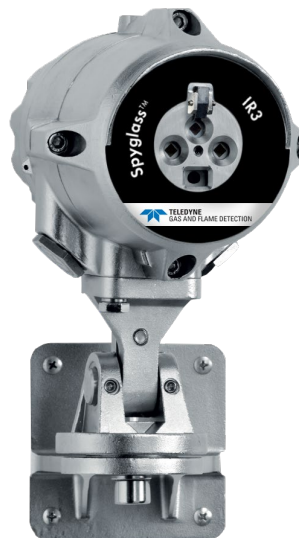




TELEDYNE
GAS AND FLAME DETECTION
Everywhereyoulook™

SPYGLASS SG50F

Hangar Model Addendum



User manuals in other languages are available on Website
<https://teledynegasandflamedetection.com>



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All of the information that is provided in this document is accurate to the best of our knowledge.

As a result of continuous research and development, the specifications of this product may be changed without prior notice.

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Spyglass SG50-F

Hangar Model Addendum



1 Introduction

This addendum applies to FlameSpec detectors:

- FLS-IR3-HD-ASX3
- FLS-IR3-ASX3

See the user manual of each detector for details on installation, maintenance, configuration and operation.

The hangar model is a specialized detector for specific applications:

Hangar, Helideck, Petroleum Loading Racks and other applications that have the following characteristics:

- 1) Extreme exhaust fume discharging (Jet / Helicopter Engines i.e.)
- 2) Fire hazards from liquid fuels without gaseous sources like LPG

The hangar model will detect flames from the following fire sources:

N-Heptane, Gasoline, Diesel, JP5, Kerosene, Polypropylene, IPA, Wood and paper and other similar sources

For more details, consult with your FGD distributor on specific applications.

1.1 Key Features

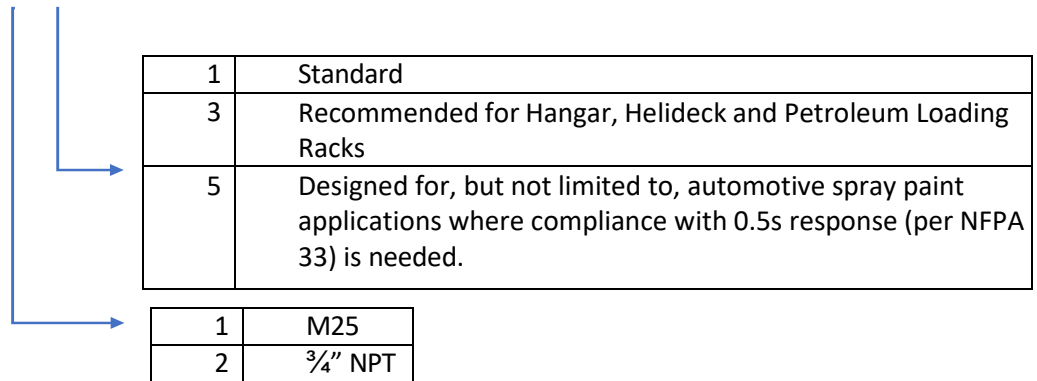
- **Improved false alarm immunity** in high CO₂ applications, like aircraft hangars or helidecks
- **1.5 second detection time** - for 1 ft² (0.1 m²) JP5 pan fire at up to 82 ft. (25m) distance.
- **Ultra-fast detection mode** - detection within 40 milliseconds for fireballs or explosions.
- **HD model** - **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.
- **Built-in-Test (BIT)** - Automatic (and manual) self-test of window cleanliness and the overall operation of the detector.
- **Window heater** to avoid condensation and icing.
- **Tilt mounting bracket** for accurate detector positioning.

1.2 Model Number Description

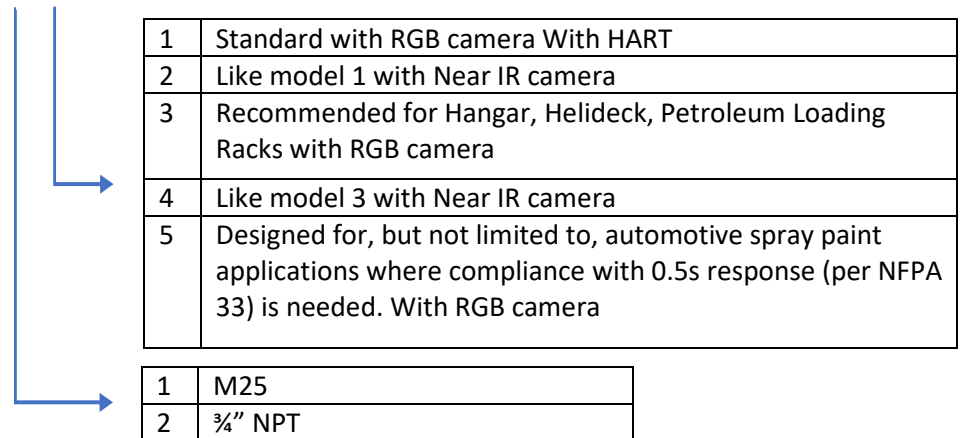
The model numbers are defined as follows:

Model No are defined as follows:

FLS-IR3 - A S X X



SG50 - F - IR3 - F - V - A S X X



1.2.1 Enhanced performance options

Option 3: Increased false alarm immunity in presence of hot CO2. Recommended for Hangar, Helideck and Petroleum Loading Racks

Option 5: Design for, but not limited to, automotive spray paint applications where compliance with 0.5 s response (per NFPA 33) is needed

2 Performance

The following tables show test results of detection distances and times for different fire scenarios. Each table lists results for a different sensitivity setting. For liquid fires the size of fire refers to the size of the pan, filled with the fuel. For gas fires the length of the plume is listed.

2.1 SG50-F-IR3-V-ASX3, SG50-F-IR3-V-ASX4

Extreme Sensitivity

Table 1: IR3-V Sensitivity (Extreme)

Fuel	Size	Distance Feet (m)	Average Response Time (Seconds)
N-Heptane	1 x 1 ft	262 (80)	4.2
Gasoline	1 x 1 ft	230 (70)	3.2
Diesel	1 x 1 ft	164 (50)	3.6
JP5	1 x 1 ft	164 (50)	3.6
JP5*	2 x 2 ft	262 (80)	10.3
Kerosene	1 x 1 ft	164 (50)	3.5
Polypropylene	1 x 1 ft	115 (35)	3.3
IPA	1 x 1 ft	180 (55)	2.5
Wood	1 x 1 ft	148 (45)	5.7

* From Ignition

High Sensitivity

Table 2: IR3-V Sensitivity (High)

Fuel	Size	Distance ft (m)	Average Response Time (Seconds)
N-Heptane	1 x 1 ft	197 (60)	3.7
JP5	1 x 1 ft	148 (45)	3.2

Medium Sensitivity**Table 3: IR3-V Sensitivity (Medium)**

Fuel	Size	Distance ft (m)	Average Response Time (Seconds)
N-Heptane	1 x 1 ft	98 (30)	0.8
Gasoline	1 x 1 ft	98 (30)	1.0
Diesel	1 x 1 ft	82 (25)	2.4
JP5	1 x 1 ft	82 (25)	1.4
JP5	2 x 2 ft	148 (45)	3.2
Kerosene	1 x 1 ft	82 (25)	1.2
Polypropylene	1 x 1 ft	66 (20)	3.3
IPA	1 x 1 ft	75 (23)	1.2
Wood	1 x 1 ft	66 (20)	1.0

Low Sensitivity**Table 4: IR3-V Sensitivity (Low)**

Fuel	Size	Distance ft (m)	Average Response Time (Seconds)
N-Heptane	1 x 1 ft	49 (15)	1.2
JP5	1 x 1 ft	39 (12)	1.2

Very low Sensitivity**Table 5: IR3-V Sensitivity (Very low)**

Fuel	Size	Distance ft (m)	Average Response Time (Seconds)
N-Heptane	1 x 1 ft	25 (7.5)	1.0
JP5	1 x 1 ft	20 (6)	1.1

2.2 SG50-F- IR3 -ASX3

Extreme Sensitivity

table 6 : IR3 Sensitivity (Extreme)

Fuel	Size	Distance Feet (m)	Average Response Time (Seconds)
N-Heptane	1 x 1 ft	262 (80)	4.6
Gasoline	1 x 1 ft	230 (70)	3.6
Diesel	1 x 1 ft	164 (50)	3.6
JP5	1 x 1 ft	164 (50)	3.6
JP5*	2 x 2 ft	262 (80)	11.0
Kerosene	1 x 1 ft	164 (50)	3.8
Polypropylene	1 x 1 ft	115 (35)	3.3
IPA	1 x 1 ft	180 (55)	2.8
Wood	1 x 1 ft	131 (40)	5.0

* From Ignition

High Sensitivity

table 7 : IR3 Sensitivity (High)

Fuel	Size	Distance ft (m)	Average Response Time (Seconds)
N-Heptane	1 x 1 ft	197 (60)	3.7
JP5	1 x 1 ft	148 (45)	3.5

Medium Sensitivity**table 8 : IR3 Sensitivity (Medium)**

Fuel	Size	Distance ft (m)	Average Response Time (Seconds)
N-Heptane	1 x 1 ft	98 (30)	1.1
Gasoline	1 x 1 ft	98 (30)	1.3
Diesel	1 x 1 ft	82 (25)	3.5
JP5	1 x 1 ft	82 (25)	1.5
JP5	2 x 2 ft	148 (45)	3.5
Kerosene	1 x 1 ft	82 (25)	1.6
Polypropylene	1 x 1 ft	66 (20)	2.1
IPA	1 x 1 ft	75 (23)	1.2
Wood	1 x 1 ft	66 (20)	1.2

Low Sensitivity**Table 9: IR3 Sensitivity (Low)**

Fuel	Size	Distance ft (m)	Average Response Time (Seconds)
N-Heptane	1 x 1 ft	49 (15)	1.4
JP5	1 x 1 ft	39 (12)	1.5

Very low Sensitivity**Table 10: IR3 Sensitivity (Very low)**

Fuel	Size	Distance ft (m)	Average Response Time (Seconds)
N-Heptane	1 x 1 ft	25 (7.5)	1.1
JP5	1 x 1 ft	20 (6)	1.3

2.3 False Alarm Immunity

The following table shows test results of false alarm immunity for detectors configured to “Extreme” sensitivity. For each radiation source a distance is listed. This is the minimum tested distance, from which the detectors did not alarm when exposed to the radiation source (either modulated or non-modulated).

False Stimuli only at Extreme Sensitivity

table 11 : False Alarm Immunity

False Alarm Source	Maximum Distance in ft (m)
Sunlight, Direct, Reflected	No response at any distance
Sunlight, Direct, reflected with water drops on sensors	No response at any distance
Incandescent frosted glass light, 300W	2 (0.5)
Fluorescent, 70W (3x23.3W)	2 (0.5)
Electric arc	2 (0.5)
Arc welding	12 (3.5)
Radiation heater, 1850W	2 (0.5)
Radiation heater, 1850W with water drops on sensors	2 (0.5)
Quartz lamp (1000W) shielded	2 (0.5)
Quartz lamp (500W) non-shielded	2 (0.5)
Quartz lamp (500W) non-shielded with water drops on sensors	2 (0.5)
Mercury vapor lamp 160Wx3	2 (0.5)
Car Exhausts	2 (0.5)
Projector led	2 (0.5)
Solenoid bell	2 (0.5)
Soldering iron	2 (0.5)
Electric Drill	2 (0.5)



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