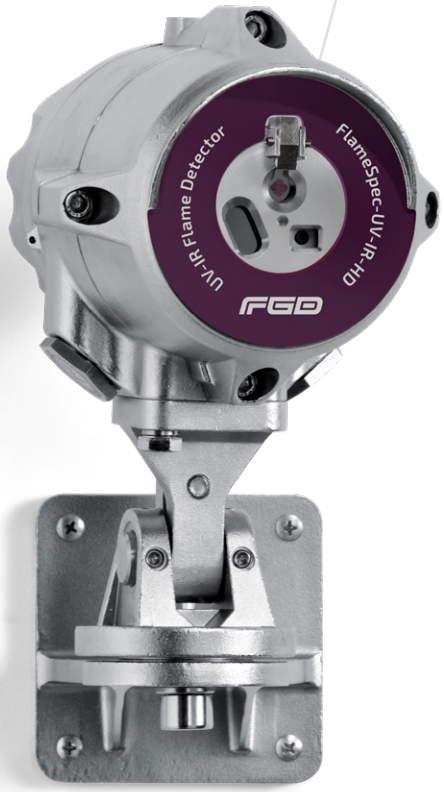
FlameSpec
UV-IR-HD
UV/IR Flame Detector



The FlameSpec UV-IR-HD detector offers extremely reliable and fast detection of fires and explosions, providing the additional, extremely valuable time that, in many cases, can make all the difference

Introduction

The FlameSpec-UV-IR flame detector provides ultra-fast response, high performance and reliable detection of a large variety of fires including hydrocarbon fires (visible and non-visible), as well as Hydrogen fires. The detector addresses slow growing fires as well as fast eruptions of fire using improved UV-IR technology. The detector operates in all weather and light conditions.

The detector provides high-definition (HD) video output of the monitored area with clear imaging of a fire event and of personnel at distances up to 100 ft. (30m) allowing rescuers to know the exact situation before entering the hazardous area. It will automatically record a video of a fire event (1 min pre-alarm / up to 3 min post-alarm).

Add to that, the integral HD quality video, with event recording, on top of the proven superior capabilities of UV-IR flame detection and you have a very powerful safety tool to protect your personnel, plant and process.

Key Benefits

- High immunity to False Alarm.
- Ultra-fast detection mode detection within 5 milliseconds for fireballs or explosions.
- Hydrogen and Hydrocarbons flame detection.
- High sensitivity – up to 100 ft. (30m) for a 1 ft^2 (0.1m^2) n-heptane pan fire.
- HD video output with Automatic HD video recording of fire events. Data/ Event logger: Alarms, faults and other relevant events are logged to non-volatile memory.
- Ethernet communication – in addition to the standard methods, such as 4-20mA and Modbus.
- Built-in-Test (BIT) – Automatic and manual internal self-test of window cleanliness and the overall operation of the detector (for both IR and UV channels).
- HART 7 models available - Easy configuration and diagnostic capability.
- Window heater to avoid condensation and icing.
- Stainless steel tilt mount with horizontal and vertical adjustment.
- UV and IR warning levels – 0-20mA – Current output warning when elevated UV or IR radiation is detected.
- SIL 2 compliant models available - suitable for use as part of a SIL 2 compliant safety system.

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FGD FIRE & GAS DETECTION TECHNOLOGIES INC.

Fire and Gas Detection Technologies Inc. | 4222 E. La Palma Ave. Anaheim, CA 92807 USA
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FlameSpec-UV-IR-HD

UV/IR Flame Detector

Model: FLS-UV-IR-HD

FIRE DETECTION	**Detection time and distance**	5ms for fast burst of explosion 1.5s for 1 ft² (0.1m²) pan fire at 0–50 ft. (0–15m) <3s for 1 ft² (0.1m²) pan fire at 50–100 ft. (15–30m)
	Field of view (IR detection)	90° Horizontal, 80° Vertical
	Time Delay	0–30 seconds
	Built in Test	Automatic and Manual
VIDEO FUNCTIONALITY	**HD Video**	Allows clear imaging of fire and humans at 100 ft. (30m) distance
	Video recording of alarm event	1-minute pre-event and 3 minutes post-event
	System integration protoco	ONVIF (Open Network Video Interface Forum) Profile S
ELECTRICAL SPECIFICATIONS	**Operating Voltage**	24 VDC nominal (18-32 VDC)
	Current Consumption	Standby: 180mA Maximum: 250mA all systems in operation (including window heater)
	Conduit Entries	2x cable and conduit entries 3/4" 14NPT or M25x1.5
	Wiring	12-20AWG (2.5-0.35mm²)
OUTPUTS	**Relays**	SPST volt-free contacts rated 2A at 30 VDC Alarm – normally open; Fault – normally closed
	0-20mA (stepped) current output	3 wire and 4 wire configurations (sink and source) HART - units available upon request
	Indication	Tri-color LED (Green, Yellow, Red)
	Modbus	RTU compatible on RS-485
	Digital (for video)	IP network IEEE 802.3 10Base-t
	Composite video	NTSC or PAL
MECHANICAL SPECIFICATIONS	**Size**	7.87 x 5.12 x 5.12" (200x130x130mm)
	Weight	Detector (Stainless Steel 316): 9.8 lbs. (4.4 kg) Tilt mount (Stainless Steel 316): 5.4 lbs. (2.4 kg)
ENVIRONMENTAL SPECIFICATIONS	**Temperature Range**	Operating: -67°F to +185°F (-55°C to +85°C) Storage: -67°F to +185°F (-55°C to +85°C)
	Humidity	Up to 99% (RH), non-condensing
	Ingress Protection	IP66 & 68 (2m, 24hr); NEMA 4X & 6P
APPROVALS	**ATEX**	ATEX: II 2 G D Ex db IIC T5 Gb or Ex db eb IIC T5 Gb and Ex tb IIIC T95°C Db -55°C<Ta<75°C Ex db IIC T4 Gb or Ex db eb IIC T4 Gb and Ex tb IIIC T105°C Db -55°C<Ta<85°C
	IECEx	Ex db IIB T5 Gb -50°C≤Ta≤75°C Ex db IIB T4 Gb -50°C≤Ta≤85°C
	FMus & FMc	Class I, Div. 1, Groups B, C & D; T4 Class I, Zone 1, AEx/Ex db IIB T4 Gb T4 -50°C≤Ta≤85°C T5 -50°C≤Ta≤75°C
	EAC CU TR	1Ex d IIC T5 Gb or 1Ex de IIC T5 Gb and Ex tb IIIC T95°C Db -55°C≤Ta≤75°C 1Ex d IIC T4 Gb or 1Ex de IIC T4 Gb and Ex tb IIIC T105°C Db -55°C≤Ta≤85°C
	Performance	ANSI FM 3260 EN 54-10
	Functional safety	Complies to SIL2, per IEC 61508
ACCESSORIES	**Stainless steel weather cover**	
	Flame simulator, model FLS-FSIM-UV-IR-KIT	
	2" & 3" pole mount adapters	
	Mounting adapters for retrofit installations	
	Paint shield / cover	
WARRANTY	**5 Years**	

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Immunity to False Alarm

False Alarm Source	Modulated		Unmodulated	
	Distance ft. (m)	Response	Distance ft. (m)	Response
Sunlight, Direct, Reflected		No Alarm		No Alarm
Incandescent frosted glass light, 300W	2.0 (0.6)	No Alarm	2.0 (0.6)	No Alarm
Fluorescent, 70W (3x23.3W)	2.0 (0.6)	No Alarm	2.0 (0.6)	No Alarm
Electric arc	2.0 (0.6)	No Alarm	2.0 (0.6)	No Alarm
Arc welding	7.0 (2.0)	No Alarm	7.0 (2.0)	No Alarm
Radiation heater, 1850W	2.0 (0.6)	No Alarm	2.0 (0.6)	No Alarm
Quartz lamp (500W) non-shielded	10.0 (3.0)	No Alarm	3.0 (1.0)	No Alarm
Mercury vapor lamp 160Wx3	2.0 (0.6)	No Alarm	2.0 (0.6)	No Alarm
Exhausts	2.0 (0.6)	No Alarm	2.0 (0.6)	No Alarm
Projector led	2.0 (0.6)	No Alarm	2.0 (0.6)	No Alarm
Solenoid bell	2.0 (0.6)	No Alarm	2.0 (0.6)	No Alarm
soldering iron	2.0 (0.6)	No Alarm	2.0 (0.6)	No Alarm
Electric Drill	2.0 (0.6)	No Alarm	2.0 (0.6)	No Alarm

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Response Characteristics

Fuel	Size	Sensitivity	Distance ft. (m)	Avrg Resp. Time (s)
N-Heptane	1 x 1 ft.	Extreme	98 (30)	3.0
N-Heptane	1 x 1 ft.	Medium	49 (15)	1.5
Gasoline	2 x 2 ft.	Extreme	164 (50)	8.1
Gasoline	1 x 1 ft.	Extreme	98 (30)	2.9
Methane	32-in Plume	Extreme	59 (18)	4.8
LPG	32-in Plume	Extreme	75 (23)	3.2
LPG	32-in Plume	Medium	33 (10)	0.6
Diesel	1 x 1 ft.	Extreme	75 (23)	3.0
JP5	1 x 1 ft.	Extreme	75 (23)	3.1
JP5	1 x 1 ft.	Medium	33 (10)	2.1
Kerosene	1 x 1 ft.	Extreme	75 (23)	2.5
Methanol	1 x 1 ft.	Extreme	59 (18)	3.8
Methanol	1 x 1 ft.	Medium	26 (8)	2.2
Ethanol	1 x 1 ft.	Extreme	72 (22)	3.8
Isopropanol	1 x 1 ft.	Extreme	75 (23)	3.0
Polypropylene	1 x 1 ft.	Extreme	49 (15)	3.1
Paper	1 x 1 ft.	Extreme	33 (10)	3.9
H_2	32-in Plume	Extreme	66 (20)	3.6

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