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Optical tube Messier AR-102 is a high-quality achromat refractor dedicated to visual observations and astrophotography. It is equipped with a bright, brightly corrected achromatic lens with a diameter of 102 and a focal length of 600 mm. In the visual observations of planets and the Moon, it works very well, showing many details of the surface of the Solar System objects. Among the objects of the Deep Universe, under dark sky, it allows to see hundreds of nebulae from the Messier and NGC catalog. The optics are fully covered with anti-reflective layers (MC). The telescope is equipped with a new 2.5 "Hexfoc spectacle extractor. The geometrical structure of the extractor is based on a hexagonal profile corresponding to a diameter of 2.5 inches. As a result, a high degree of stiffness was not found in the lifts from this price range. The extractor can be extended with a 10: 1 precision focusing module. As a result, even relatively heavy apparatus and accessories can be operated without deflections and loss of axiality. In addition, the significant diameter allows organically vignetting. The optical tube was mounted on AZ-5 rigid azimuth assembly. Characteristics of the optical tube

- Optical system
- high efficiency of the system and durability of the optics
- durability and timeless appearance of the tube
- Fixing the optical system
- metal fixing rings of the tube
- dovetail equipped with a stainless steel rail to ensure secure mounting of the tube in the assembly head and increase the durability of dovetail
- handles for easy carrying of the tube
- Piggyback photo adapter for attaching the camera
- Eyeglass extractor
- 2.5 " 2" pull out equipped with a clamping ring with a hexagonal sleeve
- reduction of 2 "to 1.25" equipped with clamping ring and M42x0.75 (T2) thread
- millimeter scale for easier focusing of images
- high precision of the focus knob
- Tube equipment
- SPL 26 mm / 1.25 "eyepiece
- 6x30 mm finder with a cross
- connector / angled mirror 90 ° 1,25 "
- extensions to the extractor, 38 mm and 25 mm

Technical parameters of the tube

- Optical system: 2-element achromat refractor
- Lens diameter: 102 mm
- Focal length of the lens: 600 mm
- Lighted: 1 / 5.9
- Switching capacity: 1.16 "
- Theoretical range: 12,0mag
- Maximum useful magnification: 200x
- Weight: 5 kg

Usage Moon the planet star clusters nebulae scenery

Equipment The set includes the following elements:

- Optical tube with clamps and dovetail rail
- 2 "spectacle lift with a reduction of 1.25", with a millimeter scale and a T2 photographic thread
- Okular SPL 26 mm / 1.25 "
- Spotting scope 8x50 with cross
- Angle plug 90 ° 1,25 "
- Universal mounting ALT-AZ (AZ5) with micromovers and steel field rack
- Universal assembly with azimuthal head with a powerful lifting capacity of 12 kg, typical for EQ5 class assemblies. The ALT-AZ type head with micromodes in two axes is equipped with a dovetail in the Vixen standard. Adjustable steel field tripod with accessories stand. The assembly allows for mounting SCT and Maksutov telescopes up to  $\varnothing = 180$  mm - 200 mm, refractors up to 152 mm, as well as spotting scopes and large binoculars of 25x100 or 28x110 type, typically mounted on photographic tripods (we recommend L-type rails with thread 1 for their assembly) / 4 inch), while ensuring low vibration, good rigidity, smooth adjustment of the tube position and equipment safety. Azimuthal assemblies make it easier and faster to position the telescope on an object of interest in the sky than the parallormal assembly. The assembly of ALT-AZ is recommended for visual observations of the sky, especially refractors (ideal for APO), Maki and SCT. The assembly is relatively light and easy to transport, so it can be part of the travel set. Regarding the mounting of Newton's telescopes, tests were carried out (information below) with a tube 8 "f / 5 (Messier NT 203/1000) and the assembly deals with such a tube, however, due to the specificity of Newtonian tubes, we suggest using a tube assembly Newton 130 - 150 mm. The montage is perfect for landscape observations (distant observations, natural observations) as well as for observation and photographing of aircraft at cruising altitudes. The head arm can be placed at different angles to the horizontal - the highest stiffness and lifting capacity is of course in the vertical position of the arm, however, this feature allows optimal mounting of the observer and observation even close to the zenith with many optical tubes. The arm can be moved from the vertical by 60 ° or 120 ° (the fixing holes are spaced at 60 degrees). Technical parameters of ALT-AZ assembly
- lifting capacity : 12 kg ( see: below)
- height of tripod spaced (min): 74 cm
- height of tripod (max): 125 cm
- distance between the ends of the legs of the fully unfolded tripod: 123 cm
- Steel legs diameter (thicker / thinner): 1.5 " / 1" (37.7 mm / 25 mm)
- total height of the head: 32.5 cm
- total height (tripod + head vertically, min) : 96 cm
- total height (tripod + head, max) : 140 cm
- total height (tripod + head inclined 60 ° from vertical, min) : 85 cm
- total height (tripod + head inclined by 60 ° from the vertical, max) : 127 cm
- head weight: 2225 g
- weight of the field tripod: 3825 g
- total weight : 6050 g

Warranty 2 years

ADDITIONAL MATERIALS

READ : A SHORT OPTICAL CLEANER GUIDE <img src="https://teleskopy.pl/pdf/tis/icon\_download.gif" [PDF] READ TO: HOW TO CONNECT COMPACT WITH TELESCOPIC <img src="https://teleskopy.pl/pdf/tis/icon\_download.gif" [PDF] READ TO: HOW TO JOIN THE DIGITAL MALE WITH A TELESCOPIC <img src="https://teleskopy.pl/pdf/tis/icon\_download.gif" [PDF]