Image taken with Vixen POLARIE (Teruyasu Kitayama)

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Vixen®

Astronomical Telescopes

Image taken with Vixen POLARIE (Teruyasu Kitayama)

Exclusively distributed by:

Vixen Optics
A Division of MrStarGuy, Inc.

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Vixen®

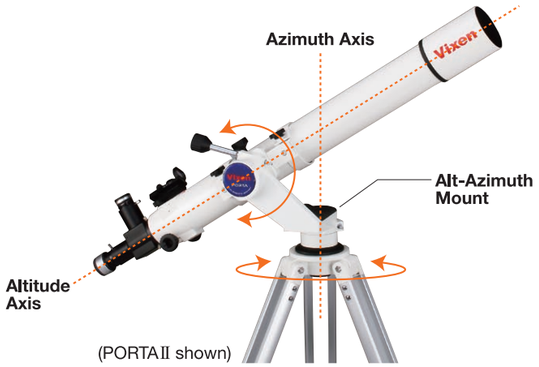
Astronomical Telescopes

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

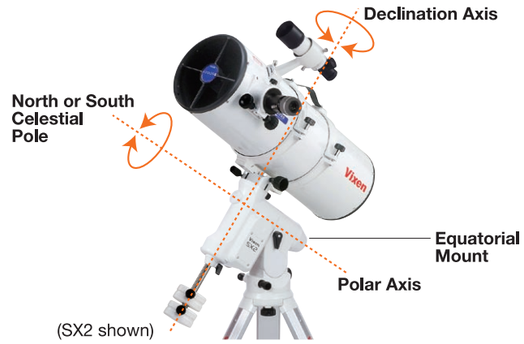
Features simple vertical and horizontal motion controls designed to easily point a telescope to the object you want to view.



◎ 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

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.

MINI PORTA — 28
Alt-azimuth Mount
A lightweight and compact alt-azimuth mount for beginners with features found on the popular PORTAⅡ Mount.

PORTAⅡ — 26
Alt-azimuth Mount
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 — 12
Alt-azimuth Mount
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 — 29
Alt-azimuth Fork Mount
A solid alt-azimuth fork mount designed to carry large aperture astronomical binoculars such as the BT series of giant binocular telescopes.

AP Equatorial Mount — 8
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 — 14
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. The mount comes equipped with STAR BOOK ONE dual axis handheld controller.

SXD2 Equatorial Mount FPL — 19
The next step up from the SX2 Mount featuring the Hi Def STAR BOOK TEN Hand Controller with built in star chart. The mount body with solid mechanics is designed for long observing sessions and astrophotography.

SXP Equatorial Mount FPL — 23
The summit of the Sphinx series of equatorial mounts with high definition “STAR BOOK TEN” controller. It boasts of ultimate precision and unrivaled performance in the class of highly portable German equatorial mounts.

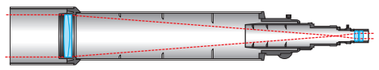
AXD Equatorial Mount — 4
Vixen’s flagship equatorial mount that is designed for both superior performance and ease of use. Best for serious astrophotographers who demand a perfect imaging platform.

Tips on Selecting an Optical Tube

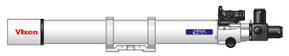
Types of Optical Tubes - There are three types of optical tubes; Refractor, Reflector and Catadioptric.

Refractors

Light is collected through an objective lens.



◎ Constantly stable field of view with excellent contrast, suitable for observation of any celestial object.
◎ 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.



Achromatic Refractors
Vixen Achromatic refractors feature stable and high contrast images.

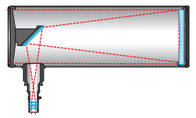
SD Apochromatic Refractors
Vixen ED (Extra Low Dispersion Glass) refractors feature sharp and clear images free from false color. Recommended for astrophotography.

Triplet SD Apochromatic Refractors
Vixen’s quad element design including triplet ED objective lens delivers high quality perfect images with no hint of chromatic aberration. Ideal for both visual observing and astrophotography.

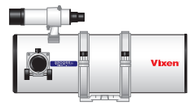
f series Introducing the Fun of Astronomy
Vixen’s f series telescopes are the result of our desire to make astronomical gear fun and easy to operate for beginners and experienced hobbyists.

Newtonian reflectors

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 outside. Wait an hour or more to cool down the telescope tube.
× It is not suitable for observation of the sun.

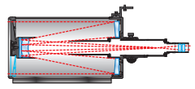


Vixen’s Newtonian reflectors feature excellent optical performance with the introduction of advanced high precision mirror formation technologies.

Catadioptric reflectors

It is an advanced combination of refractor and reflector.

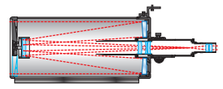
■ **VMC**
(Vixen Original Maksutove Cassegrain)



◎ 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 all 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 cools down quickly due to the open tube.
× It is not suitable for observation of the sun.

Vixen’s original modified Maksutove Cassegrain design makes it an all-round telescope not only for visual observation but also for astrophotography.

■ **VISAC**
(Vixen 6th-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 telescope should cool down for an hour before use.
× It is not suitable for observation of the sun.

Vixen’s original high precision Sixth-order Aspherical Cassegrain (VISAC) optics produces outstanding pinpoint star images without coma and without field curvature. It is highly recommended for serious astrophotography.

Telescope Controllers (For Motor-driven models)

It is essential for long time observing session and taking astrophotography.

STAR BOOK ONE — 15

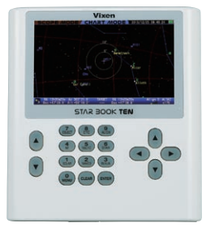
(Dual axis drive with versatile tracking options)
Supplied as standard with SX2, AP-SM Mounts and AP Photo Guider

The four direction buttons on the STAR BOOK ONE move the mount in X and Y dual axis (RA and DEC directions) either quickly or slowly. Versatile tracking options are available in addition to the sidereal and solar tracking rates.

STAR BOOK TEN — 21

(Automatic Go-to slewing and tracking with star chart)
Supplied as standard with SXD2, SXP and AXD Mounts

The revolutionary advanced Hi Def Go-to navigation controller with built in star chart is the best companion for your observing sessions.



Vixen's Flagship Equatorial Mount combining Superior Performance and Ease of Use

AXD
AXD Equatorial Mount

The AXD Mount has superior quality and performance to deliver breathtaking images of deep sky wonders.

Avid astronomers will find that the high performance and precise tracking of the AXD mount will raise their level of astrophotography. With its ease of use and superior performance, the AXD Mount offers even novice astronomers the opportunity to be a successful astro-photographer.

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

AXD Accessories

36917
AXD-P85 Metal Pillar
Pipe size : 114.3mm dia. x 881.5mm L
Thickness : 3.5mm
Base spread : 440mm in radius
Weight : 14.5 kg / 31.9 lb

25173
AXD-P85DX Metal Pillar
• Robust observatory pillar
Pipe size : 139.8mm dia. x 881.5mm L
Thickness : 3.8mm
Base spread : 450mm in radius
Weight : 24.5 kg / 53.9 lb

36916
AXD-TR102 Aluminum Tripod
Adjustable leg length : 760mm to 1018mm
Adjustable tripod height : 690mm to 915mm
Leg pipe : 55mm dia.
Base spread : from 440mm to 570mm in radius
Weight : 10.3 kg / 22.7 lb

36911
AXD Mount

Specifications	AXD and STAR BOOK TEN
R.A. slow motion	Worm and wheel gears with 270-tooth whole circle micro movement, 135mm in diameter made of brass
DEC slow motion	Worm and wheel gears with 216-tooth whole circle micro movement, 108mm in diameter, made of brass
Worm shaft gear	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
Counterweight bar	25mm in diameter, retractable, made of stainless steel
Number of bearings	21 pieces
RA display	On-screen the STAR BOOK TEN, 0.1 minute increments
RA setting circle	10 minutes increments, 1 minute increment with vernier
DEC display	ON-screen the STAR BOOK TEN, 0.1 arc minute increments
DEC setting circle	2 degrees increments, 10 arc minutes (0.167 degrees) increments with vernier
Polar axis scope	SX Polar axis scope (pre-installed) 6x20mm, Field of view 8 degrees, with illuminated reticle, within 3 arc minutes of setting accuracy
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 two tangent screw bolts about 0.5 degrees per rotation
Azimuth adjustment	Fine adjustments with twin screw knobs about 1.0 degrees per rotation, adjustable range about +/- 7 degrees
Motor drive	Pulse motors with micro-step motion control (400 pps)
Star Chart Go-To	Automatic Go-To slewing with STAR BOOK TEN, 800x of sidereal rate at maximum slewing speed
Photographic loading weight	30 kg / 66 lb (Maximum torque load: 750 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	457mm x 465mm x 152mm
Weight	25 kg / 55.1 lb (without counterweights)
Counterweights	1.5 kg x 1 and 7.0 kg x 1 / 3.3 lb x 1 and 15.4 lb x 1

Optional Accessories

3810

Dovetail-plate Mounting Block
• Used to install a dovetail plate attached optical tube
• Fits directly onto the SXP or AXD 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

25301

Advance Unit
Weight : 100 g / 3.52 oz
(For details refer to P40.)

35621

Guide Mount XY
Weight : 750 g / 26.45 lb

33801
CCD Video Camera C0014-3M
Weight : 245 g / 8.64 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)

89222
AXD Aluminum Case
Weight : 6.7 kg / 14.7 lb

For Serious Astrophotographers who demand a Perfect Imaging Platform

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

Sturdy Axes and Lightweight Body

The structure of German equatorial mounts has been thoroughly examined in order to create the sturdy but lightweight AXD equatorial mount. The A7075 super-alloy, which is the strongest material among this group of aluminum alloys, is used for the RA 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 AXD lightweight while retaining its sturdiness.


RA Axis DEC Axis

Bearings

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

STAR BOOK TEN

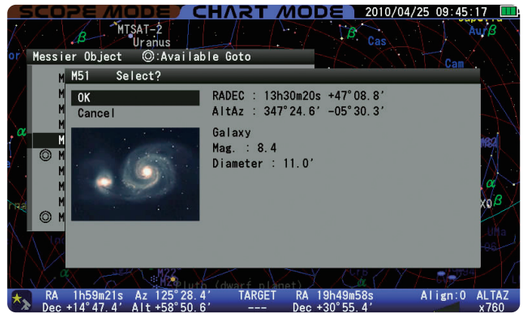
The STAR BOOK TEN is an integral part of the AXD Mount. It features an intuitive "Star-Chart Go-To" System with high definition color LCD display. With the optional Advanced Unit installed, the STAR BOOK TEN combined with a CCD video camera works as an advanced autoguider. It is highly recommended for any levels of astrophotographers.

Working voltage : DC 12V
Electricity consumption : 0.5W (Stand alone)
Size : 169mm x 154mm x 30mm
Weight : 380 g / 13.4 oz

(For details refer to P21.)

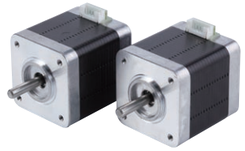
The STAR BOOK TEN contains more than 272,000 celestial objects including approximately 260,000 stars from the SAO catalogue, 109 Messier objects, 7840 NGC objects and 5,380 IC objects as well as the sun, moon and planets. Objects can be called up by common name and information can be customized.

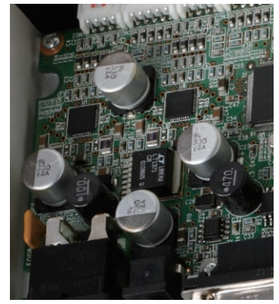
Search by a list of well known objects



Pulse Motors

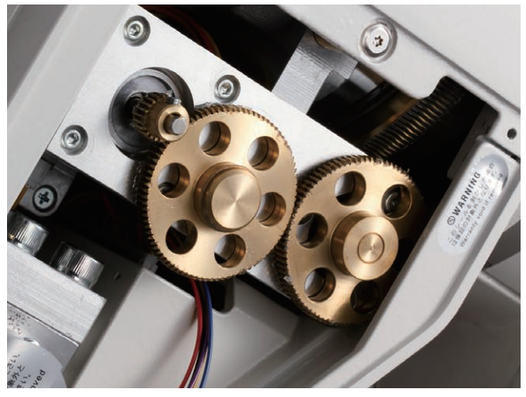
Vixen selected accurate pulse motors for better response which enable the AXD to fully realize its performance potential. A drawback associated with the ticktack motion of conventional pulse motors has been eliminated by a newly developed micro-step motion control system generating high speed 400 pulse per second. As a result, the AXD delivers surprisingly smooth tracking free of oscillation. The pulse motors maintain sufficient torque. This is most evident when you observe at high magnification and for high resolution CCD imaging.





Minimum Backlash

Vixen's 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 VPEC Periodic Error Correction

The periodic motion of each AXD mount has been measured precisely and stored in the nonvolatile memory inside the mount at Vixen's factory before shipment. This is called VPEC. The VPEC works automatically as you use the mount. It provides tracking as accurate as +/-3.5 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.

Innovative, Elegant, and functional design of the AXD Mount

The AXD Mount has minimal external protrusions and innovative interior design.
It is the flagship of Vixen's line of well-designed equatorial mounts.

Silver Setting Circles

Polished silver anodized setting circles in RA and DEC have both beauty and utility. They not only match the white AXD 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

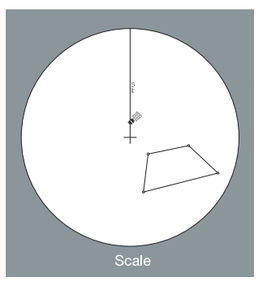
The 25mm thick retractable counterweight bar is made of stainless steel and is stored inside the declination body. This aids in quick set up.

Reliable Electronics

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

Polar Axis Scope

A 6x20mm polar axis scope with illuminated reticle is provided with the AXD. With the help of a built-in Polaris position scale, it achieves an easy and accurate polar alignment within 3 arc minutes in the northern hemisphere. For polar alignment in the southern hemisphere, a pattern of four stars in Octantis is used as a scale.



Original Motor Layout

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

Mount Head

The mount head of the AXD 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.

Vibration-Free Tripod

A sturdy tripod or a pedestal with a high grade of stability is essential to fully utilize the AXD. The exclusive AXD-TR102 tripod for the mount with 55mm thick legs, is constructed so that the legs are strong enough against the tension. This achieves perfect stability when using the AXD.

The Quad element AX103 apochromatic system features SD glass for uncompromising optical performance, the pinnacle of this aperture class.

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

36921

AXD-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	AXD 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
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

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

AXD Mount Package — **AXD Mount with AX103S OTA, AXD Half pillar and AXD-P85 Pillar**

36922

AXD-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	AXD with STAR BOOK TEN controller
Pillar	AXD-P85 metal 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
Adapter thread	60mm and 42mm for T-ring
Visual back	50.8mm and 31.7mm (with Flip mirror) push-fit
Metal Pillar	114.3mm dia. x 881.5mm in height, pipe wall 3.5mm thick, 14.5 kg
Total weight	59.5 kg / 130.9 lb

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

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

36923

AXD-VMC260L

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	AXD 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 (shortened to 670mm L)
Tube weight	12.1 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

The great light gathering power and long focal length of the VMC260 are best for detailed views of planets and faint deep sky objects. The robust pillar is suitable for use in a permanent observing base.

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

36925

AXD-VMC260L-PD

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	AXD 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 (shortened to 670mm L)
Tube weight	12.1 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.

Easy to Use Versatile Equatorial Mount

AP
Advanced Polaris 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 P15)

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)

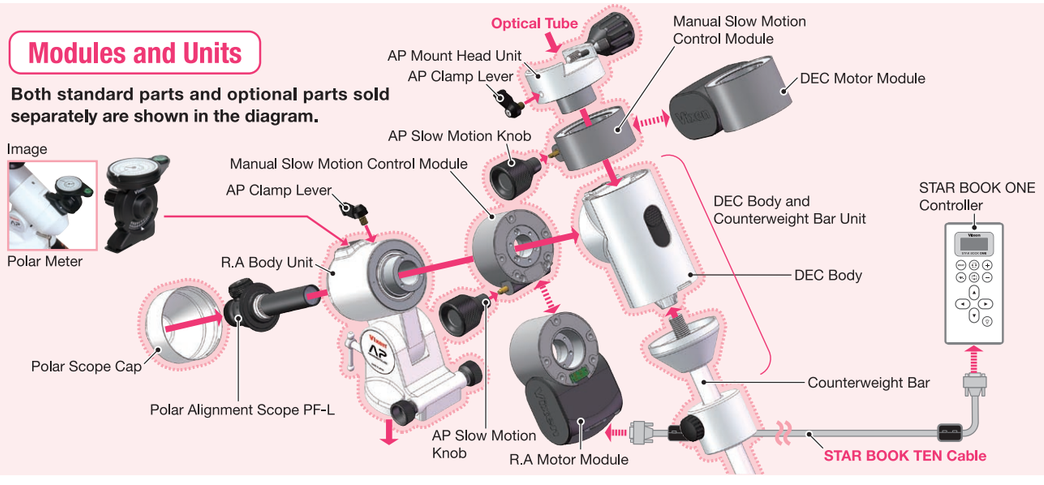
Optional Accessories

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.

Modules and Units

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




AP-A81M-SM

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
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)

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

AP Mount Package	AP or AP-SM Mount with ED81SII OTA, APP-TL130 Tripod and Eyepieces

39983 AP-ED81SII **39984 AP-ED81SII-SM**

Contents

Optical tube	D=81mm F=625mm (f7.7) SD apochromatic refractor, multicoated
Finder scope	XY red dot finder
Eyepiece	SLV20mm (31x) and SLV5mm (125x)
Mount	AP mount with manual RA and DEC slow motion control module 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 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 570mm to 1296mm in length, 3.0 kg
Total weight	13.1 kg / 28.8 lb (AP package) / 13.5 kg / 29.7 (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)

*The specifications are subject to change without notice.

25809

AP Polar Axis Body Unit

It is a base part of the AP equatorial mount that is designed to rotate parallel to earth's rotation axis. An accessory shoe is provided for an optional Polar meter.
- Altitude adjustment range: from 0 degree to 65 degrees with tangent screw, about 1.9 degrees per rotation
- Azimuth adjustment range: About +/- 6.5 degrees with twin screw knobs, about 1.4 degrees per rotation
- Equipped with the AP clamp lever

Size : 263mm x171mm x 98mm
Weight : 1230 g / 43.38 oz

25812

AP Declination Body Set

The set is composed of the AP declination body unit and the AP counterweight bar (with vanity ring).
- Equipped with a battery compartment used as a power source for the R.A motor (and DEC motor) if in use.

AP Declination body Unit
Size : 124.5mm x 81mm x 78mm
Weight : 490 g / 17.28 oz

AP Counterweight Bar
Size : 78mm dia. x 328mm
Weight : 820 g / 28.92 oz

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.

25811

AP Declination Body Unit

The core of the AP Mount that functions as the declination body of the AP Mount or as the altitude axis of the APZ Mount.
- Equipped with a battery compartment used as a power source for the R.A motor (and DEC motor) if in use.

Size : 124.5mm x 81mm x 78mm
Weight : 490 g / 17.28 oz

25817

AP Counterweight Bar with Vanity Ring

- Bar 20mm in diameter and 269mm in effective length

Size : 78mm dia. x 328mm
Weight : 820 g / 28.92 oz

25831

AP Portable Set

The AP portable set is composed of the dovetail slide bar PG, AP clamp mount head unit H, mount head base and AP polar axis bracket.
Total weight : 865 g / 30.51 oz

25815

AP Clamp Mount Head Unit

It is a part to receive the dovetail attachment bars or plates. The AP clamp mount head unit can be used together with either the manual slow motion control module or the DEC motor module.
Size : 78mm dia. x 56mm
Weight : 340 g / 12.0 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

25808

Manual Slow Motion Control Module

It is installed on the R.A and DEC rotation axes of the AP mount system to move the mount manually.
Size : 80mm x 80.5mm x 38.5mm
Weight : 360 g / 12.69 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

25819

AP Clamp Mount Head Unit H

It is a part to receive the dovetail attachment bars or plates. The AP clamp mount head unit H has a center sight hole for the polar alignment scope PF-L.
Size : 78mm dia. x 56mm
Weight : 345 g / 12.17 oz

25821

Mount Head Base

It is used to connect between the modules and the AP mount head unit or POLARIE time-lapse adapter. It is available for the R.A motor module, DEC motor module or Manual slow motion control module.
Size : 78mm dia. x 21mm
Weight : 90 g / 3.17 oz

25822

AP Polar Axis Bracket

It is a part to be combined with the polar alignment scope PF-L and others to make the AP Star Tracker. An accessory shoe is provided for an optional Polar meter.
- With 1/4 inch screw socket

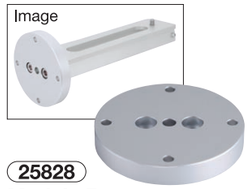
Size : 114.5mm x 78mm x 77mm
Weight : 230 g / 8.11 oz

25824

AP Mount Head Unit

It is a part to receive the dovetail attachment bars or plates. It is equipped as standard with the AP Photo Guider.
Size : 78mm dia. x 31mm
Weight : 200 g / 7.05 oz

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

25825

AP Mounting Base Post

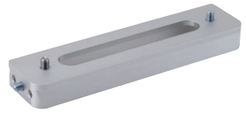
It is a base part to make up the APZ Alt-Az mount. It is available as the mounting base for an AP time-lapse unit also.
- Friction control, AP clamp lever is available

Size : 104mm dia. x 58mm
Weight : 560 g /19.75 oz

25827

AZ Counterweight

It is a counterweight equipped as standard with the APZ Alt-Az mount.
Size : 78mm dia. x 60mm
Weight : 1.65 kg / 3.63 lb



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

25814

PG Mount Head Set

The PG mount head set is composed of the AP mount head unit, mount head base and dovetail slide bar PG. With an optional clamp lever and an optical polar alignment scope PF-L, you can change the AP-SM mount into the AP photo guider.
- Equipped with the AP photo guider as standard accessory.

Total weight : 490g / 17.28 oz

25803

Polar Alignment Scope PF-L

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 setting angle 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.
- Applicable to AP, SX2, SXD2 and SXP mounts

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

Polar scope's reticle

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

NEW

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

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

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

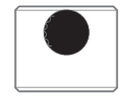
Image

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.

*The specifications are subject to change without notice.

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

APZ

APZ

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 smooth friction control mechanism of the APZ Mount, the telescope can be moved quickly by hand to your target object.

Optional

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

APZ Mount Package — APZ Mount with A80Mf OTA, APP-TL130 Tripod and Eyepieces

25843

APZ-A80Mf

Contents

Optical tube	D=80mm F=910mm achromatic refractor, multicoated
Finder scope	6x30mm, Field of view 7 degrees
Eyepiece	PL20mm (46x) and PL6.3mm (144x)
Tripod	APP-TL130 3-section aluminum legs with quick-release leg clamps
Accessories	Erect-image diagonal, AZ 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 push-fit
Tripod legs	Adjustable from 570mm to 1296mm in length, 3.0 kg
Total weight	10.1 kg / 22.2 lb

APZ Mount Package — APZ Mount with R130Sf OTA, APP-TL130 Tripod and Eyepieces

25844

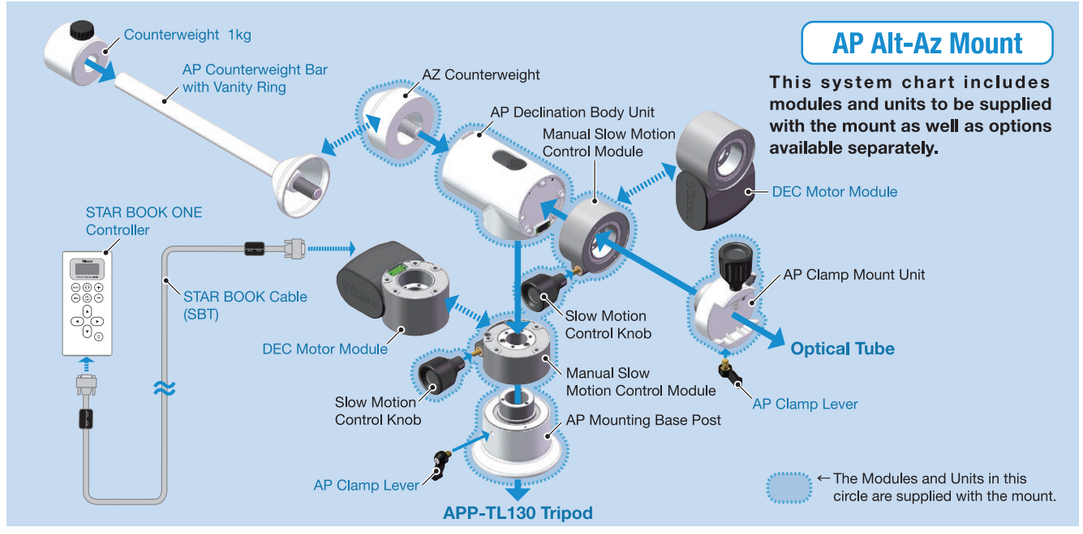
APZ-R130Sf

Contents

Optical tube	D=130mm F=650mm Newtonian reflector, multicoated
Finder scope	6x30mm, Field of view 7 degrees
Eyepiece	PL20mm (33x) and PL6.3mm (103x)
Tripod	APP-TL130 3-section aluminum legs with quick-release leg clamps
Accessories	AZ Counterweight 1.65 kg

Specifications

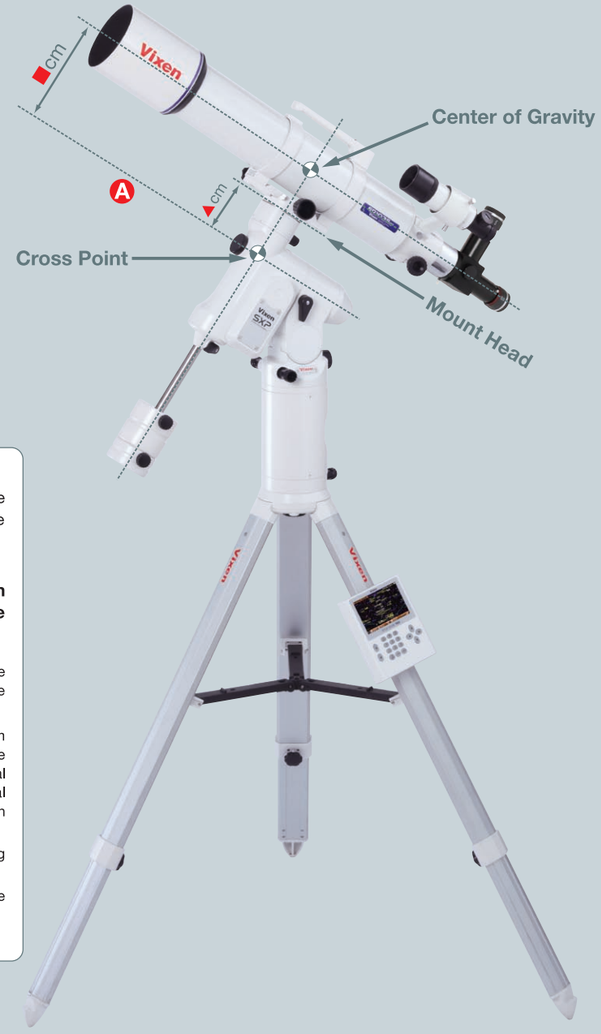
Optical tube size	160mm Dia. x 575mm L
Tube weight	5.3 kg (net 4.0 kg)
Adapter thread	42mm for T-ring
Visual back	31.7mm push-fit
Tripod legs	Adjustable from 570mm to 1296mm in length, 3.0 kg
Total weight	12.1 kg / 26.6 lb



Vixen German Equatorial Mounts

AP Mount
SX2 Mount
SXD2 Mount PFL
SXP Mount PFL
AXD 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.



A 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 SXP 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 43. 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 SXP is about 10cm. ▲

[Calculation] 6.4 kg x (6cm + 4cm + 10cm) = 128 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
AXD	STAR BOOK TEN	Yes	11cm	750 kg-cm	30 kg / 66.1 lb	Standard
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	375 kg-cm	15 kg / 33 lb	Standard
SXP	STAR BOOK TEN	Yes	10cm	400 kg-cm	16 kg / 35.2 lb	Standard

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

*The specifications are subject to change without notice.

Casual Observing with the STAR BOOK ONE

SX2
SX2 Equatorial Mount

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 axis (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

SX2 Accessories

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

2511

SX Tabletop Tripod

- Not available for a mount with counterweight

Weight : 0.9 kg / 1.9 lb

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

STAR BOOK ONE

STAR BOOK ONE

Working voltage : DC12V
(supplied from the mount side)
Size : 137mm x 65mm x 21mm
Weight : 110 g / 3.8 oz
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 axis (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.

Versatile Tracking

The tracking options are available from sidereal rate, Kings rate, lunar rate, solar rate and many more. Also, different tracking speeds are available for time-lapse photography.

Tracking Direction

The STAR BOOK ONE works in both the northern and southern hemispheres.

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

The backlash compensation provides a reduced time lag at the point of revised motion where the gears lose contact. It gives smoother rotation of the gears 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 autoguiders.

PEC

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

STAR BOOK TEN

The STAR BOOK TEN's advanced astronomical navigation with large LCD screen features user-friendly Star Chart Go-To and intuitive operation. It is highly recommended for any stargazing enthusiast from entry-level to experts.

36919

STAR BOOK TEN controller
(Optional for the SX2)

Optional Parts

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, SXP 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-s are not compatible with the SX2, SXD2, SXP, AXD 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, SXP, AXD	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-ED81SII

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
- 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 A105M OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

25073

SX2-A105M

Contents
- Optical tube : D=105mm F=1000mm (f9.5) achromatic refractor, multicoated
- Finder scope : XY red dot finder
- 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 ED81SII OTA, SXG-HAL130 Tripod and Eyepieces

25074

SX2-ED81SII

Contents
- Optical tube : D=81mm F=625mm (f7.7) SD apochromatic refractor, multicoated
- Finder scope : XY red dot finder (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 : SXG half pillar, 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 ED103S OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

25075

SX2-ED103S

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 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 accessory cases are available for the SXG series of tripods and PORTA II tripod.


(Accessory Case)

NEW


(Attachment Panel)

(Image)

35654

Eyepiece Accessory Case Set

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
Panel weight : 325 g / 11.46 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

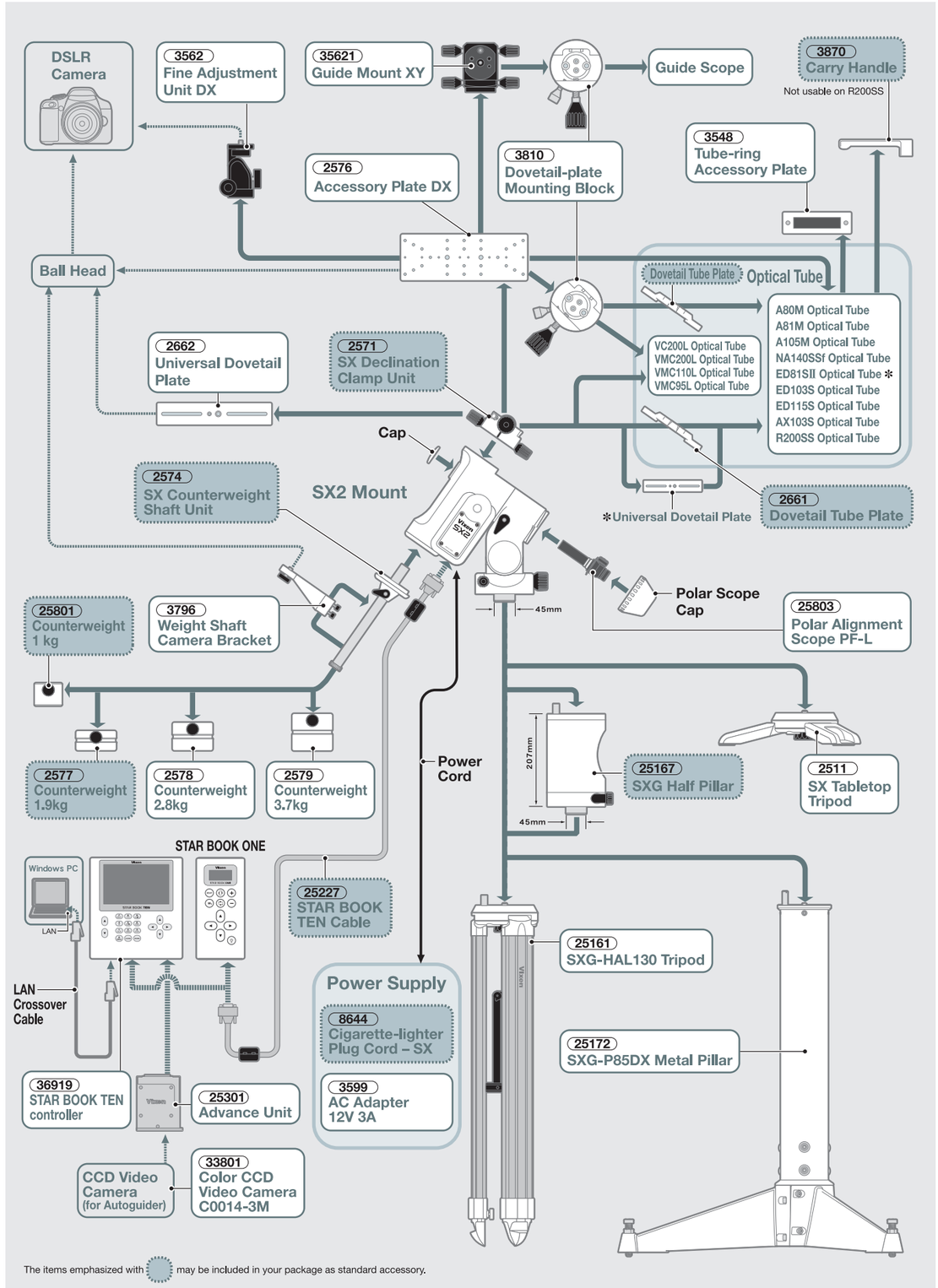
Suggested accessories to store

- 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.

The Next level of Performance

SXD2

SXD2 Equatorial Mount PFL

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 rotations 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.

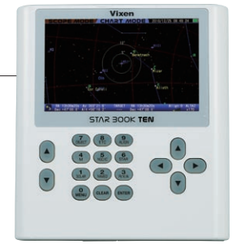
Smooth Motion and Micro-step Motion control

Bearings are used in the RA and DEC Axes and the rotating shafts of the work 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 SXD2 equatorial mount PFL comes with STAR BOOK TEN which features intuitive 'Star-Chart Go-To' system with high definition color LCD display. With the optional Advance Unit installed, the STAR BOOK TEN combined with a CCD video camera works as an advanced Autoguider. On the screen, you can view an image from a CCD video camera, record to or play back from a SD/SDHC memory card, and adjust the shutter exposure controls of a DSLR camera. It is highly recommended for any stargazing enthusiast from entry-level to expert.

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
Star Chart Go-To	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

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

SXD2 Mount PFL Accessory

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

✻The specifications are subject to change without notice.

SXD2-PFL-ED103S

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 NEW

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

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

SXD2 Mount PFL Package — SXD2 Mount FPL with ED115S OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

25103 NEW

SXD2-PFL-ED115S

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

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

SXD2 Mount PFL Package — SXD2 Mount PFL with ED103S OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

25102 NEW

SXD2-PFL-ED103S

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

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 NEW

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 NEW

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

Revolutionary Star Chart Go-To Navigation controller available for the SX2, SXD2, SXP and AXD Mounts

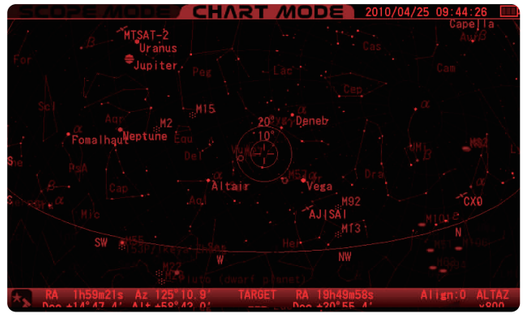
STAR BOOK TEN

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 similar to those seen in a planetarium. Its high definition screen (800x480, 65,535 colors) shows you vivid images of stars.

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.



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, moon, planet 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, 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

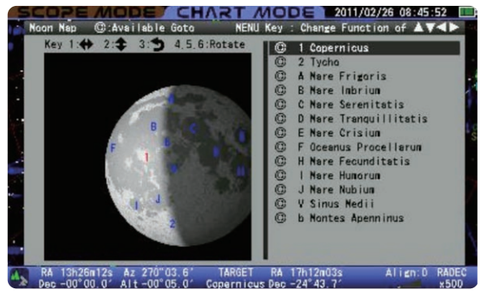
Periodic error corrections you have done to improve tracking accuracy of the mount are saved and retained if you turn off the power (It is available for SXP and AXD only). The P-PEC data can be called up next time you use the mount for astrophotography.

Autoguider

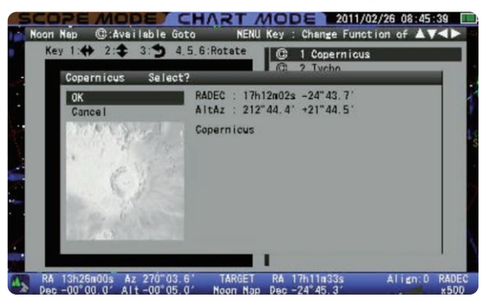
STAR BOOK TEN includes an expansion slot. It allows you to retrofit an optional Advance Unit which functions as an autoguider. The Advance Unit allows you to capture a guide star on the screen by using an optional Vixen CCD video camera (or other commercially available CCD video cameras of similar specifications). You will be able to display the guide star and the star chart side by side on the screen.

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.

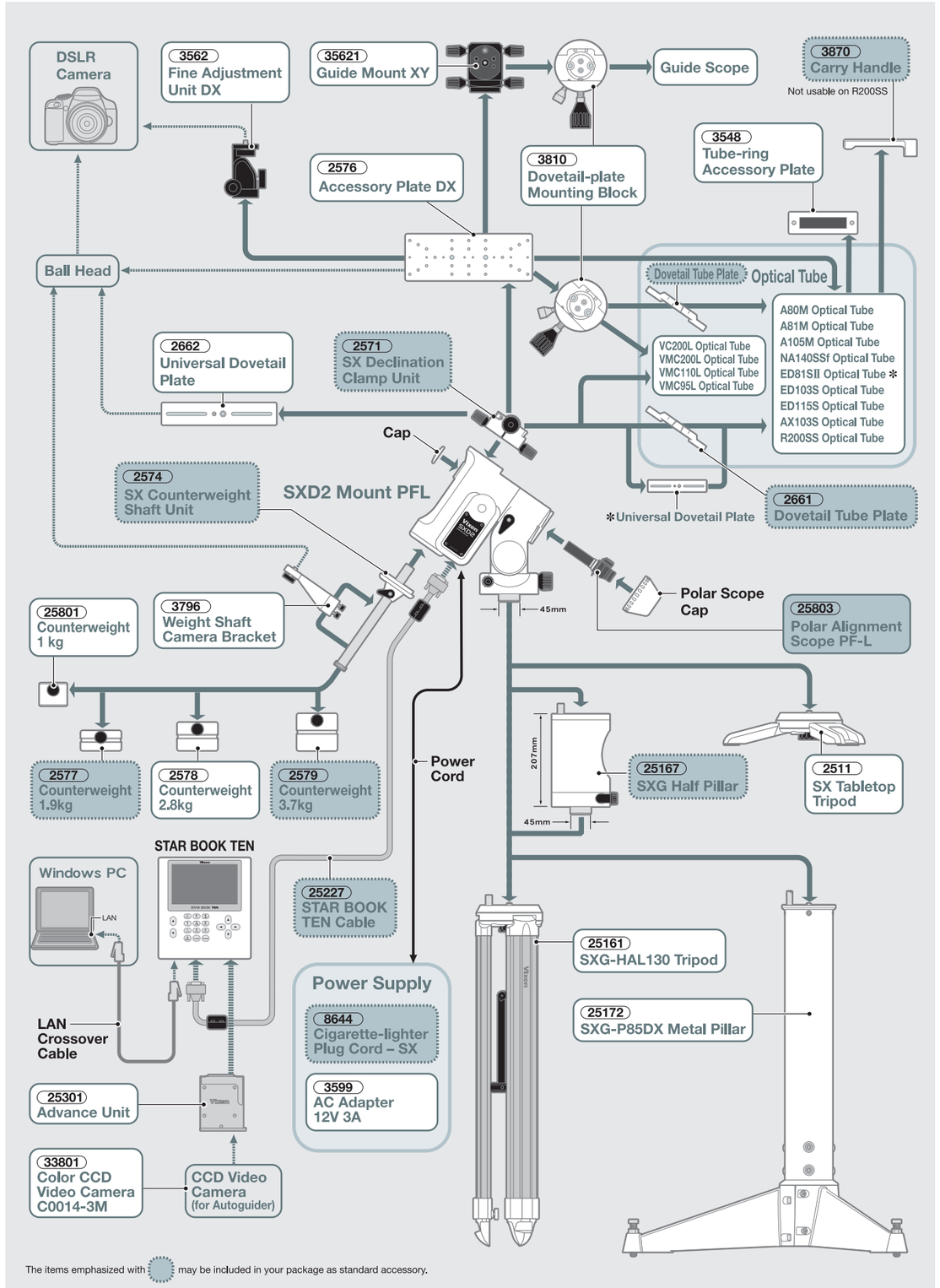


Zooming in the moon map will display more details of the site. The orientation of the moon map can be changed as it can be rotated or mirror-reversed according to your needs.



*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.

The Pinnacle of the Vixen SX Series Mounts for the Serious Astrophotographer

SXP

SXP Equatorial Mount PFL

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

Robust RA and DEC shafts

On the SXP, strong 40mm thick carbon steel is used for the declination shaft which easily holds the counterweights and other installed components. The same material is also used in the RA shaft. With these features, the highly compact mount has a photographic loading capacity of 16 kg (35.2 lbs), ensuring precise movement on a sturdy platform.

Smooth RA and DEC Motion

Every movable part of the SXP has been newly designed in pursuit of extremely smooth movements. The SXP employs 15 pieces of low-friction ball bearings to achieve the most precise movement free of stress.

Reduced Weight

With the declination body acting as part of the counterweight, the SX eliminates excess weight. The highly portable equatorial mount has a high loading capacity, rigid body, and simple operation.

Flat Mount Head

The top of the round mount head, 35mm diameter, features eight M8 pitch 1.25mm threaded holes. These are arranged at 45° to each other for installation of various optical tubes.

Optional Parts

3810 Dovetail-plate Mounting Block

- Used to install a dovetail plate attached optical tube
- Fits directly onto the SXP or AXD mount head
- Usable with Accessory plate DX
- With 1/4" threaded holes

Weight : 220 g / 7.76 oz

3599 AC Adapter 12V 3A

- Input 100V to 240V
- Output 12V 3A
- Suitable for SX2, SXD2, SXP and AXD
- With a convertible cable to change polarity

Weight : 320 g / 11.28 oz

2697 SX Aluminum Case

- For SX2, SXD2 or SXP mount
- STAR BOOK TEN and counterweights can be stored with it together

Size : 470mm x 500mm x 220mm
Weight : 6.5 kg / 14.3 lb

25121

SXP Mount PFL

Specifications	SXP-PFL and STAR BOOK TEN
R.A. slow motion	Worm and wheel gears with 180-tooth whole circle micro movement, 72mm in diameter made of brass
DEC slow motion	Worm and wheel gears with 180-tooth whole circle micro movement, 72mm 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	15 pieces
RA display	On-screen the STAR BOOK, 0.1 minute increments
DEC display	ON-screen the STAR BOOK, 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
Motor drive	Pulse motors with micro-step motion control (250 pps)
Star Chart Go-To	Automatic Go-To slewing with STAR BOOK TEN, 1000x of sidereal rate at maximum slewing speed
Photographic loading weight	16 kg / 35.2 lb (Maximum torque load: 400 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 34.3mm x 128mm
Weight	11 kg / 24.2 lb (without counterweights)
Counterweights	1.9 kg x 1 and 3.7 kg x 1 / 4.2 lb x1 and 8.15 lb x1

SXP Mount PFL Accessory

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

25172 SXG-P85DX Pillar

- Provides a less blind area and it allows easily for pointing a telescope on the SXP mount to anywhere

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

*The specifications are subject to change without notice.

SXP-PFL-R200SS

The Quad element apochromatic system features high quality SD Glass for uncompromising optical performance.

SXP Mount PFL Package — SXP Mount PFL with AX103S OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

25124 NEW

SXP-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)
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Mount	SXP-PFL with STAR BOOK TEN controller
Accessories	SXG half pillar, Flip mirror diagonal, Dovetail-plate mounting block, Counterweights 1.9 kg x 1 and 3.7 kg x 1, 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	30.7 kg / 67.5 lb

Images are sharp and high in contrast, offering spectacular views of both the planets and deep-sky objects.

SXP Mount PFL Package — SXP Mount PFL with ED103S OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

25122 NEW

SXP-PFL-ED103S

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	SXP-PFL with STAR BOOK TEN controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	SXG half pillar, Dovetail-plate mounting block, Flip mirror diagonal, Counterweights 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	29.7 kg / 65.3 lb

Detailed views of planets and faint celestial objects are brighter with a little larger aperture.

SXP Mount PFL Package — SXP Mount FPL with ED115S OTA, SXG Half Pillar, SXG-HAL130 Tripod and Eyepieces

25123 NEW

SXP-PFL-ED115S

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	SXP-PFL with STAR BOOK TEN controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	SXG half pillar, Dovetail-plate mounting block, 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	30.5 kg / 67.1 lb

The VC200L is designed for the Astrophotographers and produces edge to edge pinpoint images. Rack and pinion focusing eliminates image shift.

SXP Mount PFL Package — SXP Mount PFL with VC200L OTA, SXG-HAL130 Tripod and Eyepieces

25126 NEW

SXP-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	SXP-PFL with STAR BOOK TEN controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	Dovetail-plate mounting block, 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	29.4 kg / 64.7 lb

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

SXP Mount PFL Package — SXP Mount PFL with R200SS OTA, SXG-HAL130 Tripod and Eyepieces

25125 NEW

SXP-PFL-R200SS

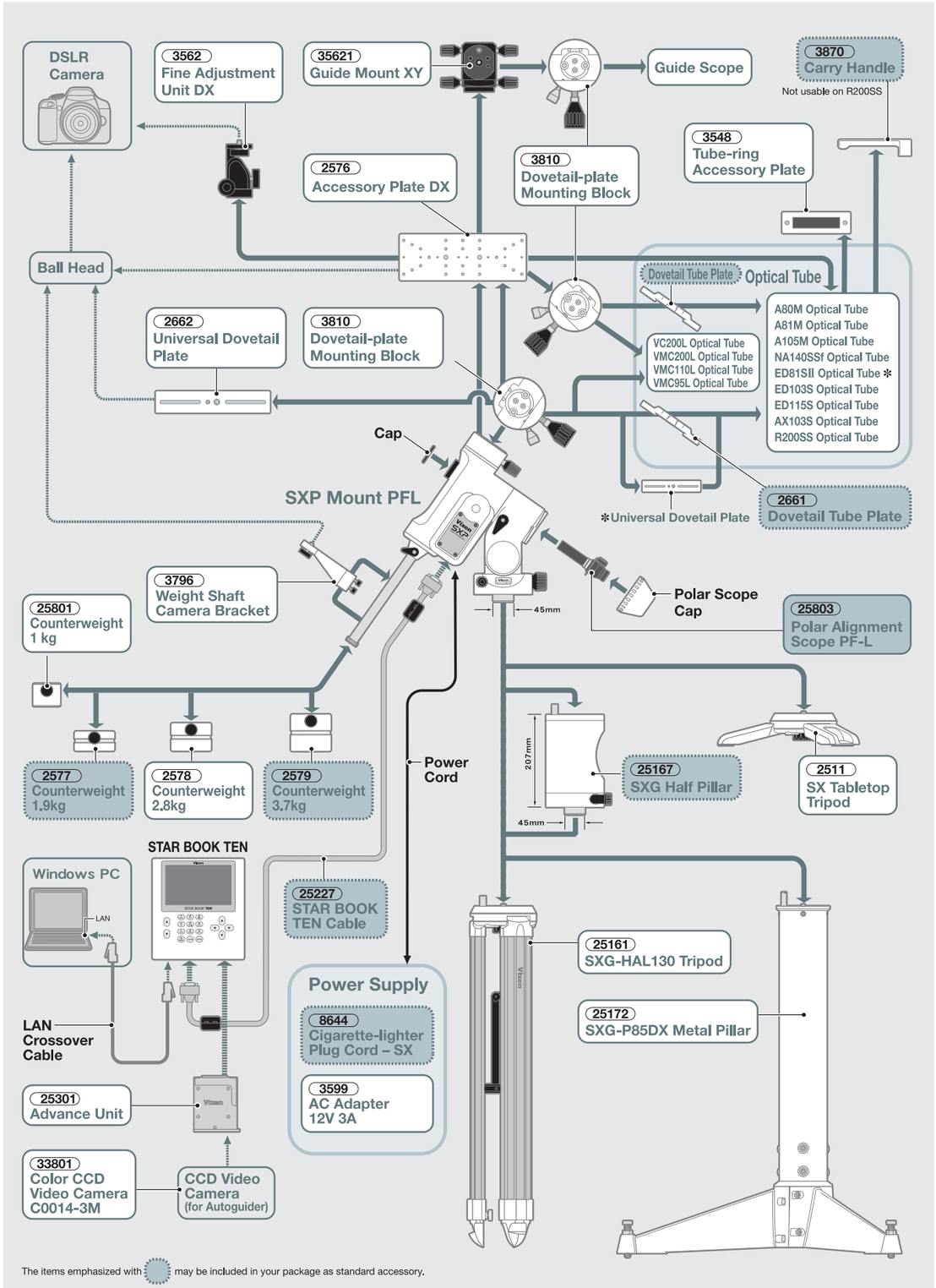
Contents

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	SXP-PFL with STAR BOOK TEN controller
Tripod	SXG-HAL130 sturdy hex-shaped 2-section aluminum legs
Accessories	Dovetail-plate mounting block, 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	29.7 kg / 65.3 lb

SXP-PFL System Structure Diagram



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

✻The specifications are subject to change without notice.

PORTA II

PORTA II

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)

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 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 Control

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.

Lunar Photography with PORTA II

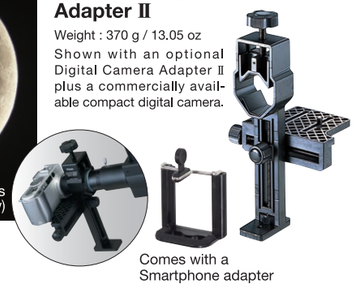
Image taken with a PORTA II A80Mf.

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

Optional Accessories

35655

Tube & Tripod Bag 100

- Carry 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,ED103S 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

38012

PORTA II Adapter

- Comes equipped with the PORTA II.
- Used to attach the PORTA II mount (head) on a SX Tabletop tripod, SXG-HAL130 tripod, SXG-AL130 tripod, SXG half pillar or APP-TL130 tripod

Weight : 142g / 5.01 oz

NEW

35659

Scope Carrier

Available for a VMC95, VMC110L, ED80Sf, VSD100F3.8, ED81SII 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

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.

2511

SX Tabletop Tripod

- Enables you to use the PORTA II on a tabletop.
- Usable with a short optical tube (VMC95L or VMC110L) only.

Size : 18.5cm prop radius and 6.4cm high
Weight : 0.9 kg / 1.9 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

f series

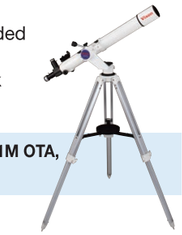
Contents

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 to1200mm 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

This package includes the highly regarded Japanese made refractor telescope.
The supplied flip mirror allows for quick change of magnification.



PORTA II Mount Package — PORTA II Mount with A81M OTA, Tripod and Eyepieces

39967

PORTA II A81M

Contents

Optical tube	D=81mm F=910mm (f11.2) achromatic refractor, multicoated
Finder scope	XY Red dot finder
Eyepiece	NPL20mm (46X), NPL6mm (152X)
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	90mm Dia. x 850mm L
Tube weight	3.5 kg (net 2.5 kg)
Adapter thread	60mm, 42mm for T-ring
Visual back	50.8mm, 31.7mm push-fit
Tripod legs	Adjustable from 900mm to 1300mm in length
Total weight	9.2 kg / 20.24 oz

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

f series

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 to1200mm 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 900mm 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

f series

Contents

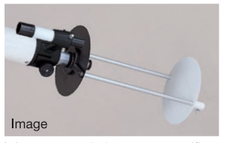
Optical tube	D=130mm F=650mm (f5) Newtonian reflector, multicoated
Finder scope	6x30mm, Field of view 7 degrees
Eyepiece	PL20mm (33x) and PL6.3mm (103x)
Mount	PORTA II
Tripod	2-section aluminum legs, adjustable from 705mm to1200mm in height
Accessories	Round accessory tray

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

Solar Observation with PORTA II

A80M shown with optional Sun projection screen set B and NPL20mm eyepiece.
Be sure to remove the finder scope when observing the sun.



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

37224

Sun Projection Screen Set B

- 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

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 mount.

Weight : 520 g / 18.34 oz

*The specifications are subject to change without notice.

MINI PORTA

MINI PORTA

Most Popular Mount for Beginners for its Great Portability and Ease of Use

Vixen's MINI PORTA alt-azimuth mount is the most affordable mount for grab and go observing. The MINI PORTA has the same function as the PORTA II and you can swing the telescope by hand in the vertical and horizontal directions freely and stop with simple friction. The mount with tripod weighs 2.8kg (6.17 lb) and the mount and tripod sections are detachable for transportation and storage. Set up your telescope in minutes and quickly start your observing session.

39922

MINI PORTA Alt-azimuth Mount

If you already have a Vixen optical tube assembly, you may choose the MINI PORTA mount only. The MINI PORTA mount accepts an optical tube of less than 119mm in outside diameter.

Specifications	MINI PORTA Alt-azimuth Mount
Mount Type	Alt-azimuth mount
Vertical and horizontal slow motions	Worm and wheel gears with 90-tooth whole-circle movement, complete with slow motion handles
Optical tube setting up	Dovetail-plate attachment system
Maximum loading weight	3.5 kg / 7.7 lb
Tripod legs	2-section aluminum legs, adjustable from 700mm to 1280mm in length (640mm to 1145mm in height)
Total weight with tripod	2.8 kg / 6.17 lb

Optional Accessories

8800

Flexible Handle 300mm

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

35512

POLARIE Cradle

- Attachable to MIMI PORTA (or PORTA II) mount for use with POLARIE star tracker.

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

MINI PORTA Mount Package — **MINI PORTA Mount with A70Lf OTA, Tripod and Eyepieces**

39941

MINI PORTA-A70Lf

Contents

Optical tube	D=70mm F=900mm (f12.9) achromatic refractor, multicoated
Finder scope	6x24mm, field of view 5 degrees
Eyepiece	PL20mm (45x), PL6.3mm (143x)
Mount	MINI PORTA
Tripod	2-section aluminum legs, adjustable from 640mm to1145mm in height
Accessories	Round accessory tray, Erect-image diagonal

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 push-fit
Tripod legs	Adjustable from 700mm to 1280mm in length
Total weight	5.3 kg / 11.7 lb

The small and very compact VMC95L optical tube fits the MINI PORTA mount nicely. It is a great starter telescope for beginners.

NEW

MINI PORTA Mount Package — **MINI PORTA Mount with VMC95LB OTA, Tripod and Eyepieces**

39944

MINI PORTA-VMC95LB

Contents

Optical tube	D=95mm F=1050mm (f11.1) catadioptric refractor, multicoated
Finder scope	XY red dot finder
Eyepiece	NPL20mm (53x)
Mount	MINI PORTA
Tripod	2-section aluminum legs, adjustable from 640mm to1145mm in height
Accessories	Round accessory tray, 2X Barlow Lens

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 push-fit
Tripod legs	Adjustable from 700mm to 1280mm in length
Total weight	4.8 kg / 10.6 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

BINOCULAR TELESCOPES

Binocular Telescopes for great Deep Sky Views

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 views of well-known nebulas, globular clusters and open star clusters are magnificent. With the ability to interchangeable eyepieces and erect images, you have the opportunity to view everything from exploring Messier objects in the deep-sky to terrestrial landscape. It is recommended to use the HF2 alt-azimuth 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.

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.

14305

BT-ED70S-A

Size : 400mm x 190mm x155mm
Interpupillary distance : 58mm to 102mm
Visual Back : 31.7mm push-fit
Weight : 4.0 kg / 8.8 lb
Note : Eyepieces are sold separately.

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

Optional Accessories

3798

Swing Bracket (Binocular Cradle)

- Span between trunnions: 251mm
- With UNC 1/4 inch screw with knob

Weight : 1 kg / 2.2 lb

25161

SXG-HAL130 Aluminum Tripod

- Adjustable from 730mm to 1156mm in height

Weight : 5.5 kg / 12.1 lb

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

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

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

BT-ED70S-A Package

Contents — BT-ED70S-A Binocular Telescope, 2x Eyepieces, HF2 Fork mount, Swing bracket, SXG-HAL130 Tripod

38067

HF2-BT-ED70S-A

Specifications	HF2-BT-ED70S-A
Objective lens	D=70mm F=400mm SD Apochromatic, multicoated
Limiting magnitude	11.0
Light gathering power	100x unaided eye
Eyepiece*	SLV20mm x 2 (20x)
Mount	HF2 Alt-azimuth fork
Tripod	SXG-HAL130 2-section aluminum legs adjustable from 807mm to 1229mm in length
Total weight	14 kg / 30.8 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 is available for the BT Binocular Telescopes.

*The specifications are subject to change without notice.

POLARIE
POLARIE STAR TRACKER

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

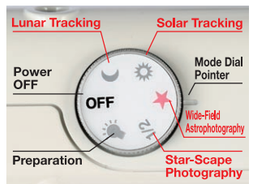
The POLARIE works with 2 AA alkaline batteries for about two hours. (It is possible to use rechargeable batteries.) For long hours of use, the POLARIE is equipped with a USB-miniB plug socket available for external power supply.

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.

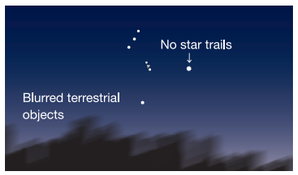


Star-Scape Astrophotography

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.



NIGHT PHOTOGRAPH
Vixen

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

Everything You Need to Start Astrophotography with POLARIE

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

35517
POLARIE with Tripod M-184V

A package of a POLARIE star tracker and a sturdy M-184V tripod including a QHD-33 ball head adapter for mounting a camera.

35509
QHD-33 Ball Head

Weight : 130 g / 4.58 oz

NEW
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
- Powered by a AA alkaline battery

Weight : 27 g / 0.95 oz
(For details refer to P54)

❶ Set up your Camera Tripod

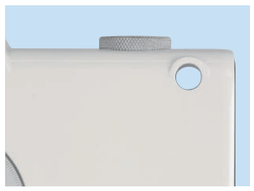
If your digital camera enables you to open the shutter for one minute or more, and focus manually to infinity, all you need is a POLARIE, a Tripod and a Ball Head to shoot for the stars.

❷ Polar align the POLARIE

The POLARIE works as a star tracker when set up to follow the diurnal motion of the stars. It is essential that the rotation axis of the POLARIE is set to be parallel to that of the diurnal motion of the stars. This is called Polar alignment (Setting up polar alignment in the northern hemisphere is described below).

Take off the compass from the back of the POLARIE. Locate north with the compass and face the front side of the POLARIE on the tripod to the north.

Tilt the POLARIE so that the built-in tilt indicator on the side of the POLARIE points your latitude.



Look through the polar sight hole and confirm that Polaris can be seen somewhere in the sight hole's field of view.

It is recommended to use an optional POLARIE Polar Scope PF-L to achieve the accuracy needed for long exposure astrophotography.

❸ Shoot for the Stars

With POLARIE it is easy to take pinpoint images of stars using a wide field photographic lens shorter than 50mm in focal length and with an exposure of 5 minutes or less. The POLARIE is an easy to transport, totally new photographic accessory that can travel with you for imaging of the beautiful starry night sky.

Optional Accessories for POLARIE

The multi-purpose M-184V Tripod, made by Velbon for Vixen, is designed for the POLARIE and astrophotography.

35516
Tripod M-184V

- Designed for POLARIE
- 4-section legs
- Adjustable tripod height : 560mm to 1370mm high (1840mm high with use of elevator)
- Screw socket : UNC 1/4 inch
- Maximum loading weight : 3 kg
- Supplied with a HD-33 ball head

Weight : 1.98 kg / 4.36 lb

NEW
35521
POLARIE Polar Scope PF-L

- 6x20mm Polar scope
- Fits to the center hole of the POLARIE to make more precise Polar alignment
- With dark field reticle illuminator for reading scales

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

35512
POLARIE Cradle

It is useful to mount a POLARIE on a MIMI PORTA (or PORTA II) mount.

Weight : 500 g / 17.6 oz

35518
POLARIE Time-lapse Adapter

- With dual UNC 1/4 and 3/8 inch threads (patent pending) for camera tripod

Weight : 165 g / 5.82 oz

NEW
35519
POLARIE Fine Adjustment Unit

It is used in combination with a POLARIE or an AP Polar axis bracket for precise Polar alignment using a POLARIE Polar scope PF-L.

NIGHT PHOTOGRAPH

NIGHT PHOTOGRAPH
Vixen

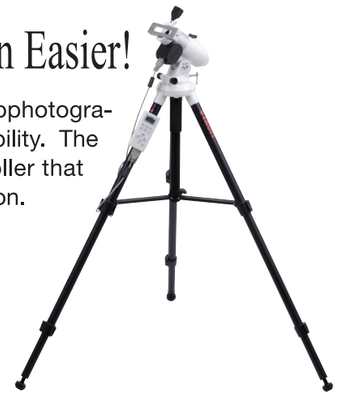
The "Night Photograph" refers to specific photographs taken at night. The Night Photographs generally feature artificial objects such as decorative illuminations, fireworks, street lights, and neon signs. In addition, photographs of scenery illuminated by moon light, wide field photos of starry skies 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.

Let's Enjoy Wide-Field Astrophotography

Taking Photos of the Night Sky Has Never Been Easier!

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. The AP Photo Guider 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 digital 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**

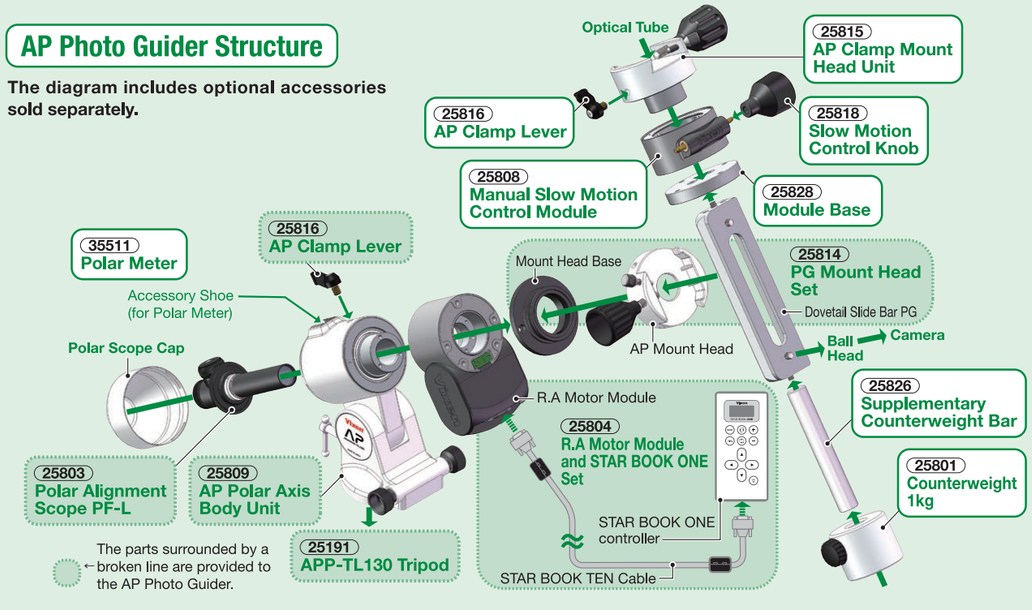
39989

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.



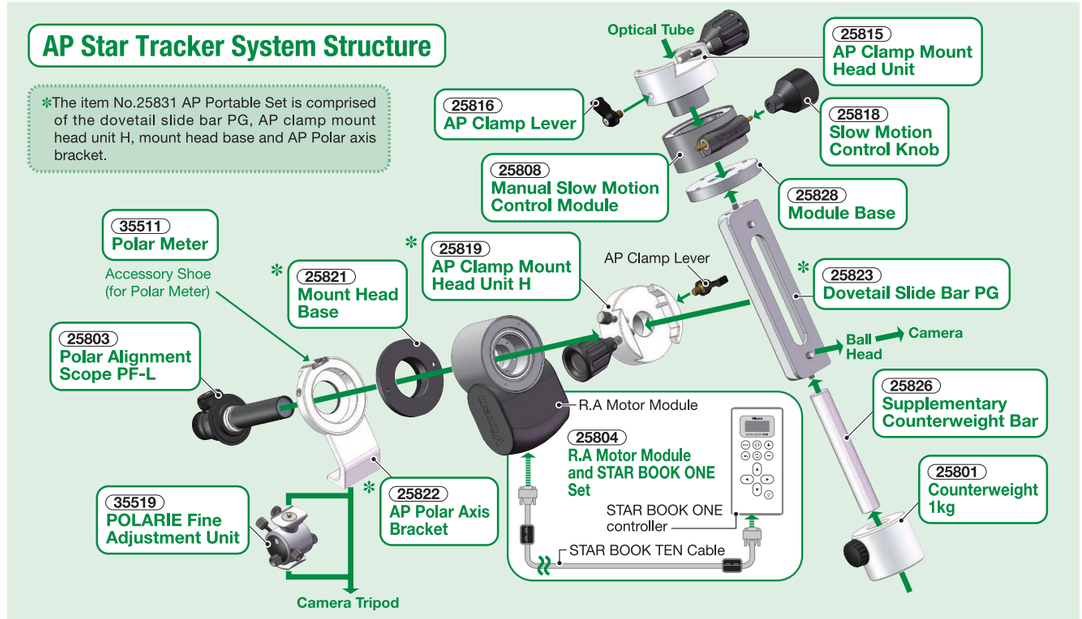
Getting Started with Imaging; "Star-Scape" and "Time-lapse"

The versatile AP Mount modules and expandable units are suitable for building an astronomical mount that is suitable for your observing needs. The system structures below show examples of what you can create with the AP modules and units.

[Example] AP Star Tracker Assembly (Not sold as a package.)

AP Star Tracker System Structure

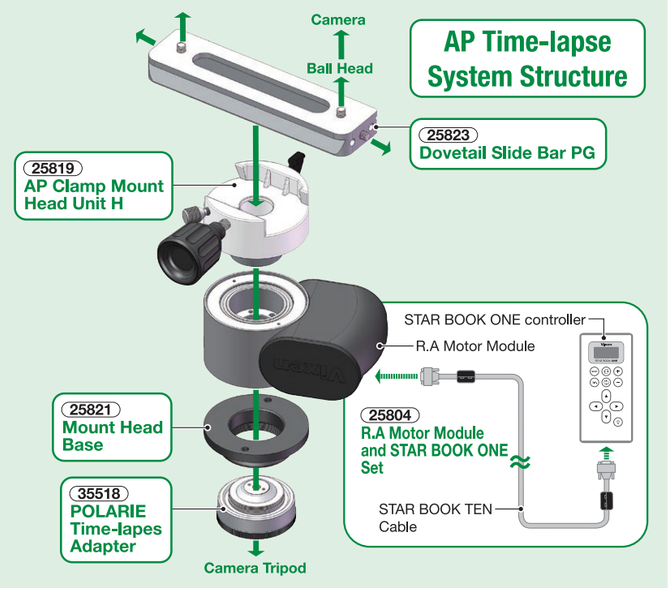
*The item No.25831 AP Portable Set is comprised of the dovetail slide bar PG, AP clamp mount head unit H, mount head base and AP Polar axis bracket.



[Example]

AP Time-Lapse Assembly
(Not sold as a package.)

AP Time-lapse System Structure



*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.

[What You Need] An AP star tracker or a POLARIE is strongly recommended. 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.

[What You Need] An AP star tracker or a POLARIE is strongly recommended. They are designed to follow the apparent motion of the stars caused by the earth's rotation, eliminating star trails.

Photos taken by Teruyasu Kitayama.

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.

[What You Need] An AP star tracker or a POLARIE is recommended in conjunction with a sturdy camera tripod. 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, SXP, AXD 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, SXP, AXD 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 specifications are subject to change without notice.

Afocal Imaging

NIGHT PHOTOGRAPH Vixen

Photographing with a compact digital camera

(39196)

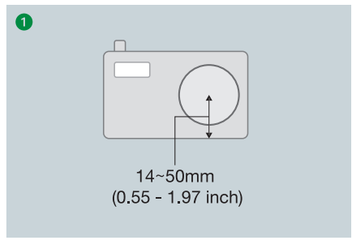
Digital Camera Quick Bracket II

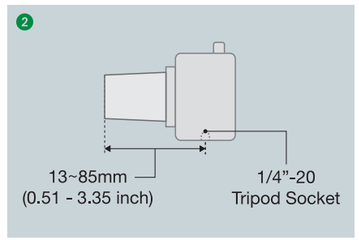
- Designed to pinch the barrel of visual back or eyepiece having grip of 34mm to 63mm (between 1.42" and 2.63") in diameter
- Equipped with a quick release knob to swing the attached camera aside
- Allows for a quick change between camera view and visual viewing
- Eyepieces with long eye relief are recommended to minimize vignetting of images
- Loading capacity 300g (10.5 oz)

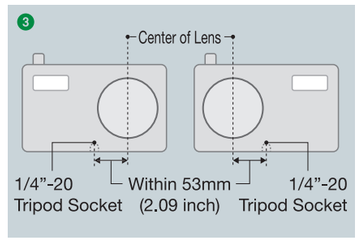
Size : 184mm x 160mm x 117mm
Weight : 240 g / 8.46 oz

Suitable for compact digital cameras with the following specifications:

1. The height from the camera's bottom to the center of the camera's lens is between 14mm and 50mm (0.55" and 1.97")
2. The distance from the camera's tripod socket to the camera's lens tip is between 13mm and 85mm (0.51" and 3.35")
3. The 1/4" tripod socket is equipped within the distance of 53mm (2.09") from the centerline of the camera's lens







Smartphone Camera Adapter

NEW

(39199)

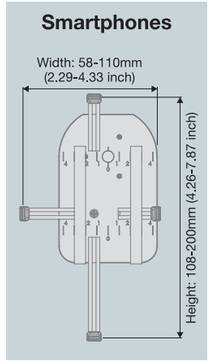
Smartphone Camera Adapter

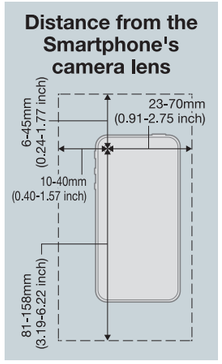
- Designed to pinch the barrel of visual back or eyepiece having grip of 32mm to 53mm (between 1.26" and 2.08") in diameter. With supplementary pinch sleeves, having grip of 19mm to 43mm (between 0.75" and 1.69") in diameter.
- The eyepiece pinch posts hold an eyepiece simultaneously by turning the eyepiece 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

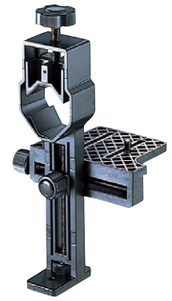
Suitable for smartphones with the following specifications:

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



Smartphone adapter

(39197)

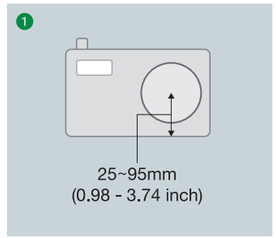
Universal Digital Camera Adapter

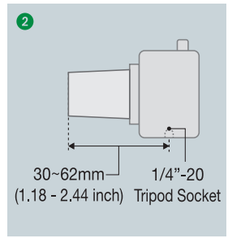
- Designed to pinch the barrel of visual back or eyepiece having grip of 28mm to 45mm (between 1.17" and 1.88") in diameter (Not usable with SSW, SLV, NLV, NPL, LVW or NLVW eyepiece)
- Equipped with vertical and horizontal slow motion screws
- Eyepieces with long eye relief are recommended to minimize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

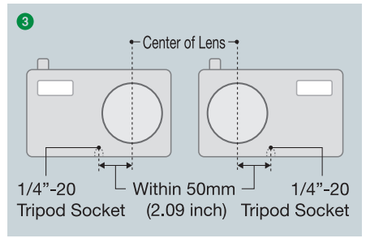
Weight : 370 g / 13.05 oz

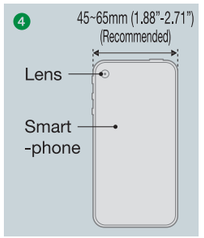
Suitable for compact digital cameras or smartphones with the following specifications:

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







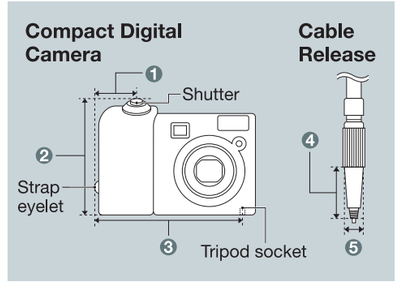


Suitable for compact digital cameras with the following specifications:

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

Two-stage focuser for both coarse and fine adjustments

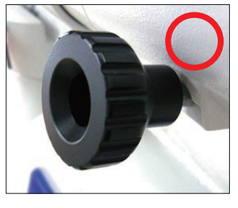
(37227)

Dual Speed Focuser

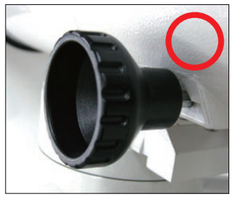
- Available for A80M, A81M, A105M, ED81SII, ED103S, ED115S, AX103S, VC200L, VMC200L or R200SS

Weight : 170 g / 6.0 oz

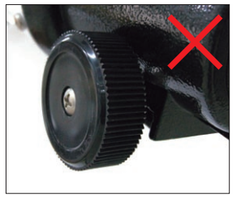
Fits the focuser with metal focus knob



Fits the focuser with plastic focus knob shown below



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



*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
- 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

NEW
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
37305	**Canon (for manual focus)**	40 g / 1.41 oz
37306	**Canon EOS, EOS Rebel**	52 g / 1.83 oz

Item No.	Find your Camera Brand	Weight
37307	**Practica (Screw mount)**	25 g / 0.88 oz
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
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.

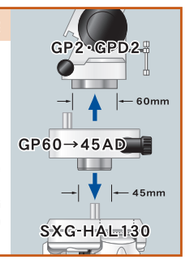
The new mounting base of the GP2/GPD2 mounts which fits the tripod head of the new SXG tripod is changed from 60mm to 45mm in diameter. The peg on the tripod head of the new SXG tripod can be positioned in place according to the mount types used. You will need an optional adapter if you want to use the 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 11)

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

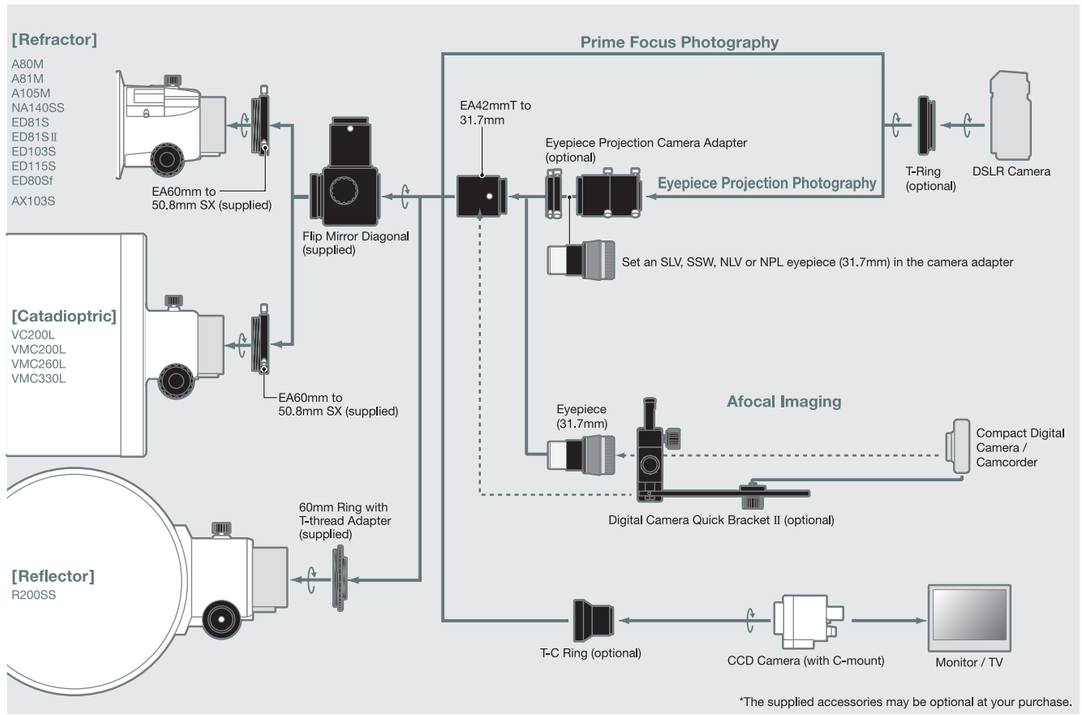
(For details, refer to page 14)

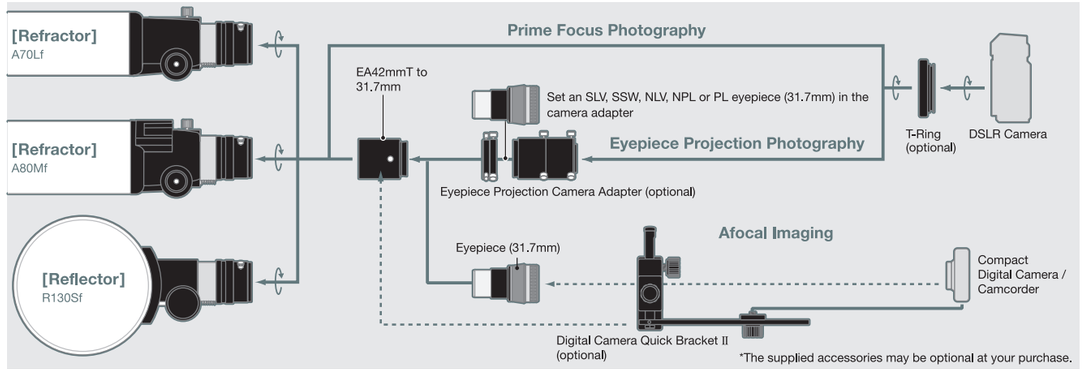
25172

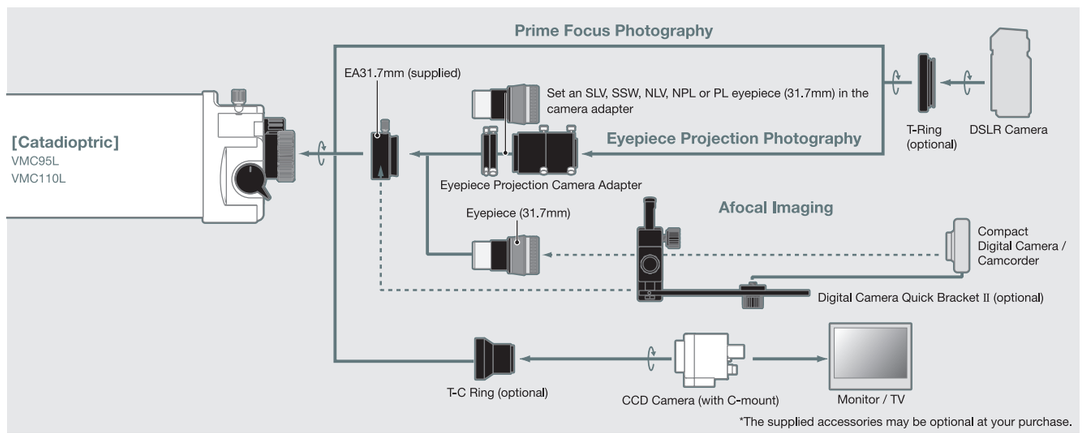
SXG-P85DX Metal Pillar

(For details, refer to page 23)

Components Guide for Astrophotography





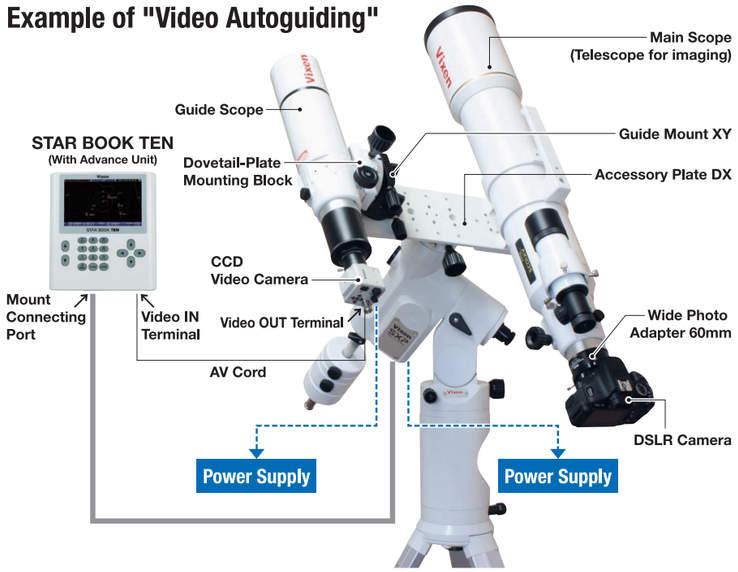


*The specifications are subject to change without notice.

"Video Autoguiding"

Advanced Autoguiding with Advance Unit

Example of "Video Autoguiding"



If you take photos of faint deep sky objects such as nebulae with a telescope and a DSLR camera (Prime focus astrophotography), you often need to apply long exposure times. The longer the focal length of the telescope, the larger the atmospheric refraction of stars appear. This affects accurate tracking of your mount. Mechanically inherent periodic motions of the mount may further influence the tracking that precisely follows a guide star's diurnal motion.

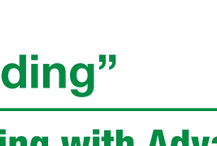
The Advance Unit for STAR BOOK TEN allows you to perfect autoguiding by a system as shown on the left. The CCD video camera attached to the guide scope keeps the guide star in view to achieve highly accurate tracking.

This is a simple and comfortable autoguiding system that does not require a PC. Autoguiding with the use of the Advance Unit is defined as "Video Autoguiding".

Optional Parts

25301

Advance Unit



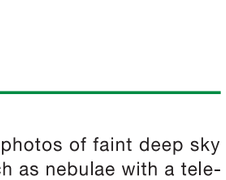
The Advance Unit is an expansion unit designed for the STAR BOOK TEN controller. The installation of the Advance Unit in the STAR BOOK TEN enhances your auto guiding capabilities. With this unit installed you can view an image from a CCD based imaging camera, record to or play back from an SD/SDHC card and adjust the shutter exposure of a DSLR camera.

- Works as a built-in autoguider in combination with an optional CCD video camera.
- Video images by analog AV signal (NTSC composite signal) can be displayed on the screen of STAR BOOK TEN. The video images can be recorded to a commercially available SD/SDHC memory card sold separately.
- Remote shutter release control of a DSLR camera is possible.

Size : 90mm x 76mm x 24mm
Weight : 100g / 3.52 oz

35621

Guide Mount XY



- A low-profile mount for installing a guide scope on it.
- Fine adjustable +/-6.5 degrees from side to side both in X and in Y directions with lock levers.

Base : 10mm thick, M8 holes x 2
(35mm from each other)
Top : 10mm thick, M6 threaded holes x 2,
M8 threaded holes x 2 (35mm from each other)
Size : 100mm x 79mm x 160mm
Weight : 750 g / 26.45 oz

33801

C0014-3M Color CCD Video Camera

- High sensitivity color CCD camera for astronomy
- Threaded for C/CS mounts (24.5mm / 1 inch)

Size : 45mm x 65mm x 51mm
Weight : 245 g / 8.64 oz

Specifications	C0014-3M Color CCD Video Camera
TV system	NTSC
Image sensor size	Color 1/3-inch CCD sensor
Number of pixels	410,000 pixels
Video signal sync	Internal synchronization
Minimum sensitivity	0.012 lux at F1.2/20 IRE level, AGC ON, Monochrome 0.0014 lux at F1.2 /20 IRE level, 32 frames accumulation, Monochrome
Horizontal line resolution	540 lines
White balance	AWB mode (3200 to 10000 K), ATW mode (2800 to 9600 K)
S/N ratio	50 db (Min.), 58 db (Max.) with AGC set to OFF
Frame accumulation	OFF / ON (2, 4, 8, 16, 32, 64, 128 or 256 frames)
Mirror reverse mode	Horizontal and vertical
Backlight compensation	ON / OFF
Digital zoom	2x
IR-cut filter switch	Auto or manual (Daytime or night, and external control)
Gamma correction	0.45 or 1.0
Gain control	AGC ON / OFF
Iris control	Applicable to auto iris CCTV lens
Electronic shutter speed	AES (Auto electric shutter) 1/60s to 1/120000s ALC (Auto lens control) 1/60s (OFF), 1/100s, 1/125s, 1/500s, 1/1000s, 1/2000s, 1/4000s and 1/10000s
Video output	Composite (NBC), 1.0V peak to peak, 75 ohm
Power supply	2.1mm DC jack with center plus polarity
Operating voltage	DC12V +/-1V
Electricity consumption	150mA (maximum)

3748

C-Mount Tele-Extender 2.4x

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

Weight : 37g / 1.31 oz

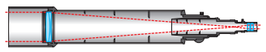
Vixen Optical Tubes

Vixen's Mounts are available with a variety of optical tubes, including refractors, reflectors, and catadioptric. Select the one that is best suited to your purpose. You may choose a small telescope to start with and upgrade later to a larger aperture optical tube as your interest grows. The optical tubes and mounts can be easily connected without using special tools.

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), multicoated optics
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, Soft carry case
Size	75mm dia. x 370mm (305mm long for storage)
Weight	1.5 kg / 3.3 lb

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), multicoated optics
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

2603

A80Mf OTA

Specifications	A80Mf Optical tube assembly
Achromatic objective	D=80mm F=910mm (f11.4), multicoated optics
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

26062

A81M OTA

Specifications	A81M Optical tube assembly
Achromatic objective	D=81mm F=910mm (f11.2), multicoated optics
Resolving power	1.43 arc seconds
Limiting magnitude	11.3
Light gathering power	134x unaided eye
Finder scope	XY Red dot finder (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 tube plate, Flip mirror diagonal, Carry handle
Size	90mm dia. x 890mm long
Weight	3.5 kg / 7.7 lb

26143

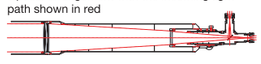
A105M OTA

Specifications	A105M Optical tube assembly
Achromatic objective	D=105mm F=1000mm (f9.5), Mgfl single coated
Resolving power	1.1 arc seconds
Limiting magnitude	11.9
Light gathering power	225x unaided eye
Finder scope	XY Red dot finder (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 tube plate, Flip mirror diagonal, Carry strap
Size	115mm dia. x 1010mm long
Weight	4.8 kg / 10.57 lb

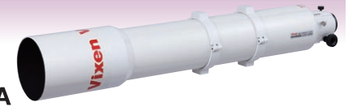
NEO Achromatic Refractor Optical Tube Assemblies

Chromatic aberration of achromatic refractors increases as their aperture increases. This becomes especially apparent for achromatic refractors with short focal length (less than F8) with apertures lager than 120mm. To compensate for this, Vixen's "NEO Achromatic" refractor has an additional two-element objective lens behind the primary objective lens, to give a bright image with excellent color correction compared to conventional achromatic refractors. As a result, star images are reduced less than 60 microns in size at the edge of field of view.

Optical arrangement with the incoming light path shown in red



Dual Speed Focuser



58681

NA140SS OTA

Specifications	NA140SS Optical tube assembly
NEO Achromatic objective	D=140mm F=800mm (f5.7), multicoated optics
Resolving power	0.82 arc seconds
Limiting magnitude	12.5
Light gathering power	400x unaided eye
Finder scope	Optional
Adapter thread	60mm
Visual back	50.8mm
Accessories	Dual speed focuser, 50.8mm compression ring
Size	140mm dia. x 1040mm long
Weight	6.7 kg / 14.75 lb

*The specifications are subject to change without notice.

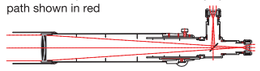
SD Apochromatic Refractor Optical Tube Assemblies

Vixen ED apochromatic refractors 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.

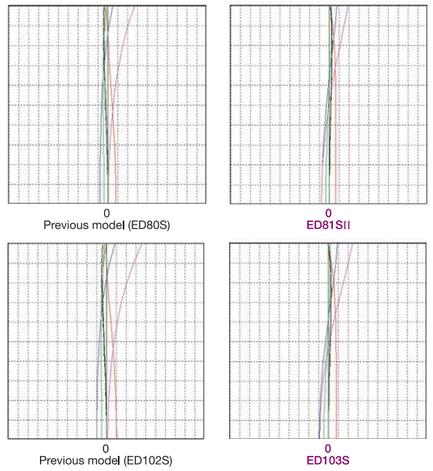
[ED81SII, ED103S, ED115S]
The SD glass produces clear and high contrast viewing, virtually free of false color. The design uses newly developed, environmentally friendly glass technology. Brighter F7.7 images will satisfy the most demanding visual astronomer or astro-photographer. The optical tubes are 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 light path 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: 10 microns per division



Shown with eyepieces sold separately

2617 ED80Sf OTA

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, Amuminum case
Size	100mm dia. x 570mm long
Weight	4.8 kg / 10.57 lb

Shown with eyepieces sold separately

26082 ED81SII OTA

Specifications	ED81SII 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 (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 tube plate, Flip mirror diagonal, Carry handle
Size	90mm dia. x 585mm long
Weight	3.6 kg / 7.92 lb

Shown with eyepieces sold separately

2609 ED103S OTA

Specifications	ED103S 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	134x 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

Shown with eyepieces sold separately

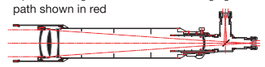
2616 ED115S OTA

Specifications	ED115S 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

“Apo Maximum” SD Apochromatic Refractor with Quad Element Design

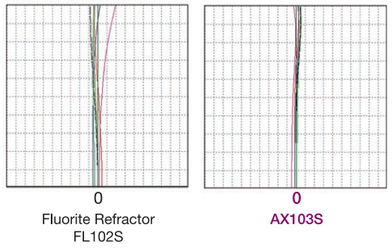
Vixen AX103S features a three element objective lens, incorporating an SD lens in its center, and the fourth lens inside of the focuser drawtube. The “Apo Maximum” lens elements are laid in the precision machining cells to exhibit the designated superb optical performance. This advanced optical design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

Optical arrangement with the incoming light path shown in red

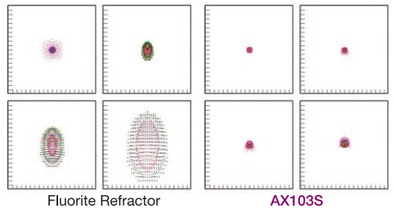


Below is a comparison of spherical aberration between the AX103S and Vixen’ s “Fluorite” FL102S, which was renowned as a masterpiece for its excellent color correction. The diagram shown below shows how the AX103S outperforms the fluorite optical tube. The bundle of light rays (spectrum) on the AX103S 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.

●Comparison of Spherical Aberration
Scale: 20 microns per division



●Comparison of Spot Diagrams
Scale: 10 microns per division



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

NGC5139 (Omega Centauri) globular cluster taken with a Vixen AX103S

A Pair of Tube Rings

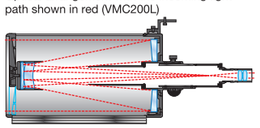
2664	SX Tube Ring 90mm	• Applicable to A80M, A80Mf, ED81S, ED81SII Weight : 350 g / 12.34 oz
2665	SX Tube Ring 115mm	• Applicable to A105M, ED103S, AX103S, Not available for VSD100F3.8 Weight : 400 g / 14.11 oz
2666	SX Tube Ring 125mm	• Applicable to ED115S Weight : 500 g / 17.63 oz
2668	SX Tube Ring 140mm DX	• Applicable to NA140SS Weight : 625 g / 22.04 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.

Shown with eyepieces sold separately

26141

VMC95L OTA

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 (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	107mm dia. x 360mm long
Weight	2.0 kg / 4.41 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 (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

58291

VMC200L OTA

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, 50.8mm compression ring 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

26301

VMC260L OTA

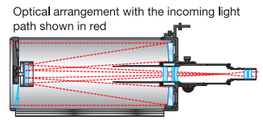
Shown with eyepieces sold separately

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 thread 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, Carry handle
Size	304mm dia. x 680mm long
Weight	12.1 kg / 26.65 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 astrophotography.

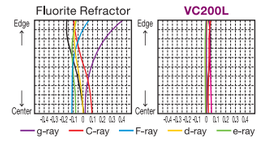
Optical arrangement with the incoming light path shown in red



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: 10 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

M20 "Trifid nebula" taken with a Vixen VC200L

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

2642

R200SS OTA

Shown with eyepieces sold separately

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

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. It has a 44mm dia. 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 NEW

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.

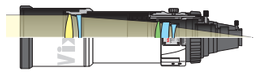
A field from Orion's belt to M42 taken with a Vixen VSD100F3.8 (Akio Nakanishi)

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).

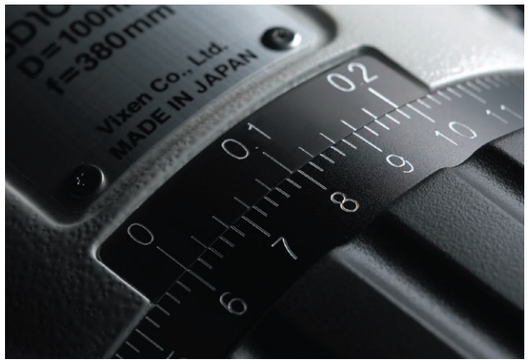
Optical arrangement with the incoming light path shown in red



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.



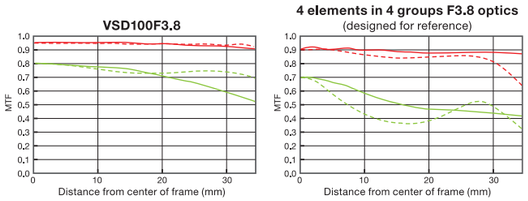
(26145)

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 / 9.91 lb

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.

(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)

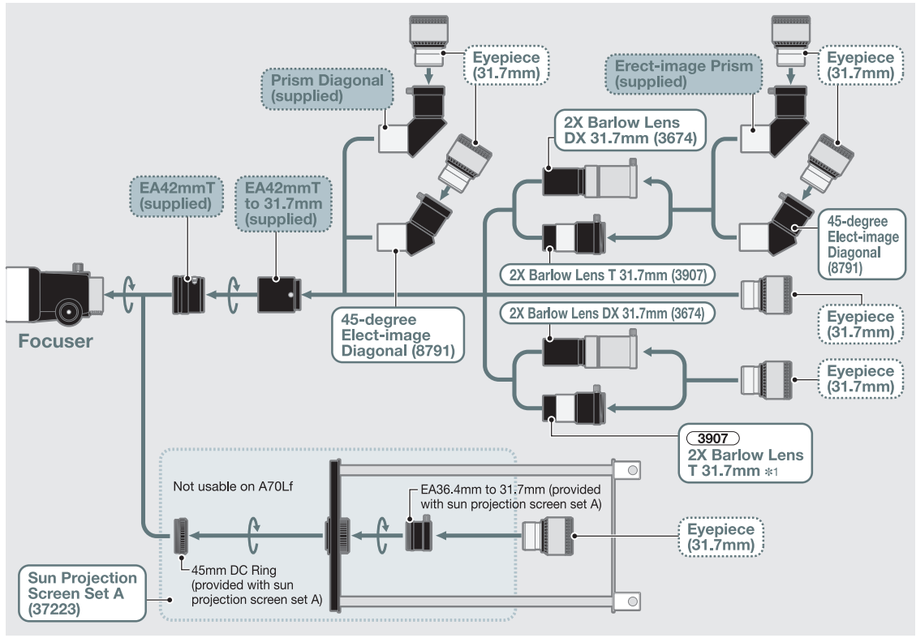
Focal Reducer V0.79X

- 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)

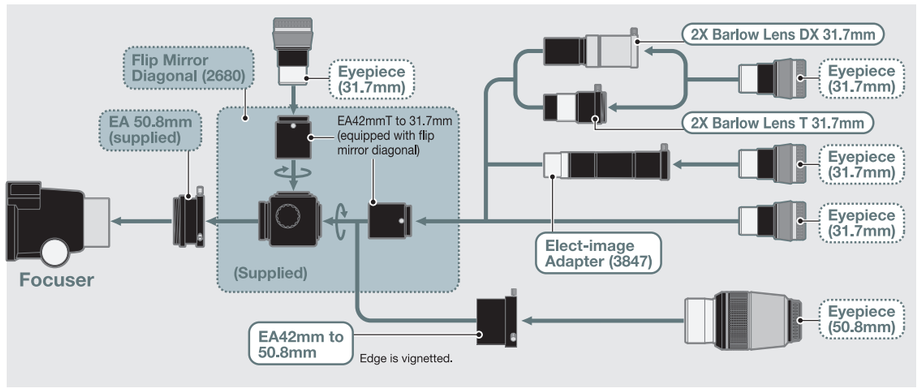
Size : 92mm dia. x 46mm long
Weight : 330 g / 11.64 oz

*The specifications are subject to change without notice.

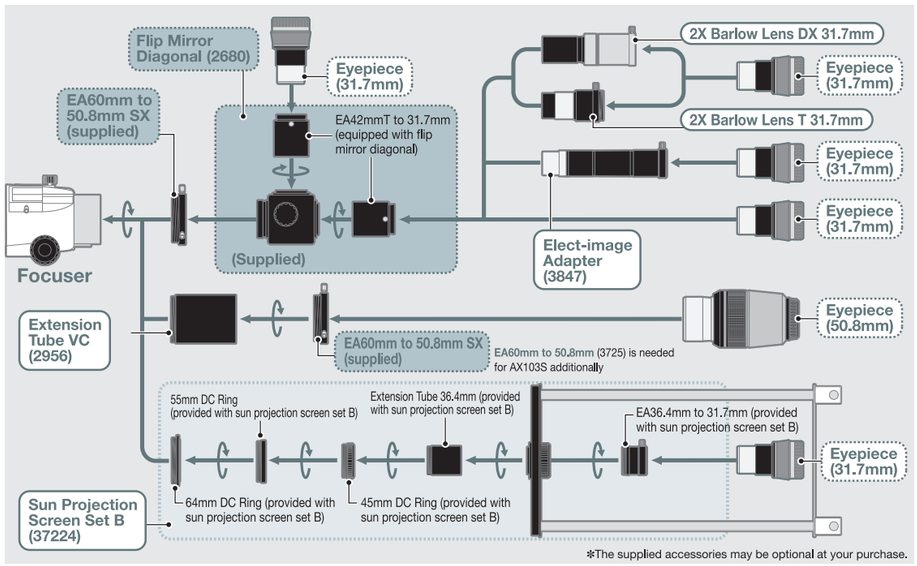
Visual Back Guide:
A70Lf and A80Mf Optical Tubes



Visual Back Guide:
ED80Sf Optical Tube

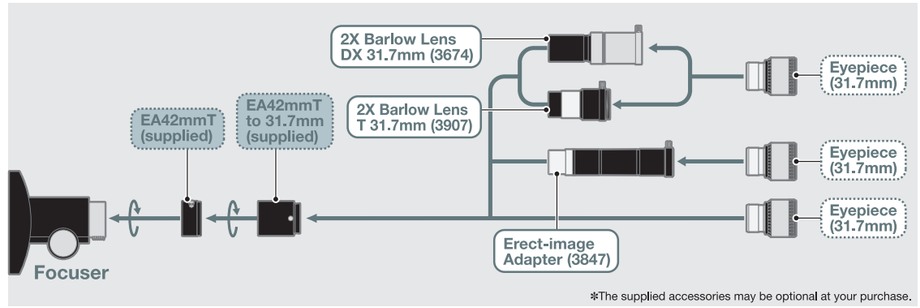


Visual Back Guide:
A81M, A105M, NA140SS, ED81SII, ED103S, ED115S and AX103S Optical Tubes



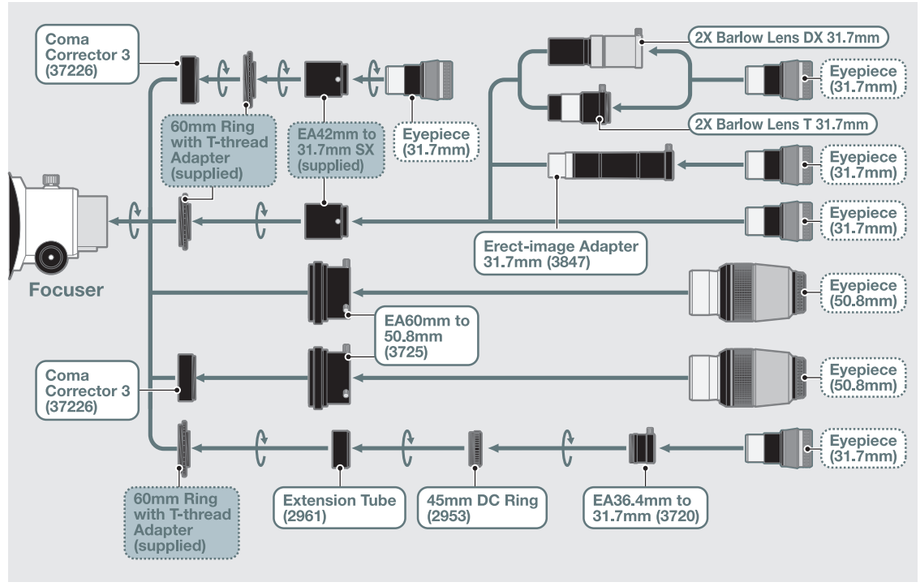
*The supplied accessories may be optional at your purchase.

Visual Back Guide:
R130Sf Optical Tube

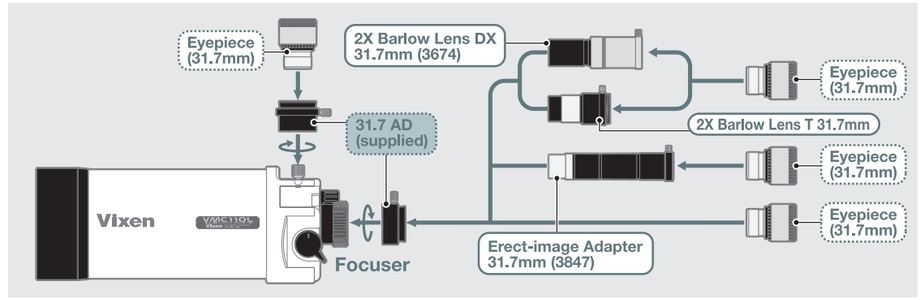


*The supplied accessories may be optional at your purchase.

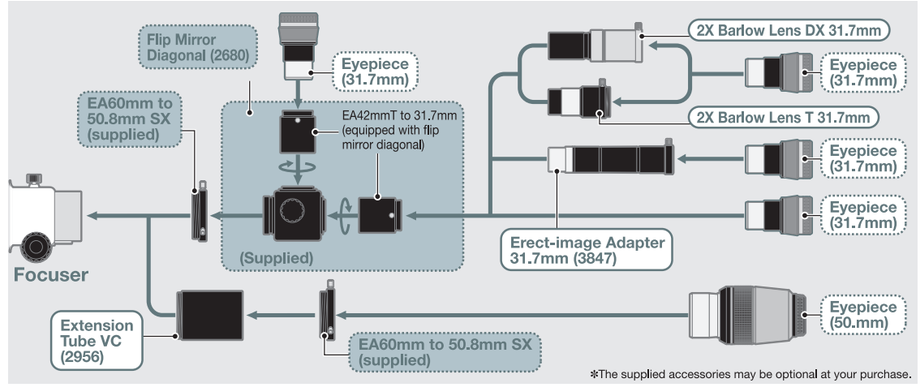
Visual Back Guide:
R200SS Optical Tube



Visual Back Guide:
VMC95L and VMC110L Optical Tubes



Visual Back Guide:
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

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 / NLV 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
39302	**NLV50mm**	50.8mm	45 degrees	38mm	419 g / 14.77 oz
3777	**LV8-24mm Zoom**	31.7mm	60-40 degrees	19mm	215 g / 7.58 oz

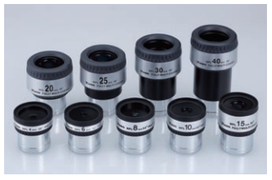
SLV Series of 31.7mm Eyepieces

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 No.3675 Prism Diagonal

Weight : 80 g / 2.82 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

Prism Diagonal

3675
Prism Diagonal 31.7mm
- 64mm long light pass
- Not usable on reflectors

Weight : 124 g / 4.37 oz

Terrestrial Viewing Adapters

8791
45-degree Erect-image Diagonal 31.7mm
- For use with a middle to low magnification eyepiece only
- 88mm long light pass
- Not usable on reflectors

Weight : 116 g / 4.09 oz

3847
Erect Image Adapter 31.7mm
- Usable on both refractors and reflectors
- Coated optics

Weight : 190 g / 6.7 oz

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

5971
Compression Ring 50.8mm
- Threaded into 60mm female thread
- 10mm long light pass

Weight : 63 g / 2.22 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

Focal Reducers and Coma Correctors for Astrophotography

3666
Focal Reducer for F7.7 ED
- Usable on ED81SII, ED103S or ED115S
- 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 eyepiece projection photography nor 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 eyepiece projection photography nor 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 eyepiece projection photography nor 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 eyepiece projection photography nor 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 eyepiece projection photography nor 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

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

NEW
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 P45)

*The specifications are subject to change without notice.

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

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

Weight : 195 g / 6.88 oz

NEW

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

Finder Scopes and Attachments

NEW

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

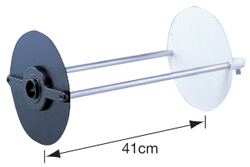
2654
Finder Bracket Shoe

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

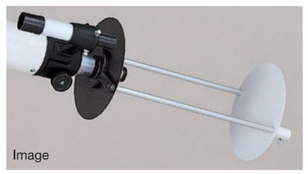


37223
Sun Projection Screen Set A
- For use exclusively with A80Mf refractor
- Consisting of 24cm dia. Sun projection white screen and sunshade, 45mm DC Ring and EA36.4mm to 31.7mm Adapter

Weight : 914 g / 32.03 oz

37224
Sun Projection Screen Set B
- For A81M, A105M, ED81Ⅱ, ED103S, ED115S 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 50 x to view the whole disk of the Sun.

Mounting Blocks, Brackets and Plates

Image

3796
Weight-shaft Camera Bracket
- Attachable to a counterweight 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

38012
PORTA Ⅱ Adapter
- The same piece as equipped with PORTAⅡ
- Used to attach the PORTAⅡ mount to the tripod head of Vixen tripod or half pillar

Size : 104mm dia. x 29mm thick
Weight : 142 g / 5.0 oz


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 AXD or SXP directly
- With threaded 1/4" holes

Weight : 220 g / 17.76 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

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, ED103S, AX103S optical tube or others

35657
Tough Tote Bag
- Capacity of about 20 liters

Size : 320mm x 320mm x 200mm
Weight : 660 g / 23.28 oz

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.

Image

89222
AXD Aluminum Case

Size : 450mm x 540mm x 240mm
Weight : 6.7kg / 14.75 lb.

NEW

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

NEW

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

Compasses

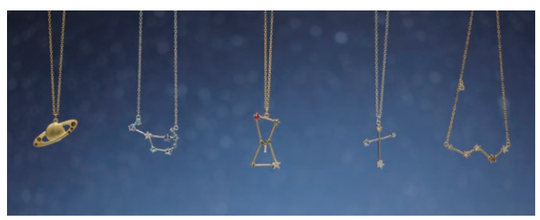
43021 Pink
43022 Yellow
43023 Green
43024 Blue
43025 Purple

Image

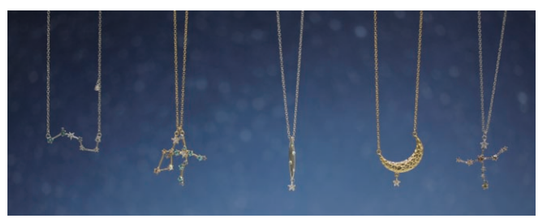
LED Compass
A transparent dial makes the pointer visible from the underside.
- Oil filled compass
- Illuminated compass dial

Size : 88mm x 54mm x 14mm
Weight : 30 g / 1.05 oz

Sora Jewelry NEW



71169 Saturn
71166 Pleiades
71160 Orion
71164 Southern Cross
71161 Cassiopeia



71165 Big Dipper
71163 Lyra and Aquila
71167 Shooting star
71168 Crescent Moon
71162 Cygnus

✻The specifications are subject to change without notice.

Astro Lamp

NEW

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)

Accessory Cases

(For details refer to P17)

NEW

35654

Eyepiece Accessory Case Set

35652

Accessory Case Set for STAR BOOK TEN / STAR BOOK

35653

Accessory Case Set for General Use

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

35411

Lens Heater 360

Image

A dew remover with USB connector to prevent a camera lens from dewing in astrophotography.

- Active Heat Fabric (AHF) with smooth flexibility
- Heater type : Fabric heater (Heating elements 20mm x 280mm)
- Temp characteristics : 10 degrees C above ambient temperature (at 20 degrees C)
- Power source/consumption : USB power supply battery 5V 0.8A, 4W
- Power supply cord : USB A (male) cord, 600mm long
- Operating duration : About 4 to 6 hours by means of a 5000mA h USB mobile battery at ambient temperature of 20 degrees C.
- Attachable to : A cylindrical shape with over 30mm in length and from 45mm to 100mm in diameter
- Dimensions : 30mm x 600mm

Weight : 40 g / 1.41 oz

Other Useful Accessories

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 VMC95, VMC110L, VMV260L, VMC330L, A70Lf, A80Mf, ED80Sf, R130Sf and VSD100F3.8

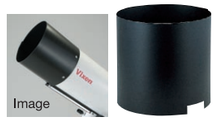
Weight : 170 g / 6.0 oz

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



Image

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

Power Supply and Cables

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

3599

AC Adapter 12V 3A

- Input 100V to 240V
- Output 12V 3A
- Suitable for SX2, SXD2, SXP, AXD or GPD2 with DD3
- With a convertible cable to change polarity

Weight : 320 g / 11.28 oz

8644

Cigarette-lighter Plug Cord – SX

- 2.1mm DC plug with center-plus polarity
- Available for SX2, SXD2, SXP, AXD, 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

For AXD

36918

AXD Large Accessory Plate

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

For STAR BOOK TEN

25301

Advance Unit

- Works as a built-in autoguider in combination with an optional CCD video camera
- Displays images on the screen of STAR BOOK TEN via CCD video camera (NTSC composite signal)

Weight : 100 g / 3.52 oz
(For details refer to P40.)

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
Objective : 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 SG6.5x32WP 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.

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.

NEW

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

FORESTA 7x50

Lightweight and Extremely Clear View

Bright and sharp images

Amazing clear field of view through this lightweight porro prism binocular. The triplet objective lens results in perfect color and edge to edge sharpness. Waterproof construction.

Long Eye Relief

The long eye relief allows for comfortable viewing. The FORESTA 7x50, with 20mm long eye relief, provides eyeglass wearers an unrestricted field of view.

14504

FORESTA 7×50

With soft binocular case and wide neck strap

- Magnification : 7X
- Effective aperture : 50mm
- Prism material : BaK4
- Angular field of view : 7.1°
- Apparent FOV : 49.7°
- FOV at 1000m : 124m
- Exit pupil : 7.1mm
- Eye relief : 20.0mm
- Brightness : 50.4
- Close focus : 6.0m
- Interpupillary distance : 56mm to 71mm
- Size : 180mm x 190mm x 65mm
- Weight : 930 g / 32.8 oz

*The specifications are subject to change without notice.