NANO STAR SENSOR

A miniaturized solution for reliable satellite attitude determination

PYXIS SPACE is a young and innovative supplier for the small satellite sector, committed to the New Space philosophy of fast, cost-efficient, and reliable development. The company builds on more than 15 years of heritage in satellite technology and provides compact, high-performance solutions tailored to the needs of research institutes, universities, and commercial missions worldwide.

The Nano Star Sensor is a miniaturized, cost-optimized star sensor specifically designed for CubeSats and other small satellite platforms. It combines star-based attitude determination with low power consumption and a compact form factor, enabling easy integration even in resource-constrained missions. Following New Space principles, the Nano Star Sensor is engineered for volume production, high reliability, and excellent performance at a competitive cost.

FEATURES

- Miniaturized design – optimized for CubeSats and other small satellite platforms
- Star-based attitude determination with arcminute-level accuracy
- Low power consumption, ideal for small satellite power budgets
- Radiation-tolerant design based on space-proven components
- Rejection of space debris and radiation artefacts
- Easy electrical and mechanical integration with standard satellite platforms
- Cost-efficient production following New Space philosophy
- High-volume manufacturing and rapid delivery

PYXIS SPACE GmbH • Magdalene-Schoch-Straße 5, 97074 Würzburg, Germany
+49 931 41 79 777 0 • info@pyxis-space.com • www.pyxis-space.com

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SPECIFICATIONS OF THE SENSOR WITH STANDARD BAFFLE

Accuracy, 3σ: - **cross boresight** - **boresight**	 36“ 180“
Data Rate	up to 2.5 Hz, no initial acquisition time needed
Slew Rate	up to 2 °/s
Sun / Earth Exclusion Angle	50° / 41°
Interface	CAN 2.0B
Power Supply	+4.5 V to +12 V
Power Consumption	250 mW at 1 Hz
Mass	75 g
Dimensions	36 x 46 x 73 mm^3
Environment	-20 °C to +50 °C (operational) -40 °C to +80 °C (survival)
Radiation	10 kRad

OPTIONS

- Customized baffle
- I2C, UART, RS422 interfaces
- Image download
- Control box for up to 6 sensors and interface extension
- EGSE hard- and software
- Star field simulator

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