UVC LED Planet Mods
PPM-T5 A

PRELIMINARY SPECIFICATIONS

Elphoton
INNOVATE HUMAN LIFE

CONTENTS

1. Description

The Elphoton UVC LED lamp type sterilization module.

◆Features

- The product adopts low-voltage DC drive and converts constant current chip into constant current drive to ensure stable light output of the lamp beads and long service life
- The product can be started instantaneously without delay, and stable working condition can be achieved after starting.
- Excellent thermal management, heat dissipation capacity more than twice that of similar products on the market
- The lamp body is made of high purity aluminum finishing anodized, and the structure is reasonable with solid materials.
- The lamp uses the highest energy UVC chip, which is more than 50% higher than the old model.

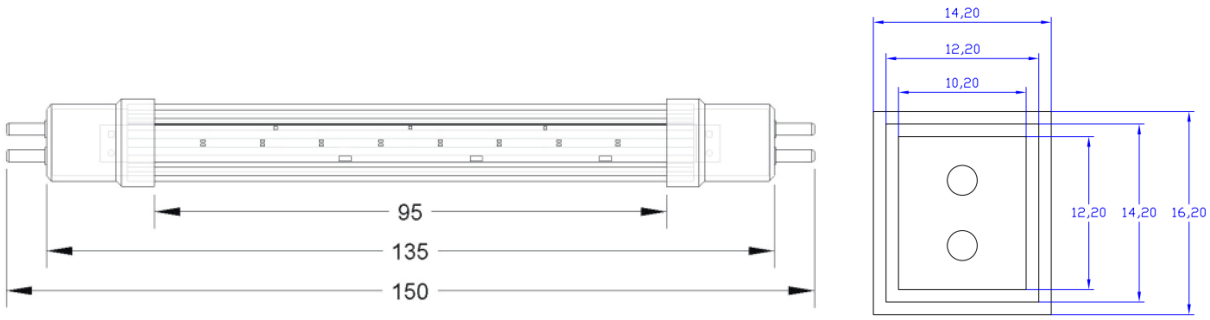
◆ Product information

- Lamp Type: DUV LED Straight Tube Double-End Double-Pin Lamp (T5)
- Lamp size: 150mm X 16.2mmX14.2mm
- Exterior Material: Aluminum
- PCB Size: 123X10X1mm
- PCB Material: Aluminum

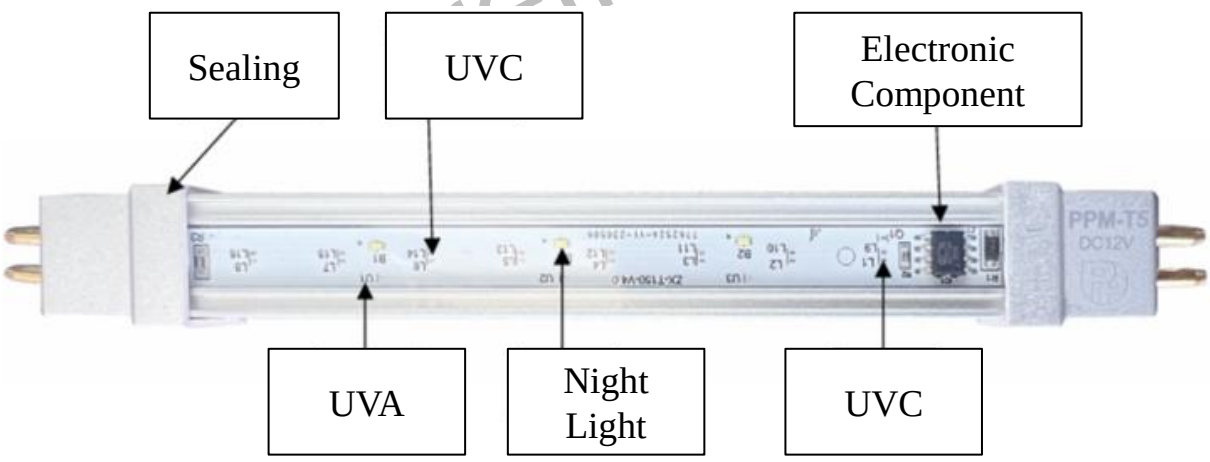
◆Application

- Surface sterilization
- Air/Water sterilization
- Sterilization inside small spaces

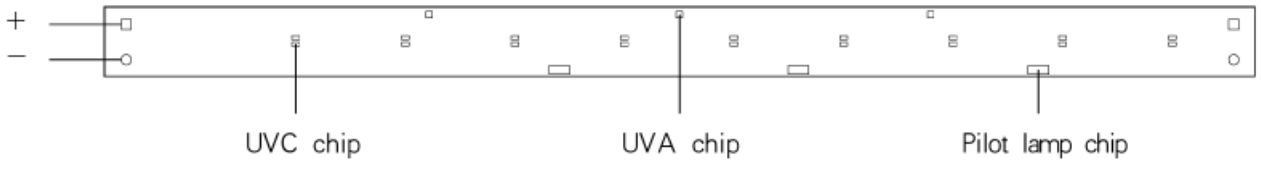
2. Outline Dimensions



3. Parts Description



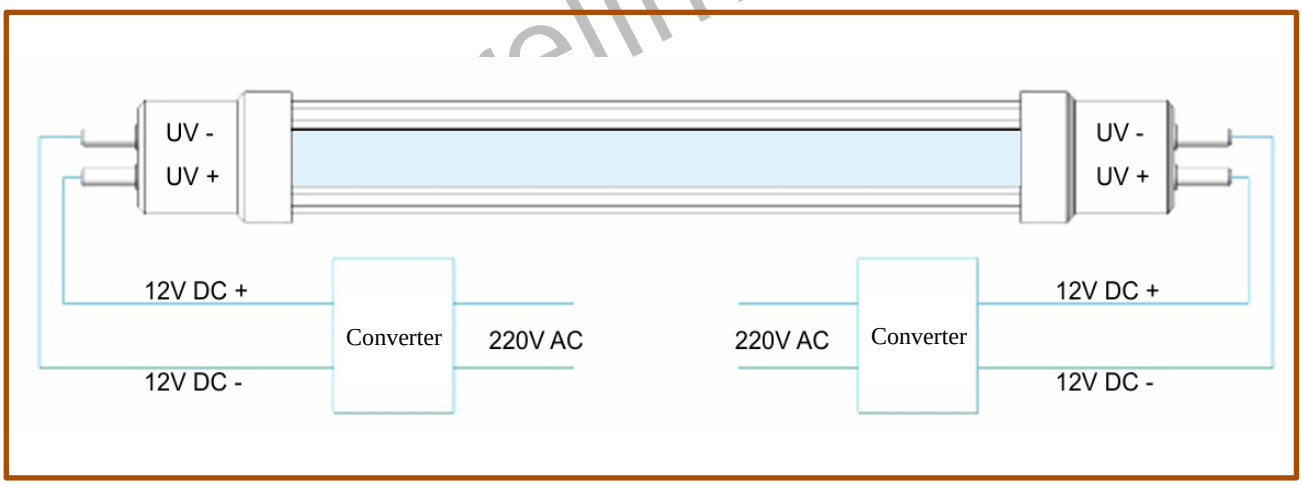
4. Deployment status



Note

* This product contains UVC and UVA different specifications and wavelengths of LED chip, the two will emit light at the same time in the working state, the front distribution of the chip is shown in the figure

5. Parts Description



Note

*The terminals at both ends of the product can form independent electrical circuits, wiring can be arbitrarily selected one of the connections to power supply, the analysis method is shown in the figure

6. Electro Optical Characteristics

[DC 12V @400mA]

Parameter	Conditions	Symbol	Min.	Typ.	Max	Unit
Radiant Flux (UVC	VF=12V	Φe	80	-	120	mW
Peak Wavelength (UVC)		W_p	270	-	280	nm
Peak Wavelength (UVA)		W_p	390	-	400	nm

Note

* Tolerances are followings as below.
  - Peak Wavelength Tolerance : ± 3.5nm

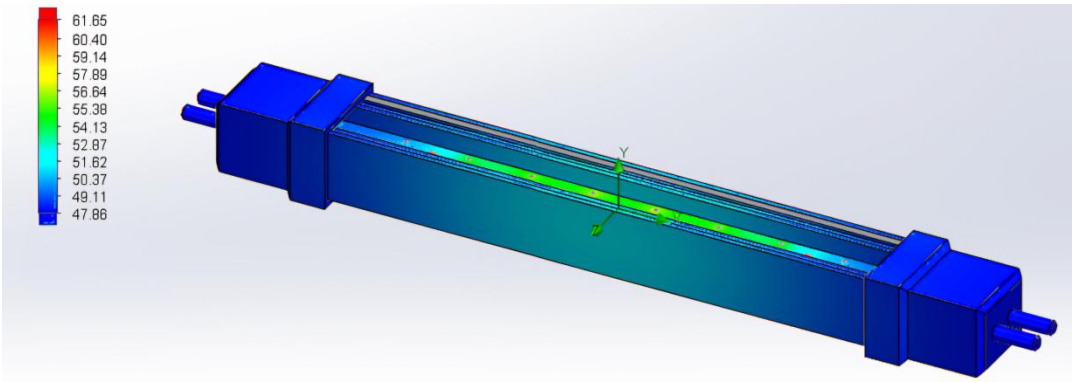
7. Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Operating Temperature	T_{opr}	-30 ~ +60℃	℃
Storage Temperature	T_{stg}	-30 ~ 60℃	℃

8. Lifetime Test/Sterilization test

Parameter	Symbol	Conditions	Result
Life time	L50	DC 12V	5,000 hr
Sterilization	-	Distance: 25cm Time: 3 min	E.Coli 99.99%
Antibacterial		Distance: 30cm Time: 5min	E.Coli 99.99%

9. Heat Dissipation simulation



10. Precaution

1) Safety for eyes and skin

- The Products emit high intensity ultraviolet light which can make your eyes and skin harmful, so do not look directly into the UV light and wear protective
- Do not view directly in to the deep UV(UVC) light of UV Module driven at low current or the LED with optical instruments for measuring such as radiant flux, light distribution and spectrum, etc.
- Proceed with caution to avoid the risk of damage to the eyes when examining the UV modules with optical instruments..

10. Precaution

2) Handling Precautions

- . The LED should be avoided direct contact with hazardous materials such as sulfur, chlorine, phthalate, acid, solvent, etc. These materials(S, Cl, VOCs, etc) may cause sulfurization of lead-frame or encapsulant silicone discoloration in LED.
- VOCs(Volatile Organic Compounds) can be generated from adhesives glue, cleaning flux, molding hardener or organic additive which used in luminaires fixtures and they(VOCs) may cause a significant Radiant Flux & Irradiance degradation of LED in Products when they exposed to heat or light. To prevent this phenomenon, materials used in Products must be carefully selected by users.
- The metal parts on the LED can rust when exposed to corrosive gases. Therefore, exposure to corrosive gases must be avoided during operation and storage.
- The metal parts also can be affected not only by the corrosive gases emitted inside of the end-products but by the gases penetrated from outside environment.
- Extreme environments such as sudden ambient temperature changes or high humidity that can cause condensation must be avoided.
- The UV Module is encapsulated with special material for the highest flux efficiency. So it needs to be handled carefully as below

  - Avoid touching quartz or glass parts especially with sharp tools such as Tweezers

  - Avoid leaving fingerprints cover parts.

  - UV Module will attract dust so use covered containers for storage.

  - Do not touch the products with wet hand

- Since it is an electrostatic sensitive product, care must be taken to prevent static electricity when installing and using it..
- The product is fragile when handling, so it should be handled carefully and avoid impact and fall
- The product is DC 12V constant voltage drive and must use the correct power supply.
- The product should be used within a set temperature range and should not be used in a high temperature sealed environment for a long time

10. Precaution

3) Others

- El photon is not responsible for any damages or accidents caused if the operating or storage conditions exceed the absolute maximum ratings recommended in this document.

- When connecting the module in the power on state, LED can be damaged by the influence of the inrush voltage / current.

- If the reverse voltage is applied to UV Module, migration can be generated resulting in LED damage.
- Please handle using equipment that prevents static electricity.
- Avoid touch unless ESD protection is used.

- The LEDs described in this document are intended to be operated by ordinary electronic equipment.
- Consult El photon, sales staff in advance for information on the applications in which exceptional quality and reliability are required, particularly when the failure or malfunction of the LEDs, may directly jeopardize life or health.
- It is recommended to consult with El photon, when the environment or the LED operation is non- standard in order to avoid any possible malfunctions or damage to product or risk of life or health.
- Disassembly of the LED products for the purpose of reverse engineering is prohibited without prior written consent from El photon.
- All defected LEDs must be reported to El photon and are not to be disassembled or analyzed.
- The Specifications can be modified and upgraded without prior notice.

11. Revision Sheet

Revision	Date	Page	Description	Remark
Rev.0.0	24.10.16	-	Preliminary edition	