

# features

- Triple-spectrum design
- Highly immune to false alarms
- Live colour video image
- Sensitivity selection
- User-programmable configuration
- Automatic manual built-in-test
- UL, CENELEC/ATEX approved options
- Standard video output
- Standard 4-wire connection
- M.T.B.F. minimum 43,000 hours
- RS-485 MOD BUS compatible

The Spextrex SharpEye CCTV Flame detector is a self-contained, triple spectrum optical flame detector that incorporates a video colour camera. The 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 colour video camera enables the user to investigate the monitored area, to identify the fire's source and location, and help select the best response to the situation (activation of fire suppression means).

Configuration can be made to issue a live colour 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 patented triple IR circuit design scans for oscillating IR radiation (1 to 10 Hz) in the spectral bands ranging from 4.0 to 5.0 microns. This highly advanced detector uses a programmed algorithm, which checks the ratio and correlation of data received by the three sensors. Only detection of radiation emissions matching the spectral fingerprint of fire will produce an alarm,

making the CCTV Flame detector highly immune to false alarms.

The SharpEye CCTV Flame detector is extremely sensitive. It can detect a 1x1 sq.ft. gasoline pan fire at 100 ft. in less than 3 seconds. The sensitivity is user programmable, offering 4 ranges of detection. The CCTV Flame detector incorporates both automatic & manual BIT (Built-in-test).

The video signal output of the CCTV Flame detector is standard NTSC (PAL version is also available). Once a fire is detected, the CCTV will switch on to allow viewing of the area. A 1x1 sq. ft. fire will be clearly seen at approximately 100 feet. A 4-20 mA and RS-485 interface as well as the standard alarm, accessory and fault relays make the CCTV Flame detector the most diverse detector available.

The CCTV Flame detector utilizes Mil.-Spec. electronic components and materials. The MTBF

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## SharpEye CCTV Flame Detector 20/20CTIN & 20/20CTIP

# Data Sheet

292 (12-02)

(Mean time between failures) is calculated to be 43,000 hours (5 years). This outstanding performance permits a 3-year warranty on the entire detector, not just the sensors.

## approvals

**UL approved	For use in Hazardous (classified) locations UL No. E209870 Class I, Groups C and D
CENELEC approved	EExd IIB + H2 T5 (70°C) Per En 50014 & 50018 **EExde IIB + H2 T5 (70°C) Per En 50014, 50018 & 50019
**ATEX approved	ATEX 1163 & 1164 per CE 0518 Ex II 2G

## mechanical

Dimensions:	120 x 132 x 132 mm										
Weight:	Aluminium: 3.7 Kg Base 1.7 Kg										
Spectral response:	Three IR band channels & CCTV image.										
Detection range:	1 sq. ft. gasoline fire @ 200 ft.* 1 sq. ft. n-heptane fire @ 200 ft.* 1 sq.ft. diesel oil fire @ 150 ft.* 1 sq. ft. 95% alcohol fire @ 150 ft.* 4 sq. ft. JP4 fire @ 150 ft.* * <i>Highest sensitivity setting.</i>										
Response time:	Typical 5 seconds.										
Time delay:	Up to 30 seconds.										
Sensitivity range:	Four sensitivity ranges set by dip-switch for gasoline pan fire 1x1 ft.2. <table><tr><th>Setting</th><th>Detection range</th></tr><tr><td>1</td><td>50 ft.</td></tr><tr><td>2</td><td>100 ft.</td></tr><tr><td>3</td><td>150 ft.</td></tr><tr><td>4</td><td>200 ft.</td></tr></table>	Setting	Detection range	1	50 ft.	2	100 ft.	3	150 ft.	4	200 ft.
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2	100 ft.										
3	150 ft.										
4	200 ft.										
Field of view:	Automatic flame detection: 90°H/90°V										
Video image:	CTIN (NTSC): 70° Horiz., 50° Vert.										
Built-in-test:	Manual & automatic BIT.										
Operating temperature range:	normal 14°F to 113°F without video image: - 40°F to 160°F										
Relative humidity:	up to 95% for the operational temperature range.										

## electrical

Operating voltage:	18-32 Vdc										
Power consumption:	Max. 150mA in stand-by Max. 200mA in alarm										
Electrical connection:	Standard two ¾" 14 NPT cable entries. Optional two M25x1.5 cable entries.										
Electrical input protection:	Complete electrical interface protection against reversed polarity voltage, surges, and spikes according to MIL-STD-1275.										
Electromagnetic compatibility:	The detector is designed and approved according to the following EMC requirements: <table><tr><td>Electrostatic discharge</td><td>IEC801-2:1984</td></tr><tr><td>Conducted emission</td><td>EN55022 Class A</td></tr><tr><td>Radiated emission</td><td>EN55022 Class A</td></tr><tr><td>Radiated immunity</td><td>IEC801-3:1984</td></tr><tr><td>EFT/B</td><td>IEC801-4:1988</td></tr></table>	Electrostatic discharge	IEC801-2:1984	Conducted emission	EN55022 Class A	Radiated emission	EN55022 Class A	Radiated immunity	IEC801-3:1984	EFT/B	IEC801-4:1988
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Outputs:	
Dry contact relays:	
Alarm:	2 Amps @ 30 Vdc 0.5 Amps @ 250 Vac
Accessory:	5 Amps @ 30 Vdc & 250 Vac
Fault:	5 Amps @ 30 Vdc & 250 Vac

**4-20mA current output:	
The 4-20mA is sink and can be supplied as source.	
Fault:	0 ± 0.5 mA
BIT fault:	2 ± 0.5 mA
Normal:	5 ± 0.5 mA
Warning:	10 ± 1 mA
Alarm:	15 ± 1 mA
Resistance loop:	100-600 Ohms

RS-485 communication:	
The detector is equipped with an RS-485 communication link. The RS-485 is MOD BUS compatible.	
Colour video image:	
Accessible via a standard NTSC video output connection (PAL version also available) that can be connected to standard video equipment for viewing, recording, scanning video images from a number of detectors.	
** <i>Optional, carries additional charge.</i>	

## part numbers

<b>20-20 CTIN</b>	CCTV Flame Detector
<b>20-20-003</b>	Swivel mounting base