

Choosing a Macro Lens

A while back while Scott was putting on a presentation at another club discussing early morning photography he was asked why use one macro lens over another. It was a good question and



one that I will answer here for you today. This is for the most part, specific to people shooting with SLR type cameras with interchangeable lenses. While other cameras may have the ability to use screw on or accessory lenses in conjunction with the existing lens, I am not talking about that today.

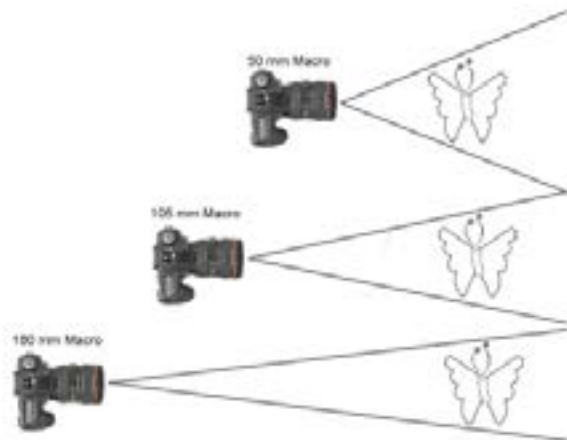
First, why a macro lens.

Macro lenses enable the photographer to photograph small subjects in great detail capturing up to life size reproductions the subject. 1:1 life size simply means that the image appears the same size on the film plane (or digital sensor) as it is in real life. Macro lenses are typically very sharp which help in capturing fine detail of small subjects. They also allow for necessary, precise manual focusing.

For 35 mm digital photography, most macro lenses will be somewhere within the following set of focal ranges: 50mm, 60mm, 90mm, 100mm, 105mm, 150mm, 180mm and 200mm. Of course, not all manufacturers make all focal lengths but most will make three of them. The 50 and 60 are generally considered wide angle macro lenses, the 90, 100 and 105 normal macros and 150, 180 and 200 telephoto macro lenses. So what is the difference?

The difference between the focal lengths of any lens is field of view. A 50mm wide angle lens macro lens has a greater field of view (about 46 degrees) than a 180mm telephoto macro (about 13 degrees). This is important because the wider the field of view, the more background will be a factor in your image. Generally you want to sufficiently blur the background to help bring emphasis to the subject but not necessarily always.

For comparison, I will talk about the lenses as used when photographing a subject at 1:1 (or life-size) that does not occupy the entire frame: a subject with a background.



December Program

Next Month, Niagara Falls Camera Club members will be putting to good use what we learned from Doug Hansgate in October as we have a One Light Portraiture workshop. Please bring your camera to have a chance to take great portraits using a single light source.

A wide angle macro lens will incorporate more of the background than a medium or telephoto macro. At the same time, the working distance (the distance between the camera and subject) will be closer when working with a wide angle macro than with a medium focal length macro or telephoto.

Working distance is a factor because the more distance between the camera and the subject, the greater ability you as a photographer will have to use light modifiers to manipulate your image. Another advantage is that when your subject can move such as butterfly, you can help prevent them from being too skittish and walking away on you by staying as far back as possible.

Where is the advantage? Most people I know will say that the advantage lays with the longer focal length macro lenses. They narrow field of view and a greater working distance from your subject typically help to create fantastic images. The drawback is that longer focal length macro lenses cost significantly more money and are heavier. If you need to carry your equipment long distances, weight may be a concern.



If you are interested in macro photography, you can start with some less expensive alternatives. Extension tubes allow you focus closer than a given lens normally allows and close up diopters may help you as well.

Bellows, extension tubes, close up filters (often called diopters) and reversing rings. Each of these can be used to make photograph small items to some extent.

Bellows and extension tubes both operate using the same principle. Moving the lens further away from the camera body will allow your lens to focus closer which means you can get the lens closer to your subject, and therefore, render the subject larger on your piece of film or digital sensor.

Extension tubes are similar to a lens but do not contain any glass and have a camera mount on one end and a lens mount on the other. To use them, attach the tube to the camera using the camera mount as you would a lens, then add a lens to the extension tube as you normally would a lens to a camera. Extension tubes may be stacked together for further magnification.

Bellows also have both a camera mount and lens mount. The difference is both mounts are attached to a rail system and flexible bellows that allows the lens and body to change distances between each other. By increasing the distance between lens and camera, you can increase or decrease your magnification factor.

Both have their advantages and disadvantages. Bellows units are larger and require more care so that the bellows unit remains flexible and free of light leaks. Extension tubes are solid so require less care but do not offer the flexibility of variable magnification of your subject. More expensive extension tubes and bellows units offer automatic aperture control allowing you to focus with the full availability of light before stopping down to take the photograph. Units that do not feature automatic aperture require lenses that can manually be stopped down which must be done prior to taking the photograph. With both of these systems, the further

the lens moves from the camera, the less light you will have available with which to accurately focus and shutter speeds will be longer.

If your camera does not offer TTL metering (older, fully manual SLRs may not) there are some complicated formulas for arriving at the proper exposure settings for a given magnification that are well beyond the scope of today's tip.

Close up filters also allow you to move in closer to your subject. They are essentially small magnifying glasses that screw on to the front of your lens. These are relatively inexpensive and provide a decent quality image for the price. Close up filters are a good option if macro photography is something you do only occasionally and wish to keep your costs down. They are available in a variety of magnifications and do not require any additional exposure. Close-up filters may be stacked for increased magnification.

A lens reversing ring offers the least amount of flexibility of any of the options I have talked about so far. This ring screws on to the filter threads of one lens and a second lens threads on to the reversing ring the same way. You end up with two lenses stacked together, front elements facing each other. The trick here is that you use a longer focal length lens coupled with a shorter (the longer attached to the camera body) to increase magnification. This is generally a very impractical solution. It is awkward, may put unnecessary amount of stress on the front barrels of the lenses and exposes your rear lens element of the furthest lens to possible damage. I have done this with a 200mm and a 50mm lens to achieve a 4:1 magnification.



As with so many things in photography, there is more than one way to get a task accomplished. Macro photography is the same. I have talked about several different options today. What is best for you will depend upon your required quality, ease of use and budget. Sometimes, to get big impact photos, you have to think small.

For a look at some of my own macro photography, visit <http://potd.chrisempey.com/category/macro/>

Until next time, happy shooting.

Monthly Standings

| Colour Prints | | | | |
|-------------------|---------|----|-------|--|
| | Entries | HA | Score | |
| Bronze | | | | |
| Sue Petri | 2 | 2 | 30 | |
| Keith Smith | 2 | 2 | 28 | |
| Silver | | | | |
| Charles Martyk | 4 | 3 | 52 | |
| Jim Koniar | 2 | 0 | 19 | |
| Gold | | | | |
| Anne Shannon | 4 | 2 | 54 | |
| Eric Baloga | 4 | 2 | 54 | |
| Lorraine Pichette | 4 | 1 | 50 | |
| Derick Bottomley | 4 | 1 | 47 | |
| Bill Feder | 4 | 1 | 47 | |
| Henry Wojnarowski | 2 | 1 | 27 | |
| Diamond | | | | |
| Silvia Greco | 4 | 4 | 69 | |
| Terry Babij | 4 | 2 | 59 | |
| George Beehler | 2 | 1 | 26 | |

| Monochrome Prints | | | | |
|-------------------|---------|----|-------|--|
| | Entries | HA | Score | |
| Bronze | | | | |
| Bill Feder | 3 | 3 | 44 | |
| Keith Smith | 2 | 2 | 30 | |
| Jan Maklak | 2 | 1 | 26 | |
| Sue Petri | 2 | 1 | 26 | |
| Jim Koniar | 2 | 1 | 22 | |
| Silver | | | | |
| Charles Martyk | 1 | 1 | 14 | |
| Gold | | | | |
| Lorraine Pichette | 4 | 3 | 57 | |
| Eric Baloga | 4 | 2 | 52 | |
| Henry Wojnarowski | 2 | 0 | 20 | |
| Anne Shannon | 1 | 0 | 10 | |
| Diamond | | | | |
| Terry Babij | 4 | 4 | 68 | |
| Karen Fulham | 4 | 3 | 61 | |
| Silvia Greco | 4 | 1 | 54 | |
| George Beehler | 2 | 0 | 24 | |

| Digital Images | | | | |
|--------------------|---------|----|-------|--|
| | Entries | HA | Score | |
| Bronze | | | | |
| Christine Hess | 4 | 4 | 66 | |
| Sue Petri | 1 | 1 | 16 | |
| Silver | | | | |
| Jim Arcangeletti | 4 | 4 | 62 | |
| Jane Kretschmer | 4 | 3 | 53 | |
| Cindy Phillips | 4 | 2 | 49 | |
| Jim Koniar | 4 | 1 | 44 | |
| Gold | | | | |
| Melissa Schumacher | 4 | 4 | 67 | |
| Terry Babij | 4 | 4 | 64 | |
| Derek Bottomley | 4 | 4 | 62 | |
| Denis Grantham | 4 | 2 | 55 | |
| Jan Maklak | 4 | 2 | 55 | |
| Lorraine Pichette | 4 | 2 | 53 | |
| Chuck Martyk | 4 | 2 | 52 | |
| Henry Wojnarowski | 2 | 2 | 32 | |
| Cliff Empey | 2 | 2 | 25 | |
| Laurie Rees | 2 | 0 | 19 | |
| Diamond | | | | |
| Scott Simons | 4 | 4 | 72 | |
| Chris Empey | 4 | 4 | 66 | |
| Laura Cardwell | 4 | 4 | 64 | |
| Eric Baloga | 4 | 2 | 55 | |
| Karen Fulham | 4 | 2 | 55 | |

In Focus is a publication of the Niagara Falls Camera Club, Niagara Falls, Ontario, Canada.

In Focus is published monthly September to March.

Articles or comments may be submitted to Chris Empey, Editor
cempey@NiagaraFallsCameraClub.org

Website: NiagaraFallsCameraClub.org