



Canon

Digital demands give us a super-duper wide-angle zoom!

What you should know:

Here's another zoom lens for SLRs designed with the needs of digital photographers in mind. As many of the current crop of digital SLRs (i.e. Canon's EOS-1D and the D60) have smaller-than-24x36mm image sensors, lenses from the 35mm camera system have longer effective focal lengths when mounted on these cameras. With wide-angle lenses, this imposes limitations, as shooters find that their 24mm lenses are covering the field of view of a 40mm. With this 16–35mm constant-aperture EOS zoom, Canon restores a reasonably wide-angle zoom range for these cameras, specifically, an effective 21–45.5mm zoom lens range for the EOS-1D; 26–56mm for the D60.

Hands on: Longer than you would expect for a wide-angle zoom, and with substantial heft (well over a pound), this lens is nose-heavy when mounted on lighter EOS cameras. Plain satin-black polycarbonate exterior has flawless fit and finish. Focal-length scale is clearly marked in reflective silver numerals. Windowed meter scale is a very legible bright white, but green footage isn't. Ribbed rubbery zoom ring turns with silky smoothness, and no zoom creep. Focusing ring, operating via a reduction gear to provide finer fingertip control, is also admirably smooth. It can be focused manually in autofocus mode. The autofocus/manual switch is easily accessible, and autofocus action was fast and noiseless.

In the lab: SQF data showed uniform excellent performance at all focal lengths.

Considerable barrel distortion (2.9 percent) was seen at 16mm; minimal pincushion

(0.25 percent) at 24mm; and slight pincushion (0.86 percent) at 35mm. Exposure at the film plane was accurate at 16mm and 35mm, with 1/2-stop underexposure at maximum aperture due to light falloff, 1/3-stop underexposure from f/4 to f/16, and 1/2-stop underexposure at f/22.

At the closest focusing distance of 10 1/2 inches at 16mm (1:9), center sharpness was excellent throughout all apertures. Corner sharpness was poor at f/2.8 to f/8, acceptable at f/11, good at f/16, and poor at f/22. Optimum sharpness was at f/16.

At 24mm, at the closest focusing distance of 10 inches (1:6), center sharpness was excellent throughout. Corner sharpness was poor from f/2.8 to f/4, good at f/5.6, excellent at f/8 to f/16, and good at f/22. Optimum performance was at f/8.

At the closest focusing distance of 10 inches at 35mm (1:4.2), center sharpness was poor at f/2.8, very good at f/4, excellent from f/5.6 to f/11, good at f/16, and poor at f/22. Corner sharpness was poor from f/2.8 to f/4, good at f/5.6, excellent from f/8 to f/11, good at f/16, and poor at f/22. Optimum performance was at f/8.

In the field: Test slides were sharp and contrasty, center and edge, at all focal lengths. Light falloff was gone by f/5.6 at 16mm, and by f/4 at 24mm and 35mm. Flare was very well controlled at all apertures at every focal length.

Conclusion: Absolutely stellar performance (and stratospheric price tag) in a constant-aperture zoom. High distortion at 16mm, will surely bug architectural photographers.

Canon 16–35mm f/2.8L USM AF



SPECIFICATIONS

16–35mm (16.50–34.07mm tested), f/2.8 (f/2.94 tested), 14 elements in 10 groups. Focusing turns 90 degrees counterclockwise. Zoom ring turns 50 degrees clockwise. Focal lengths marked at 16-, 20-, 24-, 28-, and 35mm. **Diagonal View Angle:** 108–63 degrees. **Weight:** 1 lb 5 5/8 oz. **Filter size:** 77mm. **Mount:** Canon AF. **Included:** lens hood and lens pouch. **List price:** \$2,400. **Street price:** Approx. \$1,400.

SUBJECTIVE QUALITY FACTOR

Metric	A+	A	B+	B	C+	C	D	F
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@16mm								
MAG	5	6	8	12	17	22		
Size	4x6	5x7	8x10	11x14	16x20	20x24		
2.8	97.2	96.9	95.9	93.6	89.3	84.1		
4.0	97.2	96.9	96.0	93.7	89.6	84.6		
5.6	97.0	96.7	95.7	93.4	88.8	83.4		
8.0	96.9	96.6	95.5	93.0	88.2	82.4		
11.0	96.6	96.3	95.2	92.5	87.2	80.8		
16.0	96.4	96.0	94.8	91.8	86.1	79.0		
22.0	95.8	95.3	93.9	90.5	83.5	74.9		

@24mm								
MAG	5	6	8	12	17	22		
Size	4x6	5x7	8x10	11x14	16x20	20x24		
2.8	97.4	97.1	96.2	94.1	90.0	85.2		
4.0	97.5	97.2	96.3	94.3	90.5	86.0		
5.6	97.6	97.3	96.5	94.6	91.1	87.0		
8.0	97.5	97.2	96.4	94.4	90.8	86.6		
11.0	97.2	96.9	95.9	93.6	89.3	84.2		
16.0	96.6	96.3	95.1	92.4	87.2	80.8		
22.0	95.8	95.4	94.0	90.6	83.7	75.1		

@35mm								
MAG	5	6	8	12	17	22		
Size	4x6	5x7	8x10	11x14	16x20	20x24		
2.8	97.3	97.1	96.2	94.0	89.6	84.2		
4.0	97.3	97.0	96.1	94.0	89.4	83.9		
5.6	97.5	97.2	96.4	94.4	90.5	85.9		
8.0	97.6	97.3	96.5	94.6	90.9	86.7		
11.0	97.5	97.3	96.4	94.4	90.8	86.4		
16.0	97.0	96.7	95.7	93.3	88.8	83.2		
22.0	96.1	95.7	94.4	91.2	84.8	76.7		