

NANO STAR TRACKERS



PRODUCT DESCRIPTION

The Blue Canyon Technologies (BCT) Nano Star Tracker (NST) is a reliable, high-performance product for a variety of CubeSat and microsat configurations. Extensive flight heritage and proven best-in-class performance make our star tracker the ideal fit for standalone missions or constellations.

US made and applicable for DOD applications.

HERITAGE

There are currently over 150 star trackers on-orbit with more than 250 years of cumulative flight time. The longest mission to-date for our NST was launched in 2016 with the Cygnus satellite for hurricane forecasting.

DESIGN

Our NST is designed with technical capabilities and radiation tolerance suited to missions in both LEO and GEO.

BCT Star Trackers include internal baffle and electronics. Additional baffling is also available if mission specifications require reduction in stray light.

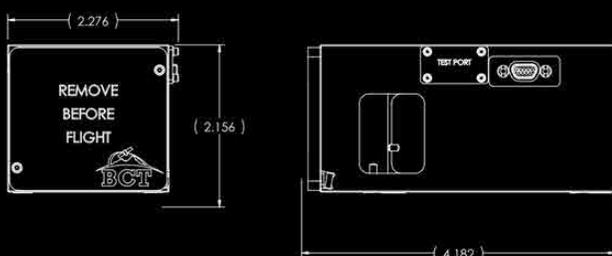
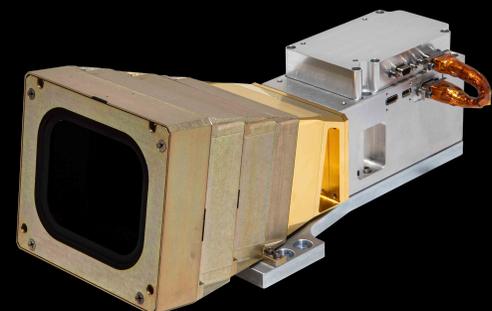
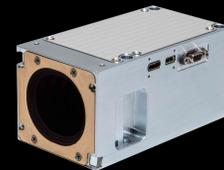
Our NST detector format is 1024x1280 pixels. External alignment fiducials available as an option.

FEATURES INCLUDE

- Flight tested heritage
- Low SWaP-C
- Tracks stars down to 7.5 magnitude
- On-board star catalog (>20,000 stars)
- Effectivity with a minimum of 6 stars visible
- Shock test qualified
- EMI/EMC tested to MIL-STD-461
- User friendly RS-422 or RS-485 interface

BASELINE DELIVERABLES

- User Manual
- Interface Control Documentation
- Command & Telemetry Handbook
- Functional and Performance Test Results
- Certificate of Conformance (Flight Units Only)
- Environmental Test Results (Flight Units Only)



**STANDARD NST****MID EXTENSION****FULL EXTENSION****PERFORMANCE**

FIELD OF VIEW	10 x 12 deg		
CROSS-BORESIGHT ACCURACY (1-sigma)	Gen 2: 6 arcsec Gen 3: 1 arcsec		
ABOUT-BORESIGHT ACCURACY (1-sigma)	Gen 2: 40 arcsec Gen 3: 10 arcsec		
SLEWING CROSS-BORESIGHT ACCURACY (@ 1 deg/sec) (1-sigma)	Gen 2: 15 arcsec Gen 3: 8 arcsec		
SLEWING ABOUT-BORESIGHT ACCURACY (@ 1 deg/sec) (1-sigma)	Gen 2: 200 arcsec Gen 3: 50 arcsec		
SOLUTION RATE	5 Hz		
MAX SLEW RATE	> 2 deg/sec		
LOST-IN-SPACE STAR IDENTIFICATION	< 4 sec (up to 1.5 deg/sec)		
SKY COVERAGE	> 99%		
BAFFLE SUN EXCLUSION ANGLE	45 deg	22 deg	17.5 deg
BAFFLE EARTH EXCLUSION ANGLE	25 deg	15 deg	12 deg

MECHANICAL INTERFACE

DIMENSIONS	10 x 5.5 x 5 cm	17 x 8.5 x 7 cm	25 x 10 x 10 cm
MASS	0.35 kg	0.45 kg	0.85 kg

ELECTRICAL INTERFACE

SUPPLY VOLTAGE	5V or 28V +/- 6V		
PEAK POWER CONSUMPTION	<1.5W (5V) or <3.5W (28V)		
SIGNAL INTERFACE	RS-485 or RS-422		

ENVIRONMENTAL CONDITIONS

OPERATING TEMPERATURE	-20°C to +50°C		
SURVIVAL TEMPERATURE	-30°C to +70°C		
VIBRATION QUALIFICATION	GEVS Qualification Profile		
DESIGN LIFE	>10 years (LEO) >3 years (GEO)		



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