

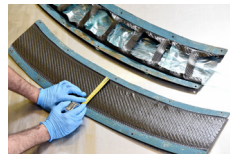
High-Definition Fiber Optic Strain Sensors

Unlike conventional strain gages that only measure strain at a discrete point, Luna's high definition fiber optic strain gages provide continuous, high resolution (~1mm) measurements of strain along the entire length of the sensor (up to 50m). A single sensor provides more than one thousand strain measurements per meter of sensor. This breakthrough measurement technology enables an entirely new dimension of stress and strain analysis. High-Definition (HD) Sensors for static environments offer unprecedented resolution and strain range, while High-Speed CFG Sensors are ideal for fatigue testing and more dynamic environments.

BENEFITS

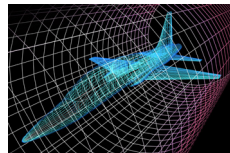
Low profile for embedding

Embed sensor within structures without influencing test results



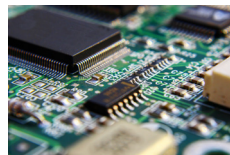
High density measurements

Characterizes strain gradients and validates finite element models



Dielectric and EMI/EMC immune

Ideal for instrumenting electronic assemblies



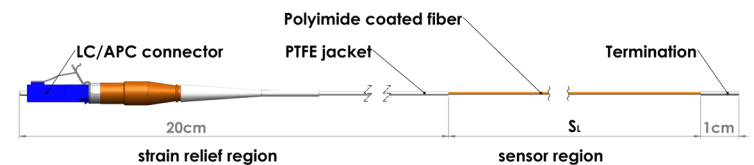
Corrosion proof

A robust sensor that introduces no source of ignition to hazardous environments



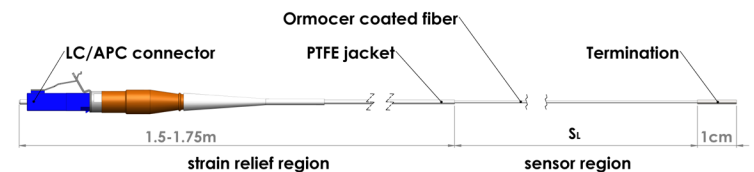
High-Definition (HD)

Uses standard unaltered fiber. Gage length and location are configurable through software.



High-Speed CFG (HS)

Uses a proprietary continuous grating pattern that offers both high spatial resolution and improved dynamic performance.



SENSOR DATA

PARAMETER	SPECIFICATION		UNITS
Sensor Material	High-Definition (HD) Sensor	High-Speed CFG Sensor	
Fiber	Polyimide coated low bend loss fiber	ORMOCER coated continuous grating	
Connector	High Temperature LC/APC	High Temperature LC/APC	
Strain Relief	PTFE (Teflon)	PTFE (Teflon)	
Termination	304 Stainless Steel	304 Stainless Steel	
Dimensions			
Sensing Length - S_L	1, 2, 3, 5, 10, 20, 30, 50	2, 5	m
Strain Relief Region Length	20	150 - 175	cm
Termination Length	1	1	cm
Sensor Diameter	155	195	μm
Termination Diameter	286	321	μm
Minimum Bend Radius	10	10	mm
Performance			
Maximum Operating Temperature Sensing Region	220	200	$^{\circ}\text{C}$
Minimum Operating Temperature Sensing Region	-40	-40	$^{\circ}\text{C}$
Maximum Operating Temperature Connector	150	150	$^{\circ}\text{C}$
Minimum Operating Temperature Connector	-60	-60	$^{\circ}\text{C}$

SENSOR PART NUMBERS

SENSOR LENGTH S_L	PART NUMBERS	
Strain	High-Definition (HD)	High-Speed CFG
1	HDS01LC220P	-
2	HDS02LC220P	HSS02LC200C
3	HDS03LC220P	-
5	HDS05LC220P	HSS05LC200C
10	HDS10LC220P	-
20	HDS20LC220P	-
30	HDS30LC220P	-
40	HDS40LC220P	-
50	HDS50LC220P	-

EXAMPLE ORDERING INFORMATION

Part number for a one meter high-definition strain sensor

HD S 01 LC 220 P

