

# SharpEye™

## CCTV IR3 Flame Detector



### 20/20CTIN & 20/20CTIP

*The SharpEye CCTV Flame Detector is a self-contained, triple-spectrum, optical flame detector that incorporates a color video camera. The CCTV is designed to meet SIL2 and HART capability along with other output options.*

*The flame detector's IR sensors and spectral band pass filters have been selected to ensure the greatest degree of spectral matching to the radiant energy emissions of fire and the lowest degree of matching to non-fire stimuli.*

*The color video camera enables the user to investigate the monitored area, identify the fire's source and location, and help select the best response to the situation (activation of fire suppression). Configuration can be made to issue either a live color video picture signal at all times, on request or only when a fire is detected. Therefore, the detector is also useful for standard CCTV purposes. The video signal output of the CCTV Flame Detector can be either NTSC (model 20/20CTIN) or PAL (model 20/20CTIP).*

*The patented triple IR circuit is designed to respond only to flickering radiation signal (1 to 10 Hz) in the spectral bands ranging from 4.0 to 5.0 microns. The SharpEye CCTV Flame Detector is extremely sensitive. It can detect a 1ft.<sup>2</sup> (0.1m<sup>2</sup>) gasoline pan fire at 200 ft. (60m) in less than 10 seconds. The sensitivity/detection distance is user-programmable, offering 4 ranges of detection.*

### MAIN FEATURES

- Live color video image
- Triple spectrum design
- Sensitivity selection
- Highly immune to false alarms
- Automatic and Manual Built-In Test (BIT)
- Standard 4-wire connection
- HART capability
- 4-20mA sink or source (3-4 wires) configuration
- RS-485 Modbus compatible
- User programmable configuration
- MTBF Minimum 43,000 Hours
- 3-Year Warranty
- Designed to meet SIL2
- UL, ATEX & GOST R approved

### APPLICATIONS

- Offshore Oil & Gas
- Onshore Oil & Gas
- Chemical plants
- Petrochemicals plants
- Storage tank farms
- Aircraft hangars
- Power generation facilities
- Pharmaceutical Industry
- Printing Industry
- Warehouses
- Automotive Industry
- Explosives & Munitions
- Waste Disposal facilities

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## GENERAL SPECIFICATIONS

<b>Spectral Response</b>	Three IR Bands		
<b>CCTV Picture</b>	Enables the user to identify a 1 ft <sup>2</sup> (0.1m <sup>2</sup> ) gasoline flame from 100 ft. (30m) offering a "live video" image of the monitored area		
<b>Detection Range</b> (at highest Sensitivity Setting for 1ft <sup>2</sup> (0.1m <sup>2</sup> ) pan fire)	<b>Fuel</b>	<b>ft / m</b>	<b>Fuel</b> <b>ft / m</b>
	Gasoline	200 / 60	JP4 150 / 45
	N-Heptan	200 / 60	Kerosene 150 / 45
	Alcohol 95%	150 / 45	Methane* 60 / 18
	Diesel Fuel	140 / 42	Propane* 60 / 18
	*20" (0.5m) high, 8" (0.2m) width plume fire		
<b>Response Time</b>	Typical 5 sec.		
<b>Adjustable Time Delay</b>	Up to 30 seconds		
<b>Sensitivity Ranges</b>	4 Sensitive Ranges for 1 ft <sup>2</sup> (0.1m <sup>2</sup> ) gasoline pan fire from 50 ft (15m) to 200 ft (60m)		
<b>Field of View</b>	IR3: 90° horizontal, 90° vertical		CCTV: 65° horizontal, 48° vertical
<b>Built-in-Test</b>	Manual and Automatic BIT		
<b>Temperature Range</b>	Operating (with video): -40°F (-40°C) to 158°F (70°C) Storage: -40°F (-40°C) to 158°F (70°C)		
<b>Humidity</b>	Up to 95%		

## ELECTRICAL SPECIFICATIONS

<b>Power Supply</b>	Operating Voltage: 18-32 VDC
<b>Power Consumption</b>	Max. 200mA in stand-by; Max. 250mA 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-1275B
<b>Electromagnetic Compatibility</b>	EMI/RFI protected (comply to CE requirements)

## OUTPUTS

<b>Relays</b>	Alarm - 2A at 30 VDC, 0.5A at 250 VAC Fault - 5A at 30 VDC and 250 VAC Fault relay normally closed, others normally open
<b>0-20mA</b>	Sink (source option) configuration Fault: 0 +0.5mA                      Warning: 10mA ±5% BIT Fault: 2mA ±10%                  Alarm: 15mA ±5% Normal: 5mA ±10%                    Resistance Loop: 100-600 Ω
<b>HART Protocol</b>	Optional HART communications on the 0-20mA analog current (FSK) - used for maintenance, configuration changes and asset management, available in mA source output wiring options
<b>RS-485</b>	The RS-485 communication link can be used in installations with computerized controllers The RS-485 is Modbus compatible
<b>Color Video Image</b>	Accessible via a standard NTSC or PAL video output connection that can be connected to standard video equipment for viewing, recording and scanning video images

## 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

## APPROVALS

<b>Hazardous Area</b>	ATEX	EX II 2G, EExd IIB + H <sub>2</sub> T4 (70°C) EX II 2G, EExde IIB + H <sub>2</sub> T4 (70°C)
	UL	Class I, Groups C & D
	GOST R	1ExdIIBT5/H <sub>2</sub>
<b>Performance</b>	FM3260	
<b>Reliability</b>	SIL2 per TUV calculation	

## ACCESSORIES

<b>Fire Simulator</b> 20/20-310	<b>U-Bolt/Pole Mount</b> 789260-2 (2" pole)	<b>Swivel Mount</b> 20/20-003 (St. St. 316L)
<b>Duct Mount</b> 794716-3	789260-1 (3" pole)	<b>USB RS485 Harness</b> 794079-6
<b>Sun Protector</b> 780280	<b>Mini Laptop Kit</b> 777820	<b>Rain Cover</b> 780981

Specifications subject to change

For more information view manual or [www.spectrex.net](http://www.spectrex.net)