



SWDC SERIES

Ultraviolet (UV) sterilization technology destroys micro-organisms with instantaneous high-power ultraviolet ray emissions, featuring high efficiency sterilization, no resurrecting micro-organisms and no side effects.

**SWDC-T103-
DNN-U1930**

Specifications are subject to change without notice.

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SWDC-T103-DNN-U1930

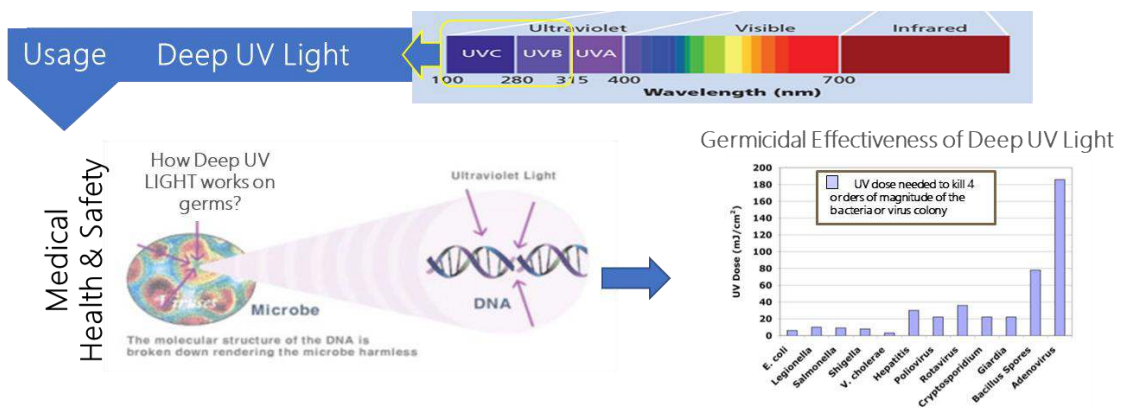
SWDC-T103-DNN-U1930 are UVC LED based modules using high-power ultraviolet light emission between 265nm and 280 nm (UVC region).



UV emission is an invisible light source subdivided in 3 regions: UVA, UVB and UVC (see graph below). A Wavelength between 230 & 285nm (UVC & UVB) is recommended for maximum efficiency of sterilization and disinfection. UVC & UVB are absorbed by the DNA and RNA of bacterial microorganisms, which can effectively sterilize our

environment (water, air, surfaces). UVC sterilization has the highest efficiency in sterilization with no resurrection and no side effects.

The SWDC modules totally solve the problems of bacterial contamination levels in drinking water, exceeding standards, achieving instant effect during usage. It has and will continue to vastly improve the quality of everyone’s daily life and has made the public’s drinking experience safer.



SWDC-T103-DNN-U1930 use a deep ultraviolet LED as the UV-C light source combine which allow to sterilize instantly water in a water tank. The irradiance of UVC LED can reach 0.8 mW/ cm². For any 4 liters water tank (170mmx300mm), measured sterilization rate in the water tank can reach over 99% after 30 ~40 mins irradiation.

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● **Product Features:**

1. Sterilization efficiency over 99% ①
2. Mercury free
3. Working life of 10,000 hours or more
4. Low standby operating current : < 0.1 uA
5. Lead-free environmentally friendly RoHS compatible
6. Waterproof level up to IP68②

① In the laboratory working environment, using the standard E. coli method to count the difference before and after sterilization;

② Please refer to the test standard of IEC60529/GB4208

● **Product Specification:**

1. Module Spec:

Spec		Symbol	SWDC-T103-DNN-U1930
Wavelength		nm	265-285
Radiant	Min	mW	2.5
	Typ.		3.0
Voltage		V	24
Power Consumption③	Min.	W	0.2
	Max		0.4
Housing Type			Pitch 2.5/ 3Pin
Signal Detection			LED board open circuit
Life Cycle		hrs	10,000④
Weight		g	13±10%

③ Power capacity above 5W

④ IESNA (Illuminating Engineering Society of North America) LM80 experimental method, 70% Lumens depreciation evaluation standard

● **SWDC-T103-DNN-U1930, Mechanical Specifications:**

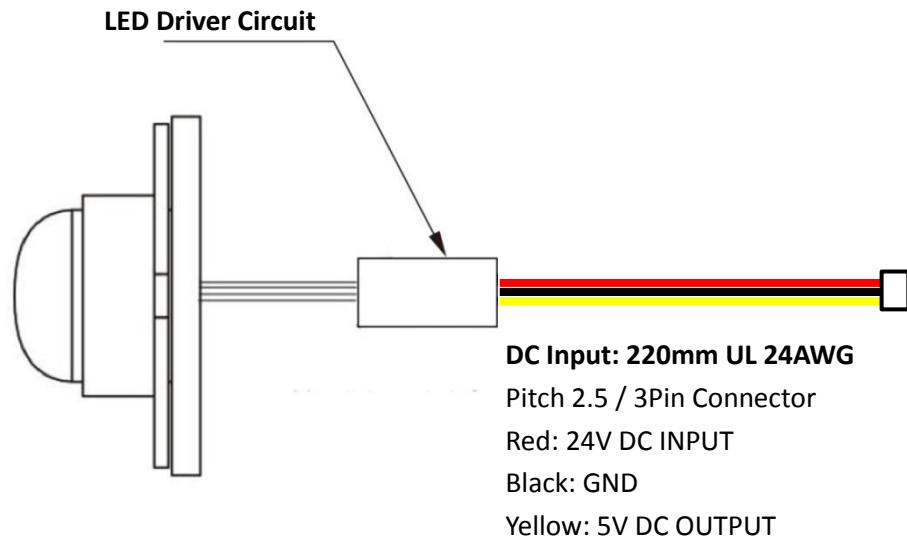


Fig. 1 Wire Schematic

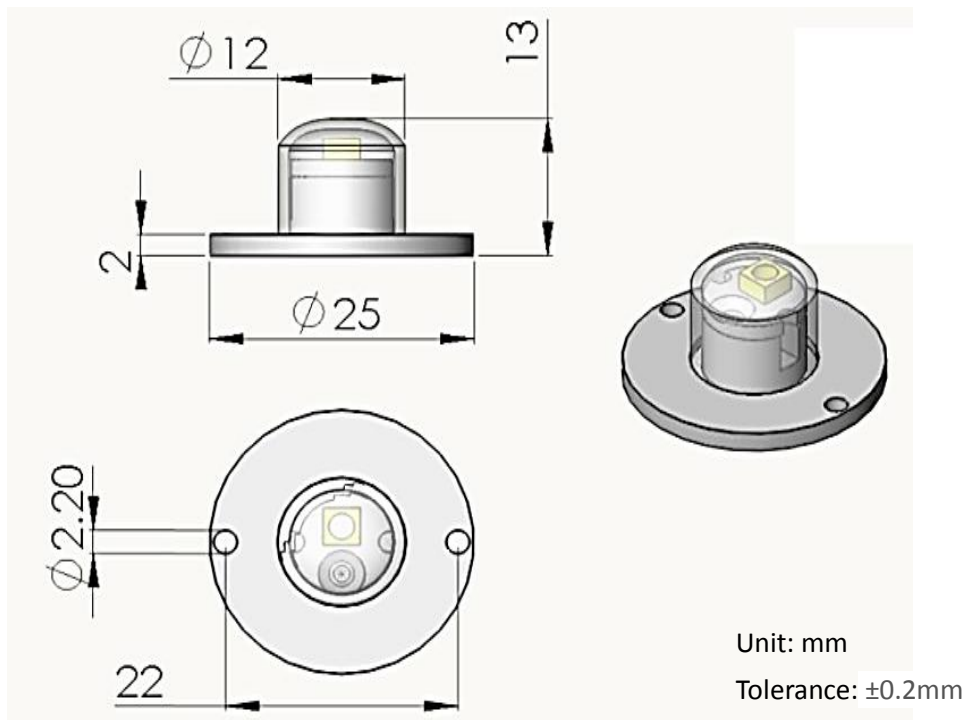


Fig. 2 Module Dimensions

● Recommended installation Method

Our sterilization module should be placed against the water tank wall, with the UV-C LED located in the center of the upper water tank, allowing the UVC light to diverge along the cross section of the water tank. The LED beam divergence of 125° , will allow the light to reach the top and bottom of the water tank with a conical area of 35mm (10 mm axial distance) of its irradiance. This will meet the National Standard regulation requirement of $30\text{mJ}/\text{cm}^2$, in about 10 minutes.

The penetration depth of 265-285nm ultraviolet radiation is about 100mm in water.

The LED module is controlled by an external circuit. This solution is specially designed for high-power UV LEDs. This can ensure the long-term stable operation of the LED, and will not affect the lifetime of the LED due to overheating.

The main body consists of three parts:

1. Quartz glass waterproof and dust proof casing
2. UV-C LED mounted on aluminum substrate
3. Base platform. The UV-C LED on aluminum substrate is encapsulated in a quartz glass sealed to isolate water and other pollution, and the base is used to fix the integral module on the upper cover of the water tank.

Note: If there is air between the UVC LED module and the water, the sterilization efficiency will be reduced.

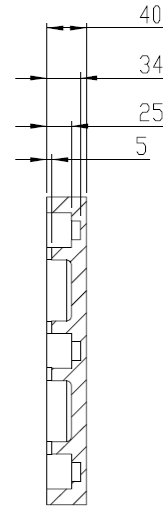
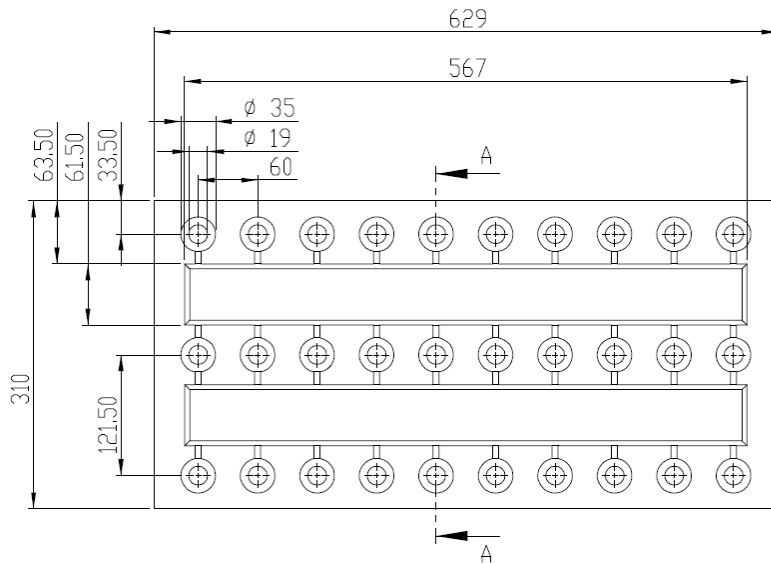


Fig. 3 4L cylindrical water tank installation diagram

● **Packing:**

1. Protective Foam Dimension: 629 x310 x40 mm

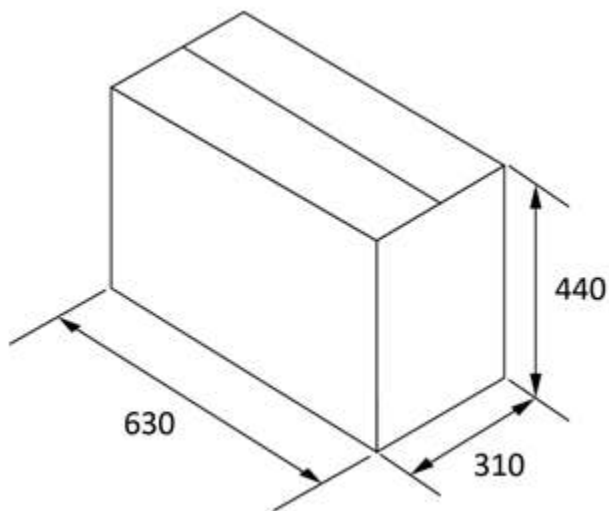
Quantity: 30 pieces/ layer



Section A -A

2. Outer Carton Box Dimension: 630 x310 x440 mm

Quantity: 10 layers/ box



*Unit: mm

*Tolerance: +/- 10mm

- History of Version:

Revision	Date	Contents of Revision Change	Remark
Rev 1.0	Jan 14, 2020	New Establishment	