
CANON'S TWIN 300mm f/4 LENSES



300mm f/4 Canon pair look alike but perform different. Top lens features low dispersion glass elements.

Specifications: 300 mm f/4 Canon telephoto FD, No. 26971. Accepts special rear mounted filters in snap-in holders, f/4 to f/32 plus "A" detents at half stops. Min. foc. dist.: 9 ft. (2.75m) 8 $\frac{1}{4}$ in. long, 3 $\frac{1}{4}$ in. diameter (210 x 83mm) 2 lb. 6 oz. (1080g) Price: \$513.00

Specifications: 300 mm f/4 Canon telephoto FD-L, No. 21258. Accepts special rear-mounted filters in snap-in holders. f/4 to f/32 plus "A" detents at half stops. Min foc. dist.: 9 ft. (2.75m) 8 $\frac{3}{8}$ in. long 3 $\frac{1}{4}$ in. diameter (214 x 83 mm) 2 lb. 8 oz. (1120g) Price: \$1150.00

Practical comments: These two 300mm f/4 telephotos by Canon may appear to be twins, but they are not. While similar in appearance, they are rather different in construction as the 300mm FD-L features low dispersion glass for improved color correction. Both lenses are moderately heavy, with the FD-L lens only about 2 oz. more. These lenses have internal focusing which insures alignment of the big front elements. Rotation of almost a full turn brings the focus from infinity to the near point of about 9 ft. The aperture ring shows the lens opening with small, closely packed numbers. There is also an "A" mark for auto-diaphragm operation when the camera is used in the shutter-priority mode. Special filters in holders are inserted near the back of the lens. Finally, each lens has a removable tripod mounting ring which is adjustable for any camera body position, and a built-in lens hood.

The focusing scales have the usual markings in feet, in white, and meters in green lettering. The focus indicator has depth-of-field marks for lens apertures of f/8, f/11 and f/16. The smooth internal focusing is easy to operate, even with the eye at the viewer. The infinity focus mark is extended to show that infinity must be checked visually in the finder, due to the variation of the infinity setting with temperature.

Continued on next page

MODERN TESTS

Continued from previous page

Field test slides: Both lenses produced very sharp color transparencies for the central part of the format. Near the edges and corners a noticeable amount of lateral color was detected in the transparencies taken with the FD lens. This was gone in the pictures taken with the FD-L lens. Wide open, the FD-L produced slightly more contrast and sharpness in the fine detail, but at f/5.6 and beyond, there was little difference between the transparencies taken with either lens. In close-ups at about 10 ft., the pictures taken with the FD-L seemed a bit sharper and more contrasty at f/4. At smaller apertures, both lenses yielded images of above average quality.

Optical bench analysis (for optical experts only): The FD-L lens showed less spherical and much less axial color flare. The distance between the red and green focus in the FD-L is only .14mm, while it was almost .50mm for the FD. Off axis, near the format corners, there was some lateral color evident in the point image of the FD lens, while the FD-L showed much less. Both lenses showed a slight amount of coma at f/4, but this was nearly gone at f/8. No significant astigmatism or flare was seen in the point images from either lens. The major difference between the FD and FD-L lens is the much reduced color flare from the latter.

PERFORMANCE 300mm f/4

Our Standard	as Tested
Focal length: $\pm 5\%$ (285.00-315.00mm)	298.91mm
Aperture: $\pm 5\%$ (f/3.80-4.20)	f/4.01
Distortion: ($\pm 3.5\%$)	0.93% (pincshn)
Light falloff: at f/5.6 +1 stop from theoretical limit (0-1.0 stops)	0.5 stops

RESOLUTION

CANON 300mm f/4 at 1:50

f/	Center (l/mm)		Corner (l/mm)	
4	Excellent	50	Excellent	45
5.6	Excellent	50	Excellent	45
8	Excellent	56	Excellent	50
11	Excellent	63	Excellent	56
16	Excellent	63	Excellent	50
22	Excellent	56	Excellent	45
32	Excellent	50	Excellent	40

CONTRAST

CANON 300mm f/4 at 30 lines/mm

f/	Center (%)		Corner (%)	
4	High	54	High	50
5.6	High	61	High	54
8	High	68	High	62
11	High	77	High	70
16	High	66	High	60
22	High	52	High	50
32	High	43	High	38

OOPS! Hard as it is to believe, three errors found their way into the September 1985 issue MODERN TESTS of three Tokina zoom lenses.

- 1. The picture on page 57, identified as the Tokina 35-105mm f/3.5-4.5 zoom is not a Tokina lens. The proper photo appears with caption at right:
- 2. The caption on page 59 incorrectly identifies the Tokina 35-105mm and 35-70mm lenses. The 35-105mm is a one-touch design and is pictured on the left. The 35-70mm on the right is a two-touch zoom.
- 3. Both the 35-105mm and 35-70mm Tokinas were incorrectly listed as AT-X lenses in the charts. Only the 35-70 is an AT-X lens; the 35-105mm is an RMC Tokina.

We regret any confusion these errors may have caused.

Tokina's compact 35-135mm f/3.5-4.5 focus to 1:4 at the 135mm setting.



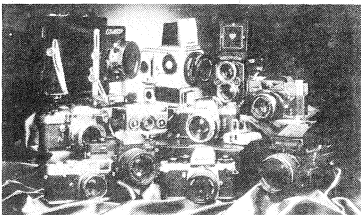
PERFORMANCE 300mm f/4 L	
Our Standard	as Tested
Focal length: ±5% (285.00-315.00mm)	299.06mm
Aperture: ±5% (f/3.80-4.20)	f/4.10
Distortion: (±3.5%)	0.94% (pincshn)
Light falloff: at f/5.6 + 1 stop from theoretical limit (0-1.0 stops)	0.3 stops

RESOLUTION				
CANON 300mm f4 L at 1:50				
f/	Center (l/mm)		Corner (l/mm)	
4	Excellent	50	Excellent	45
5.6	Excellent	56	Excellent	50
8	Excellent	63	Excellent	56
11	Excellent	70	Excellent	63
16	Excellent	63	Excellent	56
22	Excellent	56	Excellent	50
32	Excellent	50	Excellent	45

CONTRAST				
CANON 300mm f4 L at 30 lines/mm				
f/	Center (%)		Corner (%)	
4	High	57	High	53
5.6	High	65	High	60
8	High	74	High	63
11	High	80	High	71
16	High	68	High	62
22	High	61	High	51
32	High	50	High	40

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