

VIVITAR SERIES 1
70-210mm f/2.8-4
Zoom
Serial No. 28413217
(Komine)

MODERN PHOTOGRAPHY
March 1985
Page 58/9

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November 2013



LIMITED WARRANTY BY:
VIVITAR CORP
1630 STEWART STREET
SANTA MONICA, CA. 90406

VIVITAR SERIES I 70-210 f/2.8-4 ZOOM

Specifications: 70-210mm f/2.8-4 Vivitar Series I, No. 28413217; mounts for Canon, Nikon, Minolta, Pentax KA, Olympus, Konica, Ricoh, Yashica/Contax; accepts 62mm filters; f/2.8-22 with click stops at 1/2 stop intervals—except at 210mm-f/4 to f/22, also with click stops at 1/2 stop intervals; min. focal distance (.8m) at 100, 150 and 210mm (5 ft. (1.5m) at 70mm); max. magnification, 1:2.5 at 210mm; 5½ in. long, 2¾ in. diam. (140mm x 70mm); 1 lb. 13⅞ oz. (839g); \$989.95.

Latest version of Series I 70-210mm, appearing 13 years after the original caused users to reassess their prejudices about zoom lenses, sports higher speed, more compactness, and lighter weight. (For a review of the history and aspirations of the design see Keppler's SLR Notebook, August 1984, page 35.)

Practical comments: Reasonably compact for its speed and focal length range, but not light weight (1 lb. 13 ⅞ oz.). Large gripping ring and surface balances well on most SLRs; 3 in. wide textured focus and zoom collar pulls back to zoom, focuses clockwise to min. foc. dist. with smooth 270° turn; holds settings well pointing up or down; firm but easy turning, sliding action; easily legible footage scale engraved in white, metric scales in less readable green; red, infrared focusing line; green depth of field indicators; 1/4 in. knurled aperture setting ring near body; red dot for aperture settings at 70mm, green line for 210mm. (Read between the two for intermediate apertures). Stepless continuous focusing to 2 ft. 7½ in. at focal lengths longer than 100mm.

Field test slides: Performance overall was above average for a zoom with these specs. Flare well-controlled over all focal lengths and apertures. At 70mm, wide open, slides were slightly soft, improved greatly by f/8. Corners slightly soft, equalled center by f/8. Slight fall-off in illumination just noticeable wide-open, gone by f/5.6. At 150mm, wide open, center a bit soft, improved by f/5.6. Corners matched central performance.



Stocky and capable—Third generation Series 70-210mm f/2.8-4 zoom offers speed and continuous close focusing.

At 210mm, corners equalled central sharpness by f/5.6. Macro performance was adequate at wide and middle apertures, but some loss of sharpness was noted by f/16.

Optical bench analysis (for optical experts only): At 70mm, on axis, slight axial astigmatism, gone by f/5.6. Slight over-corrected spherical, and red flare, gone by f/5.6. Diffraction limited by f/8. Off axis, slight skew-ray flare, some lateral color throughout. At 150mm, on axis, slight axial astigmatism, gone by f/5.6. Slight over-corrected spherical. Diffraction limited by f/8. Off axis, slight skew-ray flare and slight astigmatism. Lateral color throughout. At 210mm, on axis, slight axial astigmatism mixed with slight yellow flare. Slight under-corrected spherical aberration. Diffraction limited by f/11. Off axis, slight skew-ray flare mixed with slight astigmatism. Lateral color throughout.

PERFORMANCE

Our Standard as Tested

Focal length: ±5%
(66.50-73.50mm) 70.76mm
(199.50-220.50mm) 207.10mm

Aperture: ±5%
(f/2.66-2.94) f/2.81
at 210mm: (f/3.80-4.20) f/4.16

Distortion:
70mm: (±2%) minimal
210mm: (±3.5%) under 1% (pin)

Light falloff: at f/5.6
+1 stop from theoretical limit
70mm: (0-1.3 stops) 1.2 stops
210mm: (0-1.0 stops) 0.6 stops

RESOLUTION

VIVITAR 70-210mm f/2.8-4
at 70mm
at 1:49

f/	Center (l/mm)	Corner (l/mm)	
2.8	V. Good	49	Excellent
4	V. good	55	Excellent
5.6	V. Good	62	Excellent
8	Excellent	69	Excellent
11	Excellent	62	Excellent
16	V. Good	55	Excellent
22	Good	49	Excellent

RESOLUTION

VIVITAR 70-210mm f/2.8-4
at 150mm
at 1:50

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

RESOLUTION

VIVITAR 70-210mm f/2.8-4
at 210mm
at 1:50

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

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CONTRAST

VIVITAR 70-210mm f/2.8-4
at 70mm
at 30 lines/mm

f/	Center (%)		Corner (%)	
2.8	High	53	Medium	25
4	High	59	High	33
5.6	High	68	High	40
8	High	70	High	44
11	High	68	High	43
16	High	62	High	39
22	High	51	Medium	33

CONTRAST

VIVITAR 70-210mm f/2.8-4
at 150mm
at 30 lines/mm

f/	Center (%)		Corner (%)	
4	High	60	High	33
5.6	High	69	High	40
8	High	70	High	44
11	High	69	High	42
16	High	63	High	37
22	High	52	Medium	33

CONTRAST

VIVITAR 70-210mm f/2.8-4
at 210mm
at 30 lines/mm

f/	Center (%)		Corner (%)	
4	High	58	Medium	29
5.6	High	64	High	35
8	High	66	High	43
11	High	61	High	42
16	High	50	High	40
22	High	42	Medium	35

