


*Wellhead SmartScope*

### Key Features

- High Resolution FBG Interrogator
- High Accuracy And Stability
- Insensitive To Polarisation Effects
- Low Power Consumption
- On-board Data Processing
- Solid State Light Source
- Compact and Lightweight
- Broad Operating Temperature

### About Wellhead SmartScope

Wellhead SmartScope is a next generation high resolution FBG interrogator, which builds on the success provided by the SmartScope platform. Wellhead SmartScope offers increased wavelength accuracy over a wider temperature range to suit harsh environment applications such as desert oil well monitoring. With its increased processing power the Wellhead SmartScope removes the need for a surface PC by performing real-time data processing on-board to provide the user with immediate useable information.

Wellhead SmartScope has built-in polarisation management to ensure no measurement errors commonly induced by birefringence, as well as an internal optical reference for improved stability and accuracy.

Available with a variety of different communications protocols, Wellhead SmartScope can easily be integrated into SCADA or any other propriety data collection systems. Wellhead SmartScope has the capability to run bespoke application software such as Smart Fibres' Fluid Contact Level measurement algorithm.

Combined with [SmartPort](#) P/T gauges, Wellhead SmartScope provides for a truly cost-effective downhole distributed pressure sensing system.

### Specifications

Measurement and Processing	
Wavelength Range	40 nm (1528 to 1568 nm)
Number of Optical Channels	2
Maximum Number of Sensors / Channel	16
Scan Frequency (all sensors simultaneously)	1 Hz
Wavelength Resolution <sup>1</sup>	0.05 pm @ 1 Hz
Wavelength Accuracy <sup>2</sup>	2 pm

Wavelength Stability over Operating Temperature Range <sup>3</sup>	2 pm
Polarisation Extinction Ratio <sup>4</sup>	< 1 dB
Dynamic Range	27 dB
Gain Control	Channel independent, 16 independent slots / channel with 9 gain levels available, automatic or user controlled
FBG Full Width at Half Maximum (FWHM)	> 0.2 nm, 0.5 nm recommended
On-board Data Storage	2 GB

Mechanical, Environmental and Electrical	
Dimensions (W x H x D)	45 x 135 x 203 mm / 1.77 x 5.31 x 7.99"
Weight	2 kg / 4.4 lb.
Operating Temperature	-15 to +60 °C / 5 to 140 °F
Storage Temperature	-40 to +85 °C / -40 to 185 °F
Comms Interface	Modbus/TCP Ethernet/TCP-IP (on request)
Communication Connector	RJ45
Power Connection	via mains adapter or DC cable supplied
Optical Connector	FC/APC
Input Voltage	+9 to +32 VDC
Power Consumption	typ 8.5 W, max. 10 W
EMC Certification	Per BS EN 61326-1 edition 2006
Hazardous Area Certification (optional)	Per ATEX for hazardous zones 0, 1 or 2 with gas groups IIA, IIB or IIC <a href="#">Link to certification</a>

1. Measurement distributions (10) when measuring a controlled artefact having recommended FWHM, during 16 hours. Maintained for up to 15 dB optical gain.  
2. Per NIST Technical note 1297, maximum wavelength difference when compared to NIST SRM 2519. Measurement with instrument at 25 °C.

3. Per NIST Technical note 1297, D113 Maximum wavelength variations over full temperature range. The measurand is NIST SRM 2519.  
4. Light is not polarised out of the instrument, therefore the polarisation induced wavelength error is kept minimal.

Specifications may change without notice

## Ordering Information

Product Type	ATEX Certified	World Zone Plug
S-ScopeWH	X	XX
	EX	UK
		EU
		US
		CN
		IN

Order code example:

S-ScopeWH-EX-EU

Variant Description	Variant Options	Variant Code
ATEX Certification	ATEX Certified	EX
	Not ATEX Certified	Blank
Mains Plug World Zone	United Kingdom (IEC Type G)	UK
	European Union (IEC Type C, or F)	EU
	United States (IEC Type A or B)	US
	China (IEC Type A, C or I)	CN
	India (IEC Type C, D or M)	IN