

HSNS

Horizon Sensor for Nano Satellites

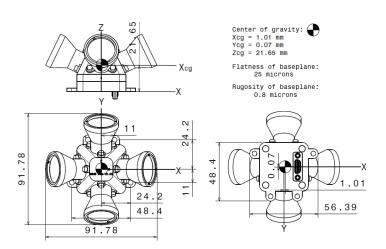
ITAR FREESpace Qualified







Mechanical Interface



Description

Horizon Sensor for **Nano and Micro Satellites** (HSNS) of Solar MEMS is a Quad Thermopile sensor for Earth detection and Nadir vector determination. This device measures the infrared radiation from Space and from Earth **with 4 IR-eyes**, providing accurate and reliable detection and attitude determination.

HSNS is based on previous experience of Solar MEMS making attitude sensors and long research projects on IR sensing devices.

Every HSNS is characterized and **tested and includes a microcontroller for fast** integration with different options like UART or I2C protocols.

Qualification Data and Flight Heritage

30° t	to	70°	Celsius
	30° t	30° to	30° to 70°

Qualification 30 kRad Total Ionizing Dose

Space-grade components
Space qualified microcontroller

Technical Characteristics

Sun sensor	Horizon sensor		
FOV of each IR eye	±2,5°		
Field of View	±64°		
Accuracy	<1 degree, 3sigma (EOL)		
Output rate	10 Hz		
Power supply	5V, 150 mW peak consumption		
Digital interface and connector	UART or I2C, microD 15 pins		
Mechanical interface	90 x 92 x 50 mm		
Mass	120 g		
Housing	Aluminum 6082 (Alodine 1200S and Anodized)		
Orbit	LEO (Customization for different altitudes)		
Lifetime	Designed for 3 years		