



FF130 APO

■ 使用说明书

■ User's Manual

警告 WARNING!!

请勿通过本望远镜直接观察太阳，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。通过寻星镜，也可以造成眼睛的严重损害。请让孩子白天远离望远镜。

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

欢迎使用ZWO FF130 APO
www.zwoastro.com

中文版

使用产品前请仔细阅读本使用说明书

FF130 APO是一款长焦比、自平场摄星镜，无需额外购买平场镜避免计算平场镜的后截距或是进行繁琐的连接以达到匹配的距离，可直接接上任意成像配件，合焦后即是最佳拍摄状态，方便快捷，让天文爱好者有更多时间投入到拍摄工作中。用FF130 APO进行目视观测也是非常理想的选择，连接天顶配合各种目镜，都能轻松合焦，甚至超高倍观测行星也不在话下。

与FF107 APO相比，FF130 APO有着更大一号的尺寸，口径上比FF107 APO大了23mm。FF130 APO采用f/7.7焦比，焦距达到了1000mm，较大于FF107 APO的f/7。四片式光学镜片组合，其中两片为ED玻璃，有着非常好的色差及其他像差控制能力。由于采用自平场设计，FF130 APO在天文拍摄中具有很强的优势。它支持中画幅60mm影像圈，点阵图细腻，周边星点变形极小，其中央RMS半径小于2微米。

FF130 APO附有伸缩遮光罩，镜筒全部采用高质量CNC加工工艺以及喷涂涂装，装饰零件醒目美观。刚性3.4英寸调焦器，附有M68/M54/M48拍摄环以及寻星镜基座。FF130 APO搭配3英寸0.7×平场减焦镜使用时，望远镜的焦比可以达到f/5.4，焦距达到700mm，有效缩短曝光时间。多功能提手附中央卡槽，可使用M6螺丝固定有M6螺孔的配件。标准Losmandy宽型鸠尾板，配合结实的双抱箍，完全满足观测和拍摄的使用需求。

规格

有效口径：130mm

焦距：1000mm

焦比：f/7.7

物镜类型：四片式全分离APO（包括两片ED玻璃）

成像圈：60mm

调焦筒缩进状态下后端最长连接长度：

1. 拍摄模式：

96mm（从M48×0.75外螺纹算起）

116mm（从M54×0.75外螺纹算起）

136mm（从M68×1外螺纹算起）

166mm（从M86×1外螺纹算起）

2. 观测模式：

148.5mm（从2英寸目镜基座算起）

全长：

842.5mm（含1.25"目视接口缩进状态）1011.5mm（含1.25"目视接口伸长状态）

889.5mm（加拍摄连接管缩进状态）1061.5mm（加拍摄连接管伸长状态）

本体重量：10.5kg

标准装重量：12.5kg

末端接口：M86×1-M68×1

M68×1-M54×0.75

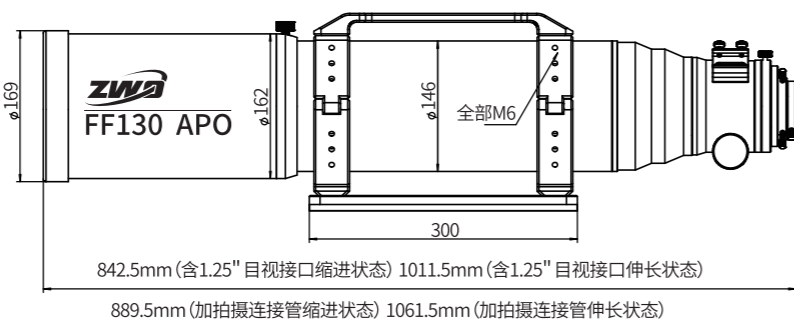
M54×0.75-M54×0.75

M54×0.75-M48×0.75（内置M48×0.75滤镜螺纹）

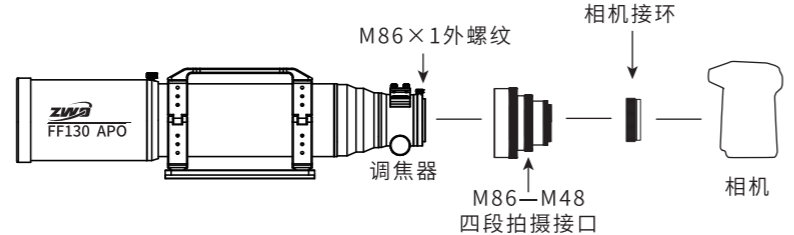
四段式拍摄连接管末端接口：M48×0.75

标配：FF130 APO本体一个，抱箍一对，提手一个，Losmandy宽型鸠尾板一个，四段式拍摄连接管一套，铝箱一个，说明书一份

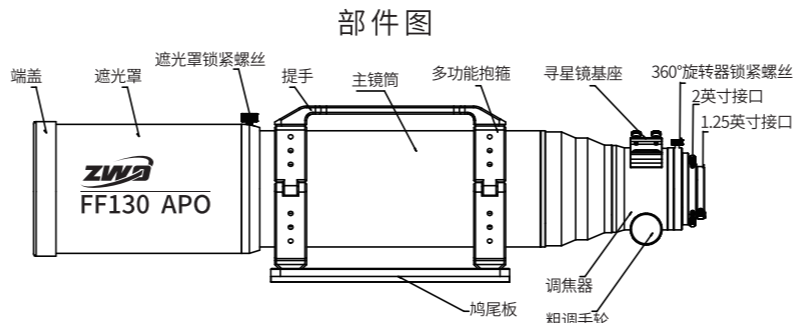
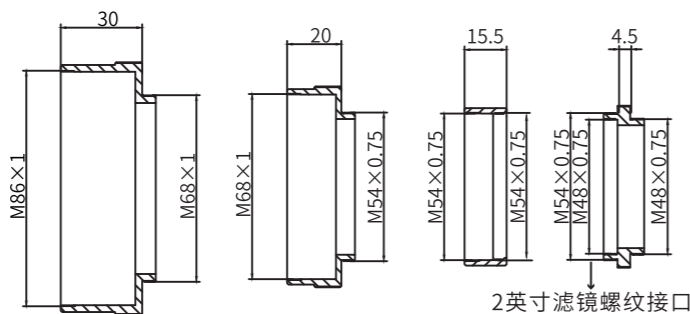
产品尺寸图



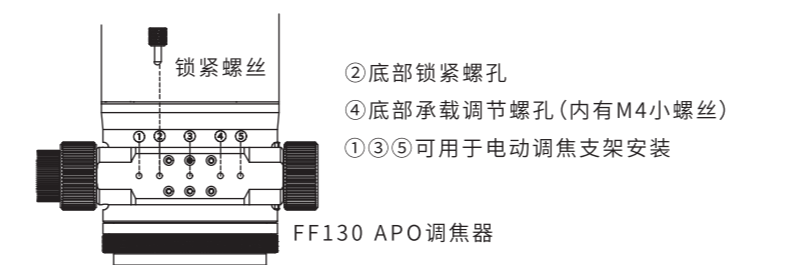
相机连接示意图



四段式拍摄连接管示意图



锁紧螺丝示意图



包装含有



FF130 APO本体、抱箍、提手、Losmandy宽型鸠尾板、四段式拍摄连接管、铝箱、说明书

English

Instructions for use

The FF130 APO is a long-focal-ratio refractive astrograph with a powerful flatfield optical design which saves you from the expensive cost of a field flattener. It eliminates the trouble of calculating the back focus distance of the flattener and connecting various accessories to achieve that distance. You can just connect any possible accessories you need as long as the target is focused. This makes the whole setting up process much more convenient, and saves your time, allowing you to pay more attention to the image shooting itself. It will also be an ideal telescope if you want to do visual astronomy. Directly connect the star diagonal to the eyepieces, you'll see focusing is such an easy thing then. Planetary observation in high magnification is also piece of cake!

FF130 APO has a larger size than FF107 APO, with an aperture 23mm larger than FF107 APO. FF130 APO has a focal ratio of f/7.7 which is bigger than FF107 APO's f/7, and a focal length of 1000mm. The quadruplet lens with two ED glasses offers excellent control of chromatic and other aberrations. With its self-flattening design, FF130 APO offers strong advantages in astronomical shooting. It supports a medium frame 60mm image circle, has a fine spot diagram with tiny distortion of the peripheral stars, and its central RMS radius is less than 2 microns.

FF130 APO comes with a telescopic lens hood, a high quality CNC machined and painted tube and attractive decorative parts. The 3.4" rigid focuser comes with M68, M54, and M48 camera adapters

and a finder base. When used with the 3" 0.7 x flat field reducer, the telescope can reach a focal ratio of f/5.4 and a focal length of 700mm, effectively reducing exposure time. The multifunctional handle comes with a central slot for attaching an M6 screw with an M6 screw hole. Standard Losmandy dovetail plate, together with sturdy double tube ring, is perfectly suited for viewing and shooting.

Specification

Aperture size:130mm

Focal length:1000mm

Focal ratio:f/7.7

Objective lens:Quadruplet air-spaced APO (including two ED glasses)

Image circle:60mm

Maximum accessory connection (with the focuser fully retracted):

1. Imaging mode:

96mm (from the base of M48×0.75 male thread)

116mm (from the base of M54×0.75 male thread)

136mm (from the base of M68×1 male thread)

166mm (from the base of M86×1 male thread)

2. Observing mode:

148.5mm (from the end of 2" eyepiece holder)

Total length:

842.5mm (with the 1.25" visual adapter fully retracted)

1011.5mm (with the 1.25" visual adapter fully stretched)

889.5mm (plus the photographic adapter fully retracted)

1061.5mm (plus the photographic adapter fully stretched)

Net weight:10.5kg

Gross weight:12.5kg

Rear-end thread type:

M86×1-M68×1

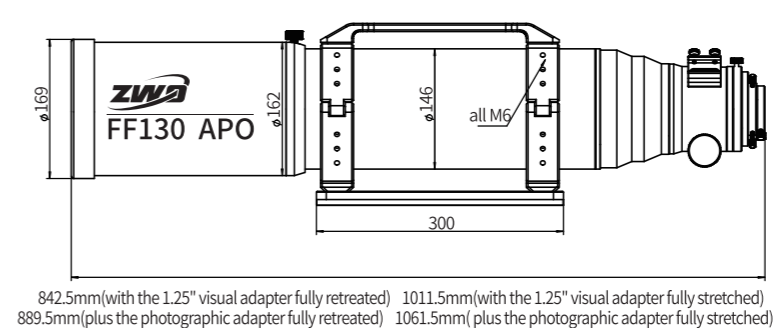
M68×1-M54×0.75

M54×0.75-M54×0.75

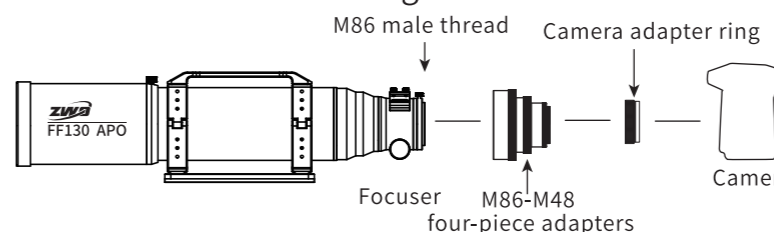
M54×0.75-M48×0.75 (M48×0.75 filter thread inside)

Standard package items:an FF130 APO OTA, a pair of tube rings, a handle, a losmandy dovetail plate, a set of 4-piece photographic adapters, an aluminum box, a manual

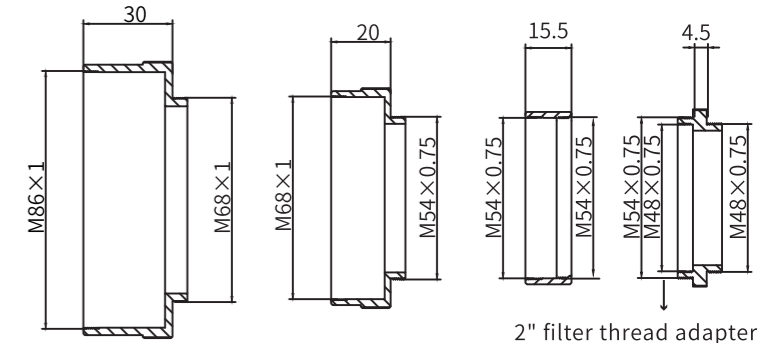
Product Size Diagram



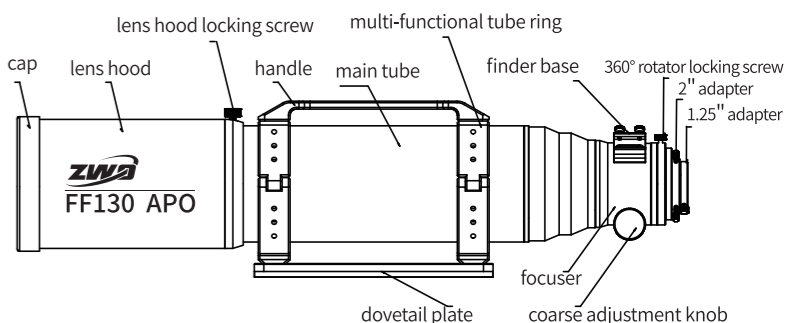
Connection Diagram of Camera



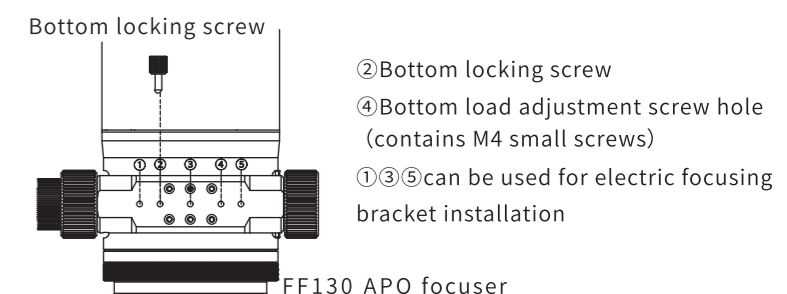
4-piece Photographic Adapter Diagram



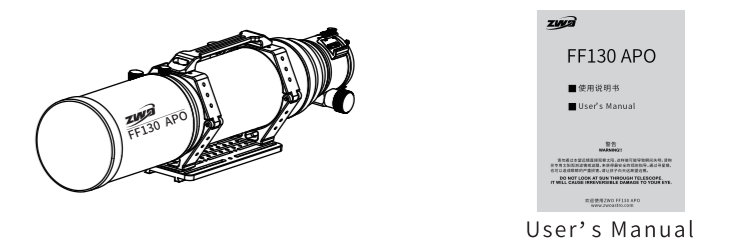
Product Parts Diagram



The Locking Screw Position Diagram



Items in FF130 APO Packaging



an FF130 APO OTA, a pair of tube rings, a handle, a losmandy dovetail plate, a set of 4-piece photographic adapters, an aluminum box, a manual