

Gearing Up

Close Up and Macro Photography

- I. Close up photography – objects are reproduced 1/5th life size to life size on the sensor (a full frame sensor is about 1.4 inches wide; life size means an object 1.4 inches wide covers edge to edge)
- II. Macro photography – images are reproduced life size or greater on the sensor (extreme close up)
- III. Required gear
 - A. A special lens that allows close focusing
 - B. Or a camera with a “macro mode” to allow close focusing
 - C. Or a special close up lens that fits on a standard lens to allow closer focusing
 - D. Patience when photographing nature (wind, moving insects, etc)
- IV. Handy gear
 - A. A tripod that allows the camera to be placed close to the subject. For flowers and other objects on the ground requires a tripod that gets close to the ground.
 - B. A light diffuser for outdoors
 - C. Artificial lighting for indoors and outdoors
- V. More Exotic Gear
 - A. Extension tubes – allows your macro lens to magnify more
 - B. Bellows focusing rail
 - C. Close up focusing rail
 - D. Flower holder (little clip that holds the flower still)
 - E. Focus stacking software (Photoshop, Helicon Focus, etc) – more info in May
- VI. Depth of field - as it relates to film and photography, is the distance between the nearest and farthest objects in a scene that appear acceptably sharp in an image.
- VII. The decision of how much of the image you want in focus is a matter of artistic expression. Having more or less of the subject in focus is neither good nor bad (despite what some judges may say.)
 - A. Very shallow depth of field evokes a mood that is about softness and sensuousness. A shallow depth of field can focus the viewer just where you want them to look.
 - B. A deep depth of field gives the artist the ability to show more detail about the total subject. A deep depth of field is good for documenting the whole subject.
- VIII. As always, you are balancing aperture, shutter speed, and ISO for any given amount of light. You can modify the amount of light and thus your choices on how you balance by adding artificial light or by blocking light as with a diffuser.
 - A. Higher f-numbers give better depth of field. Look out for loss of sharpness, slow shutter speeds, and having the background too well defined.
 - B. Higher shutter speed can freeze motion as with insects and moving flowers. Lookout for shallow depth of field and more likely to need artificial light.
 - C. High ISO allows higher shutter speed. Lookout for noise.
- IX. Increasing depth of field
 - A. Increase f-number. Macro lenses allow very high f-numbers f/36 up to f/45.
 - B. Have the subject in one plane so depth of field is more uniform.
 - C. Use a camera with a smaller sensor. Huh? For an image the same size, a smaller sensor has greater depth of field at the same f-number.
 - D. Use a shorter focal length macro lens.

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- X. Working distance is the distance from the front element of the lens to the subject. Longer focal length lenses have great working distance meaning you can get further away from the jumpy bug.
- XI. Macro Lens Choices
 - A. Longer lenses (say 200mm) allow for greater isolation of the subject from the background but are much larger and heavier. Lookout for less depth of field.
 - B. Shorter lenses (say 50mm or 60mm) are the most maneuverable but require the closest working distance.
 - C. 100mm – ahhh. (or 60mm on a 1.5 crop sensor)
- XII. Working in the wild. You will have to make your choices about the depth of field depending on the wind, the amount of light, and how fast you must work. Often, you will be forced to shallow depth of field – learn how to make it work.
- XIII. Working in the studio. Here you have many more choices and can pretty much get just what you want.
- XIV. Focusing – Manual gives you the best control while automatic may be quicker. In manual focusing, you can also fix the camera and move the subject.
- XV. For close ups, try using a wide angle lens. They can generally focus very close but don't have much magnification.
- XVI. References are everywhere on the web and many sites with fine examples.
- XVII. For inspiration, check out Kim Ritzenthaler at <http://kimlovesnature.com/>. I heard her speak and her images are just stunning. All handheld; all with a 50mm macro.