# SharpEye™
# 20/20ML

## Mini UV/IR Flame Detector

*The SharpEye Mini-UV/IR Flame Detector (20/20ML) is a compact style detector featuring excellent detection sensitivity combined with enhanced immunity to false arms.*

*This model is designed to detect hydrocarbon-based fuel fires, hydroxy and hydrogen fires, as well as metal and inorganic fires.*

*The UV/IR flame detector senses energy in the short wave section of both the ultraviolet and infrared portions of the electromagnetic spectrum.*

*The UV sensor incorporates a special logic circuit that helps prevent false alarms caused by solar radiation. The IR sensor is sensitive to radiation over the range of 2.5 to 3.0 microns. The signals from both sensors are analyzed for frequency, intensity and duration. Simultaneous matching of radiant energy in both the UV and IR sensors triggers an alarm signal.*

## MAIN FEATURES

- UV/IR Dual-Sensor
- High-Speed Response
- 50 msec Response to Saturated Signal
- Large Field of View (100° horizontal/vertical)
- User Programmable Functions
- Configurable via software from a PC or handheld device
- Immune to False Alarms (solar blind)

## APPLICATIONS

- Aerospace Industry - Hydroxy fuels, Hydrogen and Hydrazine fuels
- Aircraft Hangars - landing gear pits, under-wing and over-wing protection
- Automotive - manufacturing, paint spray booths
- Chemical Industry - production, storage, transportation
- Paint - manufacturing facilities
- Petrochemicals - production, storage, shipping facilities
- Pharmaceutical Industry
- Polymers and Glue - manufacturing and curing
- Power Generation Facilities - pump areas, gen- erator rooms, unmanned stations, gas-fired and coal-fired reactors
- Printing Industry - solvent handling, presses, drying processes
- Warehouses - storage facilities for flammable materials

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## GENERAL SPECIFICATIONS

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|---|---|
| **Spectral Response** | UV: 0.185 - 0.260 microns. IR: 2.5 - 3 microns |

**Detection Range**
(Highest Sensitivity Setting for 1 ft$^2$ (0.1m$^2$) pan fire)

| | ft | m | | ft | m |
|---|---|---|---|---|---|
| Gasoline | 50 | 15 | Methanol | 25 | 7.5 |
| n-Heptane | 50 | 15 | Methane* | 15 | 5 |
| Diesel Fuel | 37 | 11 | LPG Propane* | 15 | 5 |
| JP5 | 37 | 11 | Hydrogen* | 15 | 5 |
| Kerosene | 37 | 11 | Silane* | 15 | 5 |
| (Alcohol Ethanol | 25 | 7.5 | Polypropylene Pellets | 15 | 5 |
| IPA (Isopropyl Alcohol) | 25 | 7.5 | Office Paper | 12 | 4 |

*20" (0.5m) long 8" (0.2m) width plume fire

| | |
|---|---|
| **Response Time** | Typical 5 sec. |
| **Adjustable Time Delay** | Up to 30 sec. |
| **Field of View** | 100˚ horizontal, 100˚ vertical |
| **Built-in-Test** | Manual and Automatic BIT |
| **Temperature Range** | Operating:  -40˚F (-40˚C) to 160˚F (70˚C)<br>Storage:     -65˚F (-55˚C) to 185˚F (85˚C) |
| **Humidity** | Up to 95% |

## ELECTRICAL SPECIFICATIONS

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|---|---|
| **Power Supply** | Operating Voltage: 18-32 VDC |
| **Power consumption** | Max. 40 mA in stand-by<br>Max. 70 mA in alarm |
| **Electrical Connection** | 12 wires 6 ft. (2m) cable (for junction box connection)<br>Optional: 12-wires electrical connector (the suitable connector will be supplied) |
| **Electrical Input Protection** | According to MIL-STD-1275B |
| **Electromagnetic Compatibility** | EMI/RFI protected CE Marked |

## OUTPUTS

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|---|---|
| **Relays** | Alarm and Fault<br>SPST volt-free contacts rated 2A at 30 VDC or 0.5A at 250 VAC<br>Fault relay normally closed, Alarm Relay normally open |
| **4-20mA** | Source configuration<br>Fault:              0 ± 0.5mA<br>BIT Fault:        2mA ± 10%<br>Normal:          4mA ± 5%<br>IR Detection:   8mA ± 5%<br>UV Detection:  12mA ± 5%<br>Warning:        16mA ± 5%<br>Alarm:           20mA ± 5%<br>Resistance Loop:  100-600 Ω |
| **RS-485** | The detector is equipped with an RS-485 communication link that can be used in installation with computerized controllers. The RS-485 is Modbus compatible |

## MECHANICAL SPECIFICATIONS

| | |
|---|---|
| **Dimensions** | 4" x 4" x 2.5" (100 x 100 x 62 mm) |
| **Weight** | St.St 316L           2.5Lb (1.2 Kg)<br>Tilt Mount          0.8Lb (0.37 Kg) |
| **Enclosure** | Stainless Steel 316L with electro polish finish |
| **Environmental Standards** | Meets MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical Shock, High Temp, Low Temp |
| **Water and Dust** | IP66 and IP67 per EN60529<br>NEMA 250 6P |

## APPROVALS

| | |
|---|---|
| | FM (Functionality) |

## ACCESSORIES

| | |
|---|---|
| **Flame Simulator** | FS-1100 |
| **Tilt Mount** | 20/20-005 |
| **Air Shield** | 20/20-787 |
| **Rain Shield** | 787980 |

Specifications subject to change

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