UVC LED sterilization module DT4

PRELIMINARY SPECIFICATIONS

Elphoton
INNOVATE HUMAN LIFE

CONTENTS

1. Description

The Elphoton UVC LED water sterilization module.

◆Features

- DT4 UVC module is applicable for water purifier integrated water circuit board with natural pressure effluent or already equipped with a water intake pump.
- The module power supply needs to be controlled by main board, when there is no water flow, the module power supply must be turned off, the module can not dry burn without water, otherwise it will cause damage to the UVC LED.
- Suitable for drinking water with turbidity ≤1 degree, if the turbidity of the water is greater than, it will affect the light effect of the internal quartz glass. .

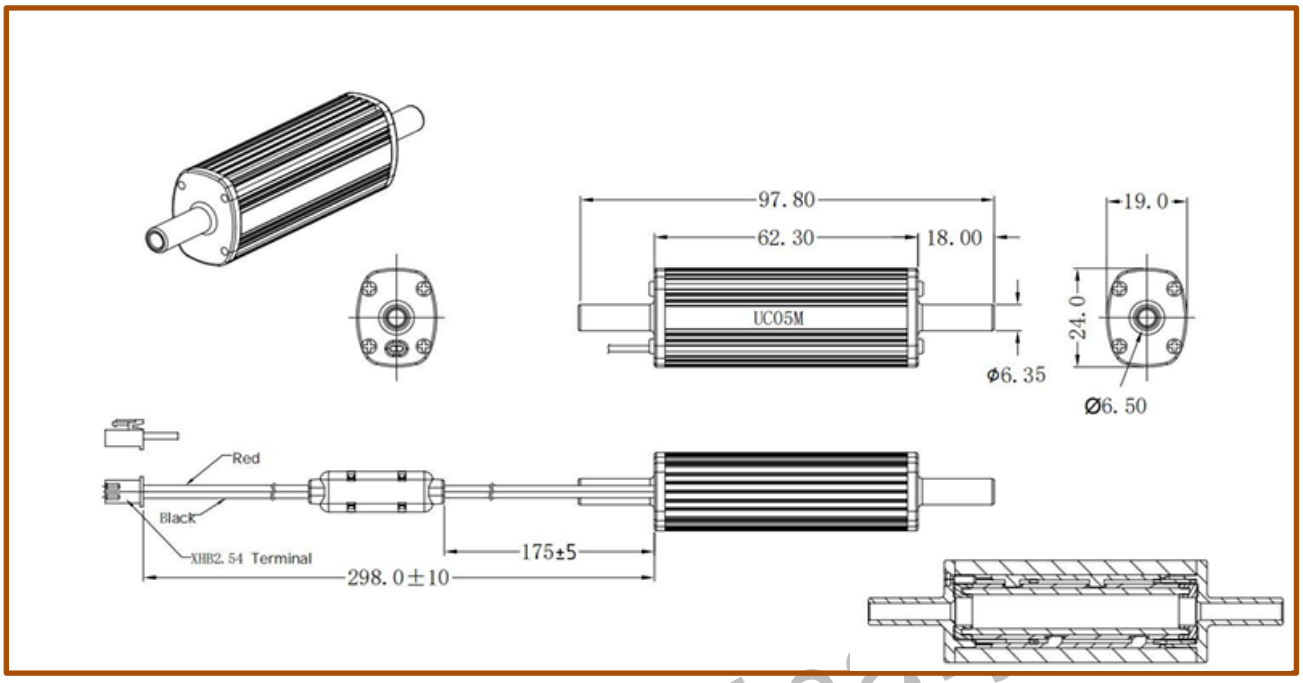
◆ Product information

- Main material: PP / Quartz / Aluminum
- Rated input Voltage: DC 24V
- Rated input Power: 3.8W ± 15%
- Rated water flow rate: 2.5L/min
- Electric strength: AC500V(50Hz)/1min
- Size of interface : DN8 quick connector
- Maximum water pressure : 200PSI
- Waterproof grade: IPX6

◆Application

- Water sterilization

2. Outline Dimensions



3. Electro Optical Characteristics

Parameter	Conditions	Symbol	Min.	Typ.	Max	Unit
Radiant Flux (UVC	VF=24V	Φe		-	60	mW
Peak Wavelength (UVC)		W_p	270	-	280	nm

Note

* Tolerances are followings as below.

- Peak Wavelength Tolerance : ± 3.5nm

4. Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Operating Temperature	T_{opr}	0 ~ +60℃	℃
Storage Temperature	T_{stg}	0 ~ +85℃	℃
Operating/Storage humidity		30~65	%

5. Lifetime Test/Sterilization test

Parameter	Conditions	Result
Life time	DC 24V	5,000 hr
Sterilization for Flow rate	2.5L/min	E.Coli 99.9%

5. 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.

2) Handling Precautions

- 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.
- Do not touch the products with wet hand
- Avoid giving strong impact on the products.

5. 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.

6. Revision Sheet

Revision	Date	Page	Description	Remark
Rev.0.0	24.10.15	-	Preliminary edition	
Rev.0.1	25.01.22	-	Add test report & Flow rate	

Appendix. 시험성적서

시 험 성 적 서

(재)한국환경수도연구원
우)07201 서울특별시 영등포구 양평로28사길 29
Tel : 02-2637-1234 Fax : 02-2631-8767

성적서 번호 : IW-240613 D
페이지 (1) / (총 1) 끝.

1. 의뢰자 기관명 : 엘포톤
   주 소 : 경기도 화성시 발안로 411-17
2. 시험대상 품목/물질/시료 설명 : DT4
3. 시 료 구 분 : 지참시료
4. 시 험 기 간 : 2024. 12. 13. - 2025. 1. 8.
5. 시 험 장 소 : ☑ 고정시험실 (서울특별시 영등포구 양평로28사길 29) ☐ 현장시험
6. 시 험 방 법 : Pour Plate Method
7. 시 험 환 경 : 습도 : (27 ± 5) % R.H.
8. 시 험 결 과

시료명	단위	결과			비 고
		조제수	통과수	제거율 (%)	
대장균	CFU/mL	4.0×10^3	< 1	99.9	-
황색포도상구균	CFU/mL	6.3×10^3	< 1	99.9	-
살모넬라	CFU/mL	5.4×10^3	< 1	99.9	-

※ 시험조건 (고객제공) : 제공된 검체에 조제수 50 L 를 정해진 유량으로 통수 후 분석
※ 출수 유량 : 2.5 L/min

확 인	시험자	이 준 석 이준석	기술책임자	송 민 형 송민형

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2025. 1. 8.

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