

The magnification limit for most macro lenses has generally been around the 1:1 reproduction ratio (life-size). This is not due to photographers' lack of innovation, but rather restricted due to the laws of physics. When you venture beyond 1:1, the properties of light are harder to control through small apertures. Photographers who do venture beyond the world of 1:1, resort to such devices as extension tubes, lens extenders, bellows, or reversing rings. These work, but not without extensive testing and sometimes frustration.

Canon's solution was to extend the limits of conventional macro lenses by building the MP-E 65mm f/2.8 macro lens. It starts at 1:1 magnification and continues to an incredible 5:1 ratio—that's 5X lifesize—without the aid of any extra gadgets. This lens sounded too good to be true, so we arranged for a test drive into the super macro world where few photographers dare to go.

Our first glance told us that this was indeed a unique lens. Weighing in at only 31 ounces, its 1:1 compressed size is a scant 98 millimeters with a standard picture field of 36 x 24mm. It then can be rotated 487 degrees to 228 millimeters to achieve a 5:1 magnification. At the 5:1 magnification, a miniscule subject 7.2 x 4.8mm will fill the entire 36 x 24mm frame, capturing minute subject detail often undetected by the naked eye. That's what really makes this lens special.

The 65mm macro lens has an f-stop range from f/2.8 to f/16, although most macro work is done at the smaller apertures. Lens construction features 10 elements in 8 groups, including 1 UD (Ultra-low Dispersion) glass element to minimize chromatic aberration. It also incorporates Canon's ElectroMagnetic



Canon MP-E 65mm f/2.8 Macro Lens

Diaphragm (EMD) for fully automatic exposure control. This macro lens has a special detachable tripod collar, takes 58mm filters and is compatible with all Canon EOS cameras.

This is a fully manual focus camera with a range from 4 inches at 1X to 1.6 inches at 5X. As you expand the lens, there is a magnification scale to provide accurate magnification readings. Electrical contacts on the back of the lens communicate information to the camera regarding lens mode, lens type, metering information, focal length, and absolute distance of the lens. Because of the unusual construction of the lens, it is not compatible with extension tubes, extenders, or additional closeup filters.

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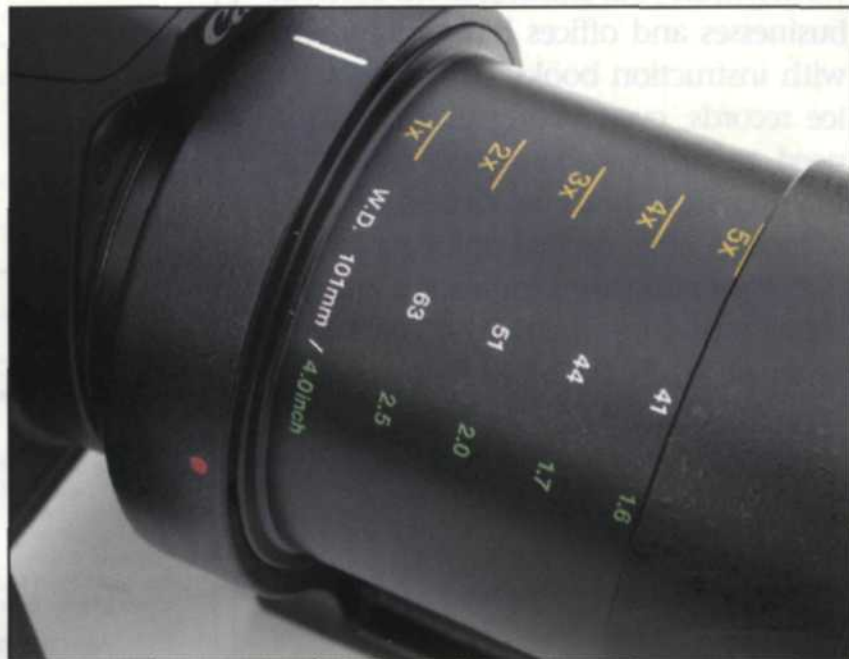
So much for the technical jargon. We know you want to see how it works in the field, but first let's get it straight about the focus system. This is a manual lens by sheer necessity. If you have ever tried to autofocus a macro lens at 1:1, it will drive you crazy. There are so many focus points in a macro scene, the autofocus will constantly search, moving in and out trying to achieve accurate focus. Most experienced macro photographers find this impractical and turn the autofocus off, even if their lens has autofocus capability.

Manual focus is even more critical as you increase the magnification to 5:1. It is almost impossible to hold still on a focus point at this magnification, so we found it necessary to brace the lens or camera as we were shooting. In many of our tests, we found it easier to set the front edge of the lens on a firm surface, and slowly move into the focus point.

We also found it difficult framing the subject at 5:1 as you can hardly see with the naked eye what you are photographing. The



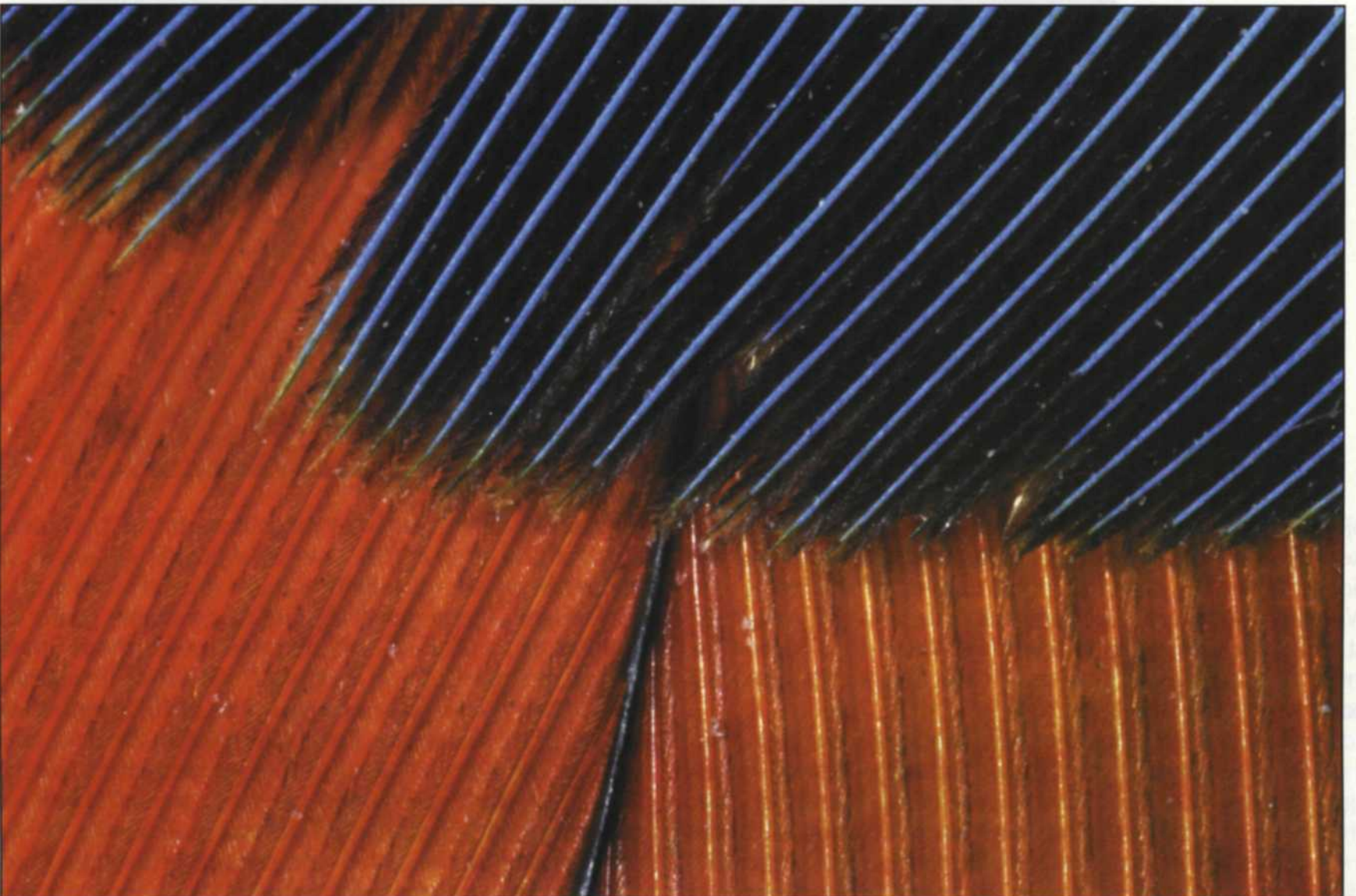
Canon MP-E 65mm f/2.8 extended.



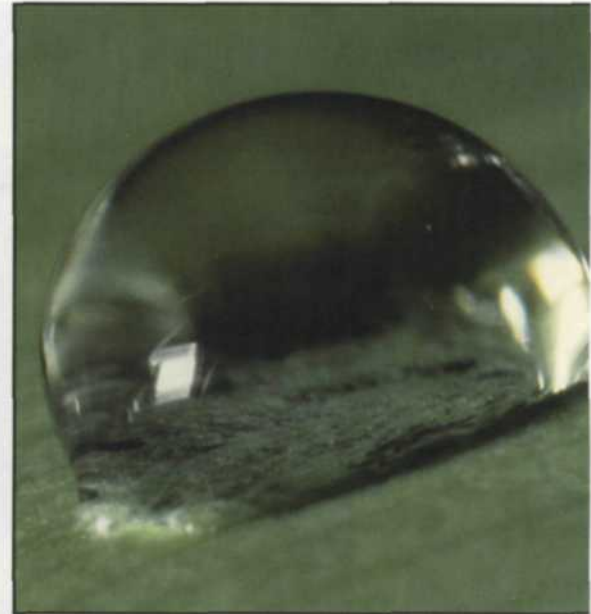
Magnification ratios engraved on lens barrel.



Dragonfly and shell



Feather



Dew drop

Fingerprint



Pill bug

subjects are so small that we suggest practicing your focusing. Take a newspaper and zero in on a specific word at each magnification until you become proficient at framing your subjects.

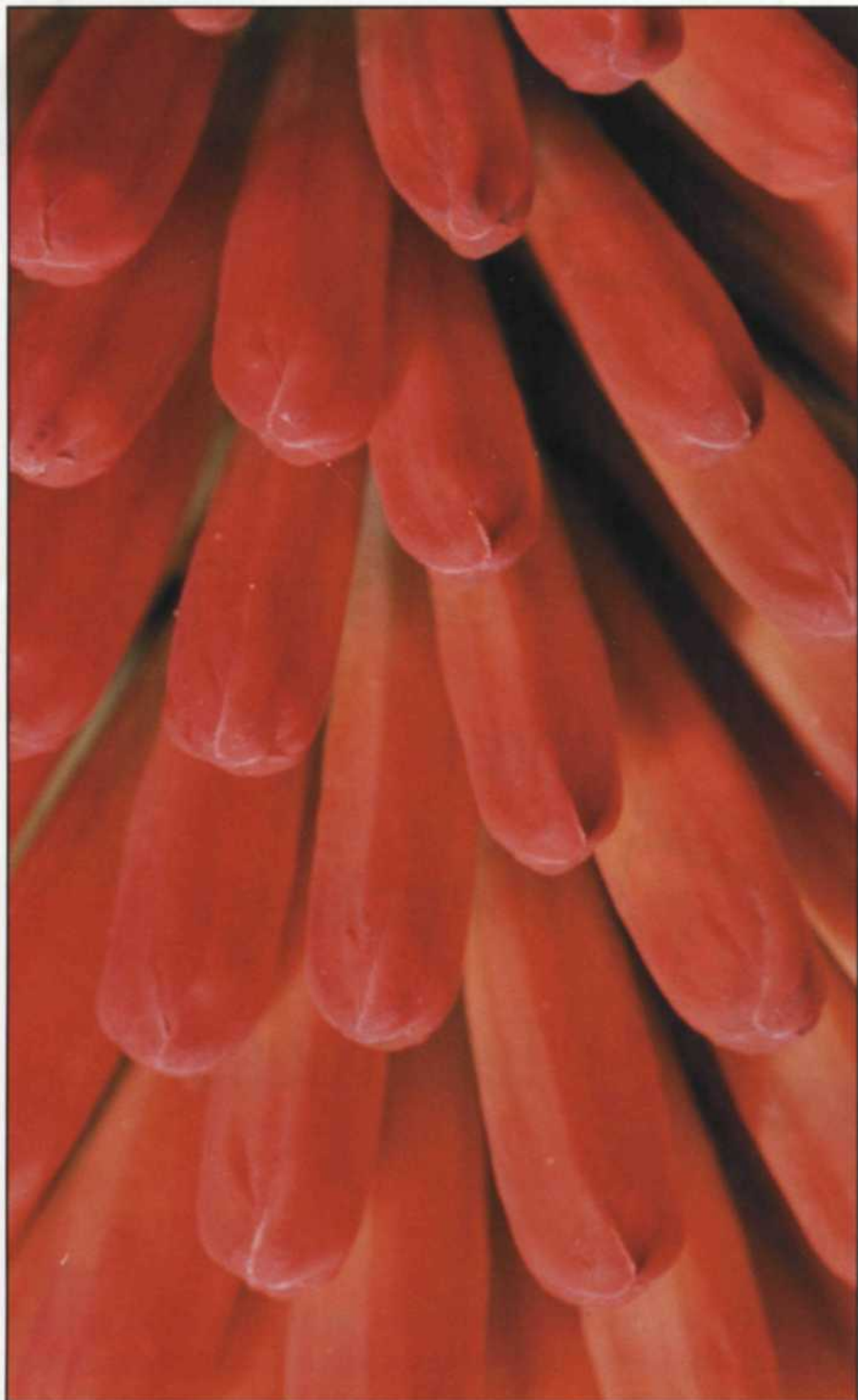
We tried several types of films with this lens and found the best to be the ISO 100–200 slide films. These films feature the tightest grain pattern and can resolve the intricate subject detail capable with this lens.

You will need to be selective in your choice of subjects depending on the magnification you use. As you increase toward the 5:1 magnification, you will need to consider flatter plane subjects than with the 1:1 magnification. Insects and flowers are great at 1:1, but the surfaces of leaves, skin, or man made materials seem better suited when you reach the 5:1 range. This is not because there of a problem with the lens, but rather the restrictions in the laws of

physics. The fact is that at 5:1 magnification, you have almost no depth of field, even at $f/16$. You can shoot 3D subjects at 5:1, but the laws of physics will limit how much focus you can maintain.

We highly recommend the use of a variable power or TTL flash, as you will want flash duration speeds shorter than normal. At full power, most flash units are about $1/500$ flash duration, which may not be enough when at 5:1 magnification. If you keep the flash head close to the front of the lens, your TTL flash should cut off at about $1/8$ to $1/16$ power which will increase the effective flash speed up to $1/6,000$ of a second. If you want to guarantee high speed, use the manual flash setting for $1/8$ to $1/16$ power and move the flash to compensate for the right exposure.

We have been doing macro photography for more than 30 years and never seen a lens like this one. It is lightweight, easy to



Red hot poker

use, and has an ability to change from 1:1 to 5:1 like no other macro system on the market. One word of warning, though. You will not get 36 great pictures with your very first roll of film, especially if you are new to macro photography. We suggest that you concentrate your effects at the 1:1 magnification first, and then progress to the higher magnifications as you become more proficient with the lens.

This is not the lens for everyone...just those brave souls who want to venture into the relatively unknown world of the small. You will experience sights few people have ever seen, and have pictures to document your adventures. Canon's MP-E 65mm Macrophoto Lens takes you to the world of macro...and beyond.

Suggested list price for this lens is \$1600. For more information, contact Canon at 1-800-OK-CANON or check out their Web site at www.canon.com.

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