

Setup

With the left tube focused to infinity, the right tube was +0.25d with diopter control on the index mark.

Clear aperture at infinity: Left side = 37 mm, right side = 36.25 mm.

Clear aperture at close focus: Left side = 36.25 mm, right side = 36.0 mm.

IPD from aperture measurements: Inf. = 63.1 mm and close focus = 62.9 mm.

Measured exit pupil lt.=5.3 mm, rt.=5.3 mm +/-.

Power from aperture/exit pupil, lt.=6.98x, rt.=6.84x.

Estimated accuracy of aperture measurements: +/-0.5mm.

DOF

As predicted. Got very sidetracked here and forgot what I was doing. I saw a flash of yellow and black bouncing off my left shoulder, headed behind me. So I went looking to see if I could find it. Probably a Goldfinch, but there has been rumored sightings of Lawrence's Warbler south of me.

Focus Details

Focus knob diameter = 35 mm (1 3/8 inches).

Close focus distance = 1.306 m (4.3' +/-).

Total rotation = 566 degrees or 1.57 turns.

Approx. focus speed = 14.1 degrees/diopter. For reference the Promaster 8x42 Elite ELX ED = 22 degrees/diopter and the 8x36 Monarch = approx. 7 degrees/diopter. This makes the 7x36 ED2 36% faster than the Promaster and twice as slow as the Monarch.

My Zen-Ray 7x36 ED2 only has about -3.7d overdrive. This may be a problem for some. It runs out of focus range with me when trying to bring the edges of view into focus with an infinity target. It has not been a problem to me when using in a normal manner yet.

Eye Relief Information

Using the center of the eye lens as the zero reference:

Total ER=17.8 mm, spec'd at 16.8 mm.

	From lens	Useful ER
Eyecups retracted	3.98 mm	13.83 mm
Intermediate notch	8.33 mm	9.48 mm
Fully extended	12.15 mm	5.66 mm

Collimation (Conditional at 64 mm IPD)

The collimation on this sample was excellent, with the best of the alphas. I hope this unit can maintain this alignment. The ISO limits are listed as a reference:

	Convergence	Divergence	Dipvergence
ISO General Purpose	40'	100'	30'
ISO High Performance	20'	60'	20'
Measured 7x36ED2	NA	17'	10'

Field of View Measurements

	Left	Right
TFOV	8.88722	8.97278
AFOV	61.6792	61.8469
Power from FOV	6.94x	6.89x

Resolution Measurement

I was able to resolve group 7, element 1 at 400 mm in both tubes of my sample. I was able to resolve group 6, element 6 very easily, group 7, element 1 resolved with a little focus adjustment and just could not see group 7, element 2. This yields a resolution limit of 4.03 arc seconds for each barrel. I consider this excellent for a 36 mm objective and would be surprised to find any significant aberrations in the images.

The resolution testing was done at 56x. A little CA was noticed starting about 1 degree from the center position.

Image Quality

Here a test grid is positioned in place of the collimation target. The grid and circles are 1 degree increments and the USAF group 2, element 1 is approximately 2 arc minutes. Edz likes, and uses 2', and this seems like a good reference size. The grid ticks on the right and top of the centerline are ¼ degree ticks, the ticks on the left and bottom of the centerline are 0.1 degree or 6 arc minutes. The group 2, element 1 is the vertical, then horizontal bars, followed by the number 1. As can be seen, the focus stays pretty sharp until the 3 degree from center ring, about 67% from center towards the edge.

To bring the edges into focus required the approximate values of diopter:

Left Side		Right Side
Top	-3d	-1d
Right	-2d	-2.5
Bottom	-3d	-2.5
Left	-2.5d	-1d

Keep in mind these are very rough figures and can change with the focus setting for depth of field or individual eyesight compensations, but on average it took me about -2.5 to -3 diopters to refocus to the outside edge.

While this target was set up, it was used to measure the TFOV at 8.9 degrees +/- in both barrels. The accuracy was about 0.25 degrees due to edge distortion and USAF targets interfered. I usually do this on the collimator target but forgot to.

Left tube

