

Spyglass™ IR3 (V)

Spyglass™ flame detectors offer the fastest detection of fires and explosions, providing the opportunity to reduce or prevent damage to property & equipment.

The SG50-F-IR3 (V) flame detectors provide unrivaled response, high performance and reliable detection for hydrocarbon fires. The color or optional near-infrared video technology in the SG50-F-IR3-V allows visualization of these fires which are often nearly invisible to the human eye. Video capture of a fire event includes one minute before the alarm and up to three minutes after the event.

Rugged stainless steel construction and accessories such as weather shields, air shields, and pole mounts allow use in the most rugged and challenging conditions.

Features

- Highest immunity to false alarms
- Triple IR uses three wavelengths in the infrared spectrum from 4.0 to 5.0 μm to detect hydrocarbon fires
- HD, or composite, video output with automatic HD video recording of events on IR3-V
- 5 selectable sensitivity levels
- Ultra-fast detection within 40 milliseconds for fireballs or explosions
- Fast flame detection, <1.5 s for standard fire up to 30 m. Option for <0.5s, in compliance with NFPA 33, available
- Optimized CO₂L option for aircraft hangars, helipads & truck loading racks available
- Detects up to 262 ft. (80m) for a 1 ft (0.1 m²) n-heptane fire
- Event logger: Alarms, faults (& videos for IR3-V) are logged to non-volatile memory
- Universal outputs, 3 and 4 wire, 4-20 mA sink / source, Fire, Auxiliary and Fault Relays. RS485 port using
- Modbus RTU
- Built-in-Test (BIT) – Automatic and manual internal self-test of window cleanliness and the overall operation of the detector
- ¹HART® 7 units available - Easy configuration and diagnostic capability, including dirty optics warning for preventative maintenance needs
- Window heater to avoid condensation and icing
- Stainless steel tilt mount with horizontal and vertical adjustment
- ¹SIL 2 compliant - suitable for use as part of a SIL 2 compliant safety system

¹ not on base unit options



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Flame Detector

Reliability For Multiple Applications

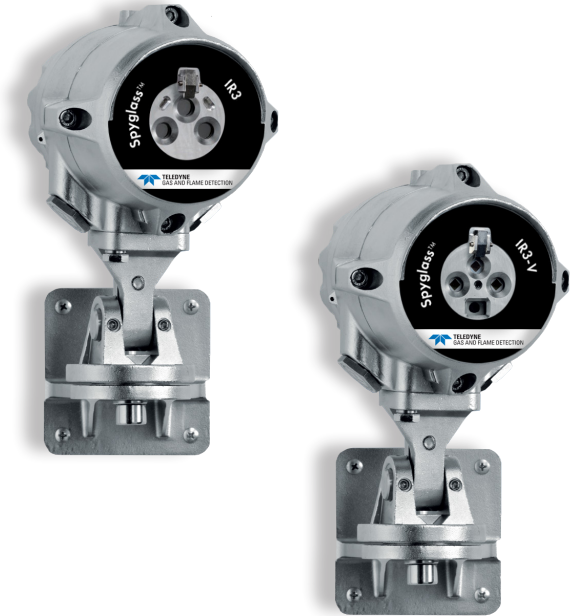
Spyglass™ IR3 (V) flame detectors provide industry leading reliability and detection speed for hydrocarbon fires. The SG50-F-IR3-V is available with color (RGB) or near-infrared video to handle both outdoor/bright light areas as well as indoor low light applications.



Color



Near-Infrared



CO₂L Version for Jet Exhaust Applications

IR3 CO₂L option gives reliable flame detection without false alarms in applications where hot CO₂ can be present from sources such as jet engines or vehicle exhaust. While these applications can be challenging for standard flame detection solutions, the Spyglass™ CO₂L configuration has proven performance to provide reliable detection and alarm. Helipads, airplane maintenance facilities & hangars and tanker loading racks are all examples of CO₂L applications.



NFPA33 Version for Paint Booth Applications

IR3 & IR3-V can also be configured to be compliant with NFPA33, providing rapid detection in areas where fast flame detection is required such as:

- Paint spray booths
- Coating processes
- High speed printing presses
- Engine test fixtures
- Other areas where rapid detection is a necessity

Model: SG50-F-IR3 (V)

Detection time and distance	40ms for fast burst or explosion 1.5s for 1 ft ² (0.1m ²) n-heptane pan fire at 0–100 ft. (0–30m) 9.0s for 1 ft ² (0.1m ²) n-heptane pan fire at 100–262 ft. (30–80m)
Sensitivity Range	5 sensitivity ranges: Extreme, High, Medium, Low, Very Low
Field of view (IR detection)	90° Horizontal, 75° Vertical
Time Delay	0–30 seconds
Built in Test	Automatic and Manual

Video Functionality - Only available on SG50-F-IR3-V

HD Video	Color HD, as standard. Near-IR filtered option
Video recording of alarm event	1 minute pre-event and up to 3 minutes post-event
System integration protocol	ONVIF (Open Network Video Interface Forum) Profile S

Electrical Specifications

Operating Voltage	24 VDC nominal (18-32 VDC)	
Current Consumption	Non-Video Units	Video Units
Standby	80mA	180mA
All systems in operation (including window heater)	120mA	300mA
Conduit Entries	2x cable and conduit entries 3/4" NPT(F) or M25x1.5	
Wiring	12-20AWG (2.5-0.35mm ²)	

Outputs

Relays	SPST volt-free contacts rated 2A at 30 VDC 3 relays: Alarm & Auxiliary – normally open; Fault – normally closed
0-20mA (stepped) current output	3 wire and 4 wire configurations (sink and source) HART® rev 7.0 (not available on base unit option)
Indication	Tri-color LED (Green, Yellow, Red)
Modbus	RTU compatible on RS-485
Digital (for video)	IP network IEEE 802.3 100Base-T - Only on IR3-V
Composite video	NTSC or PAL - Only on IR3-V

Mechanical Specifications

	SG50-F-IR3	SG50-F-IR3-V
Size	5.51 x 3.54 x 3.54" (140x90x90mm)	7.87 x 5.12 x 5.12" (200x130x130mm)
Weight	Detector (Stainless Steel 316): 6.6 lbs. (3.0 kg) Tilt mount (Stainless Steel 316): 3.3 lbs. (1.5 kg)	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, IECEx, UKCA	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
FMus & FMc	Class I, Div. 1, Groups B, C & D; T4 -50°C≤Ta≤85°C or T5 -50°C≤Ta≤75°C Class II/III, Div. 1, Groups E, F, G; T4 -50°C≤Ta≤85°C or T5 -50°C≤Ta≤75°C Class I, Zone 1, AEx/Ex db IIC T4 Gb or Class I, Zone 1, AEx/Ex db eb IIC T4 Gb -50°C≤Ta≤85°C Class I, Zone 1, AEx/Ex db IIC T5 Gb or Class I, Zone 1, AEx/Ex db eb IIC T5 Gb -50°C≤Ta≤75°C Zone 21, AEx/Ex tb IIIC T95°C Db -50°C≤Ta≤75°C or Zone 21, AEx/Ex tb IIIC T105°C Db -50°C≤Ta≤85°C
Performance	ANSI FM 3260, EN 54-10

Functional safety Certified to SIL2, per IEC 61508 (not available on all options)

Please contact us for other certifications including INMETRO, MED and PESO.

Warranty

5 years

Spyglass™ IR3 (V)

Flame Detectors

Accessories

Stainless steel weather cover

2" & 3" pole mount adapter

Airshield for areas with high airborne contamination

Paint shield / cover

Flame Simulator SP-F-SIM-IR3



Operation Distances

IR3 & IR3-V

Detector Sensitivity	ft.	m.
Extreme	23.0	7.0
High	16.0	5.0
Medium	10.0	3.0
Low	3.3	1.0

Electrical Specifications

Operating Voltage nominal, V	3.7
Number of activations between charging	~50
Battery Capacity, mAh	>3000
Charging time, hours	up to 3

All Spyglass™ flame detectors have Built-In Test (BIT) capability. Flame simulators are used when an external test (versus BIT) of a flame detector is required but a live fire test is not possible. Flame simulators mimic the radiation and flicker of a real fire source in a handheld device which is certified intrinsically safe to ATEX standards.

Mechanical Specifications

Size	3.9 x 3.9 x 7.8" (100 x 100 x 200mm)
Weight	3.96 lbs. (1.8 kg)
Simulator Enclosure Material	Painted Aluminum LM25

Environmental Specifications

Ingress Protection	IP65 (NEMA 4X)
Humidity	up to 99% (RH), non-condensing
Operating temperature	Min: -4°F (-20°C) Max: +122°F (+50°C)

Approvals

ATEX	Ex II 2 G Ex db ib op is IIC T6 Gb Ex II 2 D Ex tb ib op is IIIC T85°C Db -20°C < Ta < +50°C
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Warranty

3 years

We are committed to ensuring the quality and continuous improvement of our products. The information contained in this brochure is therefore subject to change without notice, only the technical data contained in the manual is binding. For more information, please contact us or our distributor.



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