

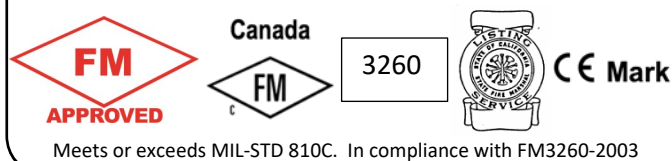
## D381/383 3IR+UV – MULTI-SPECTRUM FLAME



### STANDARD FEATURES

- Multi-Spectrum 3IR + UV design
- Detects Hydrocarbon and Non-Hydrocarbon fires with the highest false alarm immunity
- Standard outputs: Warning / Alarm / Fault / Auxiliary relays, 0-20mA and RS485
- 200 event history log & 6 FireGraphs®
- Adjustable Time/Verification Delay up to 20 seconds
- Automatic Self-Test checking electronic circuitry and Optical Path Integrity test with OptiRadar®
- Copper free aluminum enclosure, powder coated finish
- Test Mode for manual testing
- Integral cable harness for easy field wiring
- Solar Blind
- Heater Option to avoid condensation and icing
- High False Alarm immunity to external non-fire sources
- Manufactured in the USA with a 5-year warranty
- RFI & EMC compliant
- Meets SIL 2 requirements
- FM/CFM/CSFM Approved
- NEMA 4 (IP66/67) Enclosure

### PRODUCT LISTINGS



The detectors are supplied with Alarm / Auxiliary / Fault relays, 0-20 mA analog and RS485 outputs. They can store 200 events and 6 FireGraphs in their FRMA memory

### APPLICATIONS

- Onshore & offshore Oil and Gas facilities
- Refineries and Cogeneration plants
- Compressor Stations
- Chemical and Hydrogen Plants
- Crude Oil and Products Tank Farms
- LPG / LNG Facilities
- Fuel Terminals
- Marine Fuel Loading and Unloading
- Airports & Aircraft Hangars
- Silane Storage Facilities
- Industrial Warehouses
- Battery Rooms & Charging Facilities
- Paint & Solvent Storage Facilities
- Incinerators & Waste Disposal
- Power Plants

### PRODUCT DESCRIPTION

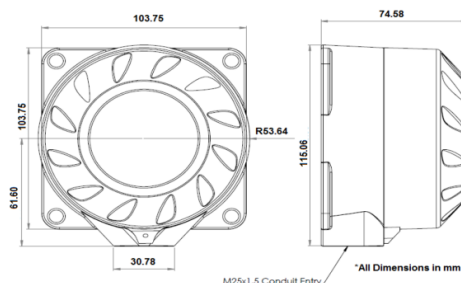
The Detectors Incorporated Model D381 and D383 Multi-Spectrum Flame Detectors are the most advanced optical flame detectors designed to respond to both Hydrocarbon and Non-Hydrocarbon fires while rejecting False Alarm sources. The D38X detectors sense UV radiation in the Ultraviolet spectrum and Infrared radiation in 3 discrete bands of IR spectrum for detecting fires. Flame response and false source rejection for the D38X models is accomplished by utilizing the Convolution Method and Advanced DSP (Digital Signal Processing) in conjunction with hard coded algorithms identifying specific wavelengths of energy. The detectors are able to respond to Hydrocarbon and Non-Hydrocarbon fires at a distance of 80+ feet. All this while rejecting False sources.

The D381 detector is designed for a multitude of applications. The detector will respond to a 1 ft. x 1 ft. n-Heptane or IPA fires from 100 feet within approximately 3-5 seconds. The Model D383 is a high-speed flame detector designed specifically for liquid spray paint and powder coating applications or anywhere a fast detection time is required. The Model D383 offers a fast and reliable fire detection and monitoring for detecting flash fires within 0.3 in compliance with NFPA 33 Standard. The Models D38X series are stand-alone fire & flame detectors in watertight NEMA 4 (IP66/67) Aluminum enclosure. The detectors feature automatic self-test for continuously checking the optical path integrity while monitoring the electronics to ensure utmost reliable operation and fault reporting.

*Specifications subject to change without notice.*

*Continued on back.*

## D381/383 3IR+UV – MULTI-SPECTRUM FLAME



### GENERAL

|                      |   |
|----------------------|---|
| Field-of-View        | 90° Horizontal and Vertical   |
| Spectral Sensitivity | UV: 180-260 nanometers<br>IR: 2-5 microns (3 discrete bands)  |
| Detection Range D381 | FM 12"x12" n-Heptane fire – 80 ft (24.4m)<br>12"x12" IPA fire – 80 ft (24.4 m) (FM)<br>36" plume Hydrogen fire – 60 ft (18 m) (FM)<br>12"x12" n-Heptane fire – 200 ft (61 m) (DI) |
| Detection Range D383 | 12"x12" n-Heptane fire – 40 ft (24.4 m) (FM)<br>Flash fires – 0.3 seconds @ 30 ft (9.1 m) (FM)<br>12"x12" n-Heptane fire – 200 ft (61 m) (DI)                                     |
| Response Time D381   | Typically 3-5 seconds   |
| Response Time D383   | Typically 0.3 seconds   |

### ELECTRICAL

|                    |   |
|--------------------|---|
| Operating Voltage  | 24 VDC nominal (18-31), Regulated   |
| Power Consumption  | Standby: 60 mA @ 24 VDC<br>Alarm: 90 mA @ 24 VDC<br>Heater: Optional, 120 mA additional   |
| Output Relays:     | Alarm / Auxiliary / Fault<br>SPDT-contacts rated 2A @ 24 VDC<br>Alarm & Auxiliary relays: De-Energized<br>Fault relay: Energized<br>Aux. relays settings: .3, 3, 10, 20 seconds |
| Analog Output      | 0-20 mA Stepped - Source  |
| Communication      | RS485 ModBus  |
| Visual Indications | Green LED - Normal<br>Red LED - Alarm   |
| Conduit Entries    | Standard: (2) M25<br>Optional M25 x 3/4" NPT adapter  |
| Wiring             | 12 AWG (3.3 mm <sup>2</sup> ) - 22 AWG (33 mm <sup>2</sup> )  |

### MECHANICAL

|                    |  |
|--------------------|--|
| Enclosure Material | 360 Copper-Free Aluminum, Powder Coated                              |
| Weight             | 2.5 lbs. (1.1 kg)  |
| Mounting           | Stainless steel swivel arm – order separately DA-002 6.6 lbs. (3 kg) |

### ENVIRONMENTAL

|                   |  |
|-------------------|--|
| Humidity Range    | 5 to 95% relative humidity, non-Condensing   |
| Temperature Range | -40° to +185° F (-40° to +85°C) FM. -55° to +185° F ( -48.3° to + 85°C) with Heater Option |
| Vibration         | In compliance with FM 3260-2003, Meets or Exceeds MIL-STD 810C                             |
| Enclosure Type    | NEMA 4 & 4X, IP66/IP67   |

### ORDERING INFORMATION AND ACCESSORIES

|              |  |
|--------------|--|
| D381         | UV/3-IR Multi -Spectrum Flame Detector in an aluminum enclosure. See Price List for option/ordering guide            |
| D383         | UV/3-IR Multi -Spectrum Ultra-Fast Flame Detector in an aluminum enclosure. See Price List for option/ordering guide |
| DA-002       | 316 S.S. Mounting Arm  |
| DA-003       | Air Purge Kit for D381/383   |
| DA-007       | Weather Shield   |
| DA-008       | Detector Key Test Station  |
| HW-AM25-0002 | M25 x 3/4" Brass Adaptor   |