4-Week Short Course: Introduction to Product Photography With Instructor John Siskin

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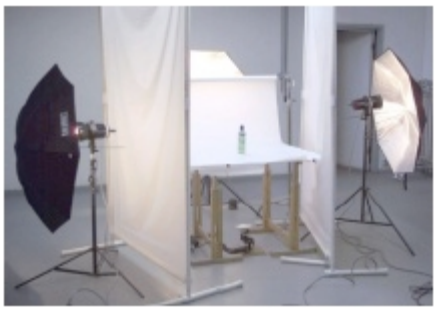
Lesson #2: Tabletop Set-up

A couple of essential expendables we left off last weeks list. First **gaffers tape**, the single most useful item for holding it all together. This is similar to duct tape but better, because it is easier to remove. This tape is available from photo sources (Calumet or B&H on line). Another item that you might like to have is called **cinefoil**. It is black aluminum foil. You can use it to manipulate a light source without worrying about the risk of fire. Many modeling lights are very hot and fire is a real risk. Other things that belong on this list are the essentials for your camera: **lenses**, **film** or **digital capture media**, perhaps a **tripod**. You get the idea. One reason for this list, beyond helping you to shop intelligently, is that the list can help you to make sure you bring the right things on location.



Product shot set-up
Light from two sides, back and below!
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Cinefoil and Gaffers Tape
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Two more items that I need for product photography, and I think you will too: **seamless paper** and **tracing paper**. Seamless is used as background paper for photography. For product I usually get the rolls that are 4.5 feet wide by 33 feet long. Most of what you'll use is white, but you may want a light color also. You'll use tracing paper when you want to light from below or the back. This helps to make a shadowless environment; we'll talk about this later in the lesson.

Meet Bob

We need to examine how the tools for this: **umbrellas**, **softboxes** and **light panels** work. We have Bob to help us with this.

Bob #1

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Bob Set-up #1

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The first shot finds Bob on top of a white column (actually all the shots will find Bob in the same place, Bob is unchanging). Bob is illuminated by a single light, a Norman 200B. The thing you want to pay attention to is the bright white spot on Bob. This is the **specular highlight**. On a small light source the specular highlight is always very intense. Not only is it bright, it is concentrated. The brightness difference between the specular highlight and the diffused highlight (the area which is illuminated but not the specular highlight) is greater than it would be if the light source were larger.

Next examine the way that the diffused highlight transitions into shadow. The transition is very abrupt. Because of these characteristics a small light source is very good at revealing texture in an object. Because of the intense specular highlights a small light creates it also creates sparkle; sparkle would be a lot of very small specular highlights. Although I almost never use a small light source by itself, I often use it in combination with large light sources to add sparkle and texture that are lost with big light sources. I should note that this looks different from a medium sized light source because 2 sources softens or adds shadow/ sparkle while a medium sized light doesn't have the small specular highlights.

Umbrellas

Bob Set-up #2

Bob #2
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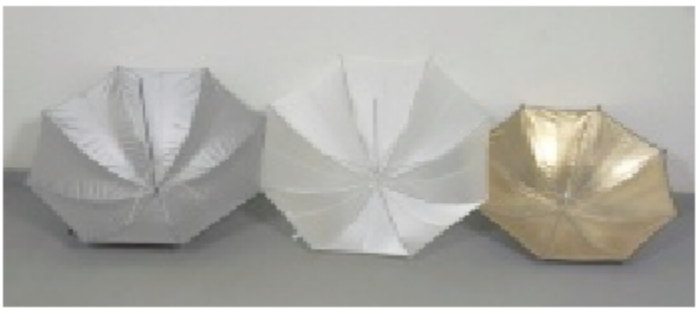
I had the good fortune to work for an advertising photographer when I was 16 years old. This was in the early seventies (do the math if you want). His name is Steve Berman; and I learned more about lighting in that summer than in any summer since. He used umbrellas, so, naturally the first lighting tool I got was an umbrella. I still think that umbrellas are the best all around lighting tool you can get. They are very inexpensive, bordering on cheap. Umbrellas are easy to set-up, unlike a softbox. If you knock your light over they even act as a parachute! They spread light the way a sawed-off-shotgun spreads pellets, only more so. Heck, if you use a shoot through umbrella (white umbrella with no cover) you can create 360º light! Really only two draw backs, **1)** they light everything there is no stopping them, and **2)** they leave telltale reflections all over the shiny stuff in your shot. You can see that I used an umbrella when you look at Bob, because the specular highlight is now shaped like an umbrella. Because the umbrella is bigger the specular highlight is bigger and dimmer. Please note what has happened to the transition to shadow. The transition is much smoother and the shadow is smaller and less intense.



Umbrella 2
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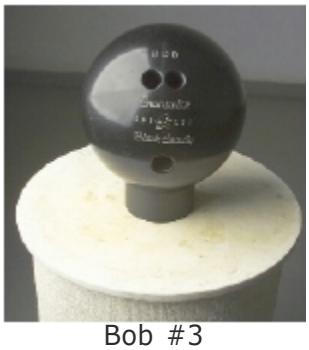
Umbrellas come in a whole range of types; this helps to extend their usefulness. The first characteristic I want to talk about is size. Bigger is better and more expensive. A bigger light source will spread light more smoothly over a lager area. There is a relationship between the size of the light source (this holds for things other than umbrellas) and the distance from the subject and the way the light looks. Basically if the light source is at a distance of less that twice the size of the light source the lighting will be very smooth. It is important to keep in mind that if your big light source is a long way from your subject you have made it into a medium or small light source. I have 3 sizes of umbrellas: **60 inch** for bigger subjects, **45 inches** for most purposes and finally **30 inch** for a tight fit on architectural subjects.

Umbrellas are provided with different fabric, which changes their character. The most common fabric is a white satin. It has two advantages, even

diffusion of light and good efficiency. The first advantage means that the light is evenly distributed and smooth over the area the umbrella is lighting. The second means that you get a lot of the light you put in an umbrella back. Any time you bounce light, off a ceiling or an umbrella, some of the light doesn't come back, and that means it isn't available for your photograph. White satin is better at bouncing light back and it is almost as smooth as white cotton, which is what photographers used to use. When you are willing to sacrifice smoothness for efficiency you can use a silver umbrella, the metal version of these umbrellas are wonderfully efficient. Umbrellas also come with gold lining and blue lining which do a partial color correction from daylight to tungsten (gold) or tungsten to daylight (blue). You can also use these umbrellas to add color to your shot. I rarely use a silver umbrella and I have never used a blue, it is easier to filter the light source.

Finally there are differences in umbrella construction. First there are umbrellas that have a removable black cover over the translucent satin fabric with black. This has two advantages, first the light doesn't come out of the umbrella, illuminating areas you'd rather leave dark; and second you can remove the cover and light through the umbrella, this is very useful in architectural interiors. The other difference in umbrella construction is that the white satin covers the ribs in some umbrellas. This cleans up the reflection of the umbrella somewhat and is supposed to create even smoother illumination. The picture of Bob was made with a 45 inch white satin ribless umbrella with a black cover. Man what a mouthful for an umbrella. I have 3 matching umbrellas like the one I used for Bob; I have 2 - 60-inch black cover ribbed white satin that I use a lot. And I do use umbrellas a lot.

Softboxes



Bob #3
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Bob Set-up #3
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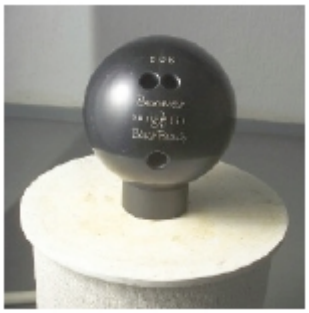
When I first opened my studio, softboxes were the new thing so I got one. They are a fabric box that encloses the light providing, hopefully, even illumination across the face of the box. The light from a softbox is much more controllable than the light from an umbrella because they have a flat face. In addition to providing an even source, the edges of the area illuminated by the softbox are quite interesting, a controllable falloff. As with the umbrellas the softbox is better if it is big. This gives you a larger

area of the very smooth light produced by a large source. As the light source backs away from the subject, it acts as an increasingly small light source; I notice it in the shadows first. Softboxes also have a characteristic specular highlight, just less objectionable than the umbrella.

The relationships between the values in the specular highlight and the diffused highlight are similar to those produced with an umbrella, except that a softbox is generally closer to the subject than an umbrella would be. This is because the umbrella is placed away from the light and the subject, while the softbox is between the light and the subject. One thing you want to have in a softbox is different covers so you can change the shape of the light, at least between a rectangle and an oval. This will allow you to change the shape of your specular highlights. One place where a softbox is noticeably superior to any other light diffuser is outdoors on a windy day. It is the easiest light to secure in a wind, but don't forget to secure it!

There is one size of softbox I find useful for product photography. This is the very small box; say 12 inches by 18 inches. I know that this is a contradiction to what I said above, but this is a beautiful size for shooting bottles and glasses; it allows you to control the reflection in the bottle. When you see a shot with a long thin reflection in a bottle of wine, this is often the light source. A lot of people like an overhead soft box for lighting product. This works particularly well in a small space, of course you'll need a boom.

Light Panels



Bob #4
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Bob Set-up #4
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The next big change in my approach to lighting came when I saw Dean Collins. Not only was Dean a brilliant instructor, he was outrageously funny. Unfortunately Dean passed away recently, much too soon. Anyway what

Dean did was to put fabric on these plastic frames. Hopefully this feels a little like déjà vu, since you should already have frames. These work as very large light sources and they are inexpensive. I made a bunch of frames, been using them for close to twenty years. These light panels are very good at being that large light source. They are easy to manipulate in the studio and easy to set-up. You can use one to light people or large product. You can clip them together to make an even larger light source; this will work for well very large products.

Of course the fabric you use matters to the shot. I generally use cotton broad cloth, it is generally very neutral in color and it hems with glue. Rip-stop nylon is another great fabric for a cover. I also like silver and gold lame, though any silver or gold fabric would work. I want to point out that while I rarely use the gold umbrella, I use the gold fabric on the frame A LOT. There is a big difference between the two: the umbrella lights things yellow; the reflector fills shadows with warm light. Another important cover for your frame is black. This will enable you to control the light spilled from the sides of the frame, and it can be used as a gobo (from go between I heard) to help build shadow and strengthen contrast. You can buy this stuff ready made, both Chimera and Westcott sell fabric the size of the frame plans, heck you can buy the whole frame from them. I have about 5 of these frames and a lot of covers, that's why I recommend making them, the savings on that many is substantial.

There are difficulties with the frames, the biggest is that the light coming through the panel is uneven and the reflection shows the irregularities of the fabric. The photo of Bob shows the first problem pretty well. The light is bright in the center and falls off, sort of like a fireball. Now lots of the time this is fine, even great. It even looks pretty good on Bob. It doesn't work all the time. If you look at the panel you can see why: the light is much brighter in the center than on the sides. Dean had a fix for this: he would clamp three of the frames into a triangle shape using double clips that are made to do this (you may want double clips on that equipment list). Now inside that triangle is the light, and it is facing away from the set into a sliver reflector wall. Then the light goes through the front cover and you get all the light that is left. Not only is this difficult to set up but it is very difficult to move.

We will discuss another plan to deal with this next. Dealing with the irregularities of the fabric is easier. **Method 1:** use a product without pesky irregularities, either a translucent plastic of tracing paper. **Method 2:** use clips, say the double clips I just mentioned, or spring clamps or even gaffers tape to draw the cloth tight. I usually use the second method. Now back to Bob.

Umbrellas and Light Panels

Bob #5
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Bob Set-up #5
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So this is a very basic change, but it took me a long time to discover it. Instead of building the triangle and bouncing off the back walls of the triangle, bounce off an umbrella. This set-up provides even and smooth light on the surface of the light panel. It is easy to reposition and manipulate. In fact I will often bounce light that has come around the light panel into a reflector and back into the shot. Can't do that with a softbox. The smoothness of the transition from diffuse highlight to shadow is just remarkable. Note that the shadow from Bob is just a slight darkening, rather than a pool of inky blackness. Look also at the column and how the light falls off smoothly across the bottom.

Now I should mention the specular highlight: first it is very close in value to the to the diffused highlight, this is because the light source is so large. Second the highlight doesn't have the telltale image of an umbrella in it. Another point is that the light has now evenly spread to the background, which has not happened in any of the other shots. One more thing I should point out is that by repositioning the light with respect to the panel you can make useful changes in the light. For instance if you raise the umbrella and light up the panel will darken as it goes to the floor, this will be reflected in the specular highlight. So is this the wonder light? Well it does have a couple of drawbacks: it sucks up a lot of light, figure you need at least 800 watt-seconds to get a useable f-stop out of this and it leaks light out the sides like mad. I often use another light panel (maybe I should call this a dark panel?) covered with black fabric to control this.

Thanks Bob!

The next item I want to mention this week is the **honeycomb spot**. As you can see in the images below, the honeycomb spot throws a tight and more control spot. This also called a grid spot. It is a very popular tool for light control because of how tight the spot is. These grids come in tighter and

wider patterns that increase the size of the pattern as the pattern widens. These will allow you to put controlled highlights into a product shot.

Norman Grid Spot
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Norman Grid Spot Pattern
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Table Top

Product Table Set-Up 3
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I am using a home built table for this first product. The legs have variable height; I got them from Ikea. This is a link to a current product which is similar to what I've used: IKEA.com You should be able to get a similar product at Home Depot.

On top of the Plexiglas is tracing paper or velum, from an art supply store.

Next I'll put a light below and behind the table.

Product Table Set-Up 1
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I can light from any side with this, which can be important. I also have complete control over shadows. I like this better than more sophisticated systems because

Product Table Set-Up 2
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the tracing paper is so easy to replace. I do not need to worry about scratching or marking the tabletop. The next step is to put up light panels and umbrellas, this will give me a chance to have light surround the product, look at the shot at the beginning of this section.

So I have to admit that a box of Cheerios is not a very exciting subject, and I made it duller by shooting straight on. This first shot is with all the lights on the table above at even levels. The bottom light has less power so that it will match the lights with the umbrellas.

Cheerios Table Shot, All Lights
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Cheerios Table Shot, No Left Light
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The second shot has the light on camera left turned off.

After I turned the left side back on I turned off the right side and shot this. You'll note that turning off either of these lights does not make a big change since the light bounces around so much that everything is evened out.

Cheerios Table Shot, No Right Light
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Cheerios Table Shot, No Back Light
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Next I turned off the back light, of course the side lights are back on now. This is a little bit more dramatic change.

Finally I turned off the bottom light. I don't suppose that surprises you. This makes the foreground darker, just as the last shot had a darker background.

The table is kind of a pain to set up, but very easy to use. You can do a lot of work with this table very quickly.

Cheerios Table Shot, No Bottom Light
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Shooting In Raw

Of course, lighting is not the only problem we face in doing photography. We also need to control the color and exposure of our photographs. One of the ways to do this efficiently is to use raw capture on our cameras. You could have an entire class on how to use raw capture, but now we only need to make this easier, not more complex. One important thing I have to point out about Raw is that each camera manufacturer has a different raw environment. This means that not everything I can do in raw will work in your camera.

Another point about Raw, Adobe has a program in Photoshop called Bridge that will open raw files. Although this can be a useful program it is bad for product photography. The problem is that Bridge automatically adjusts the exposure and color of each file, changing the files from camera settings to something else. If you shot 3 different images of the same product in three different colors it is likely that all the colors would be changed by Bridge when they were opened. You will want to use the proprietary program from your camera manufacturer when shooting Raw for product shooting.

There are a few important reasons to use Raw for product shooting. The best reason is that Raw is a simple place for making a change to all the images in a group. For instance if you shot a color test of a grey card at the beginning of shooting a group of 100 tools you could balance the test using the camera program and apply this color balance to all the other shots.

Additionally, Raw saves extra bit depth, which allows you to change the exposure with no loss in information. This keeps your shadows and highlights cleaner as you change exposure. Raw will also let you choose a level of sharpening, and apply it to all of your shots. Of course you can choose to only modify a small group of shots or just one, rather than the entire shoot. Finally Raw will change all your images into either jpgs or tiffs. One problem with Raw is that this conversion is usually time consuming. All of this will reduce the time you spend in Photoshop and give you more consistent photographs.

Your Assignment: Tabletop Set-Up

Hopefully the students will have enough equipment to do a tabletop shot. If students do not have quality lights they can use clamp lights, from Home Depot, for this assignment. Shoot two cereal boxes, individually and as a group. Be sure to concentrate on showing shape. Upload three total shots of the boxes and one shot of your lighting set-up.

If you'd like me to critique your assignment you can arrange that by paying $25 on my website. Please visit www.siskinphoto.com/workshop.php . I suppose you could also make a donation at the site.
I hope you find this class useful.
Thanks!

Please note that this class was originally prepared some years ago. You'll want to evaluate current equipment rahter than relying on these suggestions. The light panels are really useful, you should build or buy a couple of these.

In looking at this lesson again I have to say the whole thing with the Cherios box is perhaps needlessly complex. There are products that need the whole light table treatment, but usually you can clip te product and add a drop shadow later. I'm attaching some notes that might help with this lesson. Also I want to add one thing about the way I work with the camera now. I have Nikon D800 which has a slot for a Flash Card and an HD card. I store the RAW images to the Flash Card and store low res jpg images to the HD Card. I use an Eye-Fi card in the HD slot. This will transfewr my images, wirelessly, to my tablet. I really like this, because it makes it easier to evaluate my imges and share them immediately with the client.

Histogram:

The histogram is a mathematical representation of the exposure information. It shows how much of each density you have in a photograph. So if you took a picture of a just a gray card, with out anything else in the picture, the histogram would show a spike in the middle of the graph and nothing any where else on the graph. If your shot is all of one density, this histogram shows you that you have pixels in that density; this would be a boring picture. Now if you gave the same shot more light, overexposing the image, the spike would move towards the right side of the graph, because the right side represents lighter density pixels. If you removed light from the shot the spike would move left showing darker pixels. I hope this makes sense. But what can we say about a shot with a lot of different density pixels in it? Well, first, if the raised portions of the graph, which represent the number of pixels of a given density, are not cut off on the left or right side, then you have made an image that has all the information about the shot on the sensor. This exposure may or may not be perfect, but if you shot in raw then you can easily make the exposure perfect in a raw processing program. Note I said perfect, not good enough.

If you expect to see black, without detail or white, without detail in your finished shot then you should expect to see the information in the graph pushed against the left side of the graph for black and the right side for white. Here is the problem: what if the information is pushed up against the right side of the graph, and you DO NOT want to see white without detail. Your shot is over exposed. You need to reduce the amount of light in the shot. If this is an ambient light shot adjust either the aperture or the shutter speed, or both, to let in less light. If this is an exposure made with strobes adjust either the aperture, the power of the strobes, or the ISO. If the information in the graph is pushed against the left side add light, or sensitivity, rather than reduce it. Really with practice it should take only seconds to evaluate a histogram and decide what to do.

SHOOT IN RAW!

Thanks, John