TELEDYNE
GAS AND FLAME DETECTION
Everywhereyoulook™

User Manual

SP-F-SIM

Spyglass Flame Simulators

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

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.

Limitation of Liability

- The Company Teledyne Gas and Flame Detection, hereinafter referred to as Teledyne Gas and Flame detection throughout this document, shall not be held responsible for any damage to the equipment or for any physical injury or death resulting in whole or in part from the inappropriate use or installation of the equipment, non-compliance with any and all instructions, warnings, standards and/or regulations in force.
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- Teledyne Gas and Flame detection shall not be responsible for any direct or indirect damage, or any direct or indirect consequence, resulting from the sale and use of any of its products **UNLESS SUCH PRODUCTS HAVE BEEN SELECTED BY Teledyne Gas and Flame detection ACCORDING TO THE APPLICATION**.

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- The drawings, specifications, and information herein contain confidential information that is the property of Teledyne Gas and Flame detection.
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Warning

- This is not a contractual document. In the best interest of its customers and with the aim of improving performance, Teledyne Gas and Flame detection reserves the right to alter the technical features of its equipment without prior notice.
- **READ THESE INSTRUCTIONS CAREFULLY BEFORE THE FIRST USAGE**: these instructions should be read by all persons who have or will have responsibility for the use, maintenance, or repair of the instrument.
- This instrument shall only be deemed to be in conformance with the published performance if used, maintained, and repaired in accordance with the instructions of Teledyne Gas and Flame detection by Teledyne Gas and Flame detection personnel or by personnel authorized by Teledyne Gas and Flame detection.

Important Information

- The modification of the material and the use of parts of an unspecified origin shall entail the cancellation of any form of warranty.
- The use of the unit has been projected for the applications specified in the technical characteristics. Exceeding the indicated values cannot in any case be authorized.

Warranty

- Under normal conditions of use and on return to the factory, SP-F-SIM lamp carry a 3-year warranty, excluding accessories such as carrying case, etc.

Waste Electrical and Electronic Equipment (WEEE directive)

European Union (and EEA) only. This symbol indicates that, in conformity with directive DEEE (2002/96/CE) and according to local regulations, this product may not be discarded together with household waste.

It must be disposed of in a collection area that is set aside for this purpose, for example at a site that is officially designated for the recycling of electrical and electronic equipment (EEE) or a point of exchange for authorized products in the event of the acquisition of a new product of the same type as before.

Table of contents

1 General Information

WARNING: ALL INDIVIDUALS WHO HAVE OR WILL HAVE RESPONSIBILITY FOR USING, MAINTAINING, OR SERVICING THIS PRODUCT MUST READ THIS ENTIRE MANUAL CAREFULLY. FAILURE TO USE THIS EQUIPMENT PROPERLY COULD RESULT IN SERIOUS INJURY OR DEATH.

1.1 User Manual

The instructions given in this manual must be read thoroughly before installation and start-up, particularly those concerning the points related to the safety of the end-user. This user manual must be made available to every person involved in the activation, use, maintenance, and repair of the unit.

The information, technical data, and diagrams contained in this manual are based on the information that is available at a given time. In case of doubt, contact Teledyne Gas and Flame detection for additional information.

The aim of this manual is to supply simple and accurate information to the user. Teledyne Gas and Flame detection cannot be held liable for any misinterpretations in the reading of this manual. In spite of our efforts to produce an error-free manual, it may nonetheless contain some unintentional technical inaccuracies.

In the client's interest, Teledyne Gas and Flame detection reserves the right to modify the technical characteristics of its equipment to increase their performance without prior notice.

The present instructions and their content are the inalienable property of Teledyne Gas and Flame detection.

1.2 Symbols used

Icon	Significance
	This icon and text designate information of special note.

Icon	Significance
	This symbol indicates: Earth ground connection.
	This symbol denotes: Protective earth terminal. A cable of the adequate diameter must be connected to ground and to the terminal having this symbol.
	This symbol denotes: Attention! In the present mode of use, failure to adhere to the instructions preceded by this symbol can result in a risk of electric shock and/or death.
	This symbol indicates: Failure to follow instructions may result in damage to or incorrect operation of the device.
	European Union (and EEA) only. This symbol indicates that this product must not be discarded with household waste, as per the EEA directive (2002/96/EC) and your own national regulations. This product must be disposed of at a collection point that is reserved for this purpose, for example, an official site for the collection of electrical and electronic equipment (EEE) in view of their recycling, or a point of exchange for authorized products that is accessible when you acquire a new product of the same type.
	This icon and text indicate the possibility of electrostatic discharge (ESD) in a procedure that requires the reader to take the proper ESD precautions.
	Warning: This icon and text indicate a potentially hazardous situation, which, if not avoided, could result in death or injury

2 Introduction

This manual describes the Spyglass Flame Simulators that are part of the Spyglass family of products. Three different models of simulator are available for testing each type of Spyglass Detector (IR3, IR3-H2 and UV-IR). Spyglass Flame Simulators provide fast and convenient means for periodic flame detector and end-to-end system verification in the field without removing the detector from the location or hazardous area. Maintenance costs are therefore reduced.

Spyglass Flame Simulators emit either IR or UV - IR radiation (according to the model) in a special electromagnetic radiation pattern which simulates a fire to the detectors. The simulators are lightweight, easy to use, with testing distances of up to 23 ft. (7m). The IR3 version is capable of more than 1000 activations between battery charging. Spyglass Flame Simulators are ATEX approved for use in hazardous Zone 1, Zone 2, Zone 21, Zone 22 areas.

Each simulator kit contains a carrying case, simulator, carrying strap, battery charger, user manual, Allen key and a tool for removing the simulator rear cover.

Figure 1 - Flame Simulator Kit Layout

Rep	
1	Strap Range Tool
2	Flame simulator
3	Carrying Strap
4	Battery Charger
5	Adaptors
6	Carrying Case

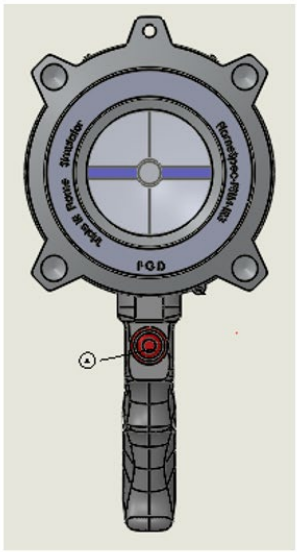
3 Operation

3.1 Flame simulator activation

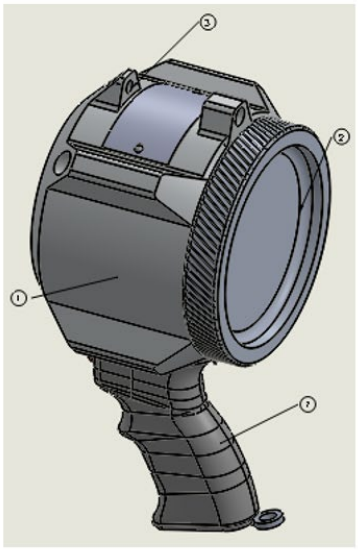
• Testing using a flame simulator to simulate a fire to the detector may activate alarms or extinguishing systems in the area unless disabled/inhibited/bypassed.

• All tests should be coordinated, and if needed, disconnect/disable the alarm and/or the extinguishing systems before the test, and reconnect after the test.

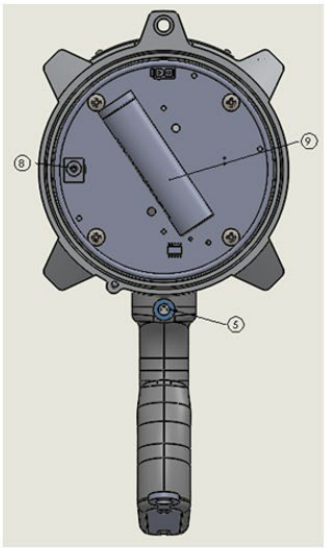
Flame Simulator Key Components



4. Push Button



1. Electronic Chamber
2. Battery Cover
3. Aiming Sights
7. Handle



5. LED status Indicator
8. Power Supply Input
9. Battery

1. Remove simulator from the case and verify the simulator battery is charged.
2. Ensure use of the correct flame simulator model according to the detector type.
3. Make sure you are testing within the specified distance, according to the detector sensitivity. See Table 1 below.
4. Point the flame simulator at center of detector by aligning the front and back aiming sights located on the top of the simulator (3).
5. The simulator should be aimed within +/- 30º from the horizontal and vertical center line axis of the detector.
6. Press the push button (4) to activate, notice the flashing green LED. Wait for the flame detector to enter into alarm (typically 10 seconds). Go to the next detector and repeat the test.

factory default settings for Detectors sensitivity is Medium.

Simulator Kit		SP-F-SIM-IR3	SP-F-SIM-IR3-H2	SP-F-SIM-UV-IR
Use with Detector Model		SG50-F-IR3-V	SG50-F -IR3-H2-V	SG50-F -UV-IR-V
		SG50-F -IR3	SG50-F -IR3-H2	SG50-F -UV-IR
				SG50-F -UV-IR-F-V
				SG50-F -UV-IR-F
		ft. (m)	**ft. (m)**	**ft. (m)**
Detector Sensitivity Setting	**Extreme**	23.0 (7.0)	23.0 (7.0)	21.3 (6.5)
	High	16.0 (5.0)	16.0 (5.0)	16.0 (5.0)
	Medium	10.0 (3.0)	10.0 (3.0)	13.0 (4.0)
	Low	3.3 (1.0)	3.3 (1.0)	3.3 (1.0)

4 LED Status, Faults & Warnings

The flame simulator has a tri-color LED which indicates the operational status of the simulator as described in the table below.

LED Status	Indication	Action
Flashing green	Normal operation	Ready for use
Flashing orange	Battery at medium capacity	Charge battery for 3 hours
Solid orange	Unit is in fail mode	Return for repair
Solid red	No power	Recharge/replace the battery
Off	No power	Recharge/replace the battery
Flashing green LED but simulator fails to activate detector alarm	Detector is unable to read the signal from the Simulator	1. Check you are within the specified distance from the detector according to the detector's sensitivity setting. 2. Check detector is powered and operational. 3. Check simulator window is clean. 4. Check detector window is clean, and not in fault or indicating 2mA output to the panel indicating a dirty window. Note: Any alarm delay set in the detector will require the simulator to be aimed at the detector for that period plus up to 10 more seconds.

5 Servicing/Maintenance

• Do not try to open, modify or repair the Flame Simulator.

• Repair, inspection or maintenance of this equipment should be performed by suitable trained personnel, in accordance with the applicable code of practice, e.g. EN 60079-19. Operation must be in accordance with recognized standards of the appropriate authority in the country concerned.

• Charge battery in a safe area– Battery chamber should only be opened in a non-hazardous location.

1. Periodically, the flame simulators front window should be cleaned using a soft cloth, water and a mild detergent. Clean and dry window.
2. Always make sure the flame simulator battery is fully charged prior to use.
3. To maintain the battery life, it should be fully charged at least once in a 3-month period.
4. Replace battery only with part number SP-F-SIM-BATT.

5.1 Simulator charging

Charge battery in a safe area – Battery chamber should only be opened in a non-hazardous location.

1. Release the locking screw using the Allen key.
2. Using strap wrench tool to remove the back-battery cover (2) of simulator by unscrewing.
3. Connect supplied charger to charging jack (8) and connect charger to power supply, 110-220VAC.
4. Allow to charge for at least 3 hours until the green LED on the charger is seen .
5. Disconnect charger, close back-battery cover (2) and tighten using the removal tool.
6. Close the locking screw using the Allen key.

5.2 Battery replacement

Battery replacement in a safe area– Battery chamber should only be opened in a non-hazardous location

1. Release the locking screw using the Allen key.
2. Using strap wrench tool to remove the back-battery cover (2) of simulator by unscrewing.
3. Disconnect the battery connector from the PCB.
4. Remove the Battery by pulling it out from the holder.
5. Put a new Battery in place and connect the connector.
6. Connect supplied charger to charging jack (8) and connect charger to power supply, 110-220VAC.
7. Allow to charge for at least 3 hours.
8. Disconnect charger, close back-battery cover (2) and tighten using the removal tool.
9. Close the locking screw using the Allen key.

6 Specifications

6.1 Technical Specifications

Mechanical	
Size	3.9 x 3.9 x 7.8 inch (100 x 100 x 200mm)
Weight	3.96lbs. (1.8Kg)
Enclosure	Painted Aluminum LM25
Ingress protection	IP65 (NEMA 4X)
Electrical	
Power	Li-ion 3.7V
Maximum current	0.5A (IR models) / 0.7A (UV-IR model)
Battery capacity	> 3000mAh
Charging time	3 Hours
Environmental	
Storage temperature	-4°F (-20°C) to +122°F (+50°C)
Operating temperature	-4°F (-20°C) to +122°F (+50°C)
Humidity	up to 99%, non-condensing
Approvals	
ATEX:	Ex II 2 G D Ex db ib op is IIC T6 Gb Ex tb ib op is IIIC T85°C Db -20°C to +50°C / -4°F to +122°F

6.2 Physical Dimensions.

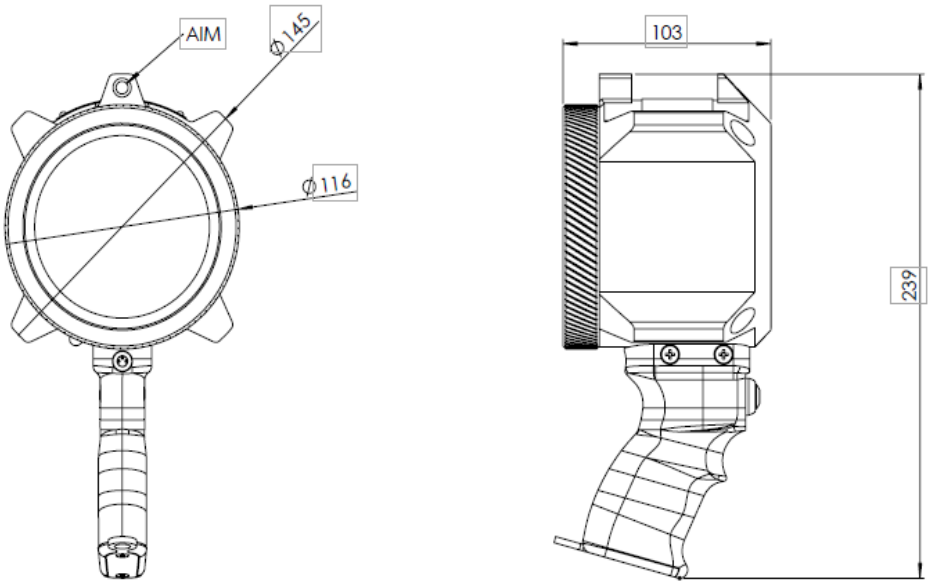


Figure 2 - Dimensions (in mm)

7 Ordering Information

Part Number	Description
Simulator Kits	
SP-F-SIM-IR3	IR3 Spyglass flame simulator kit including carry case, simulator, carrying strap, charger and manual
SP-F-SIM-UVIR	UV-IR Spyglass flame simulator kit including carry case, simulator, carrying strap, charger and manual
SP-F-SIM-IR3-H2	IR3 Hydrogen Spyglass flame simulator kit including carry case, simulator, carrying strap, charger and manual
Accessories & Spares	
SP-F-SIM-CASE	Carrying case
SP-F-SIM-STRAP	Carrying strap
SP-F-SIM-TOOL	Cover removal tool
SP-F-SIM-ALLEN	Allen Key
SP-F-SIM-CHRGR	Power supply and charger
SP-F-SIM-BATT	Replacement Battery

8 Safety

- Do not try to open, modify or repair the Flame Simulator.

- Inspection and maintenance of this equipment should be performed by suitable trained personnel, in accordance with the applicable code of practice, e.g. EN 60079-17.

- Repair of this equipment should be performed by suitable trained personnel, in accordance with the applicable code of practice, e.g. EN 60079-19. Operation must be in accordance with recognized standards of the appropriate authority in the country concerned.

- Certification of this equipment relies upon use of the following materials in its construction:

  -Enclosure: Aluminum 6061T6

  -Window: Sapphire glass

  -Seals: EPDM

- If the equipment is likely to come into contact with aggressive substances (described below), then it is the responsibility of the user to take suitable precautions (described below) to prevent the equipment from being adversely affected. This ensures that the type of protection provided by the equipment is not compromised.

- Examples of aggressive substances: acidic liquids or gases that may attack metals or solvents, or may affect polymeric materials. Examples of suitable precautions: routine inspections, establishing resistance to specific chemicals from the material's data sheets.

9 UE Declaration of Conformity

TELEDYNE DETCON

EU DECLARATION OF CONFORMITY

CE

MODELS

Flame simulators Types:
SP-F-SIM-IR3, SP-F-SIM-IR3-H2,
SP-F-SIM-UV-IR

MANUFACTURER

Teledyne Detcon Inc
14880 Skinner Road
Cypress, TX 77429
USA

Directives : ATEX Directive (2014/34/EU), EMC Directive (2014/30/EU)

ATEX EU Type Test Certificate : ICQC 22ATEX0485X

Marking: Ex CE 2575

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

Standards : EN IEC 60079-0:2018, EN 60079-1:2014,
EN IEC 60079-7:2015+A1 :2018, EN 60079-31 :2014

ATEX Notified Body (EU Type Test)
ICQC LLC
63-19, Skolas Street
Jurmala, LV-2016
Latvia

ATEX Notified Body (Quality Assurance Notification) :
INTERTEK ITALIA SPA
Via Guido Miglioli, 2/A
20063 Cernusco sul Naviglio (MI)
Italy

We declare, under our sole responsibility, that the, to which this declaration relates, are in conformance with the ATEX Directive (2014/34/EU), Electromagnetic Compatibility Directive (2014/30/EU) and the standards referenced above when properly installed and maintained and when used for the purpose for which they are intended.

Authorized by :

Name: Rebecca Crist **Title**: Quality Supervisor
Cypress, 20-Feb-2023

TELEDYNE
GAS AND FLAME DETECTION
Everywhereyoulook™

AMERICAS
4880 Skinner Rd
Cypress, TX 77429
USA
Tel.: +1-713-559-9200

EMEA
ZI Est, Rue Orfila, CS20417
62027 Arras cedex
France
Tel.: +33 (0) 3 21 60 80 80

ASIA PACIFIC
Room 04, 9th Floor, 275 Ruiping Road, Xuhui District, Shanghai, China

TGFD_APAC@Teledyne.com

www.teledynegasandflamedetection.com

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