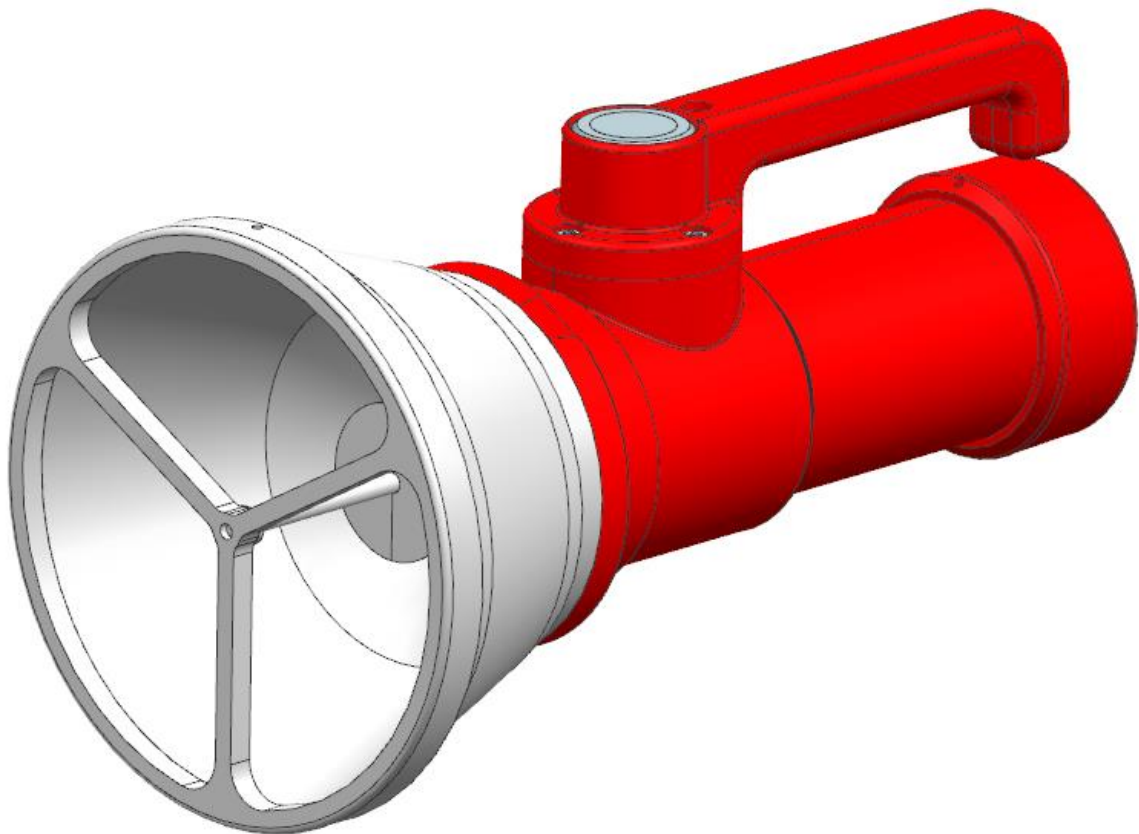


# FS-310

# Instruction Manual

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Revision: 1.4



***Please read carefully for proper use.***

## We sincerely thank you for purchasing a Gastron product.

As a company specializing in Flame & Gas detectors and F&G Monitoring Systems, we at Gastron is being recognized by many consumers for our high quality and convenience of use. We are constantly researching and exerting our efforts to develop Flame & Gas detectors satisfying our customers, and making sure our consumers always find a product they want.

From now on, solve all your problems regarding Flame & Gas detectors with Gastron products. We at Gastron will take charge and satisfy all of you.

This user manual contains information on how to operate and maintain FS-310. After reading the manual carefully, store it at a convenient location and refer to it whenever you have questions while using the product.

If something abnormal occurs after purchasing our product, please contact the following address.

- Address: Gastron Co., Ltd. 23, Cheomdansaneop 1 ro, Gunpo city, Gyeonggin province
- Tel: +82-31-490-0800
- Fax: +82-31-490-0801
- URL : [www.gastron.com](http://www.gastron.com)
- e-mail : [gastron@gastron.com](mailto:gastron@gastron.com)
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### **Note**

- **For accurate operation of Flame Detector Simulator, we recommend checking it at least once within 6 months.**
- **If periodic checks are not performed, equipment malfunction may occur due to aging of the sensor.**
- **Only a person with special technical knowledge about the Flame Detector Simulator must dismantle the device.**
- **For details on checking the Flame Detector Simulator, please contact our technical department or use our e-mail or website.**

This product and product manual is subject to change without prior notice for improving the product performance and convenience of use.

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## 1. Overview

FS-310 is a test simulator for checking whether or not a detector works properly in an explosion district or dangerous area where GTF-1100U is installed. Because a test using actual fire is not possible, the product was made to conduct a virtual fire test.

A spectrum similar to fire is generated by generating UV and IR using random flicker as sources used in FS-310. FS-310 was made so that GTF-1100U can recognize the spectrum generated like this as fire.

It is pressure resistant and explosion proof since its case is made out of AC4C(AL6061), and since it is light weight, it is portable. It can be used for approximately 100 times when fully charged using a dedicated recharger.

## 2. Features

- Flame Simulator for testing GTF-1100U.
- Portable since it uses batteries.
- It can be used approximately 100 times when fully charged.
- With low power design, it can be used for a long period of time.
- It can be used in an explosion district or dangerous area since it is pressure resistant and explosion proof.

## 3. Operation

- Position FS-310 so it faces the front side of a detector.
- If the switch on the handle is pressed, the lamp of FS-310 blinks for 15 seconds towards the detector.
- Check whether the detector works or not. (Red LED of the detector lights up)
- It does not work for 30 seconds after 1 time operation (Wait Time)
- If the switch is pressed once more during operation, it stops working. If the operation stops even in this case, it does not work for 30 seconds.
- Since the effective distance may vary depending on the FS-310 battery charge status, please use after recharging.
- If the detector does not work, perform repeat test after wait time.
- If the detector does not recognize it as fire even after repeating, the detector needs to be checked.
  - Check for foreign substances on the Sapphire Glass at the front side of the detector.
  - Check sensor through B.I.T.

## 4. Charging the Battery

- Places that should be avoided when recharging
  - Explosion district or dangerous area
  - Inside a hot car (over 40°C)
  - Place with lots of moisture or wet place
- Detach the rear cover of FS-310 and connect the mounted DC Jack with the recharger.
- The recharger supplied with FS-310 must be used.
- The status can be checked with the LED of the recharger.
  - Red light: recharging
  - Green light: Recharging complete
  - Blinking Red light: Trouble occurred while recharging (Battery defect, charger defect)
- It does not work even if operation switch is pressed during recharging.
- If recharging is finished, disconnect the recharger from the simulator and store it separately.

## 5. Specification

### 5.1. General Specifications

I T E M S		S P E C I F I C A T I O N
Detection Distance		Max 10m
Continuous Operation		100 Count
Average Detection Time		10 sec
Approvals Classification		KCs: <u>Ex d IIB+H2 T5</u>
Warranty	Main	2 years
	Battery	1 years

### 5.2. Mechanical Specifications

I T E M S	S P E C I F I C A T I O N
Explosion Proof type	Explosion Proof enclosure
Dimension	161(W) ×115.9(H) ×303.2(D) mm
Weight including Sensor	App. 2.3kg
Material	AC4C(AL6061)

### 5.3. Electrical Specifications

I T E M S	S P E C I F I C A T I O N
Power	Li-ion Battery 14.6V 2750mAh
Max Charge Voltage	16.8V
Cut Off Voltage	12V
Full Charge Time	< 3 hours
Quiescent Current	< 350uA
Operation Current	3A Average

### 5.4. Environmental Specifications

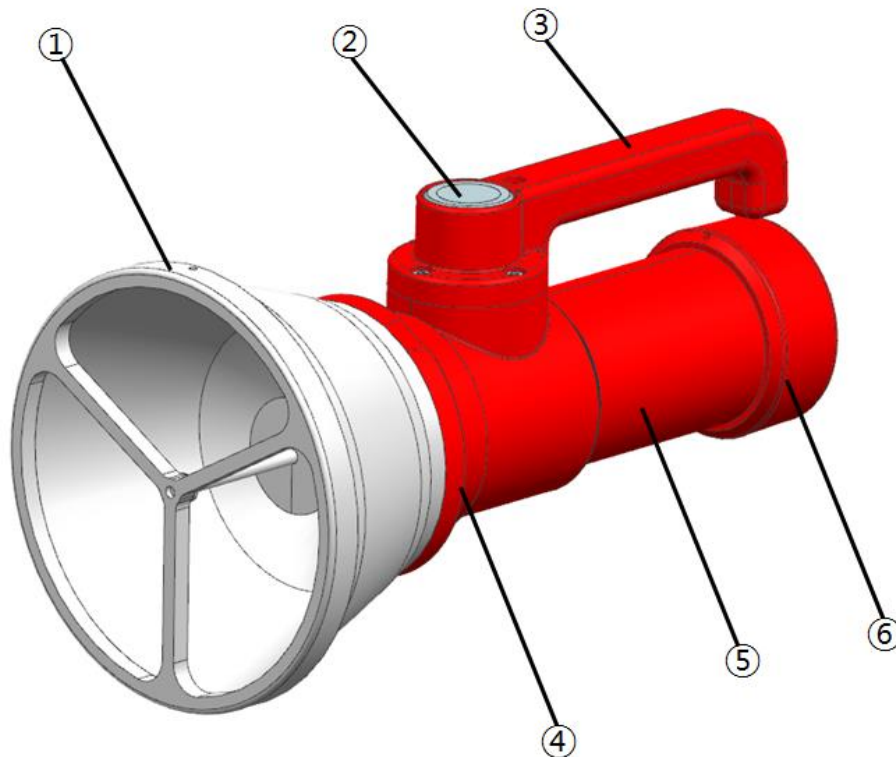
I T E M S	S P E C I F I C A T I O N
Storage Temperature	-20°C ~ 25°C
Charge Temperature	0°C ~ 45°C
Operation Temperature	-20°C ~ 50°C
Operation Humidity	30 ~ 85% RH (Non-condensing)

### 5.5. Charger Specifications

I T E M S	S P E C I F I C A T I O N
Input	AC 100~240V / 50~60Hz / 1.0A
Output	16.8V / 2.5A
Indicator	Bi-Color LED (RED & GREEN)

[Table 1: FS-310 Specification]

## 6. Name of each component



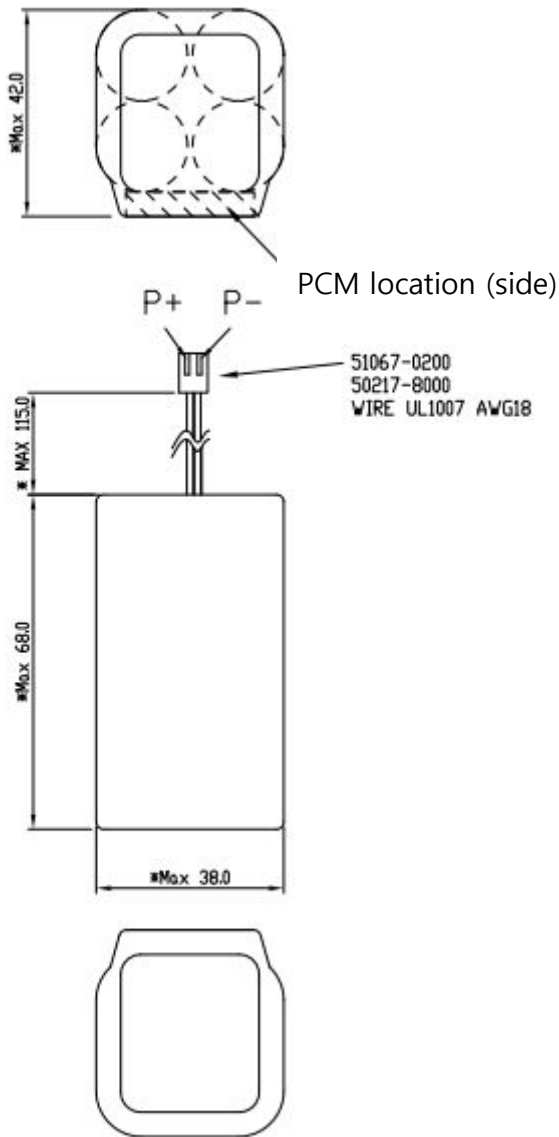
[Figure 1: FS-310 Name of each component]

No	Name	Descriptions
1	Reflector Assembly	Reflector making UV/IR Spectrum of the lamp perform long distance irradiation.
2	Switch	Turn FS-310 On/Off
3	Handle	Handle designed to enable carrying FS-310.
4	Top Cover	Part combined with the body which protects the main board.
5	Body	Part protecting the main board and battery pack
6	Rear Cover	Cover part protecting the recharging jack connected to the battery pack

[Table 2: Description of each component of FS-310]

## 7. How to Replace Battery & Precautions

### 7.1. Battery Pack Diagram & Photo

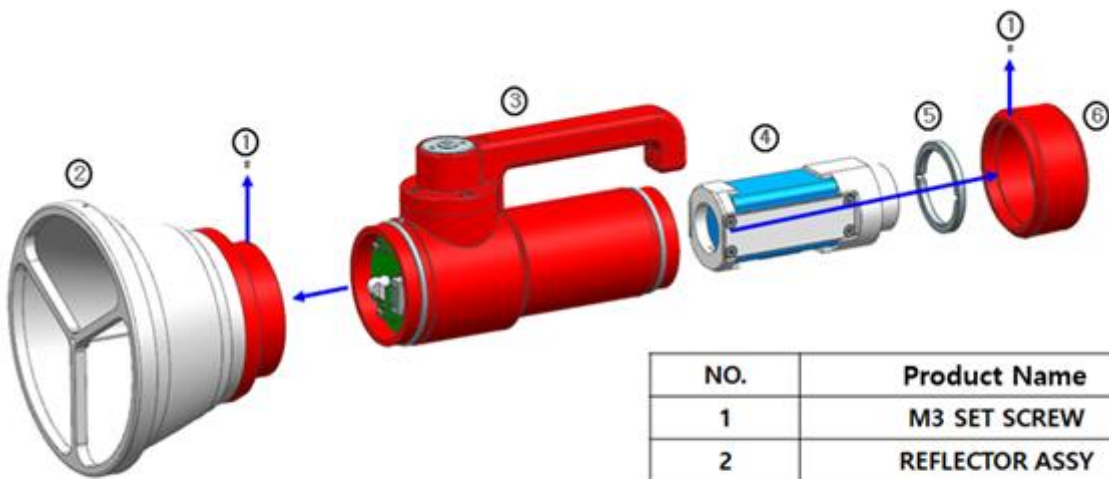




## 7.2. Battery Pack Specification

I T E M S	S P E C I F I C A T I O N
Battery Type	18650 4S1P-29E
Normal Voltage	Over 14.6V
Battery pack assy	51.6 x 48.0 x 117.0
Certification	KC, CB, UN38.3
Manufacturer & Dealer	Gastron Co., Ltd.

## 7.3. How to replace battery



NO.	Product Name
1	M3 SET SCREW
2	REFLECTOR ASSY
3	BASE BODY ASSY
4	BATTERY PACK ASSY
5	RETAINER RING
6	REAR COVER

### 7.3-1 Dismantling

- Unscrew M3 SET SCREW (interlock device) using a wrench (2POINT)
- Turn REFLECTOR ASSY counter-clockwise and separate it from the front side as shown in the diagram.
- Separate the CONNECTOR on the front main PCB side.
- After releasing the REAR COVER by turning it counter-clockwise, dismantle the RETAINER RING with the same method.
- Pull out the BATTERY PACK ASSY as shown in the diagram.

### 7.3-2 Assembly

- Assemble in the reverse order of dismantling.

## 7.4. Precautions when replacing the battery

- Do not replace in an explosion district or dangerous area
- Do not replace in a place with high temperatures (over 40°C)
- Avoid humid or wet places
- Replace the battery after separating the CONNECTOR on the MAIN PCB side
- Make an inquiry to the manufacturer when replacing the battery (place of purchase)

## 8. Revision Record

Version	Contents	Date
1.0	Initial revision	Dec. 19, 2017
1.1	Revision of operation & specification	Nov. 15, 2019
1.2	Revision of operation & specification	Apr. 3, 2020
1.3	Revision of specification	Jun. 30, 2020
1.4	Revision of Battery Pack specification	May. 24, 2021