



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.

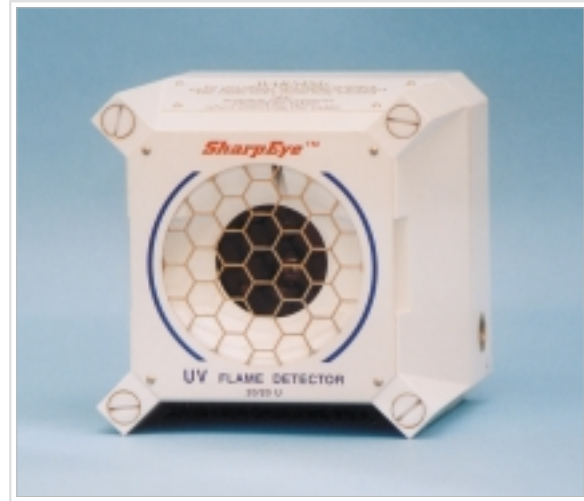
The UV sensor has been carefully selected to ensure the greatest degree of spectral matching to the radiant energy emissions of fire.

Flame is detected typically within 3 sec. for a 1ft.<sup>2</sup>. (0.1m<sup>2</sup>) 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

# SharpEye™ 20/20U-UB

## GENERAL SPECIFICATIONS

<b>Spectral Response</b>	UV: 0.185 - 0.260 microns.			
<b>Detection Range</b> (Highest Sensitivity Setting for 1 ft <sup>2</sup> (0.1m <sup>2</sup> ) pan fire)	Gasoline	50 ft (15m)	Methanol	25 ft (7.5m)
	n-Heptane	50 ft (15m)	Methane*	40 ft (12m)
	Diesel Fuel	37 ft (11m)	LPG (Propane)*	40 ft (12m)
	JP5	37 ft (11m)	Hydrogen*	50 ft (15m)
	Kerosene	37 ft (11m)	Silane***	33 ft (10m)
	Alcohol (Ethanol)	37 ft (11m)	Polypropylene Pellets**	20 ft (6m)
	IPA (Isopropyl Alcohol)	25 ft (7.5m)	Office Paper	20 ft (6m)
	<i>*20" (0.5m) plume fire, **8" (0.2m) Diameter, ***12" (0.3m) plume fire</i>			
<b>Response Time</b>	Typical 3 sec.			
<b>Adjustable Time Delay</b>	Up to 30 sec. (up to 20 sec. in compliance with FM requirements)			
<b>Field of View</b>	90° horizontal, 90° vertical			
<b>Built-in-Test</b>	Manual and Automatic BIT (in model 20/20UB only)			
<b>Temperature Range</b>	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)		
<b>Humidity</b>	Up to 95%			

## ELECTRICAL SPECIFICATIONS

<b>Power Supply</b>	Operating Voltage: 18-32 VDC
<b>Power Consumption</b>	Max. 80mA in stand-by Max. 120mA in alarm
<b>Electrical Connection</b>	2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5 mm ISO
<b>Electrical Input Protection</b>	According to MIL-STD-1275A
<b>Electromagnetic Compatibility</b>	EMI/RFI protected CE Marked

## OUTPUTS

<b>Relays</b>	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
<b>4-20mA</b>	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

<b>Dimensions</b>	4.7" x 5.2" x 5.2" (120 x 132 x 132 mm)
<b>Weight</b>	Aluminum: 8.1Lb (3.7 Kg) St.St 316L: 14.3Lb (6.5 Kg)
<b>Enclosure</b>	Aluminum, heavy-duty copper free (less than 1%), white epoxy enamel finish. Optional - Stainless Steel 316L with electro polish finish.
<b>Environmental Standards</b>	Meets MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical Shock, High Temp, Low Temp
<b>Water and Dust</b>	IP66 and IP67 per En60529 NEMA 250 6P

## HAZARDOUS AREA APPROVALS

<b>ATEX</b>	EX II 2G, EExd IIB + H, T5 (70°C), T4 (85°C) EX II 2G, EExde IIB + H <sub>2</sub> T5 (70°C)
<b>FM / CSA</b>	Class I Div. 1, Groups B, C & D Class II Div. 1, Groups E, F & G

## ACCESSORIES

<b>Fire Simulator</b>	20/20-311
<b>Swivel Mount</b>	20/20-003 (St. St. 316L)

Specifications subject to changes

For more information view manual or website [www.spectrex-inc.com](http://www.spectrex-inc.com)

DS-F-UV, May 2005