

STAR TRACKER

ST-16RT2 Data Sheet

Version 1, 14 July 2021



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 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 by Rocket Lab reaction wheels
SUPPLY VOLTAGE	9V to 34V, 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 gRMS vibration Shock: 2000G Lifetime: 13 years LEO (800 km) or 9 years GEO
HERITAGE	3 first generation units on-orbit, first launch November 2013 40 second generation units on-orbit, first launch June 2016

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	22° sun-to-boresight
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	30 units on-orbit	13 units on-orbit	10 units on-orbit
Price	US\$120,000 each	US\$140,000 each	US\$140,000 each

Integration and Test Support. Third-party optical stimulators available for realtime hardware-in-the-loop testing. Ask for pricing.