NANO STAR TRACKERS

BLUE CANYON TECHNOLOGIES

PRODUCT DESCRIPTION

Our flight-proven, high-performing and reliable star trackers are compatible across spacecraft platforms and suited even for the most challenging and sensitive missions.

The industry-trusted Blue Canyon Technologies Nano Star Tracker (NST) is qualified beyond GEVS level environments, giving our customers a low SWaP-C solution with sunning capabilities. The turnkey starlight-in, quaternion-out system integrates easily and tracks down to 7.5 magnitude.

With an on-board star catalog of more than 20,000 stars, our tracker is the ideal fit for standalone missions or constellations.

Made in the U.S. and applicable for DOD applications.

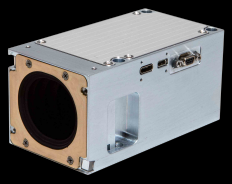
HERITAGE

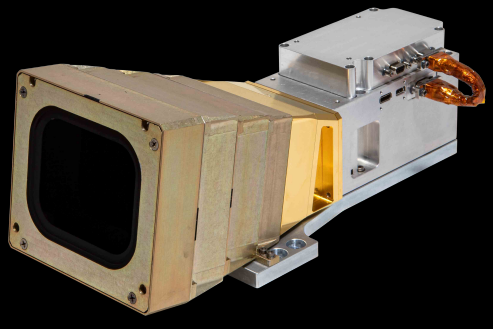
There are currently more than 150 star trackers on-orbit with more than 250 years of cumulative flight time. The longest mission to date for our NST was launched in 2016 with the Cygnss satellite for hurricane forecasting.

DESIGN

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

Blue Canyon Technologies Star Trackers include internal control electronics baffles. External baffles on the mid-extension and full-extension units narrow sun and earth exclusion angles.



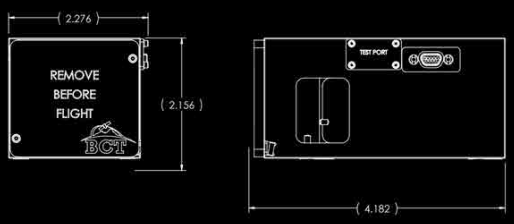


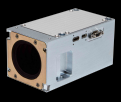
FEATURES INCLUDE

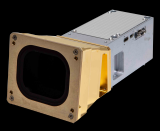
- Nearly 500 star trackers manufactured with more than 150 on-orbit
- Low SWaP-C
- Tracks stars down to 7.5 magnitude
- On-board star catalog features more than 20,000 stars
- Lost-in-space star idenification
- Shock test qualified
- EMI / EMC tested to MIL-STD-461
- User friendly RS-422 or RS-485 interface

BASELINE DELIVERABLES

- User Manual
- Interface Control documentation
- Command and Telemetry Handbook
- Functional and performance test results
- Certificate of Conformance (flight units only)
- Environmental test results (flight units only)







PERFORMANCE	STANDARD NST	MID EXTENSION	FULL EXTENSION
FIELD OF VIEW	10 x 12 deg		10 x 12 deg
CROSS-BORESIGHT ACCURACY (1-sigma)	Gen 2: 6 arcsec		Gen 3: 1 arcsec Gen 2: 6 arcsec
ABOUT-BORESIGHT ACCURACY (1-sigma)	Gen 2: 40 arcsec		Gen 3: 10 arcsec Gen 2: 40 arcsec
SLEWING CROSS-BORESIGHT ACCURACY (@ 1 deg/sec) (1-sigma)	Gen 2: 15 arcsec		Gen 3: 8 arcsec Gen 2: 15 arcsec
SLEWING ABOUT-BORESIGHT ACCURACY (@ 1 deg/sec) (1-sigma)	Gen 2: 200 arcsec		Gen 3: 50 arcsec Gen 2: 200 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		5 V or 28 V	
PEAK POWER CONSUMPTION		< 1.5 W (5 V) or < 3.5 W (28 V)	
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) > 5 years (GEO)	

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Scan to learn more

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