

Selecting the Sharpest Aperture

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The following text is part of an article on *Selecting the Sharpest Aperture*. For the whole article click the link at the top of this page.

PREFACE

I originally wrote this article back in 1999. If you read all of it, I'll probably lose you, but I'll summarize it all right here.

Depth-of-field calculations are flawed. They calculate the largest aperture that will give *barely passable sharpness*. They do not calculate the aperture which will give you the sharpest photo, just the *bare minimum*.

Depth-of-field charts and scales came from an era where film was very slow and we always needed the widest aperture possible.

If you stop down more you get sharper results, but if you stop down too far, [diffraction](#) gives you softer results, just like squinting your eyes. The very best aperture is someplace between these two, and I'm going to show you how to find it exactly.

If you're shooting flat subjects, the sharpest aperture is usually f/8. My lens reviews give the best apertures for each lens, but it is almost always f/8 if you need no depth of field. That's the easy part.

If you are a beginner or just shooting a 35mm or digital camera then this article addresses issues which won't bother you at reasonable apertures. **Just use a tripod and choose the smallest aperture you have if you need depth of field. Avoid apertures smaller than f/8 or f/11 on digital cameras.**

I have tried to put the most important part of this article as it might pertain the the average hobby shooter on the next page so you can carry the smallest amount of paper in your camera bag. Mark

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Depth-of-Field scale, Leica 40mm f/2. [enlarge](#).

What do we do when we do need depth of field? You use your existing depth-of-field scales, and simply use the apertures shown on my chart instead of those read on your lens.

To use your depth of field scales, focus on the farthest thing you want sharp. Note the distance on the scale. Focus on the nearest thing, and note its distance on the scale.

Turn the focus ring until each distance is equally far from the center index, and you'll see that each distance lies next to the same aperture number on different sides of the scale.

As an example, let's suppose we want everything from 10 feet (3 meters) to infinity in perfect focus.

Both 10 feet and ∞ are sitting above f/8 on the depth-of-field scale. You've now also focused exactly as you should for the best overall sharpness, whoo hoo!

You don't have to be exact; f/8 is more than close enough. When I'm shooting, I use my thumbnails to mark each distance, making it easy to rotate the focus ring to midway between the two distances and read the f/stop.

Once you've read the aperture your camera suggests, here's how to convert it into the sharpest aperture:

| if the lens' DOF scale says: | then use this aperture for optimum sharpness: |
|------------------------------|---|
| f/1.4 | f/5.6 |
| f/2 | f/6.7 |
| f/2.8 | f/8 |
| f/4 | f/9.5 |
| f/5.6 | f/11 |
| f/8 | f/13 |
| f/11 | f/16 |
| f/16 | f/19 |
| f/22 | f/22 |
| f/32 | f/27 |
| f/45 | f/32 |

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☞ You'll notice for f/8 read on the scale, I set f/13 on the aperture ring.

Easy!

Hint: On my cameras, I stick a tiny table that simply says f/2.8 -> f/8, f/5.6 -> f/11, f/11 -> f/16 and f/22 -> f/22. That covers it!

For [Nikon](#), [Canon](#), [Leica](#), [Pentax](#) and most 35mm cameras:

Don't have depth-of-field scales on your zoom or digital lens? You're screwed, sorry. Read on and I'll show you how to calculate your own.

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This article is written for the virtuoso large format photographic artist.

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