os7200

Optical Accelerometer

Luna's os7200 are fiber Bragg grating (FBG) based accelerometers, featuring a wide range of sensitivities and frequency responses, which can be dispersed over 10's of kilometers and integrated with ease into monitoring solutions.

The os7200 features a fresh new approach to vibration monitoring by utilizing FBG technology to measure a wide range of vibration events, all while being able to pair with various physical parameters e.g. strain, temperature, displacement, pressure, tilt.

Installation is simple and repeatable with standard threaded connections and is available in one, two or three axis configurations. A rugged, sealed metallic body, and Kevlar™ armored cables enable deployments in austere environments. Up to 128 os7200 sensors can be integrated on Luna's HYPERION platform for reduced total system costs.

The os7200 series of sensors is compatible with ENLIGHT Sensing Analysis Software, which provides an integrated suite of tools for data acquisition, computation and analysis of optical sensor networks as well as the HYPERION platforms comprehensive Application Programming Interface (API) and examples written in LabVIEW, Python, Matlab, C++ and C#.

Key Features

- High sensitivity
- Rugged sensor package
- Multipoint up to 128 sensors on a single HYPERION instrument
- Various physical parameters measurements coupled onto the same fiber optic cable
- Long distance, with 10's of kilometers of coverage
- Available mounting block for two and three axes
- Compatible with Luna's ENLIGHT software

Applications

- Structures
- Energy
- Transportation
- Marine vessels

Highly sensitive, multiparameter capable optical accelerometers for the most challenging applications.

Performance

Specifications	os7220	os7230	os7250
Frequency range	5 - 2000 Hz	5 - 1000 Hz	0 - 160 Hz
Sensitivity[1]	10 pm/g	90 pm/g	1200 pm/g
Measurement range	±200 g-	±30 g-	± 20 m/s² (maximum)
Resonance frequency	> 2,500 Hz	> 1,300 Hz	> 240 Hz
Transverse sensitivity	< -30 dB	< -30 dB	< -40 dB
Maximum shock	500 g	70 g	100 m/s² unlocked / 1000 m/s² locked
Operating temperature range	-40 to 60 °C		-65 to 80 °C
Measurement points	Up to 128 with 16 channel si255, 8 sensors per channel		
Mounting method	M5 standard mounting thread	M6 standard mounting thread	M5 standard mounting thread
Wavelength Options[2,3]	8 sensors per channel, see below for detailed wavelength offerings		
Physical Properties			
Dimmensions	14.4 mm x 34.5 mm x 41 mm	22 mm x 45 mm x 62 mm	22 mm x 50 mm x 55 mm
Weight	100 grams	280 grams	400 grams
Material	Stainless steel		
Fiber type	SMF-28		
Ingress protection	IP67		
Connector options	FC/APC or unterminated		

Notes

1 - Sensors are individually calibrated
2 - Custom options for 1460 to 1620 nm
3 - Radiation hardened variant available for the os7230

Ordering Information

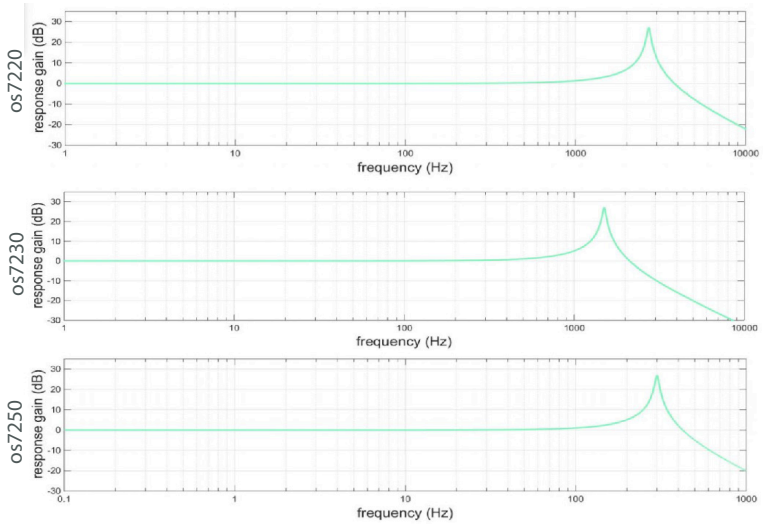
os7220-aaaa-1xx-1yy
os7230-aaaa-1xx-1yy
os7250-aaaa/tttt-1xx-1yy

aaaa os7220 & os7230	Acceleration FBG Wavelengths (+/- 1 nm) Standard 1518, 1527, 1537, 1546, 1555, 1564, 1573, 1582
aaaa/tttt os7250	Accel/Temp FBG Wavelengths (+/- 1nm) Standard 1513/1518, 1523/1528, 1533/1538, 1543/1548, 1553/1558, 1563/1568, 1573/1578 1583/1588
xx	1xx Cable 1 m, Length & Connector 1 m Standard, Cable Length FC FC/APC Connector UT Unterminated
yy	1yy Cable 1 m, Length & Connector 1 m Standard, Cable Length FC FC/APC Connector UT Unterminated

Accessories

Mounting block: 2 & 3 axis
os7220, os7230, os7250 mounting blocks

Typical sensor response



LUNA
+1.866.586.2682
solutions@lunainc.com
www.lunainc.com