

Vixen introduces a new flagship apochromat “VSD90SS” best suited for both astrophotography and visual observation and associated accessories on November 30th, 2023.

Vixen Co., Ltd. (Tokorozawa, Saitama, Japan, President Kazushige Niitsuma) will introduce a new flagship optical tube unit “VSD90SS” and associated accessories on November 30th, 2023.



Thanks to the gorgeous five-group-five-element optical design (Quintuplet) including two SD (Super ED) lenses and one ED (Extra-low Dispersion) lens, practically aberration-free optical system has been created. While compatible with full-frame digital SLR or larger 44x33mm camera, this revolutionary astrograph with a fast focal-ratio delivers extraordinary sharp and uniform star images from the center to the corner of the field of view. Furthermore, it outperforms in visual observation in a wide field of view up to planetary observation with high magnification.

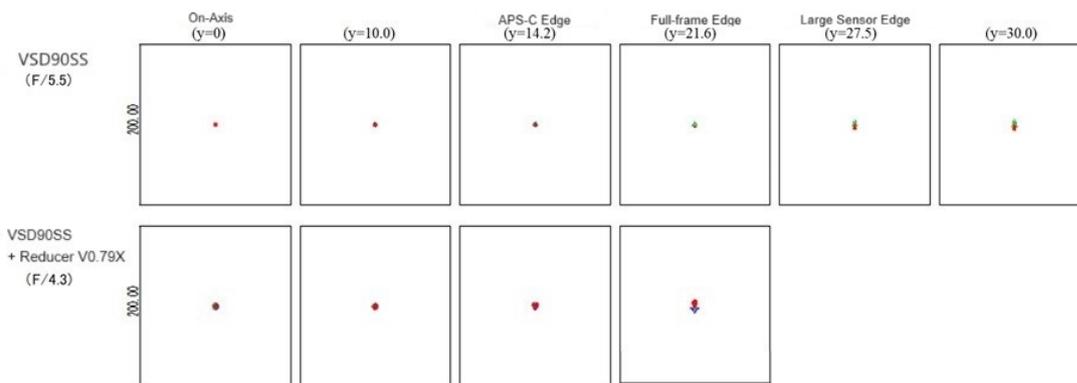
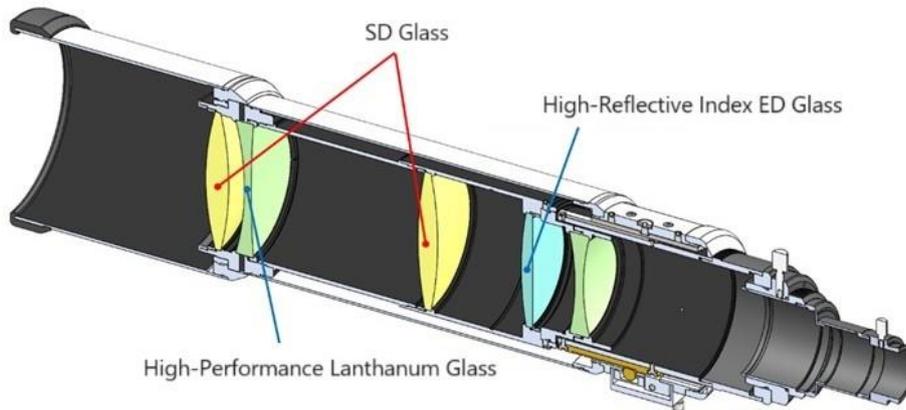


【Extra sharp and stunningly beautiful star images all over the large format!】

Incorporating two SD (Super ED) lenses and one high-reflective index ED (Extra-low Dispersion) lens (5-group 5-element) for the convex lenses, a newly developed high-performance lanthanum glass for the concave lens has successfully reduced on-axis chromatic aberration and astigmatism to the ultimate minimum.

It delivers unprecedentedly sharp and uniform star images to the edge of the field of view, not only for the full-frame digital SLR, but also for the 44x33mm * 1) larger format imaging sensor.

*1) 37x24mm if the focal reducer V0.67 is used.

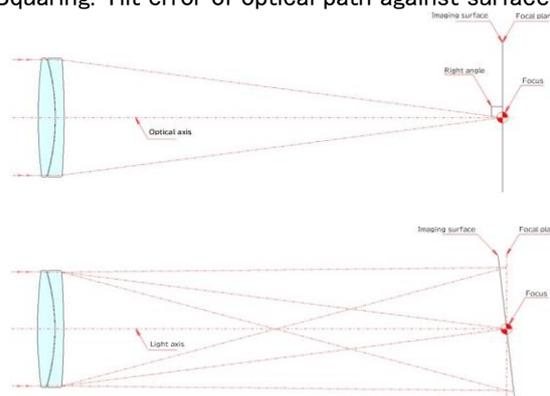


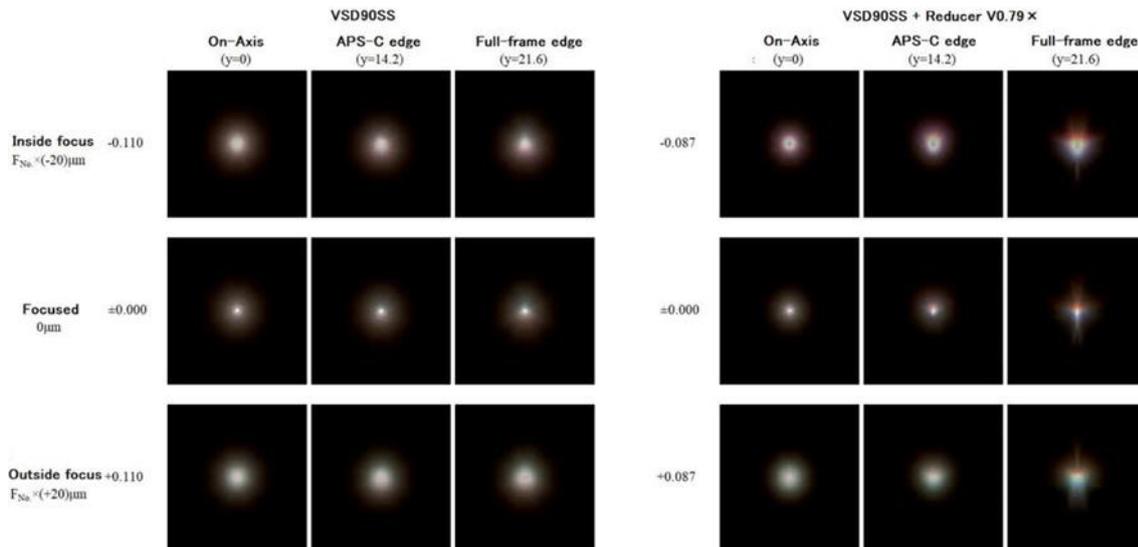
【Holding round star images stably due to 'peak gradualness' in the setting accuracy】

The VSD90SS is designed to keep a "long peak range" in the setting accuracy to make users obtain always satisfactory results in astro-imaging, regardless of the levels and skills. The VSD90SS adopts the design that widens out a sharp focus range while staying inside the Airy disc which allows reducing the change in a tint of star colors and collapse of star images on the edges of the image field even slightly failed to adjust precisely focusing or squaring. As a result, round, crisp, and beautiful stars are imaged in the entire imaging field. You can expect to secure stable results in shooting and image processing after your imaging session. You can take advantage of celestial shooting opportunities with the VSD90SS.

Correction of Squaring (Orthogonality)

Squaring: Tilt error of optical path against surface of the imaging sensor

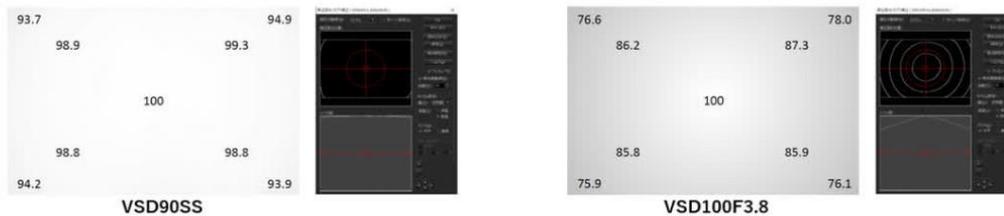




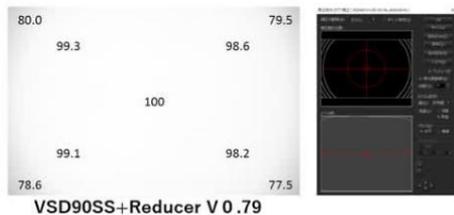
【Entirely illuminated image circle without vignetting】

Generally, astrograph can generate optical vignetting, a gradual decrease in light rays towards the image periphery produced by rear lenses shaded by the lenses in front. Because of this peripheral dimming, it was not rare for users to have the necessity to process the image for compensation after shooting. To solve this problem, VSD90SS employs large aperture lenses in the rear elements and secures over 90% of light volumes at the edge of a 60mm image circle. As the light intensity is even entirely in the image field, a need to compensate for the peripheral dimming is eliminated, or make the compensation easier in the image processing later.

Peripheral Dimming (35mm full-frame, 36 × 24mm format)



- ◎With the VSD90SS, there is no peripheral dimming on the edges of a photography field except for vignetting by a camera mount and or a filter wheel.
- ◎Although the VSD100F3.8 secures excellent peripheral illumination over 70% at the edges, the image-field-illumination begins to deteriorate from near the center due to optical vignetting.



- ◎You get even amount of illumination practically in the image field of an APS-C size.
- ◎In the image field of a full-frame 35mm size, you see that the reducer lens, camera mount and or filter wheel generate vignetting. However, the VSD90SS still keeps good amount of peripheral illumination that is equivalent to the VSD100F3.8 at prime focus.

【Rich light graduations bring beautiful stars in the image field】

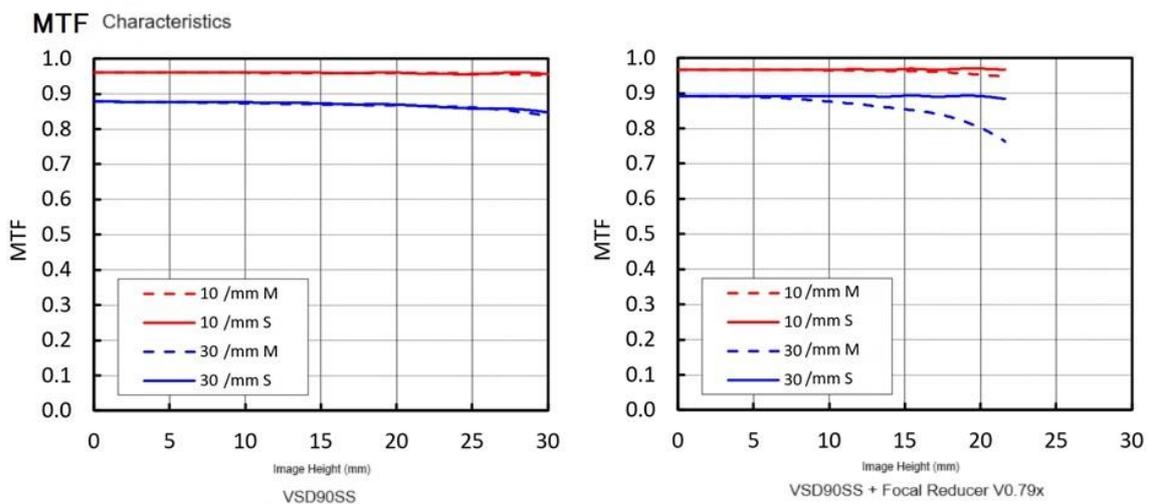
The least optical vignetting results in securing sufficient peripheral illumination and thus eliminates asymmetry flare arising from bright stars of diffraction limited. It prevents star images on the edge of the 60mm image circle from collapsing shapes. As graduations of light getting from the overall illumination are rich, you can expect beautiful consequences of your imaging successfully.

*Mechanical vignetting may occur by a camera body, a camera mount, and so on, depending on the shooting system you use.



【The MTF diagram reveals high resolution and high contrast】

The MTF (Modulation Transfer Function) indicates rating index of optical performance of a lens group by characteristics of spatial frequencies. It reveals how well the resolving power of a lens, and the contrast of a photographing object can be reproduced on the imaging plane. In the diagram the distance from the center of the image is given on the horizontal axis, and the contrast value (Max. 1) on the vertical axis. It means that the closer the curve of 10 lines per mm to 1, the higher the contrast, and the closer the curve of 30 lines per mm to 1, the higher the resolution. As indicated in the diagram, the contrast values are all close to 1, it verifies that the VSD90SS is a highly excellent optical system.



【Flat imaging field! 96.7% Strehl ratio! Great visual observing!】

The VSD90SS provides a flat field of view using a wide eyepiece of low magnification. With a quality wide field eyepiece, you get sharp images of stars in the whole field of view in visual observation. The center of field of view achieves strehl intensity of 96.7% proudly in visual-ray-wavelengths. This strehl ratio exceeds the SD81SII apochromat at 95.7%, recognized with its superb optics, and it works excellently in observing planets at high magnification.

【The versatile large focuser】

The VSD90SS employs the large focuser with a diameter of 87.5mm to make the most use of the large 60mm image circle with excellent peripheral illumination. Using the large focuser compatible with many accessories, it is versatile in various scenes, including astrophotography with a large format or 35mm full frame DSLR camera and visual observation.



【Drawtube precision lock lever】

The focuser drawtube has a lock lever that secures the drawtube firmly in place even if you use heavy imaging equipment like a large format camera or a CCD camera with a large sensor size. The lock lever pinches the rack gear on the drawtube to fix so that the angle of view or focus does not shift on your imaging equipment at the behavior of the lock lever.



【Compatible with motor-driven focusers】

An optional dual-speed focuser (sold separately) is available for the VSD90SS to allow delicate focusing. Also, an EAF (Electronic Automatic Focuser) by ZWO or equivalent is attachable.

【Compact short optical tube for easy storage】

The VSD90SS optical tube has a 600mm overall length and shortens to 476mm by attaching the dew shield in the reversed direction. (You even make it shorter to 402mm by removing all the rings on the rear.). A highly compact size when you store it and transporting is ready.



In case of use



In case of storage

Product: VSD90SS Apochromat

<Launch date> November 30, 2023

<Product code> 26131

<JAN/EAN Code> 4955295261314

<Product website> https://global.vixen.co.jp/en/product/26131_4/

<Special website> <https://global.vixen.co.jp/en/lp/VSD90SS/>



VSD related accessories

Product: VSD Tube Ring 115S

A high-quality tube ring intended for use with the VSD90SS apochromat. In addition to the VSD90SS, it is compatible with other optical tube units with an outer diameter of 115mm. The ring is designed to be directly mounted to the SXP2/AXJ/AXD2 equatorial mounts with two M8 screws supplied. Further, it can also be installed on Vixen's dovetail standard equatorial mounts such as SX2 equatorial mount by using dual slide bar and universal dovetail plate.



<Product code> 26132
<JAN/EAN code> 4955295261321
<Product website> https://global.vixen.co.jp/en/product/26132_1/

Product: VSD90SS Case

It is an exclusive case for VSD90SS which can store not only the optical tube unit but also the tube rings with slide bar with a wide space around the focuser for related accessories.



<Product code> 26133
<JAN/EAN Code> 4955295261338
<Product website> https://global.vixen.co.jp/en/product/26133_8/

<Vixen Website>

株式会社ビクセン (JP) : <https://www.vixen.co.jp/>

Vixen Global website (EN) : <https://global.vixen.co.jp/en/>

<About Vixen Co., Ltd.>

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Founded in 1949. Head Office: Tokorozawa city, Saitama, Japan

Optical instruments manufacturer from design to manufacture of astronomical telescopes, binoculars, microscopes, spotting scopes and magnifiers.

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