

# FlameSpec™ IR3-StretchH2

## Triple IR Flame Detector for Energy Transition

The FlameSpec™ StretchH2 flame detector provides unrivaled response, high performance and reliable detection for a number of fires found in Energy Transition applications, such as hydrogen and hydrocarbon fires.

The detector addresses slow growing fires as well as fast eruptions of fire using improved IR3 technology. The detector operates in all weathers and light conditions.

These features, along with the built-in event logger, provide additional means to study the cause and development of fire events.

## Key Benefits

- High immunity to false alarm, including arc welding.
- Detects, hydrogen flames and hydrocarbon fires using three infrared wavelengths, with clear separation.
- Each sensor has the same field of view to further improve false alarm immunity.
- Ultra-fast detection mode detection within 40 milliseconds for fireballs or explosions.
- 5 selectable sensitivity levels.
- Universal outputs, 3 and 4 wire, 4-20 mA sink / source, Fire, Auxiliary and Fault Relays. RS485 port using Modbus RTU.
- Event logger: Alarms & faults are logged to non-volatile memory.
- Built-in-Test (BIT) – Automatic and manual self-test of window cleanliness and overall detector operation.
- Additional dirty optics warning for preventive maintenance needs.
- HART® 7 for configuration & maintenance.
- Heated window to avoid condensation and icing.
- Stainless steel tilt mount with horizontal and vertical adjustment.
- Functional safety - SIL 2 capable.



The FlameSpec™ IR3-StretchH2 detector offers the fastest detection of fires and explosions, providing extra time that can be used to reduce damage to plant & property and initiate the evacuation of people.

# FlameSpec™ IR3-StretchH2

Model: FLS-IR3-StretchH2

## Triple IR Flame Detection for Energy Transition

### Response Characteristics

Fuel	Size	Sensitivity	Distance ft (m)	Avrg Resp.Time (s)
n-Heptane	1 x 1 ft	Extreme	180 (55)	3.3
n-Heptane	1 x 1 ft	High	131 (40)	3.4
n-Heptane	1 x 1 ft	Medium	82 (25)	2
n-Heptane	1 x 1 ft	Low	49 (15)	1.7
n-Heptane	1 x 1 ft	Very Low	25 (7.5)	1.2
Gasoline	1 x 1 ft	Extreme	131 (40)	7.3
Gasoline	1 x 1 ft	Medium	98 (30)	2.2
Methane	32-in Plume	Extreme	66 (20)	4.4
Methane	32-in Plume	Medium	52 (16)	2.2
Methane	32-in Plume	Low	26 (8)	2.9
Methane	32-in Plume	Very Low	13 (4)	4.2
LPG	32-in Plume	Extreme	102 (31)	3.7
LPG	32-in Plume	High	75 (23)	2.7
LPG	32-in Plume	Medium	39 (12)	3
LPG	32-in Plume	Low	20 (6)	0.9
LPG	32-in Plume	Very Low	10 (3)	1
Diesel	1 x 1 ft	Extreme	164 (50)	5.6
Diesel	1 x 1 ft	Medium	49 (15)	4.2
Jet fuel	1 x 1 ft	Extreme	147 (45)	5.1
Jet fuel	1 x 1 ft	High	131 (40)	4
Jet fuel	1 x 1 ft	Medium	49 (15)	3.3
Jet fuel	1 x 1 ft	Low	25 (7.5)	1
Jet fuel	1 x 1 ft	Very Low	13 (4)	2.7
H <sub>2</sub>	32-in Plume	Extreme	98 (30)	4
H <sub>2</sub>	32-in Plume	Medium	66 (20)	4
H <sub>2</sub>	32-in Plume	Low	33 (10)	3.9
H <sub>2</sub>	32-in Plume	Very Low	16 (5)	3.6
Kerosene	1 x 1 ft	Extreme	164 (50)	4.8
Kerosene	1 x 1 ft	High	131 (40)	4.4
Kerosene	1 x 1 ft	Medium	49 (15)	3.8
Kerosene	1 x 1 ft	Low	25 (7.5)	2.9
Kerosene	1 x 1 ft	Very Low	13 (4)	1.4
Methanol	1 x 1 ft	Medium	36 (11)	3.2
Ethanol	1 x 1 ft	Medium	46 (14)	2.7
Isopropanol (IPA)	1 x 1 ft	Medium	66 (20)	2.6
Ethylene glycol	1 x 1 ft	Medium	26 (8)	4.7
Syngas (30%CH <sub>4</sub> :70%H <sub>2</sub> )	32-in Plume	Extreme	82 (25)	3.9

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Immunity to False Alarm

False Alarm Source	Modulated		Unmodulated	
	Distance ft (m)	Response	Distance ft (m)	Response
Sunlight, (direct or reflected)	No response		No response	
Sunlight, (direct or reflected) with water droplets on sensors	No response		No response	
Incandescent frosted glass light, 300 W	2.0 (0.5)	No alarm	2.0 (0.5)	No alarm
Fluorescent, 70 W (3 x 23.3 W)	2.0 (0.5)	No alarm	2.0 (0.5)	No alarm
Arc welding	11.5 (3)	No alarm	11.5 (3)	No alarm
Radiation heater, 1850 W	2.0 (0.5)	No alarm	2.0 (0.5)	No alarm
Quartz lamp (500 W) shielded	2.0 (0.5)	No alarm	2.0 (0.5)	No alarm
Quartz lamp (500 W) non-shielded	2.0 (0.5)	No alarm	2.0 (0.5)	No alarm
Mercury vapor lamp 160 W x 3	2.0 (0.5)	No alarm	2.0 (0.5)	No alarm
Car exhausts	2.0 (0.5)	No alarm	2.0 (0.5)	No alarm
Projector led	2.0 (0.5)	No alarm	2.0 (0.5)	No alarm
Solenoid bell	2.0 (0.5)	No alarm	2.0 (0.5)	No alarm
Soldering iron	2.0 (0.5)	No alarm	2.0 (0.5)	No alarm
Electric drill	2.0 (0.5)	No alarm	2.0 (0.5)	No alarm

## Part Numbers

FLS-IR3-H2-AS13	Triple IR (IR3) Flame Detector for hydrocarbon and hydrogen fires. SS316 Stainless Steel Housing with 2 x M25 Entries & one certified plug.
FLS-IR3-H2-AS23	Triple IR (IR3) Flame Detector for hydrocarbon and hydrogen fires. SS316 Stainless Steel Housing with 2 x 3/4 NPT Entries & one certified plug.

