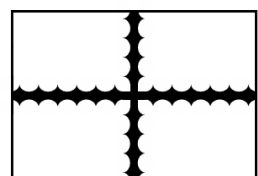


Second Generation Star Tracker (ST-16RT2)

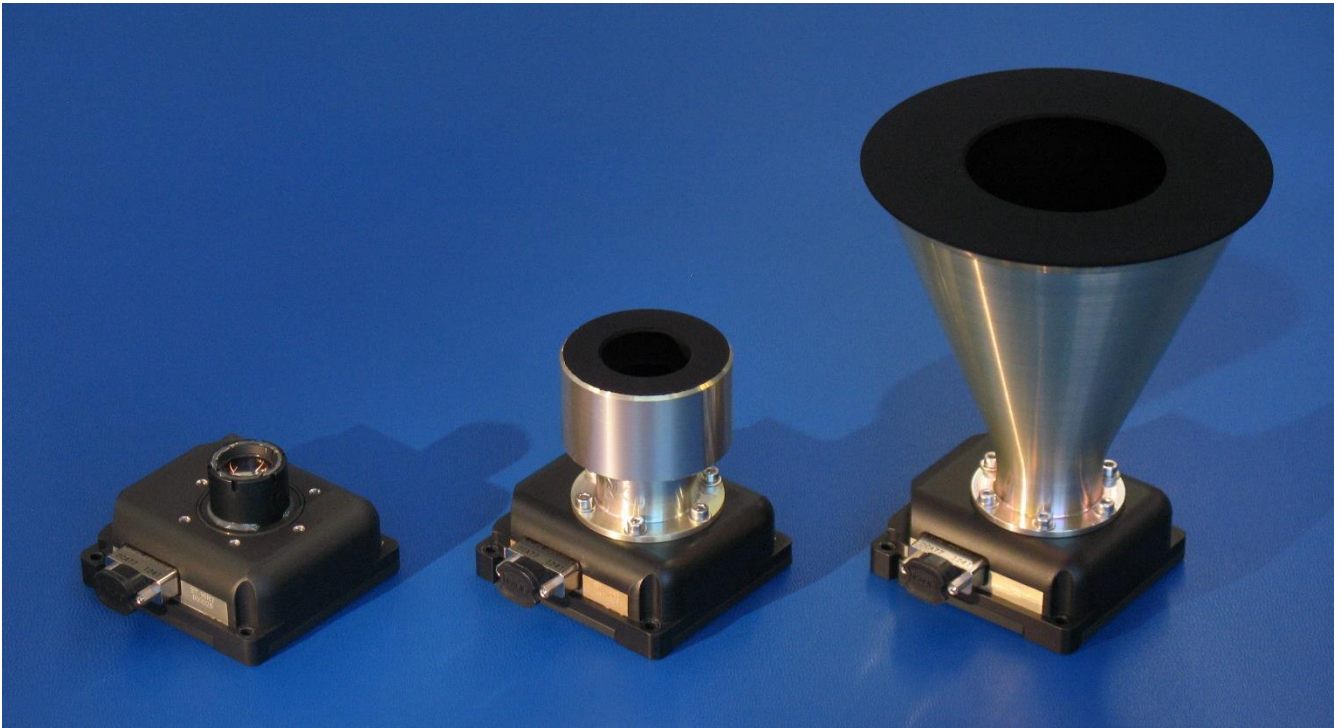


Absolute Accuracy	5 arcsecond cross-boresight (RMS) 55 arcsecond around boresight (RMS)	[Demonstrated on-orbit, including thermal effects]
Maximum slew rate	3°/second	
Lens	Full-custom 16 mm f/1.6 4-element glass Designed by Sinclair Interplanetary for shock and vacuum	
Detector	2592 x 1944 CMOS active-pixel sensor, ~3 e ⁻ system noise	
Output Solution	Provides attitude quaternion and angular rates at 2 Hz Zero initial acquisition time	
Processing	Full lost-in-space solution each frame Processor and star catalog built into unit Internal corrections for proper motion and stellar aberration	
Command / Telemetry	Two half-duplex RS-485, ±70 V fault tolerant Can share data link with Sinclair Interplanetary reaction wheels	
Supply Voltage	9 V to 34 V, redundant pins, reverse polarity protected	
Power Consumption	Average: < 0.5 W Peak: 1.0 W	
Environment	Thermal: -40°C to +50°C (operating), -40°C to +95°C (survival), Vibration: > 29.6 g _{RMS} vibration Shock: 2000 G Lifetime: 13 years LEO (800 km) or 9 years GEO	
Heritage	11 first generation units on-orbit, first launch November 2013 10 second generation units on-orbit, first launch June 2016	

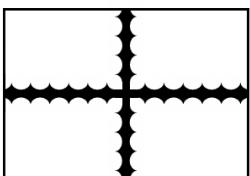


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Baffle Options	No Baffle	Short Baffle	Large Baffle
Field of View	7.5° x 10° half-angle	8° half-angle	7.5° x 10° half-angle
Sun-Avoidance	N/A	34° sun-to-boresight [demonstrated on-orbit]	22° sun-to-boresight [predicted]
Moon-Avoidance	Demonstrated orbital operation with full moon in FOV		
Dimensions	62 x 56 x 38 mm	62 x 56 x 68 mm	99 Ø x 120 mm
Total Mass	158 g	185 g	235 g
Heritage	14 units on-orbit with customer- designed baffles	7 units on-orbit	First flight deliveries August 2016
Price (ST + Baffle)	US\$120,000 each	US\$140,000 each	US\$140,000 each



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