

Optical System

Optical Design	Corrected Dall-Kirkham (CDK)
Aperture	700mm (27.56")
Focal Length	4638mm
Focal Ratio	f/6.6
Central Obstruction	42%
Back Focus	305mm (12") from mtg surface
Focus Position	Nasmyth Focus
Image Circle	70mm usable field (0.86 deg)
Image Scale	22 microns per arcsecond
Spot Size, 25mm off-axis	4.3 micron rms spot
Spot Size, 35mm off-axis	7.5 micron rms spot

Mechanical Structure

Fork Assembly	Single piece U shaped fork arm assembly for maximum stiffness
Azimuth Bearing	20" diameter trust bearing
Altitude Bearing	2 x 8.5" O.D. ball bearings
Optical Tube	Dual Truss structure with Nasmyth focus

Telescope Motion Control

SiTech EXE Control Software with Integrated PointXP Modeling	Telescope mount modeling included for optimal pointing and tracking accuracy
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Sidereal Technology Brushless Motor Control	Controls the altitude and azimuth motors, the focuser and the field de-rotator
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Focuser/Rotator	Large aperture, heavy-duty focuser can handle large payloads and will not add vignetting
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System Performance

Pointing Accuracy with PointXP Model	< 10 arcsecond rms
Pointing Precision	< 1 arcsecond
Tracking Accuracy	1 arcsecond over 5 minutes
System Natural Frequency	10 Hz or greater
Field De-Rotator Tracking Accuracy	3 microns of peak to peak error 35mm off-axis over one hour of tracking (18 arcsec)
Field De-Rotator Framing Accuracy	3 microns of error, 35mm off-axis (18 arcsec)

