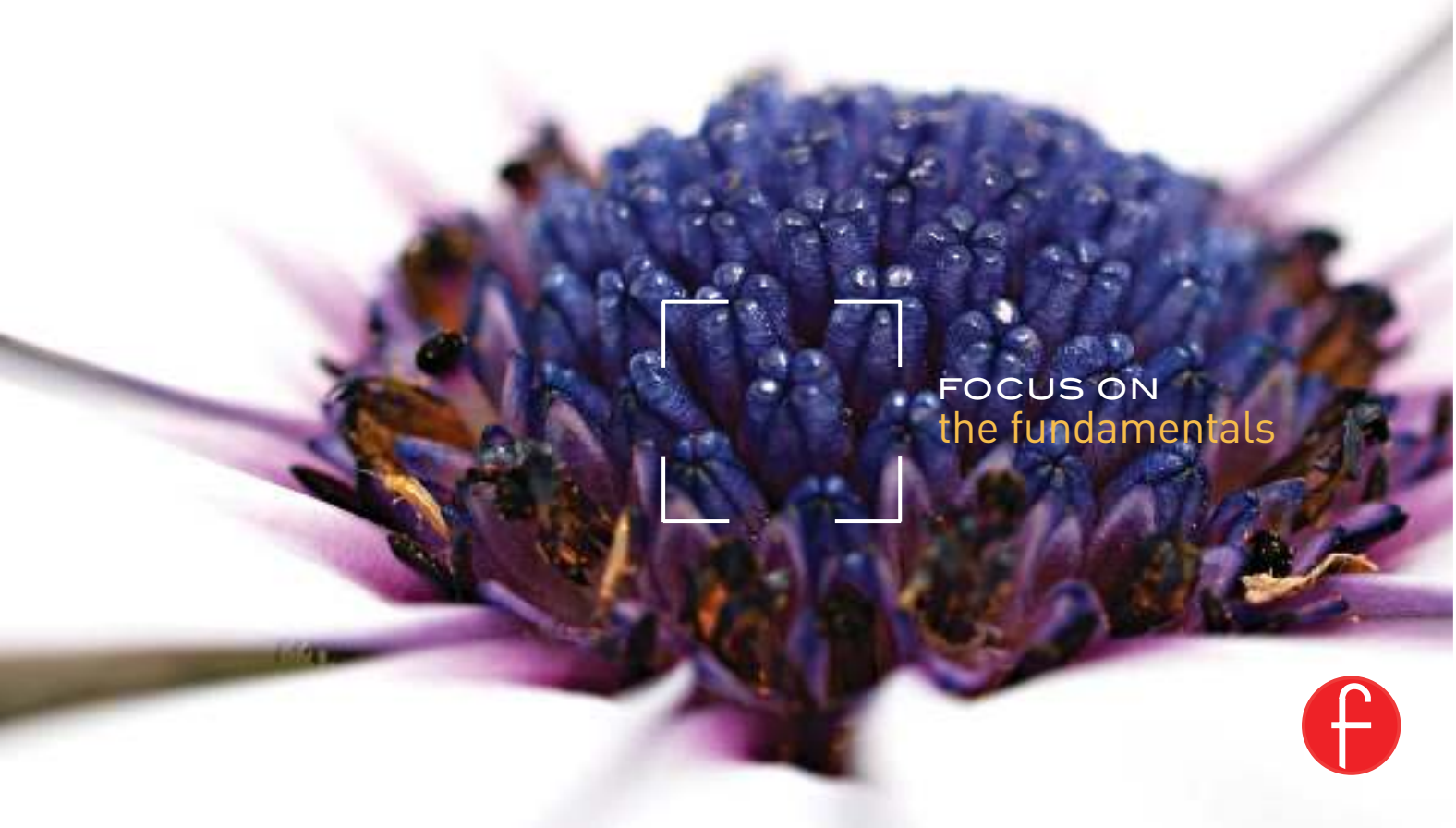


FOCUS ON

CLIVE BRANSON

# Close-Up and Macro Photography



FOCUS ON  
the fundamentals



***Focus On Close-Up  
and Macro  
Photography***

# The Focus On Series

Photography is all about the end result—your photo. The *Focus On* series offers books with essential information so you can get the best photos without spending thousands of hours learning techniques or software skills. Each book focuses on a specific area of knowledge within photography, cutting through the often confusing waffle of photographic jargon to focus solely on showing you what you need to do to capture beautiful and dynamic shots every time you pick up your camera.

Titles in the *Focus On* series:



# ***Focus On Close-Up and Macro Photography***

Clive Branson

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# Dedication

This book is dedicated to Cyril Branson, Janet Jury and to all aspiring photographers who have

a passion they want to express and achieve. No matter the odds, never let it die.



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# About the Author: Clive Branson

As far back as he could remember, Clive Branson wanted to be a photographer. After graduating from photography at Parsons School of Design in New York City, he realized that his ideas didn't equate with his budget. The dilemma persisted, forcing him to enter advertising as an art director. Two decades later, he is an award-winning art director, copywriter,

and creative director with local, national, and international agencies. But his first love remains photography. His work has been published for national newspapers, global magazines, WPBS-TV, Canada Post, and the Canadian Tulip Festival. He lives and works in Ottawa, Ontario, Canada.



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Cathy, and Leslie (models); Tom and Mark at the Camera Trading Company; and Vincent Chisholm at Vistek Cameras.



# Introduction

What's the point of close-up photography? The significance of close-up and macro photography is that it literally forces you, the photographer, to view things differently. It encourages curiosity and entices you to get on your hands and knees, to shoot something from an obscure angle, to take that extra effort for a shot. The reward is to delve into a microcosm: the delicacy of a flower's petals, the intricacies of a computer chip, the exquisite details of the human iris. Close-up/macro photography transforms the ordinary into the extraordinary.

Just take into account the average snap shot. Why do snap shots look so bland, particularly when compared to images by

professionals? Why are the latter more captivating, more illuminating and powerful? How can you adjust your snap shot into a work of art? Good photography catches and holds your viewer's attention by allowing a subject to be seen in a whole new light. As you may discover, when you start shooting with macro, it can be even quite daunting, especially the specialized field of "super macro."

This book is an attempt to guide you, by using the techniques of close-up and macro photography, in rewarding ways. If this book enables you to take better shots, then life will become a journey of endless possibilities.





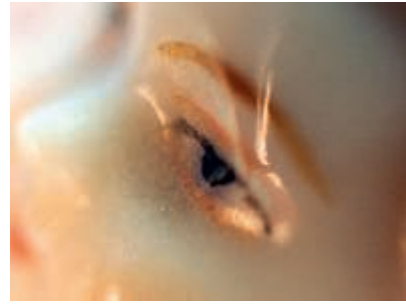
# Chapter 1: What Is Macro Photography?

## The Difference between Close-Up and Macro Photography

Although the technical name is *micro* photography (reduced to a very small size), the popular term is *macro* photography. What is the difference between close-up and macro photography? If you were to shoot a portrait, a close-up would be a shot of the person's face in full frame. A macro shot would be the detailing of your subject's eye or even the person's iris, enabling you the opportunity to focus on minute specifics less apparent to the naked eye. Close-up and macro photography are actually worlds apart, yet both highlight an intimate view of the subject without the necessity of showing the whole ensemble.

Close-up photography can be described as "filling the frame," whereas macro is the art of discovery; it's a bit like comparing a magnifying glass to a microscope. Both macro or *super macro* enable you to shoot small subjects true to size, or a little bigger. This is called life size or *1:1 magnification*. Anything farther away than this can be construed as close-up photography, not macro (even if you are using a macro lens). Macro does not involve zooming in; instead, you rely on the lens itself to magnify the image usually less than half-an-inch close. Close-up photography, however, can be achieved with any lens from zoom, telephoto, to fisheye or even wide angle. Macro is much more precise, and depending on your lens combination, you can get a ratio of 2:1 or greater, resulting in some amazing shots.





You may say, "What could I possibly use close-up or macro for?" Both styles can be used for four categories: fine art, editorial, advertising, and documentation (from showcasing, comparing, or examining objects to giving evidence, such as in forensics). Macro photography is particularly popular for capturing the minuscule details of insects and the intrinsically delicate beauty of flowers.

## The Difficulty with Macro Photography

Macro photography is challenging because many of the rules that apply to other styles of photography simply don't apply to extreme close-ups. Using a standard or telephoto lens is not the same as using a macro lens. A macro lens requires more lighting, and you need to

acquaint yourself with focusing techniques. In fact, despite the appeal of extreme close-up photography, mastering it can be somewhat difficult. With high magnification you will encounter marginal depth-of-field by fractions of an inch, limited light, and, because you have to use manual techniques, focusing can become a frustrating ordeal of hit-or-miss attempts.

*The minimum focus distance from lens to subject:*

<i>Telephoto lens (200mm +)</i>	<i>Distance: 2.5' +</i>
<i>Compact camera</i>	<i>Distance: 4.0" +</i>
<i>Macro lens</i>	<i>Distance: 1.0" +</i>
<i>Macro lens with bellows</i>	<i>Distance: -0.3"</i>



Here are a few important issues I learned when transferring from using a regular or telephoto lens to a macro lens. Because of the extreme proximity between the lens and the subject, accessibility to light will be poor, as much of the light you will need will be blocked out, so try the following tips:

1. Increase your light source. For outside shots, use a reflector or ring flash. For indoor shots, add incandescent lighting or strobe lights.
2. Slow your shutter speed, though this may cause further problems, if photographing

outdoors in the wind. You may have to bracket your shots (see 'Bracketing' in Chapter 2 p. 54).

3. Open up your aperture a lot more or increase your EV by several stops.
4. Always use a tripod for steadiness; that will ensure focus and clarity.

Another concern is getting accustomed with Manual mode—for the settings and the focusing. Focusing is one of the biggest challenges you will encounter in macro photography. To get sharp photos, focusing must be precise.

This seems obvious, but the closer you are to your subject, the lower your depth of field. A low depth of field means a limited range as to what can be focused. The advantage of using manual focus is that it allows you total autonomy to a wider context of sharpness; however, it is more time-consuming because you have to adjust all your settings to complement distance, light, and focusing—a difficult process in terms of achieving complete sharpness, because you are relying on your own assumption as to what is sharp in comparison to having the camera automatically do it.

The alternative is to dial your camera to Aperture mode. The camera sets the exposure while you simply concentrate on focusing. This is easier, but it doesn't allow you the flexibility to manipulate the exposure. And

although autofocus provides the settings and focusing, it seems to become spasmodic when instructed to focus on specifics, either by being unable to differentiate between the front or back of the subject matter or

obstinately focusing on the wrong detail or, worse, nothing at all. This is proof that cameras can't discriminate. They focus only on what is being aimed at unless there is a lack of contrast between the foreground and



background. The solution is either to find a more distinct area of contrast and switch on the focus lock or to focus manually and close down the aperture a stop to give more depth of field.

Autofocus may be ideal for creative photography, but not so much for documentation. Patience is a godsend. Despite the difficulties and special requirements of extreme close-up photography, those who

dedicate themselves to it are rewarded with unparalleled images and boundless investigation into alien territories. Macro lenses can be very expensive, so let's examine some affordable alternatives.





## Extension Accessories for Close-Up Photography

If you can't afford a macro fixed focus lens, there are several alternative means of getting a closer shot of your subject. Here are a couple of choices to consider.

### Auxiliary Filters (Close-Up Lenses)

An auxiliary screw-on, close-up lens is placed in front of your camera lens and acts as a *diopter* (or added focus adjustment), resulting in a closer focusing distance. It is a bit like putting reading glasses over your lens. These come in ratios of +1, +2, and so on. They can also be stacked so you get a +1 +2 = +3 magnification or higher. It sounds great and they are relatively inexpensive, plus they don't require any exposure corrections, but the magnification is only marginal.



With most close-up lenses, the strength of the focus is in the center of the lens rather than



*50 mm regular lens*



*50 mm with a +3 CU lens*



*50 mm with +1 +2 +3 CU lenses*

around the perimeters. If you want complete picture focus, leave a wider frame and crop it later.



*35 mm macro lens*



*35 mm macro with a +3 CU lens*



*35 mm with +1 +2 +3 CU lenses*

Keep in mind that stacking two close-up lenses is possible; however, to yield a better result, the stronger one (the one with a higher diopter number) should be the one closest to the camera lens. Moreover, by stacking three or more close-up lenses you will need to use Aperture or Manual mode for focusing.

## Extension Tubes and Teleconverters

Let me explain the difference between an extension tube and a teleconverter. Both look pretty much the same, but a teleconverter is designed to increase the focal length of a lens. An extension tube is designed to increase image size on the sensor—an attachment that allows the lens to get closer to the subject than it could normally accommodate without the need for optics. The principle is that every lens has a minimum focal distance as part of their characteristics. For example, you can't use a 50mm lens for super close-ups; it has a minimum focus distance of 1.5 feet.

An extension tube or teleconverter can reduce that minimum focal distance by 4 inches or more. Be careful about which attachments you use on particular lenses. A 25mm extension tube won't work with anything shorter than a 35mm lens because the focus zone is moved in so close and the front glass element on the lens will prevent you from getting that close. Another discrepancy is that teleconverters, typically made in 1.4×, 1.7×, 2×, and 3× models, will increase the focal length throughout the entire focusing range—from the minimum focusing distance all the way to infinity.

Let's say you are using a 100mm lens that can focus from 12 inches to infinity. With a 2×-teleconverter, you could still focus from 12 inches to infinity, but the image would be twice as large. With the same lens and extension tubes, you could focus to 10 inches, 6 inches, or closer, depending on how many millimeters of tubes you place between your camera and lens. The image size would be magnified exponentially, but you would lose the ability to focus on a distant object. It is paramount that you keep the subject parallel to the film plane to assure uniformed sharpness.



## Bellows

Bellows look like flexible accordion attachments. Their focal range depends on how close you physically position the lens to the subject, allowing you to control the lens distance from the body. One end of the bellows fits into the camera, whereas the other screws into the lens. How much magnification this extra extension will give you depends on the focal length of the lens used

(50mm, 150mm, macro, etc.). Bellows of different sizes comply to different magnifications ranging from 10mm to as much as 200mm. You can avoid the laborious procedure of trying various teleconverters by just using a bellows. Just like extension tubes, bellows do not alter the image quality of the lens because they do not have an optical system. Instead, they can give you a magnification ratio up

to 6:1, but the depth of field is very limited and focusing needs to be precise. I use bellows on my 50mm macro lens. They are inexpensive and an essential piece of equipment for extreme close-up photography. With bellows you will need a focusing rack and pinion rail and an adapter ring to screw into your camera body.



*The depth of field is marginal, so you will need to rely on aperture or manual mode for focusing, as the autofocus will be inoperative.*

## Choosing the Right Camera and Lenses

Generally, the more you want to magnify a subject, the more it will cost you. When it comes to digital single-lens reflex (DSLR) camera lenses for macro and close-up photography, the main factor you

will need to consider is the type of magnification you want. Simply taking a close-up shot with a regular lens is not enough. As mentioned previously, certain lenses don't have the magnification desired. Other lenses are just too expensive. It's a subjective decision. Personally, I use Olympus cameras with the following lenses: a Zuiko Digital 35mm 1:3.5 macro lens, a Volga 50mm 2.8 macro lens, a Zuiko Digital 200mm 1:2.8 telephoto lens, and a Zuiko Digital 40-150mm 1:3.5 zoom lens.

If you can afford it, get a fixed focal length macro lens. How can you tell what a fixed macro lens is? First, read on the lens the magnification (1:1, 1:2, 1:3.5, etc.). Second, check the desired lens at a dealership, either by sampling it there or by renting it for the weekend and really testing it thoroughly. Look into the lenses by Sigma, Tamron, Vivitar, or Tokina. A new macro lens is in the range of \$500 or more, but a used macro lens is worth investing in at half the price. Check out preowned macro lenses at camera exchange stores (reputable ones are usually recommended by camera store dealers as an alternative source).



*Chocolate sauce being poured onto a spoon*



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