

## New Takahashi TPL series

The definitive standard type eyepiece

In designing a new standard-type eyepiece, we have repeatedly performed afocal calculations by attaching various types of eyepieces to Takahashi's non-aberration optics such as TOA and Mewlon CRS, and have come to the conclusion that Takahashi's original Plossl type eyepieces are the best.

Plossl is often underestimated because there are many inexpensive products on the market, but the TPL series to be released this time uses highly refractive low-dispersion glass and has an optical design that allows the image quality of an aberration-free objective lens to enter the retina as it is, with chromatic aberration at the center about half that of the Abbe series and about two-thirds that of the LE series. The optical design allows the image quality of the aberration-free objective lens to enter the retina as it is. In this type of eyepiece without a Smythe lens, the Petzval sum cannot be corrected to zero, so the star image cannot be perfectly point-blank to the corners of the viewing ring, but astigmatism and image curvature are controlled so that the deformation of the star image at the periphery is minimized.

The image quality is extremely sharp from the center of the field of view to the half of the field of view, and although the star image bulges out toward the periphery, it is of high quality for visual observation, allowing the observer to focus on the center of the field of view.

Since the star image at the periphery is designed to bulge out naturally, it works well with a good quality short barlow.

The entire lens surface is coated with a multilayer coating that transmits more than 99% across the entire visible light range, and a high-quality matte finish

The metal hardware design, which prevents stray light from entering the lens, and other features enable stargazing with excellent contrast.

The eye relief is approximately 70% of the focal length, and the apparent field of view is 48°, the maximum field of view into which the viewing ring of TPL-33, which provides the lowest magnification at  $\phi 31.7$  sleeve, can be inserted.

All of the TPL series eyepieces have the same focal length as the existing Takahashi 31.7 eyepiece series, and all of them use rubber eyecups that can be folded back when using eyeglasses.

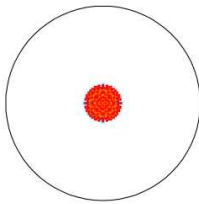
The TPL series eyepieces are fully made in Japan and are suitable for use with Takahashi's high performance objective lenses.

The Takahashi TPL series will be available in three 31.7 sleeve types: TPL-12.5, TPL-18, and TPL-25.

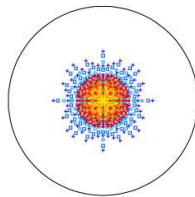
### TPL-12.5 Abbe12.5 LE12.5 Aberration comparison

Central SPOT comparison

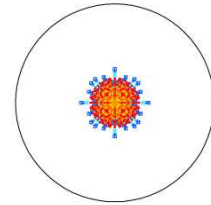
TPL-12.5



Abbe12.5



LE12.5



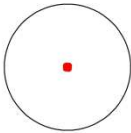
\*Circle is Airy disk

\*Attached to the stigmatic optical system to synthesize 11 wavelengths from 436nm to 656nm

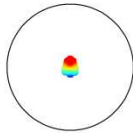
Peripheral SPOT comparison

TPL-12.5

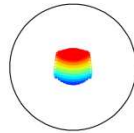
0 deg



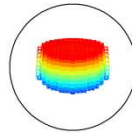
5.5 deg



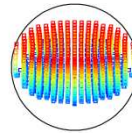
11 deg



16.5 deg

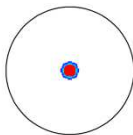


22 deg

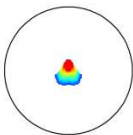


Abbe12.5

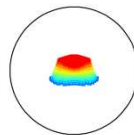
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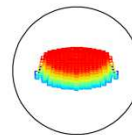
5.5 deg



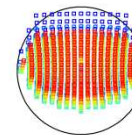
11 deg



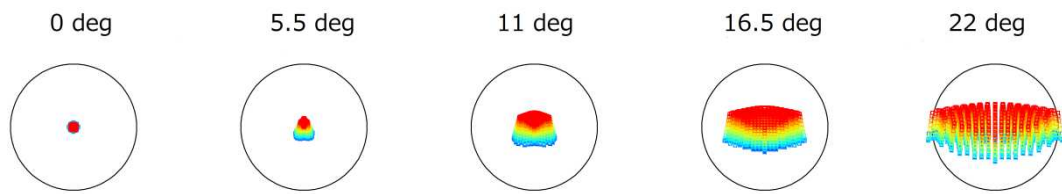
16.5 deg



22 deg



LE12.5



\*Circle is 4mrad

\*Angle is apparent field of view

\*Afocal calculation of 11 wavelengths from 436nm to 656nm when attached to an aplanatic optical system