



os8100

Optical Tilt Sensors

Luna's os8100 are Fiber Bragg grating (FBG) based high sensitivity, tilt sensors. Featuring a rugged and very stable monitoring capability that can be dispersed over long distances.

The os8100 features a novel approach to tilt sensing by utilizing FBG technology to measure minute changes in deflection angles, all while being able to pair with various physical parameters e.g. strain, temperature, displacement, acceleration, pressure.

Installation is simple and repeatable with several mounting options to include wall, ceiling, and floor mounts. With a tilt range of ranges of 10° and a resolution of down to 0.002° , the os8100 series presents a unique capability for sensor deployments. Up to 256 os8100 sensors can be integrated on Luna's HYPERION platform.

The os8100 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

Ease of installation, simple and repeatable

Rugged, multipoint monitoring; up to 256 sensors on a single HYPERION instrument

Ultra high resolution

Multiparameter various physical parameters measurements coupled onto the same instrumentation platform

Internally temperature compensated

Applications

Civil structures

Geotechnical measurements

Earth structures

Wind energy

Building construction

Rugged, ultra high resolution, multipoint tilt measurements

Performance

Specifications	os8100
Measurement Type	Temperature compensated, deflection angle (tilt)
Measurement Range	10°
Resolution	0.002°
Response Time	<3 seconds
Accuracy	10 mdeg / 175 µm/m
Protection	IP 67
Construction Material	1.4404 (SS 316L)
Measurement Points	Up to 256 with 16 channel si255, 16 sensors per channel
Wavelength Options	1463/1467, 1473/1477...1613/1617 nm in10 nm interval
Physical Properties	
Dimensions	120 mm x75 mm x 32 mm
Operating	-30 to 80° C
Weight	1.5 kg
Mounting Options	Wall, ceiling, and floor mounting options available

Ordering Information

os9100-tttt-tttt-1xx-1yy

tttt	Tilt FBG Wavelength
tttt	Tilt FBG Wavelength Tilt/Tilt Wavelengths (+/- 1nm) Standard - 1463/1467, 1473/1477, 1483/1487, 1493/1497, 1503/1507, 1513/1517, 1523/1527, 1533/1537, 1543/1547, 1553/1557, 1563/1567, 1573/1577, 1583/1587, 1593/1597, 1603/1607, and 1613/1617.
xx	1xx Cable 1m, Length & Connector 1 m Standard, Cable Length UT Unterminated FC FC/APC Connector
yy	1yy Cable 1m, Length & Connector 1 m Standard, Cable Length UT Unterminated FC FC/APC Connector

