

Questar 7" Titanium Light Weight Classic Telescope

(#20102)

Specification Sheet

Questar's commitment to quality, on which it has built its worldwide reputation, is immediately apparent in the superb resolution and mechanical precision of the Questar Titanium Light Weight Classic Seven. Those who want more aperture than the Questar 3.5 provides will marvel at the lighter packaging, increased power and quadrupled light grasp available with its larger offspring. The Light Weight Titanium Classic 7" is an astronomical telescope that is completely portable. You can use it on a tripod, table with its optional equatorial mount and legs, or with Questar's Large Astro Pier.



Our Classic 7" has been redesigned with changes to all internals to incorporate many new technologies that we've borrowed from our exiting aerospace and surveillance satellite experience. All of our internal stainless components are now titanium. To refine internal components to rapidly chill our optics and dissipate heat, we have done extensive heat transfer analysis. (Fourier analysis for isotropic material analyzing conduction, convection and radiation heat transfer, optimizing Emissivity, Prandtl number and Nusselt number)

The Questar Light Weight Classic Seven Barrel includes Blue and Black anodized precision machined lightened Aluminum and Titanium components 2540mm EFL f/14 tube assembly and tripod mount, Star Chart barrel skin, lens cap, 16mm (159-318x) and 24mm (106-212x) eyepieces, New Control box multi port selector, with built-in internal 2x barlow lens for eyepiece port, star-diagonal mirror, built-in finder, axial photographic port and eyepiece port allowing 2" type eyepieces. Basic camera coupling set, thread on dewcap with Moon Map and ABS sealed carrying case with wheels and handle. Weight of barrel assembly 19 lbs., in ABS sealed carrying case 35 lbs. Shipping weight 65 lbs

TYPE:	Maksutov Cassegrain Catadioptric
CLEAR APERTURE:	7 inches, 178mm
FOCAL LENGTH:	Basic visual, 100 inches, 2540mm, Camera close, 112 inches, 2800mm
PHOTOGRAPHIC	
FIELD OF VIEW:	1°15'
FINDER LENS:	23mm Ø, 184mm FL, 7x and 14x with 24mm and 16 mm eyepiece
ERECTING SYSTEM:	BK-7 AlSiO coated Mirror Diagonal internally mounted in control box
EYEPIECES:	Will support both 1-1/4 and 2" type. Unit ships with 1-1/4 24mm Brandon, 50° Ap Field, 16mm 4 lens Brandon, 50° Ap Field
AMPLIFYING OR	
BARLOW LENS:	- 66.06mm FL. (2X) internally mounted in control box
CORRECTOR LENS:	Bk-7 MgF2 AR coated both sides, passes UV to 3300A°, IR to 1.5 microns
MIRROR:	F2, Pyrex®, Quartz or low expansion Zerodur® (for greatest thermal stability) AlSiO coated, 7.600" dia.
SPECIAL COATINGS:	On special order, broad-band dielectric coating applied to the mirror, which increases its reflectivity. To both sides of front lens, a very low reflection coating is then applied which reduces the light loss at each surface to less than 1/10 of 1%. It transmits all frequencies of the visible spectrum and improves total light grasp by approximately 22%
BARREL:	Special extruded and stress-relieved 2024-T4 aluminum, machined full length O.D. and I.D. and anti reflective painted on I.D.
LENS CELL:	Precision machined and matched to barrel, Aluminum 2024-T4, blue anodized
REAR CLOSURE PLATE:	Precision machined and matched to barrel with special CNC milled internal surfaces to increase heat transfer and lighten weight, Aluminum 2024-T4, Blue anodized
MAIN TUBE MOUNTING	
PLATE:	Precision machined Titanium

FOCUSING MECHANISM: Mirror Thimble, precision machined Titanium, rides on bearing, linear ball type, over a fixed, hardened and ground Titanium light baffle tube. Conical stainless steel spring-loaded. Focus rod stainless steel ground shaft with precision ground 1/4-32 threads.

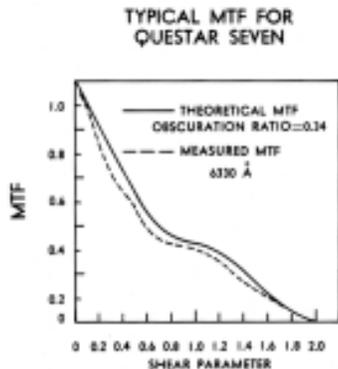
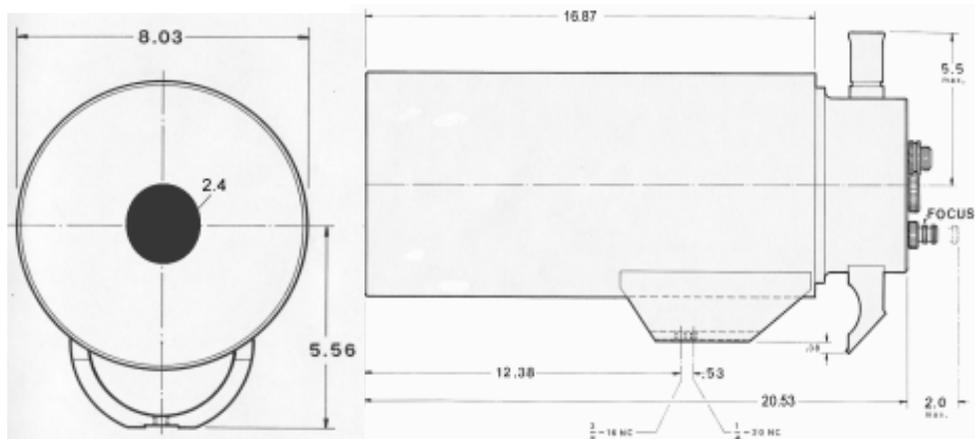
TRIPOD MOUNT Precision machined, matched and fixed mounted to barrel, with special CNC milled internal surfaces to lighten weight. Aluminum 6064 and Anodized. Has 1/4-20 and 3/8-16 threaded hole for mounting to tripods.

CONTROL BOX: Precision machined and matched to barrel with special CNC milled internal surfaces increase heat transfer and lighten weight, Cast Aluminum 505, special aluminum paint and clear over coated with internal anti reflective black paint.

KNOBS: Aluminum 2024-T4, turned on turret lathe. Stainless steel shafts and levers.

DIMENSIONS:

Maximum length with control box	22.6"
Optical Center Line	5.6"
Maximum diameter	8.03"
Barrel Assembly weight	19 lbs.
Case Weight	32 lbs.



Typical Questar Seven Modulation Transfer Function (MTF) as obtained with a shearing interferometer and expressed as a function of the shear parameter, S. To express the MTF as a function of the spatial frequency, R, in lines per millimeter, the following relationship can be used:

$$R = \frac{SD}{2\lambda f}$$

where S = shear parameter, λ wavelength, f = focal length, and D = clear aperture.

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