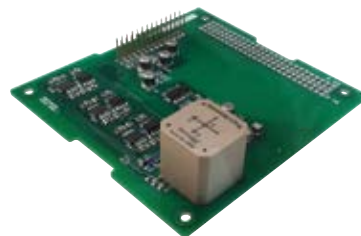


Spacemag-Lite[®]

Three-Axis Magnetometer



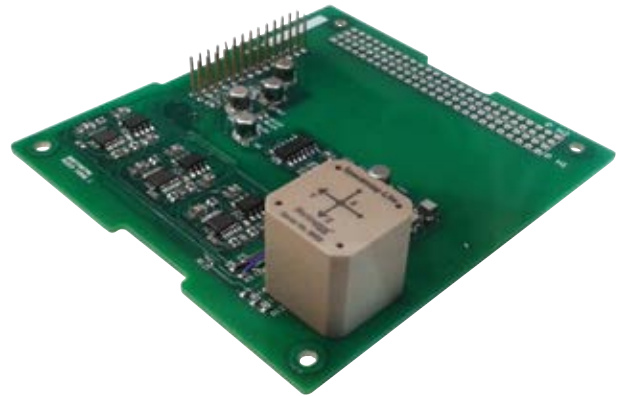


Spacemag-Lite® Three-Axis Magnetometer

Bartington Instruments offers a fluxgate magnetometer for spaceflight applications.

Spacemag-Lite® is ideal for a variety of low Earth orbit (LEO) missions, including commercial and scientific missions, where cost is a consideration.

The standard sensor is designed for CubeSat™ integration, though other configurations are also available depending on the mission requirement.



Bartington® is a registered trademark of Bartington Instruments Limited in the following countries: Australia, Brazil, Canada, China, European Union, India, Israel, Japan, Mexico, New Zealand, Norway, Russia, Singapore, South Korea, Switzerland, Turkey, United Kingdom, United States of America, and Vietnam.

SPACEMAG-LITE® is a registered trademark of Bartington Instruments Limited in the following countries: European Union, United Kingdom, and United States of America

Spacemag-Lite[®] Specifications

Performance	
Number of axes	Three (right hand XYZ coordinate system)
Polarity	+ve non-inverting output when pointing North
Full-scale measuring range	$\pm 60\mu\text{T}$
Bandwidth at -3dB	>1kHz
Measurement noise floor	10 to $\leq 150\text{pTrms}/\sqrt{\text{Hz}}$ at 1Hz
Scaling	50mV/ μT
Offset error	$\pm 100\text{nT}$ (max)
Offset temperature coefficient	$\pm 1\text{nT}/^\circ\text{C}$
Scaling temperature coefficient	$\pm 100\text{ppm}/^\circ\text{C}$
Calibration error	$\pm 0.5\%$ (at DC)
Orthogonality error	<0.5°
Alignment error (to mounting face)	N/A
Linearity error	0.0033% (least squares fit)
Frequency response	Maximal flat response ($\pm 5\%$) from DC to 15Hz
Hysteresis	<0.1% range for exposure to up to 10x range when unpowered
Excitation breakthrough	<10mV pk-pk at 16kHz

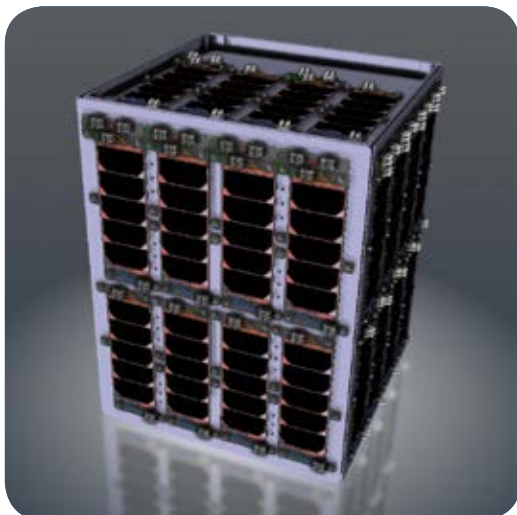


Spacemag-Lite® Three-Axis Magnetometer

Environmental	
Operating temperature range	-55°C to +65°C TBC
Storage temperature	-55°C to +65°C TBC
Vibration/Shock	N/A
Thermal – vacuum operation	N/A

Mechanical	Sensor head	Electronics enclosure
Dimensions	20 x 20 x 20mm (±0.1mm) Cable length 2m when probe mounted remotely	Conforms to Pumpkin CubeSat Kit™ PCB specification 810-00253 rev A5 (90.2x95.9mm) (PC/104 standard)
Weight (approximate)	50g incl. 2m cable 15g without cable	12g
Material	PEEK	N/A
Connector	Solder to pads on electronics	2x Samtec ESQ-126-39-G-D or Samtec ESQ-114-39-G-D TBC
Mounting arrangement	4x M3 Tapped holes	Conforms to Pumpkin CubeSat Kit™ PCB specification 810-00253 rev A5

Electrical	
Voltage input	+5V and +3.3V
Current consumption (max)	33.5mA zero field; 35mA full range (+5V) and 8.5mA (3.3V)
Analogue output	±3V (balanced, differential output, each output 0.15V to 3.15V, 1.65V zero field)
Output impedance	TBC



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The specifications of the products described in this brochure are subject to change without prior notice.