Vixen®

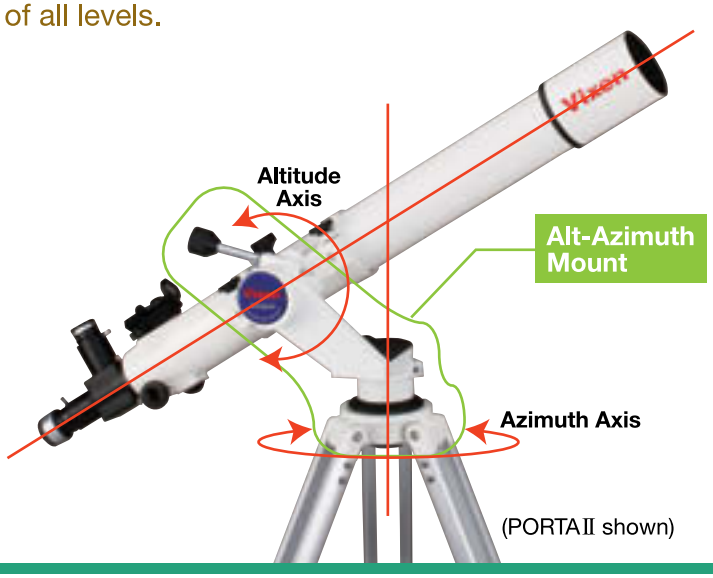
Astronomical Telescopes

Tips on Selecting a Mount for a Telescope

Types of Mounts - There are two types of telescopes mounts; Alt-azimuth and Equatorial.

Alt-azimuth Mount

The PORTA series of alt-azimuth mounts are easy-to-use grab and go mount for astronomers of all levels.



Features simple vertical and horizontal motion controls designed to easily point a telescope to the object you want to view.

MOBILE PORTA — 6

A compact and lightweight alt-azimuth mount for beginners with features found in the popular PORTAII mount. The friction stop motion mechanism allows you to swing the telescope tube by hand in the vertical and horizontal directions freely.

PORTAII Alt-azimuth Mount — 4

An innovative alt-azimuth mount suitable not only for beginners but also for serious astronomers who prefer grab and go observation of the night sky. Its excellent functionality and solid tripod provide a stable and comfortable observing platform.

APZ Alt-azimuth Mount — 8

A simple "Alt-Azimuth" mount that is comprised of parts of the AP equatorial mount. It can be changed into an equatorial mount with additional components.

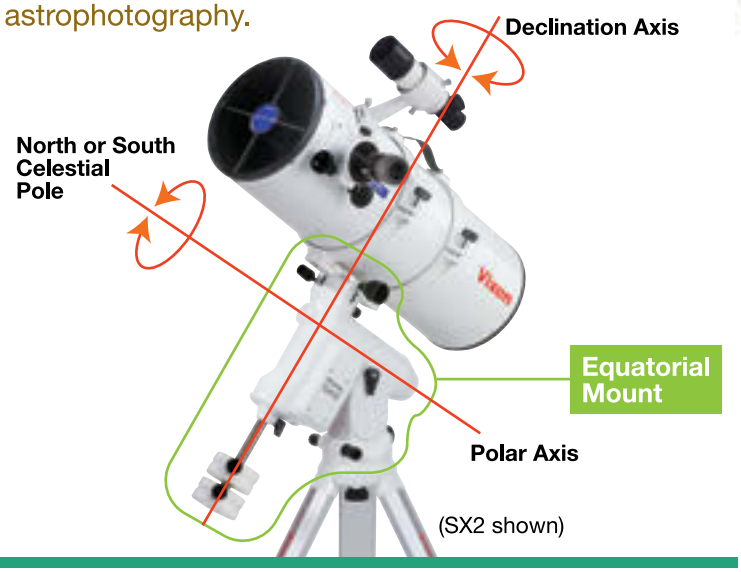
HF2 Alt-azimuth Fork Mount — 11

A solid alt-azimuth fork mount designed to carry large aperture astronomical binoculars such as the BT series of giant binocular telescopes.

◎ Can be assembled and handled easily due to its simple structure.
◎ Lightweight and portable.
○ Can also be used to mount a spotting scope (Field scope) for terrestrial viewing.
△ Unsuitable for a long observation at powers higher than 150x.
× Not designed for long exposure astrophotography.

Equatorial Mount

Best for serious astronomers who desire an equatorial platform of high accuracy for long observing and astrophotography.



Features the ability to track an object in accordance with the diurnal motion (rotation) of the earth.

◎ Allows accurate tracking of an object over an extended period.
◎ Suitable for long observation at high powers or for astrophotography.
◎ Offers a wide selection from a mount with simple two axes drive to a mount with visual Go-To navigation.
△ Familiarity of the movement of the motion of an equatorial mount is important.
△ Generally heavier than alt-azimuth mounts.

AP Equatorial Mount — 12

A standard and versatile equatorial mount providing a variety of optional accessories for adapting to your observing needs. The AP Mount is ideally suited for beginners who want to become familiar with equatorial mounts or observers who want a simple yet sturdy mount.

SX2 Equatorial Mount — 16

A sophisticated tracking mount equipped with the STAR BOOK ONE hand controller. It incorporates precision pulse motors and accurate micro-step motion control which makes the rotation of the pulse motors extremely stable and smooth.

SXD2 Equatorial Mount FPL — 21

The next step up from the SX2 Mount featuring the STAR BOOK TEN controller with navigation star chart. The mount body with solid mechanics is designed for long observing sessions and astrophotography.

SXP2 Equatorial Mount — 15

The summit of the Sphinx series of equatorial mounts with STAR BOOK TEN controller. It boasts of ultimate precision and unrivaled performance in the class of highly portable equatorial mounts.

AXJ Equatorial Mount — 25

The sturdy and precision-made AXJ mount, which is almost rival to Vixen's flagship AXD2, has a lightweight body that is applicable to SXG-HAL130 tripod. Best suited for the demanding astrophotographer as a comfortable and secure imaging platform.

AXD2 Equatorial Mount — 28

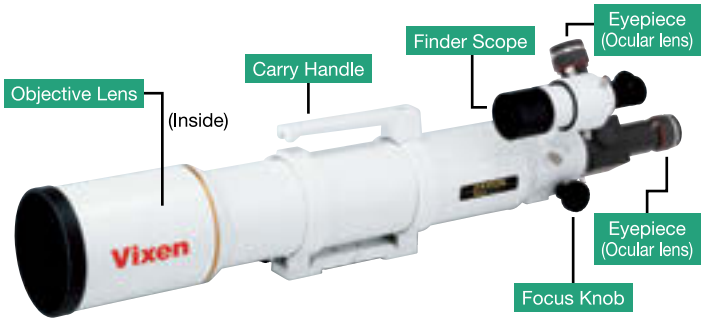
Vixen's flagship equatorial mount that is designed for both superior performance and ease of use. Best for serious astrophotographers who demand a perfect imaging platform.

Tips on Selecting an Optical Tube

Types of Optical Tubes - There are three types of optical tubes; Refractor, Reflector and Catadioptric.

Optical Tubes

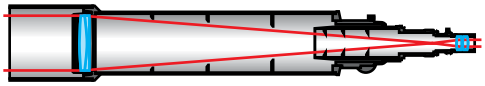
Telescope optical tubes come in many different sizes and shape. Choose one of the 3 distinct designs according to your needs.



Any type of telescope tube; refractor, reflector or Catadioptric, can be used for both visual and astrophotography. Choose an optical tube that suites your usage.

Refractor

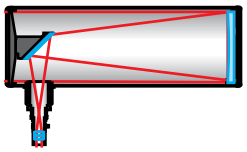
Light is collected through an objective lens.



◎ Constantly stable field of view with excellent contrast, suitable for observation of any celestial objects.
◎ Features easy handling, storage and maintenance.
○ Good thermal stability against outside temperature (Except triplet objective).
△ Relatively expensive among other types of optical tubes with the same aperture size.
△ Heavier than the other types of optical tubes due to multiple lens elements made of glass.

Newtonian Reflector

Light is collected with a concave (parabolic) primary mirror.

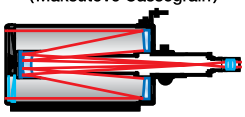


◎ Sharp central images with no chromatic aberration (No false color around images).
○ An optical tube even with large aperture is obtainable at a moderate price.
△ Tube currents are conspicuous and affect images if there is a difference in temperature between the inside of the tube and the environment. Wait an hour or more to cool down the optical tube.
× It is not suitable for observation of the sun.

Catadioptric Reflector

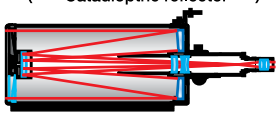
It is an advance combination of refractor and reflector.

■VMC
(Vixen original Maksutove Cassegrain)



◎ Both the primary and secondary mirrors are made of high precision spherical mirrors.
◎ The short and compact optical tube design makes it convenient to transport to the observation site and store.
○ Spherical aberration, chromatic aberration and field curvature are well-corrected.
△ Tube currents can be an issue and affect images if there is a difference in temperature between the inside of the tube and the environment. This design down relatively quickly due to the open tube.
× It is not suitable for observation of the sun.

■VISAC
(Vixen Sixth-order Aspherical Catadioptric reflector)



◎ Spherical aberration, coma aberration, chromatic aberration and field curvature are corrected accurately.
○ The compact tube is convenient for carrying and is handy for observing/imaging.
△ Tube currents can be an issue and affect images if there is a difference in temperature between the inside of the tube and the environment. The optical tube should cool down for an hour before use.
× It is not suitable for observation of the sun.

Telescope Controllers

Motor drives are essential for long time observing session and astrophotography.

STAR BOOK ONE
(Automatic Tracking)

STAR BOOK TEN
(Automatic Go-To Slewing and Tracking)

Outstanding Features of the STAR BOOK TEN

With observatory quality controls, your target object appears on the high definition screen of the STAR BOOK TEN and in your telescope's field of view instantaneously. Zooming in and out of the star chart is interlocked with motor speed. The star chart mode will let you know where you are, and where you want to go, the best companion for your observing sessions.

Slewing to an Object quickly with Command Keys

The STAR BOOK TEN has command keys to allow direct access to lists of celestial objects in the data base. The lists are planets in the solar system and the sun and the moon, well-known deep-sky objects, Messier, objects, objects in the NGC and IC catalogs and bright and named fixed stars from the SAO catalog.

Moon Map

The prominent craters, seas, bays and mountains are shown on the screen of the STAR BOOK TEN according to a waxing or waning of the Moon. You can point your telescope to those terrains on the surface of the Moon automatically.

Designed to easily point a telescope to the object you want to view.

39951

PORTA II Alt-azimuth Mount

If you already have a Vixen optical tube assembly, you may choose the PORTA II mount only. The PORTA II mount accepts an optical tube of less than 160mm in outside diameter.

Specifications	PORTA II Alt-azimuth Mount
Mount Type	: Alt-azimuth mount
Vertical and horizontal slow motions	: Worm and wheel gears with 120-tooth whole-circle movement, complete with slow motion handles
Optical tube setting up	: Dovetail-plate attachment system
Maximum loading weight	: 5 kg / 11 lb
Total weight with tripod	: 5.7 kg / 12.57 lb
Tripod legs	: 2-section aluminum legs, adjustable from 900mm to 1300mm in length (705mm to 1200mm in height)

Lunar Photography with PORTA II

Lunar Craters
(Afocal lunar photography)

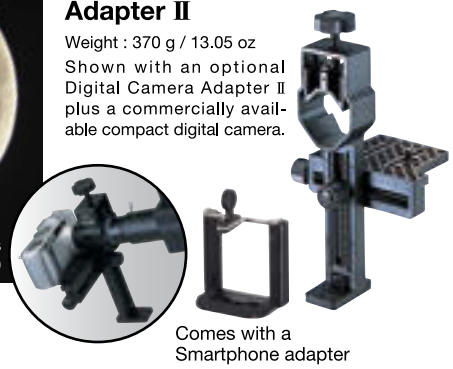
Image taken with PORTA II A80Mf.

39197

Universal Digital Camera Adapter II

Weight : 370 g / 13.05 oz

Shown with an optional Digital Camera Adapter II plus a commercially available compact digital camera.



Comes with a Smartphone adapter

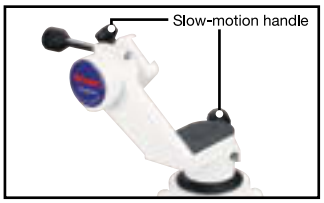
Most amateur astronomers who desire a stable and handy grab-and-go alt-azimuth mount will appreciate the great features of the PORTA II.

Dovetail-plate Attachment

With Vixen's renowned dovetail-plate system, many optical tubes, up to 160mm in outer diameter, can easily be swapped on and off the mount.

Fixing with a Single Bolt

Attaching or detaching the PORTA II mount to/from its tripod is simple with a single fixing bolt. The fixing bolt has a large gripping knob to tighten securely. It is a convenient feature for storage in a limited space.



Slow Motion Control Handles

The whole-circle slow motion movement of the PORTA II provides smooth telescope operation at every pointing angle. Handle positions of both vertical and horizontal slow motion controls can be altered in 45-degree increments. This allows a comfortable posture while using the slow motion handles for various size optical tubes.

Friction Stop Motion

Optical tube can be moved freely by hand and the friction holds its position anywhere you stop it. It allows you to manually point the telescope at target celestial objects you wish to view.

Accessory Tray

An accessory tray holds small pieces such as a camera or eyepieces. Very useful when observing at night.

Compartment for Tools

Slow motion handle positions and the amount of friction on the axes are adjusted with tools located in the compartment under the rubber covering. You will always have your tools available.

Optional Accessories

35655

Tube & Tripod Bag 100

- Carries and stores an optical tube less than 950mm (37.4 inches) in length and 125mm (4.9 inches) in diameter or a Vixen Aluminum tripod.
- Available for A80M, A80Mf, A70Lf, SD103S or AX103S optical tube.

39969

Carrying Case for PORTA II Mount with Tripod

- Stores a PORTA II mount or MINI PORTA mount and tripod along with slow motion handles and accessory tray.

Weight : 480 g / 16.9 oz

8800

Flexible Handle 300mm

- A long flexible slow motion control handle enables you to operate the PORTA II comfortably.
- Recommended for children who may have a difficulty reaching the standard handles.

3942

Camera Tripod Adapter for PORTA

- Used to attach old PORTA or PORTA II mount head onto a camera tripod with 1/4-inch screw.

35659

Scope Carrier

Available for a VMC95L, VMC110L, ED80Sf, VSD100F3.8, SD81SII optical tube or an APP-TL130 tripod.

- Useful for backpacking
- Made of waterproof material with soft texture

Size : 230mm x 140mm x 765mm
Weight : 500 g / 17.64 oz

A great combination with the lightweight and highly compact 62mm refractor optical tube.
It allows you to start observing session quickly at your backyard.

PORTA II Mount Package — PORTA II Mount with A62SS OTA, Tripod and Eyepieces

26157 NEW

PORTA II A62SS

Contents

Optical tube	D=62mm F=520mm (F8.4) achromatic objective, multicoated
Finder scope	XY red dot finder II
Eyepiece	NPL10mm (52X), (104X with Barlow lens)
Mount	PORTA II
Tripod	2-section aluminum legs, adjustable from 705mm to 1200mm in height
Accessories	Prism diagonal, 2X Barlow lens, Carry case (for optical tube), Round accessory tray

Specifications

Optical tube size	75mm Dia. x 370mm L (Retractable to 305mm long)
Tube weight	1.8 kg (net 1.5 kg)
Adapter thread	42mm for T-ring, 37mm for filter
Visual back	31.7mm
Tripod legs	Adjustable from 900mm to 1300mm in length
Total weight	7.5 kg / 16.54 lb

The A80Mf is a standard refractor telescope designed for observation of bright planets, nebulae , and star clusters.
With the supplied erect-image diagonal, this telescope can be used for terrestrial viewing in the daytime.

PORTA II Mount Package — PORTA II Mount with A80Mf OTA, Tripod and Eyepieces

39952

PORTA II A80Mf

Contents

Optical tube	D=80mm F=910mm (f11.4) achromatic refractor, multicoated
Finder scope	6x30mm, Field of view 7 degrees
Eyepiece	PL20mm (46x) and PL6.3mm (144x)
Mount	PORTA II
Tripod	2-section aluminum legs, adjustable from 705mm to 1200mm in height
Accessories	Round accessory tray, Erect-image diagonal for terrestrial viewing

Specifications

Optical tube size	90mm Dia. x 860mm L
Tube weight	3.3 kg (net 2.5 kg)
Adapter thread	43mm and 42mm for T-ring
Visual back	31.7mm push-fit
Tripod legs	Adjustable from 900mm to 1300mm in length
Total weight	9.0 kg / 19.8 lb

The ED80Sf is a premium refractor with"SD"optical glass which delivers sharp and clear images. The extra-low dispersion ED glass produces the images free of chromatic aberration.
Complete with aluminum case for the ED80Sf optical tube.

PORTA II Mount Package — PORTA II Mount with ED80Sf OTA, Tripod and Eyepieces

39956

PORTA II ED80Sf

Contents

Optical tube	D=80mm F=600mm achromatic (f7.5) SD apochromatic refractor, multicoated
Finder scope	9x50mm, Field of view 4.8 degrees
Eyepiece	NPL20mm (30x) and NPL6mm (100x)
Mount	PORTA II
Tripod	2-section aluminum legs, adjustable from 705mm to 1200mm in height
Accessories	Round accessory tray, Flip mirror diagonal

Specifications

Optical tube size	100mm Dia. x 570mm L
Tube weight	4.8 kg (net 3.4 kg)
Adapter thread	42mm for T-ring
Visual back	50.8mm and 31.7mm (with flip mirror) push-fit
Tripod legs	Adjustable from 900 mm to 1300mm in length
Total weight	10.5 kg / 23.15 lb

The R130Sf Newtonian reflector, with its large 130mm parabolic mirror gathers more light than most scopes in this range.
Great for viewing deep sky objects.

PORTA II Mount Package — PORTA II Mount with R130Sf OTA, Tripod and Eyepieces

39954

PORTA II R130Sf

Contents

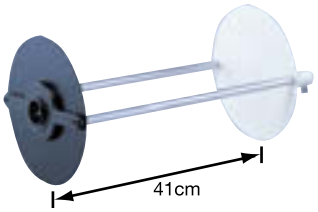
Optical tube	D=130mm F=650mm (f5) Newtonian reflector, multicoated
Finder scope	6x30mm, Field of view 7 degrees
Eyepiece	PL20mm (33x) and PL6.3mm (103x)
Mount	PORTA II
Tripod	2-section aluminum legs, adjustable from 705mm to 1200mm in height
Accessories	Round accessory tray

Specifications

Optical tube size	160mm Dia. x 575mm L
Tube weight	5.3 kg (net 4.0 kg)
Adapter thread	42mm for T-ring
Visual back	31.7mm push-fit
Tripod legs	Adjustable from 900mm to 1300mm in length
Total weight	11.0 kg / 24.2 lb

F series Introducing the Fun of Astronomy
Vixen's f series telescopes are the result of our desire to make astronomical gear fun and easy to operate for beginners and experienced hobbyists.

Solar Observation with PORTA II



37223

Sun Projection Screen Set A

- For use exclusively with A80Mf refractor
- Consisting of 24cm dia. Sun projection white screen and sunshade, 45mm DC Ring and EA36.4mm to 31.7mm Adapter

Weight : 914 g / 32.03 oz

Combining a pair of Binoculars with PORTA II

38011

PORTA Multi-Plate

- Holds a heavy large binocular or a spotting scope.
- Not available for MINI PORTA and MOBILE PORTA mounts.

Weight : 520 g / 18.34 oz

ASCOT 10X50 Binocular

1835
Tripod Adapter (Bino.holder) H

39951
PORTA II Alt-azimuth Mount

*The specifications are subject to change without notice.

Enjoy the beauty of the night sky with a MOBILE PORTA! Highly compact and stable mount for grab and go observing.

NEW

The MOBILE PORTA includes all the functions of the award wining PORTA II Mount and is more portable.

The telescope can swing freely in both vertical and horizontal directions and remain in place through simple friction.

The functional "multi-arm" single fork arm folds in to make for easy transport and storage.

Set up your telescope in minutes and start your observing session.

39901

MOBILE PORTA Mount with Tripod

Specifications		MOBILE PORTA
Mount Type	:	Alt-azimuth mount
Vertical and horizontal slow motions	:	Worm and wheel gears with 90-tooth whole-circle movement, complete with slow motion control handles
Maximum loading weight	:	3.5 kg / 7.7 lb
Tripod legs	:	2-section aluminum legs, adjustable from 720mm to 1,290mm in length (640mm to 1.140mm in height)
Total weight with tripod	:	2.4 kg / 5.28 lb

Friction Stop Motion

The friction stop allows you to move the optical tube by hand so that you can quickly point it at your target object and stop as you release.

Accessory Tray

An accessory tray holds small pieces such as eyepieces. Very useful when observing at night.

Movable Multi-Arm

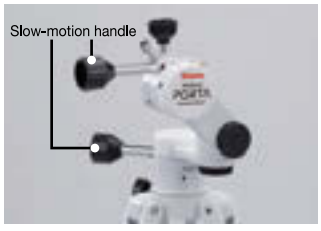
The direction of the multi-arm can be rotated in 15 degree intervals so that you can avoid interfering with the slow motion control handle or the optical tube. In addition, the vertical slow motion control handle can be moved outward, in the horizontal direction, to avoid interference with the horizontal slow motion control handle.

Foldable Mount Head

The mount head of the MOBILE PORTA can be folded for convenient storage or transport. The mount head is detachable from the tripod. The tube and Tripod Bag 100, sold separately, is the perfect bag for storage and transport of your MOBILE PORTA.

Dovetail-plate Attachment

With Vixen's renowned dovetail-plate system, different optical tubes can easily be attached. The mount holds optical tubes weighing up to 3.5 kg (under 8 lbs). 3.5 kg in weight, is available with the mount.



Slow Motion Control Handles

The slow motion control handles of the MOBILE PORTA allow for operating the MOBILE PORTA in the whole-circle of the vertical and horizontal movements. It is helpful as used together with the friction stop mechanism when observing at high magnification. The position of the slow motion control handles can be changed if needed.

35655

Tube & Tripod Bag 100

- Stores a MOBILE PORTA mount with tripod.

NEW

Carry case for OTA.

A perfect combination with the lightweight and highly compact 62mm refractor optical tube. It is convenient in observing at a remote site.

MOBILE PORTA Mount Package	A62SS Optical tube assembly, MOBILE PORTA Mount with tripod, Eyepiece & Barlow Lens

39907

MOBILE PORTA-A62SS

Contents

Optical tube	D=62mm F=520mm (F8.4) achromatic objective, multicoated
Finder scope	XY red dot finder II
Eyepiece	NPL10mm (52X), (104X with Barlow lens)
Mount	MOBILE PORTA
Tripod	2-section aluminum legs, adjustable from 640mm to 1140mm in height
Accessories	Prism diagonal, 2X Barlow lens, carry case (for optical tube), accessory tray

Specifications

Optical tube size	75mm Dia. x 370mm L (Retractable to 305mm long)
Tube weight	1.8 kg (net 1.5 kg)
Adapter thread	42mm for T-ring, 37mm for filter
Visual back	31.7mm
Tripod legs	Adjustable from 720mm to 1290mm in length
Total weight	4.2 kg / 9.24 lb

NEW

The A70Lf refractor is a basic all-around telescope that gives beginners intriguing views of lunar craters and Saturn's rings.

MOBILE PORTA Mount Package	A70Lf Optical tube assembly, MOBILE PORTA Mount with tripod and Eyepiece

39905

MOBILE PORTA-A70Lf

Contents

Optical tube	D=70mm F=900mm (F12.9) achromatic objective, multicoated
Finder scope	6X24mm, field of view 5 degrees
Eyepiece	PL20mm (45X), PL6.3mm (143X)
Mount	MOBILE PORTA
Tripod	2-section aluminum legs, adjustable from 640mm to 1140mm in height
Accessories	Erect-image prism diagonal, accessory tray

Specifications

Optical tube size	76mm Dia. x 860mm L
Tube weight	2.5 kg (net 1.9 kg)
Adapter thread	42mm for T-ring
Visual back	31.7mm
Tripod legs	Adjustable from 720mm to 1290mm in length
Total weight	4.9 kg / 10.78 lb

NEW

The small and very compact 95mm aperture optical tube fits the MOBILE PORTA mount nicely. It is a great starter telescope for beginners.

MOBILE PORTA Mount Package	VMC95L Optical tube assembly, MOBILE PORTA Mount with tripod, Eyepiece & Barlow Lens

39906

MOBILE PORTA-VMC95L

Contents

Optical tube	D=95mm F=1050mm (F11.1) catadioptric reflector, multicoated
Finder scope	XY red dot finder II
Eyepiece	NPL20mm (53X), (105X with Barlow lens)
Mount	MOBILE PORTA
Tripod	2-section aluminum legs, adjustable from 640mm to 1140mm in height
Accessories	2X Barlow lens, accessory tray

Specifications

Optical tube size	107mm Dia. x 360mm L
Tube weight	2.0 kg (net 1.8 kg)
Adapter thread	42mm for T-ring
Visual back	31.7mm
Tripod legs	Adjustable from 720mm to 1290mm in length
Total weight	4.4 kg / 9.68 lb

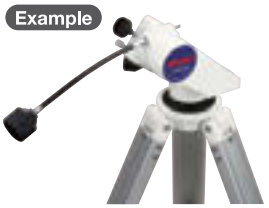
Optional Accessories

8800

Flexible Handle 300mm

- A long flexible slow motion control handle enables you to operate the MOBILE PORTA comfortably.
- Recommended for children who may have difficulty reaching the standard handles.

Example



35512

POLARIE CRADLE

- Used to install a POLARIE star tracker on the MOBILE PORTA. It is compatible with a PORTA II also.

Example

*The specifications are subject to change without notice.

A simple easy to use Alt-Azimuth Mount derived from the transformation of the AP Mount.

25841

APZ Mount

Specifications	APZ Mount
Altitude slow motion	Worm and wheel gears with 144-tooth whole circle micro movement (by hand), with slow motion control knob
Azimuth slow motion	Worm and wheel gears with 144-tooth whole circle micro movement (by hand), with slow motion control knob
Worm wheel gears	58.4mm in diameter, made of aluminum alloy
Worm shaft gears	9.8mm in diameter, made of brass
Number of bearings	6 pieces
Loading weight	About 8 kg (6 kg if used with the DEC motor module)
Counterweight	AZ counterweight 1.65 kg
Size	178mm x 258mm x 104mm
Weight	3.8 kg / 8.36 lb (incl. AZ counterweight)

With the friction stop mechanism of the APZ mount, a telescope can be quickly moved by hand to your target object. The APZ mount can easily be changed into an equatorial mount with the exchange of components.

Optional Accessory

25191

APP-TL130 Tripod

- 3-section aluminum legs with quick-release leg clamps
- Adjustable leg length: 570mm to 1296mm long
- Adjustable tripod height: 526mm to 1159mm high

Weight: 3.0 kg / 6.6 lb

NEW

Carry case for OTA.

The A62SS is equipped with a Crayford design focuser. Easily transported with its case.

APZ Mount Package — **A62SS Optical tube assembly, APZ Mount, APP-TL130 Tripod and Eyepieces**

26156

APZ-A62SS

Contents

Optical tube	D=62mm F=520mm (F8.4) achromatic objective, multicoated
Finder scope	XY red dot finder II
Eyepiece	SLV15mm (35X), SLV4mm (130X)
Mount	APZ Mount
Tripod	3-section aluminum legs, adjustable from 526mm to 1159mm in height
Accessories	Prism diagonal, counterweight 1.65 kg, parts case, carry case

Specifications

Optical tube size	75mm Dia. x 370mm L (Retractable to 305mm long)
Tube weight	1.8 kg (net 1.5 kg)
Adapter thread	42mm for T-ring, 37mm for filter
Visual back	31.7mm
Tripod legs	Adjustable from 570mm to 1296mm in length
Total weight	8.6 kg / 18.92 lb

Combining a simple to use refractor and the versatile APZ mount, this package is excellent for the beginner astronomer.

APZ Mount Package — **A80Mf Optical tube assembly, APZ Mount, APP-TL130 Tripod and Eyepieces**

25843

APZ-A80Mf

Contents

Optical tube	D=80mm F=910mm (F11.4) achromatic objective, multicoated
Finder scope	6X30mm, field of view 7 degrees
Eyepiece	PL20mm (46X), PL6.3mm (144X)
Mount	APZ Mount
Tripod	3-section aluminum legs, adjustable from 526mm to 1159mm in height
Accessories	Erect-image prism diagonal, counterweight 1.65 kg

Specifications

Optical tube size	90mm Dia. x 860mm L
Tube weight	3.3 kg (net 2.5 kg)
Adapter thread	43mm and 42mm for T-ring
Visual back	31.7mm
Tripod legs	Adjustable from 570mm to 1296mm in length
Total weight	10.1 kg / 22.2 lb

With its large 130mm effective aperture, the R130Sf Newtonian telescope is suitable for observing nebulae and star clusters.

APZ Mount Package — **R130Sf Optical tube assembly, APZ Mount, APP-TL130 Tripod and Eyepieces**

25844

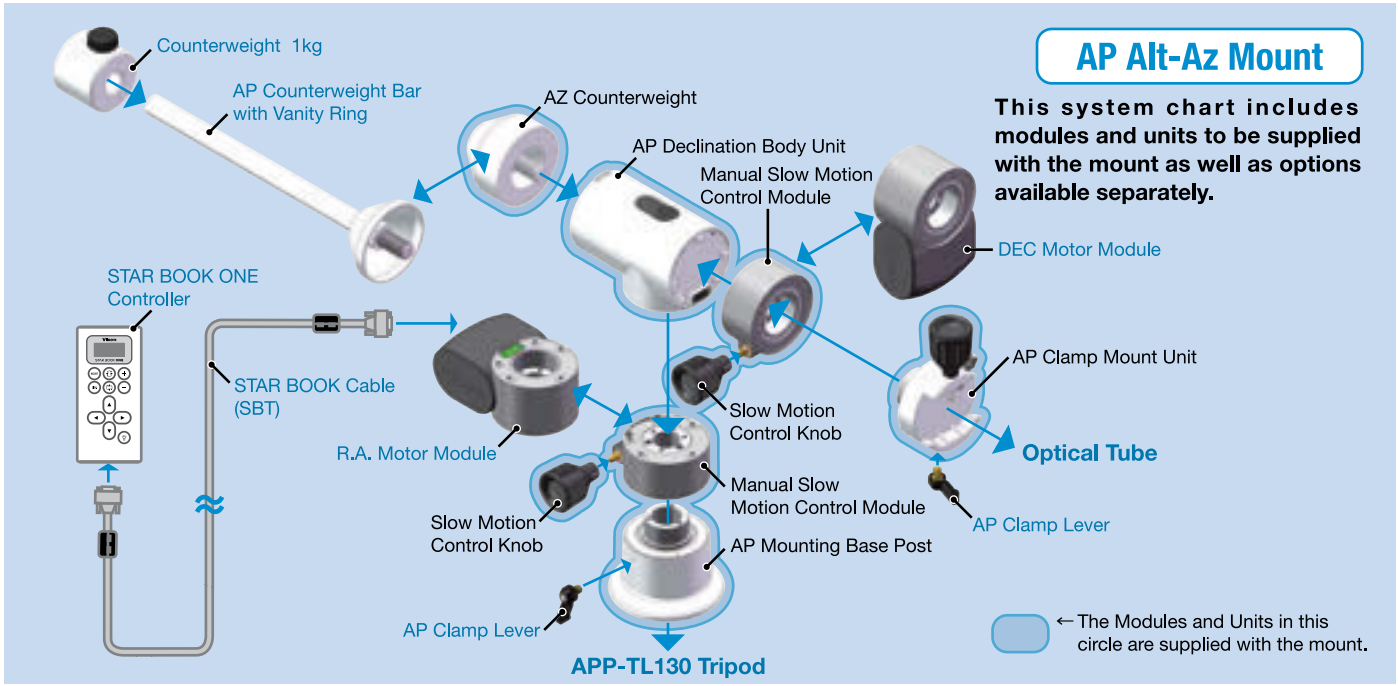
APZ-R130Sf

Contents

Optical tube	:	D=130mm F=650mm (F5) Newtonian reflector, parabolic objective mirror, multicoated
Finder scope	:	6X30mm, field of view 7 degrees
Eyepiece	:	PL20mm (33X), PL6.3mm (103X)
Mount	:	APZ Mount
Tripod	:	3-section aluminum legs, adjustable from 526mm to 1159mm in height
Accessories	:	Counterweight 1.65 kg

Specifications

Optical tube size	:	160mm Dia. x 575mm L
Tube weight	:	5.3 kg (net 4.0 kg)
Adapter thread	:	42mm for T-ring
Visual back	:	31.7mm
Tripod legs	:	Adjustable from 570mm to 1296mm in length
Total weight	:	12.1 kg / 26.62 lb



SPACE EYE

The SPACE EYE 50M and 70M are simple to use and easy to carry. To set up, simply spread the tripod legs apart, place the telescope tube on the mount and tighten the thumbscrew.

Includes everything you need for fun observing the Moon.

5926

SPACE EYE 50M

A complete backyard package for exploring space.

5927

SPACE EYE 70M

Specifications	SPACE EYE 50M	SPACE EYE 70M
Optical tube :	D=50mm F=600mm achromatic refractor	D=70mm F=700mm achromatic refractor
Finder scope :	5x20mm with compass	5x20mm
Eyepiece :	PL20mm (30x) and PL10mm (60x) Use the mirror diagonal together	PL20mm (35x) and PL10mm (70x) Use the mirror diagonal together
Mount :	Alt-azimuth with slow motion control	Alt-azimuth with slow motion control
Tripod :	Legs adjustable from 70cm to 127cm in length	Legs adjustable from 70cm to 127cm in length
Accessories :	Accessory tray, Mirror diagonal	Accessory tray, Mirror diagonal
Total weight :	2.8 kg / 6.17 lb	3.1 kg / 6.8 lb

NATURE EYE

The first telescope for kids.

Table-top"Sky and Land" telescope that is simple to use. Great gift for science-minded children.

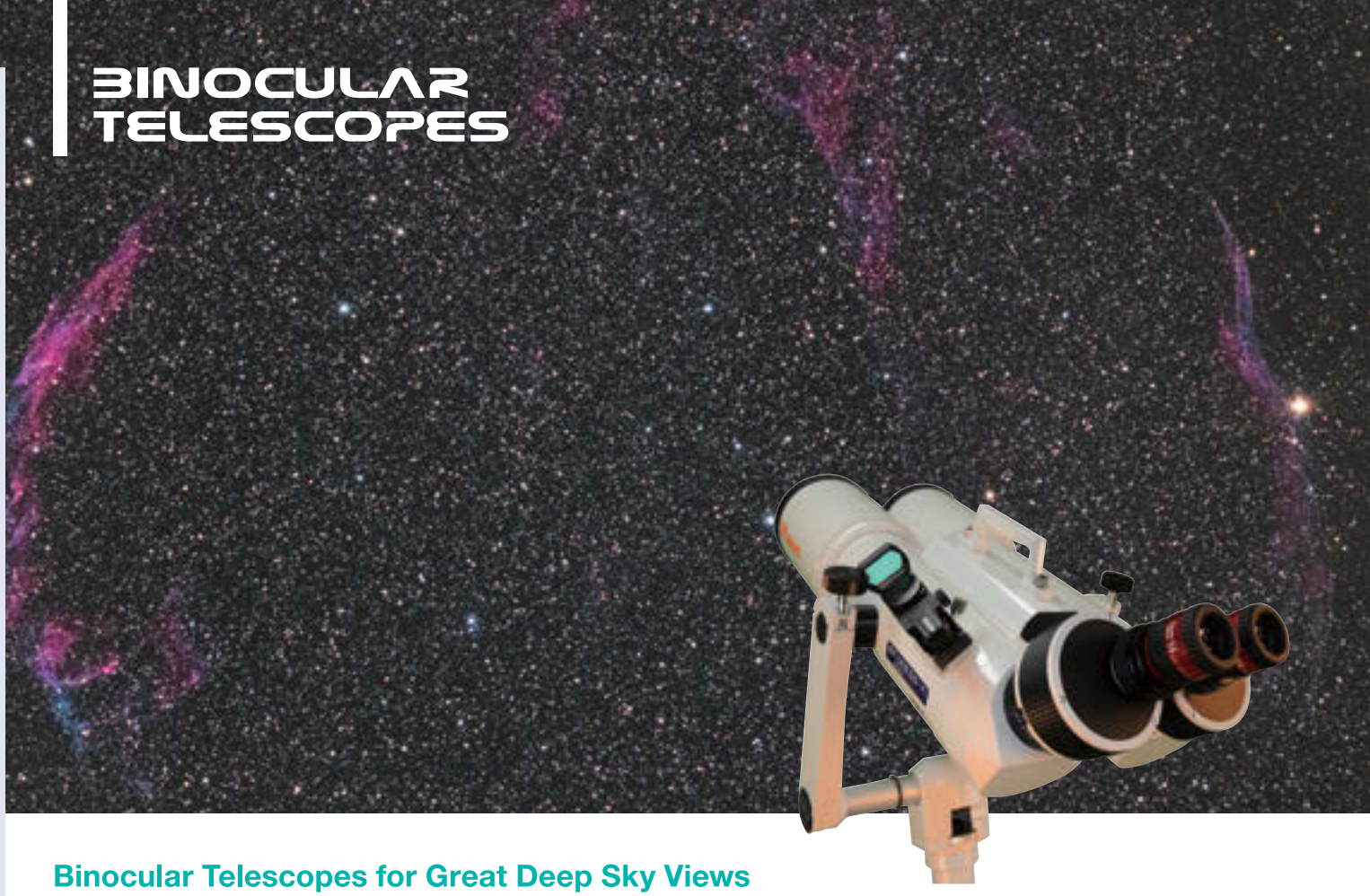
5928

NATURE EYE

Specifications	NATURE EYE
Telescope aperture :	50mm
Focal length :	360mm
Magnification :	36x, 72x with 2x Barlow lens Use the mirror diagonal together
Tripod :	Tabletop, Legs 43cm long
Accessories :	5x Finder scope, H10 Eyepiece, 2x Barlow lens
Total weight :	1.26 kg / 2.8 lb

*The specifications are subject to change without notice.

BINOCULAR TELESCOPES



Binocular Telescopes for Great Deep Sky Views

On a dark clear night at the beach or on the mountains, you may have stared with wonder at the vast number of stars that shine above. There is nothing like viewing celestial objects through a pair of large aperture binoculars. Objects take on an effect like a 3-D and the view of well-known nebulae, globular clusters and open star cluster are magnificent. With the ability to interchangeable eyepieces and with erect images, you could view everything from Messier objects in the deep-sky to terrestrial landscapes. It is recommended to use the HF2 altazimuth fork mount.

Binocular Telescopes

14306

BT126SS-A

Size : 630mm x 360mm x 200mm
Interpupillary distance : 58mm to 102mm
Visual Back : 31.7mm push-fit
Weight : 10.5 kg / 23.1 lb
Note : Eyepieces are sold separately.

BT126SS-A

The BT126SS-A Binocular Telescope brings to view an overwhelming number of stars through its 126mm objective lens that gather 324x more of light than the naked eye. It will reveal an exciting world that is total different from what you have been with naked eyes.

89223

Aluminum Case for BT126SS-A

- With storage space for eyepieces and a finder scope

Size : 820mm x 400mm x 310mm
Weight : 8.2 kg / 18.0 lb

Best Accessories for "Star Hopping"

26502

XY Red Dot Finder II

- Rigid and durable Aluminum body
- 1X aiming device
- Adjustable dim red dot
- 1/4" screw hole
- CR2032 battery

Weight : 185 g / 6.53 oz

37125

Eyepieces SSW14mm

- Push-fit Size : 31.7mm
- Apparent FOV : 83 degrees
- Eye relief : 13mm

Weight : 210 g / 7.41 oz

Enjoy spectacular "Star Hopping" through the Binocular Telescope. A wonderful companion for touring the night sky.

BT126SS-A package

Contents BT126SS-A Binocular Telescope, 2x Eyepieces, HF2 Fork mount, SXG-HAL130 Tripod

(38068)

HF2-BT126SS-A

Specifications	HF2-BT126SS-A
Objective lens	D=126mm F=625mm Achromatic, multicoated
Limiting magnitude	12.3
Light gathering power	324x unaided eye
Eyepiece	SLV20mm x 2 (31X)
Mount	HF2 Alt-azimuth fork
Tripod	SXG-HAL130 2-section aluminum legs adjustable from 807mm to 1229mm in length
Total weight	19.4 kg / 42.8 lb

(14304)

BT81S-A

Size : 480mm x 190mm x 155mm
Interpupillary distance : 58mm to 102mm
Visual Back : 31.7mm push-fit
Weight : 4.1 kg / 9.0 lb
Note : Eyepieces are sold separately.

HF2-BT81S-A

The BT81S-A binocular telescope is a long seller of astronomical observation binoculars which features a pair of 81mm objective lenses that can capture stars as faint as 11.3 magnitude. The interchangeable eyepieces are set at an angle of 45 degrees for comfortable overhead viewing.

BT81S-A Package

Contents BT81S-A Binocular Telescope, 2 x Eyepieces, HF2 Fork mount, Swing bracket, SXG-HAL130 Tripod

(38066)

HF2-BT81S-A

Specifications	HF2-BT81S-A
Objective lens	D=81mm F=480mm Achromatic, single coating with MgFl
Limiting magnitude	11.3
Light gathering power	134x unaided eye
Eyepiece*	SLV20mm x 2 (24x)
Mount	HF2 Alt-azimuth fork
Tripod	SXG-HAL130 2-section aluminum legs adjustable from 807mm to 1229mm in length
Total weight	14.1 kg / 31.0 lb

*Both the LV Zoom and NPL eyepieces are not usable on the BT Binocular Telescopes.
**Be sure to use Vixen eyepieces with a focal length longer than 10mm (medium to low magnification) to prevent from alignment errors at high magnification.
***An optional XY red dot finder or 7x50mm finder with finder bracket II is available for the BT Binocular Telescopes.

Optional Accessories

(38062)

HF2 Alt-azimuth Fork Mount

Attachable to SXG-HAL130, APP-TL130 and SXG-AL130 tripods sold separately.

Mount : Alt-azimuth fork mount with friction control
Maximum loading weight : 13 kg / 28.6 lb
Weight : 3.4 kg / 7.5 lb

(25161)

SXG-HAL130 Aluminum Tripod

• Adjustable from 730mm to 1156mm in height
Weight : 5.5 kg / 12.1 lb

(3798)

Swing Bracket (Binocular Cradle)

• Span between trunnions: 251mm
• With UNC 1/4 inch screw with knob
Weight : 1 kg / 2.2 lb

*The specifications are subject to change without notice.

AP

Advanced Polaris Equatorial Mount

Easy to Use Versatile Equatorial Mount


AP Mount


AP-SM Mount

Easy to use Versatile Mount. Customize to fit Your Observing Style.

The Advanced Polaris (abbreviated as AP) Mount is ideally suited for beginners who want to become familiar with equatorial mounts or experienced observers who want a simple grab and go mount. The AP mount securely supports your telescope optical tube for comfortable observing. With its friction control mechanism, the mount can be quickly moved to your target object. A wide selection of optional accessories are available for the AP mount to meet your observation needs.

The AP mount consists of several modules or units that are joined together to make a highly portable German equatorial mount of excellent quality. With the available R.A motor module, complete with the STAR BOOK ONE controller, it is easy to accurately track celestial objects.

There are two basic versions of the AP mount from which to choose. The basic AP mount comes standard with both the R.A and DEC manual slow motion control modules for manual operation. The AP-SM mount employs the R.A motor module for celestial tracking in place of the R.A manual slow motion control module and it comes standard with STAR BOOK ONE. The upgrading will be completed with an addition of the optionally available DEC motor module.

STAR BOOK ONE

(For details refer to page 17.)

Note: The STAR BOOK ONE recognizes the Vixen Mount to which it is attached. Only functions or commands that are applicable to that mount will be displayed on the screen.

39972 AP Mount

39973 AP-SM Mount

Specifications	AP Mount	AP-SM Mount
R.A. slow motion	Worm and wheel gears with 144-tooth whole circle micro movement	
DEC slow motion	Worm and wheel gears with 144-tooth whole circle micro movement	
R.A. axis	59mm in diameter, A5056 Aluminum alloy	
DEC axis	59mm in diameter, A5056 Aluminum alloy	
Number of bearings	7 pieces (Ball bearings)	7 pieces (Ball bearings)
Counterweight bar	20mm in diameter, steel	20mm in diameter, steel
Counterweight	1.0 kg x 1	1.0 kg x 1
Polar axis scope	Optional	Optional
Altitude adjustment	Between 0 degree and 65 degrees with a tangent screw bolts about 1.9 degrees per rotation	
Azimuth adjustment	Twin screw knobs about 1.4 degrees per rotation	
Motor drive	Optional	Pulse motor (R.A)
Tracking / Slewing	Manual operation	STAR BOOK ONE, 60x slewing speed at maximum
External Power Supply	Unnecessary	USB Micro-B
Loading weight	6 kg / 13.2 lb (Maximum torque load: 150 kg-cm)	
Size	263mm x 302mm x 96mm	274mm x 310mm x 96mm
Weight	3.6 kg / 7.9 lb (without counterweight)	3.9 kg / 8.6 lb (without counterweight)

Optional Accessories

25161 SXG-HAL130 Aluminum Tripod

Adjustable tripod height :
730mm to 1156mm high
Weight : 5.5 kg / 12.1 lb.

25191 APP-TL130 Tripod

Adjustable tripod height :
526mm to 1159mm high
Weight : 3.0 kg / 6.6 lb.

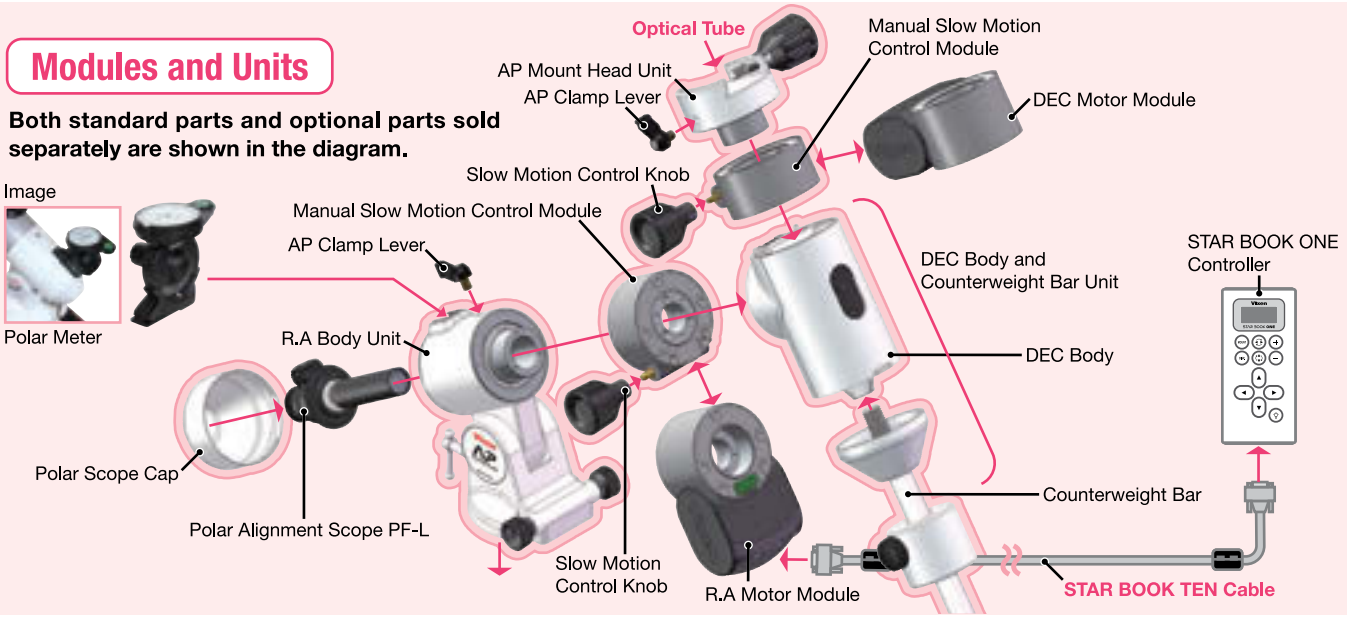
35658 AP Mount Case

- Available for storing AP, AP-SM or APZ mount

Size : 275mm x 260mm x 130mm
Weight : 700 g / 24.69 oz

Modules and Units

Both standard parts and optional parts sold separately are shown in the diagram.



*The specifications are subject to change without notice.

A great combination with the lightweight and highly compact 62mm refractor optical tube. It allows you to start observing quickly at your backyard and a remote site.

NEW

AP Mount Package — AP or AP-SM Mount with A62SS OTA, APP-TL130 Tripod and Eyepieces

26154 AP-A62SS

26155 AP-A62SS-SM

Contents

Optical tube	D=62mm F=520mm (F8.4) achromatic objective, multicoated
Finder scope	XY red dot finder II
Eyepiece	SLV15mm (35X), SLV4mm (130X)
Mount	AP Mount with manual RA and DEC slow motion control units or AP-SM Mount with RA motor module and STAR BOOK ONE controller
Tripod	APP-TL130 3-section aluminum legs, adjustable from 526mm to 1159mm in height
Accessories	Prism diagonal, 1.0kg counterweight, parts case, carry case

Specifications

Optical tube size	75mm Dia. x 370mm L (Retractable to 305mm long)
Tube weight	1.8 kg (net 1.5 kg)
Adapter thread	42mm for T-ring, 37mm for filter
Visual back	31.7mm
Tripod legs	Adjustable from 570mm to 1296mm in length
Total weight	9.4 kg / 20.68 lb (AP package), 9.8 kg / 21.56 lb (AP-SM package)

An excellent package for the new astronomer.

AP Mount Package — AP or AP-SM Mount with A80Mf OTA, APP-TL130 Tripod and Eyepieces

39976 AP-A80Mf

39977 AP-A80Mf-SM

Contents

Optical tube	D=80mm F=910mm (f11.4) achromatic refractor, multicoated
Finder scope	6x30mm, Field of view 7 degrees
Eyepiece	PL20mm (46x) and PL6.3mm (144x)
Mount	AP Mount with manual RA and DEC slow motion control modules or AP-SM Mount with RA motor module and STAR BOOK ONE controller
Tripod	APP-TL130 3-section aluminum legs with quick-release leg clamps
Accessories	Erect-image diagonal, Counterweight 1.0 kg, Parts case

Specifications

Optical tube size	90mm Dia. x 860mm L
Tube weight	3.3 kg (net 2.5 kg)
Adapter thread	43mm and 42mm for T-ring
Visual back	31.7mm
Tripod legs	Adjustable from 570mm to 1296mm in length, 3.0 kg
Total weight	10.9 kg / 24.0 lb (AP package) / 11.3 kg / 24.9 lb (AP-SM package)

Japanese made A81M for incredible night sky views.

AP Mount Package — AP or AP-SM Mount with A81M OTA, APP-TL130 Tripod and Eyepieces

39991 AP-A81M

39992 AP-A81M-SM

Contents

Optical tube	D=81mm F=910mm (f11.2) achromatic refractor, multicoated
Finder scope	XY Red Dot Finder II
Eyepiece	NPL20mm (46x) and NPL6mm (152x)
Mount	AP Mount with manual RA and DEC slow motion control modules or AP-SM Mount with RA motor module and STAR BOOK ONE controller
Tripod	APP-TL130 3-section aluminum legs with quick-release leg clamps
Accessories	Flip mirror diagonal, Counterweights 1.0 kg and 1.9 kg, Parts case

Specifications

Optical tube size	90mm Dia. x 850mm L
Tube weight	3.5 kg (net 2.5 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with flip mirror) push-fit
Tripod legs	Adjustable from 570mm to 1296mm in length, 3.0 kg
Total weight	13.0 kg / 28.6 lb (AP package) / 13.4 kg / 29.5 lb (AP-SM package)

Easy to transport and great views with the SD Glass Refractor.

AP Mount Package — AP or AP-SM Mount with ED80Sf OTA, APP-TL130 Tripod and Eyepieces

39981 AP-ED80Sf

39982 AP-ED80Sf-SM

Contents

Optical tube	D=80mm F=600mm (f7.5) SD apochromatic refractor, multicoated
Finder scope	9x50mm, field of view 4.8 degrees
Eyepiece	NPL20mm (30x) and NPL6mm (100x)
Mount	AP Mount with manual RA and DEC slow motion control modules or AP-SM Mount with RA motor module and STAR BOOK ONE controller
Tripod	APP-TL130 3-section aluminum legs with quick-release leg clamps
Accessories	Flip mirror diagonal, Counterweights 1.0 kg and 1.9 kg, Parts case

Specifications

Optical tube size	100mm Dia. x 570mm L
Tube weight	4.8 kg (net 3.4 kg)
Adapter thread	42mm for T-ring
Visual back	50.8mm, 31.7mm (with Flip mirror) push-fit
Tripod legs	Adjustable from 570mm to 1296mm in length, 3.0 kg
Total weight	14.3 kg / 31.5 lb (AP package) / 14.7 kg / 32.3 lb (AP-SM package)

NEW

If you are looking for a high quality small apochromatic refractor with color-free SD glass, this is it!

AP Mount Package — AP or AP-SM Mount with SD81S OTA, APP-TL130 Tripod and Eyepieces

26162 AP-SD81S

26163 AP-SD81S-SM

Contents

Optical tube	D=81mm F=625mm (F7.7) apochromatic objective, multicoated
Finder scope	XY red dot finder II
Eyepiece	SLV20mm (31X), SLV5mm (125X)
Mount	AP Mount with manual RA and DEC slow motion control units or AP-SM Mount with RA motor module and STAR BOOK ONE controller
Tripod	APP-TL130 3-section aluminum legs, adjustable from 526mm to 1159mm in height
Accessories	Flip mirror, Counterweights 1.0kg and 1.9kg, Parts case

Specifications

Optical tube size	90mm Dia. x 585mm L
Tube weight	3.6 kg (net 2.3 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm 31.7mm (with flip mirror)
Tripod legs	Adjustable from 570mm to 1296mm in length
Total weight	13.1 kg / 28.82 lb (AP package), 13.5 kg / 29.7 lb (AP-SM package)

Start with this affordable reflector package and move up when your needs change.

AP Mount Package — AP or AP-SM Mount with R130Sf OTA, APP-TL130 Tripod and Eyepieces

39978 AP-R130Sf

39979 AP-R130Sf-SM

Contents

Optical tube	D=130mm F=650mm (f5.0) Newtonian reflector, multicoated
Finder scope	6x30mm, Field of view 7 degrees
Eyepiece	PL20mm (33x) and PL6.3mm (103x)
Mount	AP Mount with manual RA and DEC slow motion control modules or AP-SM Mount with RA motor module and STAR BOOK ONE controller
Tripod	APP-TL130 3-section aluminum legs with quick-release leg clamps
Accessories	Counterweights 1.0 kg and 1.9 kg

Specifications

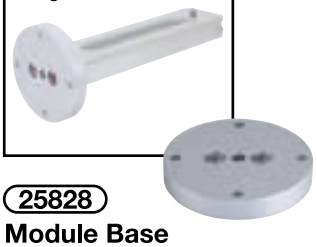
Optical tube size	160mm dia. x 575mm L
Tube weight	5.3 kg (net 4.0 kg)
Adapter thread	42mm for T-ring
Visual back	31.7mm
Tripod legs	Adjustable from 570mm to 1296mm in length, 3.0 kg
Total weight	14.8 kg / 32.6 lb (AP package) / 15.2 kg / 33.4 lb (AP-SM package)

25804
R.A Motor Module and STAR BOOK ONE Set

The R.A Motor module can be installed on the R.A rotation axis of the AP mount system to move the mount electronically with the STAR BOOK ONE hand controller.
Size : 80mm x 136.5mm x 51.5mm
Weight : 630 g / 22.22 oz

STAR BOOK ONE controller
The four direction buttons on the STAR BOOK ONE dual-axis controller move the AP mount system electrically in X and Y (R.A and DEC) directions either quickly or slowly. It can be used for autoguiding in conjunction with an external autoguider.

Image



25828
Module Base

This adapter connects the manual slow motion control module and the dovetail slide bar PG.
Size : 78mm dia. x 12mm
Weight : 142 g / 5.0 oz

25805
DEC Motor Module

It is installed on the DEC rotation axis of the AP mount system to move the mount electrically with the STAR BOOK ONE handheld controller.
Size : 80mm x 136.5mm x 51.5mm
Weight : 600 g / 21.16 oz

25823
Dovetail Slide Bar PG

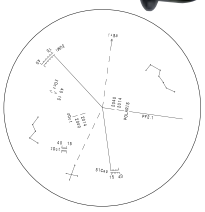
- Vixen standard dovetail (44mm in width) with a sight slot for Polar scope
- With 4 x 1/4 inch attachment bolts
- 4 x M6 screw socket

Size : 182mm x 44mm x 20mm
Weight : 200 g / 7.05 oz

25816
AP Clamp Lever

The friction control mechanism can be secured firmly with use of the AP clamp lever.
Size : 28mm x 33mm x 31mm
Weight : 10 g / 0.35 oz

25803
Polar Alignment Scope PF-L



Polar scope's reticle

The polar scope is used to accurately align the equatorial mount of your AP system to the north or south celestial pole. Polar alignment is easy as you simply bring Polaris and two other stars into the polar scope's field of view so that each can be matched with the designated position on the scale on the polar scope's reticle. No hour angle setting is necessary.

- The switch on the brightness adjustment dial of the polar alignment scope will illuminate the reticle in red when activated. The brightness can be adjusted in 8 levels by turning the brightness adjustment dial. The red light becomes gradually dimmer after a certain interval of time (about one or two minutes) and turns off automatically.
- A free app called PF-L Assist for smart-phones and tablets is available for making good use of the polar alignment scope. It will assist in displaying the current night sky which can be seen in your location through the polar alignment scope PF-L.
- Battery : CR2032 X 1
- Applicable to AP, SX2, SXD2, SXP2, AXJ and AXD2 mounts

Size : 47mm x 55mm x 142mm
Weight : 155 g / 5.46 oz

35519
POLARIE Fine Adjustment Unit

Ideal for use with the POLARIE Star Tracker. The Polar fine adjustment unit aids in precise Polar alignment with an optional polar scope. It can also be used with the AP Polar Axis Bracket.
Pan mount head : Quick release screw type, 1/4 inch threads screw
Altitude adjustment range : About +/- 15 degrees, 3.7 degrees per rotation
Latitude settings : Low/ Mid/High: 0 degree to 85 degrees
Azimuth adjustment range : About +/- 15 degrees, 5.7 degrees per rotation
Maximum loading weight : 7 kg
Screw sockets : For a camera tripod with 1/4 or 3/8 inch thread screws
Size : 51mm x 73mm x 49mm
Weight : 300g / 10.58 oz

25818
Slow Motion Control Knob

The AP Mount comes equipped with the slow motion control knobs for the R.A and DEC worm shafts and is a standard accessory. It is also usable on the GP2 and GPD2 Mounts.
Size : 40mm dia. x 51mm
Weight : 18 g / 0.63 oz

25191
APP-TL130 Tripod

A highly compact and lightweight tripod combining durability and ease of use.

- A retractable protection rubber of the metal ferrules allows for using the tripod according to your set up environment.
- Compatible with not only the AP mounts but also the GP2 mounts and PORTA II mounts.
- Adjustable leg length : from 570mm to 1296mm long
- Adjustable height : from 526mm to 1159mm high
- 3-section pipe size : 35mm/32mm/29mm in diameter
- Base spread : from 350mm to 710mm in radius

Wight : 3.0 kg / 6.6 lb

Image

35511
Polar Meter

A compass with a bubble Level, altitude scale and tilt meter used for locating Polaris with ease.
Attachable on camera accessory shoe

- Working temperature: -20 degrees Celsius to +40 degrees Celsius

Weight : 100 g / 3.52 oz

Image

35518
POLARIE Time-lapse Adapter

The POLARIE time lapse adapter allows you to mount a POLARIE on a camera tripod. It shifts the POLARIE's rotational axis to be parallel to the camera tripod head for the addition of slow panning to your time lapse movies.

- With dual UNC 1/4 inch and 3/8 inch threads socket

Size : 59mm dia. x 27.5mm
Weight : 165 g / 5.82 oz

25826
Supplementary Counterweight Bar

It is attached to the dovetail slide bar PG with 1/4 inch screw.

- Bar 20mm dia. and 130mm in effective length

Size : 23mm dia. x 135mm
Weight : 330 g / 11.64 oz

25801
Counterweight 1.0 kg

It is a counterweight equipped with the AP and AP-SM mounts as standard accessory.

SXP2

SXP2 Equatorial Mount

HOT NEW PRODUCT

The Pinnacle of the Vixen SX series Mounts has been redesigned for Increased Performance

Combining the best functions of the SX series of mounts and the STAR BOOK TEN controller, the SX Professional is designed for high performance observing and astrophotography.

Robust design with high durability

On the SXP2 mount, a pair of ball bearings which were used to support the R.A shaft have been upgraded to a large tapered roller bearings with higher strength. The span for retaining the R.A. shaft is widened. The wall thickness of the R.A. body housing is increased. The R.A. body is installed on the pedestal with two fork arms. With these features, the stability and sturdiness of the highly compact equatorial mount have been increased further with the SXP2 mount.

Belt Drive System

In the conventional drive system of the Vixen equatorial mounts, motion power of the motor was conveyed to the worm gear by the gear trains. The gear trains require a minimum amount of play to move the gears and the amount of play increases as the number of gears increases. To avoid this, transmission of the motion power has been changed from the gears to a belt system. As a result, backlash originating from the gear train has been eliminated and gear noise has been dramatically reduced. Quiet and stable motion with reliable response has been achieved.

Smooth R.A and DEC Motion

Every movable part of the SXP2 mount has been designed to produce extremely smooth movements. The SXP2 mount employs 14 pieces of low-friction ball bearings to achieve the most precise movement free of stress.

P-PEC

The period error correction rectifies irregular motions of the tracking gear wheels. The P-PEC (permanent periodic error correction) allows you to save corrections of your records and these corrections are saved to be used again.

Flat Mount Head

The top of the round mount head, 35mm diameter, features eight M8 pitch 1.25mm threaded holes. These are arranged at an interval of 45 degrees for attachment to various optical tubes.

25131

SXP2 Mount

Specifications	SXP2 and STAR BOOK TEN
R.A. slow motion	Worm and wheel gears with 180-tooth whole circle micro movement, 73.2mm in diameter, made of brass
DEC slow motion	Worm and wheel gears with 180-tooth whole circle micro movement, 73.2mm in diameter, made of brass
Worm shaft gear	9mm in diameter, made of brass
R.A. axis	40mm in diameter, made of carbon steel
DEC axis	40mm in diameter, made of carbon steel
Counterweight bar	20mm in diameter, retractable, made of stainless steel
Number of bearings	14 pieces
Polar axis scope	(Preinstalled) 6x20mm, Field of view 8 degrees, 3-star alignment system, Variable illuminated reticle with auto turn-off, Brightness adjustable in 8 steps, Dark field illumination, Setting accuracy within 3 arc minutes
Altitude adjustment	Latitude adjustable between 0 degree and 70 degrees (divided in 3 zones and adjustable +/-15 degrees per zone, for high, middle and low altitudes), altitude scale in 5 degrees increments, Fine adjustments with a tangent screw knob about 0.7 degrees per rotation
Azimuth adjustment	Coarse setting: 360 degrees, Fine adjustment: about +/- 5 degrees, Double tangent screws: about 1.7 degrees per rotation
Motor drive	Pulse motors with micro-step motion control (250 pps) by means of Belt drive system
Star Chart Go-To	Automatic Go-To slewing with STAR BOOK TEN, 1000x of sidereal rate at maximum slewing speed
Photographic loading weight	17 kg / 37.4 lb (Maximum torque load: 425 kg-cm at a point of 25cm from the place where the RA and DEC axes cross.)
Controller port	DSUB 9 PIN (Male)
Power port	DC12V EIAJ RC5320A Class4, Center plus
Power consumption	0.45A to 2.2A at 10 kg loading weight, 0.6A to 2.5A at 17 kg loading weight
Size	386mm x 419mm x 128mm
Weight	13.3 kg / 29.26 lb (without counterweight)
Counterweights	3.7 kg x 1 / 8.15 lb x 1

Optional Tripods for SXP2

25161

SXG-HAL130 Aluminum Tripod

- Adjustable leg length: from 807mm to 1299mm long
- Adjustable tripod height: from 730mm to 1156mm high

Weight : 5.5 kg / 12.1 lb

25164

ASG-CB90 Carbon Fiber Tripod

NEW

- Available for AXJ mount, SX series of Sphinx mounts, AP mount, GP/GPD mounts, HF2 folk mount, PORTA II mount and SXG half pillar.

Tripod legs : 2-section carbon fiber legs, adjustable from 510mm to 815mm in height.
Adjustable leg length : from 545mm to 900mm.
Minimum length : 590mm long including the tripod head.
Weight : 3.4 kg / 7.48 ib

*The specifications are subject to change without notice.

Casual Observing with the STAR BOOK ONE

The SX2 mount offers simple and easy operation of your telescope with a newly developed STAR BOOK ONE dual-axis handheld controller. With Vixen's accurate micro-step motion control technology, the SX2 mount achieves highly stable and smooth rotations of the pulse motors. The SX2 mount is a good choice for starting the first step to serious celestial observing.

Pulse Motors and Micro-Step Motion Control System

With the same precision pulse motors (=Step Motors) and micro-step motions control as the SXD2, the SX2 is an excellent performer with smooth response. The four ball bearings used for the RA and DEC worm shafts and the one needle bearing for the DEC clamp unit achieve silky smooth movement of the mount.

Declination Body acting as part of a Counterweight

The massive motor units are placed in the lower part of the declination body so that the center of balance of the SX2 shifts below the intersection of the RA and Dec axes. This makes the lower portion of the declination body perform as a counterweight and allow the mount to work with less counterweights.

Retractable Counterweight Bar

Durable stainless steel is used for the counterweight bar. It is moved back into the mount body for storage by loosening the bar lock lever. It is convenient for transporting the mount and for easy set up.

STAR BOOK ONE Controller

The SX2 mount comes with the STAR BOOK ONE handheld controller featuring a variety of functions in a simple design. Designed for ease of use, the lightweight STAR BOOK ONE controller moves the SX2 mount on the X and Y dual axes (RA and DEC directions). Versatile tracking options are available in addition to sidereal and solar tracking rates. Backlash compensation, autoguider port and built-in red LED light are some of the useful functions of the STAR BOOK ONE.

STAR BOOK TEN Star Chart Controller

The SX2 Mount works with the STAR BOOK TEN hand controller, featuring an intuitive star chart Go-to system with high definition color LCD display. Incorporating over 270,000 objects, the STAR BOOK TEN identifies and tracks your target easily. This controller is not included with the SX2 Mount.

(25071)

SX2 Mount

Specifications	SX2 and STAR BOOK ONE
R.A. slow motion	Worm and wheel gears with 180-tooth whole circle micro movement, 72mm in diameter
DEC slow motion	Worm and wheel gears with 180-tooth whole circle micro movement, 72mm in diameter
Worm shaft	9mm in diameter, made of brass
R.A. axis	40mm in diameter, made of aluminum alloy die casting
DEC axis	35mm in diameter, made of aluminum alloy
Number of bearings	5 pieces
Counterweight bar	20mm in diameter, retractable, made of stainless steel
Polar axis scope	Optional
Altitude adjustment	Latitude adjustable between 0 degree and 70 degrees (divided in 3 zones and adjustable +/-15 degrees per zone, for high, middle and low latitudes), altitude scale in 2 degrees increments, Fine adjustments with a tangent screw knob about 0.8 degrees per rotation
Azimuth adjustment	Fine adjustments with twin screw knobs about 1.2 degrees per rotation, adjustable range about +/- 7 degrees
Motor drive	Pulse motors with micro-step motion control (250 pps)
Tracking / Slewing	High precision tracking with STAR BOOK ONE, maximum slewing speed about 1000x of sidereal rate (x999 on display)
Photographic loading weight	12 kg / 26.4 lb (Maximum torque load: 300 kg-cm at a point of 25cm from the place where the RA and DEC axes cross.)
Controller port	D-SUB9PIN Male
Power port	DC 12V EIAJ RC5320A Class4
Power supply	Comes Cigarette-lighter plug cord (center plus polarity) as standard accessory
Working voltage	DC 12V
Electricity consumption	0.3A to 2.0A
Size	360mm x 343mm x 128mm
Weight	7.0 kg (without counterweight)
Counterweight	1.9 kg x 1

Optional Tripod for SX2

(25161)

SXG-HAL130 Aluminum Tripod

- Adjustable leg length: from 807mm to 1299mm long
- Adjustable tripod height: from 730mm to 1156mm high

Weight : 5.5 kg / 12.1 lb

The STAR BOOK ONE Dual-Axis Handheld Controller for the SX2 Mount

STAR BOOK ONE

Working voltage : DC12V
(supplied from the mount side)
Size : 137mm x 65mm x 21mm
Weight: 110g / 2.2 lb (w/o cable)
CPU : 32bit CISC Processor
• STAR BOOK ONE is not sold separately.

Lightweight, Compact and Smart Hand-held Controller

The four direction buttons on the STAR BOOK ONE dual-axis controller move the SX2 mount electrically in X and Y dual axes (RA and DEC directions) either quickly or slowly. The command buttons are laid out neatly so that they are accessible with wearing a glove.

LCD Screen

A 2-line 8-character STN LCD screen furnishes the adjustable LED backlight which is adaptive to your eyes in a dark observation site.

Language Setting

The language is available in Japanese and English.

Red LED Light

The built-in red LED light is equipped on the back of the handheld controller. It allows you to keep accommodating your eyes to darkness at an observation site.

Tracking Directions

The celestial tracking direction of a telescope differs in the northern and southern hemispheres. The STAR BOOK ONE works in both the northern and southern hemispheres.

Versatile Tracking

The tracking options are available from sidereal rate, solar rate, lunar rates and Kings rate and many more. The faster tracking speed is divided into three ranges from low to high speed. You can choose your desired tracking speed from X0.1 to X2 at 0.1 increment, from X2 to X5 at 0.5 increments or from X5 to X10 at 1 increment. Also, the different tracking speeds are useful for time-lapse photography.

Slewing Speed

The slewing speed is selectable from either a preset 4 speed range or different speed ranges (between X0.5 and X999 of sidereal rate) listed in the menu.

Backlash Compensation

Backlash is a momentary stoppage of the tracking motion of the mount that occurs when the motor gears reverse their rotation. It does not occur while the mount continues tracking at a constant speed as the gears keep contact with each other, however, it may occur when the telescope is slewed with different speeds. The backlash compensation provides a reduced time lag at the point of reversed motion where the gears loose contact. It achieves smoother tracking on the mount.

Autoguider

The STAR BOOK ONE can be used for autoguiding in conjunction with an external autoguiding system that is compatible with the SBIG autoguider. The advantages of autoguider are most apparent during long exposure astrophotography.

PEC (Periodic Error Correction)

The PEC rectifies an irregular motion of the tracking gear wheels that affect long exposure astrophotography. PEC allows you to achieve highly accurate tracking.

Optional Accessories

25803

Polar Alignment Scope PF-L

A Polar Scope with a simple alignment method using Polaris and two known stars in the northern hemisphere. Use a trapezoid in Octans in the southern hemisphere. No hour angle setting is required. 6X20mm, Field of view 8 degrees
• Variable illuminated reticle with auto-turn-off (Adjustable in 8 steps)
• Dark field illumination
• Battery : CR2032 x 1
• Setting accuracy: Within 3 arc minutes
• Usable with AP, SX2, SXD2, SXP2, AXJ, AXD2 mounts
Size : 47mm x 55mm x 142mm
Weight : 155 g / 4.06 oz.

2697

SX Aluminum Case

• Usable with SX2, SXD2 or SXP mount.
Weight : 6.5 kg / 14.3 lb

About Compatibility of Controllers

STAR BOOK ONE and STAR BOOK TEN are not compatible with the former SX and SXD Mounts. Similarly, the STAR BOOK and STARBOOK Type-S are not compatible with the SX2, SXD2, SXP2, AXJ, AXD2 and AP Mounts. Do not attempt to use the controller with a mount other than the specified ones here. This could damage the controller and the mount.

Mount	SX2, SXD2, SXP2, AXJ, AXD2	AP**	SX, SXD, New ATLUX*** (discontinued)	GP2, GPD2 (discontinued)
STAR BOOK ONE*	○	○	×	×
STAR BOOK TEN	○	×	×	×
STAR BOOK	×	×	○	×
STAR BOOK-S	×	×	×	○

* STAR BOOK ONE is not sold separately.
** AP, AP-SM, AP Photo Guider and tracking systems with the AP motor modules.
*** Not versions with SkySensor.

*The specifications are subject to change without notice.

SX2-VMC200L

A great package for beginning your journey as a serious observer.

SX2 Mount Package

SX2 Mount with A81M OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

25079

SX2-A81M

Contents

Optical tube	D=81mm F=910mm (f11.2) achromatic refractor, multicoated
Finder scope	XY red dot finder II
Eyepiece	NPL20mm (46x) and NPL6mm (152x)
Mount	SX2 with STAR BOOK ONE controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	SXG half pillar, Flip mirror diagonal, Counterweight 1 kg, Parts case

Specifications

Optical tube size	90mm Dia. x 850mm L
Tube weight	3.5 kg (net 2.5 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with flip mirror) push-fit
Tripod legs	Adjustable from 807mm to 1299mm in length, 5.5 kg
Total weight	18.9 kg / 41.6 lb

A bit more aperture to view deeper into the night sky.

SX2 Mount Package

SX2 Mount with A105MII OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

25080 NEW

SX2-A105MII

Contents

Optical tube	D=105mm F=1000mm (f9.5) achromatic refractor, multicoated
Finder scope	XY red dot finder II
Eyepiece	NPL20mm (50x) and NPL6mm (167x)
Mount	SX2 with STAR BOOK ONE controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	SXG half pillar, Flip mirror diagonal, Counterweight 1.9 kg, Parts case

Specifications

Optical tube size	115mm Dia. x 1010mm L
Tube weight	4.8 kg (net 3.8 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Tripod legs	Adjustable from 807mm to 1299mm in length, 5.5 kg
Total weight	21.1 kg / 46.4 lb

If you are looking for a high quality small refractor, this is it.

SX2 Mount Package

SX2 Mount with SD81S OTA, SXG-HAL130 Tripod and Eyepieces

26164 NEW

SX2-SD81SII

Contents

Optical tube	D=81mm F=625mm (f7.7) SD apochromatic refractor, multicoated
Finder scope	XY red dot finder II (1x aiming device)
Eyepiece	SLV20mm (31x) and SLV5mm (125x)
Mount	SX2 with STAR BOOK ONE controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	Flip mirror diagonal, Counterweight 1 kg, Parts case

Specifications

Optical tube size	90mm Dia. x 585mm L
Tube weight	3.6 kg (net 2.3 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Tripod legs	Adjustable from 807mm to 1299mm in length, 5.5 kg
Total weight	17.3 kg / 38.1 lb

A very good choice for those looking for an exceptional telescope for visual and astrophotography.

SX2 Mount Package

SX2 Mount with SD103S OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

26165 NEW

SX2-SD103S

Contents

Optical tube	D=103mm F=795mm (f7.7) SD apochromatic refractor, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	SLV20mm (40x) and SLV5mm (159x)
Mount	SX2 with STAR BOOK ONE controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	SXG half pillar, Flip mirror diagonal, Counterweight 1.9 kg, Parts case

Specifications

Optical tube size	115mm Dia. x 810mm L
Tube weight	5.4 kg (net 3.6 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Tripod legs	Adjustable from 807mm to 1299mm in length, 5.5 kg
Total weight	21.7 kg / 47.8 lb

Yields clear and bright images at the center of the field of view.

SX2 Mount Package

SX2 Mount with VMC200L OTA, SXG-HAL130 Tripod and Eyepieces

25078

SX2-VMC200L

Contents

Optical tube	D=200mm F=1950mm (f9.75) precision spherical mirror, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	SLV20mm (98x) and SLV9mm (217x)
Mount	SX2 with STAR BOOK ONE controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	Flip mirror diagonal, Counterweights 1.9 kg x 2, Parts case

Specifications

Optical tube size	232mm Dia. x 510mm L
Tube weight	6.8 kg (net 5.9 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Tripod legs	Adjustable from 807mm to 1299mm in length, 5.5 kg
Total weight	23.2 kg / 51.1 lb

Excellent views for both the visual observer and the astrophotographer.

SX2 Mount Package — **SX2 Mount with VC200L OTA, SXG-HAL130 Tripod and Eyepieces**

(25077)

SX2-VC200L

Contents

Optical tube	D=200mm F=1800mm (f9) VISAC mirror, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	SLV20mm (90x) and SLV9mm (200x)
Mount	SX2 with STAR BOOK ONE controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	Flip mirror diagonal, Counterweights 1.9 kg x 2, Parts case

Specifications

Optical tube size	232mm Dia. x 600mm L
Tube weight	6.9 kg (net 6.0 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Tripod legs	Adjustable from 807mm to 1299mm in length, 5.5 kg
Total weight	23.3 kg / 51.3 lb

The fast focal ratio is perfect for wide-field viewing and deep sky astrophotography.

SX2 Mount Package — **SX2 Mount with R200SS OTA, SXG-HAL130 Tripod and Eyepieces**

(25076)

SX2-R200SS

Contents

Optical tube	D=200mm F=800mm (f4) Parabolic mirror, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	SLV20mm (40x) and SLV5mm (160x)
Mount	SX2 with STAR BOOK ONE controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	Counterweights 1.9 kg x 2, Parts case

Specifications

Optical tube size	232mm Dia. x 700mm L
Tube weight	7.2 kg (net 5.3 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	31.7mm push-fit
Tripod legs	Adjustable from 807mm to 1299mm in length, 5.5 kg
Total weight	23.6 kg / 52.0 lb

Tripod Mounted Accessory Cases

Three Accessory Case Designs

Three tripod mounted accessory cases are available. Store eyepieces, accessories or the STAR BOOK TEN/STAR BOOK controller in these handy cases.

(For Eyepiece)

(For Controller)

(For General Use)

Choose the best accessory case for your purpose. The grey reflective tape stitched along the fastener ensures easy access at night.

(Image)

The Accessory Case Set is not only handy for carrying your accessories outside, but also easy to set on your Vixen tripod with the supplied attachment panel.

Attachment Panel for Accessory Case

The attachment panel is available for the SXG series of tripods and PORTA II tripod.

(Accessory Case)

(Image)

(35654)

Eyepiece Accessory Case

Suggested accessories to store

- 4 to 6 of SLV and/or NPL eyepieces in 31.7mm barrel
- 2 of LVW/SLV eyepieces in 50.8mm barrel and 1 or 2 of SLV/NPL eyepieces in 31.7mm barrel
- 1 of LVW/SLV eyepiece in 50.8mm barrel and 3 or 4 of SLV/NPL eyepieces in 31.7mm barrel

Accessory case size : 175mm x 255mm x 95mm
Case weight : 345 g / 12.16 oz

(Accessory Case)

(Attachment Panel)

(Image)

(35652)

Accessory Case Set for STAR BOOK TEN / STAR BOOK

Suggested accessories to store

- A STAR BOOK TEN handheld controller and a STAR BOOK TEN controller cable.
- A STAR BOOK handheld controller and a STAR BOOK controller cable.

Accessory case size : 185mm x 255mm x 80mm
Case weight : 290 g / 10.22 oz
Panel weight : 325 g / 11.46 oz

(Accessory Case)

(Attachment Panel)

(Image)

(35653)

Accessory Case Set for General Use

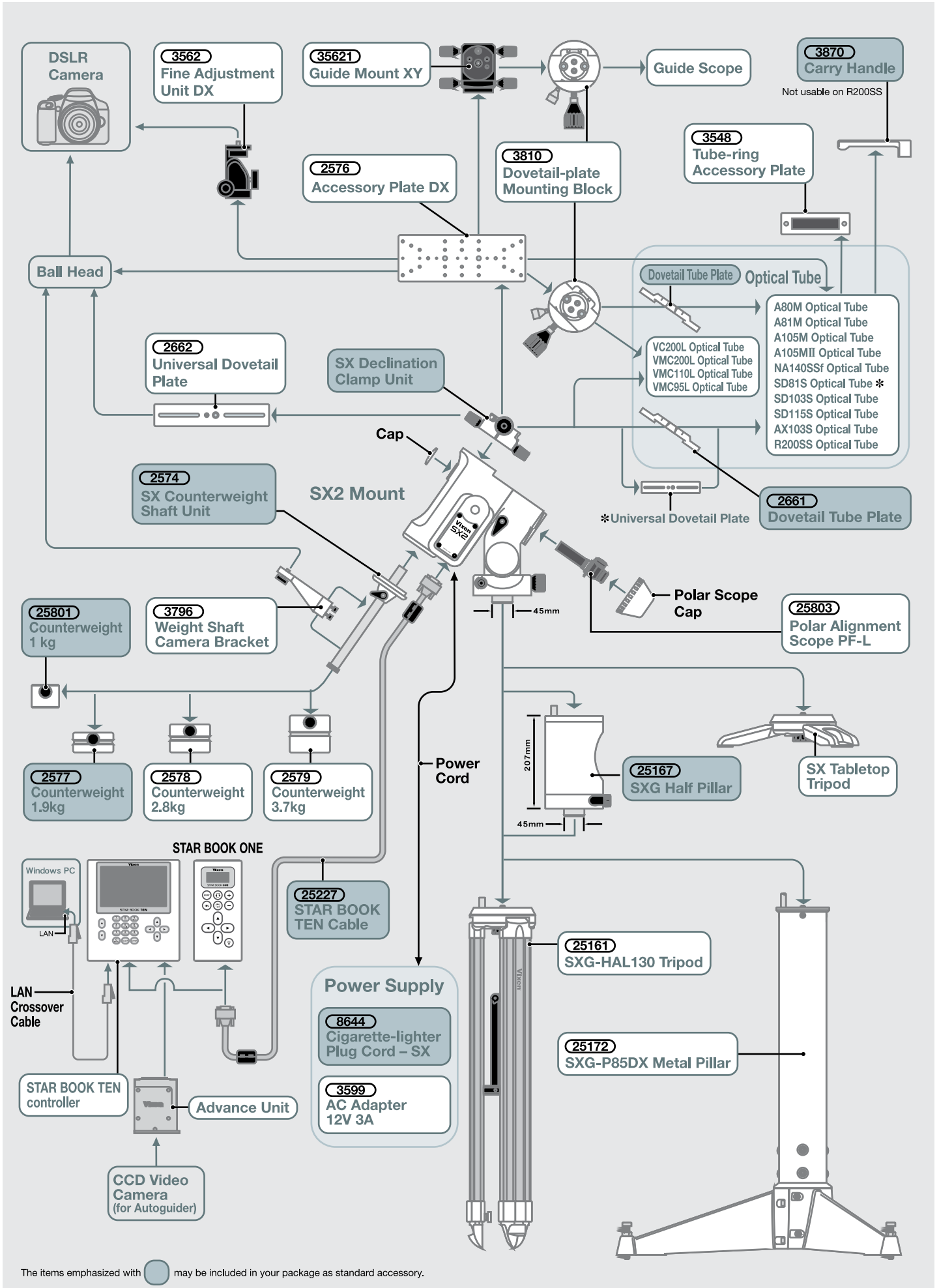
Suggested accessories to store

- For accessory parts of your choice.

Accessory case size : 185mm x 255mm x 100mm
Case weight : 300 g / 10.58 oz
Panel weight : 325g / 11.46 oz

*The specifications are subject to change without notice.

SX2 System Structure Diagram



The items emphasized with ▭ may be included in your package as standard accessory.

SXD2

SXD2 Equatorial Mount PFL

The Next level of Performance

The SXD2 Mount PFL is a high precision, sturdy mount. The cutting edge STAR BOOK TEN Hand Controller features a high definition color LCD screen with intuitive operations to ensure comfortable and accurate observing.

Increased Loading Capacity

Materials and manufacturing processes have been revised to enhance the rigidity and precision of the original SX Mount. Both the RA and DEC rotation axes of the SXD2 are made of thick steel with brass wheel gears, critical to accurate movement of the mount. Lapping of both worm gears and worm wheels ensures smooth operation. These changes have increased the precision of the Mount.

SX2 SXD2

Smooth Motion with Bearings

Bearings are used in the RA and DEC Axes and the rotating shafts of the worm gears. This reduces the load on the motors and ensures smooth rotation.

Pulse Motors and Micro-Step Motion Control

The heart of the SXD2 are the precision pulse motors (=stepper motors). These highly responsive motors use a micro-step motion control system to deliver powerful, yet silky smooth drive controls in both fine motion and quick slewing.

STAR BOOK TEN

The AXD2 mount comes with the STAR BOOK TEN which features an intuitive 'Star-Chart Go-To' navigation with a high definition color LCD display. The position of the telescope, the target and other useful information are displayed on the screen in detail. Celestial objects on the database can be easily searched by number or name. It allows you to enjoy clear and smooth star chart navigation on the screen with easy to use operations and it is highly recommended for any stargazing enthusiast from entry level to experts.

25101

SXD2 Mount PFL

Specifications	SXD2-PFL and STAR BOOK TEN
R.A. slow motion	Worm and wheel gears with 180-tooth whole circle micro movement
DEC slow motion	Worm and wheel gears with 180-tooth whole circle micro movement
RA display	On-screen the STAR BOOK TEN, 0.1 minute increments
DEC display	ON-screen the STAR BOOK TEN, 0.1 arc minute increments
Polar axis scope	(Preinstalled) 6x20mm, Field of view 8 degrees, 3-star alignment system, Variable illuminated reticle with auto turn-off, Brightness adjustable in 8 steps, Dark field illumination, Setting accuracy within 3 arc minutes
Altitude adjustment	Latitude adjustable between 0 degree and 70 degrees (divided in 3 zones and adjustable +/-15 degrees per zone, for high, middle and low latitudes), altitude scale in 2 degrees increments, Fine adjustments with a tangent screw knob about 0.8 degrees per rotation
Azimuth adjustment	Fine adjustments with twin screw knobs about 1.2 degrees per rotation, adjustable range about +/- 7 degrees
Go-To Slewing / Tracking	Automatic Go-To slewing with STAR BOOK TEN, 1000x of sidereal rate at maximum slewing speed
Photographic Loading weight	15 kg / 33 lb (Maximum torque load: 375 kg-cm at a point of 25cm from the place where the RA and DEC axes cross.)
Power port	DC 12V EIAJ RC5320A Class4
Power supply	Comes Cigarette-lighter plug cord (center plus polarity) as standard accessory
Working voltage	DC 12V
Electricity consumption	0.45A to 2.5A
Size	360mm x 343mm x 128mm
Weight	9.2 kg / 20.3 lb (without counterweights)
Counterweights	1.9 kg x 1 and 3.7 kg x 1 / 4.2 lb x1 and 8.15 lb x1

Optional Tripod for SXD2

25161

SXG-HAL130 Aluminum Tripod

- Achieves high solidness and stability

Adjustable leg length : from 807mm to 1299mm long
Adjustable tripod height : from 730mm to 1156mm high
Weight : 5.5 kg / 12.1 lb

What is Different?

	SXD2-PFL	SX2
Maximum torque load	375 kg-cm	300 kg-cm
Photographic loading weight	15 kg / 33 lb	12kg / 26.5 lb
Rotating shafts	Carbon steel	Aluminum alloy
Wheel gears	Brass	Aluminum
Bearings	9	5
Controller	STAR BOOK TEN	STAR BOOK ONE
Polar axis scope	Equipped	Optional
Counterweights	1.9 kg x 1, 3.7 kg x 1	1.9 kg x 1

*The specifications are subject to change without notice.

SXD2-PFL-AX103S

Images are breathtakingly sharp and clear with perfect color correction.

SXD2 Mount PFL Package

SXD2 Mount PFL with AX103S OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

25104

SXD2-PFL-AX103S

Contents

Optical tube	D=103mm F=825mm (f8) Quad SD apochromatic refractor, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	SLV20mm (41x) and SLV5mm (165x)
Mount	SXD2-PFL with STAR BOOK TEN controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	SXG half pillar, Flip mirror diagonal, Counterweights 1.9 kg and 3.7 kg, Parts case

Specifications

Optical tube size	115mm Dia. x 762mm L (shortened to 670mm L)
Tube weight	6.4 kg (net 4.6 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Tripod legs	Adjustable from 807mm to 1299mm in length, 5.5 kg
Total weight	28.9 kg / 63.6 lb

A very good choice for those looking for an exceptional telescope for visual and astrophotography.

SXD2 Mount PFL Package

SXD2 Mount PFL with SD103S OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

26166 NEW

SXD2-PFL-SD103S

Contents

Optical tube	D=103mm F795mm (f7.7) SD apochromatic refractor, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	SLV20mm (40x) and SLV5mm (159x)
Mount	SXD2-PFL with STAR BOOK TEN controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	SXG half pillar, Flip mirror diagonal, Counterweight 1.9 kg and 3.7 kg, Parts case

Specifications

Optical tube size	115mm Dia. x 810mm L
Tube weight	5.4 kg (net 3.6 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Tripod legs	Adjustable from 807mm to 1299mm in length, 5.5 kg
Total weight	27.9 kg / 61.4 lb

For astrophotography enthusiasts and those looking for a larger aperture optical tube.

SXD2 Mount PFL Package

SXD2 Mount FPL with SD115S OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

26167 NEW

SXD2-PFL-SD115S

Contents

Optical tube	D=115mm F890mm (f7.7) SD apochromatic refractor, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	SLV20mm (45x) and SLV5mm (178x)
Mount	SXD2-PFL with STAR BOOK TEN controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	SXG half pillar, Flip mirror diagonal, Counterweights 1.9 kg and 3.7 kg, Parts case

Specifications

Optical tube size	125mm Dia. x 930mm L
Tube weight	6.2 kg (net 4.4 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Tripod legs	Adjustable from 807mm to 1299mm in length, 5.5 kg
Total weight	28.7 kg / 63.1 lb

Exquisite viewing and imaging performance with flat, distortion-free images from edge to edge.

SXD2 Mount PFL Package

SXD2 Mount PFL with VC200L OTA, SXG-HAL130 Tripod and Eyepieces

25106

SXD2-PFL-VC200L

Contents

Optical tube	D=200mm F=1800mm (f9) VISAC mirror, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	SLV20mm (90x) and SLV9mm (200x)
Mount	SXD2-PFL with STAR BOOK TEN controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	Flip mirror diagonal, Counterweights 1.9 kg and 3.7 kg, Parts case

Specifications

Optical tube size	232mm Dia. x 600mm L
Tube weight	6.9 kg (net 6.0 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Tripod legs	Adjustable from 807mm to 1299mm in length, 5.5 kg
Total weight	27.6 kg / 60.7 lb

The fast focal ratio is perfect for wide-field viewing and deep sky astrophotography.

SXD2 Mount PFL Package

SXD2 Mount PFL with R200SS OTA, SXG-HAL130 Tripod and Eyepieces

25105

SXD2-PFL-R200SS

Contents

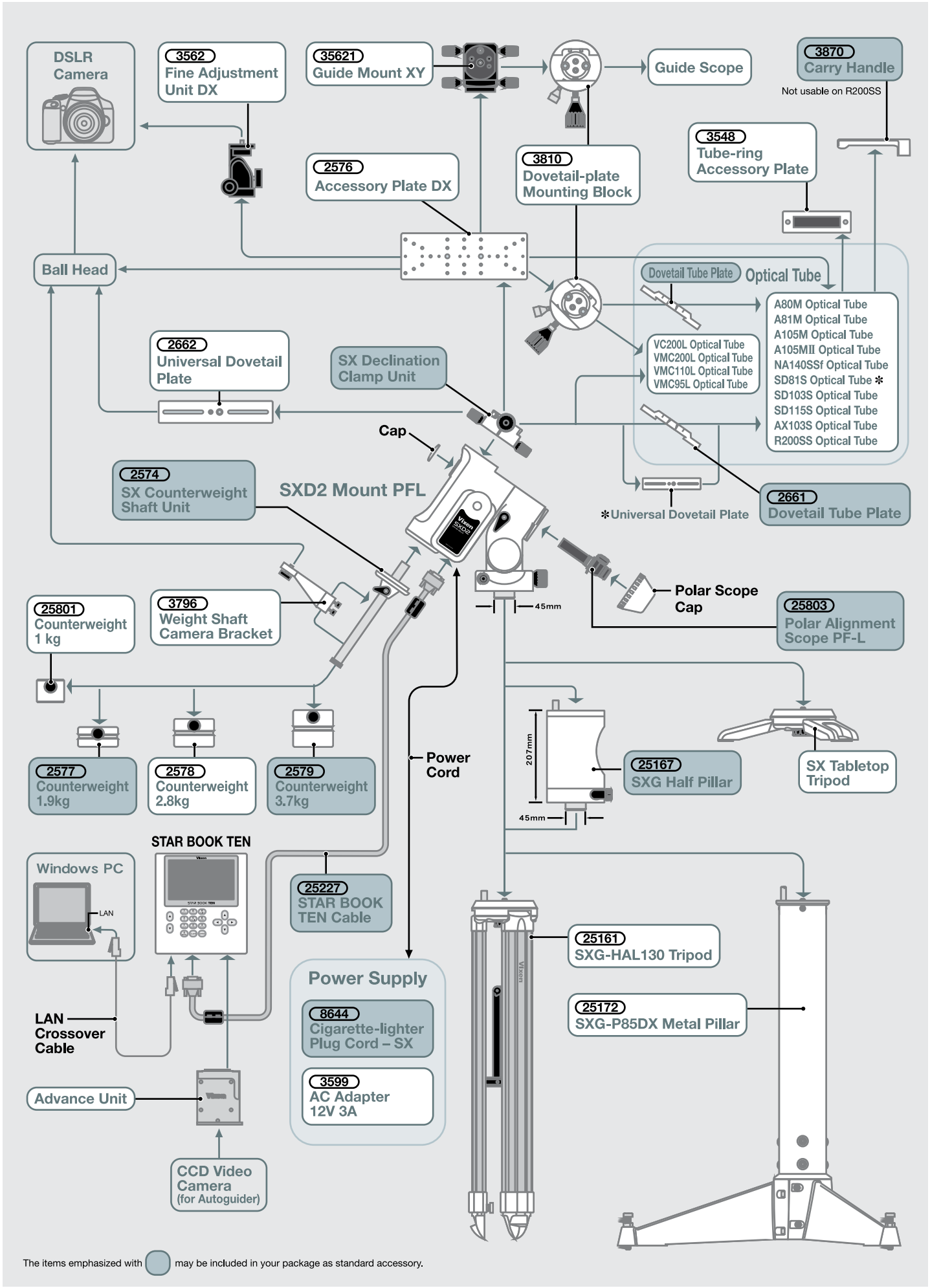
Optical tube	D=200mm F=800mm (f4) Parabolic mirror, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	SLV20mm (40x) and SLV5mm (160x)
Mount	SXD2-PFL with STAR BOOK TEN controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	Counterweights 1.9 kg and 3.7 kg, Parts case

Specifications

Optical tube size	232mm Dia. x 700mm L
Tube weight	7.2 kg (net 5.3 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	31.7mm push-fit
Tripod legs	Adjustable from 807mm to 1299mm in length, 5.5 kg
Total weight	27.9 kg / 61.4 lb

※The specifications are subject to change without notice.

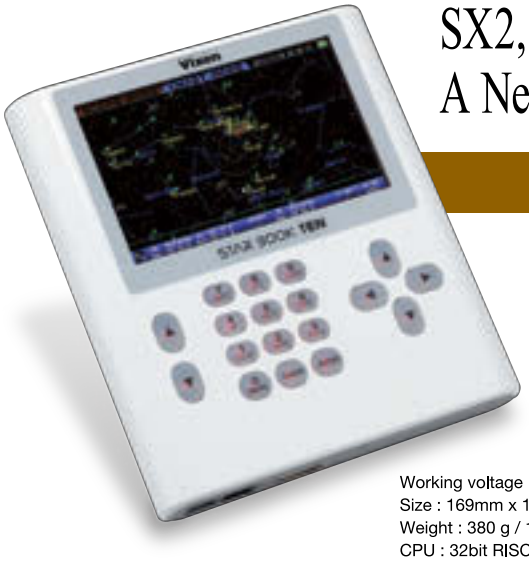
SXD2-PFL System Structure Diagram



The items emphasized with ▭ may be included in your package as standard accessory.

Star Chart Go-To Navigation controller available for the SX2, SXD2, SXP2, AXJ and AXD2 Mounts. A New Standard for the Discriminating Astronomer.

STAR BOOK TEN



Working voltage : DC 12V
Size : 169mm x 154mm x 30mm
Weight : 380 g / 13.4 oz
CPU : 32bit RISC Processor

High Definition Color LCD

The wide 5-inch TFT color LCD of the STAR BOOK TEN displays stars and constellations of the night sky like those seen in a planetarium. Its high definition screen (800X480, 65536 colors) shows you vivid images of stars. The position of the telescope, the target and other useful information are displayed in the screen in detail. The chart mode allows you to scroll through the star chart without affecting your telescope position. The scope mode synchronizes the motion of the telescope and the star chart.

Night Vision Mode

The night vision mode illuminates the whole screen in red, if applied, and will limit the brightness to the observer's eyes. All command and direction keys can be backlit in red to let you identify the keys in the dark. The backlit keys can be adjusted or turned off.

Easy-to-Use Menus

STAR BOOK TEN allows you to call up menus of celestial objects to target in SCOPE MODE as well as in CHART MODE. In addition, you can choose your target by scrolling the star chart in CHART MODE. Frequently used menus are allocated to each of ten keys.

Different Tracking Rate

The tracking rate can be changed according to the type of object you observe. The motion of the sun, the moon, planets or comet can be followed independently of the sidereal rate.

Celestial Objects Database

The STAR BOOK TEN contains more than 272,000 celestial objects including approximately 260,000 stars from the SAO catalogue, 109 Messier objects, 7840 NGC objects and 5380 IC objects as well as the sun, the moon and planets. Objects can be called up by common name and information can be customized.

Hibernate

STAR BOOK TEN has a large capacity of backup memory where your alignment information can be stored. This allows you to turn off the power of the mount temporarily to save batteries. The mount resumes tracking and "Go-To" slewing perfectly when you turn on the power again.

P-PEC

Periodic error corrections you have done to improve tracking accuracy of the mount are saved and retained if you turn off the power (It is available for SXP2, AXJ and AXD2). The P-PEC data can be called up next time you use the mount for astrophotography.

Autoguider

An external autoguider which is compatible with the ST series autoguiders from SBIG is available. The advantages of the autoguider are most apparent during long exposure astrophotography.

Moon Map

With the Moon Map menu, the telescope can be automatically pointed at great craters on the surface of the moon. The Go-To slewing to geographical features of the moon's surface is available in both Scope Mode and Chart Mode by choosing the name of the location from the list or by choosing places marked in numbers or letters on the moon map.

Zooming in the moon map will display more details of the site. The orientation of the moon map can be changed as it can be rotated or mirror-reversed according to your needs.

AXJ

AXJ Equatorial Mount

Vixen's new design introduces the sturdy and precision made AXJ mount is designed with a belt drive to eliminate backlash and gear noise. It is best suited for the demanding astrophotographer as a comfortable and secure imaging platform.

The AXJ Mount features superior performance for the discriminating Astrophotographer.

NEW

Superior Periodic Error Correction

The periodic motion of each mount measured and corrected are stored in the nonvolatile memory inside the AXJ mount at Vixen's factory before shipment. In the AXJ mount, the periodic motions at 12 points are checked on the worm wheel at an angle of 30 degrees intervals by using a high resolution periodic motion measuring tool. The most effective correction has been calculated based on this inspection. Vixen's permanent periodic error correct which is called, VPEC, works automatically as you use the AXJ mount. It provides precise tracking as accurate as +/- 4 arc seconds or less. You will be able to raise the tracking accuracy further by adding your own recorded PEC as the occasion demands.

Belt Drive System

In the conventional drive system of the Vixen equatorial mounts, motion power of the motor was conveyed to the worm gear by the gear trains. The gear trains require a minimum amount of play to move the gears and the amount of play increases as the number of gears increase. To avoid this, transmission of the motion power has been changed from the gears to a belt system. As a result, backlash originated from the gear train has been eliminated and the gear noise has been reduced dramatically. Quiet and stable motion with reliable response has been achieved.

(36951)

AXJ Mount

Specifications	AXJ Equatorial Mount
R.A.	225-tooth full circle micro-movement wheel gear, 114.5mm in diameter, made of brass
DEC	192-tooth full circle micro-movement wheel gear, 98mm in diameter, made of brass
Worm gears	15.5mm in diameter, made of brass
R.A. axis	40mm in diameter, made of carbon steel
DEC axis	40mm in diameter, made of carbon steel
Number of bearings	14 pieces
Counterweight bar	25mm in diameter, made of stainless steel, retractable
R.A. setting circle	10 minutes (hour angle) increments, accessible to 1 minute by vernier reading
DEC setting circle	2 degrees increments, accessible to 10 arc minutes (about 0.167 degrees) by vernier reading
Polar axis scope	Built-n 6x20mm scope, Field of view 8 degrees, 3-star alignment method with Polaris, Delta Umi and 51 Cep in the northern hemisphere, with Octantis stars in the southern hemisphere, With 3 arc minutes of setting accuracy, Dark-field Illuminated reticle with automatic turn off light, Brightness adjustable in 8 steps
Azimuth adjustment	Coarse setting: 360 degrees, Fine adjustment: about +/- 5 degrees, Double tangent screws: about 1.7 degrees per rotation
Altitude adjustment	Latitude between 0 degree and 70 degrees (3 divided adjustments: +/-15 degrees per zone), 3 altitude zones (for high, middle and low latitudes), 2 degrees increments, Double T-bar screws: 0.7 degrees per rotation
Drive unit	Pulse motors (Belt drive system), Micro-step motion control (300 pps)
Automatic slewing/ Tracking	Automatic "Go-To" pointing with STAR BOOK TEN, Maximum tracking speed: about 800x sidereal rate, Precision tracking with micro-step motion control
Loading capacity	22 kg (48.5 lb) at a point of 25cm above from the place where the RA and DEC axes cross.
Controller port	D-SUB 9PIN(Male)
Power port	DC12V EIAJ RC5320A Class 4, Center plus
Power consumption	0.45A to 2.2A at 12 kg loading weight, 0.6A to 2.5A at 22kg loading weight
Dimensions	420mm x 466mm x 138mm
Weight	About 17.4 kg (38.3 lb) Excluding counterweight
Counterweight	3.5 kg (7.7 lb) x 1 and 1.5 kg (3.3 lb) x 1

Optional Tripod for AXJ

(25161)

SXG-HAL130 Aluminum Tripod

Adjustable leg length : from 807mm to 1299mm long
Adjustable tripod height : from 730mm to 1156mm high
Leg width & thickness : 72mm wide x 30mm thick
Base spread : from 460mm to 7060mm in radius
Weight : 5.5 kg / 12.1 lb.

(36916)

AXD-TR102 Aluminum Tripod

(Refer to page 28.)

NEW

(36953)

AXJ-TR102 Conversion Adapter Set

- With use of the AXJ-TR conversion adapter set, the AXJ Mount can be installed on a robust AXD-TR102 tripod designed for the AXD2 Mount. This optional accessory is exclusive for the AXJ Mount.

(25164)

ASG-CB90 Carbon Fiber Tripod

NEW

- Available for AXJ mount, SX series of Sphinx mounts, AP mount, GP/GPD mounts, HF2 folk mount, PORTA II mount and SXG half pillar.

Tripod legs : 2-section carbon fiber legs, adjustable from 510mm to 815mm in height.
Adjustable leg length : from 545mm to 900mm.
Minimum length : 590mm long including the tripod head
Weight : 3.4 kg / 7.48 ib

Optional Accessories

(3810)

Dovetail-plate Mounting Block

- Used to install a dovetail plate attached optical tube.
- Fits directly onto the AXJ or AXD2 mount head.
- Usable for Accessory plate DX.
- With 1/4" threaded holes

Weight : 220 g / 7.76 oz

(36918)

AXD Large Accessory Plate

NEW

Size : 400mm x 200mm
Thickness : 15mm
Weight : 2.9 kg / 6.38 lb

(89224)

AXJ Mount Case

- Made of lightweight but durable and shock absorbing polypropylene boards and an aluminum alloy frame.

Size : 470mm x 490mm x 230mm
Weight : 4.3 kg / 9.46 lb

(3599)

AC Adapter 12V 3A

Weight : 320 g / 11.28 oz

(35621)

Guide Mount XY

Weight: 750 g / 26.45 oz

(36912)

AXD Counterweight 1.5 kg (3.3 lb)

(36913)

AXD Counterweight 3.5 kg (7.7 lb)

(36914)

AXD Counterweight 7.0 kg (15.4 lb)

*The specifications are subject to change without notice.

"Innovation" and "Inheritance" are here. The AXJ mount is a new endeavor to build high quality imaging platform.

The AXJ mount not only succeeds superior quality and excellent performance that are provided the Vixen's flagship AXD2, but also has an advanced technology that raises the level of accuracy.

Bearings

The rotational parts of the AXJ mount have 14 pieces of bearings in total. This provides extremely smooth motion for tracking and slewing to the target objects.

Loading Capacity

The use of two pairs of the bearings at both ends of the R.A axes and the distance of the both ends is wide in breadth. This helps to increase loading capacity while maintaining the lightweight mount. The AXJ mount carries a maximum loading weight of 22 kg (48.5 pounds).

Fork Arms Style R.A. Body Pedestal

The R.A body of the AXJ mount is installed on the pedestal with two fork arms. Its design is lightweight while keeping the sturdiness.

Versatile Mount Head

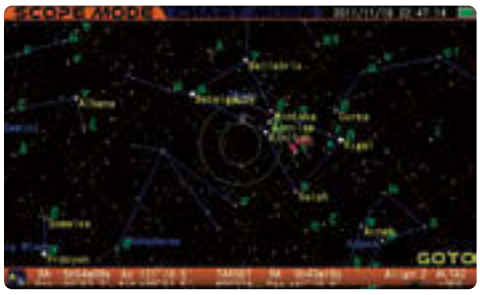
The mount head of the AXJ is an anodized aluminum plate that is resistant to scratches. Threaded holes on the mounting head for an optical tube cradle accept Vixen's mounting plates and are designed for other manufacturer's plates. The four screw holes for M8 metric screws and another four screws holes for UNC 5/16-inch screws.

Navigation with STATR BOOK TEN

The STAR BOOK TEN features user-friendly operation. The position of the telescope, the target and other useful information are displayed on the screen in detail. The night vision mode illuminates the whole screen in red, if applied, and will limit the brightness to the observer's eyes. It is highly recommended for any star gazing enthusiast from entry-level to experts.

Star Chart Mode

With observatory quality controls, popular celestial objects appear on the high definition screen of the STAR BOOK TEN. Its advanced navigation technology shows you the sky before the Go-To send you there. With the ability to zoom to any area, you can easily find your target object. No PC needed with the STAR BOOK TEN.



Search by a List of Well-known Objects

The STAR BOOK TEN has a list of week-known deep sky objects in its database, including Andromeda Galaxy, Hyades, Pleiades and many more. Celestial objects on the database can be easily searched by number or name. You can also register and save new celestial objects.

STAR BOOK TEN

A fusion of Superior Performance and Ease of Use

The AXJ mount comes with the STAR BOOK TEN which features an intuitive 'Star-Chart Go-To' navigation with a high definition color LCD display. Not only avid amateur astronomers who are keen on astrophotography but also novices will appreciate the high performance of the AXJ mount thanks to the versatile and user-friendly STAR BOOK TEN controller.

The AXJ Mount combines the best slewing and tracking in a user-friendly ergonomic design.

No matter how you are involved win astronomical observing or astrophotography, the superior interface of the STAR BOOK TEN lets you operate the AXJ mount without any difficulty.

Advanced Motor Layout

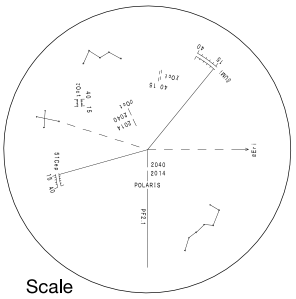
The heavy R.A and DEC motor units are placed in the lower part of the declination body so that the center of balance of the AXJ mount shifts to below the crossing point of the R.A and DEC axes, as seen in our SX series of equatorial mounts.

Retractable Counterweight Bar

The counterweight bar is a durable stainless steel of 25mm thick and it is stored inside the declination body. This aids in quick set up.

Polar Alignment Scope

The Polar Scope is used to accurately align the AXJ mount to the north or south celestial pole. The polar alignment is easy, as you simply bring Polaris and two other stars into the polar scope's field of view so that each can be matched with the designated position on the scale on the polar scope's reticle (in the northern hemisphere). The brightness adjustment dial of the polar scope will illuminate the reticle in red when turned on. The brightness can be adjusted in 8 steps. The red light becomes gradually dimmer after a certain interval of time and turns off automatically.



Scale

Accessory Shoe

There is an accessory shoe for an optional Polar Meter which is a compass with a bubble level and an altitude scale used for locating Polaris with ease. It allows for simple set up in daytime.

Tripod

The AXJ mount is compatible with an SXG-HAL130 tripod sold separately. The ASG-CB90, a compact and lightweight tripod which is constructed of durable Carbon fiber legs, is another option for a travelling astrophotographer. With use of an optional AXJ-TR102 conversion adapter set, it can be installed on a robust AXD-TR102 tripod designed for the AXD2 mount, also. Optionally available SXG-P85DX and AXD-P85DX pillars can offer you a permanent installation of the AXJ Mount in an observatory dome.

SXG-HAL130

AXD-TR102

ASG-CB90

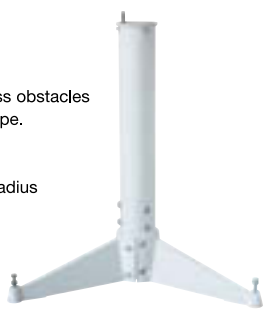
Optional Pillar

25172

SXG-P85DX Pillar

- Pillars have the advantage of less obstacles to the placement of your telescope.

Pipe size : 114mm dia. 840mm
Thickness : 3.5mm
Pedestal spider legs : 450mm in radius
Weight : 19.5 kg / 43 lb



*The specifications are subject to change without notice.

AXD2

AXD2 Equatorial Mount

With its amazing precision, incredible performance and simplicity of use, the AXD2 mount has no rival in its class. It provides tracking as accurate as +/- 2.8 arc seconds.

Vixen's Flagship Equatorial Mount Combines Superior Performance with Ease of Use.

Pleasure of Using the Flagship AXD2

Avid astronomers will find that the high performance and precise tracking of the AXD2 mount will raise their level of astrophotography. With its ease of use and superior performance, the AXD2 mount offers even novice astronomers the opportunity to be a successful astrophotographer. No matter how you are involved in astronomical observing or astrophotography, the superior interface of the STAR BOOK TEN lets you operate the AXD2 mount without any difficulty.

Sturdy and Precise Mount for Astrophotography

With the increase of digital imaging equipment, we see many exquisite astrophotos. The pixels and sensitivity of the imaging sensors are increasing allowing for even more amazing astrophotographs. Vixen has re-worked the standard structure of a German Equatorial mount, to create the AXD2 mount. Both the R.A. and DEC axes are made of lightweight but strong A7075 super aluminum ally which is 50mm in diameter. As a result, the AXD2 mount outperforms other imaging platforms. And, with a 30 kg (66 lbs) load capacity the mount is suitable for all your imaging equipment.

Star Chart Go-To Navigation

The AXD2 equatorial mount comes with STAR BOOK TEN which features intuitive 'Star-Chart Go-To' system with high definition color LCD display. The position of the telescope, the target and other useful information are displayed on the screen in detail. The night vision feature illuminates the whole screen in red, if applied, and will limit the brightness to the observer's eyes.

36941
AXD2 Mount

Specifications	AXD2 Equatorial Mount
R.A.	270-tooth full circle micro-movement wheel gear, 135mm in diameter, made of brass
DEC	216-tooth full circle micro-movement wheel gear, 108mm in diameter, made of brass
Worm gears	14.5mm in diameter, made of brass
R.A. axis	50mm in diameter, made of A7075 super aluminum alloy
DEC axis	50mm in diameter, made of A7075 super aluminum alloy
Number of bearings	21 pieces
Counterweight bar	25mm in diameter, made of stainless steel, retractable
R.A. setting circle	10 minutes (hour angle) increments, accessible to 1 minute by vernier reading
DEC setting circle	2 degrees increments, accessible to 10 arc minutes (about 0.167 degrees) by vernier reading
Polar axis scope	Built-n 6x20mm scope, Field of view 8 degrees, 3-star alignment method with Polaris, Delta Umi and 51 Cep in the northern hemisphere, with Octantis stars in the southern hemisphere, With 3 arc minutes of setting accuracy, Dark-field Illuminated reticle with automatic turn off light,Brightness adjustable in 8 steps
Azimuth adjustment	Fine adjustment: about +/- 7 degrees, Double tangent screws: about 1 degree per rotation
Altitude adjustment	Latitude between 0 degree and 70 degrees (3 divided adjustments: +/-15 degrees per zone), 3 altitude zones (for high, middle and low latitudes), 2 degrees increments, Double T-bar 0.5 degrees per rotatio
Drive unit	Pulse motors (Belt drive system), Micro-step motion control (400pps)
Automatic slewing/ Tracking	Automatic "Go-To" pointing with STAR BOOK TEN, Maximum tracking speed: about 800x sidereal rate, Precision tracking with micro-step motion control
Loading capacity	30 kg (66 lb) at a point of 25cm above from the place where the RA and DEC axes cross.
Controller port	D-SUB 9PIN(Male)
Power port	DC12V EIAJ RC5320A Class 4, Center plus
Power consumption	0.45A to 2.2A at 15 kg loading weight, 0.6A to 2.5A at 30 kg loading weight
Size	457mm x 465mm x 152mm
Weight	About 25 kg (55.1 lb) Excluding counterweight
Counterweight	7 kg (15.4 lb) x 1 and 1.5 kg (3.3 lb) x 1

Optional Pillar or Tripod for AXD2

25173
AXD-P85DX Pillar

- Robust observatory pillar.

Pillar tube : 139.8mm dia. X 881.5mm high
Thickness : 3.8mm
Base spread : 450mm in radius
Weight : 24.5 kg / 53.9 lb.

36916
AXD-TR102 Aluminum Tripod

- Adjustable leg length from 760mm to 1018mm long.
- Adjustable tripod height from 690mm to 915mm high.
- Legs spread from 440mm to 570mm in radius.

Leg pipe : 55mm dia.
Weight : 10.3 kg / 22.7 lb.

Optional Accessories

3810
Dovetail-plate Mounting Block

- Used to install a dovetail plate attached optical tube
- Fits directly onto the SXP2, AXJ or AXD2 mount head
- Usable for Accessory plate DX
- With 1/4" threaded holes

Weight : 220 g / 7.76 oz

36918
AXD Large Accessory Plate

Size : 400mm x 200mm
Thickness : 15mm
Weight : 2.9 kg / 6.38 lb

36915
AXD Half Pillar

Size : 158mm dia. x 275mm
Weight : 4.9 kg / 10.8 lb

3599
AC Adapter 12V 3A

Weight : 320 g / 11.28 oz

35621
Guide Mount XY

Weight : 750 g / 26.45 lb

89222
AXD Aluminum Case

Size : 450mm x 540mm x 240mm
Weight : 6.7 kg / 14.7 lb

36912
AXD Counterweight 1.5 kg (3.3 lb)

36913
AXD Counterweight 3.5 kg (7.7 lb)

36914
AXD Counterweight 7.0 kg (15.4 lb)

For serious astrophotographers who demand a perfect imaging platform.

The AXD2 mount is designed for you. With its amazing precision, incredible performance and simplicity of use, the AXD2 mount has no rival in its class.

Sturdy R.A and DEC axes, Lightweight Body

The structure of German equatorial mounts has been thoroughly examined to create the sturdy but lightweight AXD2 mount. The A7075 super-alloy, which is the strongest material among the group of aluminum alloy, is used for the R.A and Dec axes. The tension of the A7075 super alloy is stronger than titanium a lightweight material of high strength. Its specific gravity is 38% less than titanium. Both axes are as thick as 50mm in diameter. The use of the A7075 super-alloy for the axes makes the AXD2 lightweight while retaining its sturdiness.

RA Axis DEC Axis

Large Worm Wheels

Sizes of the worm wheels have been increased in the AXD design. The AXD2 mount has 270 teeth in R.A and 216 teeth in DEC. It achieves a high level of tracking accuracy and tracking stability.

Bearings

The rotational parts of the AXD2 mount have 21 pieces of bearings in total. This provides surprisingly smooth motion for tracking and slewing to the target objects.

STAR BOOK TEN

The AXD2 mount comes with the STAR BOOK TEN which features an intuitive 'Star-Chart Go-To' navigation with a high definition color LCD display. The position of the telescope, the target and other useful information are displayed on the screen in detail. The night vision mode illuminates the whole screen in red, if applied, and will limit the brightness to the observer's eyes. It is highly recommended for any levels of visual observers.

The STAR BOOK TEN contains more than 272,000 celestial objects including approximately 260,000 stars from the SAO catalogue, 109 Messier objects, 7840 NGC objects and 5,380 IC objects as well as the sun, the moon and planets. Objects can be called up by common name and information can be customized.

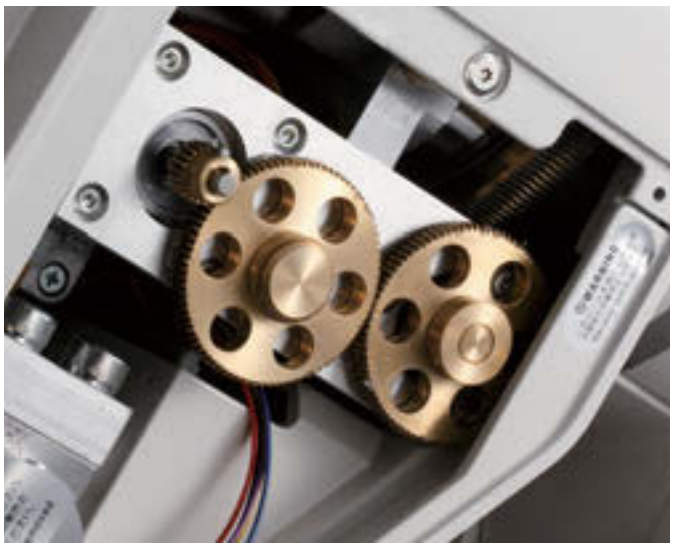
Search by a list of well-known objects.

High Response Pulse Motors

Vixen selected two-phase hybrid pulse motors for high response and which enable the AXD2 to fully realize its performance potential. With an excellent micro-step motion control system which achieves a wide dynamic range, the AXD2 mount delivers surprisingly smooth driving from low tracking speed to high slewing speed at 800X of the sidereal rate. The micro-step motion control system generating high speed 400 pulses per second results in stable and smooth movements free of oscillation. Newly developed software program and improvement of the motor control board successfully reduce the electricity consumption of the pulse motors while maintaining high torque.

Backlash Reduction

The micro-step motion control system accurately works the pulse motors from low speed to high speed. This eliminates the need for reduction gears in the motor gear train. And dramatically decreases backlash of the gears.



Ultimate Periodic Error Correction - VPEC

The periodic motion of each AXD2 mount has been measured precisely and stored in the nonvolatile memory inside the mount at Vixen's factory. This is called VPEC. The VPEC works automatically as you use the mount. It provides tracking as accurate as +/-2.8 arc seconds. You will be able to raise the tracking accuracy further by adding your own recorded PEC as the occasion demands.

*The specifications are subject to change without notice.

The AXD2 Mount – Innovative, Elegant and Functional.

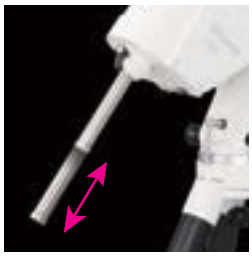
The AXD2 mount has minimal external protrusions and innovate interior design. It is the flagship of Vixen's line of well-designed equatorial mounts.

Silver Setting Circles

Polished silver anodized setting circles in R.A and DEC have both beauty and utility. They not only match the white AXD2 body nicely but also allow you to point your telescope to a target well within the provided verniers. The RA reads 1 minute (hour angle) and the DEC reads 10 arc minutes (or about 0.167 degrees).

Retractable Counterweight Bar

The counterweight bar is a durable stainless steel of 25mm thick and it is stored inside the declination body. This aids in quick set up.



Advanced Motor Layout

The heavy R.A and DEC motor units are placed in the lower part of the declination body so that the center of balance of the AXD2 mount shifts to below the crossing point of the R.A and DEC axes. This makes the lower portion of the declination body act as a counterweight. Additionally, the low profile mount head allows the mount to balance with less counterweight.

Reliable Wiring

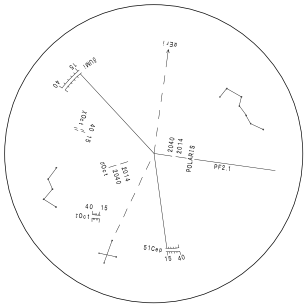
All the electronic parts inside the AXD2 mount are accumulated on one electric circuit board to simplify electrical wiring. The mount is equipped with a highly reliable and safe electric circuit board.

Mount Head

The mount head of the AXD2 mount is made of an anodized aluminum plate that is high resistant to scratches. The threaded holes on the mount head accept both Vixen's dovetail mounting block and other manufacturer's tube plates.

Polar Alignment Scope

The Polar Scope is used to accurately align the AXD2 mount to the north or south celestial pole. The polar alignment is easy, as you simply bring Polaris and two other stars into the polar scope's field of view so that each can be matched with the designated position on the scale on the polar scope's reticle (in the northern hemisphere). The brightness adjustment dial of the polar scope will illuminate the reticle in red when turned on. The brightness can be adjusted in 8 steps. The red light becomes gradually dimmer after a certain interval of time and turns off automatically.



Scale

Vibration-Free Tripod

A sturdy tripod with a high grade of stability is essential to fully utilize the AXD2 mount. The dedicated AXD-TR102 tripod with 55mm thick legs is constructed to be strong enough against strain. This achieves perfect stability when using the AXD2 mount.

NEW

The Quad element AX103S apochromatic system features SD glass for uncompromising optical performance, the pinnacle of this aperture class.

AXD2 Mount Package — **AXD2 Mount with AX103S OTA, AXD Half pillar and AXD-TR102 Tripod**

(36942)

AXD2-AX103S

Contents

Optical tube	D=103mm F=825mm (f8) Quad SD apochromatic refractor, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	Optional
Mount	AXD2 with STAR BOOK TEN controller
Tripod	AXD-TR102 2-section round aluminum legs
Accessories	AXD half pillar, Flip mirror diagonal, Dovetail-plate mounting block, Counterweights 1.5 kg x 1 and 7.0 kg x 1

Specifications

Optical tube size	115mm Dia. x 762mm L (shortened to 670mm L)
Tube weight	6.4 kg (Net 4.6 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Tripod legs	Adjustable from 760mm to 1018mm in length, from 690mm to 915mm in height, 10.3 kg
Total weight	55.3 kg / 121.7 lb

NEW

The 103mm f8 SD apochromatic refractor, designed for both visual observing and astrophotography, comes mounted on a sophisticated AXD2 atop a steel pedestal.

AXD2 Mount Package — **AXD2 Mount with AX103S OTA, AXD Half pillar and AXD-P85DX Pillar**

(36943)

AXD2-AX103S-P

Contents

Optical tube	D=103mm F=825mm (f8) Quad SD apochromatic refractor, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	Optional
Mount	AXD2 with STAR BOOK TEN controller
Pillar	AXD2-P85DX Pillar
Accessories	AXD half pillar, Flip mirror diagonal, Dovetail-plate mounting block, Counterweights 1.5 kg x 1 and 7.0 kg x 1

Specifications

Optical tube size	115mm Dia. x 762mm L (shortened to 670mm L)
Tube weight	6.4 kg (Net 4.6 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Metal Pillar	139.8mm dia. x 881.5mm in height, pipe wall 3.8mm thick, 24.5 kg
Total weight	64.6kg / 142.1 lb

NEW

The large, lightweight VMC260L comes mounted on the sophisticated AXD2 Mount and sturdy tripod. It can easily be transported to distant observing sites.

AXD2 Mount Package — **AXD2 Mount with VMC260L OTA and AXD-TR102 Tripod**

(36947)

AXD2-VMC260L(WT)

Contents

Optical tube	D=260mm F=3000mm (f11.5) Precision spherical mirror, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	Optional
Mount	AXD2 with STAR BOOK TEN controller
Tripod	AXD-TR102 2-section round aluminum legs
Accessories	Dovetail saddle plate, Flip mirror diagonal, Counterweights 1.5 kg x 1 and 7.0 kg x 1

Specifications

Optical tube size	304mm Dia. x 680mm L
Tube weight	12.1 kg (Net 10.0 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Tripod legs	Adjustable from 760mm to 1018mm in length, from 690mm to 915mm in height, 10.3 kg
Total weight	55.9 kg / 123.0 lb

NEW

The great light gathering power and long focal length of the VMC260L are best for detailed views of planets and faint deep sky objects. The robust pillar is suitable for use in a permanent observing base.

AXD2 Mount Package — **AXD2 Mount with VMC260L OTA and AXD-P85 DX Pillar**

(36948)

AXDVMC260L(WT)-P

Contents

Optical tube	D=260mm F=3000mm (f11.5) Precision spherical mirror, multicoated
Finder scope	7x50 finder with illuminated reticle, Field of view 7 degrees
Eyepiece	Optional
Mount	AXD2 with STAR BOOK TEN controller
Pillar	AXD-P85DX metal pillar
Accessories	Dovetail saddle plate, Flip mirror diagonal, Counterweights 1.5 kg x 1 and 7.0 kg x 1

Specifications

Optical tube size	304mm Dia. x 680mm L
Tube weight	12.1 kg (Net 10.0 kg)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Metal Pillar	139.8mm dia. x 881.5mm in height, pipe wall 3.8mm thick, 24.5 kg
Total weight	70.1 kg / 154.2 lb

*The specifications are subject to change without notice.

Let's Start Taking Images of Stars and Celestial Wonders!

There are various types of astrophotography. Taking pinpoint images of stars is simple with the use of a wide field photographic lens.

Generally, there are two types of wide field astrophotography. One is fixed tripod astrophotography, with a tripod mounted camera, and the other is piggyback astrophotography, with a camera attached to a polar aligned equatorial mount or star tracker.

Star-Scape Astrophotography

Photographs of constellations and the Milky Way with landscapes or architectural objects included are examples of this type of photography. Your night sky photos are sure to impress. The POLARIE allows you to create 'star-scape' photos in night-sky scenes by adding a motionless night landscape or silhouetted figure in the foreground of your frame.

Wide Field Astrophotography

Photographs of wide-field of views of constellations and the Milky Way are called wide-field astrophotography. Usually nightscapes are not included in the frames of photographs or they will be in the background part of your image. The POLARIE is designed to follow the apparent motion of the stars caused by the earth's rotation, eliminating star trails.

Image taken with POLARIE (Hiroyuki Narisawa)

Fixed-Tripod Imaging

The fixed-tripod imaging is a simple star-scape astrophotography using a camera and tripod only. Star trails go longer as exposure times increase due to the apparent diurnal motion of the stars. Adding landscape or architectural objects in the foreground will make your photos more impressive.

Fixed-tripod Imaging

Time-Lapse Astrophotography

The time-lapse astrophotography is video imaging that is made of hundreds or thousands of still images of the starry skies taken at regular intervals. It allows you to capture the motion of constellations and the Milky Way impressively with the passage of time in the foreground of silhouetted terrestrial objects.
The POLARIE with a POLARIE Time-Lapse adapter is useful for adding slow panning motion to your time-lapse movie.

Afocal Imaging (Collimation Photography)

It is a method which uses direct photographing of an object magnified by an eyepiece.

If you've been thinking that you need to have special skills to enjoy astrophotography, you may be pleasantly surprised with a simple method of photographing the moon by using a compact digital camera.

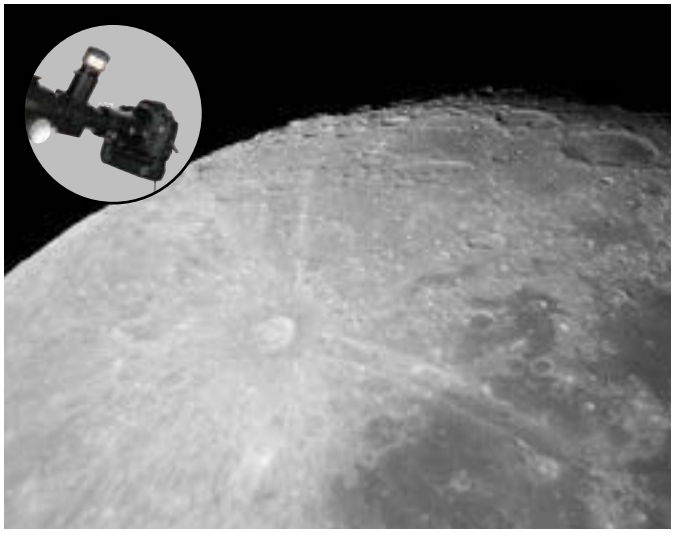
[What You Need] An alt-azimuth mount with slew motion control works well for shooting the moon and bright planets. You just place your compact digital camera attached on the camera adapter in tandem with the visual back of your astronomical telescope so that it is aligned straight to the eyepiece of the astronomical telescope.

Eyepiece Projection Photography

The eyepiece projection photography uses a method which takes images of a magnified object through an eyepiece inserted between the optical tube and a DSLR camera body or a CCD imaging camera.

Eyepiece projection photography is employed when you take photographs of the moon's surface or planets. Unlike the prime focus photography in which only the telescope tube is used, the eyepiece is added to magnify images of the object searching for details. The images taken with this technique appears larger than that taken with the prime focus.

[What You Need] An equatorial mount such as SX2, SXD2, SXP2, AXJ, AXD2 or AP is recommended.



Prime Focus Photography

The prime focus photography technique uses a camera body or a CCD imaging camera attached with adapters to an optical tube. Neither an eyepiece nor a camera lens is used.

Prime focus photography is a typical method in photographing nebulae or star clusters. It employs a DSLR (Digital Single Lens Reflex) camera directly attached on the astronomical telescope.

Specially, it is a method of astrophotography in which the telephoto lens is replaced by the astronomical telescope tube. This enables photography with a high magnification at a reasonable cost as compared to the use of a dedicated telephoto lens for the (D)SLR camera.

When you take photographs of deep sky objects with the prime focus photography method, it is necessary to track the object accurately for a long time. It may sound a little difficult, but you can try this method by referring to articles on astrophotography.

[What You Need] An equatorial mount such as SX2, SXD2, SXP2, AXJ, AXD2 or AP is recommended. Long exposure is required for capturing faint objects like nebulae and star clusters. Thus use of a sturdy mount with motor drive for autoguiding is required.

The Lagoon nebula (M8) and the Trifid nebula (M20) taken with Vixen R200SS.

POLARIE

POLARIE STAR TRACKER

NIGHT PHOTOGRAPH
Vixen

Taking photos of the night sky has never been easier!

The POLARIE Star Tracker makes imaging of the night sky accessible to everyone. Put POLARIE in your knapsack or camera bag and go out to snap pictures of the beautiful starry sky. The POLARIE is your traveling companion and records memories of night sky scenes.

With a simple polar alignment set up, the POLARIE, on a camera tripod, allows you to take images of night sky without trailing as it automatically follows the movement of the stars.

Batteries for the POLARIE

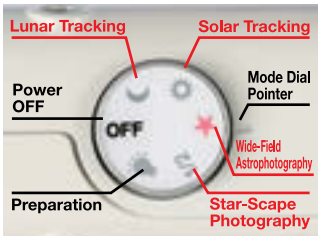
The POLARIE works with 2 AA alkaline batteries for about two hours. (It is possible to use rechargeable batteries.) For long hours of use, the POLARIE is equipped with a USB-miniB plug socket available for external power supply.

Easy Setup in a dark place

The built-in indicator is backlit in red for the northern hemisphere. The legend on the mode dial will also illuminate.

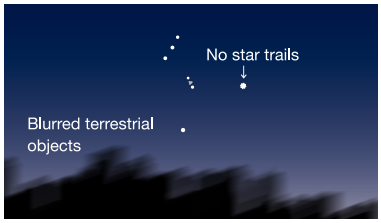
Different Tracking Speed

Besides the ordinary celestial tracking rate, the POLARIE has solar rate, lunar rate and a half speed of the celestial rate which allows you to take images of the night sky with minimal blurring of the foreground ('star-scape' mode). Each position on the mode dial is backlit if selected.



Star-Scape Astrophotography

It allows moderately long exposures with minimal blurring of the foreground.



Wide-Field Astrophotography

It allows moderately long exposures with no star trails but blurred terrestrial objects.

(35505)

POLARIE Star Tracker

Specifications	POLARIE
Tracking mode	Celestial tracking, 1/2 celestial tracking, Solar tracking, Lunar tracking, usable in both northern and southern hemispheres
Drive gears	Worm gear and 57.6mm dia. wheel gear with 144-tooth
Polar axis	40mm dia. made of aluminum alloy
Bearings	2 pieces
Drive motor	Pulse motor
Polar sight hole	About 8.9 degrees field of view
Tilt indicator	Angles between 0 degree and 70 degrees (5 degrees increments)
Compass	Detachable, Supplied as standard accessory
Working voltage at 2.0kg loading capacity	2x AA size batteries – DC2.4V to 3.0V, Max 0.6A External power supply – DC4.4V to 5.25V, Max 0.3A
External Power supply	USB-miniB
Duration of operation	About 2 hours at 20 degrees (68F) temperature and a 2kg / 4.4 lb loading weight with use of alkaline batteries
Operating temperature	0 degree to 40 degrees C
Size	95mm x 137mm x 58mm (3.7 x 5.9 x 2.3 inches)
Weight	740 g / 26.1 oz (without batteries)
Optional accessory	POLARIE Polar scope PF-L

Just put the camera on the POLARIE and you are ready to start capturing images of the starry sky.

(35524)

POLARIE with M-155MA Tripod

NEW

Everything you need to start astrophotography with POLARIE. This is a package of a POLARIE Star tracker and a sturdy M-155MA tripod complete with a POLARIE Fine adjustment unit and a QHD-33 Ball head for mounting a camera.

Increase the loading weight of the POLARIE Star Tracker with optional accessories to take images of deep sky wonders with a telephoto lens.

Quick Release Angle Plate

It is an "L" shaped plate which is used to hold a DSLR camera body both in vertical and horizontal positions. The Quick Release Angle Plate has an advantage over the ball head in stability. With use of this product, the camera can be set closer to the center of gravity and will prevent the camera from moving.

- Applicable to a DSLR Camera with 1/4" thread socket.
- Usable with the Quick Release Panorama Clamp.

Size : 120mmL x 38.1mmW x 71.5mmH
Weight : 110g

Quick Release Panorama Clamp

The quick release panorama clamp has a low profile design that mounts a DSLR camera in the position with a low center of gravity. It is installed on an end of the optional Dovetail Slide Bar DD and used in combination with the optional Quick Release Angle Plate. Because the POLARIE Multi Mounting Block can only rotate the camera in the direction of diurnal movement, the use of the Quick Release Panorama Clamp can rotate the camera in the direction of declination. It allows the camera to slew to your target easily.

- Applicable to a Dovetail Slide Bar or Dovetail Slide Bar DD.
- Usable with the Quick Release Angle Plate.

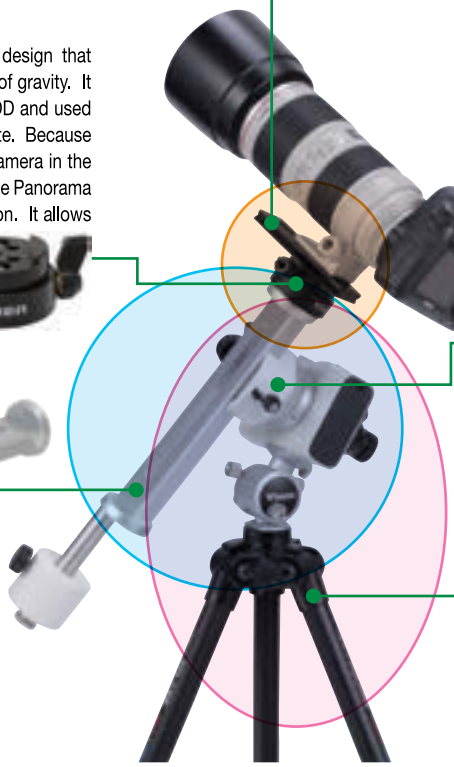
Size : 61mm dia. x 32mmH
Weight : 210g / 7.4 oz.

Dovetail Slide Bar DD

This dovetail slide bar has a Vixen standard width of 44mm. It has disc plates with 1/4-inch camera screws on its both ends to install the optional Quick Release Panorama Clamp or a commercially available Ball Head on it.

- Thread sockets : 1/4" x 2, M6 x 4

Size : 55mm dia. x 260mmL
Weight : 390g / 13.8 oz.



POLARIE Multi Mounting Block

This mounting block is used to attach the Vixen standard dovetail attachment plates to the POLARIE Star Tracker. The standard camera mounting block provided for the POLARIE is replaced by the POLARIE multi mounting block to increase a loading capacity of the POLARIE. Thus, a dovetail slide bar DD sold separately, and an optional counterweight assembly are available for the POLARIE to mount a heavy telephoto lens for deep-sky astrophotography.

- Applicable to a POLARIE Star Tracker.
- Usable with the Dovetail Slide Bar or Dovetail Slide Bar DD.

Maximum loading weight : 6.5kg / 14.3 lb
Size : 78mm dia. x 65.5mmH
Weight : 440g / 15.5 oz.

M-155MA Tripod

It comes equipped with the POLARIE Fine Adjustment Unit which allows for smooth polar alignment by the POLARIE Polar scope PF-L installed onto a POLARIE Star tracker. The POLARIE Fine Adjustment Unit is detachable from the tripod head. It has both the 1/4 thread socket and the 3/8 thread socket on its bottom for the use with commercially available camera tripods.

POLARIE Step-up Kit

Example

This POLARIE Sep-up Kit is complete with the POLARIE Multi Mounting Block, Dovetail Slide Bar DD, POLARIE Polar Scope PF-L and POLARIE Fine Adjustment Unit. If you already have a POLARIE Star Tracker, this heavy loading kit is beneficial to your deep-sky astrophotography with a telephoto lens. Both a counterweight 1.0 kg and a supplementary counterweight bar shown on this page are optional.

Quick Release Clamp Set

Example

It consists of the Quick Release panorama Clamp and the Quick Release Angle Plate.

POLARIE with M-155MA Tripod Set

Just put the camera on the POLARIE and you are ready to start capturing images of the starry sky. This is a convenient package consisting of a POLARIE and a sturdy M-155MA tripod complete with the POLARIE Fine Adjustment Unit and QHD-33 Ball Head.

Example

NIGHT PHOTOGRAPHY

NIGHT PHOTOGRAPH
Vixen

The Night Photographs generally feature artificial objects such as decorative illuminations, fireworks, street lights, and neon signs. In addition, photographs of scenery illuminated by moon light, wide field photos of starry skies and images of the wonders of nature are included in Night Photograph. Imaging our world at night will extend your fun with photography. Vixen promotes photography at night with an icon of "NIGHT PHOTOGRAPH" shown here in order to encourage more people to look up to the starry night sky.

*The specifications are subject to change without notice.

Camera tripod with POLARIE fine adjustment unit

A sturdy tripod, made by Velbon for Vixen, has fine motion control knobs on its tripod head for accurate and smooth polar alignments of your POLARIE Polar Scope PF-L.

35523

M-155MA Tripod

- 4-section legs, adjustable from 470mm to 1550mm in height.
- With center poll elevator 280mm long.
- Minimum tripod length: 510mm.
- Comes with a QHD-33 Ball head adapter.

Weight : 1.7 kg / 3.74 lb

For long exposure astrophotography

The Polar scope is used to accurately align your POLARIE star tracker to the north or south celestial pole. It's 6X20mm tube fits to the center hole of the POLARIE neatly. The Polar scope comes equipped with variable intensity illuminator for reading scales in the scope's dark field of view.

35521

POLARIE Polar Scope PF-L

- 6X20mm Polar scope.
- Fits the center hole of POLARIE to allow for more precise polar alignment with ease.
- With dark field reticle illuminator for reading scales.

PF-L Assist App

The PF-L Assist app helps you to align your POLARIE to the north celestial pole or south celestial pole to make it turn parallel to earth's rotational axis easily. The free download PF-L Assist app is available for iPhone, Android and Kindle fire.

Example

35511

Polar Meter

- The Polar Meter is a compass with a bubble level and an altitude scale used for locating Polaris with ease. It attaches to the accessory shoe on POLARIE.

Weight : 100 g / 3.52 oz

Example

35512

POLARIE Cradle

- It is useful to mount a POLARIE on a MINI PORTA, PORTA II or MOBILR PORTA mount.

Weight : 500 g / 17.6 oz

Example

35518

POLARIE Time-lapse Adapter

- It turns your POLARIE into a simple and handy Time-Lapse unit. With dual UNC1/4 and 3/8 inch threads for camera tripod.

Weight : 165 g / 5.82 oz

Example

35519

POLARIE Fine Adjustment Unit

- It is used in combination with a POLARIE or AP Star Tracker made up of an AP Polar axis bracket and other units.

Weight : 300g / 10.58 oz

Example

35522

POLARIE Multi Mounting Block

- It is used exclusively for a POLARIE as a mounting block for Vixen's standard dovetail slide bars in place of the POLARIE's original camera mounting block.

Weight : 440g / 14.08 oz.

This product is not usable by itself.

Example

35525

Dovetail Slide Bar DD

- A Vixen standard dovetail slide bar that is designed to work in combination with a POLARIE Multi Mounting Block.

Weight : 390g / 13.7 oz.

Example

35529

POLARIE Step-up Kit

- A perfect starter kit for upgrading your POLARIE to take wide-field astrophotography with use of a telephoto lens.

Weight : 1350 g / 47.6 oz

Counterweight bar and counterweight are sold separately.

Example

35526

Quick Release Angle Plate

- It is used together with a Quick release panorama clamp.

Weight : 110 g / 3.88 oz

Example

35527

Quick Release Panorama Clamp

- It allows for rotating a camera in the direction of the perpendicular against the diurnal motion if this unit is attached onto the Dovetail slide bar DD.

Weight : 210 g / 7.4 oz

Example

35528

Quick Release Clamp Set

- It is useful for holding a camera securely on a POLARIE step-up kit.

Weight : 320 g / 11.27 oz

Enjoy Long Exposures Deep-Sky Imaging with a Telephoto Lens

NIGHT PHOTOGRAPH Vixen

The AP Photo Guider is a sturdy and reliable tracker for close up views of star clusters and nebulae.

The AP Photo guider is a versatile star tracker for long exposure astrophotography having the same precision of the AP mount and the ease of portability. It comes equipped with the STAR BOOK ONE controller that provides you both accurate tracking for hours and comfortable operation.

High Precision Tracking

The AP Photo Guider allows you to take pinpoint photos of stars and constellation without guiding corrections for the length of several minutes. If you have a DSLR camera with telephoto lens, photographing nebulae and star clusters will be fun with the AP Photo Guider.

Lightweight

The AP Photoguider includes the sturdy but lightweight APP-TL130 Tripod, with the complete system weighing only about 12 lbs., convenient for transporting to a dark location away from light pollution.

Optional modules and units which may be necessary to transform an AP Photo Guider to an AP Equatorial Mount

25808
Manual Slow Motion Control Module
• For single-axis drive

25805
DEC Motor Module
• For dual-axis drive

25815
AP Clamp Mount Head Unit

25812
AP Declination Body Set

25818
Slow Motion Control Knob
• For manual operated

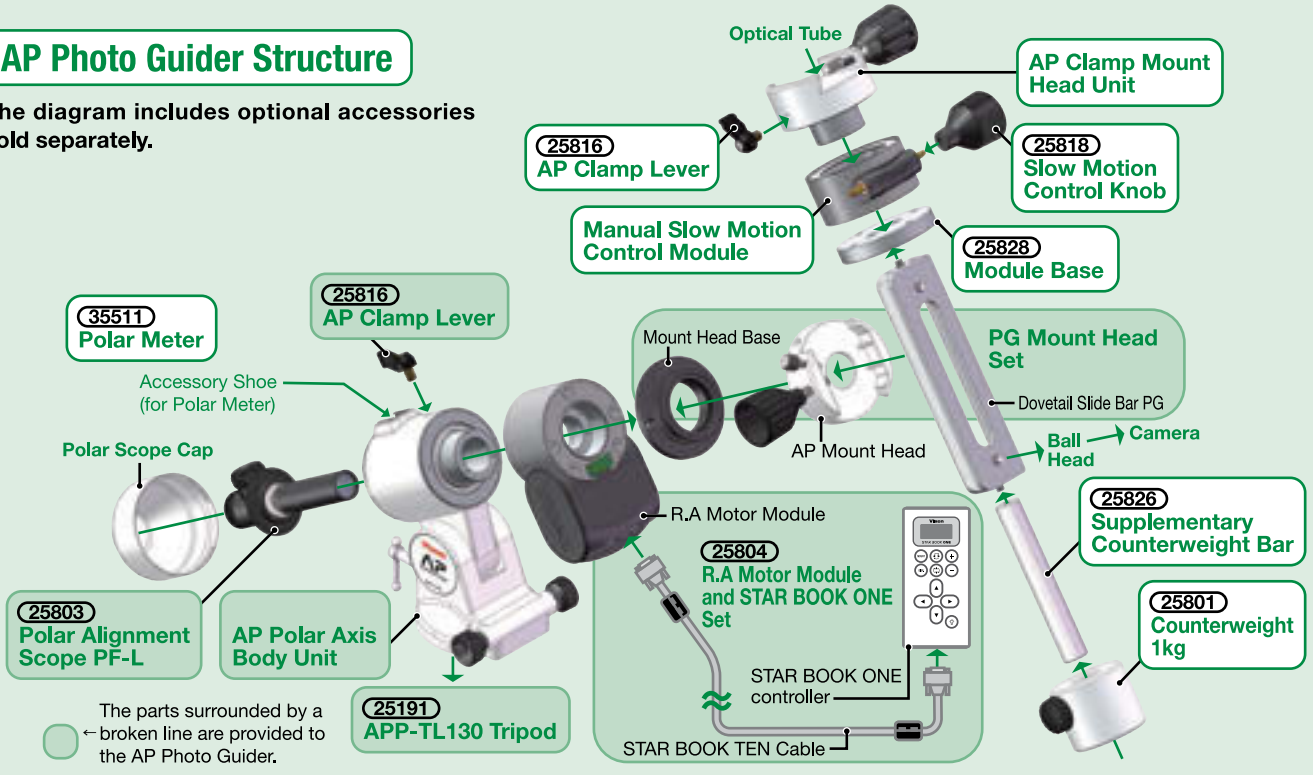
25801
Counterweight 1kg

39989
AP Photo Guider

Mount Specifications	AP Photo Guider
Slow motion control	Wheel and worm gears full circle micro movement by electricity
Quick slewing motion	Friction stop motion
Wheel gear	73.5mm in diameter, 144-tooth
Worm gear	11mm in diameter, made of brass
R.A axis	59mm in diameter, made of aluminum ally
Number of bearings	4 pieces
Azimuth adjustment	+/-6.5 degrees fine adjustments with twin adjustment screw knobs, 1.4 degrees per rotation
Altitude adjustment	0 degrees to 65 degrees with tangent screw with handle, 1.9 degrees per rotation
Polar alignment scope	6x20mm field of 8 degrees, self-light-off dark field illuminator (8 steps adjustments), setting accuracy of 3 arc minutes or less, CR2032 battery
Motor drive	Pulse (Stepping) motor
Tracking	High precision tracking with STAR BOOK ONE
Maximum loading Wt.	6 kg (150kg-cm torque load at a point of 25cm from the fulcrum)
Cable connecting port	D-SUB 9PIN male plug
Power supply port	USB Micro-B (DC4.4 to 5.26V)
Power supply	USB external battery pack (Not sold by Vixen)
Electricity consumption	DC5V 0.2 to 0.5A (1.0 to 2.5W)
Weight	2.4 kg / 5.28 lb

AP Photo Guider Structure

The diagram includes optional accessories sold separately.



*The specifications are subject to change without notice.

An example of an upgraded AP Star Tracker composed of AP modules and optional parts.

AP Star Tracker for Wide-Field Astrophotography

NIGHT PHOTOGRAPH Vixen

Getting Started with Wide-Field "Star-Scape" Astrophotography.

The versatile AP Mount modules and expandable units are suitable for building a portable equatorial mount or small imaging platform that is suitable for your needs. The system structure below shows an example of what you can create with the AP modules and units.

25832 AP Star Tracker

Slow motion control	:	Wheel and worm gears full circle micro movement by electricity
Quick slewing motion	:	Friction stop motion
Wheel gear	:	73.5mm in diameter, 144-tooth
Worm gear	:	11mm in diameter, made of brass
Polar axis	:	45mm in diameter, made of aluminum alloy
Number of bearings	:	3 pieces
Polar alignment scope	:	6x20mm field of view 8 degrees, self-light-off dark field illuminator (8 steps adjustments), setting accuracy of 3 arc minutes or less, CR2032 battery
Motor drive	:	Pulse (Stepping) motor
Tracking	:	High precision tracking with STAR BOOK ONE
Maximum loading Wt.	:	6 kg (150kg-cm torque load at a point of 25cm from the fulcrum)
Cable connecting port	:	D-SUB 9PIN male
Power supply port	:	USB Micro-B female
Power supply	:	USB external battery pack (Not sold by Vixen)
Electricity consumption	:	DC5V 0.2A to 0.5A (1.0W to 2.5W)
Weight (Body only)	:	1.5kg / 3.3 lb

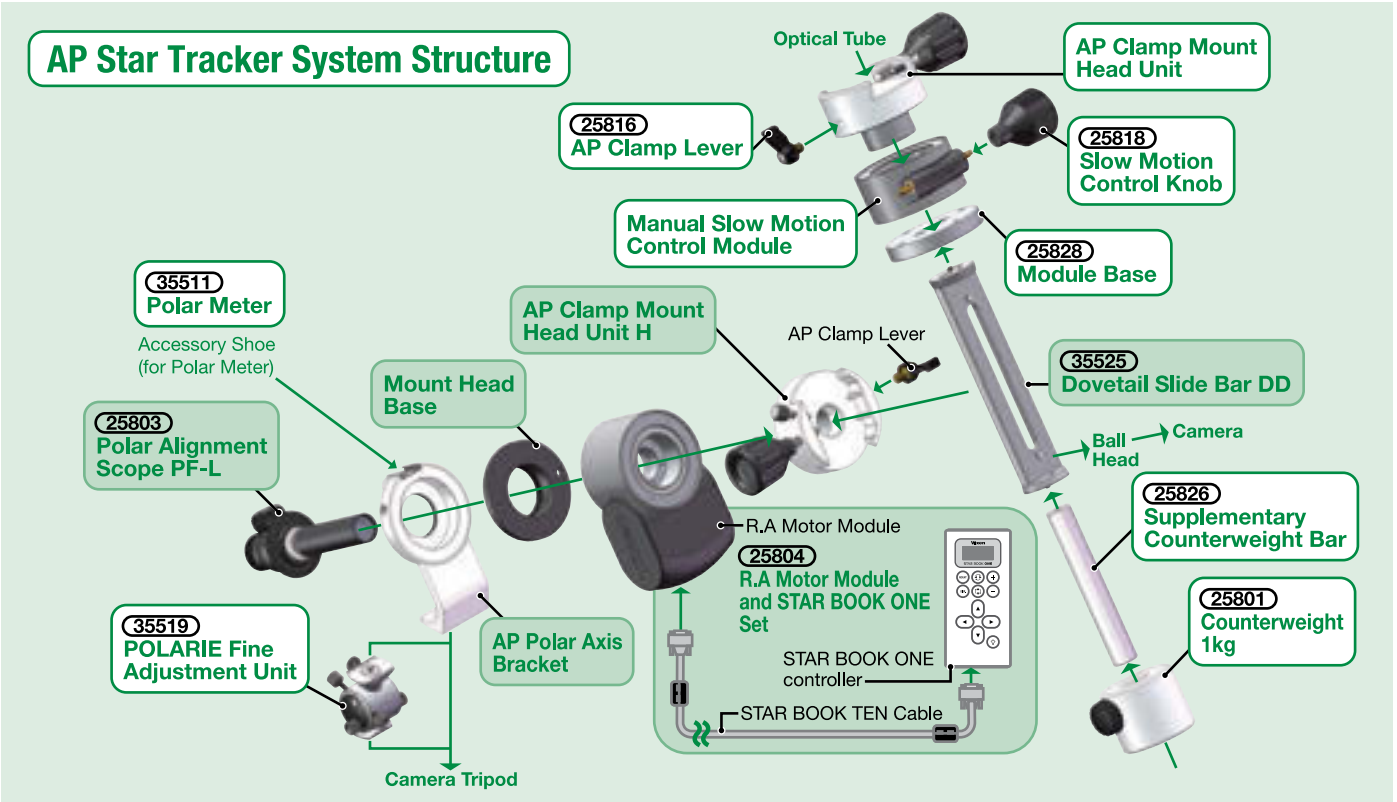
Optional Accessories

- 35523 M-155MA Tripod
- 35511 Polar Meter
- 25826 Supplementary Counterweight Bar
- 25801 Counterweight 1kg

Heavy Loading Capacity yet Lightweight Body

The weight of the AP star tracker is only 1.5 kg (3.3 lb) but it has a rigid construction that carries a maximum loading weight of 6 kg (13.2 lb). In combination with a lightweight but sturdy camera tripod, you can take it everywhere.

An Upgrade example of the AP Star Tracker using AP Modules and Units



Afocal Imaging

Smartphone Camera Adapter

39199

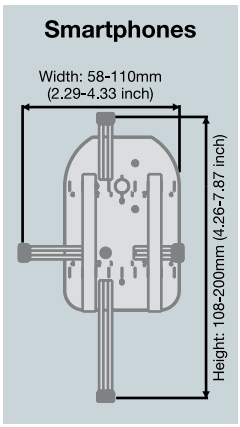
Smartphone Camera Adapter

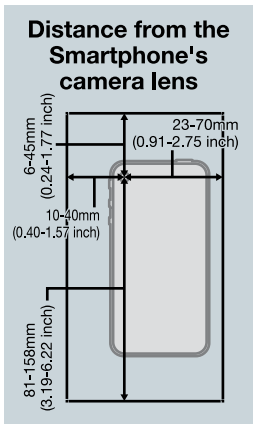
- Designed to pinch the barrel of visual back or eyepiece having grip of 32mm to 53mm (between 1.26" and 2.08") in diameter. With supplementary pinch sleeves, having grip of 19mm to 43mm (between 0.75" and 1.69") in diameter.
- The eyepiece pinch posts hold an eyepiece simultaneously by turning the eyepiece clamp knob simply.
- The vertical and horizontal clamp arms with rubber claw hold a smartphone securely and they enable you to set the camera lens in line with the center of the eyepiece's field of view easily.
- Eyepieces with long eye relief are recommended to minimize vignetting of images.
- Loading capacity : 300 g / 10.5 oz

Size : 149mm X 90mm X 56mm Weight : 178 g / 6.27 oz

Suitable for smartphones with the following specifications:

1. The size of smartphones is between 58mm and 110mm (2.29" and 4.33") in width (minor axis length) and between 108mm and 200mm (4.26" and 7.87") in height (major axis length). A thickness of less than 15mm (0.59").
2. The distance from the smartphone's camera lens to the left end of the smartphone is between 10mm and 40mm (0.40" and 1.57") when you face the camera lens to the front.
3. The distance from the smartphone's camera lens to the right end of the smartphone is between 23mm and 70mm (0.91" and 2.75") when you face the camera lens to the front.
4. The distance from the smartphone's camera lens to the upper end of the smartphone is between 6mm and 45mm (0.24" and 1.77") when you face the camera lens to the front.
5. The distance from the smartphone's camera lens to the lower end of the smartphone is between 81mm and 158mm (3.19" and 6.22") when you face the camera lens to the front.





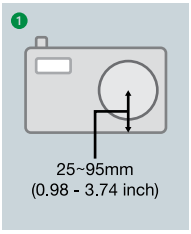
Photographing with a smartphone or a compact digital camera

39197

Universal Digital Camera Adapter II

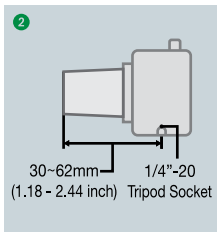
- Designed to pinch the barrel of visual back or eyepiece having grip of 28mm to 45mm (between 1.17" and 1.88") in diameter (Not usable with SSW, SLV, NLV, NPL, LVW or NLVW eyepiece)
- Equipped with vertical and horizontal slow motion screws
- Eyepieces with long eye relief are recommended to minimize vignetting of images
- With a smartphone adapter
- Loading capacity 800 g (28.2 oz)

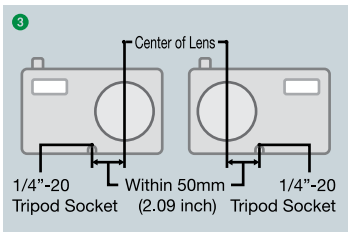
Weight : 370 g / 13.05 oz

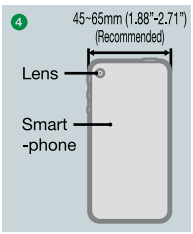


Suitable for compact digital cameras or smartphones with the following specifications:

1. The height from the camera's bottom to the center of the camera's lens is between 25mm and 95mm (0.98" and 3.74")
2. The distance from the camera's tripod socket to the camera's lens tip is between 30mm and 62mm (1.18" and 2.44")
3. The 1/4" tripod socket is equipped within the distance of 50mm (2.09") from the centerline of the camera's lens
4. Smartphones in width between 45mm and 65mm (1.88" and 2.71") is available for the smartphone adapter





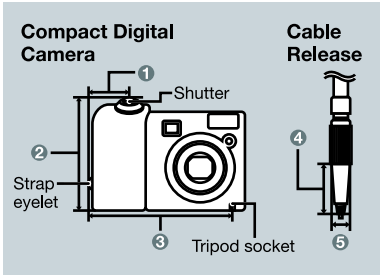


Suitable for compact digital cameras with the following specifications:

1. The position of the camera's shutter is not over 32mm (1.133") distant from the side of the bracket
2. The camera's height is lower than 80mm (3.34") from the bottom of the bracket
3. The 1/4" tripod socket is equipped within the distance of 100mm (4.18") from the side of the bracket

Size of a cable release head connectable

4. Longer than 12mm (0.5")
5. Smaller than 7mm (0.29") in diameter



39183

Cable Release Bracket II

Size : 82mm x 134mm x 30mm
(82mm to 114mm long extendable)
Weight : 80 g / 2.82 oz

39184

Cable Release 30AS

Size : 21mm dia. x 300mm long
Weight : 26 g / 0.91 oz

*The specifications are subject to change without notice.

Accessories for Prime Focus / Eeyepiece Projection Astrophotography

NIGHT PHOTOGRAPH Vixen

Camera Adapters and T-rings

39361

Eyepiece Projection Camera Adapter

- Fits a telescope with flip mirror diagonal or focuser on R200SS, VSD100F3.8 directly
- Usable on A70Lf, A70Mf, R130Sf
- Not available for LVW eyepieces and 50.8mm eyepieces

Size : 60mm dia. x 105mm
Weight : 242 g / 8.54 oz

3523

Camera Adapter 43DX

- For both prime focus and eyepiece projection photography
- Fits 43mm visual back
- With 48mm filter thread
- Not available for 50.8mm eyepieces

Size : 63mm dia. x 164mm
Weight : 390 g / 13.76 oz

37315

Camera Mounting Adapter for 645D

- For use exclusively with VSD100F3.8
- Applicable to Pentax 645AF2 mount
- 55mm image circle at 70% illuminated

Size : 71mm dia. x 49mm
Weight : 65 g / 2.29 oz

3876 for Canon EOS or Four Thirds
3878 for General type

Wide Photo Adapter 60mm

- For prime focus photography
- Fits the focuser on R200SS and VSD100F3.8 directly
- An extension tube VC is required additionally if the focal reducer is not used for photographing
- A T-ring that is appropriate to your camera is needed.

Size : 72mm dia. x 20mm
Weight : 55 g / 1.94 oz

38751

Wide Photo Adapter 60DX for EOS (for Canon EOS cameras)

- Adapter threads 60mm and 56mm for use with a reducer or corrector PH
- Applicable to Canon EF mount (T-ring is pre-installed in the adapter)
- Camera rotation is possible for a framing
- Usable on focusers with 60mm thread drawtube

Size : 81mm dia. x 30mm
Weight : 190 g / 6.70 oz
Note : T-ring for Canon EOS is not required.

T-rings (Thread 42mm pitch 0.75mm)

T-Ring for Nikon

T-Ring for Canon EOS

T-C Ring for C mount

Item No.	Find your Camera Brand	Weight
37301	**Nikon, Fuji Film**	22 g / 0.78 oz
37303	**Sony Alpha (Konica Minolta Alpha)**	45 g / 1.59 oz
37314	**Sony E**	113 g / 3.98 oz
37304	**Minolta (for manual focus)**	30 g / 1.06 oz
37306	**Canon EOS, EOS Rebel**	52 g / 1.83 oz

Item No.	Find your Camera Brand	Weight
37308	**Vixen, Pentax K, Ricoh, Cosina**	36 g / 1.27 oz
37302	**Four Thirds**	58 g / 2.04 oz
37313	**Micro Four Thirds**	110 g / 3.88 oz
37316	**Fuji Film X**	113 g / 3.98 oz
3763	**T-C Ring (for C mount)**	52 g / 1.83 oz

About the Unification of the Connection Specifications between Mounts and Tripods

Historically, Vixen GP Mounts and Sphinx Mounts have used different tripods. Vixen has now created one tripod, the SXG Tripod, to fit all of these mounts. With this unification, a single common tripod is used for all the different mount types such as the GP equatorial and HF2 altazimuth fork mounts.

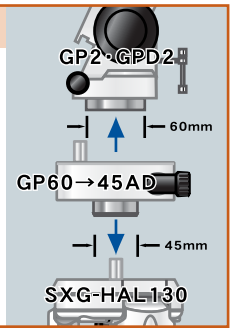
The new mounting base of the GP2/GPD2 mounts which fits the tripod head of the new SXG tripod is changed from 60mm to 45mm in diameter. The peg on the tripod head of the new SXG tripod can be positioned in place according to the mount types used. You will need an optional adapter if you want to use the former GP2/GPD2 mount (60mm dia. mounting base) with the new SXG tripod.

25169

GP60 to 45AD

- Needed to attach the former GP2/GPD2 mounts to the new SXG tripod (or SXG Half Pillar)

Weight : 775 g / 27.3 oz



25191

APP-TL130 Tripod

(For details, refer to page 14.)

Compatibility of Vixen Tripods and Pillars

◎ Suitable ○ Good × Not available

Tripod/ Pillar	APP-TL130	SXG Half Pillar	SXG-HAL130, SXG-P85DX
AP Mount	◎	○ Not compatible with the APP-TL130	○
SX Mount	×	◎	◎
PORTA II Mount	◎	○	○
GP2/GPD2 Mounts	○ Not recommended for the GPD2	◎	◎

25161

SXG-HAL130 Aluminum Tripod

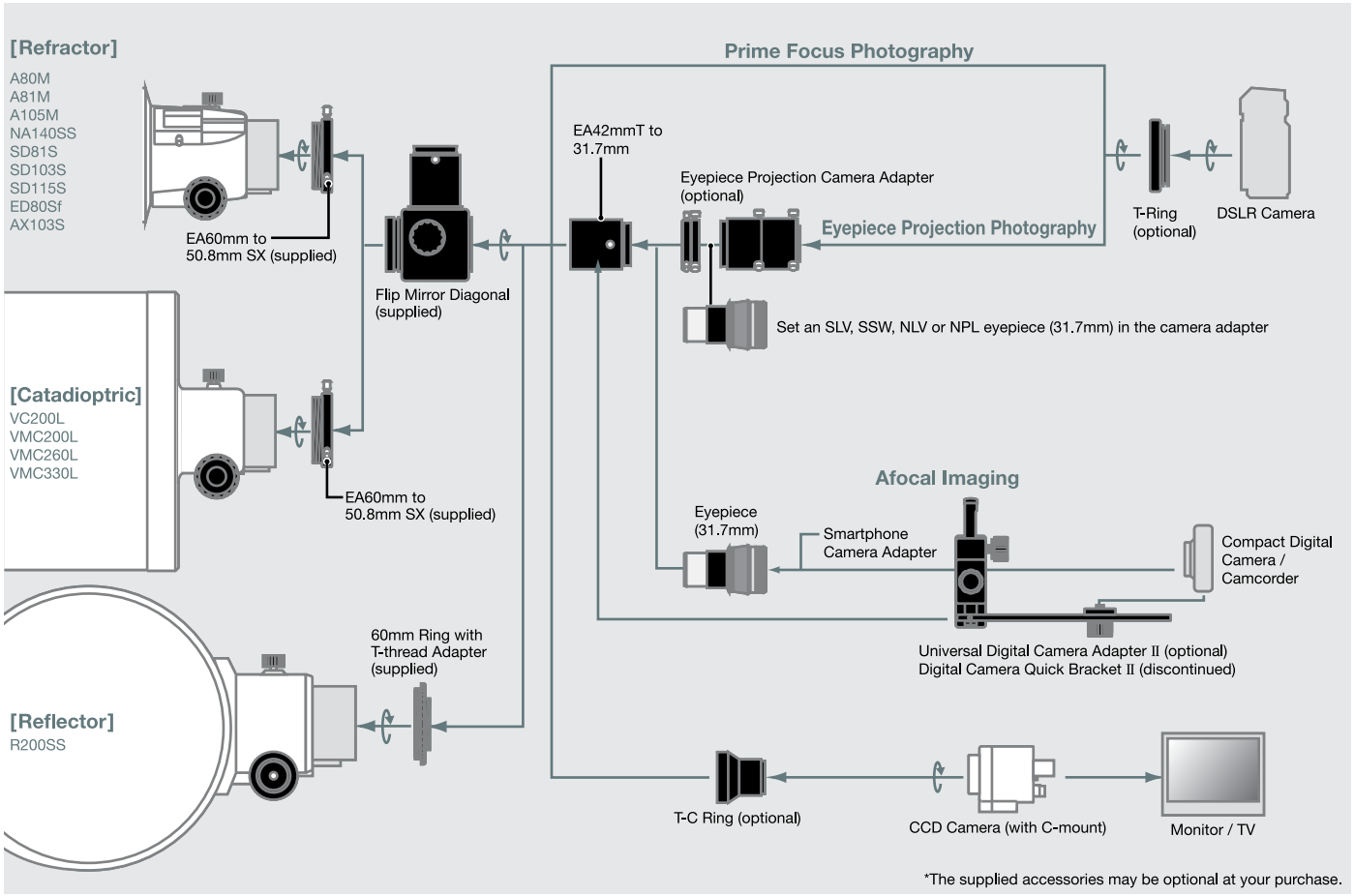
(For details, refer to page 16.)

25172

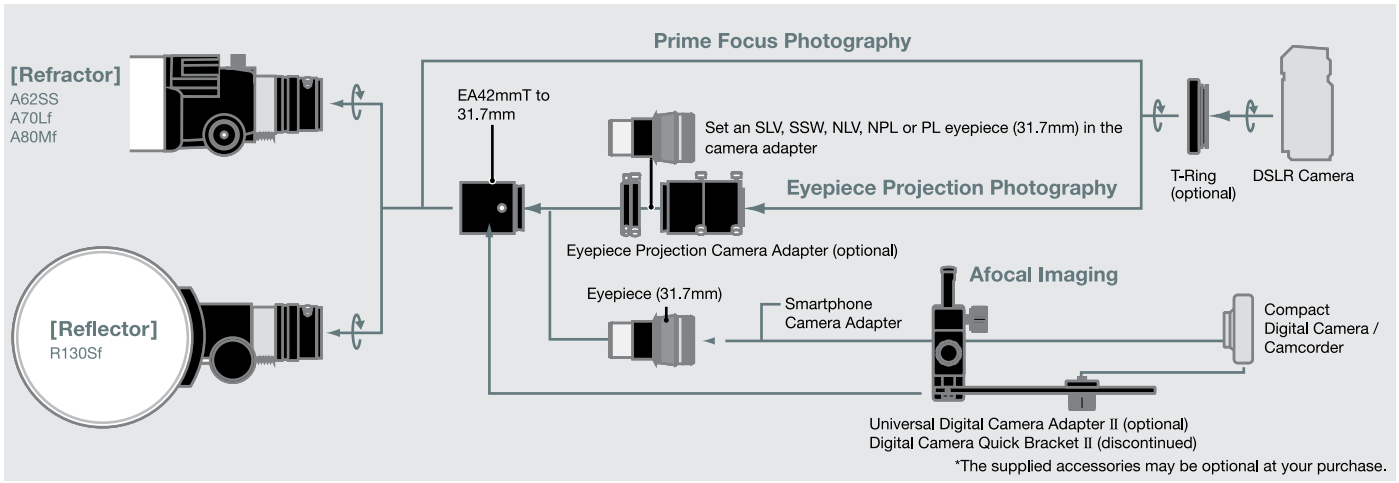
SXG-P85DX Pillar

(For details, refer to page 27.)

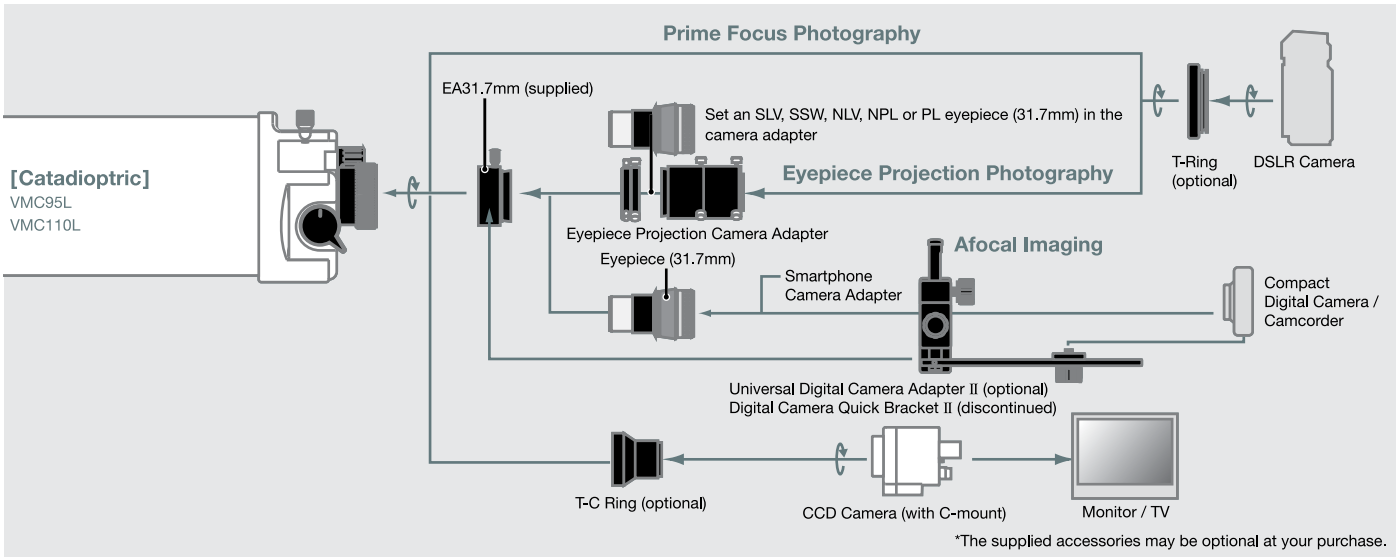
Components Guide for Astrophotography



*The supplied accessories may be optional at your purchase.



*The supplied accessories may be optional at your purchase.



*The supplied accessories may be optional at your purchase.

*The specifications are subject to change without notice.

Vixen's Mounts are available with a variety of optical tubes, including refractors, reflectors and catadioptrics. Select the one that is best suited to your purpose. The optical tubes and mounts can be easily connected without using special tools.

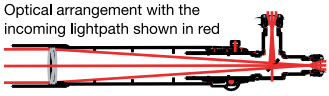
SD Apochromatic Refractor Optical Tube Assemblies

Vixen SD apochromatic refractor feature feature "Super extra-low Dispersion" SD optical glass in its objective lens. The optical design with SD glass suppresses residual chromatic aberration far under the threshold of visibility and produces outstanding sharp images with high contrast for both visual and photographic applications.

[ED80Sf]
The ED80Sf combines excellent color correction with affordable pricing. A combination with a PORTA II mount will be a standard of most welcome grab-and-go telescopes. It is suitable both for visual observing and astrophotography. A Crayford type focuser is provided.

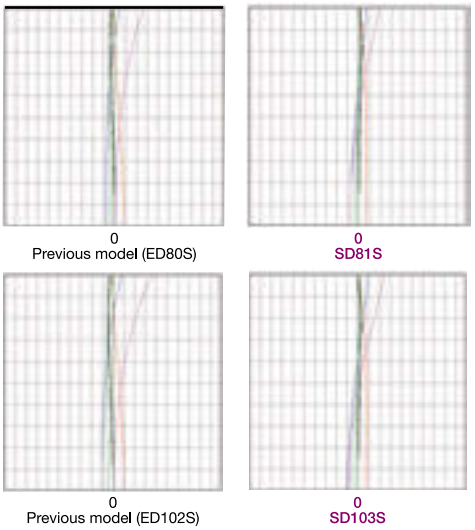
[SD81S, SD103S, SD115S]
The SD glass produces clear and high contrast viewing, virtually free of false color. The design uses newly developed, environmentally friendly glass technology. Brighter F7.7 images will satisfy the most demanding visual astronomer or astro-photographer. The optical tubes are very stable yet light weight. The rack-and-pinion focusing is smooth and stable. An optional Dual speed focuser will provide finer focus adjustments. Manufactured in Japan.

Optical arrangement with the incoming lightpath shown in red



The SD lenses focus visible rays of light from the C-ray (red), d-ray (yellow), e-ray (green), F-ray (blue) to g-ray (purple) at nearly the very same position, as compared with our previous models, as shown in the diagrams of spherical aberration below. It verifies that the chromatic aberration is highly corrected over a wide spectrum of light with the SD lenses. Especially the g-ray, which affects image contrast, is depressed excellently.

● Comparisons of Spherical Aberration with the previous ED models
Scale: 200 microns per division



0
Previous model (ED80S)

0
SD81S

0
Previous model (ED102S)

0
SD103S

2617

ED80Sf OTA

Shown with eyepieces sold separately

Specifications	ED80Sf Optical tube assembly
Apochromatic objective	D=80mm F=600mm (f7.5), multicoated optics
Resolving power	1.45 arc seconds
Limiting magnitude	11.3
Light gathering power	131x unaided eye
Finder scope	9x50mm finder, 4.8 degrees field of view
Adapter thread	42mm for T-ring
Visual back	50.8mm and 31.7mm push fit with the supplied Flip mirror diagonal
Accessories	Tube rings, Dovetail tube plate, Flip mirror diagonal, Aluminum case
Size	100mm dia. x 570mm long
Weight	4.8 kg / 10.57 lb (Net 3.4 kg / 7.48 lb)

26146

SD81S OTA

Shown with eyepieces sold separately

Specifications	SD81S Optical tube assembly
SD Apochromatic objective	D=81mm F=625mm (f7.7), multicoated optics
Resolving power	1.43 arc seconds
Limiting magnitude	11.3
Light gathering power	134x unaided eye
Finder scope	XY Red dot finder II (1x aiming device)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm push fit with the supplied Flip mirror diagonal
Accessories	Tube rings, Dovetail Slide Bar M, Flip mirror diagonal, Carry handle
Size	90mm dia. x 585mm long
Weight	3.6 kg / 7.92 lb (Net 2.3 kg / 5.06 lb)

26147

SD103S OTA

Shown with eyepieces sold separately

Specifications	SD103S Optical tube assembly
SD Apochromatic objective	D=103mm F=795mm (f7.7), multicoated optics
Resolving power	1.13 arc seconds
Limiting magnitude	11.8
Light gathering power	217x unaided eye
Finder scope	7x50mm finder, 7 degrees field of view
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm push fit with the supplied Flip mirror diagonal
Accessories	Tube rings, Dovetail tube plate, Flip mirror diagonal, Carry handle
Size	115mm dia. x 810mm long
Weight	5.4 kg / 11.89 lb (Net 3.6 kg / 7.92 lb)

26148

SD115S OTA

Shown with eyepieces sold separately

Specifications	SD115S Optical tube assembly
SD Apochromatic objective	D=115mm F=890mm (f7.7), multicoated optics
Resolving power	1.01 arc seconds
Limiting magnitude	12.1
Light gathering power	270x unaided eye
Finder scope	7x50mm finder, 7 degrees field of view
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm push fit with the supplied Flip mirror diagonal
Accessories	Tube rings, Dovetail tube plate, Flip mirror diagonal, Carry handle
Size	125mm dia. x 930mm long
Weight	6.2 kg / 13.65 lb (Net 4.4 kg / 9.68 lb)

NEW

37245

SD Reducer HD Kit

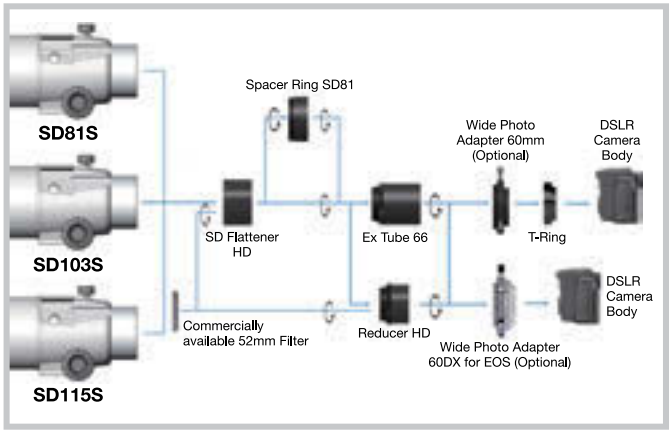
- This kit consists of a field flattener lens, a focal reducer and connecting tube rings; those are components for prime focus astrophotography with the SD81S, SD103S or SD115S optical tube. The SD Reducer Kit is made to be used in combination with an accessory such as a wide photo adapter 60DX, sold separately.

Specifications	SD Flattener HD	Reducer HD
Lens elements	2 elements in 1 group	2 elements in 2 groups
Coatings	AS coatings (Over 99.9% light transmission per lens surface)	
Size	58mm dia. x 34mm L	68mm dia. x 45.2mm L
Weight	111 g / 3.91 oz	218 g / 7.68 oz

The field flattener lens “SD Flattener HD” improves images toward the edge of field of view while closely maintaining the original focal length of a telescope. It covers a photographic field of a DSLR camera with full-frame imaging sensor at prime focus photography.

The focal reducer “Reducer HD” covers the photographic field of a DSLR camera with full-frame imaging sensor at prime focus photography. The focal length is reduced to 0.79X while keeping flat and sharp images toward the edge of field of view.

Photographic Configuration



	SD Flattener HD	Image Circle (light transmission)
SD81S	625mm – 644mm (F7.7 – 7.9)	89% at 44mm dia.
SD103S	795mm – 811mm (F7.7 – 7.9)	83% at 44mm dia.
SD115S	890mm – 908mm (F7.7 – 7.9)	80% at 44mm dia.

	SD Flattener + Reducer HD	Image Circle (light transmission)
SD81S	625mm – 496mm (F7.7 – 6.1)	72% at 44mm dia.
SD103S	795mm – 624mm (F7.7 – 6.1)	63% at 44mm dia.
SD115S	890mm – 699mm (F7.7 – 6.1)	60% at 44mm dia.

	Reducer HD	Image Circle (light transmission)
AX103S	825mm – 635mm (F8.0 – 6.2)	63% at 44mm dia.
VC200L	1800mm – 1386mm (F9.0 – 6.9)	47% at 44mm dia. (60% at 36mm dia.)

The Andromeda Galaxy taken with Vixen SD81S combined with SD Reducer HD Kit. (Hiroyuki Narisawa)

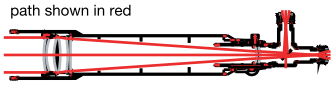
*The specifications are subject to change without notice.

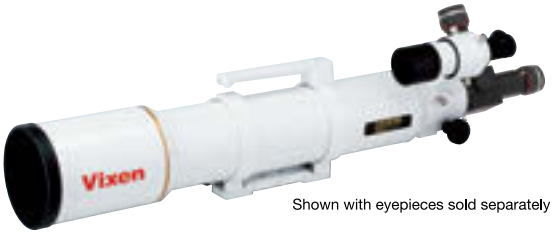
"Apo Maximum" SD Apochromatic Refractor with Quad Element Design

Vixen AX103S features a three element objective lens, incorporating an SD lens in its center, and the fourth lens inside of the focuser drawtube. The "Apo Maximum" lens elements are laid in the precision machining cells to exhibit the designated superb optical performance. This advanced optical design produces crystal-clear, sharp and high contrast images with no trace of false color.

Below is a comparison of spherical aberration between the AX103S and Vixen' s "Fluorite" FL102S, which was renowned as a masterpiece for its excellent color correction. The diagram shown below shows how the AX103S outperforms the fluorite optical tube. The bundle of light rays (spectrum) on the AX103S is straighter than on the FL102S. The result is that residual chromatic aberrations are reduced far below the threshold of visibility. The spherical aberration of g-ray(purple), which affects contrast by digital imaging, is excellently decreased on the AX103S. In spot diagrams of the AX103S, the star images are more concentrated and are seen as small as 20 microns at the edge of the imaging field. In addition, vixen' s "Precision Multi-coatings" applied to each surface to the AX103S lenses enhances visible light transmission to 99.5% on any single surface and assure extremely high light transmission.

Optical arrangement with the incoming light path shown in red



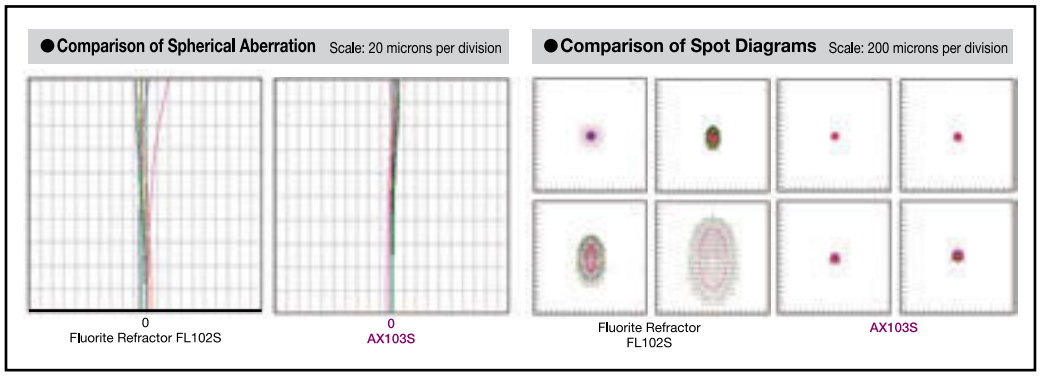


Shown with eyepieces sold separately

(26144)

AX103S OTA

Specifications	AX103S Optical tube assembly
Quad SD Apochromatic objective	D=103mm F=825mm (f8.0), multicoated optics
Resolving power	1.13 arc seconds
Limiting magnitude	11.8
Light gathering power	217x unaided eye
Finder scope	7x50mm finder, 7 degrees field of view
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm push fit with the supplied Flip mirror diagonal
Accessories	Tube rings, Dovetail tube plate, Flip mirror diagonal, Carry handle
Size	115mm dia. x 762mm long (Retractable to 670mm)
Weight	6.4 kg / 14.11 lb (Net 4.6 kg / 10.14 lb)



NEW

(37247)

Reducer HD

- The Reducer HD can be used solo in combination with the AX103S optical tube. The focal length is reduced to 0.77X. In case with use of the AX103S, it covers a photographic field of a DSLR camera with full-frame image sensor at prime focus photography. A commercially available 52mm filter is usable with the Reducer HD.

Fluorite Apochromatic Refractor

A highly portable short tube designed for both the astrophotographer and the visual observer.

Extremely sharp and bright star-field images to the very edge of a full frame imaging sensor (95% light transmission at 44mm image circle). The FL55SS turns into a fast F/4.3 Astrograph with the addition of the optional Flattener lens and focal reducer. Despite its small aperture, the FL55SS, with a high resolution HR eyepiece, delivers stunningly clear views of the moon and bright planets.

NEW

(26201)

FL55SS OTA

Specifications	FL55SS Optical Tube Assembly
Fluorite Apochromatic objective	D=55mm F=300mm (f5.5), multicoated optics
Resolving power	2.11 arc seconds
Limiting magnitude	10.5
Light gathering power	62x unaided eye
Finder scope shoe	Optional
Adapter threads	60mm, 43mm and 36.4mm
Visual back	31.7mm push fit
Accessories	Extension tube for visual observing, Dovetail slide bar M
Size	80mm dia. x 282mm
Weight	1.5 kg / 3.3 lb (Net weight)

Note : If the optical tube attached on the dovetail slide bar M is not workable in balance due to a heavy accessory attached to the focuser, , it is recommended to replace it with a universal dovetail plate sold separately.

Fluorite Objective Lens

The FL55SS has a fluorite element which yields uncompromising optical performance. You will enjoy "a level higher" stunningly clear view of the moon and bright planets despite of the range of small aperture, with use of a high-resolution HR eyepiece.

NEW

(37253)

Reducer HD Kit for FL55SS

- This kit consists of a field flattener les, a focal reducer and a connecting tube ring, which is dedicated to the FL55SS optical tube. It is made to be used in combination with an accessory such as a wide photo adapter 60DX, sold separately.

Specifications	Flattener HD for FL55SS	Reducer HD for FL55SS
Lens elements	2 elements in 1 group	3 elements in 3 groups
Coatings	AS coatings (Over 99.9% light transmission per les surface)	
Focal ratio	F5.7	F4.3
Image circle (light transmission)	96% at 44mm dia.	86% at 44mm dia.
Size	58mm dia. x 30mmL	68mm dia. x 45.3mmL
Weight	107 g / 3.77 oz	237 g / 8.35 oz

Achromatic Refractor Optical Tube Assemblies

Vixen achromatic refractors allow sharp views of the moon and planets, as well as pinpoint images of stars. The easy-to-maintain refractor is an excellent choice for beginners through experts.

Optical arrangement with the incoming light path shown in red

Shown with an eyepiece sold separately

26152 A62SS OTA

Specifications	A62SS Optical Tube Assembly
Achromatic objective	D=62mm F=520mm (f8,4), 4-element lens design, multi-coated
Resolving power	1.87 arc seconds
Limiting magnitude	10.7
Light gathering power	78x unaided eye
Finder scope	Optional
Adapter thread	42mm for T-ring, 37mm for filter
Visual back	31.7mm push-fit, with compression ring
Focuser	Crayford type focuser, rotatable
Accessories	Built-in dovetail mounting plate, Erect-image diagonal 31.7mm, Soft carry case
Size	75mm dia. x 370mm (305mm long for storage)
Weight	1.8 kg / 3.96 lb (Net 1.5 kg / 3.3 lb)

NEW

Shown with eyepieces sold separately

Shown with eyepieces sold separately

2602 A70Lf OTA

Specifications	A70Lf Optical tube assembly
Achromatic objective	D= 70mm F=900mm (f12.9), multi-coated
Resolving power	1.66 arc seconds
Limiting magnitude	11.0
Light gathering power	100x unaided eye
Finder scope	6x24mm finder, 5 degrees field of view
Adapter thread	42mm for T-ring
Visual back	31.7mm push fit
Accessories	PL20mm, PL6.3mm Erect-image diagonal 31.7mm, Tube rings, Dovetail tube plate
Size	76mm dia. x 860mm long
Weight	2.5 kg / 5.5 lb (Net 1.9 kg / 4.18 lb)

2603 A80Mf OTA

Specifications	A80Mf Optical tube assembly
Achromatic objective	D=80mm F=910mm (f11.4), multi-coated
Resolving power	1.45 arc seconds
Limiting magnitude	11.3
Light gathering power	131x unaided eye
Finder scope	6x30mm finder, 7 degrees field of view
Adapter thread	42mm for T-ring
Visual back	31.7mm push fit
Accessories	PL20mm, PL6.3mm Erect-image diagonal 31.7mm, Tube rings, Dovetail tube plate
Size	90mm dia. x 860mm long
Weight	3.3 kg / 7.26 lb (Net 2.5 kg / 5.5 lb)

26062 A81M OTA

Specifications	A81M Optical tube assembly
Achromatic objective	D=81mm F=910mm (f11.2), multi-coated
Resolving power	1.43 arc seconds
Limiting magnitude	11.3
Light gathering power	134x unaided eye
Finder scope	XY Red dot finder II (1 aiming device)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm push fit with the supplied Flip mirror diagonal
Accessories	Tube rings, Dovetail tube plate, Flip mirror diagonal, Carry handle
Size	90mm dia. x 890mm long
Weight	3.5 kg / 7.7 lb (Net 2.5 kg / 5.5 lb)

26071 A105MII OTA

Specifications	A105MII Optical tube assembly
Achromatic objective	D=105mm F=1000mm (f9.5), multi-coated
Resolving power	1.1 arc seconds
Limiting magnitude	11.9
Light gathering power	225x unaided eye
Finder scope	XY Red dot finder II (1 aiming device)
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm push fit with the supplied Flip mirror diagonal
Accessories	Tube rings, Dovetail tube plate, Flip mirror diagonal, Carry handle
Size	115mm dia. x 1010mm long
Weight	4.8 kg / 10.57 lb (Net 3.8 kg / 8.36 lb)

A Pair of Tube Rings

2664 SX Tube Ring 90mm
• Applicable to A80M, A80Mf, SD81S, ED81S, ED81SII Weight : 350 g / 12.34 oz

2665 SX Tube Ring 115mm
• Applicable to A105MII, A105M, ED103S, SD103S, AX103S, Not available for VSD100F3.8 Weight : 400 g / 14.11 oz

2666 SX Tube Ring 125mm
• Applicable to ED115S, SD115S Weight : 500 g / 17.63 oz

2671 SX Tube Ring 176mm
• Applicable to R150S Weight : 1100 g / 38.8 oz

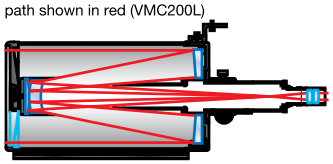
2672 SX Tube Ring 232mm
• Applicable to R200SS Weight : 1400 g / 49.38 oz

*The specifications are subject to change without notice.

Vixen original Maksutov Cassegrain Telescopes

The newest Catadioptric design from Vixen features a combination of a meniscus lens unit in front of the secondary mirror and high-precision spherical mirrors that are shaped with extreme accuracy. Spherical aberration and curvature of field are corrected to a high level of optical performance for clear and sharp images. Open tube design of the VMC telescopes eliminates the dew problem that is common with Schmidt-Cassegrain designs. They are suited for observation of all types of celestial objects, from the moon and planets to deep sky objects.

Optical arrangement with the incoming light path shown in red (VMC200L)



[VMC95L, VMC110L]

The Vixen VMC95L and VMC110L are modified Cassegrain optical tube assemblies. They include a built-in slide diagonal, dew shield and dovetail attachment plate. The built-in slide mirror allows installation of two different power eyepieces or camera for astrophotography. These compact optical tubes are great pick up and go scopes for astronomical or terrestrial observing.

26141

VMC95L OTA

Shown with eyepieces sold separately

Specifications	VMC95L Optical tube assembly
Primary Mirror	D=95mm F=1050mm (f11.1), precision spherical mirror, multicoated
Resolving power	1.22 arc seconds
Limiting magnitude	11.7
Light gathering power	184x unaided eye
Finder scope	XY Red dot finder II (1 aiming device)
Adapter thread	42mm for T-ring
Visual back	31.7mm push fit
Accessories	Built-in Flip mirror diagonal, Dovetail attachment plate
Size	107mm dia. x 360mm long
Weight	2.0 kg / 4.4 lb (Net 1.8 kg / 3.96 lb)

2605

VMC110L OTA

Shown with eyepieces sold separately

Specifications	VMC110L Optical tube assembly
Primary Mirror	D=110mm F=1035mm (f9.4), precision spherical mirror, multicoated
Resolving power	1.05 arc seconds
Limiting magnitude	12.0
Light gathering power	247x unaided eye
Finder scope	XY Red dot finder II (1x aiming device)
Adapter thread	42mm for T-ring
Visual back	31.7mm push fit
Accessories	Built-in Flip mirror diagonal, Dovetail attachment plate
Size	119mm dia. x 370mm long
Weight	2.3 kg / 5.06 lb (Net 2.1 kg / 4.62 lb)

58291

VMC200L OTA without accessories

Specifications	VMC200L Optical tube assembly
Primary Mirror	D=200mm F=1950mm (f9.75), precision spherical mirror, multicoated
Resolving power	0.58 arc seconds
Limiting magnitude	13.3
Light gathering power	816x unaided eye
Finder scope	Optional
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm push fit
Accessories	Dovetail attachment rail and carry handle
Size	232mm dia. x 510mm long
Weight	5.9 kg / 13.0 lb

[VMC200L]

The VMC200L is a 200mm aperture f/9.75 Catadioptric optical system that incorporates a primary mirror and a meniscus corrector lens just before a secondary mirror for correcting spherical aberration. It results in extremely sharp focus in the center of the field of view. It is highly regarded by visual observers who enjoy the moon, planets, and beyond.

[VMC260L]

The Japanese made Vixen VMC260L is a true all purpose telescope. The large 260mm aperture Catadioptric design consists of two mirrors and a unique double meniscus lens design. This corrector, in front of the secondary mirror, virtually eliminates spherical aberration and field curvature with superb contrast. With its 260mm aperture dielectric coated mirror, the VMC260 collects enough light for serious visual and photographic applications and for both planetary and deep sky observing.

2633

VMC200L OTA

Shown with eyepieces sold separately

Specifications	VMC200L Optical tube assembly
Primary Mirror	D=200mm F=1950mm (f9.75), precision spherical mirror, multicoated
Resolving power	0.58 arc seconds
Limiting magnitude	13.3
Light gathering power	816x unaided eye
Finder scope	7x50mm finder, 7 degrees field of view
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm push fit with the supplied Flip mirror diagonal
Accessories	Flip mirror diagonal, Dovetail attachment rail, Carry handle
Size	232mm dia. x 510mm long
Weight	6.8 kg / 14.97 lb (Net 5.9 kg / 12.98 lb)

26302

VMC260L OTA

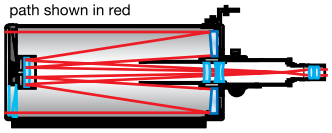
Shown with eyepieces sold separately

Specifications	VMC260L Optical tube assembly (with attachment for SXP or AXD)
Primary Mirror	D=260mm F=3000mm (f11.5), precision spherical mirror, multicoated
Resolving power	0.45 arc seconds
Limiting magnitude	13.8
Light gathering power	1380x unaided eye
Finder scope	7x50mm finder, 7 degrees field of view
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm push fit with the supplied Flip mirror diagonal
Accessories	Large dovetail attachment rail and Cradle, Flip mirror diagonal, Carry handle
Size	304mm dia. x 680mm long
Weight	12.1 kg / 26.65 lb (Net 10.0 kg / 22.0 lb)

Vixen Sixth-order Aspherical Catadioptric system – VISAC

Vixen's unique catadioptric system consisting of a high precision sixth-order aspherical primary mirror, a convex secondary mirror and a triple corrector lens, provides high definition star images to the edge of a wide imaging field and offers exceptionally outstanding performance in astro-photography.

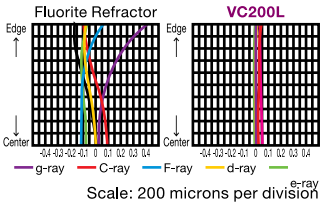
Optical arrangement with the incoming light path shown in red



As coma aberration, spherical aberration and curvature of field are perfectly corrected, images captured with the VISAC are stunningly sharp. Star images are less than 15 microns across all the way to the very edge of the 42mm image circle. The VISAC mirror produced by a unique aluminum vacuum evaporation technology is a superb optical system truly designed for both visual observation and astrophotography.

VISAC vs. Fluorite

This comparison reveals extremely minute chromatic aberration, in very small five hundredth millimeters unit, clearly showing that the aberration in the VISAC is far less than on a fluorite refractor.



Scale: 200 microns per division

Optical Design Comparisons

Telescope System	Spherical Aberration	Coma	Field Curvature
Classical Cassegrain	○	—	—
Dall-Kirkham	○	—	—
Ritchey-Chretien	○	○	—
Schmidt-Cassegrain	○	—	—
VISAC	○	○	○

Shown with eyepieces sold separately

(2632)

VC200L OTA

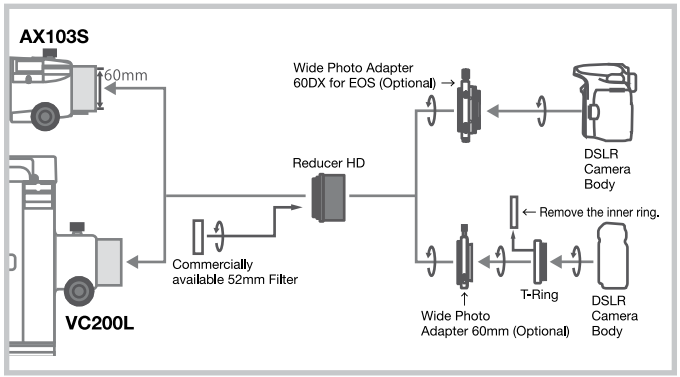
Specifications	VC200L Optical tube assembly
Primary Mirror	D=200mm F=1800mm (f19.0) VISAC mirror, multicoated
Resolving power	0.58 arc seconds
Limiting magnitude	13.3
Light gathering power	816x unaided eye
Finder scope	7x50mm finder, 7 degrees field of view
Adapter thread	60mm and 42mm thread for T-ring
Visual back	50.8mm and 31.7mm push fit with the supplied Flip mirror diagonal
Accessories	Flip mirror diagonal, Dovetail attachment rail, Carry handle
Size	232mm dia. x 600mm long
Weight	6.9 kg / 15.19 lb (Net 6.0 kg / 13.2 lb)

(37247)

NEW

Reducer HD

The Reducer HD can be used solo in combination with the VC200L optical tube. The focal length is reduced to 0.77X. It covers a photographic field of a DSLR camera with APS-C image sensor at prime focus photography. A commercially available 52mm filter is usable with the Reducer HD.



Newtonian Reflectors

Newtonian reflector telescopes are completely free of chromatic aberration and they are generally less expensive than refractor telescopes of equal aperture. The primary mirror of the R200SS is produced with a unique aluminum vacuum evaporation technology to form a high precision parabolic mirror surface constantly. The lightweight and high quality R200SS with faster F4 focal ratio is best suited for astrophotography of nebulae, star clusters and comets.

(2604)

R130Sf OTA

Specifications	R130Sf Optical tube assembly
Primary Mirror	D=130mm F=650mm (f5.0) parabolic mirror, multicoated
Resolving power	0.89 arc seconds
Limiting magnitude	12.3
Light gathering power	345x unaided eye
Finder scope	6x30mm finder, 7 degrees field of view
Adapter thread	42mm thread for T-ring
Visual back	31.7mm push fit
Accessories	Tube rings, Dovetail tube plate, PL20mm, PL6.3mm
Size	160mm dia. x 575mm long
Weight	5.3 kg / 11.67 lb (Net 4.0 kg / 8.8 lb)

Shown with eyepieces sold separately

(2642)

R200SS OTA

Specifications	R200SS Optical tube assembly
Primary Mirror	D=200mm F=800mm (f4.0) parabolic mirror, multicoated
Resolving power	0.58 arc seconds
Limiting magnitude	13.3
Light gathering power	816x unaided eye
Finder scope	7x50mm finder, 7 degrees field of view
Adapter thread	60mm and 42mm thread for T-ring
Visual back	31.7mm push fit
Accessories	Tube rings, Dovetail tube plate, Cary strap
Size	232mm dia. x 700mm long
Weight	7.2 kg / 15.85 lb (Net 5.3 kg / 11.66 lb)

The Corrector PH is a corrector lens system of the highest quality that features a Wynne type 3-element in 3-group optical design. It corrects coma aberration of parabolic mirrors and complements spherical aberration excellently. The Corrector PH has a 44mm image circle that covers the 36mm x 24mm full frame DSLR to provide a surprisingly sharp image all over the imaging field. Anti-reflective AS coatings, which are the same coatings used for our high-end VSD100F3.8 Astrograph achieves 99.9% high transmission of light per surface. It will change your R200SS into a perfect astrograph.

(37237)

Corrector PH

- Reduces focal length by 0.95X (Changes to F3.8)
- Wide photo adapter 60mm or 60mmDX and T ring are needed separately for prime focus photography
- Available for visual observation

Weight 175 g / 6.17 oz

*The specifications are subject to change without notice.

A field from Orion's belt to M42 taken with Vixen VSD100F3.8 (Akio Nakanishi)

Astrograph

Ultra Short-Focus Refractor for Astrophotographers featuring a 5 Elements in 5 Group Lens Design

The Vixen VSD100F3.8 features a surprisingly fast f-ratio of F/3.8 which is the fastest in this class of quality refractors. The wide and flat imaging field that covers 645 medium format cameras and an innovative 5 elements in 5 group lens design completely eliminates a violet tint in chromatic aberration (blue halo).

Optical arrangement with the incoming light path shown in red

It employs an SD lens in the front objective group and an ED lens in the rear objective group to achieve a superb color correction. The blue halos around stars, that are perceptible in astrophotography and that are hard to reduce with a 4 elements in 4 group lens design, are corrected successfully. In addition, astigmatism and coma aberrations are corrected to an extremely high level of image quality.

The Strehl intensity on the lens design of the VSD100F3.8 is better than that on a 4 elements in 4 group lens design by approximately 10%. It does not decrease abruptly on stars away from the center of a photographic field. It is ideally suited to detect faint stars. The image circle is as large as 70mm in diameter (60% illuminated). The star images are as small as 15 microns around the corners, resulting in excellent field flatness.

The VSD100F3.8 has the most up-to-date coatings of extremely high reflectivity. These have been developed to match the characteristics of each lens element in order to avoid the deterioration of image contrast due to the increase of lens elements. It boasts of 99.9% light transmission at the maximum per lens surface and achieves superb images with extremely high contrast with no ghost and no flare images. (Patent pending)

Precision Over-sized Focuser and Large Rubber Focus Ring

The VSD100F3.8 has an oversized focuser that can be attached to the 645 medium format cameras without difficulty. Highly accurate focusing is possible with the non-rotational helical fine focuser, where the distance of drawing in and out the focuser can be read as small as 20 microns with the provided vernier scale. All the graduations are engraved. The grooved large rubber focusing ring can be grasped easily even when wearing gloves. The thick rubber ring on the top of the dew shield absorbs shock and protects the optics. The stopper piece inside the helical fine focuser has a slot for smooth focusing movements without slack. This works with the large rubber focus ring allowing the focuser to turn smoothly with a large CCD camera attached.

The length of the dew shield, the positions of the inner baffles and their proportions to the diameter of the optical tube have been designed to eliminate ghost in the lens design process and to successfully prevent stray light and flare images.

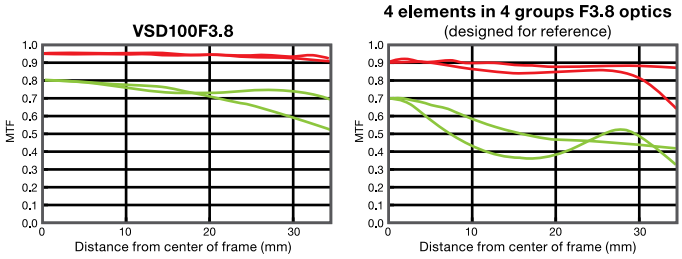
(26145)

VSD100F3.8 OTA

Specifications	VSD100F3.8 Optical tube assembly
Quintuple SD Apochromatic objective	D=100mm F=380mm (f3.8), AS coating
Resolving power	1.16 arc seconds
Limiting magnitude	11.8
Light gathering power	204x unaided eye
Finder scope	Optional
Adapter thread	80mm, 60mm and 42mm for T-ring
Visual back	60.2mm and 31.7mm push fit
Accessories	Aluminum carrying case
Size	115mm dia. x 497mm long
Weight	4.5 kg / 9.9 lb (Net weight)

Describing Lens Performance with MTF Characteristics

Vixen's goal was to develop a process to outperform the views from a premium photo lens. The result is the introduction of MTF (Abbreviation of Modulation Transfer Function), typically used for evaluating the optical performance of camera lenses. The diagram clearly describes the optical performance of the VSD100F3.8 as compared to a 4 element 4 group design.



Thus, it allows for a more precise evaluation of the photographic performance as compared to conventional spot diagrams. This is a new direction in the choice of an astrograph.

Spatial frequency	S	M
10 lines / mm		
30 lines / mm		

(26636)

VSD Tube Rings 115mm

- Comes standard with a rigid attachment plate for Vixen SXP/AXD mount
- Hinged tube ring using quality parts
- Felt lined on interior the tube ring to prevent the optical tube from scratching

Size : 148mm x 167mm x 185mm
Weight : 1 kg / 35.2 oz

(26635)

VSD Finder Bracket Shoe

- Fine anodized aluminum finish
- Low-profile design to fit the aluminum case when attached to the main body
- Side face flat lock without marring the finder bracket

Size : 39mm x 53mm x 15mm
Weight : 41 g / 1.45 oz

(37315)

Camera Mounting Adapter for 645D

- 55mm image circle at 70% illuminated
- With 58mm thread for a commercially available filter
- Quality mat finish inside

Size : 71mm dia. x 49mm long
Weight : 65 g / 2.29 oz

(26637)

Focal Reducer V0.79X

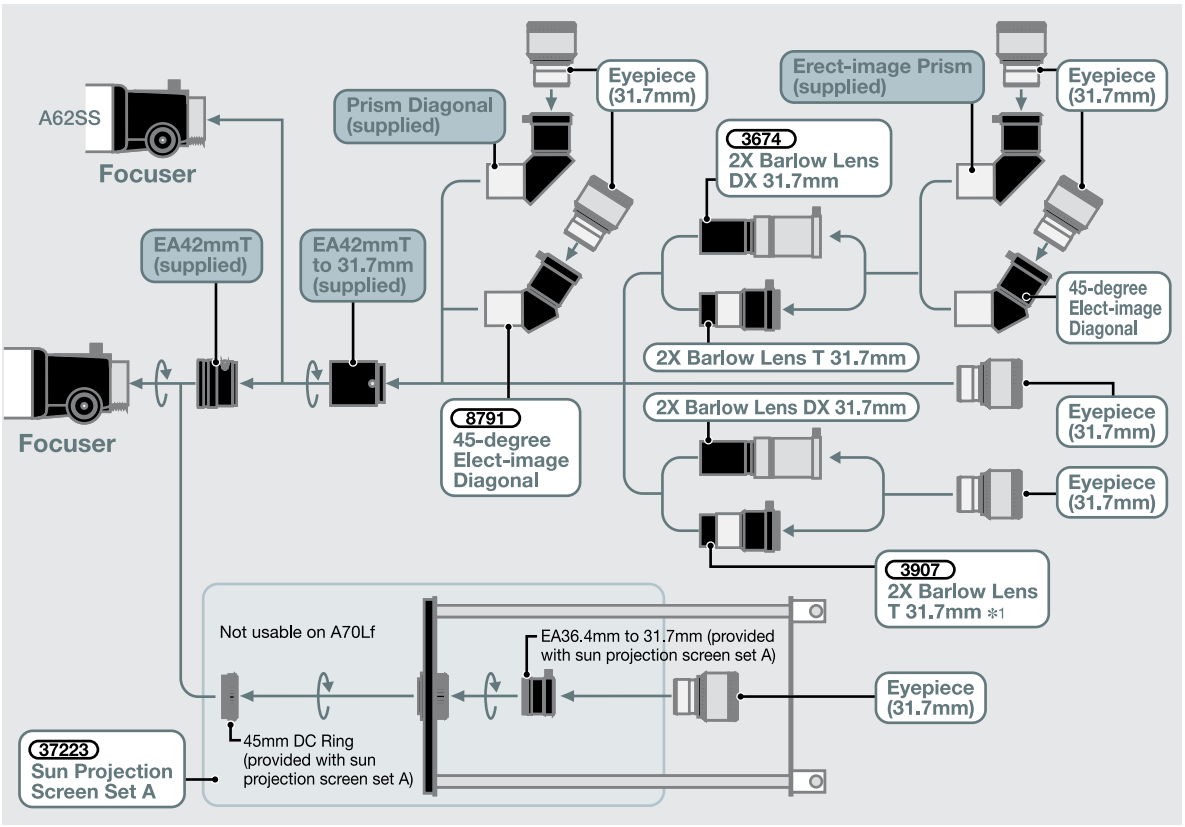
- Transforms VSD100F3.8 to an even faster astrograph with 300mm in focal length at f3.0 (0.79X)
- Optical design of 3-element in 3-group including extra-low dispersion (ED) glass for color correction
- 99.9% light transmission coatings per lens surface
- With 58mm thread for a commercially available filter
- Suitable for DSLR with a 35mm full-frame sensor (69% illuminated)

Size : 92mm dia. x 46mm long
Weight : 330 g / 11.64 oz

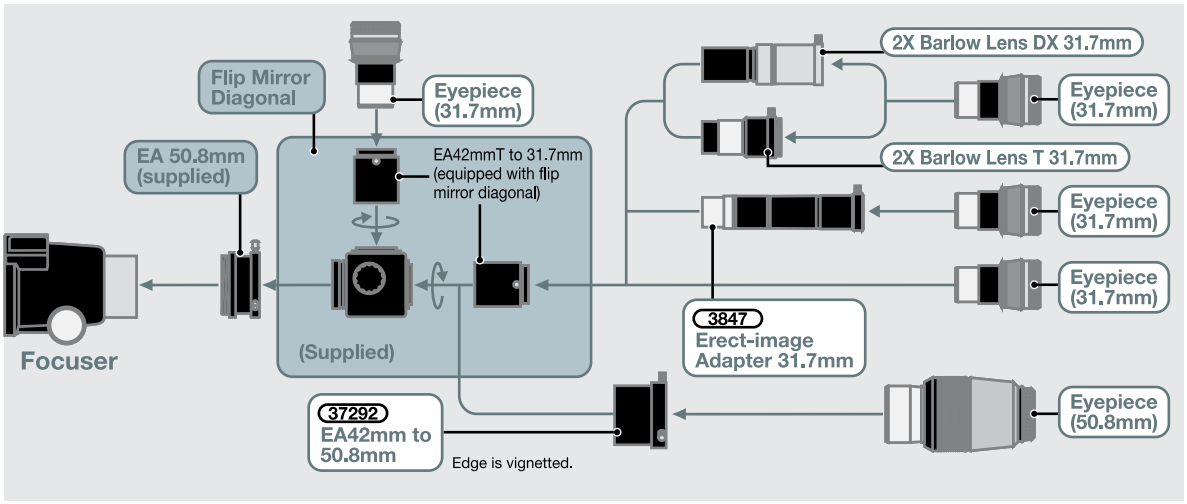
*The specifications are subject to change without notice.

Visual Back Guide:

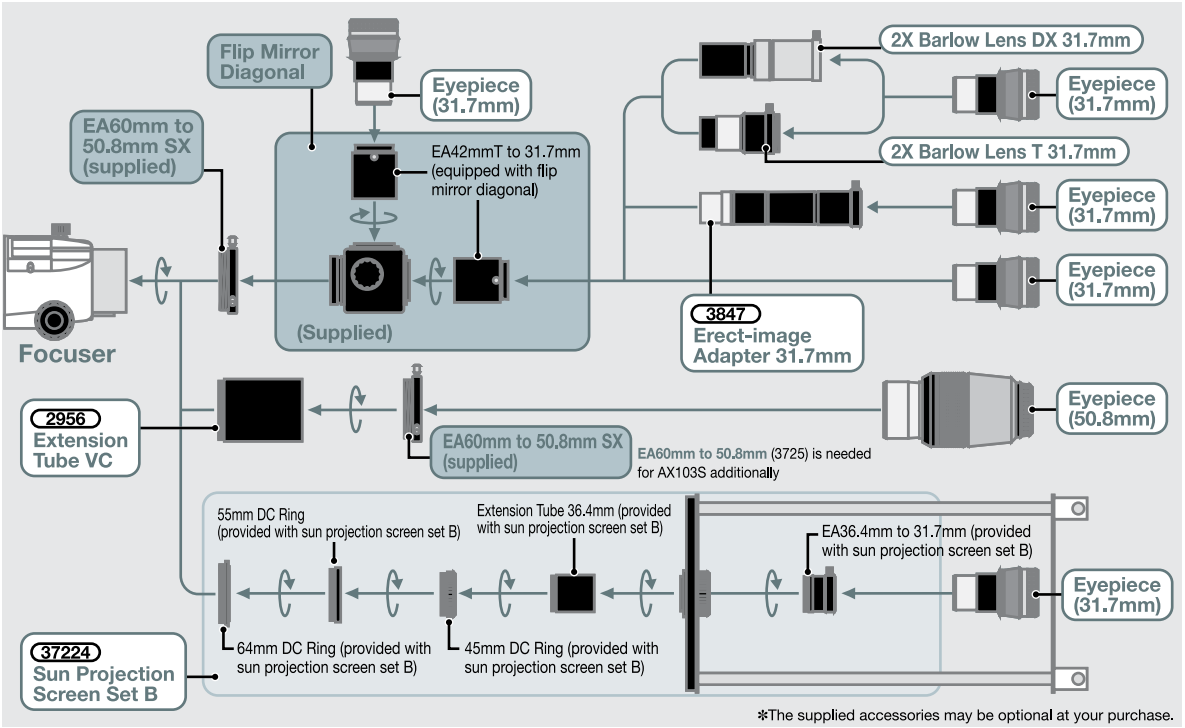
A62SS, A70Lf and A80Mf Optical Tubes



ED80Sf Optical Tube

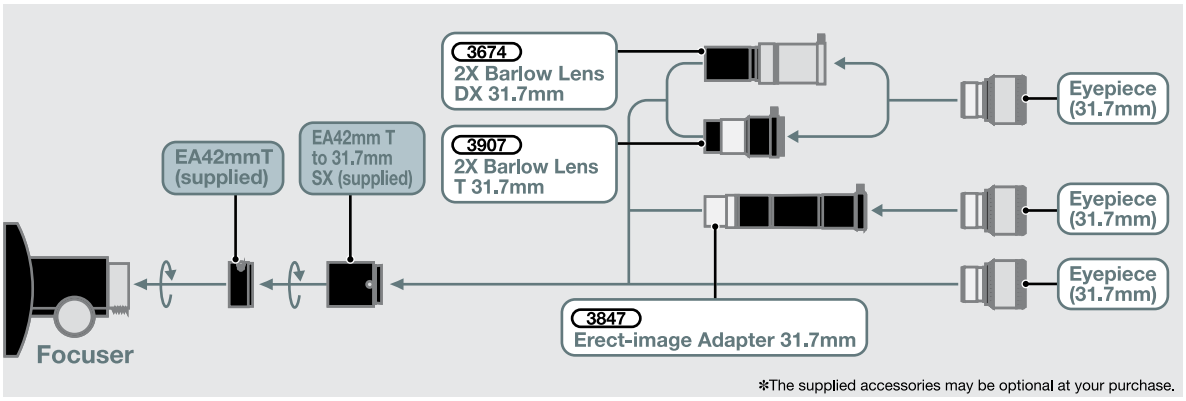


A81M, A105MII, NA140SS, SD81S, SD103S, SD115S and AX103S Optical Tubes



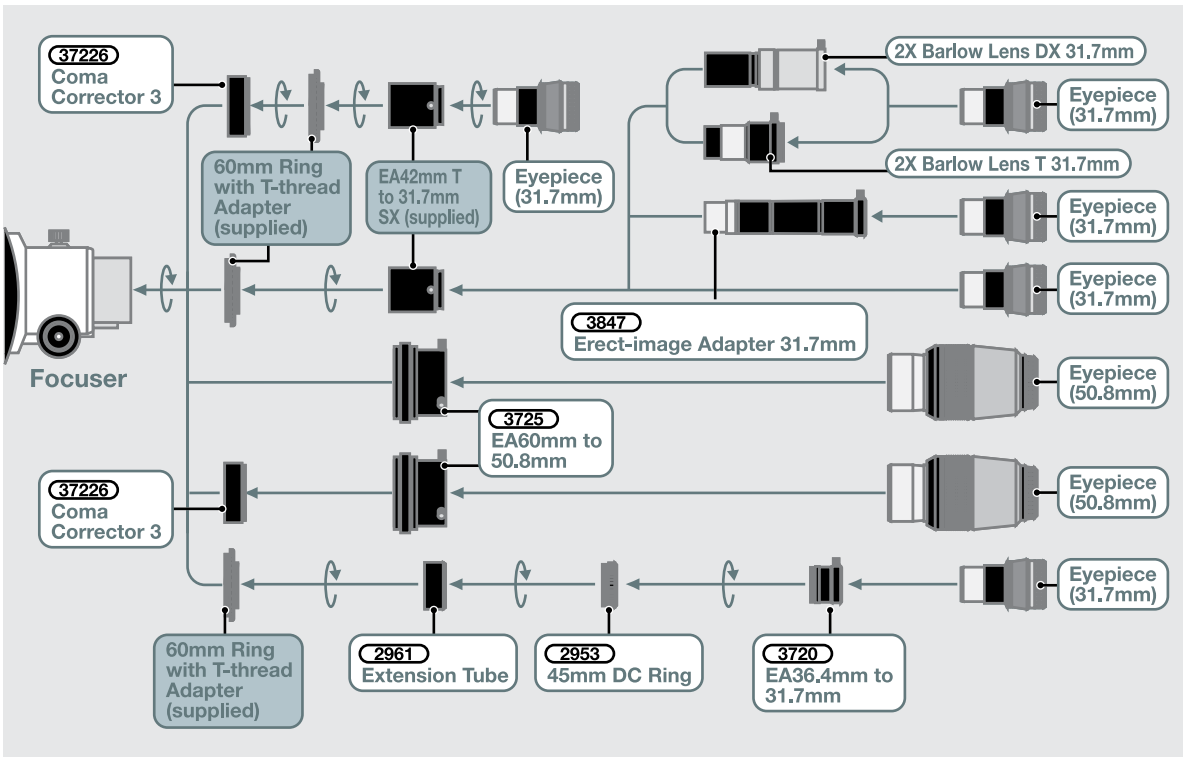
*The supplied accessories may be optional at your purchase.

R130Sf Optical Tube

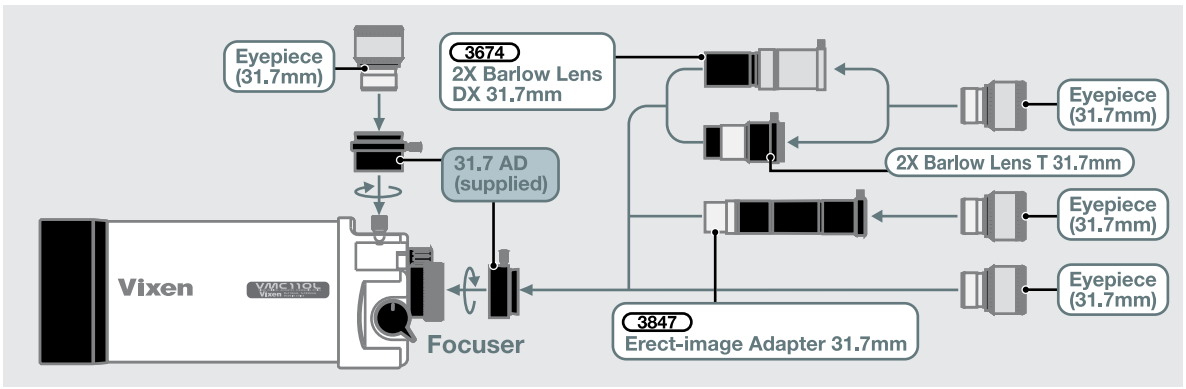


*The supplied accessories may be optional at your purchase.

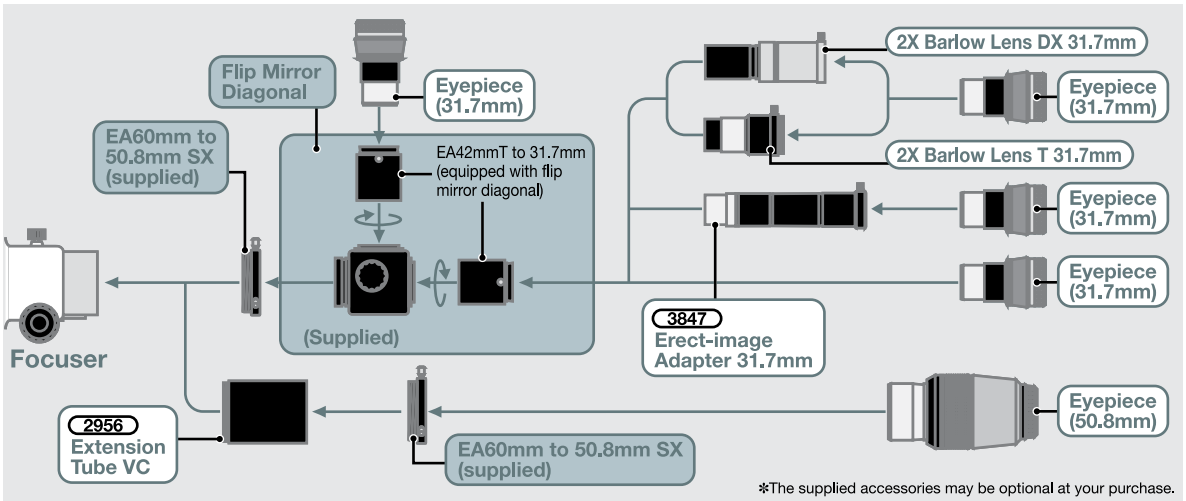
R200SS Optical Tube



VMC95L and VMC110L Optical Tubes



VC200L, VMC200L and VMC260L Optical Tubes



*The supplied accessories may be optional at your purchase.

*The specifications are subject to change without notice.

Eyepieces and Astronomical Accessories

Vixen Premium Eyepieces

Observe the Moon and planetary surfaces with Vixen's overwhelming sharp and high contrast HR eyepieces.

The high resolution HR eyepieces are designed for observation of subtle difference of surface of the planets, detailed surface features of the Moon and challenging double stars. The HR eyepieces create breathtaking, superb images with extremely high levels of definition and contrast. A simple 5 elements in 3 groups lens design of the HR eyepiece achieves the largest possible transmission of light in conjunction with Vixen's AS coatings that deliver 99.9% light transmission per lens surface.

Item No.	Description	Push-fit Size	Apparent FOV	Eye relief	Weight
37132	**HR1.6mm**	31.7mm	42 degrees	10mm	120 g / 4.23 oz
37133	**HR2.0mm**	31.7mm	42 degrees	10mm	117 g / 4.13 oz
37134	**HR2.4mm**	31.7mm	42 degrees	10mm	115 g / 4.06 oz
37135	**HR3.4mm**	31.7mm	42 degrees	10mm	115 g / 4.06 oz

View the magnificence of the universe with Vixen's ultra wide eyepieces.

The new SSW series of eyepieces are designed with an ultra-wide 83 degree apparent field of view. The SSW eyepieces allow you to see an area that is three times as wide as eyepieces with a moderate 45° or 50° field of view. With this wide field of view, you see many more stars across your eyepiece. Enjoy spectacular views of stars through your telescope. The SSW eyepieces deliver clear and high contract images with no hint of ghost and flare throughout the field of view due to its advanced multi-coating technology. You will be impressed with the extremely sharp images even at the very edge of the field of view.

Item No.	Description	Push-fit Size	Apparent FOV	Eye relief	Weight
37121	**SSW3.5mm**	31.7mm	83 degrees	13mm	230 g / 8.11 oz
37122	**SSW5mm**	31.7mm	83 degrees	13mm	230 g / 8.11 oz
37123	**SSW7mm**	31.7mm	83 degrees	13mm	225 g / 7.94 oz
37124	**SSW10mm**	31.7mm	83 degrees	13mm	220 g / 7.76 oz
37125	**SSW14mm**	31.7mm	83 degrees	13mm	210 g / 7.41 oz

50.8mm NLVW / LVW and 31.7mm Zoom Eyepiece

Item No.	Description	Push-fit Size	Apparent FOV	Eye relief	Weight
39301	**NLVW30mm**	50.8mm	65 degrees	22.4mm	363 g / 12.80 oz
3727	**LVW42mm**	50.8mm	65 degrees	20mm	545 g / 19.22 oz
3777	**LV8-24mm Zoom**	31.7mm	60-40 degrees	19mm	215 g / 7.58 oz


NLVW30mm


LVW42mm


LV8-24mm Zoom

SLV Series of 31.7mm Eyepieces

The SLV Series of eyepiece feature a hexagonal shaped eyepiece barrel, long 20mm eye relief, and twist up click stop eyecup for adjusting to the most comfortable eye point for viewing. The SLV eyepieces with high grade Lanthanum glass, deliver remarkably clear and high contrast star images to the edge of the viewing circle. The lenses are fully multi-coated for high light transmission.

Item No.	Description	Push-fit Size	Apparent FOV	Eye relief	Weight
37202	**SLV2.5mm**	31.7mm	50 degrees	20mm	173 g / 6.10 oz
37203	**SLV4mm**	31.7mm	50 degrees	20mm	168 g / 5.92 oz
37204	**SLV5mm**	31.7mm	50 degrees	20mm	165 g / 5.82 oz
37205	**SLV6mm**	31.7mm	50 degrees	20mm	165 g / 5.82 oz
37206	**SLV9mm**	31.7mm	50 degrees	20mm	176 g / 6.20 oz
37207	**SLV10mm**	31.7mm	50 degrees	20mm	175 g / 6.17 oz
37208	**SLV12mm**	31.7mm	50 degrees	20mm	172 g / 6.06 oz
37211	**SLV15mm**	31.7mm	50 degrees	20mm	163 g / 5.74 oz
37212	**SLV20mm**	31.7mm	50 degrees	20mm	155 g / 5.46 oz
37213	**SLV25mm**	31.7mm	50 degrees	20mm	151 g / 5.32 oz

NPL Series of 31.7mm Eyepieces

The 2-group 4-element Plossl optical design of the NPL series eyepieces delivers flat and clear images with good color correction. The NPL20, NPL25, NPL30 and NPL40 eyepieces employ twist-up eye-guards for viewing comfort. The lenses are fully multi-coated for high light transmission.

Item No.	Description	Push-fit Size	Apparent FOV	Eye relief	Weight
39201	**NPL4mm**	31.7mm	50 degrees	2.3mm	70 g / 2.47 oz
39202	**NPL6mm**	31.7mm	50 degrees	3.0mm	70 g / 2.47 oz
39203	**NPL8mm**	31.7mm	50 degrees	4.5mm	79 g / 2.79 oz
39204	**NPL10mm**	31.7mm	50 degrees	6.5mm	80 g / 2.82 oz
39205	**NPL15mm**	31.7mm	50 degrees	11mm	100 g / 3.53 oz
39206	**NPL20mm**	31.7mm	50 degrees	15mm	110 g / 3.88 oz
39207	**NPL25mm**	31.7mm	50 degrees	19.5mm	130 g / 4.59 oz
39208	**NPL30mm**	31.7mm	50 degrees	24mm	120 g / 4.23 oz
39209	**NPL40mm***	31.7mm	40 degrees	36mm	120 g / 4.23 oz

* Not available for eyepiece projection photography with R200SS.

Note: The following older optional accessories are not compatible with the SLV and NPL series of eyepieces.
SX Camera Adapter (3931), Universal Digital Camera Adapter (3919) and NST Camera Adapter 36.4 (3911) and Universal Camera Adapter II (39197).

Eyepiece and Magnification

Dividing the focal length of the telescope by the focal length of the eyepiece gives the magnification.

[Example] When an SLV 10mm eyepiece is used with a A80Mf telescope (focal length = 910mm), the magnification is calculated as follows: 910mm ÷10mm = 91

Barlow Lenses

3674

2X Barlow Lens DX 31.7mm

- High aberration correction with 3-element lens design
- Fully multi-coated
- 2.6x with use of No.3675 Prism Diagonal
- Best for telescopes with faster focal ratio

Weight : 140 g / 4.94 oz

3907

2X Barlow Lens T31.7mm

- Threaded for T-ring
- Coated optics
- 3.3X with use of 3675 Prism diagonal

Weight : 80 g / 2.82 oz

Finder Eyepiece 100

NEW

35203

Finder Eyepiece 100

- Fits 31.7mm visual back
- With cross hairs

Focal length : 100mm
Apparent FoV : About 11 degrees
Size : 50mm dia. x 186mm long
Weight : 180 g / 6.35 oz

Flip Mirror

2680

Flip Mirror Diagonal 31.7mm

- Attached to 50.8mm visual back
- Accepts two 31.7mm eyepieces
- Threaded to fit T-ring
- 119mm long light pass

Weight : 295 g / 10.4 oz

Star Diagonal

3675

Prism Diagonal 31.7mm

- 64mm long light pass
- Not usable on reflectors

Weight : 124 g / 4.37 oz

Terrestrial Viewing Adapter

3847

Erect Image Adapter 31.7mm

- Usable on both refractors and reflectors
- Coated optics

Weight : 190 g / 6.7 oz

Coma Correctors

37226

Coma Corrector 3 for R200SS

- Fits directly into the focuser drawtube
- T-ring is required additionally for prime focus photography
- 52mm filter thread
- Available for visual observation

Weight : 83 g / 2.92 oz

37237

Corrector PH

- Usable on R200SS
- Reduces focal length by 0.95X (Changes to F3.8)
- Wide photo adapter 60mm or 60mmDX and T ring are needed separately for prime focus photography
- Available for visual observation

Weight 175 g / 6.17 oz
(For details refer to P47.)

Focal Reducers and Flatteners for Prime Focus Astrophotography

3666

Focal Reducer for F7.7 ED

- Usable on SD81SⅡ, SD103S or SD115S
- Reduces focal length by 0.67x (Changes to F5.2)
- Wide photo adapter 60mm and T-ring are needed separately for prime focus photography
- Not available for visual observation

Weight : 174 g / 6.14 oz

3871

Focal Reducer for VMC

- Usable on VMC200L, VMC260L or VMC330L
- Reduces focal length by 0.62x (VMC200L, VMC260L and VMC330L change to F6, F7.1 and F8.1 respectively)
- Wide photo adapter 60mm and T-ring are needed separately for prime focus photography
- Not available for visual observation

Weight : 183 g / 6.46 oz

37228

Focal Reducer for AX103S (For APS-C use)

- Designed for APS-C format camera
- Reduces focal length by 0.7x (Changes to F5.6)
- Wide photo adapter 60mm and T-ring are needed separately for prime focus photography
- Not available for visual observation

Weight : 140 g / 4.93 oz

37231 for Nikon
37232 for Canon EOS
37233 for Sony Alpha

Focal Reducer for ED80Sf

- For Nikon, Canon EOS or Sony Alpha DSLR camera
- Reduces focal length by 0.85x (Changes to F6.4)
- Supplied with a T-mount ring
- Not available for visual observation

Weight : 242 g / 8.54 oz (Excluding T-mount ring)

37229

Focal Reducer 2 for VC200L

- Reduces focal length by 0.71x (Changes to F6.4)
- Wide photo adapter 60mm and T-ring are needed separately for prime focus photography
- Not available for visual observation

Weight : 131 g / 4.62 oz

26637

Focal Reducer V0.79X

- Usable on VSD100F3.8
- Reduces focal length by 0.79X (Changes to F3.0)
- Wide photo adapter 60mm or 60mmDX and T ring are needed separately for prime focus photography
- Available for visual observation

Weight 330 g / 11.64 oz

NEW

37245

SD Reducer HD Kit

- Usable on SD81S, SD103S, SD115S, AX103S or VC200L
- Reduced focal length by 0.79X
- Wide photo adapter 60mm or 60mmDX and T-ring are needed separately for prime focus photography.
- 52mm filter thread
- Not available for visual observation.

Weight : 436 g / 15.38 oz

NEW

37246

SD Flattener HD Kit

- Usable on SD81S, SD103S or SD115S
- Wide photo adapter 60mm or 60mmDX and T-ring are needed separately for prime focus photography.
- 52mm filter thread
- Not available for visual observation.

Weight : 218 g / 7.69 oz

NEW

37247

Reducer HD

- Usable on AX103S or VC200L
- Reduced focal length by 0.77X
- Wide photo adapter 60mm or 60mmDX and T-ring are needed separately for prime focus photography.
- 52mm filter thread
- Not available for visual observation.

Weight : 218 g / 7.69 oz

NEW

37253

Reducer HD Kit for FL55SS

- Designed for FL55SS
- Reduced focal length by 0.79x
- Wide photo adapter 60mm or 60mm DX and T-ring are needed separately for prime focus photography

Weight : 433 g / 15.27 oz

NEW

37252

Flattener HD Kit for FL55SS

- Designed for FL55SS
- Wide photo adapter 60mm or 60mm DX and T-ring are needed separately for prime focus photography

Weight : 196 g / 6.92 oz

NEW

37251

Reducer HD5.5

- Designed for FL55SS
- For imaging with the FL55SS telescope, it is essential to use in combination with an optional Flattener HD Kit for FL55SS.
- Reduced focal length by 0.76x

Weight : 237 g / 8.35 oz

*The specifications are subject to change without notice.

Eyepiece Adapters

3720
EA36.4mm to 31.7mm
- Threaded into 36.4mm thread
- 27mm long light pass

Weight : 29 g / 1.02 oz

2689
EA42mmT to 31.7mm SX
- Fits 42mm male T-thread
- 55mm long light pass

Weight : 46 g / 1.62 oz

37292
EA42mmT to 50.8mm
- Fits 42mm male T-thread
- 38mm long light pass

Weight : 60 g / 2.12 oz

3725
EA60mm to 50.8mm
- Threaded into 60mm thread
- 13mm or 34mm long light pass (Reversible)
- Suitable for R200SS

Weight : 66g / 2.33 oz

37293
EA60mm to 50.8mm SX
- Threaded into 60mm thread
- 10mm long light pass

Weight : 63 g / 2.22 oz

37291
EA50.8mm to 43mm
- Fits to 50.8mm visual back
- Converts to 43mm thread

Weight : 85 g / 3.0 oz

Extension Tubes and Rings

2956
Extension Tube VC
- Threaded into 60mm thread
- 66mm long light pass

Weight : 115 g / 4.06 oz

2957
Extension Tube 43mm
- Threaded into 43mm thread
- 41mm long light pass

Weight : 37 g / 1.31 oz

2951
64mm DC Ring
- Converts 60mm thread to 53mm thread
- 4mm long light pass

Weight : 22 g / 0.78 oz

2952
55mm DC Ring
- Converts 53mm thread to 43mm thread
- 3mm long light pass

Weight : 19 g / 0.67 oz

2953
45mm DC Ring
- Converts 43mm thread to 36.4mm thread
- 8mm long light pass

Weight : 19 g / 0.67 oz

2961
Extension Tube R200SS
- Same part supplied with R200SS focuser
- Converts 42mm T-thread to 43mm thread
- 20mm long light pass

Weight : 11 g / 0.38 oz

2954
60mm Ring with T-thread Adapter
- Same part supplied with R200SS focuser
- Rotator to change an image orientation in photography
- Threaded into 60mm thread
- Converts to 42mm T-thread
- 4mm long light pass

Weight : 26 g / 0.91 oz

Finder Scopes and Attachments

26502
XY Red Dot Finder II
- Rigid and durable Aluminum body
- 1X aiming device
- Adjustable dim red dot
- 1/4" screw hole
- CR2032 battery

Weight : 185 g / 6.53 oz

8616
7X50mm Finder with illuminated reticle
- 7.0 degrees field of view
- With illuminated crosshair
- CR2032 battery

Weight : 365 g / 12.87 oz

2656
50mm Low-profile Finder Bracket (S)
- Not usable with A70Lf

Weight : 195 g / 6.88 oz

26552
50mm XY Finder Bracket II
- Attachable to the focuser of Vixen's OTA
- Not usable with a A70Lf
- With O ring for fixing a 50mm finder scope
- Finder leg with spring-loaded anti-slipping mechanism

Weight : 170 g / 6.0 oz

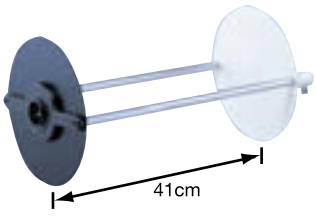
2654
Finder Bracket Shoe

Weight : 96g / 3.39 oz

26635
VSD Finder Bracket Shoe
- Used to attach on VSD100F3.8

Weight : 41 g / 1.45 oz

Solar Observation Accessories

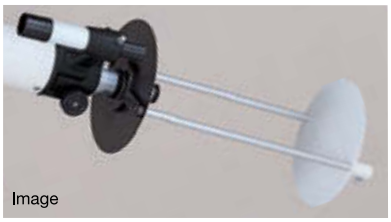


37223
Sun Projection Screen Set A
- For use exclusively with A80Mf refractor
- Consisting of 24cm dia. Sun projection white screen and sunshade, 45mm DC Ring and EA36.4mm to 31.7mm Adapter

Weight : 914 g / 32.03 oz

37224
Sun Projection Screen Set B
- For A81M, A105MII, SD81S SD103S, SD115S or AX103S refractors
- Consisting of 24cm dia. Sun projection white screen and sunshade, 64mm, 55mm and 45mm DC Rings, EA36.4mm to 31.7mm Adapter and 36.4mm Extension tube

Weight : 980 g / 34.17 oz



Image

It is recommended to use a magnification from 40x to 50x to view the whole disk of the Sun.

Mounting Blocks, Brackets and Plates

Image

3796
Weight-shaft Camera Bracket
- Attachable to a counter-weight bar having a diameter of 20mm or 25mm

Size : 165mm long
Weight : 302 g / 10.65 oz

3562
Fine Adjustment Unit DX
- 1/4"-20 screw pan head with tangent-screw slow motion controls
- Movable within +/- 10 degrees vertically and horizontally

Size : 87mm x 52mm x 40mm
Weight : 340 g / 12 oz

3943
Camera-platform Adapter
Attached to the Vixen tripod head to mount a photographic accessory on it.
- Usable with a PORTA II tripod
- With a 1/4" screw

Weight : 380 g / 13.4 oz

3548
Tube-ring Accessory Plate
- With a threaded 1/4" bolt
- Attached to a pair of Vixen tube rings to mount a guide scope or a photographic accessory on it

Size : 191mm x 48mm
Weight : 276 g / 9.74 oz

2661
Dovetail Tube Plate
Size : 190mm x 43.5mm x 20mm
Weight : 160 g / 5.64 oz

2662
Universal Dovetail Plate
- Useful to balance a telescope tube
- With threaded 1/4" and 3/8" holes

Size : 230mm x 44m x 20mm
Weight : 310g / 10.93 oz

26631
Dovetail Slide Bar M
Size : 211mm x 50mm x 21mm
Weight : 270 g / 9.52 oz

26632
Dovetail Slide Bar L
Size : 286mm x 50mm x 21mm
Weight : 360 g / 12.69 oz

25823
Dovetail Slide Bar PG
- Vixen standard dovetail (44mm in width) with a sight slot for Polar scope
- With 4 x 1/4 inch attachment bolts
- 4 x M6 screw socket

Size : 182mm x 44mm x 20mm
Weight : 200 g / 7.05 oz

NEW

35525
Dovetail Slide Bar DD
- Standard 44mm dovetail plate designed for POLARIE.
- With 4X 1/4" camera screws
- Threaded holes for 4 x 1/4" screws and 4 X M6 screws,

Size : 55mm dia. (disc part) x 260mm long
Weight : 390 g / 13.76 oz

2576
Accessory Plate DX
- Usable with SX2, SXD2, SXP, GP2 or GPD2
- Equipped with dovetail slide rail
- A dovetail-plate mounting block is needed additionally if used on VC or VMC optical tube

Size : 330mm x 120mm x 12mm
Weight : 1275 g / 44.97 oz

Bags and Cases

Image

25167
SXG Half Pillar
- Usable with SX2, SXD2, SXP, GP2 or GPD2
- An optional adapter is needed additionally if used with GPD2 with the former 60mm mounting base

Weight : 1.8 kg / 3.96 lb.

3810
Dovetail-plate Mounting Block
- Usable with Vixen optical tubes equipped with dovetail tube plate
- Fits the mount head of AXD2, AXJ or SXP2 directly
- With threaded 1/4" holes

Weight : 220 g / 17.76 oz

35659
Scope Carrier
- Useful for backpacking
- Made of waterproof material with soft texture

Size : 230mm x 140mm x 765mm
Weight : 500 g / 17.64 oz

3565
Parts Case
- Semitransparent plastic case used for storing eyepieces and adapters.

Size : 215mm x 305mm x 80mm

Image

35655
Tube & Tripod Bag 100
- For a telescope or tripod less than 950mm long and less than 125mm in width
- Usable with A81M, A80Mf, A70Lf, SD103S, AX103S optical tube or others

Image

3880
VC200L Aluminum Case
- For VC200L or VMC200L

Size : 335mm x 670mm x 270mm
Weight : 6.2 kg / 13.65 lb.

Image

2697
SX Aluminum Case
- For SX2, SXD2 or SXP

Size : 470mm x 500mm x 220mm
Weight : 6.5 kg / 14.31 lb.

NEW

Image

89224
AXJ Mount Case
- Made of lightweight but durable and shock absorbing polypropylene boards and an aluminum alloy frame.

Size : 470mm x 490mm x 230mm
Weight : 4.3 kg / 9.46 lb

Image

89222
AXD Aluminum Case
Size : 450mm x 540mm x 240mm
Weight : 6.7kg / 14.75 lb.

35658
AP Mount Case
- Available for storing AP, AP-SM or APZ mount

Size : 275mm x 260mm x 130mm
Weight : 700 g / 24.69 oz

*The specifications are subject to change without notice.

Bags and Cases

35657
Tough Tote Bag
• Capacity of about 20 liters
Size : 320mm x 320mm x 200mm
Weight : 660 g / 23.28 oz

6228 Pink 6230 Grey
6227 Blue 6218 Green
6209 Moss Green
Non-woven Cloth Bag
• For storing an eyepiece or small parts.

Accessory Cases

(For details refer to P19)

35654
Eyepiece Accessory Case

35652
Accessory Case Set for STAR BOOK TEN / STAR BOOK

35653
Accessory Case Set for General Use

Power Supply and Cables

8644
Cigarette-lighter Plug Cord – SX
• 2.1mm DC plug with center-plus polarity
• Available for SX2, SXD2, SXP2, AXJ, AXD2, GPD2 with DD-3 or others

8643
Cigarette-lighter Plug Cord – Center-minus
• 2.1mm DC plug with center-minus polarity
• Available for DD-2 controller, Dew Heater2 or C0014-3M CCD video camera

3599
AC Adapter 12V 3A
• Input 100V to 240V
• Output 12V 3A
• Suitable for SX2, SXD2, SXP2, AXJ, AXD2 or GPD2 with DD3
• With a conversion cable to change polarity
Weight : 320 g / 11.28 oz

2536
SX Battery Box
• For 8x D-size alkaline batteries
• Available for DD-3 controller
• With 2.1mm DC plug cable with center-plus polarity
Size : 140mm x 80mm x 80mm

8619
Battery Box
• For 8x D-size alkaline batteries
• Available for DD-2 controller, Dew Heater2 or C0014-3M CCD video camera
• With 2.1mm DC plug cable with center-minus polarity
Size : 140mm x 80mm x 80mm

2537 NEW
Polarity Conversion Cable -SX
Aa power supply cable to be used for converting center minus polarity (GP, SP) to center plus polarity (SX). It is included in the 3599 AC Adapter 12V 3A as standard accessory.

Dew Heaters

37225
Dew Heater2
• Water-resistant rubber heater
• 16.2 Ohm resistor (12V, 8.9W)
• 655mm long heater with 2.2m cable
• 2.1mm jack with center-minus polarity
• With Battery box
Weight : 120 g / 4.23 oz

NEW
35415
Lens Heater 360Ⅱ

Image

A dew remover with USB connector to prevent a camera lens from dewing in astrophotography. It is used by wrapping the strip of the heating elements around the camera lens. The surfaces of the lens heater are made of special tape fasteners that allow for easy wrapping and unwrapping. Active heater fabric(AHF) with smooth flexibility.
• Heater: Fabric heater (Heating elements 18mm x 250mm)
• Temp. characteristics: 10 degrees C above ambient temperature (at 20 degrees C)
• Power source / consumption: USB battery 5V 300mA / 1.5W
• Power supply: USB A (male) cord with magnet contact, 1500mm long
• Operating duration: About 24 hours (at 20 degrees C ambient temperature) by means of a 10,000mAh37Wh mobile battery
• Applicable to: A cylindrical shape with over 30mm in length and from 45mm to 100mm in diameter.
Size : 30mm x 600mm Weight : 55 g / 19.4 oz

NEW

35431
Camera Bag Inner Heater
It is partition heater used inside a tote bag. It protects cameras or other equipment from getting dew during the night.
• Heater: Fabric heater
• Power source / consumption: USB battery 5V 800mA / 4W
• Power supply: USB with magnet contact
• Operating duration: About 3 to 5 hours by means of a 5,000mAh mobile battery
Size : 260Hmm x 330mmW x 200mmD

NEW
35437
Heater Wrap Sheet Ⅱ

The “Heater Wrap Sheet II” heat cloth has a built-in, wire free, heating system (i.e. Active Heat Fabric) designed to protect cameras, lenses, eyepieces and astronomical accessories during night photography sessions where optics are prone to become wet from dew. The Heater Wrap Sheet II also aids in maintaining battery life of your camera or other powered equipment when the ambient temperature is low.
• Heater: Fabric heater
• Power source / consumption: USBA 5V 1A / 7.5W
• Power supply: USB A (male) cord with magnet contact, 650mm long
• Operating duration: About 4 to 5.5 hours by means of a 10,000mAh37Wh mobile battery
• Heater Temp.: About 30 degrees C at 10 degrees C of outdoor ambient temperature
Size : 450mm x 470mm
Weight : 150 g / 5.29 oz

There are many other uses for the Heater Wrap Sheet II, such as a lap robe or seat warmer. This is very useful at sport events and other outdoor activities. When the cloth is folded, the attached parts stick together. You can create a pouch or pocket with the cloth in which to hold your camera or lens safely without any extra fasteners.

The Heater Wrap Sheet II is powered with a plug that attaches to a USB power source of one ampere or more. It will operate for five hours and over, depending on your power source and the temperature.

For AXD

36918
AXD Large Accessory Plate
• Usable on AXD2 or AXJ
Size : 400mm x 200mm x 15mm
Weight : 2.9 kg / 6.38 lb

Guide Mount

35621
Guide Mount XY
• A low-profile mount for installing a guide scope (80mm or smaller in aperture)
• Holes for 8mm and threads for M6 screws
Size : 100mm x 79mm x 160mm
Weight : 750 g / 26.45 oz

Other Useful Accessories

37222

Moon Glass ND 31.7mm

- Neutral density filter (ND4) for the bright moon
- Filter aperture 19mm dia.
- Threaded into the 31.7mm eyepiece barrel

Weight : 10 g / 0.35 oz

3732

Light Baffle Hood

- Blocks stray light in astrophotography
- Available for VC200L, VMC200L or R200SS
- Wrapping shade, 20cm long

Weight : 110 g / 3.88 oz

3870

Metal Carry Handle

- With M6 screw for attachment
- Not usable on A70Lf, A80Mf, R130Sf, VSD100F3.8, NA140SS, R200SS and VMC260L optical tubes

Weight : 220 g / 7.76 oz

3748

C-Mount Tele-Extender 2.4x

- Fits 31.7mm visual back
- Extends focal length by 2.4x

Weight : 37g / 1.31 oz

37227

Dual Speed Focuser

- Allows dual speed focusing with coarse and fine speed adjustment at a ratio of 1:7
- Attachable to the focuser on the current Vixen optical tubes except for VMC95L, VMC110L, VMV260L, VMC330L, A70Lf, A80Mf, ED80Sf, R130Sf and VSD100F3.8

Weight : 170 g / 6.0 oz

Fits the focuser with metal focus knob

Fits the focuser with plastic focus knob shown below

Does not fit the focuser with cylindrical plastic focus knob (a screw in its center)

Astro Lamp

71091

Astro LED Lamp SG-L01

Adjustable dim red LED light secures your night vision at observing sessions.

- 1 x red LED and 2 x white LED, Always start illuminating from dim light of the red LED when turned ON
- Intensity of light is adjustable between 10% and 100%
  Red illumination : 0.4 to 7 lumens
  White illumination : 4 to 27 lumens
- IPX4 rated water-resistant construction
- Powered by a AA alkaline battery
- Wearable on the neck with extension strap band

Size : 60mm x 25mm x 40mm (Main body)
Weight : 27 g / 0.95 oz (without strap and battery)

Sora Jewelry

The motif of Sora jewelry necklaces is based on the most familiar constellations, celestial objects and astronomical phenomenon. The constellation Sora jewelry accurately represents the brightness of stars by using bigger stones for brighter stars.

NEW

71215

Saturn (Planet)

Saturn is the second largest planet of our Solar System, easily identified by its distinctive rings.

71166

Pleiades (Celestial objects)

A cluster of young stars aged between sixty million years old and a hundred million years old. It is depicted on the oldest Planisphere.

71160

Orion (the Hunter)

A row of easy to identify three stars in the center of Orion is a marker to locate the constellation in the winter night sky.

71164

Southern Cross (Crux)

It is the smallest in size of all the 88 constellations. One of the most celebrated group of stars for its beauty.

71161

Cassiopeia
(the Queen in Greek mythology)

A well-known constellation by its W shaped pattern of stars, which is used to locate Polaris.

71165

Big Dipper (part of Ursa Major)

The most popular area of the constellation with its distinctive arrangement of stars known as the Big Dipper.

71163

Lyra and Aquila (the Harp and the Eagle)

Each of these constellations harbors gems. "Vega" in Lyra and "Altair" in Aquila are bright first magnitude stars constructing the summer triangle.

NEW

71213

Shooting Stars
(Celestial phenomenon)

Shooting stars are the remnants of a comet caused by its plunge into the atmosphere.

NEW

71214

Moon Surface
(Satellite of Earth)

The moon is an integral part of Earth's history and the life of its inhabitants.

71162

Cygnus (the Swan)

The beak of Cygnus is a brilliant telescopic double star "Albireo" that is regarded as the most beautiful in the heavens.

Materials:
Brass with Rhodium plating (nickel-free) Rhinestone and Cubic Zirconia Necklace Chain: 40cm long plus 5cm long clasp. "Sora" means the sky in Japanese.

*The specifications are subject to change without notice.

SG 2.1x42

"Constellation" Binocular

Fun Star Gazing with Ultra Wide Field of View

Enjoy Star-Hopping

The SG2.1X42 is a handy binocular with a bright 42mm aperture and low 2.1x magnification that is designed and developed for star gazing. Enjoy finding a row of stars in constellations and millions of stars in the Milky Way Galaxy with its ultra wide field of view. The sparkle of beautiful and mysterious stars will never fail to give us a sense of the vastness of the universe.

All Made in Japan

Every element from lens polishing to machining has been carried out to produce a truly unique binocular of exquisite quality.

19172

SG2.1×42

With soft binocular case and neck strap

Magnification : 2.1x
Effective aperture : 42mm, fully multicoated optics
Eye relief : See below.
Close focus : 2m
Interpupillary distance : from 55mm to 74mm
Size : 4.6cm x 12.8cm x 5.4cm
Weight : 410 g / 1.44 oz

- With soft case and neck strap
- Individual focusing
- Corrected vision of 20/20 may be required to focus at infinity
- The whole field of view is not visible if wearing eyeglasses

Note:
The SG2.1x42 binocular uses an optical design of a Galilean type telescope system. With the characteristics of this system, real field of view, apparent field of view and eye relief are not determined strictly. Although only the eye relief is described in the specifications of this product mainly, it is indicated as reference for the person who wears glasses.

<Reference specifications>
Actual field of view : 12.2 degrees Apparent field of view : 25.2 degrees Eye relief : 8.4mm*

* The values of the actual field of view and apparent field of view are measured based on an 8.4mm eye relief. If the distance of the eye relief decreases to 5.6mm, the apparent field of view will increase to 28 degrees (the actual field of view will be 13.6 degrees.) Therefore, these vary with your viewing position.

SG 6.5x32

Experience the Edge-to-Edge Sharp View

Ultimate Astronomy Binocular

The SG6.5x32 is the next step up from the SG2.1x42. It was designed and developed at the request of star gazers, Using ED glass, high quality prisms and cutting edge coating technologies, this binocular is perfect for viewing at very low light conditions. No loss of light results when delivering extremely sharp and clear images.

19173

SG6.5×32

With soft binocular case and neck strap

- Magnification : 6.5X
- Effective aperture : 32mm
- Prism material : BK7
- Angular field of view : 9.0°
- Apparent FOV : 58.5°
- FOV at 1000m : 157m
- Exit pupil : 4.9mm
- Eye relief : 20.0mm
- Brightness : 24.0
- Close focus : 6.0m
- Interpupillary distance : 56mm to 76mm
- Size : 140mm x 132mm x 48mm
- Weight : 610 g / 21.5 oz

Ten remarkable features of the SG6.5X32

- ED glass is used to eliminate all hints of false color.
- Flat and high light transmission characteristics throughout the wavelength of star spectrums by means of seven layers special multi-coatings.
- High reflective silver and dielectric coatings on the sub roof prisms produce the maximum reflectivity.
- The sub roof prism is made of less light-absorption glass to keep high transmission of light for collecting subtle light from faint stars.
- The roof prisms are phase coated to reduce halation and increase resolution for clear and high contrast images.
- The travel of focusing becomes slower around infinity focus where you view celestial objects to allow for fine focus adjustments.
- The ergonomic body is comfortable to hold especially when aiming the binoculars at the sky.
- The knurled focus wheels are turned easily even when wearing gloves.
- The large aperture eyepiece offers your eyes a comfortable viewing position.
- The light weight but solid binocular body is made of magnesium alloy and waterproof for serious outdoor use.

ATERA

Enjoy Star Watching without Shaking the Field of View

11493 Beige

ATERA H12×30 Binocular with Vibration-Canceller

With soft binocular case, neck strap and 2 AAA batteries

NEW

- Magnification: 12X
- Effective aperture: 30mm
- Prism material: BaK4, BK7
- Coatings: Fully multi-coated, Phase-coating on prisms
- Angular field of view: 4.2°
- Apparent FOV : 50.4°
- FOV at 1000m: 73m
- Exit pupil: 2.5mm
- Eye relief: 17.5mm
- Brightness: 6.3
- Close focus : 2.5m
- Interpupillary distance: 55mm to 75mm
- Battery duration: 12 hours (2x AAA Alkaline batteries)
- Size: 149mm x 108mm x 62mm
- Weight: 422 g / 14.9 oz (w/o battery)

Lightweight, Handy for Sports Events and Star Watching

The ATERA H12X30 is a lightweight handheld image stabilization binocular with vibration compensation by means of a two-axis gimbal system. It achieves stable and comfortable viewing with high magnification of 12X, at which subtle vibration is noticeable, thanks to its high vibration compensation angle of +/-3 degrees (up and down, left and right). You will be able to enjoy star watching without shaking the field of view as if you are using with a tripod.

Vixen German Equatorial Mounts

AP Mount
SX2 Mount
SXD2 Mount PFL
SXP2 Mount
AXJ Mount
AXD2 Mount

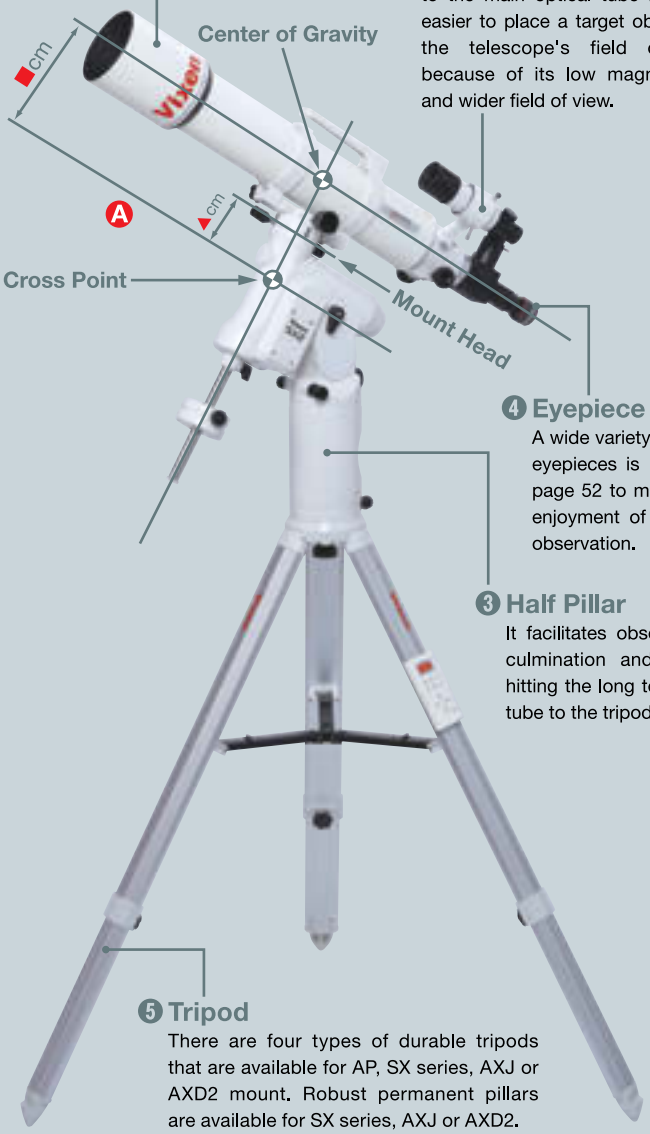
With Vixen equatorial mounts, you have a wide selection of Vixen telescopes and optical tubes, including refractors, reflectors and catadioptric systems, from which to choose. You are sure to find one to fit your specific observing needs. You can also start with a smaller telescope and upgrade later to a larger one as your interest and needs grow. All Vixen products are interchangeable. The Vixen equatorial mounts are an excellent choice for anyone who wants to start exploring the night sky with a truly reliable instrument.

❶ Optical Tube Assembly

There are three types of optical tubes; refractor, reflector and catadioptric which is an advanced combination of the refractor and reflector. The optical tube is attached to a Vixen mount with a dovetail plate system which simplified the attachment and removal of optical tubes.

❷ Finder Scope

A finder scope which is subsidiary to the main optical tube makes it easier to place a target object into the telescope's field of view because of its low magnification and wider field of view.



❹ Eyepiece

A wide variety of Vixen eyepieces is listed on page 52 to make your enjoyment of celestial observation.

❸ Half Pillar

It facilitates observing in culmination and avoids hitting the long telescope tube to the tripod leg.

❺ Tripod

There are four types of durable tripods that are available for AP, SX series, AXJ or AXD2 mount. Robust permanent pillars are available for SX series, AXJ or AXD2.

Ⓐ About Torque Load

Vixen uses terms of Torque Load as guidance for an allowable loading weight. The torque load can be calculated by the following formula.

Torque Load (kg-cm)
= Weight of an instrument loaded (Kg) x Distance from the place where the RA and Dec axes cross to the center of gravity of an instrument loaded (cm) ■

[Example] When you install an AX103S optical tube assembly on the SX2 mount using the dovetail-plate mounting block, the torque load is calculated as follows:

1) You find the outside diameter of the AX103S is 115mm from the specifications on page 44. Supposed that the center of gravity of the AX103S is the center of the optical tube assembly, it would be a point of a half of the optical tube diameter. It is about 6cm here to make a calculation easier.
2) The space of the tube ring and dovetail-plate mounting block is about 4cm in breadth in total.
3) Distance from the RA and DEC axes cross point to the mount head of the SX2 is about 10cm. ▲

[Calculation] 6.4 kg x (6cm + 4cm + 9cm) = 121.6 kg-cm

Quick reference of the Vixen Equatorial Mounts

Mount	Controller equipped as standard	Star Chart Go-To Slewing	Distance to the mount head from the RA and DEC axes cross point	Maximum Torque load*	Photographic loading weight	Polar scope
AP	STAR BOOK ONE (AP-SM)	No	10cm	150 kg-cm	6 kg / 13.2 lb	Optional
SX2	STAR BOOK ONE	Possible (if SBT is used)	9cm	300 kg-cm	12 kg / 26.5 lb	Optional
SXD2	STAR BOOK TEN	Yes	9cm	370 kg-cm	15 kg / 33 lb	Standard
SXP2	STAR BOOK TEN	Yes	10cm	425 kg-cm	17 kg / 37.4 lb	Standard
AXJ	STAR BOOK TEN	Yes	13cm	550 kg-cm	22 kg / 48.4 lb	Standard
AXD2	STAR BOOK TEN	Yes	11cm	750 kg-cm	30 kg / 66.1 lb	Standard

*At a point of 25cm above from the place where the RA and DEC axes cross.

Image courtesy of Hiroyuki Narisawa.

Vixen Co., Ltd.

http://www.vixen.co.jp

5-17-3 Higashitokorozawa Tokorozawa, Saitama 359-0021 Japan
Phone : +81(0)4-2944-4141
Fax : +81(0)4-2944-9722

Vixen Europe GmbH

Kleinhülsen 16/18, D-40721 Hilden, Germany
TEL:+49(0)2103/89787-0
FAX:+49(0)2103/89787-29
http://vixen-europe.com

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