

## Binocular Sky Review: Opticron WP Observation 16x80

### Manufacturer's Specification

Weight (g)	2390
Field of View (°)	4.3
Eye Relief (mm)	17
IPD (mm)	55-72
Waterproof	Yes
Prism Type	Porro
UK Guarantee	30 yrs
Origin	Japan
Body Material	Aluminium Alloy
Armour Type	None
Nitrogen Gas Filled	Yes
Prism Material	BaK4
Prism Coating	Multi-coated
Lens Coating	Fully multi-coated with protective overcoat
Eyecup Type	Twist-up



**Price: £479**

**Available from:** [First Light Optics](#)

### Initial Impressions

The binocular is of Bausch&Lomb (aka “American”)-type construction, i.e. the near end of the objective tube is integral to the prism housing.

The binocular is covered in a textured rubber armour that gives a secure grip with or without gloves and which will offer some protection against accidental knocks. The centre focusing is smooth, with no “stiction”. The right eyepiece dioptre is also smoothly operating but, unless you hold it, it is likely to move slightly when you twist the eyecup to



lock in its extended position. The adjusting ring is knurled and is easy to adjust with gloves. The hinge is smooth and tight enough not to accidentally slip once it is adjusted, for example when you are mounting the binocular or using the right eyepiece adjustment. The eyecups twist up and down smoothly and lock in their extended position.

The coatings look very good indeed. They appear to be evenly applied and reflect only a tiny amount of light. The insides of the objective tubes are ribbed around their entire length, suggesting that control of stray light should be very good.



There are small cut-offs in the light path, suggesting that the prisms are slightly under-sized.

The prisms themselves are obviously multicoated: they reflect a minimal amount of light. They are housed in a proper “cage” and are not merely held in place with clips. They do not appear to be grooved on their hypotenuses.

The rigid, plastic-covered case is lined with a velvet-type fabric. The inside of the lid is slightly padded where it bears on the eyepieces when the lid is closed. The case is more than adequate to protect the binocular from knocks it might get in reasonable use. It has a sprung metal latch closure, a pull-out (aka telescopic) handle and a removable strap.



The untethered objective and eyepiece covers are all an excellent fit, and do not come off accidentally when you remove the binocular from its case and are unlikely to come off in normal use. The binocular has a thin (6mm) webbing neck-strap – I did not attach this, as I always used it mounted – but it is a disincentive to try to wear the binocular around your neck!

The binocular has a central mounting bar with a sliding connector for direct mounting to a 1.25” screw on a tripod head. A very nice touch is that the connector has a lever to tighten it, which makes it much easier to tighten securely than the ubiquitous knurled thumb-wheel that is used on budget models with a similar mounting system.



The objective lenses are recessed a substantial 3cm into their tubes, offering excellent protection against both accidental touching and glare from bright objects outside the field of view. There are retractable lens hoods on the objectives that extend an additional 2cm, offering substantial protection against glare and some resistance to dewing.

## Testing the Specifications

As you would expect with a binocular of this quality, the aperture is the full 80mm and is not internally stopped. Examination of reflections when a bright light is shone down the objective end confirms the fully multi-coated spec. There are no grey segments in the exit pupil, confirming that the prisms are of high-index glass. Measurement confirmed that the minimum interpupillary distance is 55 mm. The eye cups are 43 mm diameter, so there is 12 mm between them at their closest; this should accommodate most nose bridges and small faces. With fully-corrected vision, the right eyepiece dioptre is set close to zero when you focus to infinity, suggesting that it is properly adjusted. There is some “beyond infinity” focus travel so the binocular could be used without spectacles by people with moderate to strong myopia as well as those with hyperopia/presbyopia. For those who do need spectacles, the eye lenses are recessed only 1mm into their housings so, with the eye-cups folded down, there is 16mm of the specified 17mm eye relief available. I found this to be adequate to enable the entire field of view to be visible with spectacles.

## Under the Stars

For testing, during some of which I compared it to the similarly priced [Lunt 16x70 Magnesium](#), I mounted the binocular on a *Manfrotto #475B* tripod with a #501 fluid head.

Collimation was, as far as I could ascertain, perfect. The field of view very easily contains *Polaris* and *Delta Ursae Minoris* ( $4^\circ$ ), which is consistent with the specified field of  $4.3^\circ$ . The view is extremely sharp and flat over the central 80% of the field. A small amount of field curvature affects the periphery.

When Io and Europa were separated by 27 arcseconds, they were cleanly split over 90% of the field of view (this was 95% on the Lunt). I could detect a small amount of vignetting towards the edge. Control of false colour (chromatic aberration) is very good on axis, but becomes noticeable on bright objects (e.g. the lunar limb) once they are off-axis, although it is still well-controlled and not overly obtrusive here. I did not notice it at all on first magnitude stars. As with most binoculars, colour correction is sensitive to eye position and deteriorates if your eyes are not co-axial with the binocular's optics.

...there was no glare at all from a bright blue-rich white streetlight immediately outside the field of view.

This is a very impressive binocular. Optically, it is extremely good.

There is a small amount of pincushion distortion: it is unobtrusive, but is sufficient to eliminate the nauseating “rolling ball” effect that can occur without it. Control of stray light is very good, a testament to properly applied multicoatings and the ribbing in the objective tubes: there are no spurious reflections from bright objects and there was no glare at all from a

bright blue-rich white streetlight or a gibbous Moon when they were immediately outside the field of view. This contributes to the excellent image contrast in this binocular. Colour rendition is faithful, so differences between star colours are obvious.

The Andromeda Galaxy was bright and showed shape and very good differentiation of the core; I could easily distinguish a sharper cut-off in brightness from the dust lane at the nearer edge. The Orion Nebula looked clear and detailed, with more fine detail becoming apparent as I looked for longer. On the night I tested this, I could easily distinguish three stars of the Trapezium.

These binoculars are substantial and feel robust but not overly heavy. Although most of the testing was done on a tripod, I could use them satisfactorily on a monopod with a *Manfrotto #222* trigger-grip head.

## Conclusions

This is a very impressive binocular. Optically, it is extremely good. The tweaking of the right eyepiece when locking up the eyecup is the only major mechanical irritant and is one that is easily overcome with care. Apart from the neck-strap, the accessories are all fit for purpose. The waterproofing and nitrogen-purging make it suitable for humid-night astronomy. Opticron's 30-year guarantee should give confidence that these positive qualities will not deteriorate with regular normal use.

In comparison to the Lunt 16x70, it goes about 0.2 magnitudes deeper. I experienced the Lunt's field to be very slightly flatter but, because the Opticron's field is larger, there was no detectable difference in the size of the true flat field. Other than that, there is little to choose between them. For that reason, I think the Opticron would be my binocular of choice if it was to be my largest binocular but, if not, it comes down to personal preference with respect to things like centre or individual focus and twist-up or fold-down eye-cups.

Given its considerable optical and mechanical quality, at its price of £479, I think this binocular represents extremely good value for money.

Binocular Sky Ratings (/10)	
Sharpness of Image	10
Size of usable field	9.5
Colour Correction	8
Control of stray light	9
Eye relief	10
IPD	10
<b>Overall Optical Quality</b>	<b>9.5</b>
Focus mechanism	10
Right eyepiece adjustment	7
Eye cups	8
Hinge	10
Armour	10
<b>Overall Mechanical Quality</b>	<b>9.0</b>
Case	8
Neck-strap	4
Objective caps	8
Eyepiece caps	8
<b>Value for Money</b>	<b>10</b>
<b>Overall</b>	<b>9.2</b>

[Click here](#) to see the [Opticron WP Observation 16x70](#) on [First Light Optics](#) website

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