

FIRST light

See an interactive 360° model of this scope at www.skynightmagazine.com/VixED81SII



Vixen ED81SII 3-inch apo refractor

A portable starter scope that can be used for both imaging and observing

WORDS: PAUL MONEY

VITAL STATS

- **Price** £1,077 (£949 tube only)
- **Aperture** 81mm (3.18 inches)
- **Focal length** 625mm (f/7.7)
- **Optics** ED multicoated objective
- **Focuser** Dual-speed 7:1 reduction
- **Length** 585mm
- **Mounting** Tube rings with dovetail bar
- **Weight** 3.5kg (tube only 2.3kg)
- **Extras** Flip mirror diagonal, red-dot finder, carry handle
- **Supplier** Vixen UK/Opticron
- **www.vixenoptics.co.uk**
- **Tel** 01582 726522

Refractors continue to be a popular choice both for visual and imaging purposes, and this is especially true of short focal length models. Continuing this trend, Vixen has upgraded its successful ED81S with higher-quality glass and added a dual-speed focuser, resulting in the ED81SII. The telescope can be purchased as a standalone tube, or packaged with a Vixen flip-mirror diagonal and red-dot finder. It is the latter we are reviewing here.

The telescope tube is 585mm long and has a diameter of 90mm, while the optical system consists of a 3.18-inch multicoated objective lens with a focal length of 625mm. This gives a short focal ratio of f/7.7. The objective lens uses ED (extra low dispersion) glass to remove the effect of chromatic aberration or colour fringing.

The focuser offers dual-speed fine control with a 7:1 ratio, which is particularly useful for astrophotography. The focus can also be locked using a tension knob, reducing the chance of image shift if your photographic equipment is on the heavy

SKY SAYS...

Our star test was pin sharp and crisp; only the slightest distortion appeared at the field's very edges

side. For the price we would have liked to have seen a graduated scale to make it easier to return to the same focal point in subsequent sessions.

The end of the focuser terminates in a 60mm thread with a 2-inch adaptor screwed into it; in order to use the scope for visual observing, you need to attach a star diagonal

or the optional flip mirror diagonal. If using the flip mirror diagonal, you can unscrew the straight-through end barrel to reveal an M42 thread, to which you can attach a T-ring adaptor for prime focus astrophotography.

Crisp and clear

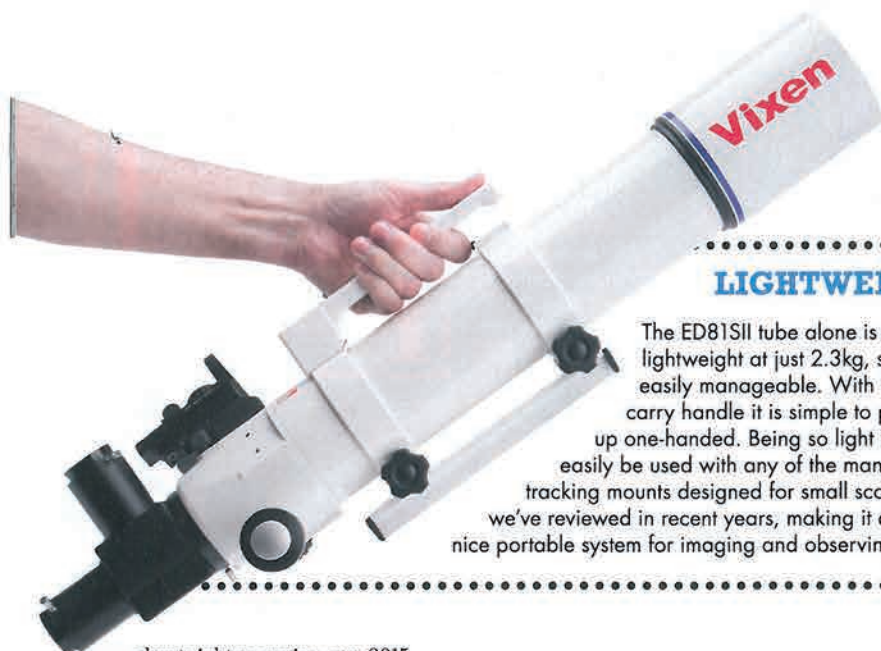
For our visual tests the supplier loaned us a range of Vixen SLV 1.25-inch eyepieces, including 25mm, 12mm and 6mm variants. With the 25mm eyepiece the system gave 25x magnification, providing a wide field of view that allowed us to take in the whole of the Sword of Orion in one go. Our star test using Capella in Auriga was pin sharp and crisp across almost the whole view; only the slightest distortion appeared at the very edges.

At 25x magnification the Moon was also crisp, with little in the way of colour fringing around its bright edge. Higher magnification brought out plenty of sharp detail so we swung the scope to point at Jupiter and were rewarded with a small – but nicely detailed – disc with the two main belts and the Great Red Spot on display. ▶

LIGHTWEIGHT GET UP AND GO SETUP

The ED81SII tube alone is quite lightweight at just 2.3kg, so easily manageable. With its carry handle it is simple to pick up one-handed. Being so light it can easily be used with any of the many tracking mounts designed for small scopes we've reviewed in recent years, making it a nice portable system for imaging and observing

from a remote site. Adding the red-dot finder, flip mirror diagonal, tube rings and dovetail bar only brings the weight up to 3.5kg, again nothing that would press a good tracking mount. This system could be taken on holiday as hand luggage, making it an ideal instrument for eclipse trips, providing of course you also have a certified solar filter for the front end. Just add a mount and at least two eyepieces and you'll have a good setup that should give plenty of enjoyment for many years.



FOCUSER

The focuser is of a dual-speed rack and pinion design with a 7:1 ratio for providing fine focus control. It can accommodate a 2-inch diagonal or the optional flip mirror diagonal. It also features a generous 93mm of focus travel.

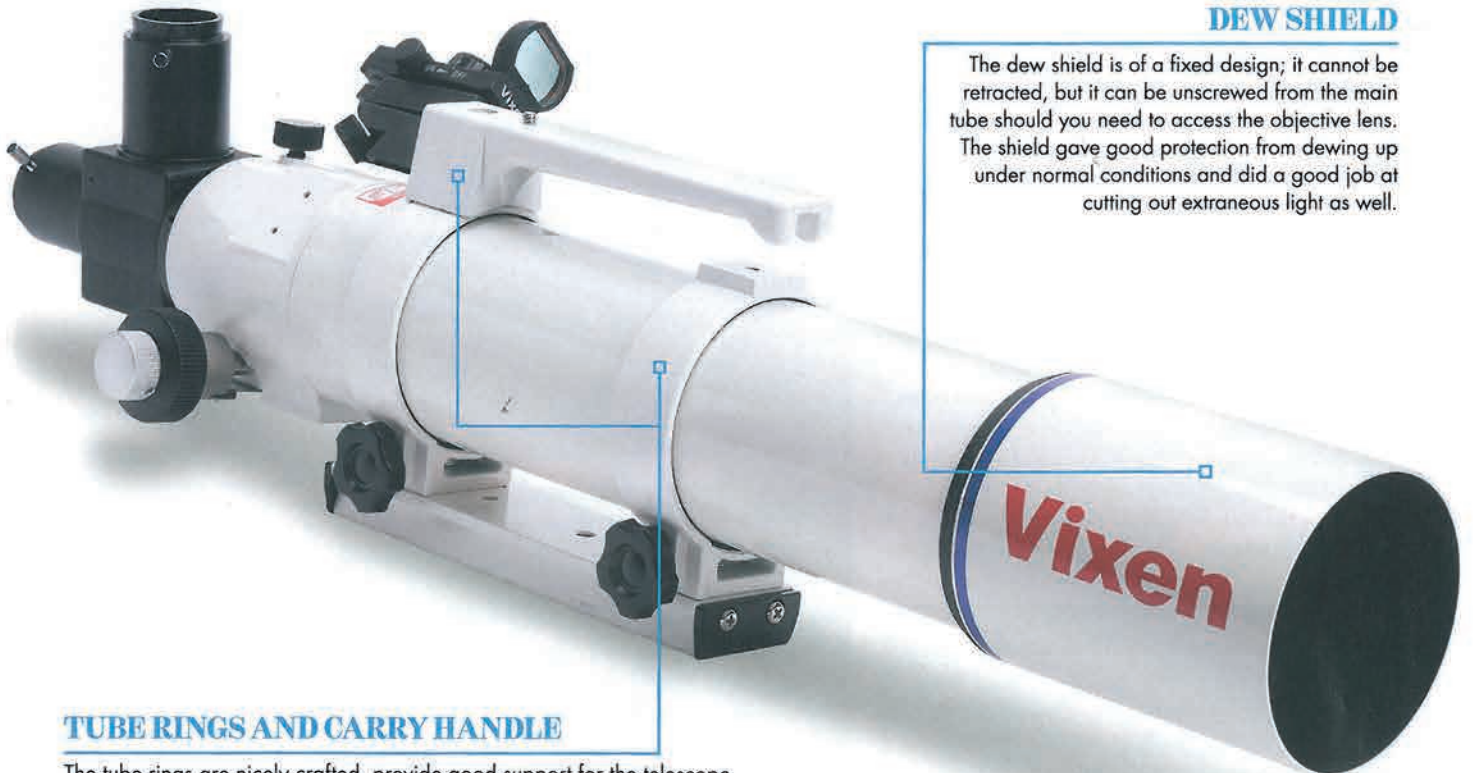


FLIP MIRROR DIAGONAL

The flip mirror diagonal allows the use of two 1.25-inch eyepieces, which you can switch between by turning a knob – this is useful for comparing low- and high-magnification views. Unscrewing the end barrel reveals an M42 thread, allowing a T-ring adaptor to be attached for prime focus astrophotography.

DEW SHIELD

The dew shield is of a fixed design; it cannot be retracted, but it can be unscrewed from the main tube should you need to access the objective lens. The shield gave good protection from dewing up under normal conditions and did a good job at cutting out extraneous light as well.



TUBE RINGS AND CARRY HANDLE

The tube rings are nicely crafted, provide good support for the telescope and allow easy rotation of the tube assembly if required. They attach to a standard Vixen dovetail bar. A very useful carry handle makes it easy to pick the telescope up and secure it to a mount.

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The objective lens is multicoated and made from ED (extra low dispersion) glass to correct for chromatic aberration, also known as colour fringing, where not all colours are brought to the same focus. This was well controlled visually. Photographically there was a little colour fringing on the brightest stars, but nothing too serious.

SKY SAYS...

Now add these:

1. Vixen SX2 mount
- 2: 25mm SLV Eyepiece
- 3: T-mount/ring for DSLR camera

▶ looking farther afield, we enjoyed a wide view of the Sword region of Orion, with M42 at its heart. It was gratifying to be able to increase the magnification to show the four Trapezium stars. The galactic pair of M81 and M82 in Ursa Major were also well seen, with M82 appearing a little disturbed along its length. M45, the Pleiades open star cluster, filled the view, with a hint of the Merope nebulosity also visible.

We attached our Canon EOS 50D, which has an APS-C sized sensor, via a T-ring adaptor screwed to the body of the flip mirror, and took a series of exposures of several objects including the Pleiades, Sword of Orion and the Moon. We were gratified to capture some pretty sharp images, with only a slight distortion towards the field edges of the stars, something that a quick test shot using our own flat-field corrector easily fixed; it depends on how picky you are with respect to the quality of the stars at the image edges as to whether you wish to use a corrector or not.

The ED81SII was easy to set up and install on our Go-To mount and we found it a pleasure to use being so lightweight. It's easy to recommend it for both visual and imaging purposes. **S**



◀ We managed to capture a hint of the nebulosity running through M45 in this stack of 21 two-minute exposures at ISO 2000



◀ Our close companion gave up plenty of sharp detail after processing; this is a stack of 32 1/500-second exposures at ISO 100

VERDICT

BUILD & DESIGN	★★★★★
EASE OF USE	★★★★★
FEATURES	★★★★★
FIELD OF VIEW	★★★★★
OPTICS	★★★★★
OVERALL	★★★★★

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