

NANO STAR TRACKERS



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 line of Blue Canyon Technologies nano star tracker are qualified beyond GEVS level environments, giving our customers a low SWaP-C solution with stunning capabilities. The turnkey starlight-in, quaternion-out system integrates easily and is an ideal fit for standalone missions or constellations.

HERITAGE

Blue Canyon has manufactured nearly 650 flight star trackers and launched more than 350. The longest mission to date for our star trackers was launched in 2016 with the Cygnss satellite for hurricane forecasting.

DESIGN

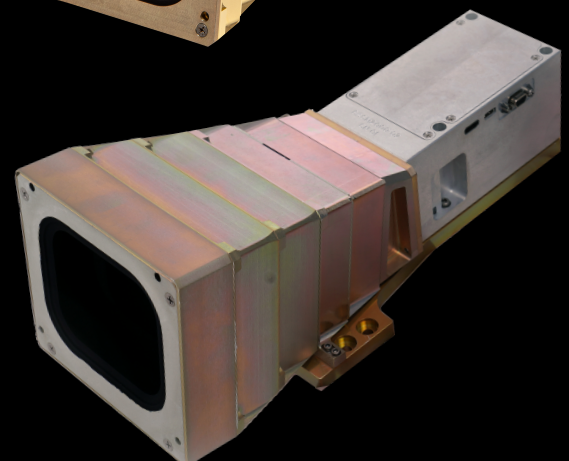
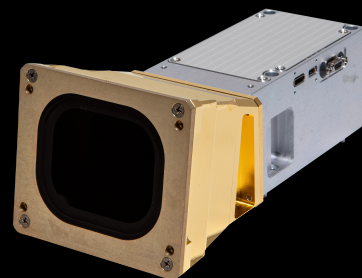
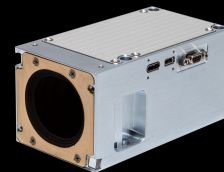
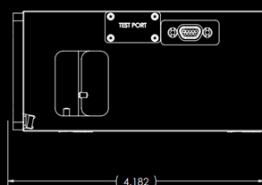
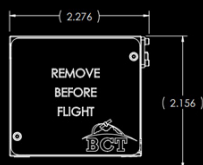
Blue Canyon star trackers are designed with technical capabilities and radiation tolerance suited to missions in both LEO and GEO and include internal control electronics baffles. External baffles on the mid-extension and full-extension units narrow sun and earth exclusion angles.

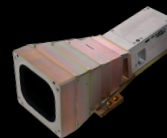
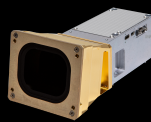
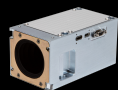
FEATURES INCLUDE

- Low SWaP-C
- Tracks stars down to 7.5 magnitude
- On-board star catalog features more than 20,000 stars
- Lost-in-space star identification
- 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	27 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	_____
LONGEST UNIT ON-ORBIT (YEARS)	_____	8	_____
TOTAL CONFIRMED UNITS LAUNCHED	_____	290	_____
CUMULATIVE TIME ON-ORBIT (YEARS)	_____	725	_____

Note: This data is for information only and subject to change. Please contact Blue Canyon Technologies for current design data.



2550 Crescent Drive
Lafayette, CO 80026

BLUECANYONTECH.COM