

LAMINAR SENSORS

DESCRIPTION

Laminar sensors collect real-time UV-VIS-IR reflectance and transmittance spectral data. By connecting to existing ethernet networks via Modbus TCP, this technology provides agnostic communication for the vendor. The spectral data collected by sensors is used in conjunction with factory PLC data to create machine learning (ML) models to optimize industrial processes.

TECHNICAL SPECIFICATIONS

Supply Voltage: 48VDC, 802.3af Power over Ethernet

Power Draw: 12W maximum over PoE+

Output communication: Ethernet, Modbus TCP

Temperature: -20°C to 70°C

Material: 316 Stainless Steel

Protection class: IP67

Size: See customer drawing

Mounting: Set screw onto a compatible sanitary clamp

Pipe Size Compatibility: Pipe size compatibility: 1.5" - 6" OD

****Laminar provided flow cells come with preinstalled triclamp ferrules**

Compatible process connections: Varinline Process Connection Type N (1.5" - 6")

For other sanitary connection options, ask Laminar for more details.

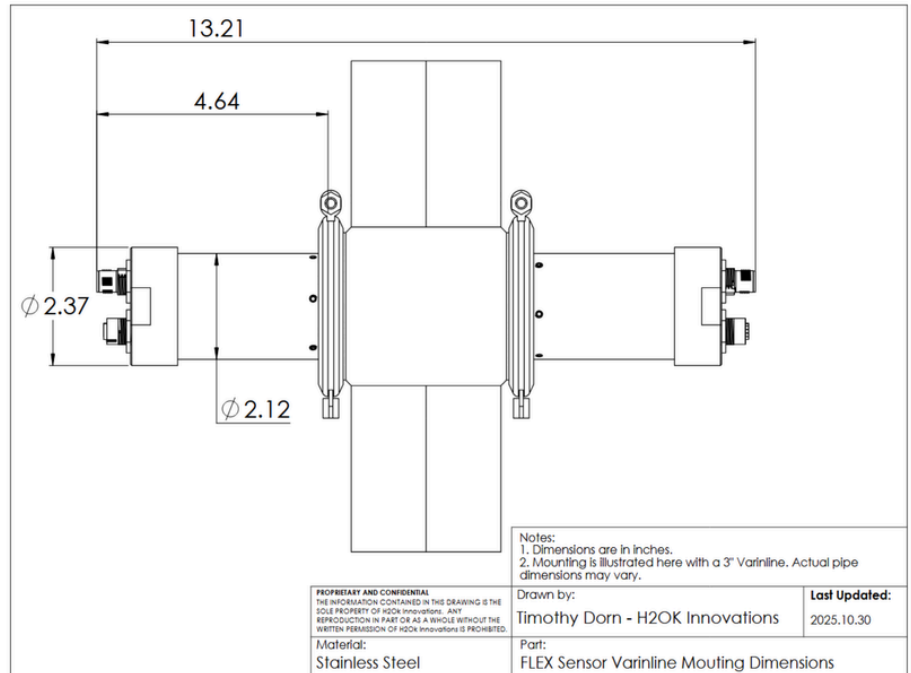


FEATURES

- Built-in illumination
- Easy installation and mounts in line with compatible sanitary clamp or flow indicator
- 6 set screws to install
- Single M12 connection for power and data
- Up to 4 devices can be daisy chained off 1 PoE+ connection
- Fast system expansion with Ethernet-based networking
- Modbus TCP for vendor-agnostic communication
- Wash-down safe, water-tight

APPLICATIONS

- Sanitation & Clean in Place (SIP / CIP)
- Line Flushing Optimization / Product Changeover
- Product Quality and Concentration



Dimensioned drawing of Laminar sensors mounted to Varinline housing. Dimensions are in inches.

Want to learn more about our sensors and technology?

Talk to our team at runlaminar.com/contact

EDGE GATEWAY

DESCRIPTION

Laminar Edge Gateway is a robust, cross-network industrial IoT gateway with built in processing capability to run Laminar Machine Learning Models securely on the edge. By connecting to both Laminar Sensors and local systems, this technology receives real-time data, locally translates spectral data against parameters of interest, and outputs human-readable decisions for industrial process optimization.

TECHNICAL SPECIFICATIONS

Mechanical

Housing Material: Polycarbonate

Display: Large touchscreen

Mounting: Wall or cabinet mount close to the CIP PLC

Electrical

Power Supply: 802.3at PoE+ (25W)

Max Power Draw: 25W

Supply Voltage: 48VDC nominal (PoE+)

Network Interfaces: Dual Ethernet- Eth0 (IT/cloud), Eth1 (OT, PoE+ powered)

Software

On-Device ML: Runs Laminar ML models locally

Inference Type: Real-time edge inference

Firmware Updates: Remote OTA (local-only option for secure environments)

Communication Protocols

PLC Brands Supported: Allen Bradley, Siemens, Mitsubishi, Rockwell, and others (drop-in retrofit for legacy PLC)

Industrial: Modbus TCP, Ethernet/IP, Profinet, BACnet, CC-Link, OPC UA

Serial: RS485/Modbus RTU, HART, 4-20mA

Cloud: MQTT over HTTPS, port 443, TLS 1.2, X.509 certificates

Ratings

Operating Temperature:

20°C to 70°C

Ingress Protection: IP67

Emissions and Safety Testing: TUV tested (FCC Part 15, IC ICES-003, EN 55011:2010, EN61326:1:2013)

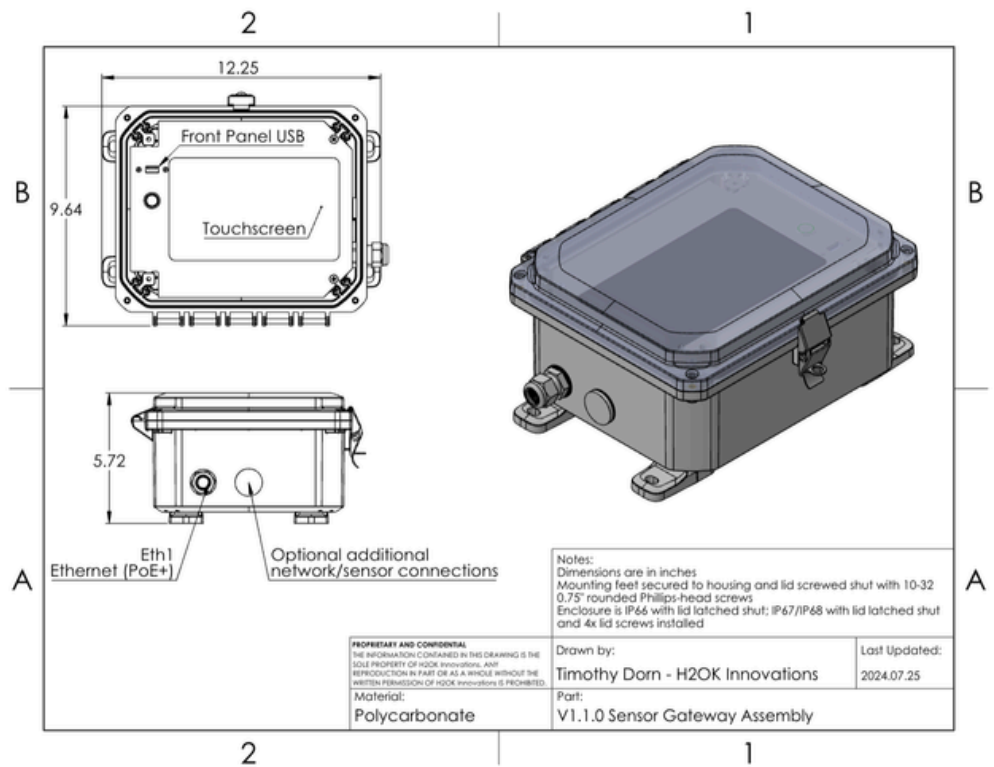
Washdown Safe: Yes

Compliance and Security Protocols

- SOC 2 Type 2 secure network protocols with regular pentesting.
- Flexible OT/IT architecture to comply with best security practices.

Data Security: Encrypted in transit and at rest

Remote Access: Client approved methods (Bomgar, Citrix, Claroty)
IT security reviews are passed for all major organizations.



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