

Multi-Spectrum Flame Detector

Model D371 3IR+UV by Detectors Inc.



Operation

The Detectors Inc. Model D371 3IR+UV Multi-Spectrum Flame Detectors are the most advanced optical flame detectors designed and optimized to respond to both Hydrocarbon and Non-Hydrocarbon based fires while rejecting False Alarm sources. The D371 model senses 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 D371 model 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 is able to respond to Hydrocarbon fires at distances of 200+ feet and low energy Non-Hydrocarbon fires at distances of 80+ feet; all this while rejecting False sources.

The D371 is a stand-alone fire & flame detector in a watertight NEMA 4X (IP66, 67) and explosion-proof Stainless Steel enclosure designed for indoor/outdoor Class I, Div. 1 (Zone 1) Installations. The Detector is supplied with Alarm / Auxiliary / Fault relays, 4-20 mA analog and RS485 outputs. The detectors can store 200 events and 6 FireGraphs in its FRAM memory.

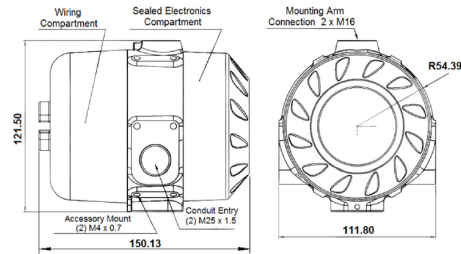
Standard Features

- Multi-Spectrum design for detecting both Hydrocarbon and Non-Hydrocarbon fires with highest false alarm immunity
- Standard outputs: Alarm/Fault/Auxiliary relays, 4-20 mA, and RS485 ModBus
- 200 Event Logs and 6 FireGraphs each 6 seconds long
- Multiple selectable sensitivity levels
- Automatic Self-Test for checking electronic circuitry, and Optical Path Integrity test with OptiRadar®
- Standard 316 Stainless Steel enclosure
- Test Mode for manual testing
- Encased electronics module for easy field installation and removal
- Pluggable connectors for ease of wiring and installation
- Separate (isolated) field wiring compartment
- Manufactured in USA with a 5 - Year Warranty RFI & EMC compliant
- Meets SIL 2 requirements

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





Dimensions in mm

General

Field-of-View	90° Field-of-View
Spectral Sensitivity	UV: 180-260 nanometers IR: 2-5 microns (3 discrete bands)
Sensitivity Range	Low, Medium, High
Response Time	Alarm: 3-5 Seconds
Detection Range	2' x 2' n-Heptane fire: 300 ft. (91 M)

Electrical

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

Mechanical

Enclosure Material	316 Stainless Steel, Standard
Weight	10 lbs. (4.5 kg)
Mounting	Stainless Steel Swivel Arm - Optional 6.6 lbs. (3 kg)

Environmental

Humidity Range	5 to 95% relative humidity, non-Condensing
Temperature Range	-67°F to +185°F (-55°C to +85°C - lower temp with an internal heater)
Vibration	In compliance with FM 3260-2003, Meets or Exceeds MIL-STD 810C
Enclosure Type	NEMA 4 & 4X, IP66/IP67

Approvals & Classifications

FM Approved	Class I, Div. 1, Groups A, B, C and D; Ta Class II/ III, Groups E, F and G; T4, T5 & T6 Class I, Zone 1 AEx db eb IIC T4 Gb AEx tb IIIC 135°C Db T4, Ta T4, T5, T6
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Ordering Information & Accessories

D371SS-111B-MU21	3IR+UV Detector with Relays, 4-20mA, Modbus, No Heater, Normally De-Energized Non-Latching, Normally Energized, Non-Latching, Redundent Alarm, (2) x M25, FM (US) - ATEX - IECEX-FM Canada Divisions and Zones, 110 Feet, FOV 90 Degrees, Hydrocarbon
D371SS-211B-MU21	Detector Above with heater
DA-001 316	S.S. Swivel Mounting Arm Assembly