Studio Lighting

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9/8/2013
Studio Lighting

- Get exposure and color balance right in camera. Don’t depend on Photoshop

- Raw or JPEG – 4096 tones or 256?
  - If JPEG set color balance in Camera (AWB, daylight, or 5600 degrees K)
  - If RAW use a reference card in initial studio shot and eye dropper in Photoshop or Lightroom

- We are going to introduce you to Studio Lighting Equipment

- Show you some types of lighting and the differences they make in the portrait

- Then we are going to ask you to set up the lights in various exercises
Four factors of light to consider

- **Direction**
  - Where are the sources of light coming from

- **Distance**
  - How far away from the light is the subject.
    - If light is close it wraps (flows) around the subject like water
    - If light is far away it acts as a point source and doesn’t flow

- **Color**
  - Is the light warm or cool – Gold reflector to warm. Silver to cool.

- **Quality**
  - Is the light hard or soft – Use umbrella or softbox to soften
Alien Bee
B400 - $225
B800 - $280
B1600 - $360

All other lights can be triggered off the flash of the first light. (Slave flash can be turned off by plugging in a sync cord)
Additional Equipment

- Tripod
- Backdrop & Stand
- Lighting Kits
- Boom
- Grids
- Flags
- Barndoors
- Umbrella
- Soft box
- Brolly
- Reflector
- Snoot
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Key Lighting

- **Low Key**: Losing detail in the shadows
- **Mid Key**: Detail in both shadows and highlights
- **High Key**: Losing detail in the highlights
Four Light Studio Set Up

- **Main (or Key) Light** – serves as the main light for the model. A softbox is generally used as it provides a softer light and wraps the light around the model so as to give a 3D effect.

- **Fill Light** – fills in and softens the shadows caused by the main light and is generally not as strong as the main light. Increase fill to reduce contrast; Reduce fill to increase contrast.

- **Hair or Back Light** provides highlights for the hair and helps separate the model from the background.

- **Background light** separates the model from the background giving more of a 3D or less flat effect.
Flat, Split, Broad, & Short Lighting
(only one light at head level)

**Flat**
- Light from front of face, same height as head
- No shadows on face
- Face is flat, uninteresting
- De-emphasizes nose, widens face

**Broad**
- Lit side of face is nearest to camera
- Widens face
- De-emphasizes facial texture

**Split Light**
- Light is from side of head

**Short**
- Lit side of face is farthest from camera
- Narrows face
- Emphasizes facial contours
- Generally used for male portraits
Nose Shadow Lighting Types
(One Light, higher than split lighting)

Butterfly or Paramount
- Butterfly shadow underneath nose
- Shadow size depends on main height
- Used for Glamour photos
- Flattens features, narrows neck, emphasizes ears.

Loop
- Main Light creates “loop” shadow of nose
- Emphasizes facial contours
- Narrows face

Rembrandt
- Loop shadow meets cheek shadow to create triangle of light under eye.
- Vary dramatic effect
- Good for low key photos, usually with Short lighting

All of these can be created by setting lights and rotating subject
What kind of lighting was used?
What kind of lighting was used?
Other Lighting Types
Rim Light and Side Light

Used frequently in Artistic Nude Black & White Photography
Exposure Measurement

- In portrait photography the contrast between highlight areas and shadow areas is extremely important.
- Measurement of contrast can be done with an Incident Exposure Meter.
- Typical Contrast measurements and results are:

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Stops difference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:1</td>
<td>No Difference</td>
<td>Flat Lighting</td>
</tr>
<tr>
<td>2:1</td>
<td>1 Stop</td>
<td>General Photography</td>
</tr>
<tr>
<td>3:1</td>
<td>1 1/2 Stop</td>
<td>General B&amp;W Photography</td>
</tr>
<tr>
<td>4:1</td>
<td>2 Stops</td>
<td>Dramatic Low Key</td>
</tr>
<tr>
<td>8:1</td>
<td>3 Stops</td>
<td>Very Dramatic Low Key</td>
</tr>
</tbody>
</table>

- There is no “correct” contrast. It depends on what you as the photographer are looking for.

JKM 9/8/2013
Enhanced Images 15
Incident Light Measurement

- To set exposure, remove the reflector and measure the incident light at point A
- Replace the reflector and measure incident light at point B
- To measure hold the Incident Light Meter up to the subjects cheek
- Change Main light by increasing/decreasing Power
- Change Reflector by moving reflector closer or further back

One Light Setup

2:1 Contrast Ratio = 1 Stop difference

A = f/8  B = f/5.6

Reflector

Model

Key Light

This is only one of numerous Studio light set ups
Effect Lighting

Two Background lights will give you balanced lighting. Very important for high key lighting. For High Key f/16 don’t overexpose (blow out)

One light behind the model with a grid can place a circle of light behind the model’s head effectively separating a dark haired model’s head from a dark background.

You must be conscious of background spill (background reflection around the edges of the model. Can be used effectively or can cause unwanted light.

Background can be made lighter or darker by changing the shutter speed. A slower shutter speed will let in the ambient light in the room causing the background to get lighter

Hair Light can be implemented with a grid or a snoot pointed at the model’s hair. Barn doors can be used to block unwanted light from the camera or model. Hair light should be one stop overexposed.
Distance from Lights to Model should be about the same as what you are shooting, i.e. 3-4 feet for head shot; 5-7 feet for Full body. If light is too far away it becomes a point source and doesn’t wrap the head.

As model’s head rises, lights should go up, i.e. sitting to standing.

Distance of Model to background depends on whether you want shadows or blur on the background.
Face detail

- Eyes are most important part of portrait
- Set Camera slightly above eye height to get round pupil not cut off by lower eyelid
- Catch light in the eyes is a must
- Lips could use lip gloss to keep moisture
- Skin reflection – Powder puff
- Only thing that brings life to facial portrait is ____________?

- Keep up a constant chatter with the model
- If you want them to have a smile, tell them a funny story. Don’t take shot immediately. Wait a second until they relax the smile, then take the shot.

The Photographer
Corrective Studio Techniques

- Round Face – short lighting
- Large Ears - don’t shoot straight on
- Long Nose - Low camera angle
- Short Nose - high camera angle
- Large or bulging eyes – face toward camera. No catch light in white of eye
- Thinning hair – Don’t use a hair light
- Try to hide problem features in shadows, i.e. scars or pimples
- Abnormally large features, reduce shadows to reduce size or flatten

Bulbous nose
Posing Techniques

- Double Chin – Extend jaw toward camera
- Small eyes – turn chin toward camera
- Glasses
  - Remove
  - Tip forward
  - Tilt chin down or shoot from higher angle
- Angle shoulders from horizontal
- Tilt head slightly from vertical

- Half or Full Length
  - Don’t crop photo at an arm or leg joint
  - If it bends, bend it

- Waistline problems
  - Pose in sitting position
  - No tight clothing
  - No slouching

- Hands
  - Man’s hands must have strength
  - Woman’s hands must have grace
Exercise 1 – Light Direction

- Set up a background, a Hard Light (no umbrella or softbox), Camera, and Subject
- Light directly in front of the subject at head height. This will produce Flat Light on the subject’s face (no shadows)
- Raise the light and note the butterfly shadow under the nose.
- Rotate the light through the positions at left and note the shadows on the face
- Place the Light at a 30° Angle (loop position), and Rotate the model. Butterfly, Loop, Rembrandt, and Split, can all be created by rotating the model.
Exercise 2. Light Distance

- Set up Flat or Butterfly lighting on the Model with Hard Light
- Vary the distance between Model & Background and note shadows appearing on the Background
- Vary the Light to Model distance and note the effect light has on the model (wrap)
Exercise 3. Light Color

- Add a reflector to the set up
- Note the effect on the nose shadow
- Change the color of the reflector from cold to warm.
Exercise 3. Light Color

- Add a reflector to the set up
- Note the effect on the nose shadow
- Change the color of the reflector from cold to warm.
Exercise 4. Light Quality

- Experiment with multiple ways to soften the Hard Light you have been using:
  - Reflecting umbrella
  - See through umbrella
  - Soft Box
  - Soft Box & Reflector
  - Soft Box & Umbrella
Exercise 5. Effect Lights

- Set up four or five light set using Main Light, Fill Light, Background Light, Hair Light.
- Measure each Light with exposure meter and take photos for reference.