



Just as choice of paintbrush helps decide what a painter can paint, a lens controls the possibilities that a photographer can capture. Don't get me wrong: a brush is a tool, and a lens is a tool. In both cases, the tool helps to frame a painter or photographer's vision of the world—but the vision must come from within.

Different kinds of flower photography are best done with different kinds of lenses, but the good news is that unless you want to get really, really close you don't need expensive and specialized equipment.

A normal angle of view, meaning what most people see, is about 43 degrees. The effective angle of view of a camera lens depends upon the focal length of the lens as well as the size of the sensor used for capturing light. For digital cameras with sensors the size of a frame of 35mm film, a 50mm lens provides roughly the normal angle of view. How this works on your camera depends upon the sensor size and its ratio to a 35mm film frame (check your manual for this information).

Generally, a shorter focal length means the lens has a wider angle of view and can therefore be used to capture a wide view of the world. Lenses with this property are called *wide-angle lenses*. Wide-angle lenses are great if you want to capture an extensive garden view, or perhaps if

you want a shot with one flower in the foreground and others back behind it.

Conversely, lenses with a longer focal length are known as *telephoto lenses* and bring you closer to your subject. Another way of saying the same thing is that these lenses provide a narrower angle of view. Telephoto lenses are great for capturing flowers from a distance when you can't get close to your subject, and also if you want to isolate a flower from everything else in the background.

Zoom lenses cover a range of many focal lengths, in some cases from wide angle to telephoto.

I photographed this Icelandic poppy (*Papaver nudicaule*) using a *Lensbaby*. The *Lensbaby* is a special purpose lens designed so that the photographer can control which part of the photo is in focus. The in-focus area is called the *sweet spot*.

My idea with this photo was to have the flower core in focus, and to allow the petals to go out of focus. This made for a very painterly overall effect.

Photo: Lensbaby using f/8 aperture ring, 1/125 of a second at ISO 200, hand held



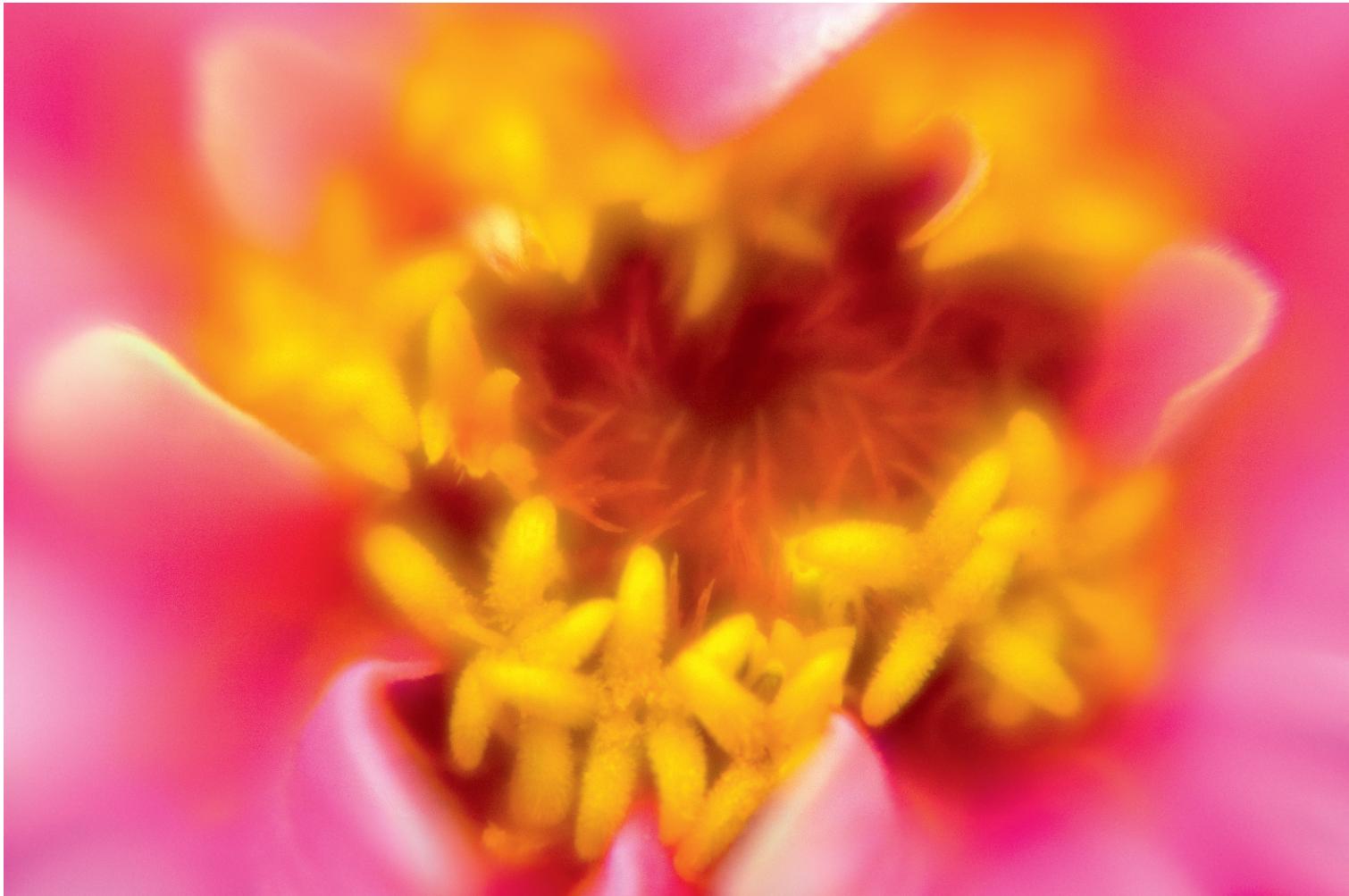


Many compact digital cameras provide a zoom lens with a range of focal lengths—so you can photograph flowers from nearer or further away. Most compact digital cameras also allow you to focus close-up using a special macro mode.

More generally, to say that a lens is a *macro* lens means that it is especially designed for close-up work, and comes into its own for this kind of photography. Macro lenses, covered further on pages 70–77, are very helpful if you

want to explore the worlds of close-up flower photography.

Even if you don't have a macro lens, there are a number of fairly inexpensive ways to equip your Digital Single Lens Reflex (DSLR) camera with interchangeable lenses so that it can shoot closer and get the flower photos of your dreams. I recommend and often use extension tubes and close-up filters (see pages 78–83 for more information)!



RIGHT: My idea with this shot was to isolate this tiny tiarella flower from its surroundings using a longer lens.

Photo: 200mm, 36mm extension tube, 1/20 of a second at f/5.6 and ISO 200, tripod mounted

LEFT: Looking closely at this zinnia, I saw what seemed to be a series of interlocking small flowers merged into the larger petals of the blossom. My idea with this photo was to capture these “inner” flowers romantically and softly.

Photo: Lensbaby using a f/5.6 aperture ring and +10 close-up filter, 1/200 of a second at ISO 200, hand held



If you really want to get up-close and personal with a flower, nothing beats a macro lens. Most of these special purpose lenses do focus to infinity (∞) in the distance, but come into their own at near distances.

The *magnification ratio* is used to classify the relationship between an object in the real world and its size in a capture. Macro photography is often thought to begin when the subject appears in a magnification ratio of 1:2, or half as large as life size, and continues to a ratio of 1:1 and beyond—so that in extreme macros the subject is captured on the sensor as much as five or six times larger than in life (5:1 or 6:1).

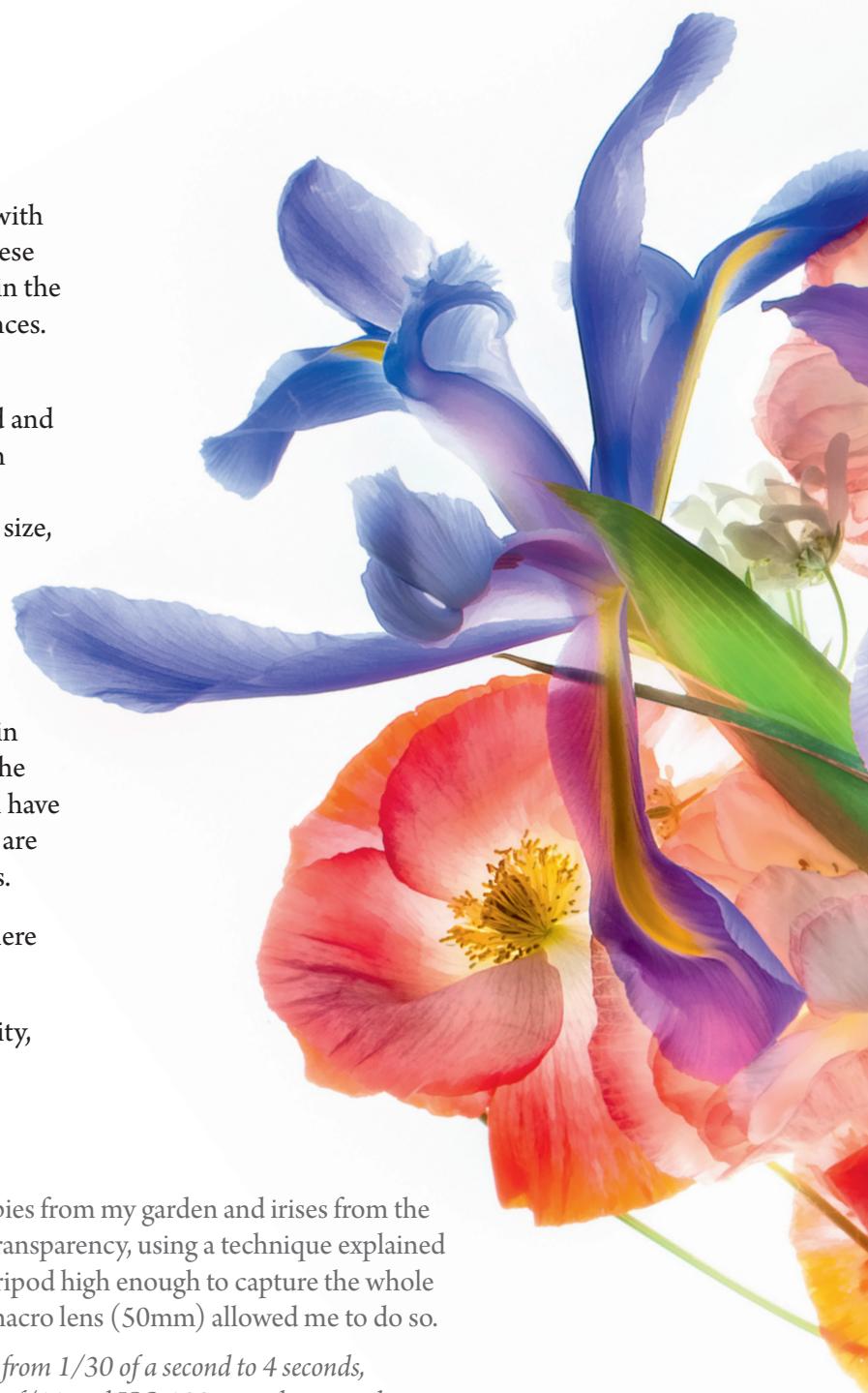
Whether a lens focuses into the close-up domain of macro photography is a separate issue from the focal length of the lens. In other words, you can have lenses with roughly a normal angle of view that are macros, or telephoto lenses that are also macros.

For reasons having to do with optical design, there aren't any wide-angle macro lenses.

Some zoom lenses have a supposed macro facility, but these aren't usually true macro lenses in the sense that they don't get you very close.

I photographed this floral arrangement of poppies from my garden and irises from the grocery store straight down on a light box for transparency, using a technique explained on pages 182–185. It was difficult to raise my tripod high enough to capture the whole composition, but using a normal focal length macro lens (50mm) allowed me to do so.

Photo: 50mm macro, eight exposures at durations from 1/30 of a second to 4 seconds, exposures combined in Photoshop, each exposure at f/11 and ISO 100, tripod mounted





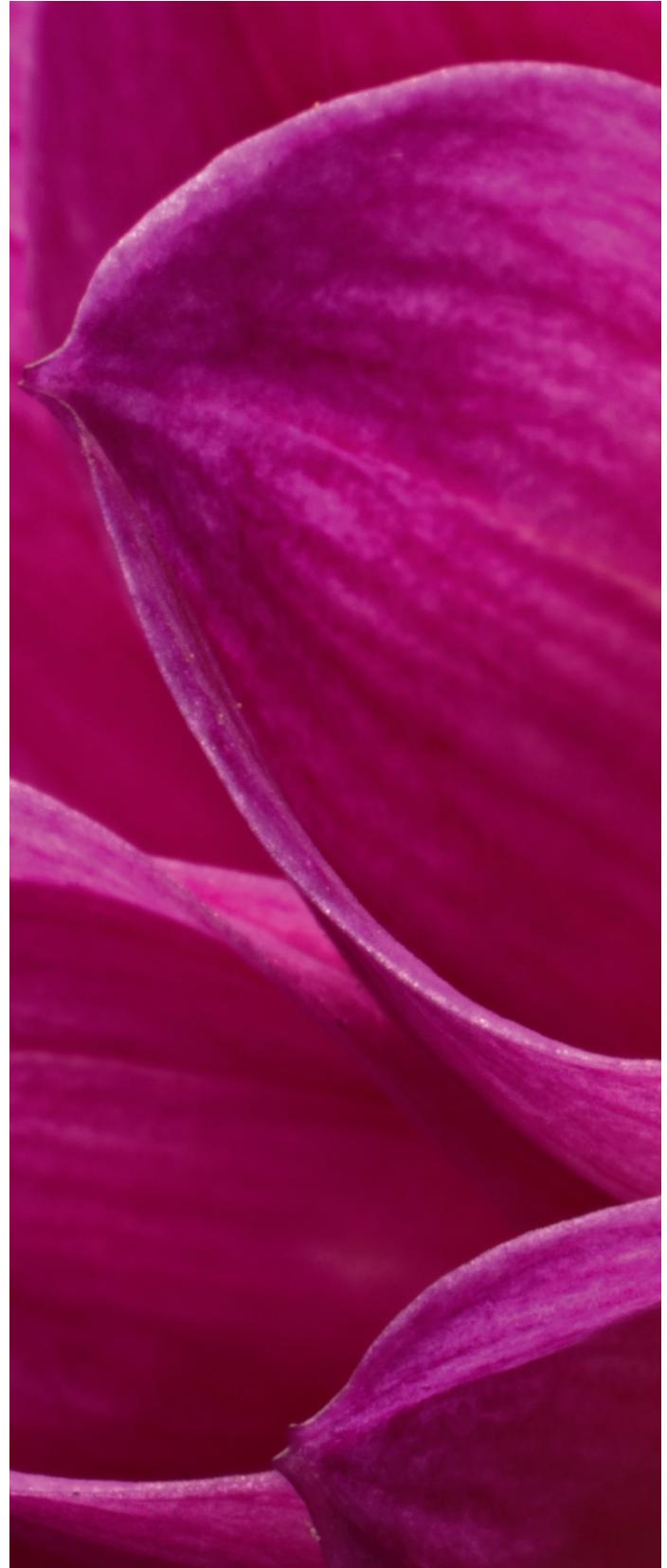
When it comes to macro lenses, there's a trade-off between focal length and how close you can get. While telephoto macros don't focus as close in terms of their magnification ratio as shorter focal length macro lenses, they do allow you to get out of the way of your own photography. In other words, when you are using a 50mm macro lens (one that has a normal field of view) to get a high magnification macro you need to be so close to your subject that you will likely block the light and create shadows from your camera and lens.

If you do choose to use a telephoto macro lens—as I often do—a tripod collar is a surprisingly valuable feature. This allows the tripod to be attached to the lens, rather than your camera, providing a better center of gravity for balance—and also allowing you to pivot from vertical to horizontal without removing the camera from the tripod.

The table on page 74 shows some of the better macro lenses that are currently available. I've included the manufacturer's precise designation for each lens, because otherwise it can be hard to be sure about exactly which lens you are buying.

To photograph the petals of this dahlia I used a “normal” focal length macro because this let me get close to my subject while showing the roundness of the flower.

Photo: 50mm macro, 1/2 of a second at f/32 and ISO 100, tripod mounted





A Comparison of Macro Lenses

Focal length	Lens	Camera mount	Comments
50mm	Pentax smcP D-FA 50mm f2.8 Macro	Pentax	Normal focal-length macro.
50mm	Sigma Macro 50mm F2.8 EX DG	Canon Nikon Pentax Sigma Sony	Excellent normal focal-length macro.
60mm	Nikon AF-S Micro-Nikkor 60mm f/2.8G ED	Nikon	Normal focal-length macro.
65mm	Canon MP-E 65mm f/2.8 1-5x Macro Photo	Canon	This is a special purpose macro lens intended for extreme magnification close-ups—it cannot focus at a distance. Provides a tripod collar.
85mm	Nikon PC-E Micro-Nikkor 85mm f/2.8D	Nikon	Completely manual macro lens provides some tilts and swings for perspective correction.
100mm	Canon EF 100mm f/2.8L Macro IS USM	Canon	Mid-range macro telephoto.
100mm	Pentax smcP D-FA 100mm f/2.8 Macro	Pentax	Mid-range macro telephoto.
100mm	Zeiss Makro-Planar T* 2/100	Canon Nikon	Old-fashioned, heavy, and expensive. A wonderful macro lens for mid-range flower photography.
105mm	Nikon AF-S VR Micro-Nikkor 105mm f/2.8G IF-ED	Nikon	Mid-range macro telephoto.
105mm	Sigma 105mm F2.8 EX DG Macro	Canon Nikon Pentax Sigma Sony	Mid-range macro telephoto.
150mm	Sigma 150mm F2.8 EX DG OS HSM APO Macro	Canon Nikon Pentax Sigma Sony	Telephoto macro; tripod collar provided.
180mm	Canon EF 180mm f/3.5L Macro USM	Canon	Telephoto macro; tripod collar provided.
200mm	Nikon AF Micro-NIKKOR 200mm f/4D IF-ED	Nikon	Manual focus telephoto macro; provides a tripod collar.

To capture this detail of an iris on a mirror, I used a telephoto macro (200mm) so that my lens and camera wouldn't show up as part of the reflection in the mirror.

Even using a telephoto macro lens, I only had a very small possible area that could be included in the final photo without showing the camera, so I had to compose this image extremely carefully.

My idea with this shot was to use the yellow line running down the center of the iris to visually reference a highway, and make viewers think about the central stripe in a roadway.

Photo: 200mm macro, 7.1 seconds at f/40 and ISO 100, tripod mounted





There's nothing like a daffodil to let one know that spring is really on its way! I photographed this backlit version on one of the first really bright days of spring, using an intermediate focal length macro lens (85mm) to give a sense of the scale of the core of the flower compared to its petals.

Photo: 85mm macro lens, 36mm extension tube, 20 seconds at f/64 and ISO 100, tripod mounted



Walking along the street in my neighborhood, I came upon this somewhat showy pansy. A moderate telephoto macro (105mm) allowed me to create a striking portrait of the flower by isolating it from its background.

Photo: 105mm macro, 2/5 of a second at f/40 and ISO 200, tripod mounted