

# CAMERA INFO

There are three settings that affect the exposure of the photographs we take: **ISO, Aperture, Shutter Speed, and White Balance.**

**ISO** As you increase your ISO number, your photos will grow progressively brighter. For that reason, ISO can help you capture images in darker environments. A photo taken at too high of an ISO will show a lot of grain, also known as noise, and might not be usable. So, brightening a photo via ISO is always a trade-off. You should only raise your ISO when you are unable to brighten the photo via shutter speed or aperture instead. In the case of Studio photography your shutter speed and aperture will be useful to avoid grain. If you are photographing a still object, set the ISO to 100.

**Aperture** can be defined as the opening in a lens through which light passes to enter the camera. (F-stop) of a lens determines how much light is admitted into the camera. Adjusting the Aperture is analogous to your pupils dilating and constricting. Aperture also determines how collimated the light rays are that enter the camera. Wide apertures admit large amounts of chaotic rays of light, and this results in a narrow depth of field - only a sliver of the image will be in focus, and the rest will be quite blurry. Narrow apertures admit rays of light which are more or less parallel with one another, and this results in greater depth of field and the majority of the image being in focus. Image clarity will begin to degrade with smaller apertures due to diffraction. Therefore, it is generally advisable to use an F-stop midway through the lens' range.

**Shutter Speed** is the length of time the camera shutter is open, exposing light onto the camera sensor. Essentially, it's how long your camera spends taking a photo. If you are shooting subjects in motion, it is advisable to use a shutter speed of 1/250 or faster. When you use a long shutter speed (also known as a "slow" shutter speed), you end up exposing your sensor for a significant period of time. The first big effect of it is motion blur. If your shutter speed is long, moving subjects in your photo will appear blurred along the direction of motion. The longer the shutter speed the more time the sensor is being exposed to light.

## ISO

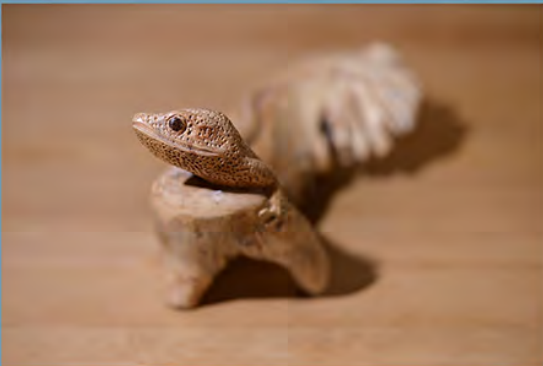


These two images demonstrate the difference in image quality between high and low ISO. They are both magnifications of the exact same sample size. The image on the left was taken with a lower ISO than the image on the right. Notice the granulated texture and extra color noise in the right image compared to left image with more controlled color.

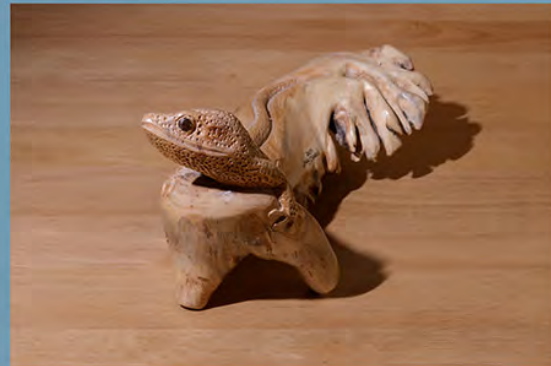
# APERTURE

## Lens Aperture Chart for Beginners

				
f/1.4	f/2.8	f/5.6	f/11	f/22
Very Large Aperture	Large Aperture	Medium Aperture	Small Aperture	Very Small Aperture
Very Small Depth of Field	Small Depth of Field	Medium Depth of Field	Large Depth of Field	Very Large Depth of Field
Almost Nothing In Focus	Little In Focus	Some In Focus	Much in Focus	Almost All In Focus
				
Brightest	Bright	Medium	Dark	Darkest



Large aperture

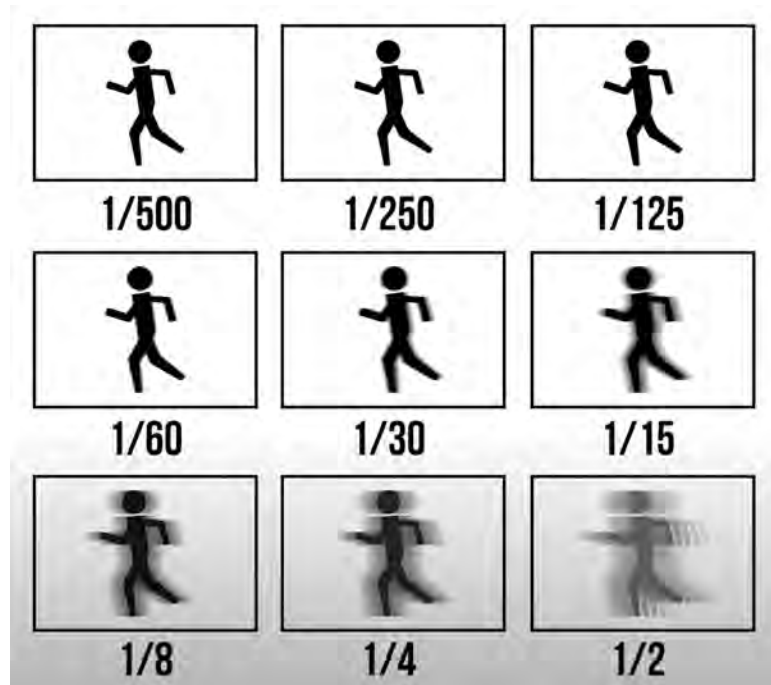


Small aperture

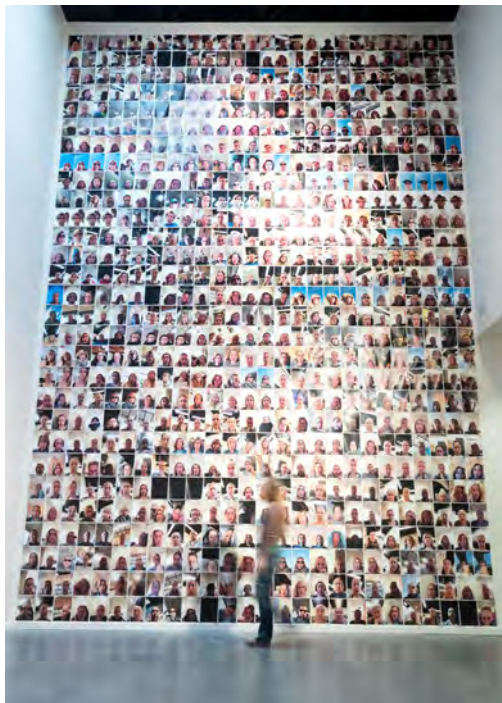
The image on the left was shot with a wide aperture, resulting in very shallow depth of field. Only the head of the reptile is in focus.

The image on the right was shot with a narrow aperture, resulting in a large depth of field. The whole image is in focus.

# SHUTTER SPEED



Keep in mind a longer shutter speed will admit more light - while a faster shutter speed will create a darker image.



The image on the left uses a slower shutter speed. This image reveals the scale of the work - keeping the work in focus as the person is blurred. While the image on the right was shot with a much quicker shutter speed which allows both the individual and the artwork to be in focus.






## WHITE BALANCE

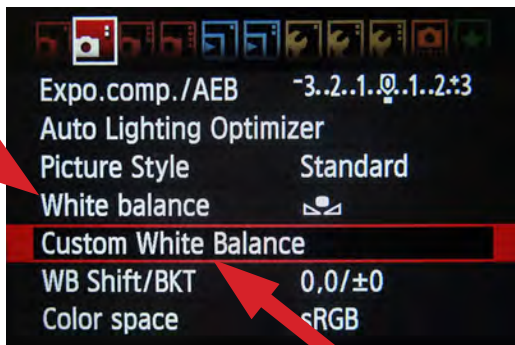
**White Balance** is the camera setting that adjusts how colors are rendered in an image. Setting the correct white balance setting results in the color of light appearing as close to neutral (white / grey in color) as possible.

Once you've set-up your lights and your artwork in the studio - photograph a white surface using the light source.

Click the menu button on the camera find White Balance settings.

1. Select "Custom White Balance" 
2. Select "Custom White Balance" beneath WB tab. The camera will prompt you to source an image from your library. Select the image you photographed with the white surface. This will allow you to capture your artwork with more accurate white balance with the lighting you've set-up. Note that any adjustment in lighting will effect your White Balance.

Step 1



Step 2



This example showcases different WB settings and how different an image can appear depending on the WB setting.



# STUDIO EQUIPMENT

## Soft Box Lights

A softbox diffuses the light into a pleasing soft, even light. When used properly, it reduces harsh shadows. The closer the softbox is to the model or subject, the softer the light appears, emulating window light. If you want to increase or decrease the intensity of light you will need to change the distance of the light from the work- i.e. closer for more light and further away for less light. Do not adjust the fader on the light, similar to the floodlight it will change the hue of light and affect your white balance.



## Flood Lights (Smith-Victor Light)

Flood lights will provide warm intense light that is fairly direct. One can diffuse its intensity by using a stand and white sheet if necessary. It's important to note that these lights will alter the color of the image, so you'll need to white balance after your lighting has been set-up.



## LED Lights

The LED Video Light provides a smooth and soft light that is well-suited for video use. It is a bi-color light that enables you to adjust the color temperature. The light can be dimmed from 25 to 100% throughout most of its color temperature range. Adjustments can be made either on the on-board LCD via two buttons and a dial.



### ARRI Spotlight

The ARRI light with snoot attachment is typically used for narrowing a high beam light. This is helpful if one is looking to make an aggressive cast shadow or spotlight. Be careful when operating with this light because it tends to get very hot.



### Tripod

The Salon Tripod that lives in 515 allows users to make micro adjustments to the camera's angle. It's wheels are engaged and disengaged with a single foot pedal, and the lateral arm sports a counterbalanced rack-and-pinion drive mechanism. The locking pedals are useful for long shutter speed shots.

The standard tripod is lighter and easier to move around. It can also be used as a second vantage point that could be useful for shooting video interviews



### C Stands

C Stands are very useful tool in the photo studio. They can be used when shooting flay lays. To hold paper rolls, fabric, or formica for backdrops. They can also be used to create reflecting light or blocking light with additional photo studio tools.



### Impact Digital Light Shed

is a high-quality, translucent cloth material housing for photographing small and medium works. The Light Shed can be lit from the sides, top, back, front or can be placed on a shooting table for bottom illumination. Included are two translucent surfaces, which can be used as a base or background for your scene. The kit also includes white and black sweeps, which provide more choices for background.

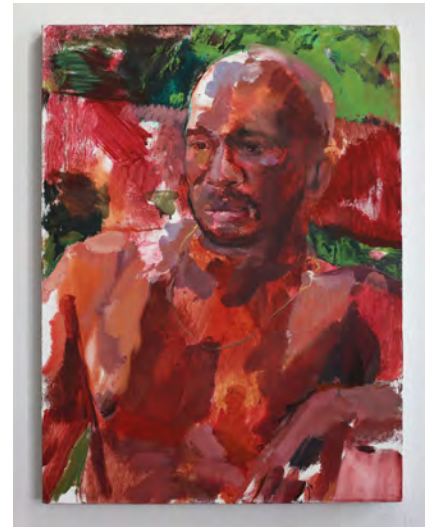




# DOCUMENTING WORK

Before you document your work it's helpful to research artists you admire that are well represented and make notes of how they document their work. While there are some standards of creating a good image (clear,focused,exposure) you do have some creative liberty when documenting. Here are some examples of 2D & 3D work.

## 2D



No crop offers edge clarity, shape definition, and an example of the work existing in space



A cropped image is focused on the work separate from its background without distraction of shadows or edges.

# 3D

Seamless Backdrop vs. Pedestal or Table



Seamless Backdrop



# 3D

Seamless Backdrop vs. Pedestal or Table

Pedestal or Table



## 3D Special Examples



Hanging sculpture with unique cast shadows. Shadows are very active which was a stylistic decision.



Detail shot with blurred background using a larger aperture.



Flat Lay photography, used for photographing books or product shots



Still fashion shot with seamless backdrop.



# Large-Scale/ Installation

If you're working with temporal material, or photographing an installation there are many things to consider. If possible capture the artwork with a neutral background (minimal distractions). Shoot detail photos as well as distance photos to give the viewer an idea of the material as well as the scale. Lighting equipment maybe needed to create optimal lighting situation for larger work in spaces outside of the photo studio.



The Image on the left is an example of a still installation that might be too difficult to photograph in the studio.

The image on the right is a good example of showcasing wearable objects as well as performance work. Note that the lighting presents an accurate depiction of the environment of the performance while also capturing the wearable art.

# File Formating

## JPEG/JPG

JPEG is a lossy raster format that stands for Joint Photographic Experts Group, the technical team that developed it. This is one of the most widely used formats online, typically for photos, email graphics and large web images like banner ads. JPEG images have a sliding scale of compression that decreases file size tremendously, but increases artifacts or pixelation the more the image is compressed.

You should use a JPEG when...

1. You're dealing with online photos and/or artwork. JPEGs offer you the most flexibility with raster editing and compression making them ideal for web images that need to be downloaded quickly.
2. You want to print photos and/or artwork. At high resolution files with low compression, JPEGs are perfect for editing and then printing.
3. You need to send a quick preview image. JPEG images can be reduced to very small sizes making them great for emailing.

Don't use a JPEG when...

1. You need a web graphic with transparency. JPEGs do not have a transparency channel and must have a solid color background. GIF and PNG are your best options for transparency.
2. You need a layered, editable image. JPEGs are a flat image format meaning that all edits are saved into one image layer and cannot be undone. Consider a PSD (Photoshop) file for a fully editable image.

## RAW

A raw image format contains unprocessed data capture by a digital camera or scanners' sensor. Typically images are processed (adjusted for color, white balance, exposure, etc.) and then converted and compressed into another format (e.g. JPEG or TIFF). Raw images store the unprocessed and processed data in two separate files so that you're left with the highest quality image possible that you can edit non-destructively with a photo editing application like Photoshop. There are dozens of raw formats, but some of the typical formats are CRW (Canon), NEF (Nikon) and DNG (Adobe).

You should use RAW when...

1. You are shooting and editing photos. Make sure your camera is set to RAW so you can capture the most versatile image. Then, use a compatible photo-editing application to adjust your image.

Don't use RAW when..

- 1.) You're working with web graphics. RAW is built for photo editing. When you're ready to present your photos for the web, convert them to JPEG
- 2.) You're ready to print your photos. Many printers won't accept raw formats, so first convert to JPEG or TIFF.

## **TIFF**

TIFF is a lossless raster format that stands for Tagged Image File Format. Because of its extremely high quality, the format is primarily used in photography and desktop publishing. You'll likely encounter TIFF files when you scan a document or take a photo with a professional digital camera. Do note that TIFF files can also be used as a "container" for JPEG images. These files will be much smaller than traditional TIFF files, which are typically very large.

You should use a TIFF when..

1. You need high-quality print graphics. Along with RAW, TIFF files are among the highest quality graphic formats available.
2. If you're printing photos-especially at enormous sizes-use this format.
3. You are making a high-quality scan. Using TIFF to scan your documents, photos and artwork will ensure that you have the best original file to work from.

Don't use a TIFF when..

You're working with web graphics. While many web browsers support it, TIFF files are optimized for print. Go with JPEG or PNG when you need to display high-quality images online.

## **GIF**

GIF is a lossless raster format that stands for Graphics Interchange Format. GIF is also a widely used web image format, typically for animated graphics like banner ads, email images and social media memes. Though GIFs are lossless, they can be exported in a number of highly customizable settings that reduce the amount of colors and image information, which in turn reduces the file size.

You should use a GIF when...

1. You want to create web animation. GIF images hold all of the animation frames and timing information in one single file. Image editors like Photoshop make it easy to create a short animation and export it as a GIF.
2. You need transparency. GIF images have an "alpha channel" that can be transparent, so you can place your image on any colored background.
3. You need a small file. The compression techniques in the GIF format allow image files to shrink tremendously. For very simple icons and web graphics, GIF is the best imagefile format.

Don't use a GIF when...

1. You need a photographic-quality image.
2. You need to print an image, because of the color limit, most printed photos will lack depth. If you need to print photos use PSD and JPG.