114mm Newtonian Reflector Telescope (#8734)

Instruction Manual

WARNING!

NEVER USE A TELESCOPE TO LOOK AT THE SUN!
Looking at or near the Sun will cause instant and irreversible damage to your eye.
Children should always have adult supervision while observing.

1. Description

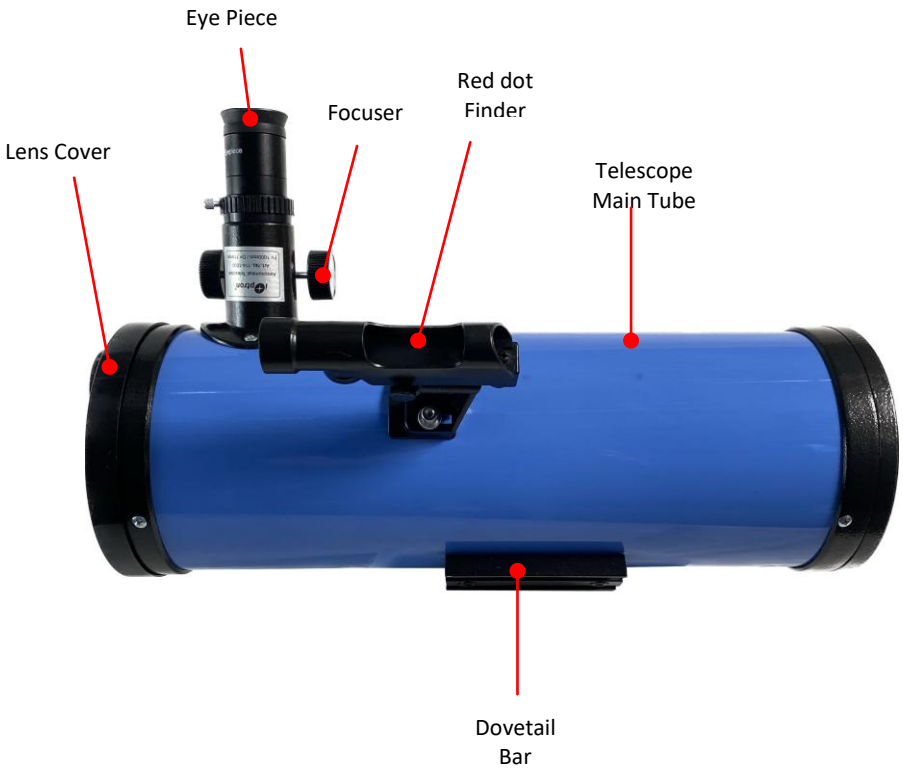

Figure 1. N114 Newtomian Reflector

2. Telescope Setup

The N114 telescope comes with a Vixen-type dovetail. It can be mounted onto any telescope mount that accepts a Vixen-type dovetail. Just simply release the dovetail locking knob on the dovetail saddle. Slide the telescope dovetail bar in and lock the dovetail locking knob.

Figure 2. Install the N114 telescope onto a telescope mount

Attach the red dot finder scope to the telescope tube:

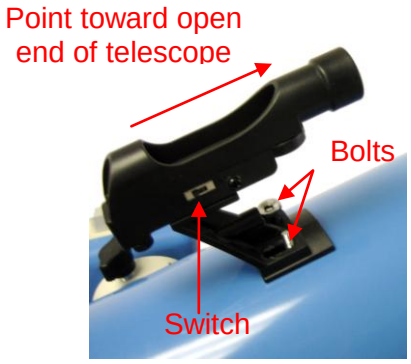

Figure 3. Install a red dot finder

First remove the two thumb nuts from the scope body. Then place the finder scope onto the two bolts and re-attach the nuts. The finder scope should face towards the open end of the telescope (see arrow in diagram).

Insert the diagonal into the eyepiece side of the telescope. Tighten the thumbscrews to a firm feel only. Slide the eyepiece into the open end of the diagonal. Tighten the. Remove the dust cover from the other end of telescope before observation.

3. Telescope Operation

3.1. Imaging Orientation

The image orientation of in an N114 scope is inverted, as shown in the following. The image is upside-down and reversed from left-to-right. Practice your telescope mount on the moving directions during the day time.

Actual image orientation as seen with the unaided eye

Inverted image, as viewed with the eyepiece in telescope

Figure 4. Image through a telescope

3.2. Selecting an Eyepiece

The magnification of a telescope is defined by the focal lengths of the telescope and the eyepiece. A formula can be used to determine the power of each eyepiece: Telescope focal length divided by eyepiece focal length equals magnification.

For example, an N114 telescope has a focal length of 1000mm. With a 25mm eyepiece, the magnification will be

1000mm ÷ 25mm = 40X (magnification)

If you want more magnification, you may order higher power eyepieces. Note: a 25 mm focal length eyepiece has a lower power than a 10 mm one. Always start with the lowest power eyepiece for easy locating the objects.

3.3. Focusing Telescope

Practice telescope focusing during the daytime to get familiar with the scope.

(1) After selecting the desired eyepiece aim the telescope tube at a land-based target at least 200 yards away (e.g. A telephone pole or building). Fully retract focusing tube by turning the focus knob.

(2) While looking through selected eyepiece, slowly extend focusing tube by turning focusing knob until object comes into focus.

3.4. Using Finder Scope

Check the LED battery on the finder. The finder uses a CR2032 Lithium button battery. Slide a new battery into the battery compartment with “+” sign facing out. Turn on the switch on the side of the finder. You should see a red dot on the front screen. There are two thumb screws on the finder to adjust the red dot position on the screen. The one on the bottom is for up/down, and the one on the side is for left/right

Aim the telescope to a distant object and center it in the eyepiece. The look through the red dot finder and adjust two thumb screws to move the red dot pointing to the object. If the red

dot can’t reach the alignment object in laft/right direction, adjust the finder by release two thumb nuts shown in Figure 3.

Mow you have the red dot finder aligned to the main telescope. Use the red dot to find the object and it should also located into your main scope.

4. Specifications:

Product Name	iOptron N114mm OTA (#8734)
Optical Design	Newtonian Reflector
Clear Aperture	114mm
Focal Length	1000mm
Focal Ratio	f/8.8
Resolving Power	1 arcsec
Limiting Visual Magnitude	12.8
Highest Useful Magnification	269
Focuser	1.25" rack-and-pinion
Eyepiece adapter	1.25 inch
Eyepiece 1	25 mm
Eyepiece 2	10mm
Weight (OTA)	4 lbs
Warranty	One year limited