SPECTREX INC.

SharpEye™ 20/20U-UB

UV Flame Detector

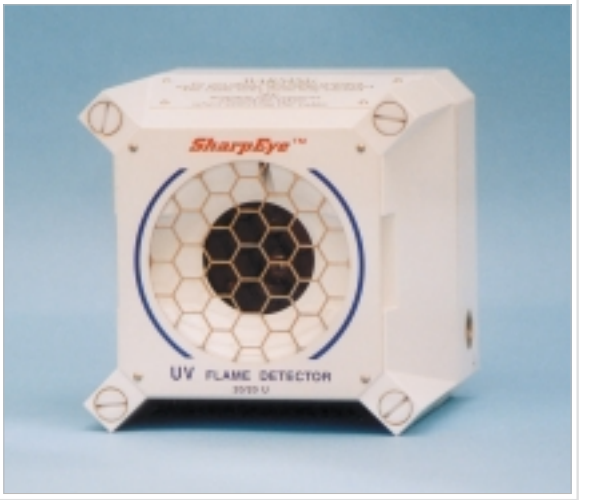
The SharpEye UV Optical Flame Detectors 20/20U and 20/20UB (which includes a BIT function) are designed to meet the strict industry performance requirements. The UV sensor has been carefully selected to ensure the greatest degree of spectral matching to the radiant energy emissions of fire.

Flame is detected typically within 3 sec. for a 1ft.^{2}. (0.1m^2) pan gasoline fire. A unique Fast UV Flame Detector Model (20/20FU) detects within several milliseconds a saturated UV signal caused by an explosion or a large fire.

The microprocessor design allows for unique field programmability making these flame detectors easily adaptable to all environments, applications and requirements.

The SharpEye UV Flame Detector incorporates a special logic circuit that helps prevent false alarms caused by solar radiation.

Both U and UB models are self-contained, optical flame detectors that function as stand-alone units directly connected to external devices such as alarm systems or automatic fire extinguishing systems.



The UV detectors are particularly useful for detection of invisible flames from fuels such as: Hydrogen, Hydrides, Ammonia, Silane and other inorganic fuels.

** It is important to note that this detector must not be exposed to UV radiation sources such as: electrical arcs, sparks and welding, etc.*

Main Features

- UV Spectrum Design
- Typical 3 second Response
- User Programmable Configuration
- Automatic and Manual Built-In Test (BIT) - UB
- Standard 4-wire Connection
- 4-20mA source (3-4 wires) configuration
- MTBF Minimum 100,000 Hours
- 3-Year Warranty
- FM, CSA, ATEX and Gost K Approved

Applications

- **Aerospace Industry** - Hydroxy, Hydrogen and Hydrazine fuels
- **Automotive** - manufacturing, paint spray booths
- **Chemical Industry** - production, storage, transportation
- **Explosives & Munitions** - handling and storage
- **Paint** - manufacturing facilities
- **Petrochemicals** - production, storage, shipping facilities
- **Pharmaceutical Industry**
- **Polymers, Solvents and Glue** - manufacturing and curing
- **Power Generation Facilities** - pump areas, generator 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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SharpEye™ 20/20U-UB

General Specifications

Spectral Response	UV: 0.185 - 0.260 microns.
Detection Range (Highest Sensitivity Setting for 1 ft² (0.1m²) pan fire)	Gasoline 50 ft (15m); n-Heptane 50 ft (15m); Diesel Fuel 37 ft (11m); JP5 37 ft (11m); Kerosene 37 ft (11m); Alcohol (Ethanol) 37 ft (11m); IPA (Isopropyl Alcohol) 25 ft (7.5m); Methanol 25 ft (7.5m); Methane* 40 ft (12m); LPG (Propane)* 40 ft (12m); Hydrogen* 50 ft (15m); Silane*** 33 ft (10m); Polypropylene Pellets** 20 ft (6m); Office Paper 20 ft (6m) **20" (0.5m) plume fire, **8" (0.2m) Diameter, ***12" (0.3m) plume fire*
Response Time	Typical 3 sec.
Adjustable Time Delay	Up to 30 sec. (up to 20 sec. in compliance with FM requirements)
Field of View	90˚horizontal, 90˚ vertical
Built-in-Test	Manual and Automatic BIT (in model 20/20UB only)
Temperature Range	Operating: -40°F (-40°C) to 160°F (70°C) Operating Option: -40°F (-40°C) to 185°F (85°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	Max. 80mA in stand-by Max. 120mA in alarm
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

Relays	Alarm - 2A at 30 VDC, 0.5A at 250 VAC Fault and Accessory - 5A at 30 VDC and 250 VAC Fault relay normally closed, others normally open
4-20mA	Source configuration Fault: 0 +0.5mA BIT Fault: 2mA ±10% Normal: 4mA ±5% Warning: 16mA ±5% Alarm: 20mA ±5% Resistance Loop: 100-600 Ω

Mechanical Specifications

Dimensions	4.7" x 5.2" x 5.2" (120 x 132 x 132 mm)
Weight	Aluminum: 8.1Lb (3.7 Kg) St.St 316L: 14.3Lb (6.5 Kg)
Enclosure	Aluminum, heavy-duty copper free (less than 1%), white epoxy enamel finish. Optional - 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 2G, EExd IIB + H_2 T5 (70°C) ,T4 (85°C) EX II 2G, EExde IIB + H_2 T5 (70°C)
FM / CSA	Class I Div. 1, Groups B, C & D Class II Div. 1, Groups E, F & G

Accessories

Fire Simulator	20/20-311
Tilt Mount	20/20-005 (St. St. 316L)