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William Optics Corp.

ZenithStar 66

INSTRUCTION MANUAL

WILLIAM OPTICS™

WILLIAM OPTICS USA

Crafting the Earth's Finest Astronomical

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Crafting the Earth's Finest Astronomical Instruments

Thank you for choosing a William Optics ZENITHSTAR 66 high-quality short tube refractor. This simple step-by-step instruction manual is designed to provide Zenithstar 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.

CONTENTS

Getting to know your telescope

ZenithStar 66 SD Doublet APO Specifications

Aperture	66 mm
Focal Ratio	F / 5.9
Focal Length	388 mm (15.3")
Objective Type	SD Doublet, Air Spaced, Fully Multi-Coated, STM coating
Resolving Power	1.78"
Limiting Magnitude	10.8
Lens Shade	Retractable
Focuser	40.6 mm (1.6") Crayford Focuser with 1:10 dual-speed microfocuser 63 mm (2.4") Focuser Travel Length 360° Rotatable Design
1.25" Adapter	Brass Compression Ring
L- type Mount	L Bracket Based
Field Stops	10 Baffles
Tube Diameter	75 mm (2.95")
Tube Length	300 mm (11.8") Fully Retracted 360 mm (14.2") Fully Extended
Tube Weight	3.5 lbs. (1.7 kg)
Case	Aluminium Case (Standard)
Case Dimensions (WxHxD)	38.5 cm x 24.5 cm x 16.5 cm (15" x 9.6" x 6.5") (Water Resistant)
Case Weight	3.7 mm (1.6")

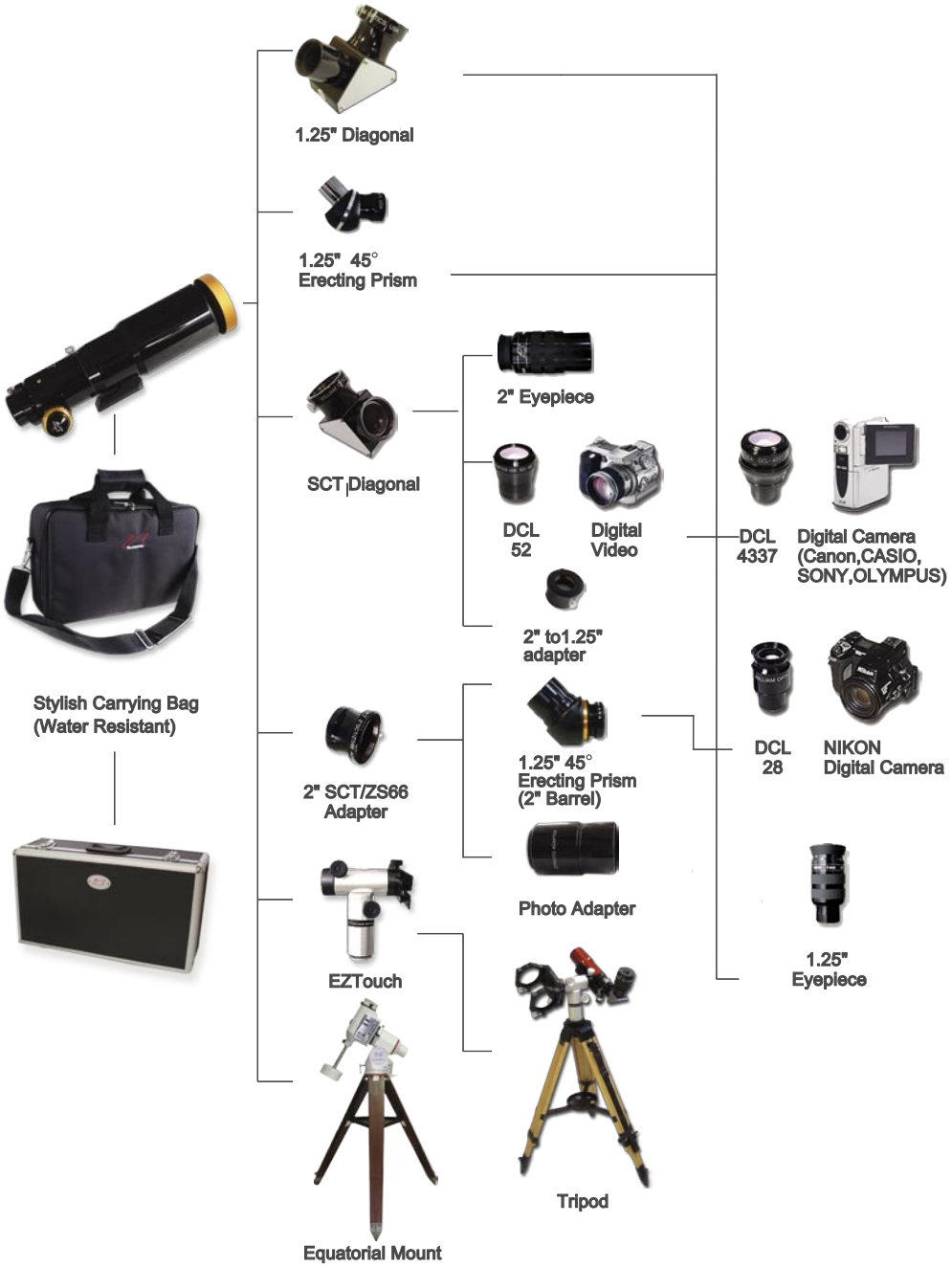
ZenithStar 66 Triplet ED APO Specifications

Aperture	66 mm
Focal Ratio	F / 7
Focal Length	460 mm (18.1")
Objective Type	Triplet ED APO Design Fully Multi-Coated
Resolving Power	1.78"
Limiting Magnitude	10.8
Lens Shade	Retractable
Focuser	40.6 mm (1.6") Crayford Focuser with 1:10 dual-speed microfocuser 61 mm (2.4") Focuser Travel Length 360° Rotatable Design
1.25" Adapter	Brass Compression Ring
L- type Mount	L Bracket Based
Field Stops	10 Baffles
Dew Shield O.D.	85 mm (3.3")
Tube Diameter	75 mm (2.95")
Tube Length	345 mm (13.6") Fully Retracted 410 mm (16.1") Fully Extended
Tube Weight	3.7 lbs. (1.7 kg)
Case	Soft carrying bag
Case Dimensions (WxHxD)	38.5 cm x 24.5 cm x 11.5 cm (15" x 9.6" x 4.5") (Water Resistant)

ZenithStar 66
Petzval ED Semi- APO Specifications

Aperture	66 mm
Focal Ratio	F / 6.1
Focal Length	400 mm (15.7")
Objective Type	4-Element Design Fully Multi-Coated
Resolving Power	1.78"
Limiting Magnitude	10.8
Lens Shade	Retractable
Focuser	40.6 mm (1.6") Crayford Focuser with 1:10 dual-speed microfocuser 61 mm (2.4") Focuser Travel Length 360° Rotatable Design
1.25" Adapter	Brass Compression Ring
L- type Mount	L Bracket Based
Field Stops	10 Baffles
Dew Shield O.D.	85 mm (3.3")
Tube Diameter	75 mm (2.95")
Tube Length	345 mm1 (3.6") Fully Retracted 410 mm (16.1") Fully Extended
Tube Weight	3.7 lbs. (1.7 kg)
Case	Soft carrying bag
Case Dimensions (WxHxD)	38.5 cm x 24.5 cm x 11.5 cm (15" x 9.6" x 4.5") (Water Resistant)

ZenithStar 66 Accessories Chart



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

Connection Instructions

(2" SCT Diagonal & Optional SCT Adapter)

Step-1

Extend the tube fully and connect the scope via the L-base bracket or mounting rings.

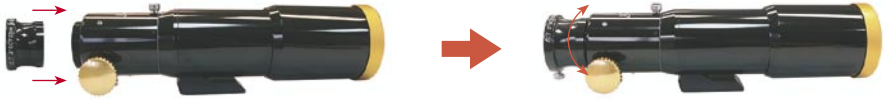
Remove the 1.25" adapter to mount a WO SCT Diagonal or extender.

Step-2

Make sure that the diagonal is tightly secured before operating.

Holding the diagonal steady in position with one hand, turn the SCT ring on the SCT thread of the ZS 66.

Step-3



An OPTIONAL SCT extender/adapter allows you to use 2" accessories on your ZS66.
Replace the 1.25" adapter with the extender.

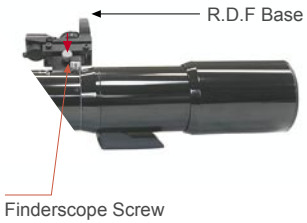
The extender is not designed to use standard push-in diagonals, but as an extender for non-WO 1.25¨ diagonals, or for 2¨ accessories such as photo adapters.

Connection Instructions

(Red Dot Finder)

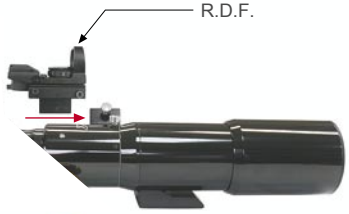
Step-1

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.
We suggest positioning the RDF base with the thumbscrew facing towards the left (for clarity purposes it's shown on the right hand side on these instructions).



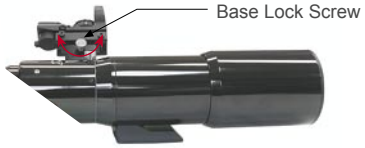
Step-2

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



Step-3

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



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.

Usage

The Zenithstar series is designed to work with SCT-thread Diagonals, for both daytime and nighttime viewing, as an outstanding travel scope. We recommend purchasing a WO 2" star diagonal to make the most of these little telescopes.

Some 1.25" diagonals may require an additional extender. William Optics markets an optional 2" SCT extender/adapter, as shown in the connection instructions.

Because the Zenithstar 66 are well suited to viewing nebulae, clusters, large galaxies and comets, we recommend the use of high quality wide-angle eyepieces. The WO SWAN and UWAN series eyepieces are available in a variety of focal lengths. Viewing the moon and planets is also impressive at magnifications of 120X when seeing conditions permit.

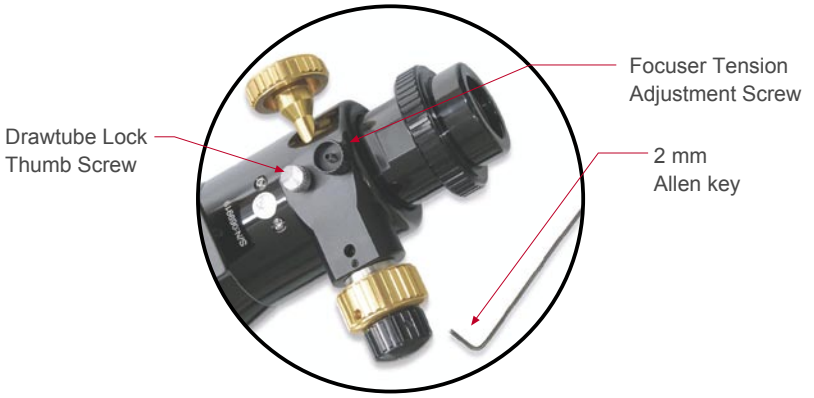
To calculate the magnification of your telescope and eyepiece combination, divide the telescope focal length in mm by the eyepiece focal length in mm.

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 a12X 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 mounting rings and plates, super high quality 2" Quartz star diagonals which provide for superior viewing and high quality images.

The Zenithstar telescopes are suitable for large-field astrophotography; the Petzval version features a very flat and well corrected field of view, the SD version has great color correction at a fast speed of f/5.9, whereas the triplet version has an excellent color correction. Please see our website for examples of photos taken with these telescopes. The Accessories Chart on page 05 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 2mm 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 suggest placing all accessories inside an airtight container with desiccative control. Secondly, remember to store the telescope in a non-humid environment, never leave it in a hot heated environment. If not properly stored, it may develop mildew growth and other preventable build up.
  Be particularly careful after a night observation that the lens has no dew on it before storing the telescope away.

- In case the lens surface becomes dusty, smeared, or gets fingerprints or fungus build-up on it, first of all, remove any surface particle by using an air blower, then carefully proceed to wiping the lens gently with a lint-free proper soft cloth. Use a lens liquid cleaner to get the best cleaning result. Make sure you change your cloth to a new one from time to time.
  The above-mentioned indications are not necessary if you carefully protect your telescope.

- The beautiful anodizine of your ZenithStar 66 is not easy to ruin. Nonetheless take care of the exterior body tube by wiping it down with a slightly damp soft cloth from time to time. Water should be enough to do the job. Please do not use any organic solvent on your telescope, for example alcohol, benzene and other hazardous chemical as this might ruin it.

Caution for Safety

- Caution! Never directly view the sun light with your telescope.
  Do not aim your ZenithStar 66 at the Sun because this might impair your Loss of eyesight can occur when your telescope is not properly protected by solar viewing filter. (Solar filters can be easily purchased through your WO Authorized Dealers).

- Always place the optical telescope assembly (OTA) on a completely flat surface, unstable placement of telescope may cause it to fall, and if handled without caution, it may easily injure yourself and others.

- Never use your telescope under rainy conditions: this telescope is not designed to be water-proof. If your telescope accidentally gets caught in rain, please wipe down the water with a dry clean cloth, but if the lens gets totally soaked by water, please contact your WO Authorized Dealer right away for details on a service solution.

- Do not disassemble or attempt repairing your telescope without a written authorization from William Optics Corp. : this violates the warranty terms under the limited product warranty section and invalids any guarantee. Always consult with your local WO Authorized Dealer or with William Optics Corp. for details on how to service your telescope.

Bundle Equipment

1. Stylish soft carrying case, backpack style, with custom fitted foam, water resistant, carry-on size, aluminium case for ZenithStar 66 SD Doublet APO.
2. L-bracket base.
3. Dew shield cover.

Optional Equipment

In order to operate your ZenithStar 66 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" SCT 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.

Other accessories depending on application.

Also available from WO:

- W.O. 2" SCT extender / adapter.
- Red dot finder.
- W.O. 2" Star Mirror Diagonals.
- W.O. 2" and 1.25" 45° Erecting prisms.
- Ultra wide angle UWAN Eyepieces, 1.25" or 2" versions.
- DCL 52, 28, 4337 series "Digital Camera adapter Lens for Digital Cameras and Digital Video".
- Digiscoping adapter: universal adapter for any type of digital camera.
- W.O. VR-1 filter improves seeing on bright objects like the Moon "Violet-Reducer".

Recommended Products

Diagonal Mirrors

2" SCT 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" SCT Dielectric Diagonal Mirror

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

1.25¨ Dielectric Diagonal

The same quality as the 2¡¨ diagonal, lower cost, perfect for our ZS66 series!
Compression ring.

2" SCT Extender Adapter

2" SCT/ ZS66 Adapter

Allows connection of 2" accessories such as photo adapters or 1.25" diagonals to ZS 66 and other 2" SCT-thread telescopes.
Completely anodized.
Anti-marring brass compression ring chromed thumbscrew.

Digital Camera adapter Lenses

DCL-4337

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 through a 2" to 1.25" adapter.

Erecting prisms

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.

R.D.F. & Bracket

Red dot finder (R.D.F.)
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!

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.

UWAN Eyepieces

1.25" Uwan Eyepieces
Ultra Wide Angle (82°)
16mm (1.25"),7mm (1.25"), 4mm (1.25") focal lengths.
7 elements in 4 groups, fully multi-coated.