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William Optics Corp.



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Crafting the Earth's Finest Astronomical Instruments

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ZENITHSTAR 80

Fluorite Doublet

INSTRUCTION MANUAL



Crafting the Earth's Finest Astronomical Instruments

Thank you for choosing a William Optics ZENITHSTAR Fluorite Doublet, William Optics' 10-year anniversary telescope.

This simple step-by-step instruction manual is designed to provide Zenithstar Fluorite Doublet (ZSFD) owners with a better understanding of how to operate their new telescope by providing precise, updated information.

These instructions will also guide you through how to properly maintain the Zenithstar, and how to operate it at its maximum capabilities.

Please carefully familiarize yourself with your telescope's parts and functions before operating it for the first time.

WARNING!

DO NOT USE THIS TELESCOPE UNDER ANY CIRCUMSTANCES TO DIRECTLY VIEW THE SUN.

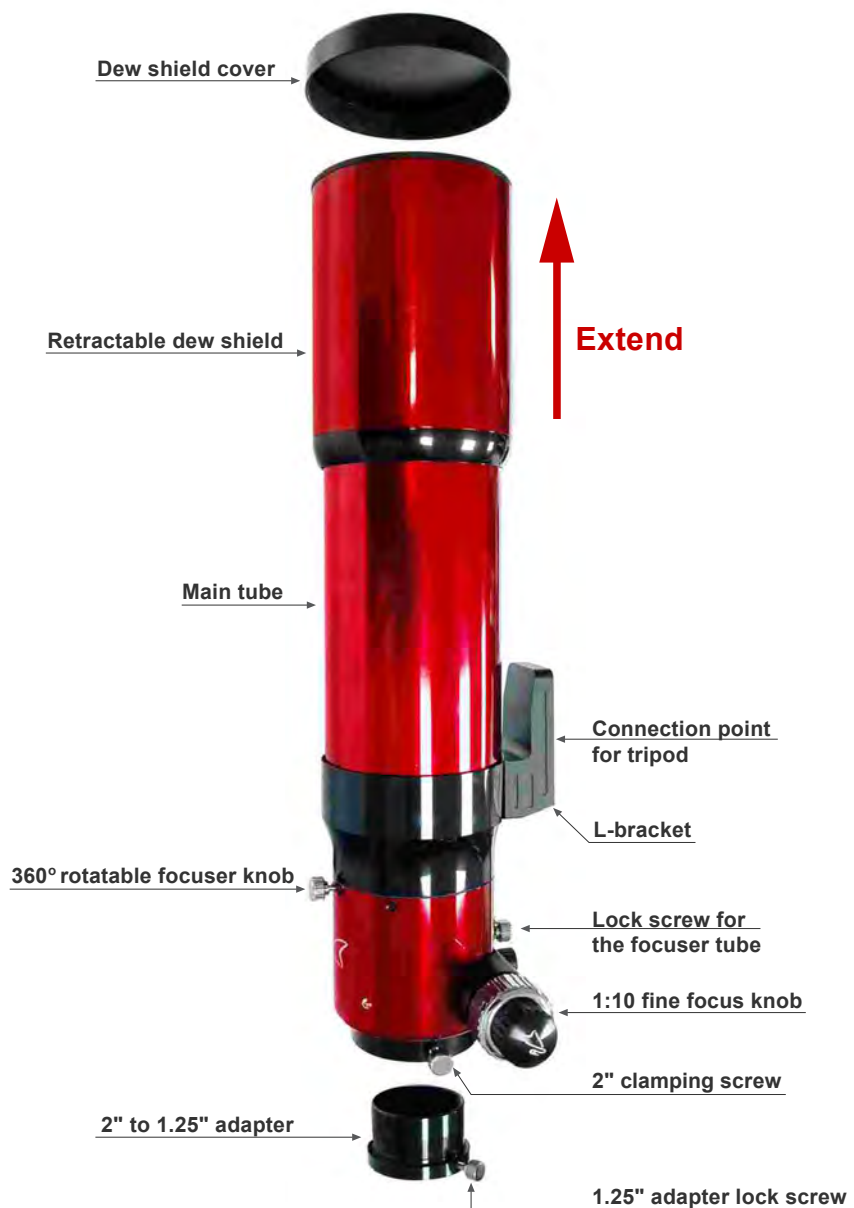
It could easily cause instant blindness or serious damage to your eyes. To view the sun, use only appropriately designed solar filters that will reject 99.96% of the sun light and heat. Educate your family on how to use this telescope properly during day and night time observations. For further information please contact your local dealer.



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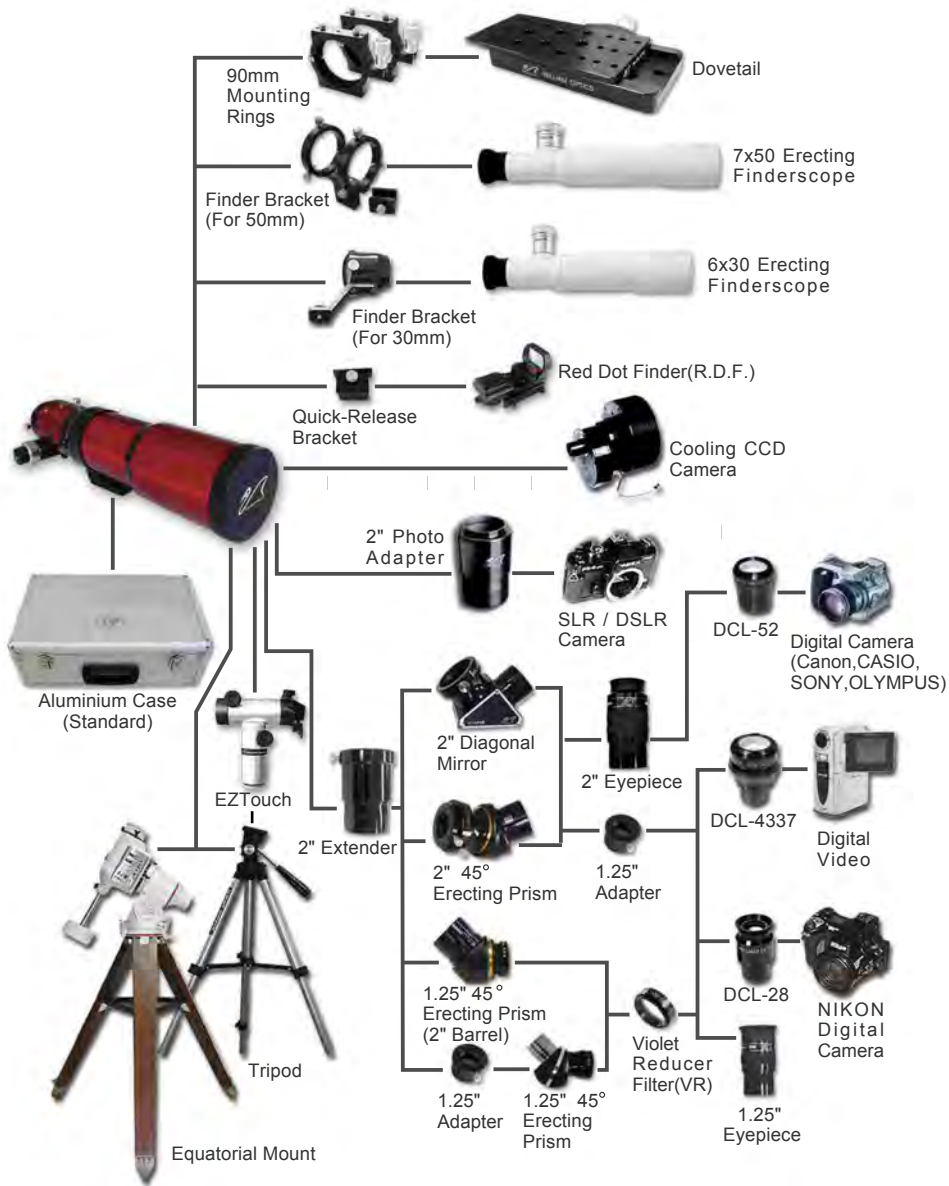
Getting to know your telescope



Zenithstar Fluorite Doublet Refractor Specifications

Aperture	80mm
Focal Ratio	F / 6.9
Focal Length	555 mm
Objective Type	Fluorite Doublet, Air Spaced, APO TMB co-designed Fully Multi-Coated, STM coating
Resolving Power	1.45"
Limiting Magnitude	11.3
Lens Shade	Retractable
Focuser	2" 360° Rotating Camera-Angle Adjuster, 1:10 fine focus Focuser Travel Length 80mm (3.15") 1.25" Adapter & 2" extender Included
1.25" Adapter	Brass Compression Rings
L-Type Mount	L Bracket Based
Field Stops	15 Baffles
Tube Diameter	90mm
Tube Weight	2.4 kg (5.3 lbs.)
Tube Length	375 mm (14.7") Fully Retracted 440 mm (17.3") Fully Extended
Case	Aluminium Case (Standard)
Case Dimensions	48 x 28 x 16cm (19" x 11" x 6.3")

Zenithstar Fluorite Doublet Accessories Chart



Above diagram is only for future connectivity purposes.
Please contact our Authorized Dealers for accessories purchase.

Connection Instructions

(2" Diagonal Mirror)

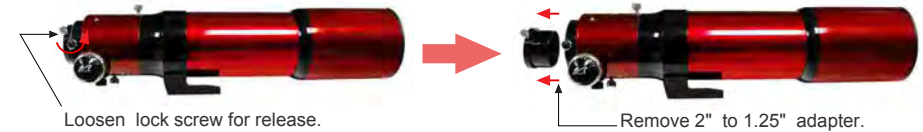
Step-1



Using the supplied L-Bracket, attach the telescope to the tripod threaded with a standard photographic 1/4-20 connection knob. Ensure that the knob is tight or locked down before proceeding.

After the telescope is firmly connected to the tripod, extend the dew shield.

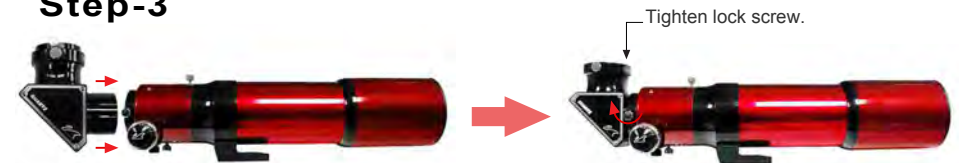
Step-2



Loosen lock screw for release.

Remove 2" to 1.25" adapter.

Step-3



Tighten lock screw.

Step-4



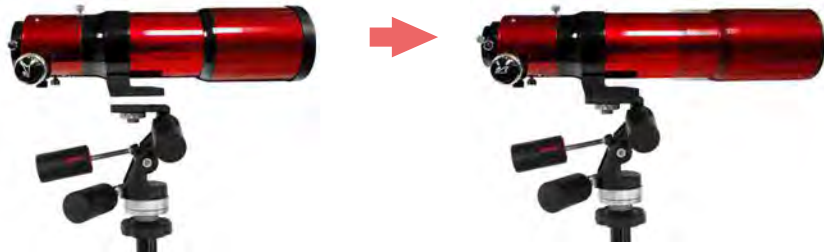
Insert eyepiece for visual observation.

Tighten lock screw.

Connection Instructions

(2" Erecting Prism)

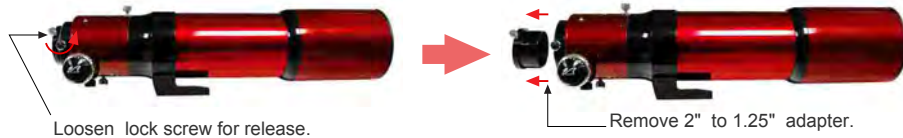
Step-1



Using the supplied L-Bracket, attach the telescope to the tripod threaded with a standard photographic 1/4-20 connection knob. Ensure that the knob is tight or locked down before proceeding.

After the telescope is firmly connected to the tripod, extend the dew shield.

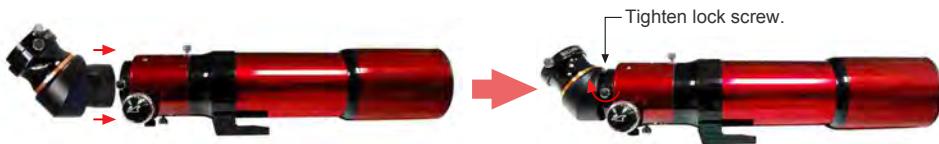
Step-2



Loosen lock screw for release.

Remove 2" to 1.25" adapter.

Step-3



Tighten lock screw.

Step-4



Insert eyepiece for visual observation.

Tighten lock screw.

Connection Instructions

(Red Dot Finder)

Step-1

Take out the finderscope screw from the drawtube top with a small flat screwdriver. This is the larger black screw at the left of the rotation lock thumbscrew.



Finderscope Screw

Step-2

We suggest positioning the RDF base with the thumbscrew facing towards the left.



2.5mm

R.D.F Base

Step-3

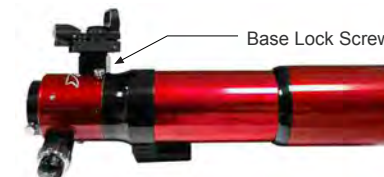
Insert the quick release red-dot finder bracket in the base.



R.D.F Base

Step-4

Lock the bracket thumbscrew properly and follow alignment instructions. Note that this is an optional product available for purchase from WO.



Base Lock Screw

Connection Instructions

(Aligning R.D.F.)



The alignment of the finder needs to be performed only when necessary. We recommend aligning during daytime by point telescope and finder at the same far object.



Step-1

Find a distant object in the telescope with a low power eyepiece.

Step-2

Use a 2mm Allen key to loosen the setscrew on the left side of the RDF, near the bracket under the letter "R". Using a 2.5 mm Allen key make adjustments to the Alt-Az adjustments (marked R and UP) until the red dot in the reticule overlays the same object as the center of the eyepiece view.

Step-3

Using a high magnification eyepiece (short focal length) repeat this procedure for fine alignment.

View Field of Red Dot Finder.
(with WO Erecting Illuminated Red Dot Finder)



Brightness Adjustment

Alignment Setscrews

Reticule Selector



View Field of Telescope.
(with WO Dielectric)



Usage

The Zenithstar FD series is designed as the ultimate, versatile short tube refractor. It is perfect for travel, piggybacking/guiding scope, astrophotography, rich-field observations. We recommend purchasing a WO 2" star diagonal to make the most of this telescope.

Because the Zenithstar FD is well suited to viewing nebulae, clusters, large galaxies and comets, we recommend the use of high quality wide-angle eyepieces. The WO UWAN series eyepieces are available in a variety of focal lengths and make a perfect complement to this telescope.

Viewing the moon and planets is also very impressive at magnifications of 120X when seeing conditions permit. To calculate the magnification of your telescope and eyepiece combination, divide the telescope focal length in mm by the eyepiece focal length in mm.

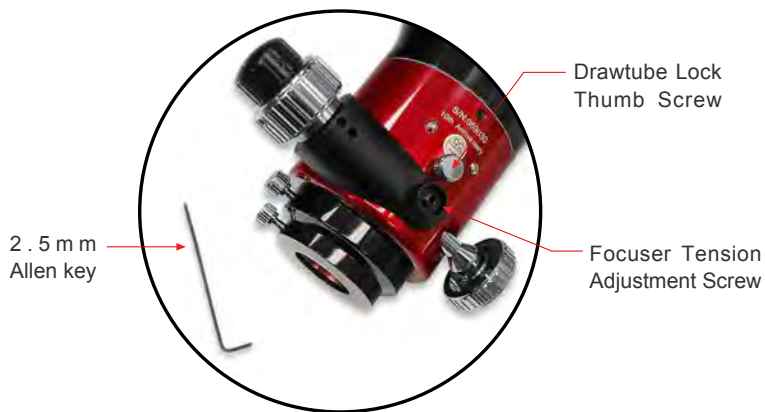
Keep in mind that the atmosphere plays an important role in seeing conditions, and only the best seeing conditions will support high power viewing. Additional power under less than ideal seeing conditions will not result in an increase in viewable details, and lower powered eyepieces should there be used under those conditions. It's easiest to locate objects using low power eyepieces (20X magnification) and then zoom in by switching to higher powered eyepieces. The largest field of view will be seen using a 12X low power-wide field of view eyepiece.

A stable tripod or mount is recommended for optimal viewing. This includes high quality photography tripods, and German Equatorial mounts, which are designed for astronomical use and include precise tracking of celestial objects. Optional accessories from WO include black anodized mounting rings and plates, super high quality 2" Quartz star diagonals which provide for superior viewing and high quality images.

A recommended Alt-az. mount for this telescope is William Optics high-quality mount, EazyTouch. This beautiful mount is easy to use and will provide a perfect, quick-to-set-up addition to your collection.

The ZSFD is suitable for large-field astrophotography; the accessories Chart on page 03 provides additional details on photographic accessories for various CCD, digital and film cameras.

Never aim your telescope or finderscope at the Sun without proper Solar filters installed on the front of the telescope. Doing so for even a moment may permanently damage your vision. Proper Solar filters consist of a filters made by reputable manufacturers, designed to fit tightly over the front of the dew shield. Solar eyepiece filters are not considered safe, and should not be used. With proper front mounted Solar filters, the telescope will not be harmed by viewing the Sun. Contact your Authorized WO Dealer for further information on the brands, sizes, and prices of proper solar filters.



All WO telescopes, including ZenithStar, are now fitted with a smooth and precise dual speed 1:10 focusing system.

1:10 means that for every ten full rotations of the small fine-focus knob the large knob rotates once.

The focuser drawtube tension can be adjusted using a 2.5mm Allen key on the screw protruding from the black hollow ring.

Tension should be adjusted only when necessary by progressively tightening the screw until you reach the desired tension.

Make sure that the black ring is always tight against the focuser.

Storage and Cleaning

- ▶ We recommend storing all equipment in an air tight container with desiccant packages to remove unwanted humidity from the air. Never leave the telescope in a humid environment, and avoid leaving the scope in a hot heated environment. If not properly stored, it is possible for the scope to develop mildew growth or other preventable conditions. Be careful after a night of observing when conditions might leave dew on the lens, and allow the scope to air dry in a room temperature environment before storing the telescope.
- ▶ If the front lens surface becomes dusty, smeared, shows fingerprints, or any other surface build up, the following steps can be taken to clean the lens. First, gently blow away any surface dust or particles with a clean air blower (canned or compressed air is not recommended). Second, use a photographic quality optical cleaning solution and cloths to gently wipe the surface clean. A clean cloth should be used every time that cleaning is needed. With proper care, and protection, cleaning should rarely be needed.
- ▶ The Zenithstar has a beautiful high gloss anodized finish that can be easily smudged with fingerprints; however this will not harm the finish. A slightly dampened clean soft cloth with plain water should be enough to clean the surface. Please avoid any harsh chemical cleaners or organic solvents like benzene, alcohol, etc, as these may ruin the finish.

Caution for Safety

- ▶ **Caution! Never directly view the Sun with your telescope!**
Do not aim your telescope at the Sun without a front mounted high quality professionally manufactured solar filter. Viewing the Sun without the proper protection may result in permanent severe damage to your eyes, and even cause blindness. Contact your Authorized WO Dealer if you are interested in purchasing a compatible and proper solar filter.
- ▶ Always place the telescope on a flat surface, to prevent it from falling and injuring yourself or others.
- ▶ Never use the telescope in the rain or in conditions where it may get wet. The telescope is not designed to be waterproof. If the telescope accidentally gets caught in the rain, immediately wipe off all water using a clean dry soft cloth. If the telescope gets totally soaked in water, immediately contact your Authorized WO Dealer for service instructions.
- ▶ Do not disassemble or attempt to repair your telescope without a written authorization from William Optics Corp., as this violates the warranty terms under the limited product warranty, and negates any guarantee.

Bundle Equipment

1. Practical aluminum carrying case, with custom-fitted foam, water resistant and carry-on size.
2. L-bracket
3. 2" to 1.25" adapter
4. 2" extender (necessary to reach visual focus with most eyepieces, but not necessary with WO binoviewers).

Optional Equipment

In order to operate your ZenithStar Fluorite Doublet you will need the following minimum equipment:

A sturdy tripod for astronomical or birding usage or a mount (equatorial or ALT-AZ).

A mirror diagonal or erecting prism (The WO 2" Dielectric Diagonal is strongly recommended for better results in star observation and digital photography. A top-quality Dielectric Quartz model is also available now).

At least one or two good eyepieces (9 to 40 mm wide-field recommended) depending on the application.

For ZenithStar Fluorite Doublet, a 2" extender already provided.

For astrophotography, a photo adapter plus a T-mount connection are necessary. William Optics offers a 0.8x reducer flattener with CCD camera adapter.

Please refer to our Accessories Chart on page 03.

Quality nebula filters, light pollution filters, Solar Max H-alpha filters, depending on the application.

Also available from WO:

- Erecting, illuminated reticle finderscopes with bracket (6x30 and 7x50 models available).
- WO 2" and 1.25" Erecting prisms.
- Super wide angle Eyepieces, 1.25" or 2" versions.
- DCL 28, 4337 series.
(Digital Camera adapter Lens for Digital Cameras and Digital Video).
- Digiscoping adapter: universal adapter for any type of digital camera.
- WO 1.25" VR-1 filter improves seeing on bright objects like the Moon.
(Violet-Reducer).
- WO 80 mm mounting rings, saddle plate, dovetail plate combo for equatorial mounting.
- WO 2" Extension Tube.
- WO 2" Photographic Adapter

Recommended For This Scope

Binoviewer Package



Binoviewer

Enjoy the pleasures of BaK4 quality binoviewers with compression rings in your refractor, SCT or Newtonian with a value package including 2 eyepieces (1.25" WA 66 20mm) and 1.6x corrector Barlow!

D i a g o n a l M i r r o r s



2" Quartz Dielectric Diagonal

High-quality dielectric coating (99% reflectivity), precision-polished quartz flat in our much-admired, patented mechanics. Our 2" Diagonals are what you need for your best observing sessions. Only from William Optics.



2" Dielectric Diagonal Mirror

99% reflectivity with 1/10 lambda high-precision mirror surface, with elegant exterior design, with 1.25" adapter.

A P O B a r l o w



2" APO 2.5x Barlow Lens

3-element apochromatic air-spaced, FMC.
Great color correction and contrast.

E r e c t i n g p r i s m s



2" 45°



1.25" 45°
with 2" Barrel



1.25" 45°

45° Erecting Prisms

Perfect both for astronomical and terrestrial observations.
Revolutionary and sophisticated design, extra-smooth feel.

D i g i t a l C a m e r a a d a p t e r L e n s e s



DCL-52

This innovative digital adapter lens is designed for large-lens digital camera and digital video cams users' needs.

It can be connected to any 2" diagonal or erecting prism.

9 0 ° E r e c t i n g P r i s m



90° Erecting Prism

High quality prism, coating and finish, for good correct-image views of celestial objects. Perfect in daylight too.

SWAN Eyepieces



1.25" Eyepieces

Super Wide Angle (72°).
9 mm, 15 mm, 20 mm focal lengths.
5 elements in 4 groups, fully multi coated.
Parfocal.



2" Eyepieces

Super Wide Angle (72°).
25mm 33mm, 40mm focal lengths, FMC.
Generous eye-relief.

UWAN Eyepieces



Uwan Eyepieces

Ultra Wide Angle (82°)
28mm (2"),
16mm (1.25"),
7mm (1.25"),
4mm (1.25").

Mounting Rings



90 mm Mounting Rings internal diameter

These felt-lined mounting rings are made out of solid aluminum, powder painted. A worthwhile investment if you want the best out of your mount and telescope.

Red Dot Finder



Red Dot Finder with Quick Release Bracket

This very practical r.d.f. comes with a handy, quick-release bracket included in the price. Centering your objects in the sky has never been easier!

6 x 3 0 F i n d e r S c o p e



6x30 FinderScope

6x30 erecting illuminated finderscope.
The red illuminated reticle allows precise alignment.

3 0 m m B r a c k e t



30mm Bracket

R e d u c e r / F l a t t e n e r



0.8x Reducer/Flattener with CCD camera adapter

This very elegant 2" reducer/field flattener comes with a CCD camera adapter.

In addition to reducing the focal length by a factor of 0.8 for fast photography, it works as a flattener of the field curvature for sharp and pinpoint stars in your pictures. It is especially recommended to imagers using a CCD camera.

C o m b o P l a t e



Combo Plate

A mount is only half of the equation. Actually less than half. The best telescope and the best mount, still need a versatile mounting plate to go with. William Optics Combo plate (dovetail and saddle plate) is elegant, solid, and machined to the highest standards, as any WO product.

William Optics Corp.

Company Policies

Privacy Policy :

William Optics Corporation (WO) neither intends to nor will ever disclose your personal information to third parties without your consent. All company personnel with access to customer information are aware of our policies and are trusted professionals in the field. WO intends to enforce these provisions vigilantly for your peace of mind and protection.

Damage, Shortage & Incorrect Shipment :

If your purchase has incurred any damage during shipping, you didn't receive the correct product or parts are missing, contact us or your Authorized WO Dealer within 48 h of delivery in order for us to assist you without delay.

Carrier-caused problems must be reported to the carrier as well.

Manufacturer Warranty :

William Optics is the manufacturer of the products sold on WOnline and through its Authorized Dealers sales network. This means that each original item is covered by the WO warranty. For a period of two years from the date of original retail purchase, WO will repair or replace a defective product provided it is returned to WO freight prepaid, with proof of purchase. Please contact WO to solve any warranty claim.

If the product has been misused, mishandled or if repairs have been attempted or performed without explicit consent from WO, the warranty will be deemed void. Normal wear-and-tear is not covered by this warranty. If the claim is denied because it is deemed to be a non-manufacturing defect, the customer will be notified of the reasons of denial.

This warranty is the manufacturer's warranty; additional warranties may apply but are beyond William Optics Corp.'s responsibility.

WO reserves the right to verify all warranty claims for defective products. WO furthermore reserves the right to change these terms and conditions and product specifications or to discontinue products without previous notice. This does not affect your warranty rights.

Repair Policy :

Beyond the warranty period it is the customer's responsibility to deal directly with WO in order to agree upon any repairs or replacements. Please contact William Optics for further details on your options to obtain service on one of our products.

Return and Refund Policy :

We hope that you are happy and delighted with your purchase.

If nonetheless you wish to return an item for a refund, please contact us for a return authorization number (RA#), fill in the return form here below and return together with your product to where instructed.

All returns to be refunded must be in perfect conditions, with original paperwork, packaging and proof of purchase.

Refunds after 14 days from the invoice date are subject to a 15% restocking fee. No refund will be allowed after 30 days from the invoice date.

The customer must prepay all transportation costs.

Original shipping charges, taxes or customs duties are not-refundable.



Complete Name & Address, Contact No. and E-mail	
Purchased Product, including Serial No. if available	ZenithStar Fluorite Doublet
Place and date of Purchase	
Reasons for return	
Return Authorization Number	
Please read the refund policy carefully and if you have any doubt, please contact your Authorized Dealer or William Optics Corp. Return in perfect condition upon receiving your RA # to where instructed. All return charges are the responsibility of the purchaser.	