The Studio!

…safety, EQUIPMENT and *procedures*

One step closer to becoming professional photographers!

Bellwork

Believe it or not, a photography studio is full of hidden hazards. Take the next two minutes to list as many as you can in Google Classroom. Feel free to discuss with a neighbor.

Objectives

Students will be able to:

- Define terminology
- Identify all the different parts of the studio equipment and lighting equipment
- Know all of the safety issues involved in the studio
- Know and perform all procedures needed in the studio
- Determine what equipment they need to use in the studio
    - When and Where it’s applicable

CAUTION

SAFETY FIRST

Electricity

- By far the **BIGGEST** danger in the studio is electricity! Mishandling of it can have dire consequences.
- 110/220 volts (from the wall) is already a lot of electricity, and if you are using any type of **strobes,** they include large **capacitors** that can store up enormous amounts of electricity... and disperse it in a fraction of a second.

The Risks

of

Electricity

in the Studio

Overheating

Equipment Damage

Explosions

Fires

Shocks

DEATH

Electricity Safety

Power Cords

Make sure the cord is the correct size for the job.

Do not over-connect a power strip.

Make sure to inspect cords for frays, knots, etc.

Make sure they are seated correctly into the wall and/or equipment.

Electricity Safety Continued

Be careful with liquids

This should be obvious. Electricity and liquids do not mix.

No liquids in the studio unless otherwise instructed.

Liquids can also cause slips and falls.

Electricity Safety

Equipment

Make sure all power packs and strobes are switched off and discharged before plugging or unplugging lights or power.

Note: All modern strobes discharge automatically on power-down. It's still a GREAT habit to hit the test button after switching it off just to make sure.

Let’s meet our lights, shall we?

Our Strobes

Paul C. Buff's Alien Bee B400(2) & B800(1)

Vocabulary

Monolight:

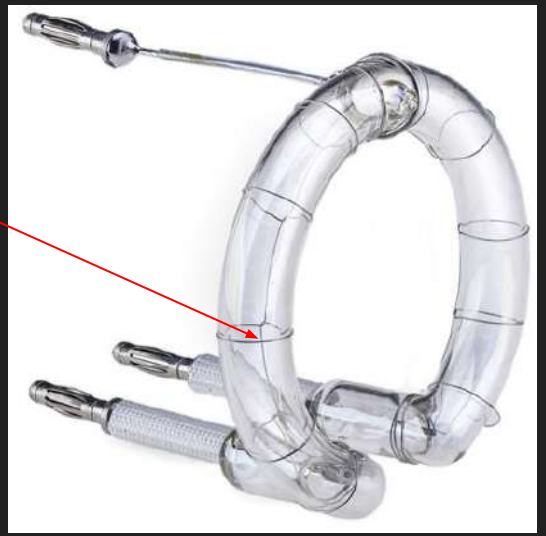
A **monolight** is a self-contained photographic flash lighting unit usually found in a studio.

Each **monolight** has its own independent power source. It does not depend on a centralized power supply as a "pack and head" system does.

All Strobes Have 2 Light Sources

1. Modeling Bulb

2. Flash Bulb/Tube



Modeling Light/Bulb

The modeling bulb/light on the flash unit is used for previewing where the light is falling on your subject. It does not affect the photograph. It does not flash. It is like the lightbulb you use in your lamps at home.

SAFETY

This will need to cool down before you store the strobe light. Turn off the strobe completely and leave out to cool for a little while before putting the strobe cap on. Do not touch.

Flash Tube/Bulb

A gas discharge tube used, especially in photography, to provide an electronic flash when a current is suddenly passed through it. They are designed to produce extremely intense, incoherent, full-spectrum white light for very short durations.

DO NOT TOUCH!

Strobe Safety

- **NEVER TOUCH EITHER BULBS WITH YOUR BARE HANDS**
- They become **HOT**, very **HOT**!
- The oils from your hands can cause the bulb to smoke, and even explode. Yes, you heard that correctly, **EXPLODE**!
- Use your shirt, Kleenex, or paper towel when changing out bulbs.
  - You are not expected to change bulbs in the classroom. Tell Mr. Nistas if there is an issue.
- **NEVER** let any lighting modifier(soft box, umbrella, etc) touch the modeling bulb. It will cause a **FIRE**.
  - Always remove lighting modifiers after the lights have been unplugged and cooled down.

Other Hazards

- Crumbs and sticky fingers damage equipment. No **food** in the studio unless otherwise instructed.
- Try to work with a partner. Two heads are better than one when it comes to safety.

Keep track of gear!

- Don’t leave things around in places people can trip on them. Make sure neither you nor others put things in places that will increase the chances of an accident.
  - When not in use, put equipment back in the Light Cabinet.

Safety Review

Talk to your neighbor about the importance of safety in the studio. You will have a safety test before being allowed to work with the studio equipment.

Discuss the things you've learned today.

- Is there anything you're unclear about?
- What surprised you the most?

Equipment in the Studio

Light Cabinet

This is the cabinet in the backroom that holds the majority of the lighting equipment we use for Photography.

This should be locked when equipment is not in use.

If you need access to it, let Mr. Nistas know.

Backdrop/Props Cabinet

This is the cabinet in the backroom that holds the larger cloth backdrops as well as some of our props.

When you finish using any of these items, you need to store them *neatly* back in the cabinet.

Posing Table

If you need to pose a person or place an object on a table, you can use the posing table to easily adjust the height of so you can have your subject/model stand instead of sit(For posture) or have your item at a higher angle so you do not need to bend down to take photos.

Step Stool

The step stool is for either yourself or your model/subject.

Remember when you’re doing portraits(Either headshots or full length), you need to be at the final photos midpoint.

Light Modifiers

Vocabulary

What is Soft Light?

Soft light is a gradual transition from dark to light. Instead of an easily identifiable line where the shadows start, it's a softer gradient where light transitions to shadows. This tends to be more flattering.

What is Hard Light?

Hard light is more abrupt and usually harsher transition from light to dark. The space between them is smaller. This is usually a more dramatic lighting.

Does the size of the light matter?

The smaller the light source, the harder it is. The larger the light source, the softer it is.

The closer the light source is, the softer it is. The farther the light source is, the harder the light is.

The more intense the light source is, the harder it is.

What are ways we can control this?

Umbrellas

The most common types of light modifiers are umbrellas and softboxes.

Reflecting umbrellas produce a diffused and soft light due to the larger size of the reflecting surface. They are mounted in such a way that the strobe light is actually facing away from the subject or model. Light flies from the strobe head hitting the inside of the umbrella and then bounces back towards the subject.

Umbrellas

There are silver-lined, white, and gold tinted umbrellas.

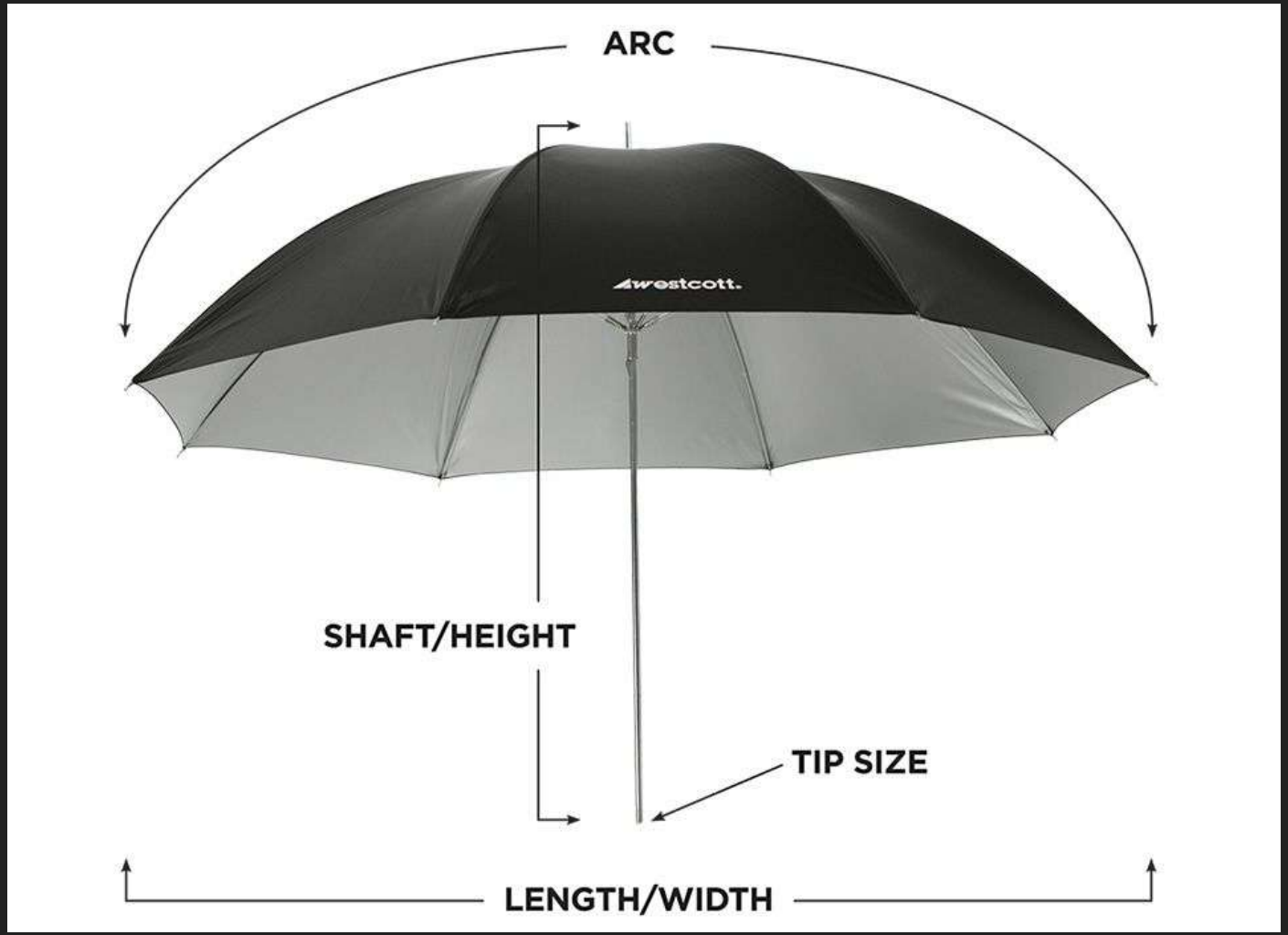
- Silver-lined umbrellas are the most efficient and can focus light more narrowly than the other types.
- White umbrellas offer a wider spread of reflected light.
- Gold umbrellas produce a warm tone.

Through an Umbrella

When shooting through an umbrella, you are creating a larger light source(especially in regards to distance from subject), which softens the edges of the shadows.

Brolly Box

A **Brolly box** is an umbrella with a diffuser front on it similar to what a softbox has.


ARC
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SHAFT/HEIGHT
TIP SIZE
LENGTH/WIDTH

How to Use Umbrellas

When using an umbrella, make sure when you open it you open it enough for the inner arms to lock open(Otherwise the umbrella will close up).

How to Store Umbrellas

If the umbrellas came with a sleeve, when you are finished with the umbrella, collapse it(Click on the switch on the rod) and then put them back in the sleeves(Roll them gently!). Umbrellas go back in the Light Cabinet in the back room.

Softboxes

Softboxes are different than umbrellas because they are usually square or rectangular.

They are lightweight boxes that come with a reflective inside and a translucent front.

Softboxes come in different shapes and sizes and are attached to the front the strobe over the light source.

Softboxes

This is how Softboxes work. Light is emitted from the strobe head and gets reflected inside the walls of the softbox and then is diffused through the box's translucent front creating a soft, but more focused light source illuminating the model or scene.


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Umbrellas vs Softboxes

The difference between reflecting umbrellas and softboxes is that the spread of light with a softbox is more contained.

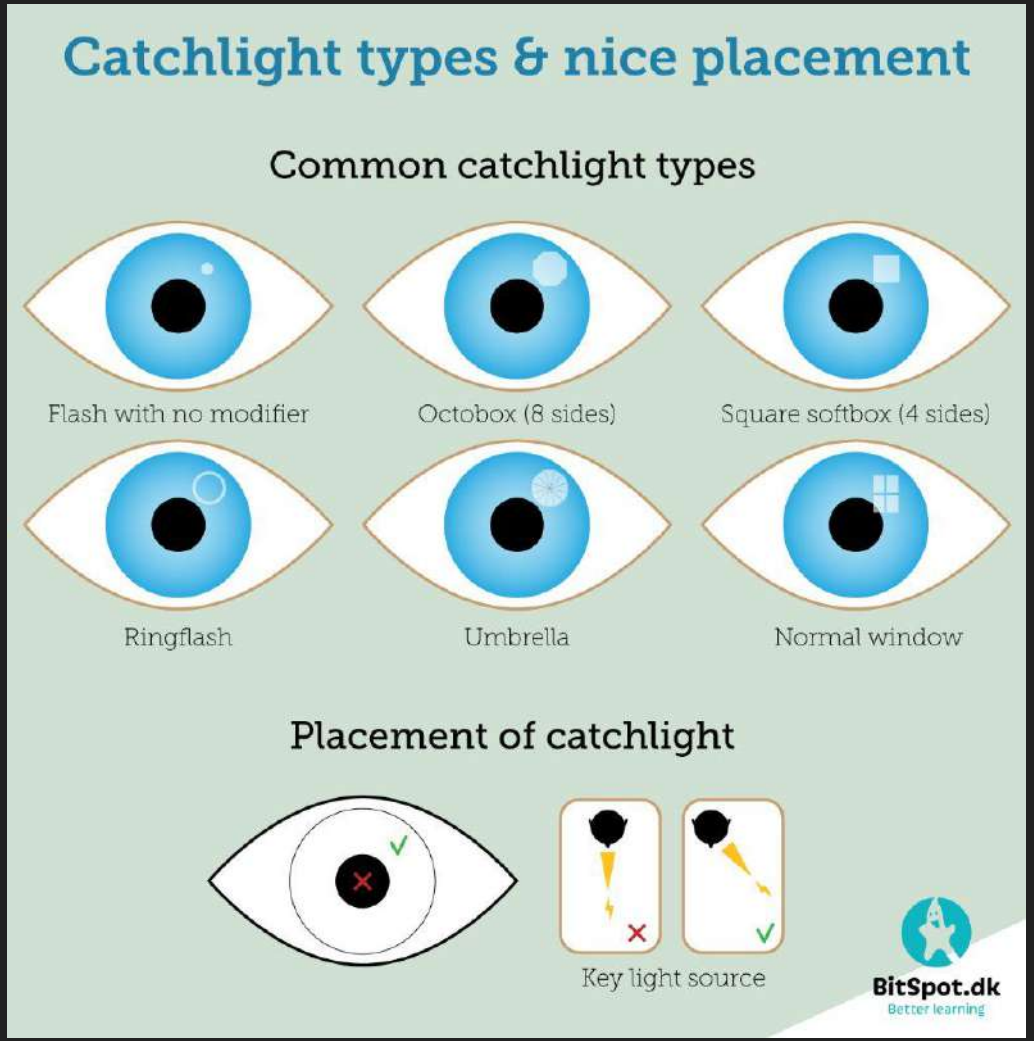
With an umbrella on the other hand, light can spill beyond the boundaries of the reflective surface affecting the amount of light getting back to the subject.

Spilled light can also hit walls and ceilings indoors causing it to reflect and bounce all over the place.

An umbrella simply isn't as controllable as a softbox.

Catchlights

Pay close attention when you look at your next portrait. Can you determine what type of lighting they used just by looking at the catchlight in their eye?



Barn Doors, Snoots, Honeycomb Grids, and Flags

Some other tools that control and modify the quality of light are barn doors, snoots, and honeycomb grids.

These are attached directly to your strobe head by mounting to the reflector that comes with(or is bought for) your strobe, as discussed above.

Flags help direct your light.

Snoots

Snoots are conical shaped tools that narrow the distribution of light.

These can be used to produce a very focused, harsh light.

They are often used like a spot light or to light the background.

They are also very handy as a rim or hair light to illuminate the model from the back.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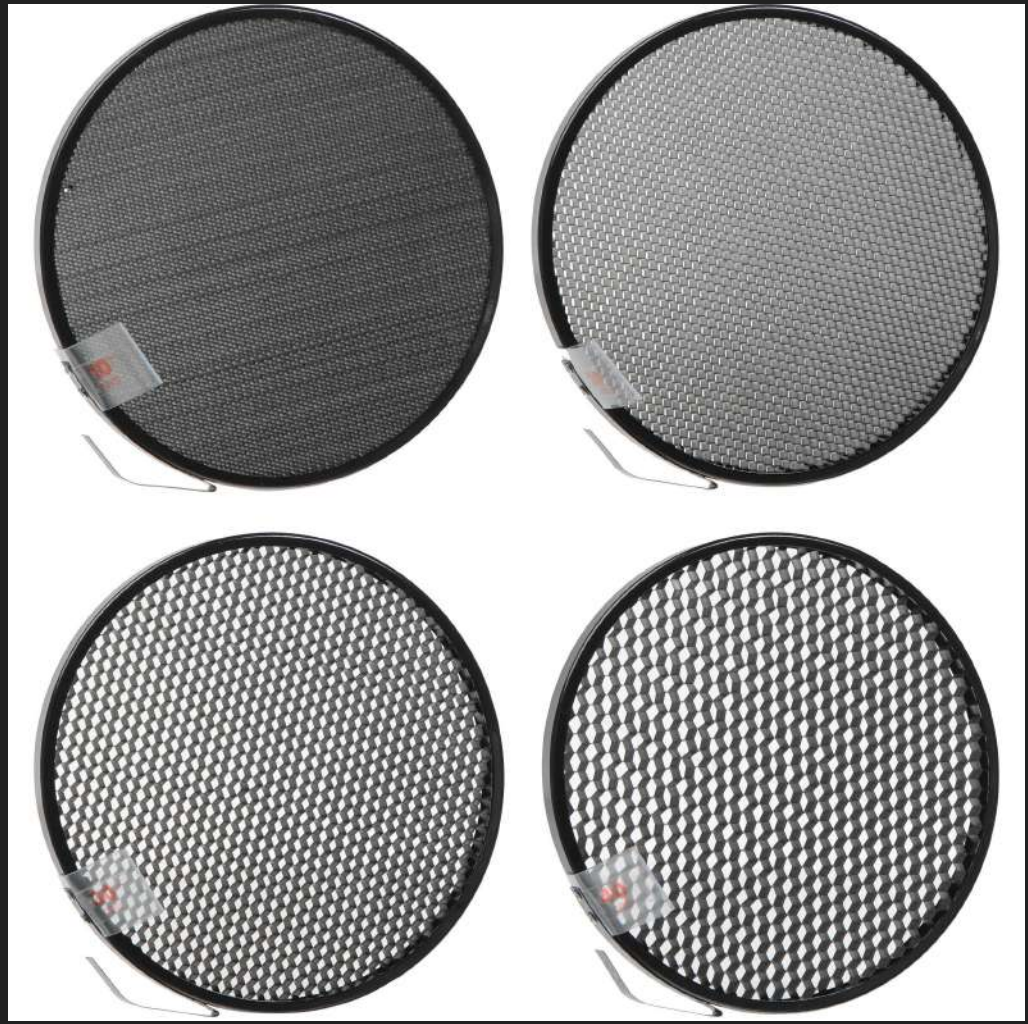
Barn Doors

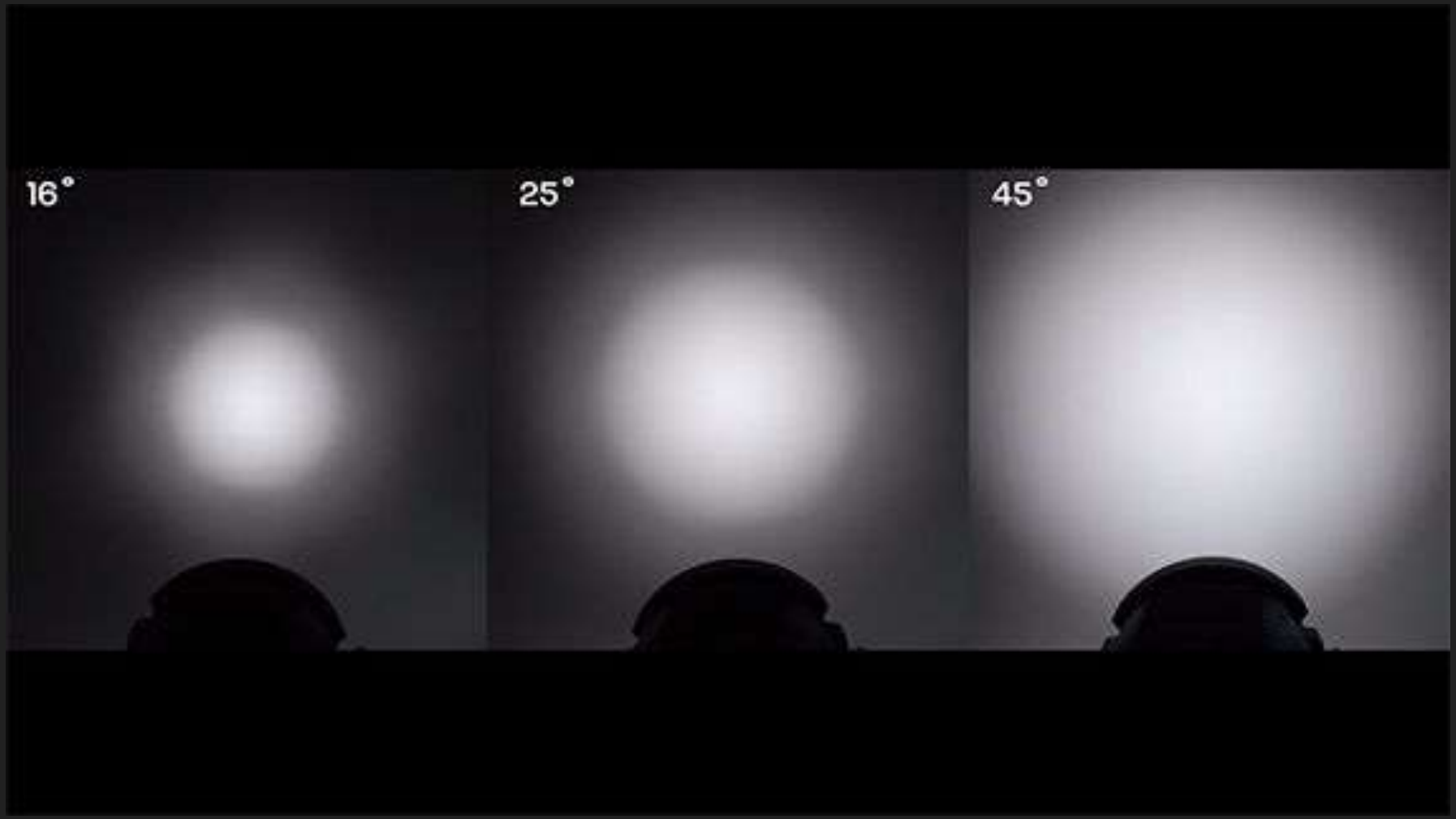
Barn doors are flaps surrounding a strobe that can be opened or closed to control the light and prevent it from spilling.

They don't produce a concentrated and direct light like snoots, but they can come in handy depending on your needs.

Honeycomb Grids

Honeycomb grids, as the name suggests, are basically honeycomb shaped metallic grids that direct the light for a more focused spread. These come in different degrees. The smaller the grid cells the tighter the holes through which the light travels, and in turn the more focused the light becomes.




16°
25°
45°

Flags

Flags are another type of light modifiers. A flag is any kind of opaque object placed in the way of light to better direct it, to prevent lens flare or to prevent it from spilling. A semi-translucent flag is called a scrim and is used to cut down on light spill.

Flash Head Reflector

The electronic flash head is like a blank canvas for photographers. The most flexible systems allow us to choose the reflectors we need to best do the shot in front of us right now. Different reflectors have different properties. The internal finish of the reflector and its shape also have a lot to do with the quality of light they reflect.

What's that?

The small hole on the side of our Alien Bee Flash Head Reflector is where you put the umbrella rod through to mount it to the Alien Bee Light unit.

How to store

All of the Flash Head Reflectors are stored in the Light Cabinet in the back room.

Beauty Dish

A beauty dish is simply a shallow parabolic disk that attaches to a light source. There is a plate covering the flash head – this causes the light to reflect back into and out to the sides of the main dish. Most of the light is aimed forward at the model because of the size and curvature of the dish.

When used up close, the beauty dish provides a very focused light source without a hot spot in the middle. It delivers a semi-hard light – softer than an on-camera flash or strobe unit, but harder than a softbox. The beauty dish provides a concentrated light source where the center is the brightest and the light gently falls off at the edges.


Beauty dish
Softbox
Umbrella

Stands and Grips

Stands and Grips

Stands and grips are used to support your light sources, strobes, and even light modifiers or backdrops.

There are two main types of light stands: lightweight stands and C-stands which are more heavy duty. Both types come in varying sizes, lengths, and prices. Heights can usually be adjusted. Sandbags can also be attached to weight the stand and better stabilize your lights.

Reflectors

In flat lighting, a reflector can add interest or drama to the shot. Some photographers use reflectors as hair lights outdoors. Many reflectors have a black side that can be used to block out light instead of to reflect it. Reflectors are also great for bouncing a flash when there's nothing around to bounce off of.

Lightweight Stand

When you shop for a lightweight stand, the ones with an air-shock are superior. The extra money you pay will go a long way in protecting your expensive lights when you accidentally loosen a knob. The air-shock will soften the fall of your light, minimizing or even eliminating any damage.

Make sure you get one with a wide footprint (meaning the legs of the stand spread far apart) so that your setup is stable and doesn't fall over.

You can get a good lightweight stand for around $70.

C-Stands

C-stands are very good, but they comes at a price.

They are heavy duty and very stable.

C-stands typically **don't** have air-shocks, so you need to pay attention while loosening your knobs so you don't harm your gear.

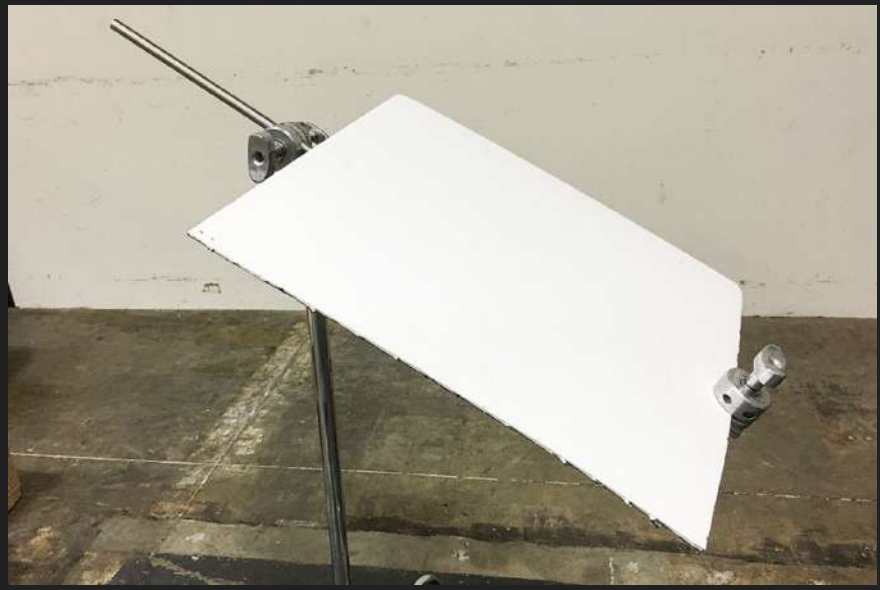
(They will drop fast when you loosen them so brace them before you do so)

C-Stands

C-stands are frequently used in the video industry due to their durability and stability.

They can come with a number of attachments like boom arms that can be mounted onto the stand.

These arms allow you to add reflectors, scrims, flags and other modifier and rotate them to any angle you wish.



C-Stands

The c-stand is strong enough to hold backgrounds and seamless white paper in addition to lights.

They are also very useful when you're shooting outdoors in windy conditions because their weight adds to their stability.

You can get a c-stand with an attachments kit for less than $200, sometimes less.

Proper Way for C-Stand Legs to be “out.”

C-Stand Telescopic Arm

The C-Stand Telescopic Arm allows you to angle your light over your subject. The good thing about this version is that you can have it stretched out further away from the light stand to reach your subject without having to worry about the arm being in your shot.

Always make sure to use a sandbag to be a counterbalance to your light!

C-Stand Arm

This is the second type of C-Stand arm.

This one is better if you want to use your C-Stand to bring in additional items into your shot.

This should **NOT** be the C-Stand arm you use with strobe lights.

Gravity works!

Make sure when you are lowering anything on a C-Stand you are bracing it and lowering it down slowly!

Adjustable Legs!

You can actually raise the legs of the C stand, so if you were shooting on stairs or any uneven ground you could adjust them to be even!

We have two of these type of C-Stands.

Storage

When you are transporting the C-Stand, you can detach the legs and also fold the legs down(Make sure to lock them in place or they'll flip around).

For the backroom, when you finish using the C-Stands just move them to the side of the room but they should still be in the standing position, just at its lowest with any attachments close to the body.

Sandbags

Always use a sandbag when using lights with lightstands and on backdrop stands! They help weigh down the stands so they will not fall over!

On Lightweight

Make sure to put at least one on the lightweight stands as shown.

It is best to put the sandbag on the leg opposite where the light is facing to give proper counter balance.

On C-Stand

Make sure to put the sandbag on the highest leg.

If the sandbag is suspended and not touching the ground, the full weight of the sandbag is being utilized.

Make sure to have it opposite the light.

On Tripods

If you need to use a tripod(Sometimes a good impromptu light stand or when you’re using a camera on it but there’s a lot of wind), most tripods have a hook or place to hang a sandbag.

Sandbag Hack

If you forget sandbags, sometimes you can use other things to weight down stands and tripods.

You can get a gallon of water almost anywhere, and you just need to tie it to the equipment.

Sandbags on Lightweight and C-Stands

When putting a strobe light(Or any other kind of light) on a light stand, put the sandbag on the leg lined up directly with the light. If the light is facing between the light stand legs, it’s easier for it to tip over.

When using an extension arm on a C-Stand, make sure to put a sandbag on the hook at the end of the arm to make sure to properly balance the light(You don’t want the light to fall on the subject!).

Backdrops

Backdrops

Utilizing backdrops allows you to control your background/block out a background you don’t want in your photos.

There are plenty of different ways to make a backdrop for photography.

It can be a sheet, or seamless paper, or even a pop up backdrop.

Backdrops

When putting on the fabric sheet backdrop, keep the stands low when putting on the backdrop rod, then raise both stands up together.

You must always use a sandbag on the bases of backdrops.

You never want a backdrop falling on your subject!

Backdrop stands must be put away in the corner of the classroom.

Fabric Backdrop Locked

When using the larger backdrop, make sure to lock the backdrop in place(with clamps, bolts, etc) to keep the top pole in place instead of possibly falling down.

Backdrops

Make sure to pack up the backdrop when you have finished using it.

Backdrop fabric sheets must be put back in their bags and put in the file cabinet in the backroom.

The pop up backdrop must be put back in the classroom.

Backdrop Clip

This should only be on the pop-up backdrop stands ONLY.

These are used to clip the pop-up backdrops(Or any reflectors, really) onto the stands and hold it in place.

Be careful if using outdoors because this will not hold it to the stand if there is wind.

Power!

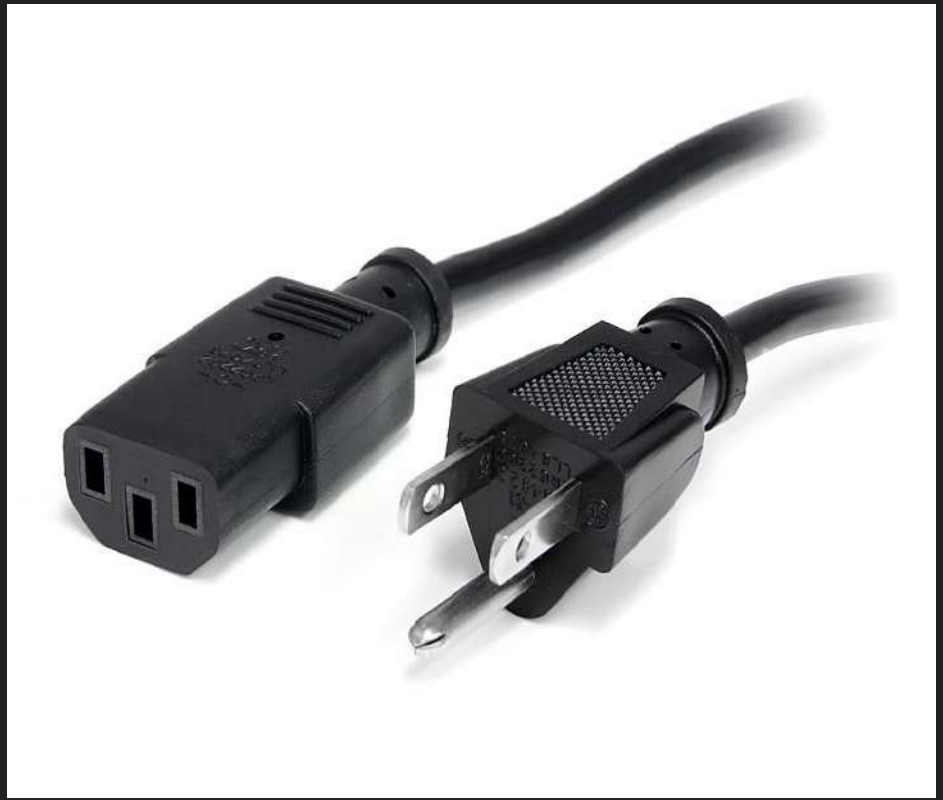
Light Cords

This is the type of power cords used for the strobe lights.

Light cords must be coiled and velcroed, then placed in the Light Cabinet in the backroom.

If the cord has a switch on it, make sure it is in the “off” position when plugging in/out from the power outlet.

Make sure the strobe light is also off when plugging in/out from the power outlet.



Extension Cords

Extension cords are for the strobe lights to be able to place them correctly throughout the back room.

Extension cords need to be coiled correctly and velcroed and stored in the Light Cabinet in the back room.

Some extension cords have multiple input ends and might be better to use than an extension cord + power strip.

Power Strips

Power strips are to limit the amount of cords around the studio.

If you have two lights(Main/Back) on one side of the room by one outlet, and your third light is on the opposite side by another light, you'd use an extension cord from the outlet to the two lights, then use a power strip to plug the two strobes together.

Try to limit the amount of cords/trip hazards in the studio!

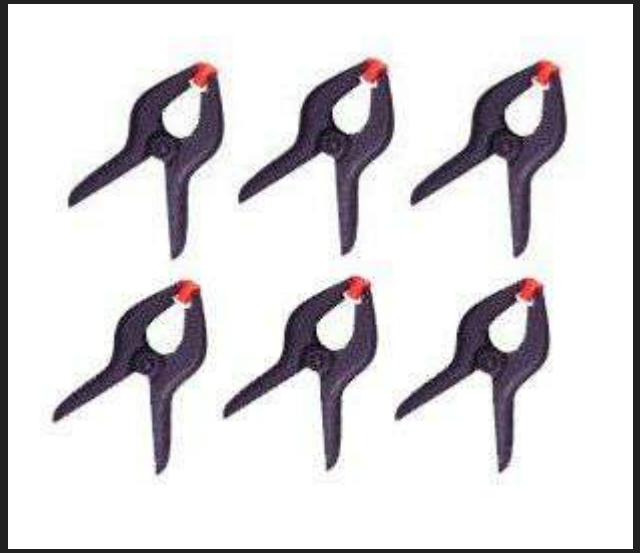
Latch it down!

Clips/Clamps

All purpose clips are used to hold a variety of things.

These can be used to hold a backdrop in place.

These are to be stored in the classroom on the bookshelf.



Gaffer’s Tape

Gaffer’s tape is used to secure power cords and other loose items on the ground to make sure to prevent any tripping hazards.

This is with Mr. Nistas.

The lights!

...finally!

Strobe Lights

We have one B800 Alien Bee Strobe light.

It’s color is black, and you should use this as your primary/key light when utilizing more than one light in the studio.

Strobe Lights

We have two of the B400 Alien Bee strobes.

They are both white, and you should use these as your side/hair/back/ background light.

Light Stand Knob

You use this knob to secure your Strobe Light to your light stand.

Do not overexert when you turn the knob!

Tilt Lever

You use this lever to allow you to adjust the angle of your strobe light.

Make sure this is secure when it’s on the light stand so your light won’t move later during the shoot.

Light Cover

You keep this on the Alien Bee Strobe.

DO NOT PUT THIS ON THE LIGHT IF THE BULB IS STILL HOT! IT WILL MELT THE CAP AND YOU WILL HAVE TO PAY FOR THE REPAIRS!

Release/Lock

You squeeze these two together to release the cap and remove it.

If we get modifiers(Beauty Dish, Softbox, etc), you need to squeeze them together to lock the modifier in place.

Locking Pins

These are the items that will lock your light cap and modifiers in place.

You need to make sure these are all inside the ring of your item that you are locking in place.

Umbrella Lock Knob

Use this knob to lock in place or release the umbrella rod.

Certain Alien Bee beauty dishes will have a detachable rod that will go through this part.

Light Power

You will use the slider at the top on the back to adjust the intensity of the strobe light(The flash!).

Try to start at the lowest setting and then adjust from there.

Sync

The sync port is where you plug in the Radio Popper Receiver into the Alien Bee, with a 3.5mm plug in.

Model Lamp

The “On” button for Model Lamp turns the Model light on and off.

The “Cycle” button will change the Model light from its current Light Power setting to the maximum.

Test

Pushing this will fire the strobe.

If you slide the Light Power down, you will need to fire off the test button to get rid of the current charge before it will be at the correct Light Power level.

Power On/Off Switch

Red switch, turns the Alien Bee Strobe On or Off.

Power Plug Port

You will plug in the power cord for Strobe Lights here.

Control!

Radio Poppers

The Radio Poppers come in two different units, the receiver(top) and transmitter(bottom). Make sure they are all on the same channel or it might not work.

Transmitter connects to your cameras hot shoe mount.

Radio Poppers are stored in the Star Wars bag and put in the Light Cabinet in the Light Cabinet.

Receiver

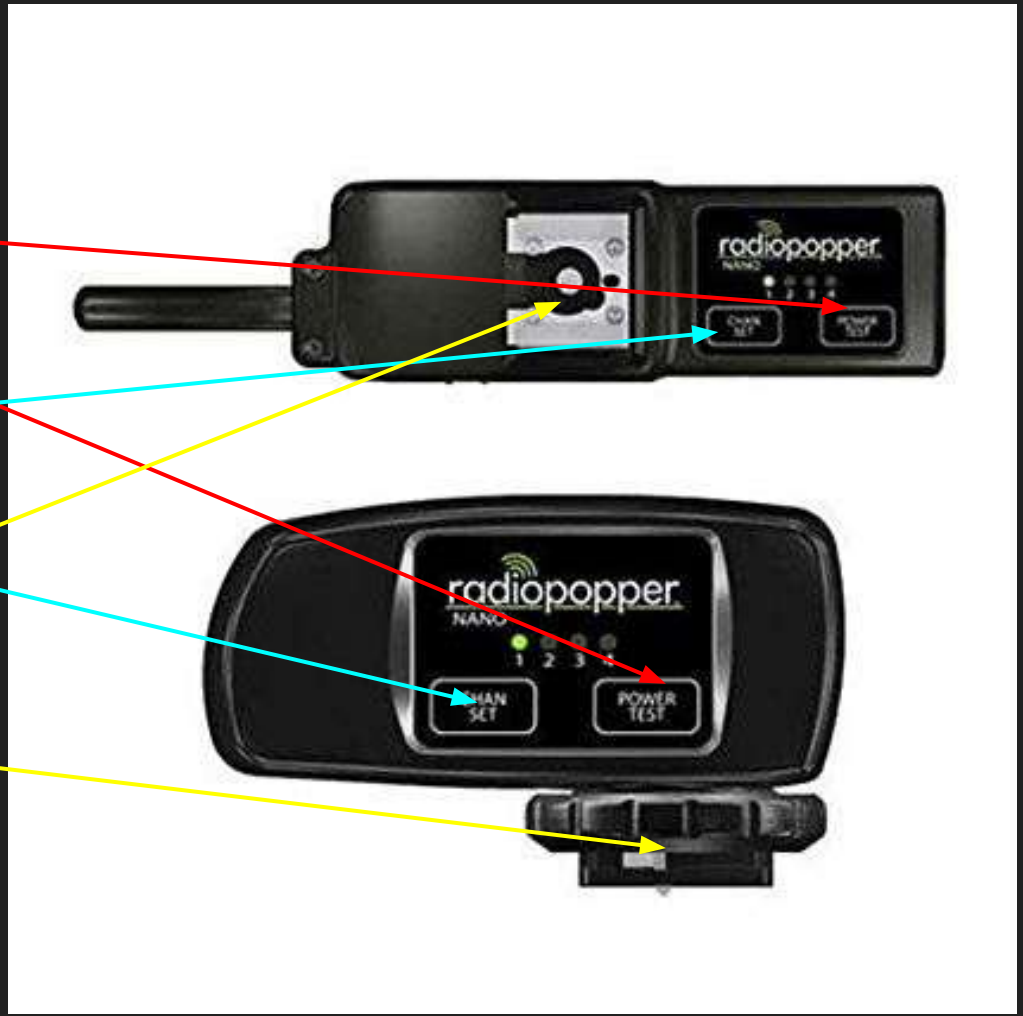
Transmitter

Radio Poppers

POWER / TEST:
You hold down until lights flash to turn on or off. You tap it to test it(Light will flash if successful).

CHAN SET:
You use this button to change the channel. Both units need to be on the same channel to communicate.

Hotshoe mount:
Use this to attach either to your camera(transmitter) or putting a speedlight on it(receiver).



3.5mm Auxiliary Cords

There is a 3.5mm auxiliary cord for each of the Radio Popper Receivers to plug from the unit to the Strobe Light via the sync port.

The auxiliary cords need to be stored with the Radio Poppers in the Star Wars bag in the Light Cabinet.

YOU(the photographer)

At the end of the day the most important piece of equipment in the studio is yourself. You are the one who determines where each part of the studio is placed and used, and how to be safe with each and every piece. When using the studio, you are the main person who is responsible for EVERYTHING that happens in the studio.

The studio space and equipment are a privilege, not a right. The majority of famous photographers out there are masters of the studio, and there can be a large income made if you can understand and utilize the studio to its fullest. You should be trying to shoot in a studio as much as possible, because if you can understand artificial light, you can master natural light easily.

Conclusion

What light setup are you looking forward to most?

What looks like the hardest light modifier to use?

What looks like the easiest light modifier to use?

Are you ready to get in the studio?

Remember you will be taking a safety exam to use the studio. There will be assignments specifically in the studio, so you can’t just fail it and not continue on.