



**DETECTORS
INCORPORATED**

Flame Detector for Semiconductor Industry

**Multi-Spectrum
IR3 Flame Detector
Model D390**

PRODUCT DESCRIPTION

Designed for chemical-laden harsh environments, the Model **D390** is the most suitable flame detector for semiconductor clean rooms and wet benches. The Model **D390** is a stand-alone IR3 fire & flame detector in a totally sealed polypropylene enclosure specifically designed for semiconductor manufacturing facilities. The **D390** detector is optimized to respond to fire sources from hydrocarbon and non-hydrocarbon fuels while rejecting non-fire false alarm sources. The detector's flame response and false source rejection is accomplished by utilizing a Neural Network Decision process in conjunction with hard coded Algorithms identifying specific wavelengths of Energy.

The **D390** detector requires an external 24 VDC power source and is supplied with Alarm/Fault/Auxiliary relays, 4-20 mA analog and RS485 ModBus outputs. The detector is supplied with an integral 20-foot multi-conductor cable for wiring to external devices. The detector can also store 200 events with time and date stamped in its flash memory.



FEATURES & BENEFITS

- ▶ Multi-Spectrum design IR/IR/IR
- ▶ Standard outputs: Alarm/Fault/Auxiliary relays, 4-20 mA, and RS485 ModBus®
- ▶ Real-Time Clock
- ▶ 200 Event Logs with date and time stamped
- ▶ Automatic Self-Test for checking Optical Path Integrity and electronic circuitry
- ▶ Leak-Proof Polypropylene enclosure
- ▶ Test Mode for manual testing or test lamp
- ▶ Integral cable harness for easy field wiring
- ▶ False Alarm immunity to external non-fire sources
- ▶ Manufactured in USA with 3-Year Warranty
- ▶ RFI & EMC compliant
- ▶ Designed to SIL 3 requirements

APPLICATIONS

- ▶ Semiconductor clean rooms
- ▶ Wet Bench working area
- ▶ Wet Bench plenum
- ▶ Semiconductor processing facilities
- ▶ Equipment behind wet bench area
- ▶ Silane cabinets and dispensing stations
- ▶ Under floor area of clean room

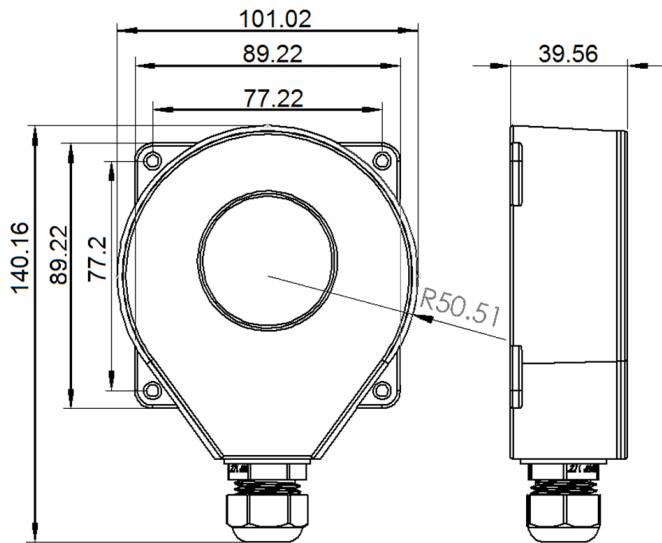
Model **D390** Flame Detector Technical Data

General

Field-of-View: 105° Horizontal & Vertical
Spectral Sensitivity: IR: 2-5 microns (3 discrete bands)
Response Time: Alarm: 3 Seconds
Detection Range: 8" dia. Polypropylene fire, distance 8 ft.
8" dia. IPA fire, distance 8 ft.

Electrical

Operating Voltage: 24 VDC nominal (18-30), Regulated
Power Consumption: Standby: 60 mA @ 24 VDC
Alarm: 90 mA @ 24 VDC
Relays Outputs: Alarm / Fault / Auxiliary
SPDT—contacts rated 2A @ 24 VDC
Alarm & Auxiliary relays: De-Energized
Fault relay: Energized when powered
Analog Output: 0-20 mA Stepped - Source
Communication: RS485 ModBus
Visual Indications: Green LED - **Normal**
Red LED - **Alarm**
Amber LED - **Fault**
Wiring: Pre-Installed cable harness 20 ft. long
24 Gauge 12 conductor cable



Mechanical

Enclosure Material: Molded Polypropylene
Weight: 2.5 lbs. (1.1kg)
Mounting: Polypropylene Bracket —Optional

Environmental

Humidity Range: 5 to 95% relative humidity, non-Cond.
Temperature Range: -40 to +185°F (-40 to +85 °C)
Enclosure Type: NEMA 4 & 4X, IP67

Approvals & Certifications

CERTIFICATIONS (IN PROCESS):

- Factory Mutual (FM/CSA)
- Class I, Div. 2, Groups B, C, D (Zone 2)
 - Class II/III, Div. 2, Groups E, F, G

Ordering Information & Accessories:

D390-1P1-02 Detector with sealed Polypropylene enclosure, Relays & 4-20 mA outputs, FM/CSA, 20-ft. cable
D-004 Polypropylene bracket mounting assembly

SENSE WITH PEACE OF MIND

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