

T165 Telescope

Optical system	Ritchey Chretien
Focal ratio	F/12
Mirror diameter	1.65m
Focal length	19.68m
Image scale	10.48 arcsec/mm

+Focal reducer

Focal ratio	F/3.14
Focal length	5.162m
Image scale	39.06 arcsec/mm

+CCD

Alta Apogee U47	
Array Size (pixels)	1024 x 1024
Pixel Size:	13 x 13 microns (0.51" x 0.51")
Field of View:	8.7' x 8.7'

CCD Specifications

CCD

 [CCD47-10](#)

Array Size (pixels)	1024 x 1024
Pixel size	13 x 13 microns
Imaging area	13.3 x 13.3 mm (177.2 mm ²)
Imaging diagonal	18.83 mm
Linear Full Well (typ.)	100,000 e-
Dynamic Range	>83 dB

Camera System Performance

PC Interface	USB 2.0
Max. Cable length	5 meters between hubs; 5 hubs maximum (max. total of 30m)
Digital resolution	12 bits at 2 MHz and 16 bits at 700 kHz
System Noise (typ.)	2 counts at 2 MHz; 10 e- RMS at 700 kHz
Pixel Binning	1x1 to 10x1024 on-chip
Exposure Time	20 milliseconds to 183 minutes (2.56 microsecond increments)
Image Sequencing	1-65535 image sequences under software control
Frame Sizes	Full frame, subframe, focus mode
Cooling	Thermoelectric cooler with forced air. Maximum cooling 50-55° C below ambient temperature (D02 housing); 70-75C below ambient (D09 housing)
Temperature Stability	±0.1° C
Dark Current (typical)	0.1 e-/pixel/sec (-30° C; D02 housing); 0.01 eps for High Cooling D09 housing.
Camera Head	Standard: D02. Low profile: D06. Wide angle: D13. Aluminum, hard blue and black anodized. 6" x 6" x 2.1" (15 x 15 x 6.25 cm). Weight: 3.1 lb. (1.4 kg). Optional High Cooling housing: D09. 7" x 7" x 4.38" (17.8 x 17.8 x 11.1 cm). Weight: 7.2 lb. (3.3 kg)
Mounting	2" 24 tpi; 3.5" bolt circle. D06: 1.77" thru; 3.5" B.C. D09: 2.5" 20 tpi; 5.125" B.C. D13: 3" 20 tpi; 5.125" B.C. Optional Nikon or Canon lens mount.
Back focal distance	Standard: 1.025" (2.60 cm). Low profile: 0.55" (1.40 cm). High Cooling: 1.36" (3.45 cm). Wide angle: 1.02" (2.59 cm). [optical]
Operating Environment	Temperature: -22° to 27°C. Relative humidity: 10 to 90% noncondensing
Cable length	Standard: 15 ft. (4.5m)
Power	40W maximum power with shutter open and cooling maximum. Power supplied by AC/DC "brick" supply with international AC input plug. Alternate 12V input for user's source.
Shutter	Standard: Melles Griot 43mm. Low profile: no internal shutter. High cooling & Wide Angle: Melles Griot 63mm.
Remote Triggering	LVTTL input to camera allows exposure start within 25 microseconds of rising edge of trigger.

CCD Sensitivity

