

PERFORMANCE

Our Standard	As Tested
Focal length: ±5% (66.50-73.50mm) (199.50-220.50mm)	72-90mm 200-70mm
Aperture: ±5% (f/3.33-3.68) at 210mm: (f/4.28-4.73)	f/3.67 f/4.64
Distortion: 70mm: (±2%) 210mm: (±3.5%)	0.46% (barrel) 0.98% (pincshn)
Light falloff: at f/5.6 +1 stop from theoretical limit 70mm: (0-1.3 stops) 210mm: (0-1.0 stops)	0.3 stops 0.6 stops

RESOLUTION

OLYMPUS 70-210mm f/3.5-4.5 at 70mm/1:50

f/	Center (l/mm)	Corner (l/mm)
3.5	Excellent	56
5.6	Excellent	56
8	Excellent	63
11	Excellent	56
16	V. Good	50
22	Good	45

at 1:50

f/	Center (l/mm)	Corner (l/mm)
3.5	Excellent	50
5.6	Excellent	56
8	Excellent	63
11	Excellent	56
16	V. Good	50
22	Good	45

at 1:50

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

CONTRAST

OLYMPUS 70-210mm f/3.5-4.5 at 70mm/30 lines/mm

f/	Center (%)	Corner (%)
3.5	High	49
5.6	High	50
8	High	61
11	High	56
16	High	51
22	Medium	34

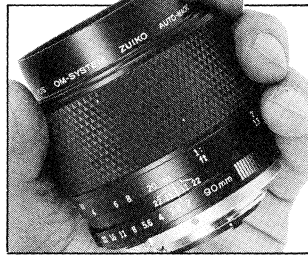
at 30 lines/mm

f/	Center (%)	Corner (%)
3.5	High	48
5.6	High	50
8	High	59
11	High	55
16	High	52
22	Medium	34

at 30 lines/mm

f/	Center (%)	Corner (%)
4.5	High	50
5.6	High	52
8	High	60
11	High	54
16	High	51
22	Medium	35

Ultra-fast 90mm f/2 Olympus Macro



Chunky Zuiko 90mm f/2 macro rivals a normal 90 in size when focused to infinity.

Specifications: 90mm f/2 Olympus Zuiko Auto-Macro, No.101413 macro lens, accepts 55mm accessories; f/2 to 22, with full-stop detents; min. foc. dist.: 1.3 ft. (.4m) (1:2 scale), smallest area covered: 48mm x 72mm, 1-13/16x2-3/4 in., 2-3/4 in. long, 2-3/4 in. diam. (72mm x 70mm); 19.5 oz. (549g). \$620 w/ case.

Practical comments: Smooth manual focusing to half life-size (1:2) with 1-1/8 in.-wide diamond-patterned rubber focusing ring. Distance scale clearly engraved in orange to 1.3 ft., magnification scale in yellow to 1:2. White depth-of-field scales for f/11 and 22 only because of lack of space. Red index for infrared refocusing. Rear-mounted, well-spaced aperture scale in white, detented at full and half stops. 340° clockwise turn of focusing ring extends lens to its full 4-5/8 in. for maximum close focus. Compact but massive lens is not weighty for its high speed and double-acting helical mount, balances well on lightweight OM bodies for hand-held and tripod-mounted work. Image snaps into focus decisively and is still easily focusable at longer distances, unlike some longer macros that are touchy to focus beyond 15 ft.

Field test slides: Slides shot at normal distances were crisp and high in contrast. Very slight color fringing seen in corners, disappeared by f/2.8. Corners equaled central sharpness by f/4. Flare was well controlled throughout. In macro, results were average at wide apertures, improving as you stopped down. Resolution held up to f/22, slight contrast falloff attributed to diffraction appeared after f/16. An above average performance for any long macro, especially so for a 90mm f/2.

Optical bench report (for optical experts only): On axis, we saw very slight overcorrected spherical aberration with very slight yellow-red flare (which disappeared by f/5.6). Diffraction limit was reached by f/16. Off axis, we saw very slight coma mixed with very slight astigmatism, almost gone by f/16. Lateral color present.

PERFORMANCE

Our Standard	As Tested
Focal length: ±5% (85.50-94.50mm)	90.44mm
Aperture: ±5% (f/1.90-2.10)	f/2.04
Distortion: 90mm: (±2%)	0.47% (pincshn)
Light falloff: at f/5.6 +1 stop from theoretical limit 90mm: (0-1.2 stops)	0.3 stops

RESOLUTION

ZUIKO 90mm f/2 at 1:50

f/	Center (l/mm)	Corner (l/mm)
2	Excellent	56
2.8	Excellent	56
4	Excellent	63
5.6	Excellent	70
8	Excellent	70
11	Excellent	63
16	Excellent	56
22	V. Good	50

MACRO RESOLUTION

at 1:4

f/	Center (l/mm)	Corner (l/mm)
2	Accept.	40
2.8	Good	45
4	Good	45
5.6	V. Good	51
8	Good	45
11	Accept.	40
16	Accept.	40
22	Accept.	40

at 1:2

f/	Center (l/mm)	Corner (l/mm)
2	Accept.	40
2.8	Good	45
4	Good	45
5.6	Good	45
8	V. Good	51
11	Good	45
16	Accept.	40
22	Accept.	40

CONTRAST

ZUIKO 90mm f/2 at 30 lines/mm

f/	Center (%)	Corner (%)
2	Low	30
2.8	Medium	47
4	High	69
5.6	High	68
8	High	60
11	High	54
16	High	48
22	Low	33

New Zoom Really Smells



Unique design of 45-80mm no-touch is a breath of fresh air.

Specifications: 45-80mm f/3.5 Sailor, No.8301122, in mounts for most U.S. and Japanese makes, accepts no accessories, f/3.5-22, no detents. Min. foc. dist.: 2.9m, 3-1/16 in. long x 2-3/4 in. dia. (78 x 70mm); 5-9/16 oz. \$14.

Practical comments: One look at the Sailor Zoom convinced us that this was no ordinary lens. Its odd focal length range, non-removable rear cap with detachable magnetic mounting base, and permanently coupled focusing and aperture rings are unique. So is its incredibly low price. The diaphragm and single element are both made of high-quality plastic, but the fixed focusing distance of 2.9m and fixed f/8 working aperture tend to limit its optical performance. However, once you pull the back section off the barrel and open the small flip-top can within, you can control the OTF (olfactory transfer function) by gripping the rear cap as you turn the barrel to open or close the five-bladed iris.

Field test slides: Since we were unable to mount the Sailor Zoom on any known SLR, we mounted it on the dashboard of Toyota, Honda, and Mitsubishi cars instead, and evaluated its performance as a car air freshener. We were frankly impressed with its output in all four scents we tried, but judged it to be aperture dependent, with stronger odors at wider settings.

Optical bench analysis (for olfactory experts only): Despite our impressive array of exotic adapters, we were unable to mount this lens on our optical bench. Understandably, this left our noses slightly out of joint. (Note: These air fresheners are available from K.I. Shakai, Kyoto Japan, in six different fragrances)