SORHEA

FIBER OPTIC DETECTION

LUMOR

FIBER OPTIC DETECTION SYSTEM

PERFORMANCE FEATURES

- **Precise acoustic** technology
- **Versatile applications**
- **Long distance** range
- Precise **geolocation**
- **Redundancy** and **reliability**
- **Connected** and **intuitive solution**

LUMOR L

LUMOR S

LUMOR

FIBER OPTIC DAS DETECTION SYSTEM

FIBER OPTIC DETECTION

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PRECISE **ACOUSTIC TECHNOLOGY**

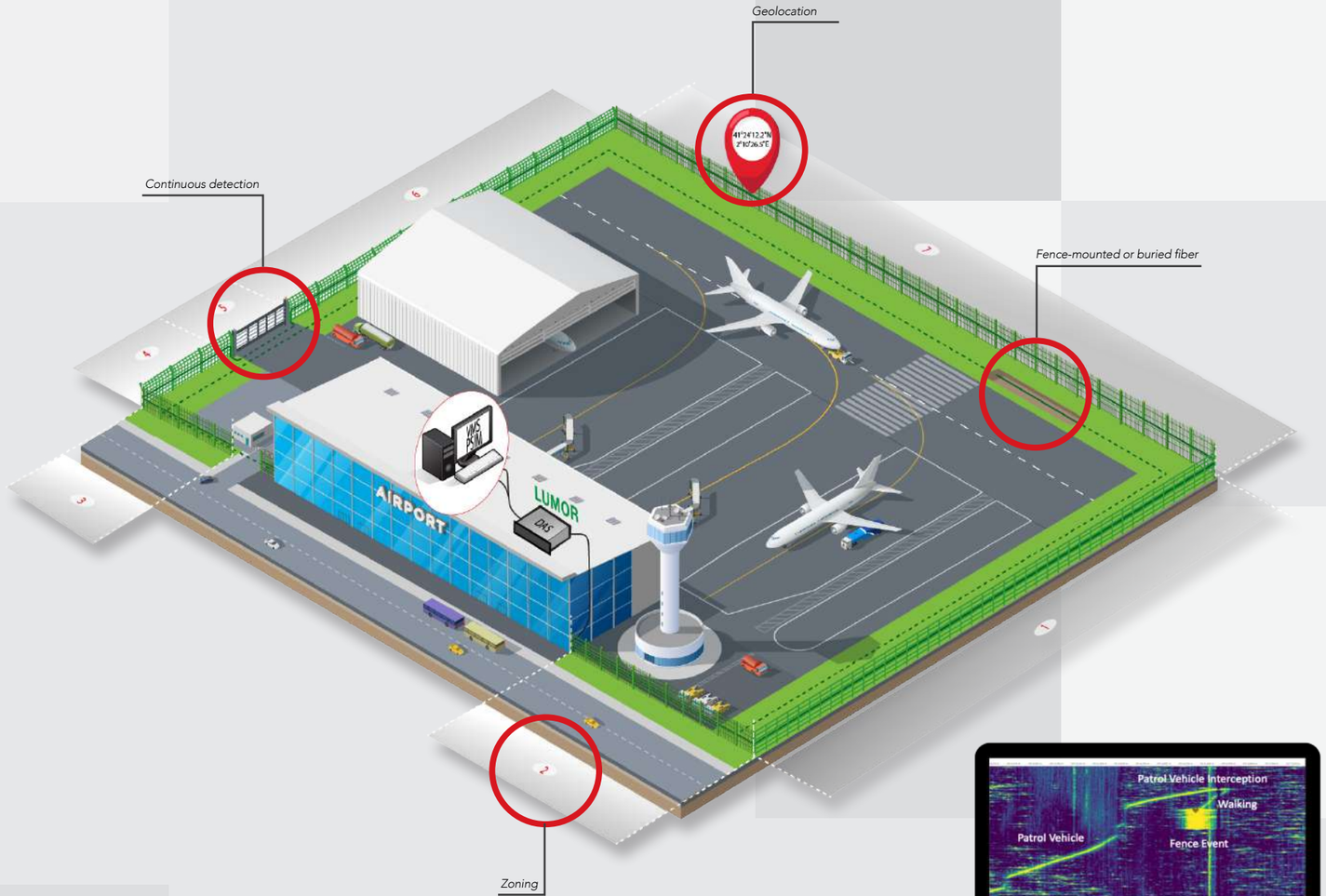
- **High-performance technology based on a quantitative DAS** (Distributed Acoustic Sensing) analyser for continuous and reliable monitoring
- **Precise location** of intrusions (every 6 meters)
- Low false alarm rate thanks to **integrated Machine Learning algorithms** that enhance target detection and classification

REDUDANCY AND RELIABILITY

- **Redundancy capability** to ensure protection in case of power failure or malfunction
- **Continuous, uninterrupted monitoring,** regardless of conditions
- Dashboard providing full **event tracking** and real-time location updates

VERSATILE APPLICATIONS

- **Fence-mounted installations** for visible and deterrent security
- **Fully buried installation** for discreet monitoring
- **Hybrid installation** (fence + buried) for comprehensive protection

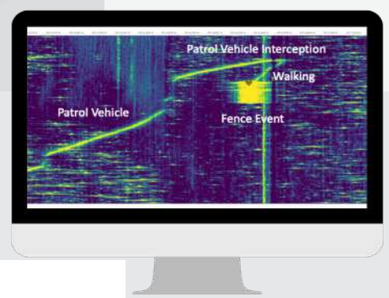


LONG DISTANCE RANGE

- **Effective long-distance monitoring**, suitable for large infrastructures thanks to fiber optic technology
- **Continuous, uninterrupted detection**, ideal for industrial sites, critical infrastructures, or borders
- Ability to create **customised detection zones**

PRECISE **GEOLOCATION**

- **Real-time intrusion detection** with six-meter location accuracy
- **Rapid identification of intrusion** points for effective response
- **Geographic Information System** (GIS) for cable overlay on a map
- **Real-time signal and event visualisation** via an interactive dashboard



CONNECTED AND **INTUITIVE** SOLUTION

- Access to an **advanced configuration tool** via a web page integrated into the DAS analyser
- **Advanced diagnostic** of installations
- **Data visualisation** and signal processing

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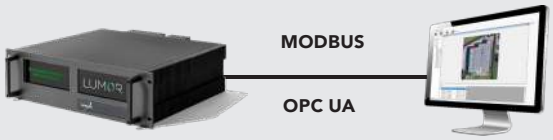
2 SIMULTANEOUS ALARM TRANSMISSION MODES

MODE 1 Connection Modbus / OPC UA



MODE 2 SPECTRA

TECHNICAL FEATURES

S1 AVAILABLE IN ECONOMICAL PACK

	LUMOR S		LUMOR L	
	S1	**SR**	**L1**	**L2**
Sensing range	2 km / 5 km / 10 km / 20 km (1.24 mi / 3.11 mi/ 6.21 mi / 12.43 mi)	2 km / 5 km / 10 km / 20 km (1.24 mi / 3.11 mi/ 6.21 mi / 12.43 mi)	40 km on fences / 65 km buried (24.85 mi / 40.39 mi)	80 km on fences / 130 km buried (49.71 mi / 80.78 mi)
Number of fibers	One fiber	Two fibers	One fiber	Two fibers
Detection redudancy	No	Yes	No	Yes
Hardware redudancy	Yes	No	Yes	Yes
Measurement type	Quantitative – Heterodyne optical phase measurement used as a proxy for strain, vibration, and temperature			
Standard fiber types	**Single Mode Fiber** (SMF): ITU-T G.652, G.654 or G.65 **Multi-Mode Fiber** (MMF): ITU-T G651.1 etc. (NB: range limited to 8 km for MMF)		**Single Mode Fiber** (SMF): ITU-T G.652, G.654 or G.65 **Multi-Mode Fiber** (MMF): ITU-T G651.1 etc. (NB: Range limited to ~8 km for MMF) **Engineered fiber**: Continuous scatter enhanced type	
Optical connections	LC/APC or SC/APC		E2000-PS APC	
Size	**Format**: 19-inch 1U Enclosure / **Height**: 44.5 mm I 1.75in **Width**: 482.6 mm I 19in / **Depth**: 293 mm I 11.6in		**Format**: 19-inch 3U Enclosure / **Height**: 132.5 mm I 5.22in **Width**: 482.6 mm I 19 in / **Depth**: 471 mm I 18.5 in	
Weight	8 kg I 17,6 lbs		16.5 kg I 37 lbs	
Power supply	24 / 48 V DC nominal (16.8 – 62.4 V DC).		**Option 1**: 110 / 230 V AC nominal (85 - 264 V AC) at 50 - 60Hz. Dual redundant power supplies and cables **Option** 2: 24 / 48 V DC nominal (16.8 – 62.4 V DC). Dual redundant power supplies and cables	
Mounting	Slide rails for front and back support		Telescopic rackmount rails	
Power consumption	Max. 40 W		110 W (Standard but future advanced options may exceed this power)	
Operating temperature range	-5 °C to 50 °C I 23 °F to 122 °F			
Operating humidity (max)	85% non-condensing		95% non-condensing	
Ingress Protection	IP50 [Protected against dust]			
Electromagnetic compatibility Compliance (EMC)	**EU**: CE compliant - 2014/30/EU **USA:** (FCC): 47 CFR Part 15 B **Canada**: ICES-003 2012		**2013/30/EU:** EN55032:2015+A11:2020, EN55035:2017+A11:2020, EN301 489-1 V2.2.3, EN301 489-19 V2.1.1 **USA** (FCC): 47 CFR Part 15 B **Canada**: ICES-003 2020 **UK**: SI 2016/1091 and amendments	
Zone management	Zone and schedule management of algorithms			
Interface Support	MODBUS, OPC UA, Dry Contact, SMS via cloud, SMS via modem, Email interface.			
Detection algorithms (Include, but are not limited to:)	Fiber break / Intrusion (walking, manual/mechanical digging, fence climbing/cutting, etc) / Leak detection Pig tracking / Real-time microseismic detection			
Remote configuration	Web interface for full remote configuration and operation, including software and firmware updates over the internet.			

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