

MiniLaser Aspirating Smoke Detector

FHSD8075-ULF



Overview

The MiniLaser is a compact, single-zone aspirating smoke detector designed for applications that demand high sensitivity, advanced diagnostics, and flexible configuration. Built on proven ModuLaser® technology, it delivers reliable early warning while maintaining a small footprint suitable for a wide range of installations.

High Resolution Detection with Intelligent Alarm Stability

MiniLaser uses laser-based forward-scattering optical detection, optimized for identifying extremely small particles associated with incipient fires. With very high optical resolution and multiple independent alarm levels, it supports early intervention while maintaining operational reliability.

The integrated ClassiFire™ technology continuously adapts sensitivity based on environmental conditions, ensuring long-term alarm stability and minimizing nuisance alarms throughout the detector's lifecycle. This intelligence maximizes early warning performance without increasing false alarm risk.

Designed for Fast Installation, Commissioning, and Service

MiniLaser is engineered to simplify every stage of deployment. Modular placement of the user interface and expansion modules allows flexible physical installation, while pre-installation backplanes enable wiring to be completed early in the project lifecycle. Commissioning is accelerated through a DIP-switch interface, enabling key configuration settings without a PC, while a USB-C interface supports advanced diagnostics, configuration, and firmware updates. All wiring terminals are front-accessible, allowing live testing and maintenance without powering down or dismantling the detector, significantly reducing service time and disruption.

Long Term Operational and System Integrity

MiniLaser delivers sustained value through features that enhance reliability, traceability, and lifecycle performance. Continuous airflow monitoring detects blocked sampling points, broken pipes, and abnormal flow conditions, while event logging and chart recording provide long-term visibility of system performance. Embedded PipeCAD file storage ensures full design traceability over time, even when original documentation is unavailable. The 10/90 wastegate airflow architecture and multi-layer internal dust filter extend maintenance intervals, protect the optical chamber, and support consistent detection performance over the product's lifetime.

Standard Features

- **Dual Configuration**
Dip-switch configuration setting for simple sampling pipe layouts or PipeCAD for more complex sampling pipe layout modeling
- **Customizable**
Display sub-module and Expansion sub-module can be located most conveniently based on wiring needs, it can be installed on either side of the detector module. Subjected to the specific requirements of the application, up to 2 functional-modules can be installed in the expansion sub-module
- **Simplified Installation**
Ingenious docking station design allows detector to be easily installed. Sensitive electronics are easily removed to ensure they will not be damaged during installation. Provisions for Aspirating pipework and cabling available into either the top or the bottom of the unit.
- **Pre-Engineered for Cost Efficiencies**
Up to 400 ft of pre-engineered pipe network in a "I" or "T" configuration with a maximum of 25 sampling holes* — more than 2x competitive systems — means no costly pipe network design is needed. Nearly 30% less expensive than any other UL 268 7th Ed. listed Aspirating Smoke Detector.

Standard Features Continued

- **Intuitive User Interface**

Easy to understand icon driven UI, providing status of faults and alarms. With the addition of a LED bar graph that displays the smoke level development in the protected area.

- **Easy Pipe Connection**

The quick fit pipe adaptor system locks down securely, yet leaves plenty of room for easy pipe connection and removal.

- **Easy Maintenance**

Access to all wiring terminals for easy diagnostics while the unit is fully operational. Additionally a local reset button is provided which can be used during commissioning and maintenance. To further simplify maintenance, the MiniLaser and ModuLaser use the same interal air filter.

LED & Display Indication Diagrams

LED	Description
	Laser fault
	Filter fault
	Flow fault
	Prealarm
	Fire alarm
	General fault
	Warning
	Power

Specifications

General	
Status indication	LED's
User interface	Alarm and fault indicators, with smoke level bar graph display
Alarm levels	4 (Aux, Pre-alarm, Alarm and Alarm 2)
Event log	20,000 events per system
Connectivity	USB-C port
Electrical	
Operating voltage	24 VDC nominal (18.0V to 30.0V)
Current consumption	Current Consumption at 24VDC 120 mA - fan speed 1 180 mA - fan speed 4 (default speed) 230 mA - fan speed 6 365 mA - fan speed 10
Detection	
Detection principle	Laser light scattering mass detection and particle evaluation
Sensitivity	0.00914 %obs/ft to 7.62 %obs/ft (0.03 %obs/m to 25 %obs/m)
Coverage Area	Up to 18,000 ft ² (1672m ²) (subjected to local approvals and installation standards)
Velocity Range	0 to 4000 ft/min (0 to 20 m/s)
Particle Sensitivity Range	0.003 to 10 microns
Fan Speed	Configurable (1-10)
Sampling Pipe	
Length	Up to 400 ft. (125m)
Quantity sampling holes	Up to 10 - Class A per system Up to 20 - Class B per system Up to 35 - Class C per system Up to 25 - Pre-Engineered pipe network designs per system
Inlet size	1.06 or 0.98 in (27 or 25 mm) outer diameter
Inlet location	Top or bottom
Exhaust size	1.06 or 0.98 in (27 or 25 mm) outer diameter
Exhaust location	Top or bottom
Sampling and Exhaust Quantity	1

Input	
Input quantity	1
Input type and rating	Supervised
Termination	15 KΩ 5% 1/4 W
Programmable	Yes
Output	
Output quantity	3
Output type and rating	Voltage free (contact rating 2 A at 30 VDC / NO/NC/C)
Programmable	Yes (2 x outputs / 1 x fixed for fault)
Physical	
Physical dimensions	(W x D x H) 6.5 x 5.25 x 11.8 in. (165 x 133.5 x 300 mm)
Net weight	4.7 lb. (2.15 Kg)
Color	Grey-white (RAL 9002)
Mounting type	Surface mount, DIN Rail
Cable entries	6 at the bottom, 5 at the top, 2 at the rear
Cable entry size	0.5 in. (20 mm) - top and bottom
Detector module orientation	Vertical (0 deg or 180 deg)
Environmental	
Operating temperature	Equipment: 14 to +140°F (-10 to +60°C) Sampled air: -40 to +140 °F (-40 to +60 °C) with sampled air heated to operational temperature of at least 14°F (-10°C)
Relative humidity	0 to 95% noncondensing
Environment	Indoor
IP rating	IP40
Standards & Regulation	
Compliance	REACH, RoHS
Certification	UL/ULC
Chart Recorder	
Sampling period	Adjustable between 1s and 60s
Capacity	1 month @1s / Up to 5 years @60s
Values recorded	Detector value, 4 alarm level values, flow value and temperature (all simultaneously)



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Ordering Information

FHSD8075-ULF	MiniLaser
9-30520	MiniLaser Expansion Housing
9-30521	MiniLaser I/O Expansion Module
9-30794	Gromets, replacement
9-30795	Pipe Adapter, angled, replacement
9-30796	Pipe Adapter, straight, replacement
9-30699N-P	Filter pack (6), replacement