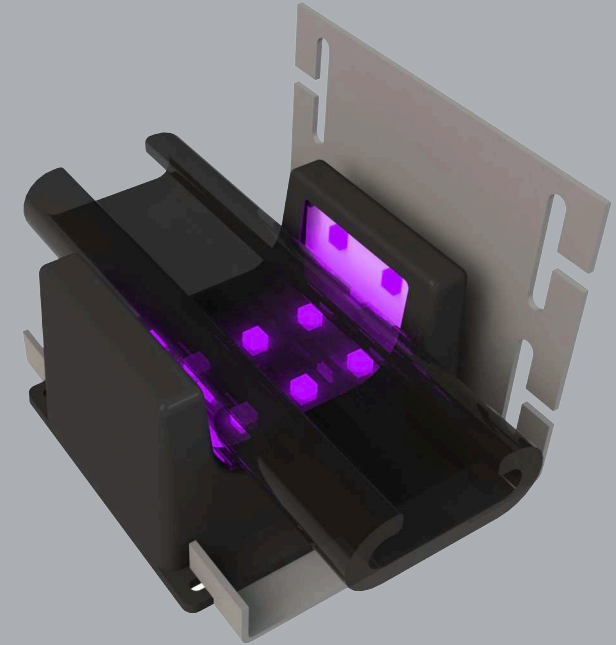


# Sapphire LED UV-C Handrail Sterilization Module Installation Instructions



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## Warnings

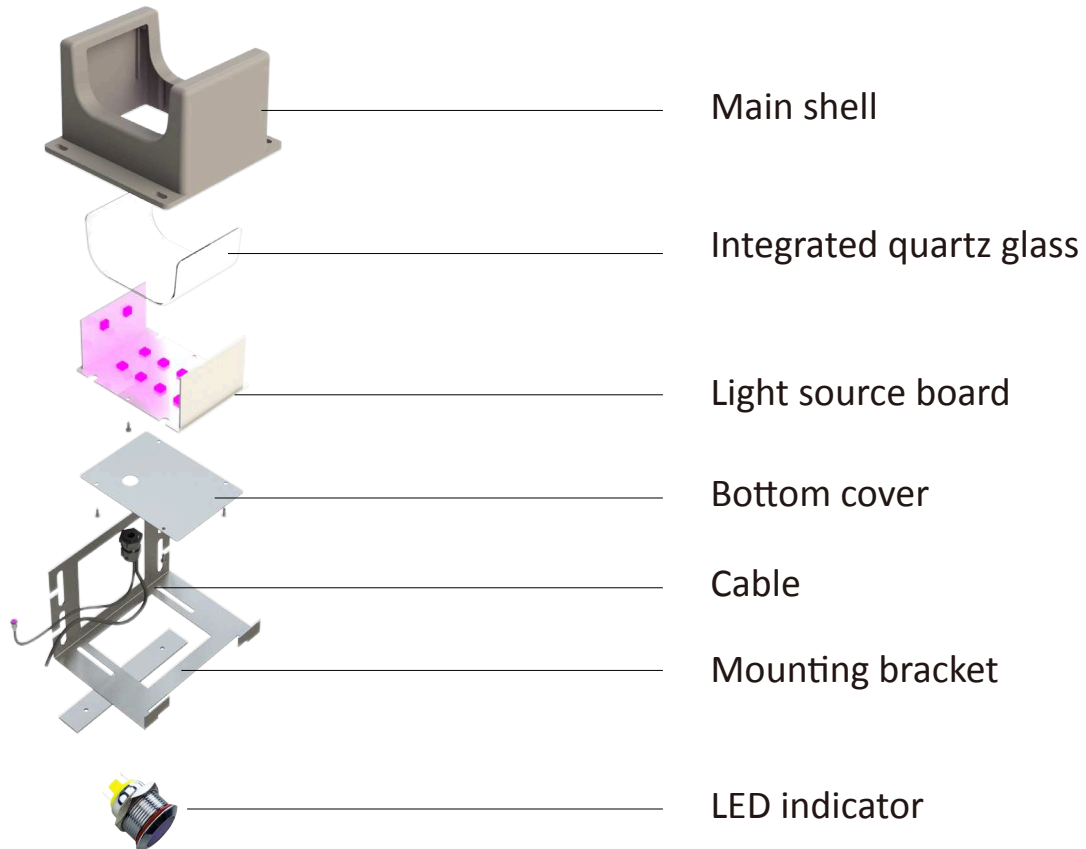
- 1、 UV emitted from this product, Dangerous!
- 2、 This UVC sterilization lamp is especially designed for escalators and moving walks, work as disinfection tool for escalator handrail.
- 3、 Only electrician professionals can install, test, and operate our product.
- 4、 Wear eye protection and gloves during the installation.
- 5、 Please restrictively following our installation manual.



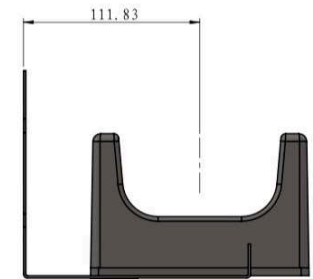
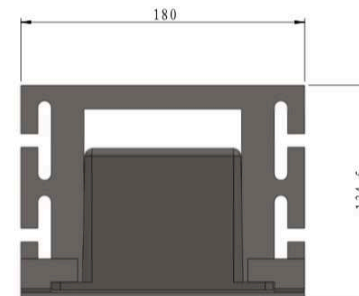
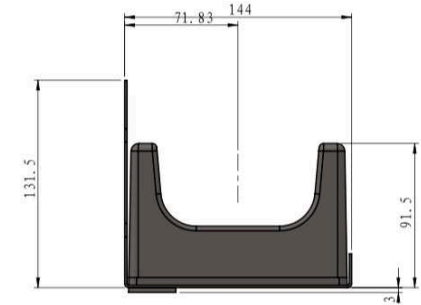
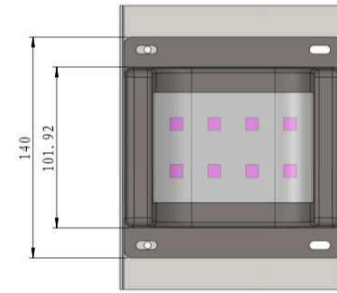
This publication is for informational purposes only. All persons participating in the installation and/or maintenance of Sterile Touch and using these instructions must be qualified to perform such work.

# Part 1: Components and Technical Data

## Product exploded view



## Dimensions








### BOM list

ID	QTY	Articles
1	1	Main Shell
2	1	Integrated quartz glass
3	1	Light source board
4	1	Bottom cover
5	1	Cable (5M)
6	1	Mounting Bracket
7	1	Operation monitor LED
8	1	Cable (3M)
9	2	M6 screw
10	2	M8 T-bolt screw
11	4	Fastening Screw Cushion

### Technical Parameters

Model	Sterile Touch
Input Voltage	DC24V+-10%
Input Current	< 0.3A
Totally Rated Power	6.24W
Wave length	270-280nm
LED Size	3535
LED Quantity	12PCS
Design Lifetime	10000H
IP Protecting Level	IP55
Working Temperature	-25 °C ~+60 °C
Operation Relative Humidity	≤95%
Storage Environment	-30 °C ~+70 °C
Best Disinfection Distance	≤25mm
Irradiation Area	195*70mm
Initial Irradiances	≥70uw/cm2(@15mm)
Irradiance@10000Hrs	≥60uw/cm2(@15mm)
On and Off Times	300 000 times

Danger signs and personal protection equipment





 <p><i>Electric shock</i></p>	 <p><i>Safety shoes</i></p>	 <p><i>Escalator Stop</i></p>
 <p><i>Pinch point hazard</i></p>	 <p><i>General Hazard</i></p>	
 <p><i>Hard hat</i></p>	 <p><i>Safety gloves</i></p>	
 <p><i>Safety goggles</i></p>	 <p><i>Check visually / aurally</i></p>	

# Part 2: Installation Manual

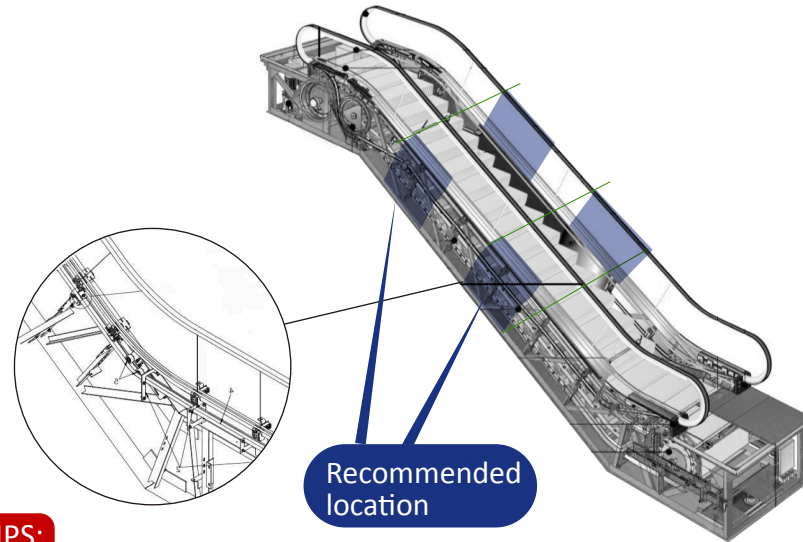
**1**  
STEP Place protective barrier



**TIPS:**

-  Check visually / aurally
-  Escalator Stop
-  Hard hat
-  General Hazard

**2**  
STEP Find the suitable installation location



**TIPS:**

We have already installed our Sterile Touch on escalators of different brands.

We advice that the most suitable installation place: from the beginning of the lower comb line of the escalator , the position should be the at upper place of the second skirt cover plate. (Between the 6th and 9th steps) . Of course upper or down place can be suitable too .

**3**  
STEP Remove skirt cover plate



**TIPS:**

Tool: screwdriver

From the start of the lower comb line of the escalator find the screw positioned at upper to the second skirt cover plate

**4**  
STEP

Secure the bracket



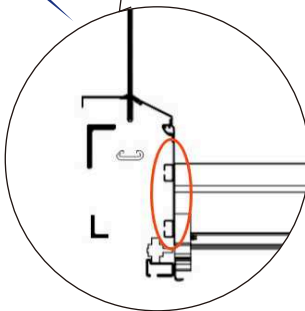
Secure the mounting bracket to the C-shape slot

**TIPS:**



Use the screws and nuts supplied with our product ( M8\*2 )

Tool: M8 wrench



**5**  
STEP

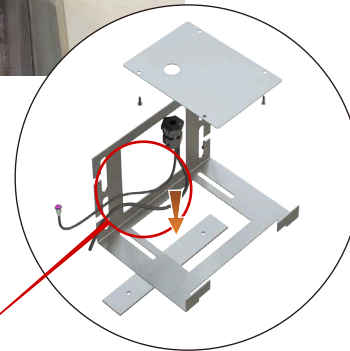
Install main module



Pinch point hazard



Safety gloves

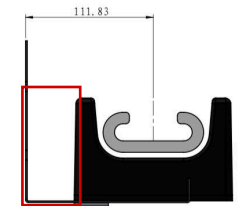
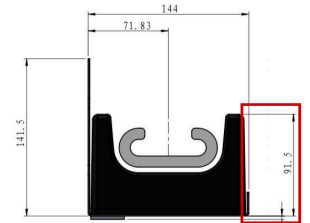
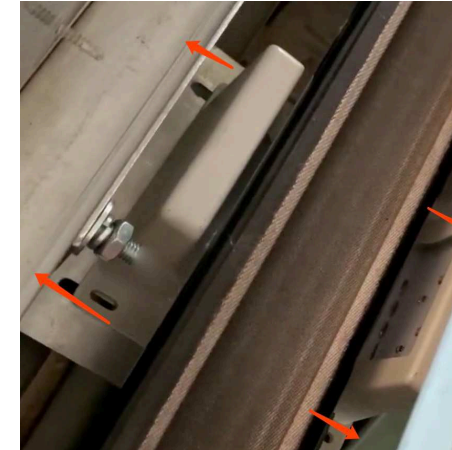


**TIPS:**

- ✓ The surface is quartz glass, vulnerable, try to not touch it!
- ✓ Make sure the power cable goes through the down open square of the bracket

**6**  
STEP

Adjust the distance between source light and handrail surface

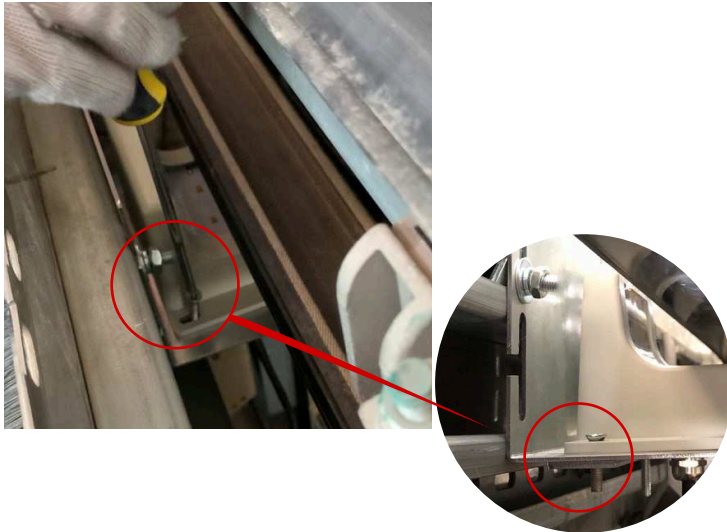


**TIPS:**

- ✓ We suggest the vertical height distance between handrail surface and protective glass should be MIN 5MM , MAX 15MM
- ✓ The protective glass should be positioned to be at the center of the handrail plane face, the most symmetric it is the better will be the Sterilization effect

**7  
STEP**

Secure the main module on the mounting bracket



**TIPS:**



Use the screws and nuts supplied with our product ( M6\*2 )

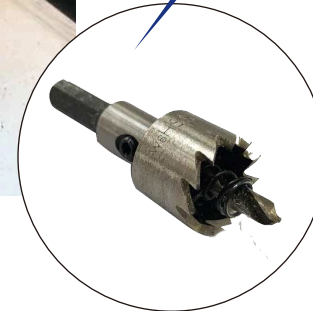
Tool: screw driver

**8  
STEP**

Install LED indicator on the skirt



Use the twist drill which be provided from us



**TIPS:**

- ✓ Decide the suitable place to install and position the indicator.
- ✓ The max distance from the main body is 3M
- ✓ We advice to install it near the entrance green traffic light
- ✓ Use the supplied twist drill to make properly the hole in the skirt panel.
- ✓ Tool : electric drill

**9  
STEP**

Position the TAG correctly



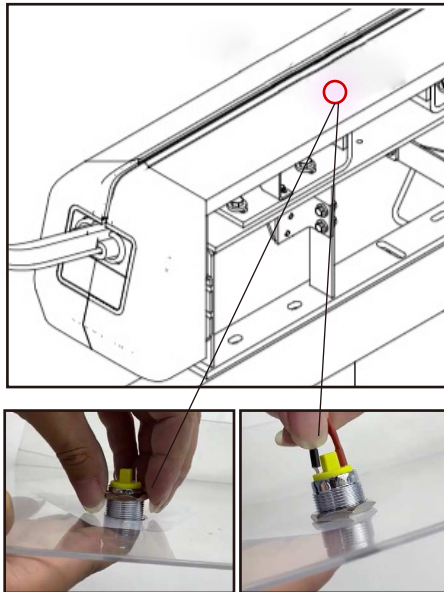
**TIPS:**

- ✓ According to user 's preferences, paste the TAG in the direction you like to adjust
- ✓ We recommend to past it in the same direction as the traffic light



**10  
STEP**

Fix the LED indicator correctly and adjust the cable length

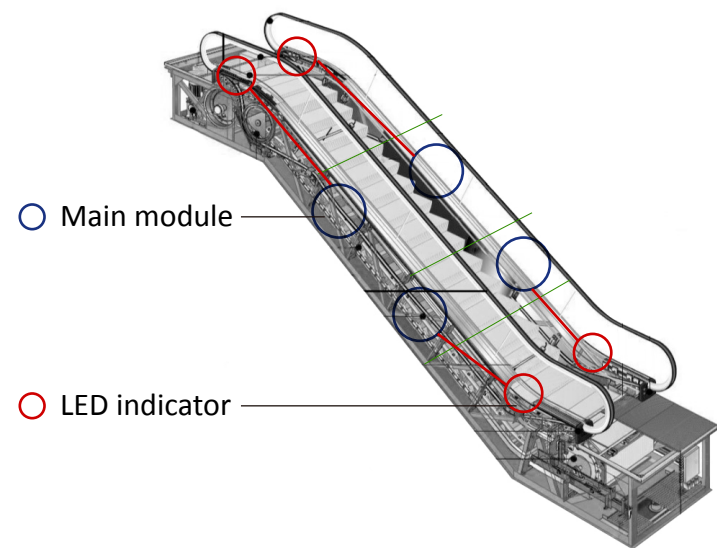


**TIPS:**

LED lights do not distinguish between positive and negative terminal

**11  
STEP**

Connection of the cable



**TIPS:**

Sterile Touch uses DC24V power voltage with 5m cable . And then connect the cable to the control cabinet 24V output port interface.

**12  
STEP**

Final Examination



Safety goggles



Check visually / aurally

**TIPS:**

Check whether 12 LED lights of source light block and LED indicator lights are working

## Part 3: Q&A

1

Q: What is the waterproof capacity?

A: Our ES “sterile Touch” is IP55 level waterproof resistant

2

Q: Which tools may be acquired in installation?

A: We will ship the necessary installation tools and screws/bolts with the “Sterile touch ” module with no additional cost. During the whole installation process, installers should be equipped with M8 wrench, Philips screwdriver, electric drill and most important be aware that you have to wear protecting glasses and gloves.

3

Q: How about personalization?

A: We can print customers' company logo on stickers with no additional cost, also we can print your logo on our product main body directly with a minimal cost.(MOQ> 20unit)

4

Q: Which product parts for distribution?

A: We can provide product parts under your demand.

5

Q: How long is installation time?

A: If following correctly our installation manual, professional installer can conduct the whole installation process in 15 -25 minutes only. Of course It would take a little longer time due to the structural differences escalators made before 1990's.

6

Q: Any possible damage on handrail?

A: All the tests show that if clients conduct correct installation, there won't be noticeable damage on handrail surface.(Please see test report)

7

Q: How about the Flame Retardant?

A: The frame and connecting cable meet the highest standard flame-retardant level (level V0 ) ( ABS V0 ) , for the highest safety. To be in accordance with the European EN115 escalator standard.

8

Q: Does it need a power source? How does it get power?

A: Yes, it need power with DC 24V, and it can be connected to 24V output port of escalator control cabinet. If there isn't 24V output port available, we could provide transformer that turn 220V to low voltage 24V for installation.

9

Q: If install more than one set of our products on each side, how to light up the running Status Indicator?

A: This function could be realized, but the production cost will be increased as well. If you have demand of this or other request, welcome contact us.

10

Q: Does it apply to all brand Escalator or movingwalk?

A: Our product covers 95% different types of escalators on the market(except Russian made escalator). If your escalator model is too old, we may need you to provide us your escalator blue print to find a specialized solution for you. Usually the width of handrail between 70-88mm and thickness between 25-35mm is applicable.

11

Q: How about the bacteria kill ability?

A: Our handrail lamp can kill 99% of Escherichia coli, staphylococcus aureus and other common bacteria in one minute when the handrail is still (see the test report). Because there is no condition for the normal operation of the handrail in the laboratory, we calculated the bactericidal effect of the handrail in the movement state through the calculation formula. According to the example of handrail belt L = 28m, running speed v = 0.5m/s, handrail belt running cycle T = 56S, single irradiation area staying time 0.2S, calculated according to the accumulated 1min effective sterilization time, the escalator needs to run 16800s, about 4.6h to achieve the sterilization effect (the above calculation is based on the the theoretical data)

12

Q: Does the uv light also stop working when the escalator is in sleep or power-saving mode?

A: There is contactor inside the escalator control cabinet, Our sterile touch will start to work once it get power from the contactor inside the control cabinet. Also the UV light stop working when the escalator stops.

- 13** Q: Ultraviolet light can be an effective measure for decontaminating surfaces that may be contaminated by the SARS-CoV-2 virus by inducing photodimers in the genomes of microorganisms. Ultraviolet light has been demonstrated to be capable of destroying viruses, bacteria and fungi in hundreds of laboratory studies (Kowalski 2009). The SARS-CoV-2 virus has not yet been specifically tested for its ultraviolet susceptibility but many other tests on related coronavirus, including the SARS coronavirus, have concluded that they are highly susceptible to ultraviolet inactivation. The effect of UVC Rays on covid-19 has been proven by scientific studies.  
A: In the absence of a vaccine, no laboratory will test it with COVID-19, but it is effective to other common bacteria.(see the test report)
- 14** Q: How many lamps should be installed in one escalator?  
A: If the escalator elevation less than 4.5 meters, we suggest it should be one pair(2pcs) per escalator, if higher , for a better efficiency of sterilization, we will advice you to install two pair(4pcs) module per escalator.( 2 pieces for the right handrail and 2 pieces for the left handrail)
- 15** Q: Should customers do routine maintenance? At what frequency?  
A: No special routine maintenance . you can check the LED monitor on the skirt of escalator, if light is on, then it is working. If not, so the module should be replaced.(the module life time is one year under normal environment operating)
- 16** Q: Is higher power applicable to sterile touch?  
A: No, we need to balance the sterilization effect and handrail life time. The current power is the safest to ensure maximum sterilization without damaging the service life of handrail.

### Guarantee and Liability

- 1、 We provide a one-year warranty for our products. In the guarantee period, you can contact us for free warranty service as for any product failure.
- 2、 If customer use other components or UVC devices mixed with our UVC lamp and cause UVC lamp dysfunction, the warranty service won't apply.
- 3、 If damages are caused by miss operation or intentional purpose, the warranty policy won't apply.