



The SharpEye Triple IR (IR3) Optical Flame Detector (20/20XI) incorporates all the features of the 20/20I in a NEW EExde, stainless steel housing with heated optics to eliminate condensation and icing on the window. The IR3-XI also includes a fast connection to an Intrinsic Safe (I.S.) handheld unit (or PC computer) for function set-up, troubleshooting and maintenance. The new housing design isolates the electronics circuitry and sensors in a sealed section during installation with wiring via the segregated integral terminal section.

The IR3-XI is extremely sensitive. It can detect 1ft.² (0.1m²) gasoline pan fire at 200 ft (60m) in less than 5 seconds. The sensitivity is user-programmable, offering 4 ranges of detection. It has applications in a wide range of industrial and commercial facilities, where the threat of accidental fire involves hydrocarbon fuels such as gasoline, kerosene, diesel



fuel, aviation jet fuels like JP-4, JP-5, JP-8, hydraulic fluids, paints and solvents, hydrocarbon gases like ethylene and polyethylene, natural gas (LNG), town gas, liquefied petroleum gas (LPG), methane, ethane, propane, etc.

MAIN FEATURES

- Triple Spectrum Design
- Sensitivity Selection
- User Programmable Functions through an I.S. Handheld Unit.
- Highly Immune to False Alarms
- Automatic and Manual Built-In Test (BIT)
- Heated Optics
- Standard 4-wire Connection
- 4-20mA sink or source (3-4 wires) configuration
- RS-485 Modbus Compatible
- MTBF Minimum 100,000 Hours
- 3-Year Warranty
- ATEX Approved

APPLICATIONS

- **Automotive** - manufacturing, paint spray booths
- **Aircraft Hangars** - landing gear pits, under-wing and over-wing protection
- **Chemical Industry** - production, storage, transportation
- **Explosives & Munitions** - handling and storage
- **Oil & Gas** - exploration, production, storage and offloading
- **Offshore Platforms** - fixed rigs and floating vessels FPSO
- **Power Generation Facilities** - pump areas, generator rooms, unmanned stations, gas-fired and coal-fired reactors
- **Petrochemicals** - production, storage, shipping facilities
- **Pharmaceutical Industry**
- **Printing Industry** - solvent handling, presses, drying processes
- **Tank Farms** - floating-roof and fixed-roof tank areas
- **Warehouses** - storage facilities for flammable materials
- **Onshore** - refineries, loading terminals, pipelines
- **Waste Disposal Facilities** - incineration, processing and storage of flammable waste materials (solids, liquids, gases)

GENERAL SPECIFICATIONS

Spectral Response	Three IR Band			
Detection Range (Highest Sensitivity Setting for 1 ft ² (0.1m ²) pan fire)	Gasoline	200 ft (60m)	JP4	150 ft (45m)
	N-Heptane	200 ft (60m)	Kerosene	150 ft (45m)
	Alcohol (Ethanol)	150 ft (45m)	Methane*	60 ft (18m)
	Diesel Fuel	140 ft (42m)	Propane*	60 ft (18m)
	* 0.5m plume fire			
Response Time	Typical 5 sec.			
Adjustable Time Delay	Up to 30 seconds			
Sensitive Range	4 Sensitive Ranges for 1 ft ² (0.1m ²) gasoline pan fire from 50 ft (15m) to 200 ft (60m)			
Field of View	90°horizontal, 90° vertical			
Built-in-Test	Manual and Automatic BIT			
Temperature Range	Operating:	-40°F (-40°C) to 160°F (70°C)		
	Storage:	-65°F (-55°C) to 185°F (85°C)		
Humidity	Up to 95%			

ELECTRICAL SPECIFICATIONS

Power Supply	Operating Voltage: 18-32 VDC
Power Consumption (Includes heated optics)	Max. 150mA in stand-by
	Max. 200mA in alarm
Heated Optics	To eliminate condensation and icing on the window
Electrical Connection	2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5 mm ISO
Electrical Input Protection	According to MIL-STD-1275A
Electromagnetic Compatibility	EMI/RFI protected CE Marked

OUTPUTS

Electrical Interface	There are three (3) wiring options. These options must be defined at factory per the customer order
4-20mA	Sink (source option) configuration
	Fault: 0 ±0.5mA
	BIT Fault: 2mA ±10%
	Normal: 5mA ±10%
	Warning: 10mA ±5%
	Alarm: 15mA ±5%
	Resistance Loop: 100-600 Ω
RS-485	The detector is equipped with an RS-485 communication link that can be used in installations with computerized controllers. The RS-485 is Modbus compatible
Relays	Alarm, Fault and Accessory SPST volt-free contacts rated 5A at 30 VDC or 250 VAC Fault relay normally closed, others normally open

MECHANICAL SPECIFICATIONS

Dimensions	5.7" x 5.5" x 4.8" (146 x 140 x 123 mm)
Weight	7.5 Lb (3.4 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 NEMA 250 6P

HAZARDOUS AREA APPROVALS

ATEX	EX II 2(1) GD, EExde [ia] IIC T5 (70°C)
FM (designed to meet)	Class I Div. 1, Groups B, C & D
	Class II Div. 1, Groups E, F & G

ACCESSORIES

Fire Simulator	20/20-310
Tilt Mount	20/20-007 (St. St. 316L)