FF110 APO

■ 使用说明书

警告

请勿通过太望远镜直接观测太阳，这样做可能导致瞬间失明，请购买专用太阳观测滤镜或滤膜，来获得最安全的观测指导。

www.zwoastro.cn

中文版（简体）

使用产品前请仔细阅读本使用说明书

FF110 APO 是一款口径为 110 毫米，焦距为 766 毫米，原生焦比为 F7.0 的天文望星镜，用途多样，兼顾目视观测与天文摄影。

该望远镜采用前三后一的四片式光学结构，内含一片 ED 玻璃，并支持全面福拍摄。采用自平场设计，连接相机等成像配件后，合焦部可直接拍摄（有效合焦范围自 M54-M48 拍摄接口端面算起，后端连接有效长度为42mm-73mm即可合焦）。

遮光罩采用可伸缩式设计，能进一步缩减整体长度，提升便携性。镜筒整体采用高质量CNC工艺加工，内部设有光阑，可有效抑制杂散光。

把手处预留寻星镜基座槽，调焦器两侧亦各配备一个寻星镜基座，不仅便于灵活调整寻星镜位置而无需拆卸，也方便装其他天文配件提供了更多可能。拍摄使用CNC定制手拧螺丝搭配硅胶衬垫式开口设计，无需多余工具，拆卸方便。

FF110 APO 配备 3 英寸齿轮齿条式双速调焦器，支持 1:10 的精密调焦。后端集成 360度鱼场旋转器，便于精确构图。鸠尾板为 300 毫米标准窄版规格，并设有 1/4 英寸与3/8英寸螺丝孔，可直接连接三脚架使用。

镜筒末端提供 2 英寸与 1.25 英寸接口，方便接驳各类附件。此外，FF110 APO 还标配一个镜影延长管，内含 2 英寸滤镜螺纹，后端配备 M48×0.75 与 M54×0.75 双格的镜影缓环，以满足多样化的拍摄需求。

FF110 APO规格：

有效口径： 110mm
焦距： 766mm
焦比： F7
物镜类型： 四片式全分离APO（包括一片ED玻璃）
成像圈： 44mm

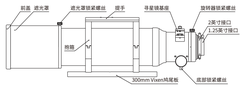
调焦筒缩进状态下后端最长连接长度：
拍摄模式：
73mm（从M48×0.75外螺纹算起）
91mm（从M54×0.75外螺纹算起）
观测模式：
132mm（从1.25英寸目镜基座算起）
142mm（从2英寸目镜基座算起）

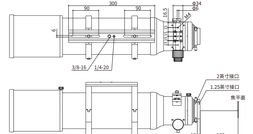
调焦筒伸出状态下后端最短连接长度：
拍摄模式：
42mm（从M48×0.75外螺纹算起）
60mm（从M54×0.75外螺纹算起）
观测模式：
101mm（从1.25英寸目镜基座算起）
111mm（从2英寸目镜基座算起）

全长：
664mm（含1.25英寸接口缩进状态） 751mm（含1.25英寸接口遮光罩伸长状态）
728mm（加拍摄接口缩进状态） 815mm（加拍摄接口遮光罩伸长状态）

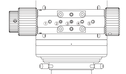
OTA重量： 5.74kg
总重（包含镜手、抱箍和鸠尾板）： 6.76kg
末端接口：（1）M78×1 - 55MM 延长环
（2）M78×1 - M54 x 0.75
（3）M54×0.75 - M54 x 0.75
（4）M54×0.75 - M48 x 0.75 (内置 M48×0.75 滤镜螺纹)

尺寸及部件分布图

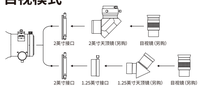




调焦器锁紧螺丝示意图

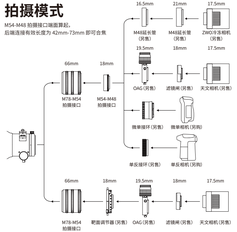


目视模式

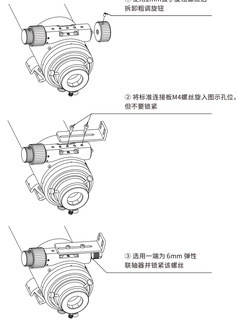


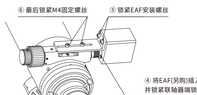
拍摄模式

M54-M48 拍摄接口端面算起，后端连接有效长度为 42mm-73mm 即可合焦

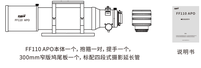


EAF 安装示意图





包装含有



官方网站
微信公众号
视频号
哔哩哔哩
小红书
抖音

FF110 APO

■ User Manual

WARNING

DO NOT LOOK AT SUN THROUGH TELESCOPE.
IT WILL CAUSE IRREVERSIBLE DAMAGE TO YOUR EYE.

www.zwoastro.com

English

Please read this user manual carefully before using the product.

The FF110 APO is an OTA with an aperture of 110mm, a focal length of 766mm, and a native focal ratio of F7.0. It is designed for both visual observation and astrophotography.

The telescope features a quadruplet optical lens design (three elements in the front and one in the rear), including one piece of ED glass, which can effectively reduce chromatic aberration, and supports 44mm full-frame imaging. With its self-flattened design, after attaching the imaging accessories, users can directly use it for shooting after the OTA is in focus. (The effective back focus is measured from the M54-M48 imaging interface flange. Focus can be achieved when the total rear connection length is between 42 mm and 73 mm).

The retractable dew shield helps reduce overall length and improves portability. The entire lens tube is manufactured using high-quality CNC machining and paint finish, and it also includes an internal baffle to effectively suppress stray light.

On the handle bar of FF110 APO, it has a finder base slot. Besides, there are two finder bases on both sides of the focuser. This allows flexible adjustment of the finder scope position without disassembly and provides additional options for attaching other astronomical accessories. The tube rings feature CNC-machined thumb screws and a clamshell-opening design, enabling tool-free installation and removal.

The FF110 APO comes with a 3-inch rack-and-pinion dual-speed focuser offering 1:10 fine adjustment, along with a built-in 360° field rotator at the rear for precise framing. It includes a 300mm standard Vixen dovetail plate with 1/4" and 3/8" screw holes for direct tripod mounting.

The rear interface of the FF110 APO includes both 2-inch and 1.25-inch adapters, enabling compatibility with a wide range of astronomical accessories.

The FF110 APO comes standard with a photographic extension tube, which includes M48*0.75 and M54*0.75 adapters. It also features a built-in 2-inch filter thread for easy attachment of filters.

FF110 APO Specifications:

Aperture size: 110mm
Focal length: 766mm
Focal ratio: F7.0
Objective lens: Quadruplet air-spaced APO (including one ED glass)
Image circle: 44mm

Maximum allowable optical path length （with the focuser fully retreated）:
Imaging Mode:
73mm (from the base of M48×0.75 male thread)
91mm (from the base of M54×0.75 male thread)
Visual Mode:
132mm (from the end of 1.25" eyepiece holder)
142mm (from the end of 2" eyepiece holder)

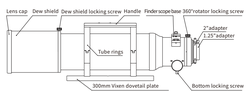
Minimum allowable optical path length （with the focuser fully extended）:
Imaging Mode:
42mm (from the base of M48×0.75 male thread)
60mm (from the base of M54×0.75 male thread)
Visual Mode:
101mm (from the end of 1.25" eyepiece holder)
111mm (from the end of 2" eyepiece holder)

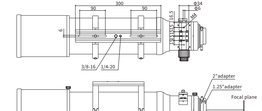
Total length:
664mm (including 1.25" adapter as dew shield contracted)
751mm (including 1.25" adapter, fully stretched)

728mm (including the photographic extension tube as dew shield contracted)
815mm (including the photographic extension tube, fully stretched)

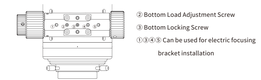
Net weight: 5.74kg
Gross weight (including tube ring&dovetail plate)：6.76kg
Rear-end thread type:
(1)M78 x 1- 55MM Extension Adapter
(2)M78 x 1 - M54 x 0.75
(3)M54 x 0.75 - M54 x 0.75
(4)M54 x 0.75 - M48 x 0.75 (with built-in M48 × 0.75 filter thread)

Product Overview and Dimensional Diagram



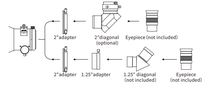


The Locking Screw Position Diagram



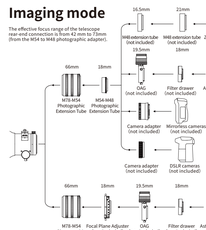
② Bottom Load Adjustment Screw
③ Bottom Locking Screw
③/④/⑤ Can be used for electric focusing bracket installation

Visual Mode

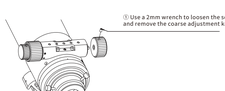


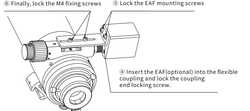
Imaging mode

The effective focus range of the telescope rear-end connection is from 42 mm to 73mm (from the M54 to M48 photographic adapter).



Steps of Installing EAF





What's in the box



FF110 APO main unit ×1
Carrying Handle ×1
300 mm Narrow Dovetail Plate ×1
Tube Rings ×1 pair
Standard Four-Section Extension Tube
User Manual



Warranty card



Inspection Certificate

Official site
Facebook
YouTube
Ins
Twitter