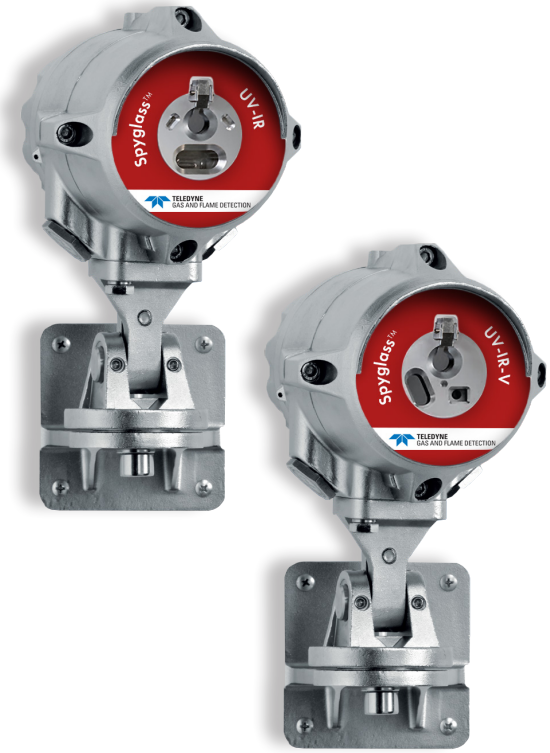
TELEDYNE GAS AND FLAME DETECTION
Everywhereyoulook™



Spyglass™ UV-IR, UV-IR-F (V)

The UV-IR family of flame detectors provides ultra-fast response, high performance and reliable detection of hydrocarbon and non-hydrocarbon fires including hydrogen, hydrogen/methane blends, ammonia, and silane.

The SG50-F-UV-IR-F is similar to the SG50-F-UV-IR except it is optimized for hydrocarbon fires such as methane, fuels, and solvents. Both the UV-IR and UV-IR-F are also available with built in video in either color (RGB) or near-infrared format.

Video and data of events are quickly stored to non-volatile memory. The recordings start one minute before detection and continue for up to three minutes. The event video can be used for post incident investigation.

Features

- High immunity to False Alarm
- Hydrocarbon and non-hydrocarbon flame detection
- High sensitivity – up to 100 ft. (30m) for a 1 ft^2 (0.1m^2)n-heptane fire
- Ultra-fast detection within 5 milliseconds for fireballs or explosions
- High speed (<0.5s) model [X5] available for compliance with NFPA 33
- HD or composite video output with automatic recording of fire events with UV-IR-V & UV-IR-F-V
- Data/Event logger: Alarms, faults & videos as well as other relevant events 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
- Additional dirty optics warning for preventive maintenance needs
- [1]HART® 7 - Easy configuration and diagnostic capability
- Window heater to avoid condensation and icing
- Stainless steel tilt mount with horizontal and vertical adjustment
- [1]SIL 2 compliant - suitable for use as part of a SIL 2 compliant safety system
- Detect high UV (sparks and arcs) or IR levels via auxiliary relay or 4-20mA

[1] not on base unit options

Spyglass™ UV-IR, UV-IR-F (V)

Flame Detector

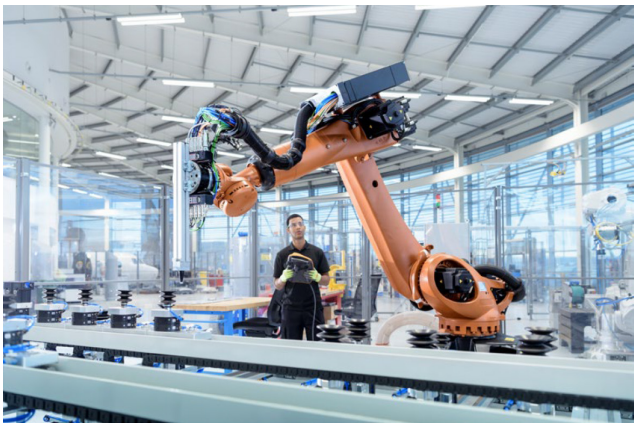
UV-IR Spyglass™ UV-IR flame detectors combine detection of UV energy from fire sources along with an infrared detection band at 2.7 microns detecting the hot H_2O given off by most fires. This allows the UV-IR to detect many types of fires including hydrogen, methane, and ammonia.

UV-IR-V Spyglass™ UV-IR-V flame detectors add video detection to the basic UV-IR package. By adding video to a flame detector it is possible to monitor remote locations from a safe area, allowing a human operator to quickly react to a fire alert. In addition, the video is recorded which allows for analysis after a fire incident of how the fire started, how it progressed, and how the suppression systems functioned. Video available in color or near-infrared.

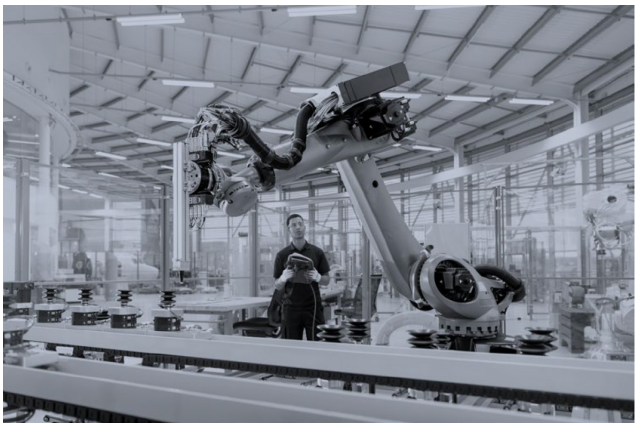
UV-IR-F Spyglass™ UV-IR-F flame detectors combine detection of UV energy from fire sources along with an infrared detection band at 4.5 microns detecting the hot CO_2 given off by hydrocarbon fires. With this focus on the hot CO_2 the UV-IR-F is optimized to detect hydrocarbon fires, but not nonhydrocarbon fires such as hydrogen, ammonia, and silane.

UV-IR-F-V Spyglass™ UV-IR-F-V flame detectors add video detection to the basic UV-IR-F package. Similar to the UV-IR-V, the UV-IR-F-V comes in either color or near-infrared format to detect hydrocarbon fires such as methane, gasoline, diesel, jet fuels, and solvents.

Color (RGB) Video Option



Near-Infrared Video Option



Model: SG50-F-UV-IR, UV-IR-F (V)

Detection time and distance	5ms for fast burst or explosion 1.5s for 1 ft² (0.1m²) n-heptane pan fire at 0–50 ft. (0–15m) <3s for 1 ft² (0.1m²) n-heptane pan fire at 50–100 ft. (15–30m)
Sensitivity Range	4 sensitivity ranges: Extreme, High, Medium, Low
Field of view (IR detection)	90° Horizontal, 80° Vertical
Time Delay	0–30 seconds
Built in Test	Automatic and Manual

Video Functionality - Only available on SG50-F-UV-IR-V, UV-IR-F-V

HD Video	Color HD, as standard. Near-IR filtered option (X2 available on request)
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

Spyglass™ UV-IR, UV-IR-F (V)

Flame Detector

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 available on UV-IR-V & UV-IR-F-V
Composite video	NTSC or PAL - Only available on UV-IR-V & UV-IR-F-V

Mechanical Specifications

	SG50-F-UV-IR & SG50-F-UV-IR-F	**SG50-F-UV-IR-V & SG50-F-UV-IR-F-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, EN54-10
Functional safety	Certified to SIL2, per IEC 61508 (not available on all options)

Please contact us for other certifications including INMETRO and PESO.

Warranty

5 Years

Accessories

Stainless steel weather cover

2" & 3" pole mount adapter

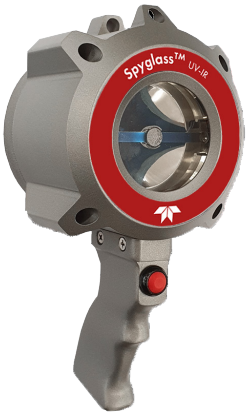
Airshield for areas with high airborne contamination

Spyglass™ UV-IR, UV-IR-F (V)

Flame Detectors

Flame Simulator SP-F-SIM-UVIR

(only works on UV-IR, not UV-IR-F models)



Operation Distances

	UV-IR	
Detector Sensitivity	**ft.**	**m.**
Extreme	21.3	6.5
High	16.0	5.0
Medium	13.0	4.0
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

Warranty

3 years

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