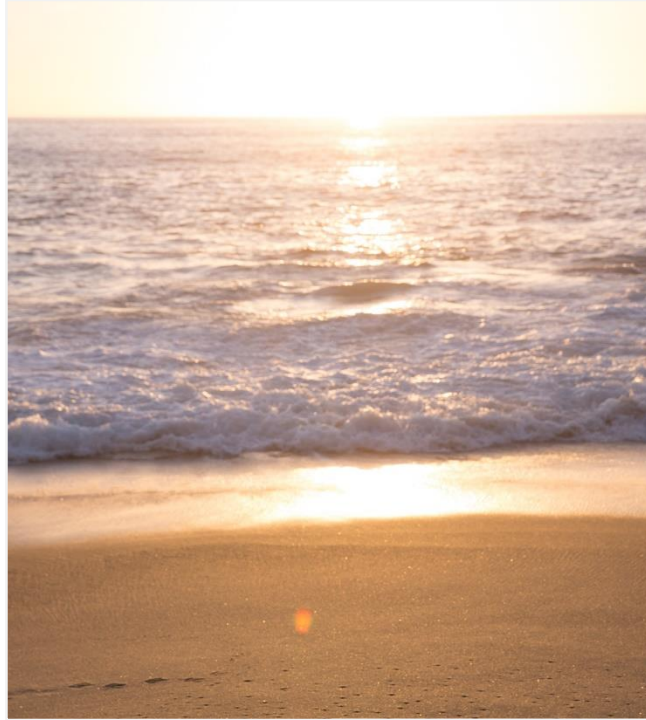
- Westcott 40” 5 in 1 - \$40
- Fotodiox 40”x60” 5 in 1 - \$30
- Fotodiox 48”x72” 5 in 1 - \$60

STEPS

1. Silver bounce for a stronger and more specular light with more defined shadows on the subject
2. Dropped my white balance to 3600K while using a CTO gel over the flash
3. Model’s is posed and framed in front of the sunset to create a natural highlight to pull in the viewer’s eyes
4. Lighting assistant is “feathering” the reflector up to avoid too much light hitting the ground

FINAL CAMERA SETTINGS

24-70mm f/2.8 II @ 41mm, 1/200th, f/5.6, ISO 100, 3600K CTO, silver bounce @ TTL or 1/4th to 1/2 power





CASE STUDY 2

DESSERT SUNSET

THOUGHTS & APPROACH

I will be the first person to admit that shots like this one are 100% easier and will yield better results by using off-camera flash and modifiers.

But, don't be fooled. Every photographer will be in situations where you are rushed to pull off a shot, where you are limited on gear, or simply limited on the gear available to you.

In these situations, techniques like this are absolutely wonderful to have in your toolkit as it will enable you to pull off a shot that would be impossible otherwise.

That being said, when we get to Lighting 201, we are going to get the flashes off-camera which will give us more flexibility in our composition/exposure which you see in the image below.

GEAR LIST

Reflectors

- Westcott 40" 5 in 1 - \$40
- Fotodiox 40"x60" 5 in 1 - \$30
- Fotodiox 48"x72" 5 in 1 - \$60

STEPS

1. First shot, arrive at your desired background exposure and analyze the existing light
2. Started with white over silver, however we tossed the white when we weren't getting enough light back onto the model
3. Lighting from the left in order to match the direction of available light on the model
4. Shoot until we got the right wind on the cloth train

FINAL CAMERA SETTINGS

TOP - Sigma 35mm f/2.8 Art @ 1/200th, f/2.8, ISO 100
Silver bounce @ TTL or 1/4th to 1/2 power

BOTTOM - Sigma 35mm f/2.8 Art @ 1/100th, f/4.0, ISO 100
Bolt Flash w/ Westcott Rapid Box on a Benro Monopod
Pocket Wizard Plus 3 on camera and flash



CASE STUDY 3

SINISTER HEADSHOT

THOUGHTS & APPROACH

I always ask my clients if there are any particular shots they would like to have.

Sure enough, Matt is an actor and said that he wanted a cinematic headshot that would portray a “sinister” emotion as he just played the part of Scar in a recent Lion King production. So I knew I would need a dramatic key light (Split or Rembrandt) with a lot of shadows to convey that emotion.

With that in mind, I selected this location under the overpass for several reasons (the first being it was within eyesight). Mainly, I wanted a scene where I could shoot up on Matt, to give him a more “dominating” presence over the camera. I also needed there to be a background or rather an “upground”, and for the shooting area to be dark enough that I could over power the existing light with my own key light. Shooting up against this background also gave me great lights and metal lines for some background detail.

I found the perfect spot for my subject when I saw an opening in the wall to the left. The opening allowed a little bit of daylight in which worked as a perfect kicker on the left side of Matt’s face.

GEAR LIST

Grid

- Budget - Vello Grid \$20
- Favorite - Mag Mod Grid + Gels \$80

Reflectors

- Westcott 40” 5 in 1 - \$40
- Fotodiox 40”x60” 5 in 1 - \$30
- Fotodiox 48”x72” 5 in 1 - \$60

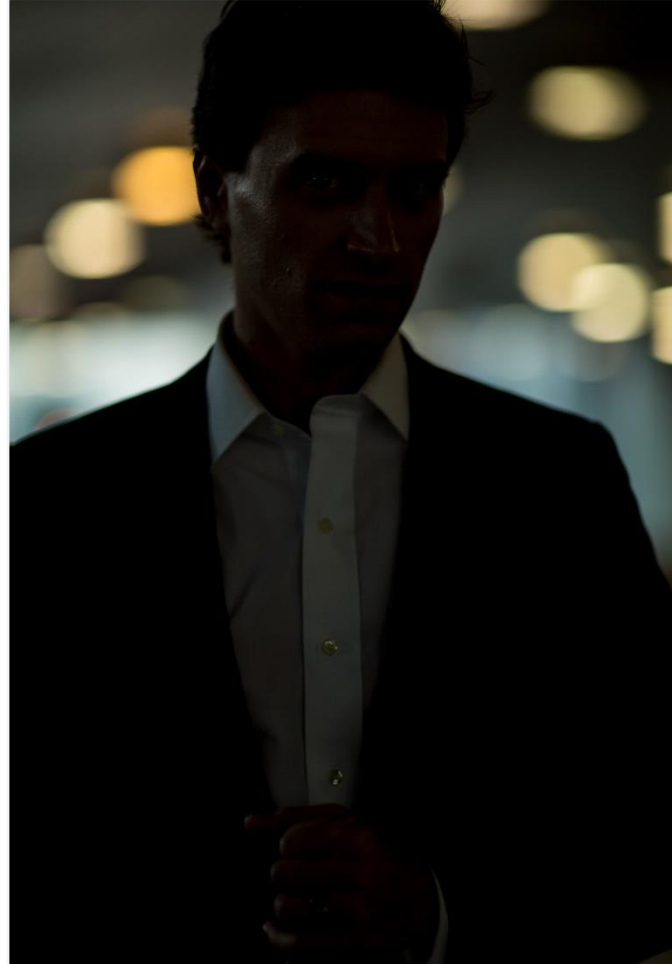
STEPS

1. First shot to expose background and kicker.
2. White over silver above and to the right of the actors head for a heavily directional light. MagMod grid used to prevent flash spill towards the subject.
3. Positioned the subjects face for both Split and Rembrandt lighting for dramatic effect.

FINAL CAMERA SETTINGS

85mm f/1.2L II @ 1/50th, f/1.6, ISO 200

White over silver bounce @ TTL or 1/8th to 1/16th power





CASESTUDY 4

FAMILY PORTRAITS

THOUGHTS & APPROACH

Anytime I am shooting a family, or rather anytime I have kids involved in our shoot, we need to use lighting setups that are quick and simple.

We want to be able to move from scene to scene quickly, which means to travel light in terms of gear. In addition, we need to be able to shoot quickly, meaning we can't have slow flash recycle times otherwise we will miss great moments and expressions.

So, on-camera flash bounced off of a reflector at a lower power setting is absolutely wonderful for both of these reasons. It is simple and easy to setup, and we can shoot quickly so long as we keep the flash power down a bit.

Because I was shooting family portraits, I wanted a natural look to the images. For this reason, I placed our subjects in a backlit area of grass, and allowed the background to blow out a little to leave it with a natural mood. I also placed them in an area of grass where they would have a nice rim light to separate them from the background.

From there, I simply added flash in the same direction as the ambient light to be my key light.

GEAR LIST

Reflectors

- Westcott 40" 5 in 1 - \$40
- Fotodiox 40"x60" 5 in 1 - \$30
- Fotodiox 48"x72" 5 in 1 - \$60

STEPS

1. Placed subjects in a backlit area of grass
2. Expose for the background (brighter for a more natural look)
3. White over silver for a softer light, with a little more strength from the silver underneath
4. Key light added from the same direction as ambient light direction

FINAL CAMERA SETTINGS

Sigma 50mm f/1.4 Art @ 1/200th, f/2.0, ISO 50
White over silver bounce @ TTL or 1/4th to 1/8th power
(remember TTL will slow down recycle time a bit)

CASE STUDY 5

ATHLETE PORTRAITS

THOUGHTS & APPROACH

When I arrived I did a bit of location scouting as I always do. Noticing the garage, I asked whether it was ok if we open it for lighting, and also because we wanted to use some environmental fog.

With the garage opened, we had a fantastic back light. The garage also gave me a simple background pattern, while the back light would separate my subjects from that background.

I used the white V-Flat as my first bounce for a softer head-to-toe light, and used a silver fill for a more powerful fill light for the abs/chest area.

Again, this shoot was lit with a heavily angled primary light (Rembrandt / Split) in order to highlight and create shadows to accent the athletes muscle definition.

GEAR LIST

Grid

- Budget - Vello Grid \$20
- Favorite - Mag Mod Grid + Gels \$80

V-Flat

- Budget - Home Depot insulation \$10
- Favorite - White/black foam core \$20-\$35

Reflectors

- Westcott 40" 5 in 1 - \$40
- Fotodiox 40"x60" 5 in 1 - \$30
- Fotodiox 48"x72" 5 in 1 - \$60

Reflector Stand

- 1-2x Fotodiox 3-in-1 Boom Stand \$80 (comes with reflectors)

Fog Machine

- Rosco Mini-V \$450

STEPS

1. Expose for background, and desired Aperture
2. V-Flat left as key light, silver right as fill
3. Positioned subject faces either angled slightly towards the key light (Rembrandt) or into camera (Split)
4. Added and fanned fog for ambience

FINAL CAMERA SETTINGS

24-70mm f/2.8L II @ 1/50th, f/2.8, ISO 400 (note slow shutter black edge)

V-Flat bounce w/ silver fill @ TTL or 1/4th to 1/8th power





CASE STUDY 6

WORKING ANGLES

THOUGHTS & APPROACH

After setting up my lighting, one of my favorite things to do is simply move around the subject. I will tell the subject to hold a pose, or simply act and be in the moment. If we are lifting weights, then they would lift weights. If we are on an engagement portrait session, they would talk and interact with each other.

During this time, I move around the subject looking for different angles and vantage points while shooting with the light in the same position.

More often than not, my favorite shot is from one of the side angles. The primary shot is always my “safety” shot, but it is the side angles and “shoot-through” that I end up publishing and putting in my portfolio.

This scene is a perfect example of this type of movement and shot during a shoot. Once the lighting was setup, I simply had Jeremiah (who is a boxer) hold a few different poses as I moved around the scene.

Notice how in the bottom two shots, the shift in angle really highlights and presents the rim/kicker light coming from the garage in the back.

GEAR LIST

V-Flat

- Budget – Home Depot insulation \$10
- Favorite – White/black foam core \$20-\$35

Reflector Stands

- 1-2x Fotodiox 3-in-1 Boom Stand \$80 (comes with reflectors)
- Matthews C-Stands \$130 (to get items up really high)

Fog Machine

- Rosco Mini-V \$450

STEPS

1. White v-flat above head for top down lighting to highlight muscle definition
2. Typically subject will look down due to shaded eyes
3. Light fog for ambience
4. Once light is set, move around subject for different angles

FINAL CAMERA SETTINGS

24-70mm f/2.8L II @ 1/30th, f/2.8, ISO 800
V-Flat overhead @ TTL or 1/4th to 1/8th power



CASE STUDY 7

DRAG + COMPOSITE

THOUGHTS & APPROACH

For this scene, I knew I wanted to go with a super dramatic shutter drag showing motion a la our typical Lin and Jirsa Photography style. The question was simply how?

If there was a lot of traffic at the time of shooting, this shot would be simple and we could get everything in one shot. However, there was virtually no traffic when we shot this image, so there was no point in waiting around.

Instead, I knew a composite would be the most simple approach to getting the shot.

GEAR LIST

Reflectors

- Westcott 40" 5 in 1 - \$40
- Fotodiox 40"x60" 5 in 1 - \$30
- Fotodiox 48"x72" 5 in 1 - \$60

Tripod

- Budget – MeFoto Globe Trotter \$200
- Favorite – MeFoto Globe Trotter Carbon Fiber \$330

STEPS

1. First shot was for the couple which in this case is our "plate." Use faster Shutter Speed so they don't ghost. Use higher ISO or more open aperture to arrive at same exposure.
2. Second and third shot, slow down the shutter speed, compensate by closing the Aperture and lowering ISO to stay at same exposure.
3. Shoot vehicles going by on the left, then vehicles moving by on the right.
4. Apply the same Develop settings, and equal out all the exposures in Lightroom to all 3 images.
5. Combine all 3 shots in Photoshop, and simply mask the left and right vehicle movement into the plate image (exposures must be identical, otherwise blending will be needed).

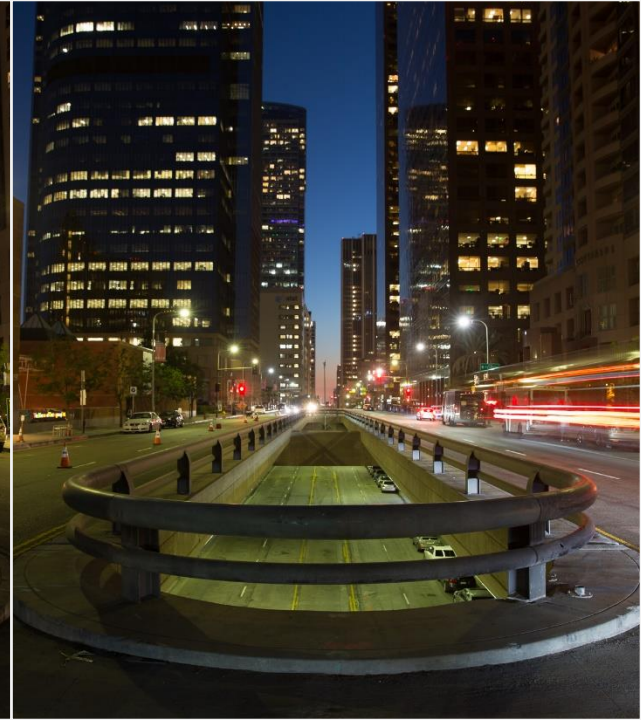
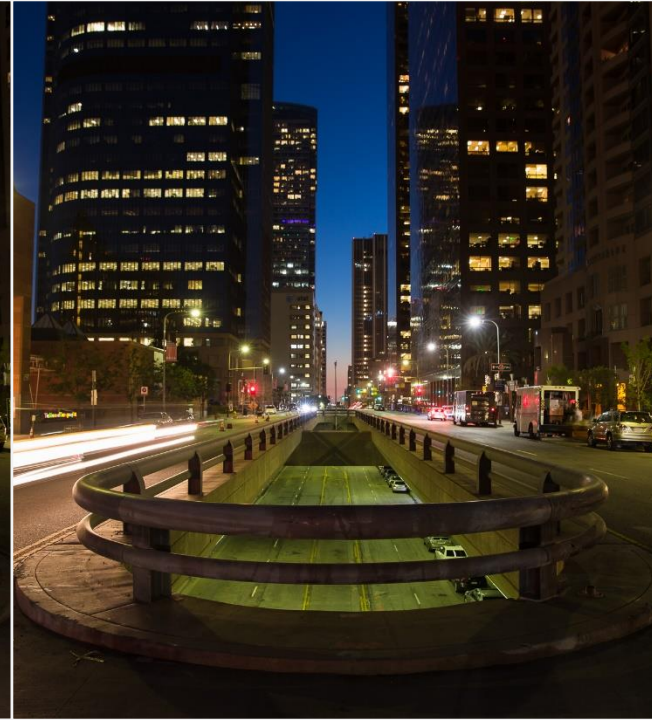
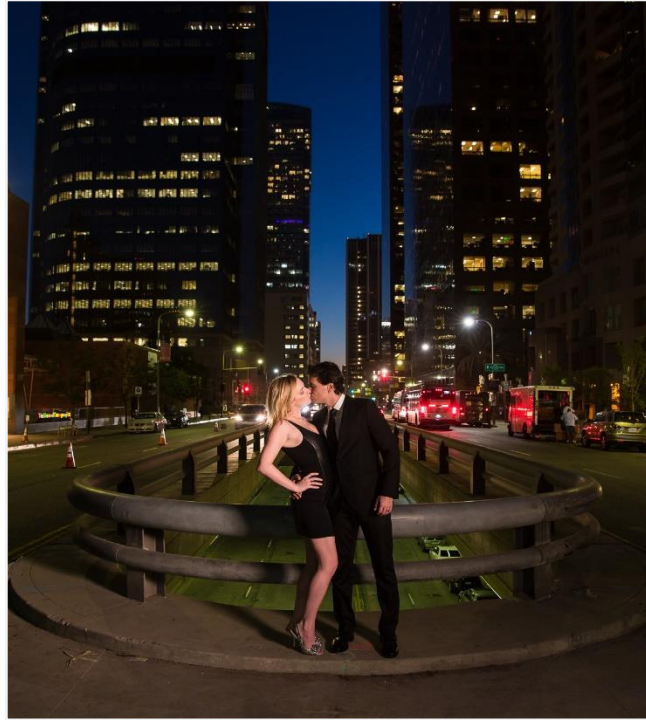
FINAL CAMERA SETTINGS

PLATE – 24mm 1.4L II @ 1/10th, f/4.0, ISO 800

White over silver bounce @ TTL or 1/4th to 1/8th power

MOTION SHOTS – 24mm 1.4L II @ 2", f/4.0, ISO 100

No flash, ambient only





CASE STUDY 8

LESS IS MORE

THOUGHTS & APPROACH

The last case study, the last thought that I want to impart on you all is something that it took me years to learn and develop. That “something” is the ability to see and understand subtlety, to understand that lighting and photography is all about extremely fine balances.

A professionally executed image is all about “subtlety.” That soft touch that makes an image “just right.” So, to conclude, I wanted to show you this series of images one more time just to show you how big of a difference a small amount of light can make.

In going for a natural look, I exposed this scene to be ultra bright, allowing the light to leak even into the lens creating a nice flare in the top right. All I wanted was just a subtle kick to bring attention to my model, and I got that with just a simple bounce off of a silver reflector.

While I love the natural light image on the left, the image on the right just has that little extra kick of light that gives it a bit of a “punch” and polish.

While I love this image, if there was any small change I could make, it would be to get the light up higher, so it has a little more “top down” of an angle. But, that requires a bit of Lighting 201, which is next!

GEAR LIST

Reflectors

- Westcott 40” 5 in 1 - \$40
- Fotodiox 40”x60” 5 in 1 - \$30
- Fotodiox 48”x72” 5 in 1 - \$60

STEPS

1. Placed subject against a bright and backlit scene
2. Exposed for a bright look with just enough saturation in the leaves/background (1 or 2 stops away from proper skin exposure)
3. Light added to give direction to the natural flat light in the scene
4. Silver bounce due to distance from reflector and subject

FINAL CAMERA SETTINGS

50mm f/1.2L @ 1/100th, f/1.2, ISO 100 + 5 STOP ND
Silver bounce @ TTL or 1/2nd to 1/4th power (remember TTL will slow down recycle time a bit)