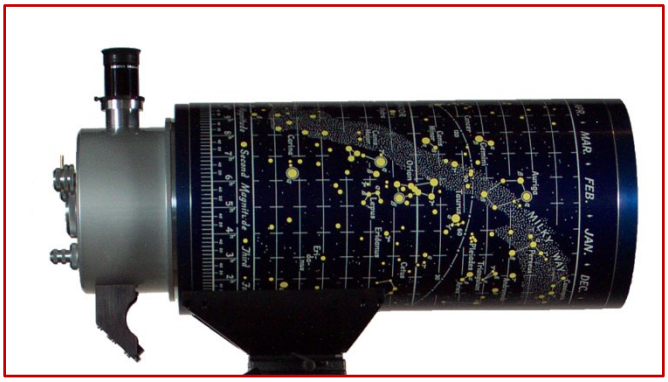
Questar 7”Titanium Lightweight Classic Telescope

(#20102) Specification Sheet



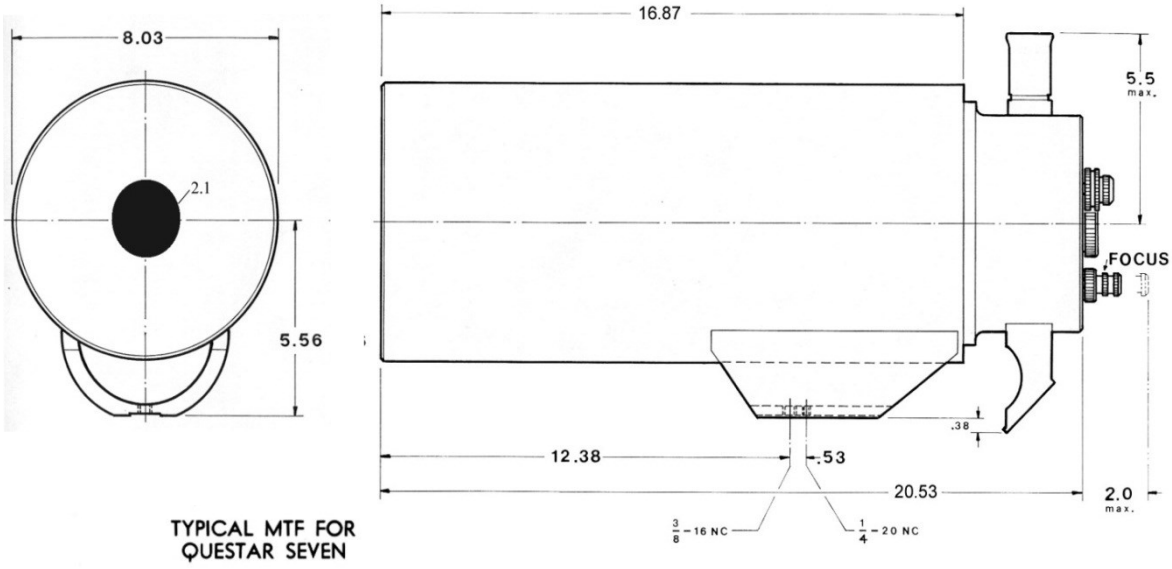
Questar's commitment to quality, on which it has built its worldwide reputation, is immediately apparent in the superb resolution and mechanical precision of the Questar Titanium Light Weight Classic Seven OTA. Those who want more aperture than the Questar 3.5 provides will marvel at the lighter packaging, 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)

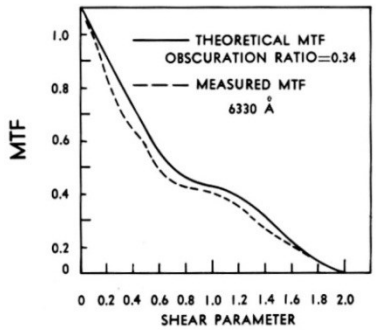
The Questar Light Weight Classic Seven Barrel includes Blue and Black anodized precision machined lightened Aluminum and Titanium components 2540mm EFL f/14 tube assembly and tripod mount, Star Chart barrel skin, lens cap, 16mm (159-318x) and 24mm (106-212x) eyepieces, New Control box multi port selector, 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

DESIGN TYPE	Maksutov Cassegrain Catadioptric
WORKING RANGE	18m (60ft.) to infinity
OPTICAL RESOLUTION	.6 arc second
CLEAR APERTURE	178mm (7 inches)
EFFECTIVE FOCAL LENGTH	2540mm basic visual, 2800mm camera close coupled
F-NUMBER	f/14.2 @ 2540mm EFL, f/15.7@2800mm EFL, Photographic FOV 1-1/4°
SPECTRAL RESPONSE	0.35 – 2.1 micron
FINDER LENS:	23mm Ø AR coated, 184mm FL, 7x (24mm) and 14x (16mm) eyepiece
ERECTING SYSTEM:	BK-7 AlSiO coated Mirror Diagonal internally mounted in control box
EYEPIECES:	Will support Questar Brandon, 1-1/4 and 2” type. Unit ships with 24mm Brandon, 50° Ap Field, 16mm Brandon, 50° Ap Field
AMPLIFYING OR BARLOW LENS:	- 66.06mm FL AR coated. (2X) internally mounted in control box
CORRECTOR	BK7, MgF2 AR Coated, 178mm (7 inches) diameter
PRIMARY MIRROR	Pyrex substrate, aluminum coated, SiO overcoat, 193mm (7.6 inches)
SECONDARY MIRROR	Aluminum coating on corrector, SiO overcoat, 47mm (1.87 inches) diameter. Mask spot 53.4mm (2.1 inches)
BAFFLING	Wire helix in central tube
BARREL	Aluminum 2024-T4 heat-treated and stress relived tube, precision machined OD, ID with matched blue anodized corrector cell, Anti-reflective ID painted. Rolled and bonded Star Chart aluminum sheet on OD.
REAR CLOSURE PLATE	Precision machined and matched to barrel with special CNC milled internal surfaces to increase heat transfer and reduce weight, 2024-T4 Aluminum, Blue anodized
DEWCAP	Internally black-flocked Synthane seamless tube 1/32 thick with bonded rolled aluminum moon map cover, dual threaded mount for attaching to OTA in stored position or as a dew cap.
CENTRAL TUBE & MOUNT	Machined, heat treated ,Centerless ground Titanium maintube and 6" Ø Titanium mounting and adjustment plate.

FOCUSING TUBE	Mirror Thimble, precision machined Titanium, Precision linear roller bearings matched to hardened Titanium central tube and baffle system, integrated Primary mirror mounting and tension system.
FOCUS MECHANISM	¼-32-pitch stainless steel precision ground focus rod; direct acting on mirror thimble, stainless central conical spring.
TRIPOD MOUNT	Precision machined, matched and fixed mounted to barrel, with special CNC milled internal surfaces to lighten weight. Aluminum 6064 and blue anodized. Has ¼-20 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	
Length with Control Box	**57.4cm (22.6 inches)**
Optical Center line	**14.2cm (5.6 inches)**
Maximum Diameter	**20.4cm (8.03 inches)**
Case (outside)	**Length ……71cm (28 inches)**
	Depth ……..45cm (18 inches)
	Height ……30cm (12 inches)
Weight	**Bare Lens with eyepiece …….. 19lbs (8.6kg)**
	Lens with eyepiece, & dew cap ……21lbs (9.5kg)
	Standard package complete in case ……35lbs (16.3kg)



TYPICAL MTF FOR QUESTAR SEVEN



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.

Questar Corporation
6204 Ingham Road
New Hope, PA 18938
USA

Telephone: 215-862-5277 or 800-247-9607
Fax: 215-862-0512
Email: questar@QuestarCorporation.com
Web: www.QuestarCorporation.com