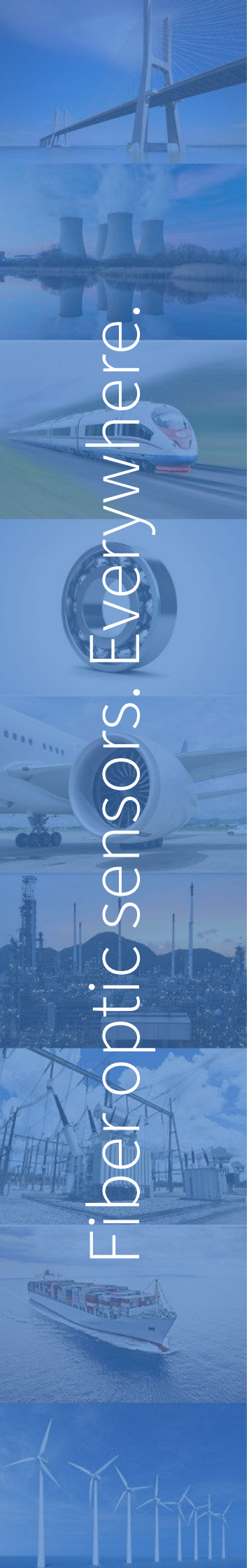



# Mini-interrogators datasheet

Cost-effective acquisition system optimized for dynamic measurements using fiber optic sensors. Highly integrated, interoperable design tailored for large-scale monitoring.

Strain | Temperature | Acceleration | Tilt | Torque & load

Non-contractual picture

| | SR-1080 | DM-4120 | DM-8125 | DMX-4120 |
|---|---|---|---|---|
| Number of fibers | 1 | 4 | 8 | 4 |
| Max. number of sensors per fiber (1) | 8 | 10 | | |
| Max. sampling frequency (2) | 24kHz (switched) | | | 24kHz (sync) |
| Wavelength range | 1530-1570nm | 1525-1575nm | | |
| Wavelength sensitivity (3) | < 0.5pm | | | |
| Wavelength accuracy (4) | < 10pm | | | |
| Sensors FWHM | From 100pm to 1nm | | | |
| Light source | SLED | | | |
| Optical connection | LC/APC | | | |
| Data interface | Ethernet (TCP/UDP/MQTT) · Modbus TCP | | | |
| Time synchronization | NTP | | | |
| Software interface | PeakViewer™ visualization app · API for Python | | | |

## Physical characteristics

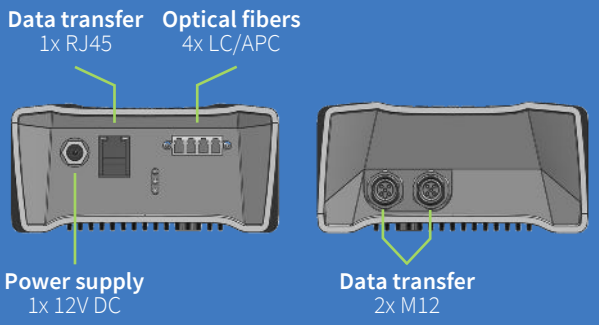
| | | |
|---|---|---|
| Dimensions | 170 x 135 x 65mm | |
| Weight | 1.2kg | |
| Operating conditions (non-condensing) | 0 to +40°C | -20 to +60°C |
| Power | 12 to 24 V DC external | |

(1) Minimum peak spacing of 3nm required in operation | (2) "*Switched*": For n > 1 fibers connected, this value has to be divided by 2n. "*Sync*": This value is achieved synchronously over all fibers | (3) Defined as standard deviation over 10 minutes | (4) Over full temperature range

FTMesures
LES SOLUTIONS CAPTEURS

## SENTEA'S INTERROGATORS

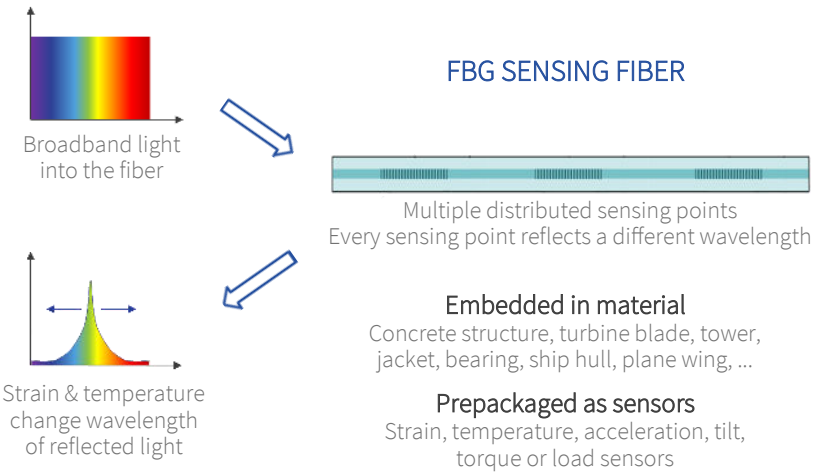
detect change in reflected light proportional to change in strain, temperature, acceleration, etc.




## About Sentea

Sentea has the ambition to become the market leader in fiber optic sensor interrogators leveraging the benefits of integrated photonics. The company is a spin-off of Ghent University and research center imec and commercializes more than 10 years of research on fiber optic sensors and silicon photonics. Its headquarters are on the Ghent technology campus, the silicon photonics hotspot of Europe.

## Optical sensors based on Fiber Bragg Gratings (FBG)




**Embedded in material**
Concrete structure, turbine blade, tower, jacket, bearing, ship hull, plane wing, ...

**Prepackaged as sensors**
Strain, temperature, acceleration, tilt, torque or load sensors

## Monitoring in harsh environments

Unaffected by electromagnetic interferences and lightning, resistant to corrosion and extreme temperatures, and safe to use in explosive applications, fiber optic sensors can be used even in the harshest environments.

The sensing element is a specialty fiber with multiple distributed sensing points that can be embedded in, or mounted onto, steel, concrete or composite materials of any system or structure.

For easy installation, also various stand-alone fiber based sensors are available to measure strain, temperature, acceleration, tilt, torque or loads in any structure or system that needs to be monitored.

## Tailored for large-scale deployment

The cost of interrogators has been the biggest hurdle for the wider adoption of fiber optic sensors. Leveraging the benefits of silicon photonics, Sentea brings to market the most cost-effective fiber sensor interrogator.

Thanks to its highly integrated and interoperable architecture, Sentea's interrogator represents the ideal solution for large-scale monitoring applications.