

Polaron® F10+

Real-Time Bioaerosol Sensor



The **Polaron F10+** provides real-time detection of airborne biological threats and other aerosolized anomalies. It rapidly and reliably detects all four classes of biological agents (spores, toxins, viruses, and bacteria) at low concentrations, with low false-alarm rates. By combining state-of-the-art patented polarized elastic light scattering and laser-induced fluorescence, the Polaron® can detect small particles with weak fluorescence properties, down to 0.5 micron sensitivity, while rejecting commonly occurring non-biologic fluorescing material that can cause false alarms in legacy detectors.



Applications

The Polaron monitors air continuously and provides early-warning alarms of aerosol threats. It transmits information as a first-tier “trigger” in a networked system for a variety of applications:

- Building protection
- Mass-transit security
- Special-event monitoring
- Force and base protection

Key Benefits and Features

- **Best-in-class sensitivity** – capable of detecting singlet particles in all agent classes (spore, bacteria, virus, toxin)
- **Low false alarm rates** – advanced algorithms for classifying aerosol backgrounds versus anomalies
- **Fast response** – alarms can automatically initiate aerosol sample collectors
- **High confidence** – extensive US Government testing
- **More coverage** – affordable, compact, lightweight



POLARON™ F10+ REAL-TIME BIOAEROSOL SENSOR

PRODUCT SPECIFICATIONS

SAMPLING ANALYSIS

Core Technology	Orthogonal detection, combining polarized elastic light scattering and laser induced fluorescence
Flow Rate	10 lpm with 100% sample volume
Threats	Spores, Bacteria, Viruses and Toxins
Particle Size Sensitivity	>0.5 µm
Limit of Detection	<20 ACPLA at 2 µm, in a background >2,000 PLA
Alarming	Configurable response time, 10s to 300s adjustable; typically set at 1 to 4 mins

SYSTEM INTERFACE

Display & Alerts	- One multi-color LED for visual indication - Two configurable digital outputs - Full display and interface via external software
Communication	Standard: Encrypted Ethernet; RS232 or RS485 Optional: Encrypted wireless or cellular
Data Storage	On-board storage of 2 weeks continuous data

POWER

Input Voltage	12 - 40 VDC (110-220 VAC, 50-60 Hz with optional AC/DC adapter)
Power Consumption	20 W

ENVIRONMENTAL

Operating Temp	0 to 55 °C (32 to 131 °F)
Operating Humidity	5% to 95%, non-condensing
Storage Temp	0 to 55 °C (32 to 131 °F)

PHYSICAL FEATURES

Dimensions	W x D x H: 17.8 x 20.0 x 28.7 cm (7.0 x 7.9 x 11.3 in)
Weight	1.58 kg (3.48 lbs)
Enclosure	High-impact ABS / Polycarbonate; resistant to fire, dust, splash, and cleaning chemicals



Inverted inlet cap option for overhead installation such as ceilings



Protecting People, Products & Critical Infrastructure

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