

# Photographing Your Knitting: Putting Your Masterpiece in the Best Light

© 2010 Conrad R. & Jeanne E. Hoffman,  
All Rights Reserved

## ***Introduction***

Good photography is all about controlling light. A photo studio is nothing more than a place with lights, reflectors, backgrounds, and the clamps and rods necessary to hold them in the desired locations. Photographers spend most of their time getting the lighting just right, and very little time actually taking the shot.

Knitting projects are conveniently sized and easy to light, so our "studio" can be almost anywhere and can use simple lights and props from the hardware and crafts stores. Remember that photographers are resourceful. They're constantly thinking of new uses for everyday objects around them. Coat hangers, duct tape, plungers, kitchen clips and Blue Tac all have unexpected photographic uses.

We live in the best of times for cameras and technology. Even the most inexpensive digital point 'n shoot will do a competent job of photographing your projects if given the right setup and lighting. With little more than rudimentary computer skills you can enhance your photos to a near professional level. A few more button pushes and hundreds or thousands can view your work without you ever having talked to a publisher.

Now we'll cover 8 steps to better photographs.

## ***Defining the Mission***

Photographs serve many purposes and the best photo for one may not be the best photo for another. Here are some possible reasons to make a photograph, listed in order of how much time and effort one might expend to get a suitable result:

1. to email a friend
2. to post on a web site or include in a handout
3. to run in a newspaper advertisement
4. to include in a knitting book
5. to be a cover shot for a magazine or book jacket

In the first case, any convenient lighting or even the camera's flash may be all that's needed. Though not the best choice, a camera phone might record a perfectly adequate image. As we move through the list, better and better lighting and a nice sharp image will be required to make the best impression. Remember that projects can become used, shop-worn or damaged, so you'll always get the best photographs soon after a project is completed. Try to anticipate where the image might ultimately go, and set your standards accordingly. When in doubt, err on the side of a better image.

## ***Supporting the piece***

It's usually best to avoid shadows on the background and you can do that by supporting the piece a foot or more in front of the background. Small items like mittens can be placed over a wooden dowel or even a bent coat hanger. Using computer software, the exposed support can be erased from the image later on. Remember that thin wires are easier to erase than wide supports. With something large like a sweater, you might be able to use a mannequin or cut out a cardboard form. For hats and caps you can get a Styrofoam head at the beauty supply store.

To save the world's supply of coat hangers, you can go to any welding supply store and buy a tube of copper-clad steel welding rod. It's an inexpensive source of easily bent wire, good for just about anything where you might otherwise wreck a coat hanger.

You may be tempted to lay the piece down on a background placed on the floor, but this should be a last resort. If the piece is laid on the background and shot from above, there will be sharp shadows around the edges, and the sweater will be fore-shortened, which is to say that the bottom will appear wider than the top. You will have more trouble holding the camera steady, and you'll be bent over at an awkward and uncomfortable angle. Try to keep the piece vertical.

## Backgrounds

The color of the background will have a tremendous effect on how your piece looks. In general, a neutral grey background is best for showing off colors. Here are a couple examples.



Since you've supported the piece well in front of the background, the brightness of the background can be controlled by how much light you direct towards it. A piece of white Fomecor® or similar foam board can be lit to provide anything from very dark to pure white, though it's not always practical. Poster board and matte board come in various colors and shades and are also a good choice. A smooth wall will work, if such is available.

Though you can control the shade of the background with the lighting, lack of space will often put the background close to the lights, making it too bright. It's best to keep some neutral deep grey poster board on hand for when a dark background is needed. You can also make backgrounds with nothing more than a sheet of white foam board or poster board, and some cans of spray paint. Remember, photographers are resourceful.

## Color control

Our eyes and brain pretty much ignore the difference between sunlight, incandescent light and fluorescents. When we look at a piece of white paper, we know it's white regardless of what kind of light is present. Cameras aren't so smart. They normally render sunlight as "white" and any other light source comes out too red or too green unless you make special adjustments. We'll talk about those adjustments a bit later.

When choosing lights it's important that they all be the exact same color. Never mix lighting types, say sunlight coming in a window plus an incandescent to fill in shadows. Even florescent room lights will cause trouble if combined with your main incandescent lights, so turn them off when shooting.

In the bad old days photographers used incandescent photofloods. They ran dangerously hot, were expensive, lasted about 4 hours and used gobs of electricity. Today we can go green by choosing compact fluorescent lamps (CFLs), but they have to be the right ones. CFLs come in various colors, from reddish to bluish, indicated by their *color temperature*. They may also have a *color index*, which is supposed to tell you how well colors will look, compared to sunlight. A color index in the high 90s is best for photography, but CFLs that good are usually expensive special order items. In any case, only buy CFLs if they list the color temperature on the package and on the base of the bulb, otherwise you'll have no idea what you're getting.

Our goal is to make quality images without having to learn too much about color temperature and without having to make special adjustments to our cameras. We'll do that by getting CFLs as close to daylight as possible- 5500K, and leaving the camera set for daylight.

### **Lights**

Go to the home improvement store and buy two inexpensive clamp-on reflector lights similar to those shown below. These were less than \$14.00 for the pair.



Next, hopefully in the same store, buy two identical 100W equivalent (23W actual) CFLs. Do not buy a lower wattage. They should be "daylight", but look for the color temperature as described previously. You want 5500K. Many brands will not be marked and should be avoided. Don't be surprised if the information is hard to find- try to read the base of the bulb through the plastic. The brands and types carried seem to change weekly and will be different between the major home store outlets, so check several different stores to get what you need. We paid under \$5 for the pair. These CFLs will take several minutes to reach full brightness. Like all CFLs they also contain a trace of mercury, so take special care not to break them and to dispose of them properly.

If you shop online, you can find CFLs made specifically for photography. They'll cost a bit more, sometimes a lot more, but the results should be excellent.

### **Lighting & Texture**

Professionally done lighting will be very smooth and three dimensional. This is accomplished with large light sources, often rectangular "soft boxes" several feet on a side. Look at the lighting on the national evening news programs. They light the front of the newscasters with flattering soft light, and then add some highlights to the shoulders and hair with a bright light from

behind. This kind of lighting reduces texture (a.k.a. wrinkles). As the size of the light source is reduced, and the angle made to graze across the subject, texture is revealed. Too much and the subject becomes harsh. The effective size of the light source is a combination of its physical size, and its distance. The sun is huge, but since it's so far away it's a very small light source and gives hard edged shadows. A window is large compared to most subjects and can give very soft lighting.

With knitting projects the goal is to retain some of that professional smoothness, but also bring out the texture of the piece. That's especially true if trying to illustrate construction techniques.

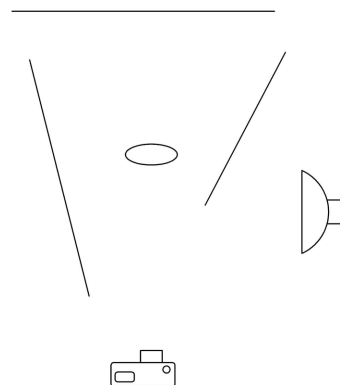
The "studio lighting" shown above was made with a length of 2x4 hot glued to a couple of cutoffs so it wouldn't fall over and break the bulbs. If your table is short, you can also just clamp the lights to the backs of two chairs. Move the chairs around as needed. The size of the reflector floods is appropriate to most pieces, as they're large enough not to be too harsh, but can still bring out texture if properly placed. Having them close gives high brightness but low texture. Having them far away gives low brightness (duh!), but high texture.

Almost all studio shots benefit from one or more *reflectors*. A strategically placed piece of white foam board can reflect light onto a dark area and bring out more detail. That same foam board can also be used in front of a light to shadow a problem area that's getting too much light. If you have (or have a friend who has) a table saw or router, you can slot a short 2x4 to make a handy base for a foam board reflector.

There is no substitute for just moving lights around and observing the result. Here are a couple typical setups. Try these and vary the distances and angles.

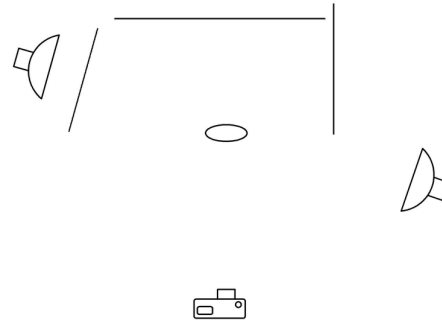


This is an example of how to use only one light. The light is bounced off of two pieces of foam board as shown in the diagram.





Here, one of two lights skims across the mitten from the right to bring out more texture. The other is behind the mitten on the left and provides a highlight on the left edge. It's diffused with some white plastic or fabric to reduce the brightness.



### ***Working the camera***

All cameras are different so we have to be a bit generic here. Consult your camera manual for the exact details. It's assumed you're using a modern digital "point 'n shoot". A film camera is certainly capable of these shots too. Of course you'd need to scan the photos for any digital post processing and to use them in email and on web sites.

Your camera may have dozens of menu choices, but only a couple things are important here. First, the flash should not be used because we are using other lights. Find out how to shut it off. We bought those bright 100W CFLs so you'd have plenty of light to avoid both flash and the necessity of a tripod, though using a tripod is always beneficial if you have one available.

Next, the camera will almost certainly have some means of performing *white balance*. Hopefully this is a simple menu choice between daylight, florescent, flash and incandescent.

You need your camera set for daylight white balance, since we're using daylight CFLs. It's usually a sun-shaped icon on the display. Though corrections can be made later, they're never as good as when the camera is set properly to begin with. If you have a choice between auto and daylight, choose daylight. With auto white balance, the camera will change the white balance slightly as the subject colors and lighting change. That will make your job more difficult at the computer when you fine tune the color and appearance. Just don't forget to change the setting back to auto for general snapshot use.

The camera exposure needs to be correct and the best way to do that is to use a *program* mode, usually indicated by a large **P** on the control dial. Read your camera manual to learn about other features it may have, like sensitivity, macro and autofocus modes.

Finally, take aim, fill the frame with as much of the project as you can, and take the shot!

### ***The finishing touch- post processing***

All images need adjustments to look their best. Thus it has always been, whether in the darkroom with film, or at the computer with digital images. In fact, your skill at post-processing will have more to do with how people perceive your images than anything else you do.

There are many programs you can use to tune up your images. Photoshop is the best known and the term *photoshop* has become a verb, meaning image adjustment using any program. The

premium version of Photoshop is quite expensive and is probably overkill for most. There is also a cheaper version with fewer features. Paint Shop Pro is competitive for much lower cost, but in all honesty the learning curve for any of these programs can be steep. The features you need are commonplace and are also found in the freeware program IrfanView, written by Irfan Skiljan (it's pronounced Ear-fan).

You will need to do five or more things to your images.

1. crop to eliminate excess background
2. remove any supports, spots and other defects
3. adjust the brightness and contrast
4. adjust the color
5. resize for email or web use

The first step is to get the image up on the screen and look at it. Really look. Size up the lighting. Is it even? Did you get the color about right. Is the background the shade you want? Does the piece fill most of the frame? If there are obvious problems you should have fixed when taking the shot, and if it's still set up, fix what you can and shoot it again. Learn to really look when taking the shot so you can see and avoid the problems you just saw on the computer. It's a skill that only comes with practice.

Save the image under a new name so you don't destroy the original camera image file.

Now **crop** the image the way you want it. When showing a project it's usually best to make it as large as possible, with just a bit of space around the sides. If using a head or mannequin, compose accordingly.

Use the **clone tool** to remove any supports. If there's still some evidence of the erasure, there may be other tools like **blur** or **push** that you can use to smooth it out.

Adjust the **brightness and contrast** so the image has some snap, but don't let it get harsh, have black detail-less shadows or burned out whites. Most photographers tend towards harsh images at first and then slowly come to appreciate a rich and wide tonal range as their skills advance.

If our evil plan has been successful, the **color balance** should be very close. You may wish to adjust the red, green or blue levels slightly, but remember that your monitor may not match anyone else's, so "correct" is hard to determine. If you have a grey area in the shot you can measure the amount of red, green and blue, and then adjust based on that. Perfect grey is created when they are equal. Some software has an **eyedropper** tool to inspect and measure the color of different areas, though IrfanView, unfortunately, isn't one of them. In general, green and cyan tints are very undesirable, so try for neutral or a slightly warmer reddish error.

Chances are, your camera will take a picture with far more pixels than are needed or desired. A good 8"x10" photo needs about 6 megapixels for good quality. Most modern cameras are 8-10 megapixels or more. That's **way too much** for email or the web. Not everybody has a high speed connection, nor is there any good reason to waste Internet bandwidth.

Let's forget megapixels for a while and just consider your computer screen. Though they get larger every year, the average screen is about 1280 pixels across. If you want to display a photo that takes up about a third of the screen, that's 426 pixels. We'll allow for people who might want a closer view and say that images for email and the web should never be more than 600 pixels wide. Emailing an image much larger than that without prior permission is considered rude and a breach of internet etiquette.

Before we reduce the image size, save a copy of the full size processed image under a new name.

Now, in your image editor, choose resize/resample, be sure preserve aspect ratio is checked, and then enter a new width of 600 pixels. Click OK.



Something else you can do to keep image sizes under control is to save the image with the right amount of compression. If you save as a jpg file (recommended), there will be an option to set the compression level, also called the quality level. If the scale is 0-100, a setting of 70-80 will look good but reduce the file size. Your finished images should have a file size of less than 200 kilobytes.

### ***Materials & Resources***

Reflector lights- Home Depot, Commercial Electric 8.5" Clamp Light, 277-894

CFLs- Home Depot, "n:vision" 100W (27W actual) daylight, bar code 62148 09064

Foam board & poster board- Michael's, A.C. Moore or Hyatt's

IrfanView- <http://www.irfanview.com/>

Paint Shop Pro- <http://www.corel.com>

Photoshop- <http://www.adobe.com/products/photoshop/compare/>

High quality photographic CFLs- <http://www.alzodigital.com>

Welding rod, 1/16" copper plated steel- Rochester Welding Supply or any welding supply co.

This Document- <http://www.conradhoffman.com> (under "Jeanne's Stuff")

### ***If you break a CFL***

CFLs are so common that you should know how to clean up a broken one. CFLs contain a trace of mercury. Mercury vapor is poisonous, so you need to follow special precautions during cleanup and disposal. The EPA constantly reviews the best practices for CFL cleanup, so you'll need to go to <http://www.epa.gov/hg/spills/#fluorescent> for the current information. In the meantime, ventilate the room and leave it until the bulb cools. Do not track any debris out of the room and do not, under any circumstances, use a vacuum cleaner to remove the debris until you've reviewed the EPA information. If you have CFLs in the home, it would be a good idea to print out the EPA information and assemble a cleanup kit, so it's available before you need it.