

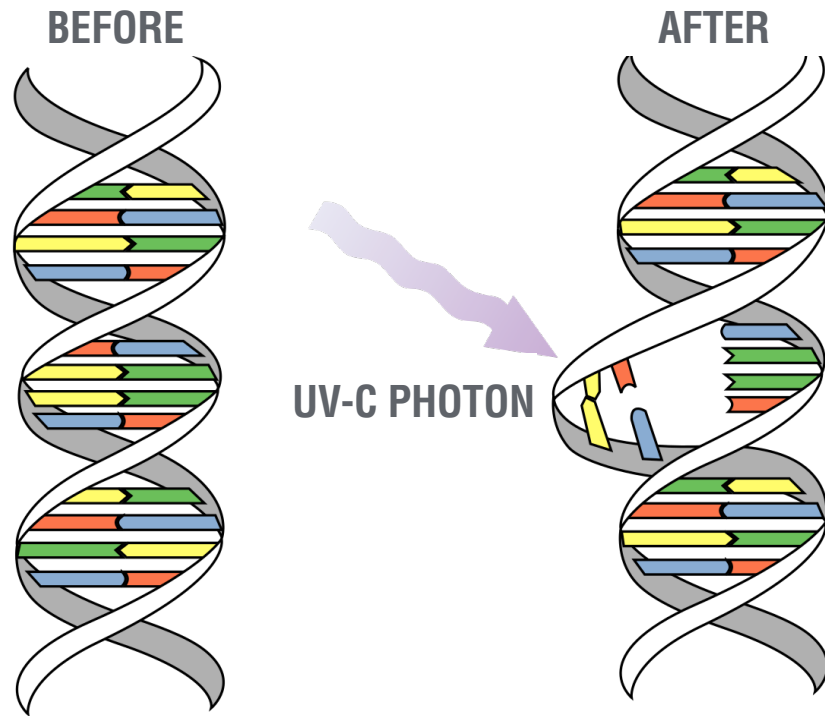
Welt Electronic SpA

**NEW UV-C LED
SOLUTIONS**

Is it possible to sanitize environments and surfaces using UV-C LEDs?

- **Already known the antibacterial and antiviral power of ultra-violet light, LEDs represent for sure an efficient solution for sterilization of environments and surfaces.**
- **The UV-C LEDs are suitable for water, air and surface treatments application, in skin treatments, in medical spectroscopy, in fluorescence analyzers, in food and pharmaceutical transformation, in horticulture lighting.**
- **The COVID-19 infection can be caused touching contaminated surfaces, where the virus can survive up to three days (both on plastic and steel), for this reason it becomes essential to minimize this risk.**
- **The UV-C light, in wavelengths from 200nm to 280nm, inactivates and kills at least two more near-relatives of COVID-19's viruses, the SARSCOV-1 and MERS-CoV, so it's conceivable that it can be equally useful to inactivate COVID-19 as well.**

Efficient against 99,99% of germs and bacteria



From a scientific study about the antimicrobial power of UV-C LEDs we know that they have an efficiency of 4 Log with the elimination of 99,99% of tested microorganisms: E. Coli, Staphylococcus Aureu (MRSA) and Monilia Albican.

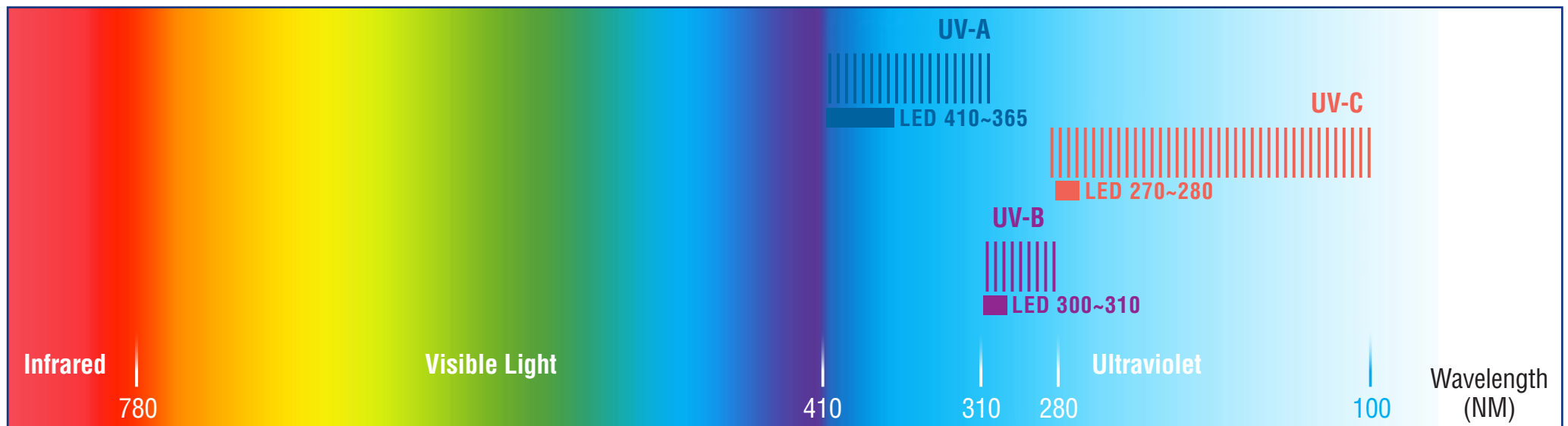
The ultraviolet UV-C LED ray starts a photochemical reaction inside the germs that destroys their DNA, RNA and/or proteins making them unable to reproduce.

Irradiation Time	0 sec.	10 sec.	20 sec.
E.coli (10,000 dilution)			
Peak Wavelength 280nm			
Radiant Flux 59mW			

*Note: This data is a reference value, hence Nichia cannot make guarantee these results, Please treat this data the as reference
Information from Nichia Model No, NCSU334BT Product Specification

UV Applications

The UV technology employed to LED lamps can be very useful in lots of applications and it's used in a different way depending on the intensity and wavelength (UV-A, UV-B, UV-C). In particular, it can be very efficient to reduce the quantity of bacteria, the virulence of harmful organisms, the presence of pathogens and bad smells in general.



Industrial	Residential	Bio
Counterfeit money detector/Entertainment	Sterilization	Horticulture
Ink (Adhesion/Ink/Nail)	Indoor Tanning	Dentist
	Surface Distinction	
	Water Distinction	Sterilization
	Mosquito Killer	

Main UV LED applications



WATER DISINFECTION

Drinkable water for domestic use

Waste water

Swimming pool

Water purifier



AIR DISINFECTION

Air conditioning system

Office

Healthcare facilities



SURFACES DISINFECTION

Food and pharmaceutical packaging

Aseptic area

Medical equipment

Restaurant and kitchen

Docking station for mobile phones

Beauty equipment

Baby bottle sterilizer

UV-C LED components solutions

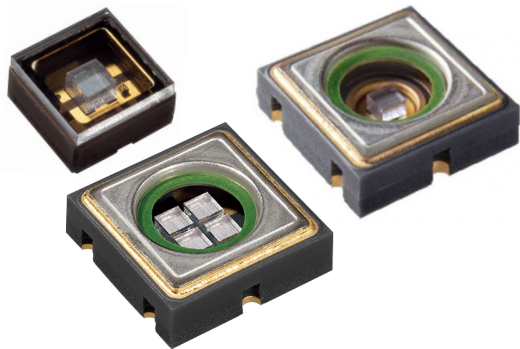


NC4U334BRT

NCSU334BT

NCSU434BT

NCSU434AT



PU35CL1-V1

PU35CM1-V3

PU35CM1-V3

PU35CM1-V6

PU35CM2-V0

PU35CM3-V0

PU35CM7-V0

PU35CH1-V0

PU35CH1-V0

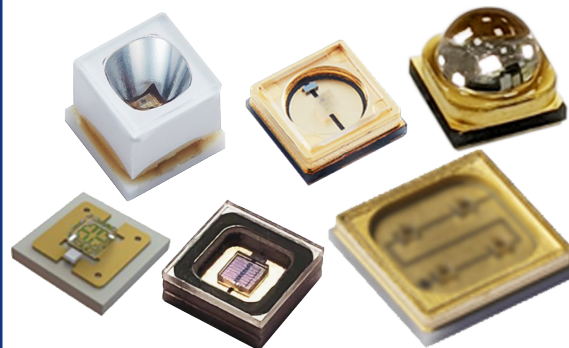
PU35CH1-V1

PU35CH2-V0

PU68CH1-V0

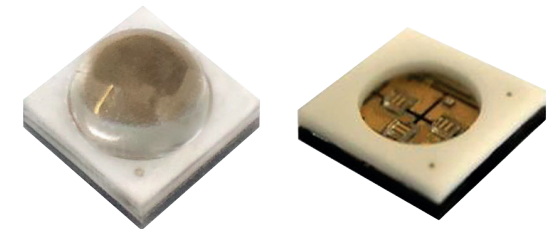
Coming Soon:

PU68CH1-VX [Q4 2022]



UVK5050Q11-B20

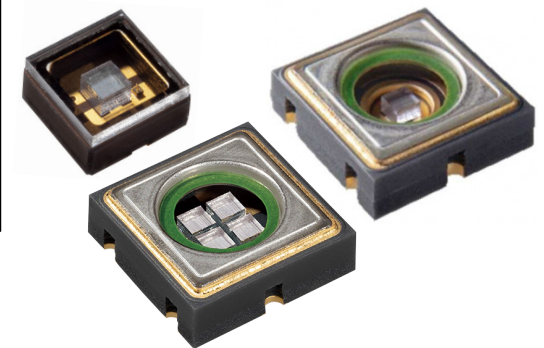
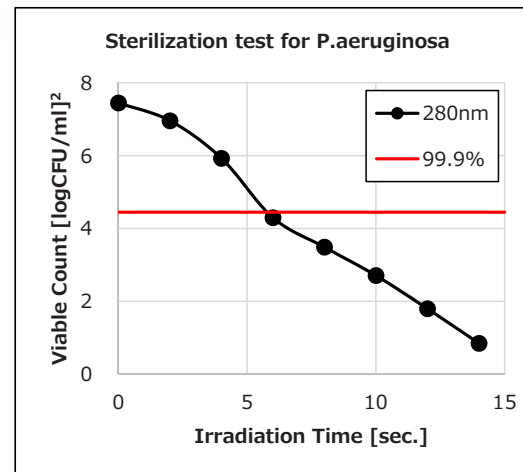
UVK5050037-G0



NICHIA UV-C LED

The Nichia's UV-C LED (334 and 434 series) are designed to satisfy the sterilization mass market demand through the solid-state lighting. These small size but highly efficient LEDs guarantee 40% more efficiency than competitors. This solution ensures the maximum miniaturization system and long-time performances more stable than the actual UV-C technologies on market.

Part No.		NCSU334B		Unit
Wavelength Rank		280		nm
Test Condition	Number of LED		1	pc.
	Forward Current		350	mA
	Peak Wavelength		280	nm
	Radiant Flux		59	mW
	Working Distance		50	mm
Irradiation ¹ Time	Gram Negative Bacteria	E.coli	14	sec.
		P.aeruginosa	6	
	Gram Positive Bacteria	S.aureus	11	



¹ Irradiation time for 99.9% sterilization.

² log = Logarithm
CFU = Colony Forming Unit

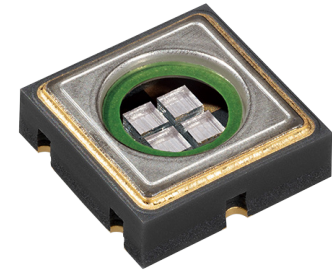
Irradiation Time	0 sec. (10,000 dilution)	2 sec. (10,000 dilution)	4 sec. (10,000 dilution)	6 sec. (10,000 dilution)	8 sec. (10,000 dilution)
P.aeruginosa Peak Wavelength 280nm Radiant Flux 59mW					

Note: This data is a reference value, hence Nichia cannot make guarantee these results. Please treat this data the as reference.

NICHIA UV-C LED

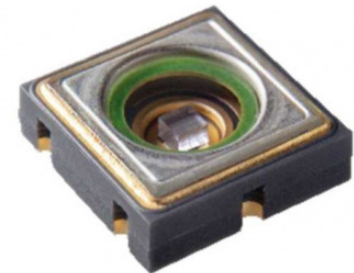
SMD NC4U334BRT UV-C LED features

- High performances with typical radiant flux 200mW
- Peak wavelength 280nm
- Typical voltage 22.5 V, typical current 350mA, maximum current 500mA
- Typical power consumption: 7.87W
- 110° deg viewing angle
- Dimensions (LxWxH): 6.8x6.8x2.12mm



SMD NCSU334BT UV-C LED features

- High performances with typical radiant flux 70mW
- Peak wavelength 280nm
- Typical voltage 5.5 V, typical current 350mA, maximum current 500mA
- Typical power consumption: 1.92W
- 115° deg viewing angle
- Dimensions (LxWxH): 6.8x6.8x2.12mm



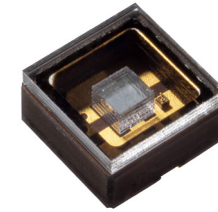
Applications

- Disinfection
- Sterilization

NICHIA UV-C LED

SMD NCSU434BT UV-C LED features

- High performances with typical radiant flux 17,5mW
- Peak wavelength 280nm
- Typical voltage 5.3 V, typical current 350mA, maximum current 500mA
- Typical power consumption: 1.99W
- 110° deg viewing angle
- Dimensions (LxWxH): 3.5x3.5x1.72mm



SMD NCSU434AT UV-C LED features

- High performances with typical radiant flux 17,5mW
- Peak wavelength 280nm
- Typical voltage 5.3 V, typical current 100mA, maximum current 150mA
- Typical power consumption: 0.53W
- 110° deg viewing angle
- Dimensions (LxWxH): 3.5x3.5x1.72mm

Applications

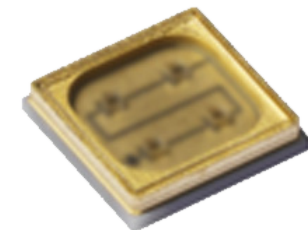
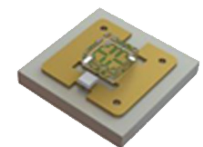
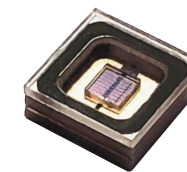
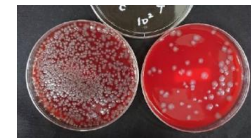
- Disinfection
- Sterilization

LEXTAR UV-C LED

The LEXTAR UV-C LED series includes many different types and powers to be suitable for everyday objects and many other applications.

Test Method: JIS Z 2801
UV LED Model: PU35CM1 V1

Test Bacteria	Concentration of Bacteria (CFU/mL)	Concentration After Testing (CFU/mL)		Antibacterial Efficacy (%)
		Reference	Treated	
Escherichia coli (ATCC 8739)	9.5×10 ⁵	7.9×10 ⁵	3.3×10 ⁴	95.82 (1 min)
			1.7×10 ⁴	97.85 (3 min)
			6.5×10 ³	99.18 (5 min)
Staphylococcus aureus (ATCC 6538P)	4.3×10 ⁵	3.8×10 ⁵	2.5×10 ³	93.42 (1 min)
			2.3×10 ³	99.39 (3 min)
			1.6×10 ³	99.58 (5 min)
Pseudomonas aeruginosa (ATCC 9027)	7.2×10 ⁵	6.7×10 ⁵	1.1×10 ⁴	98.36 (1 min)
			2.8×10 ³	99.58 (3 min)
			9.6×10 ²	99.86 (5 min)



LEXTAR UV-C LED

APPLICATIONS



High power Air disinfection

- Ultra-high radiant intensity
- High flow rate (>2L/min)



Mid power Water disinfection

- High radiant intensity
- Low flow rate (1-2L/min)

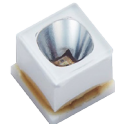


Low power Surface disinfection

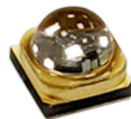
- Wide angle
- High performance/cost ratio
- Static state



PU35CL1-V1
3,5 mW
125° - 3535



PU35CM2-V0
12 mW
35° - 3535



PU35CM1-V6
14 mW
60° - 3535



PU35CM1-V3*
15 mW
125° - 3535

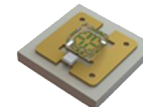


PU35CM7-V0
25 mW
125° - 3535

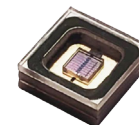
PU35CM3-V0
24 mW
125° - 3535



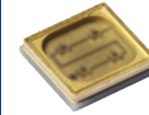
PU35CH1-V0*
50 mW
125° - 3535



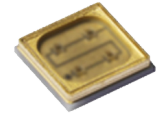
PU35CH1-V1
80 mW
140° - 3535



PU35CH2-V0
50 mW
125° - 3535



PU68CH1-V0
70 mW
125° - 6868



PU68CH1-VX
200 mW
125° - 6868

Coming Soon:
[Q4 2022]

Typical current

20mA

100mA

200mA

350mA

500mA

1400mA

Maximum current

30mA

150mA

300mA

500mA

600mA

2000mA

* Available 265nm

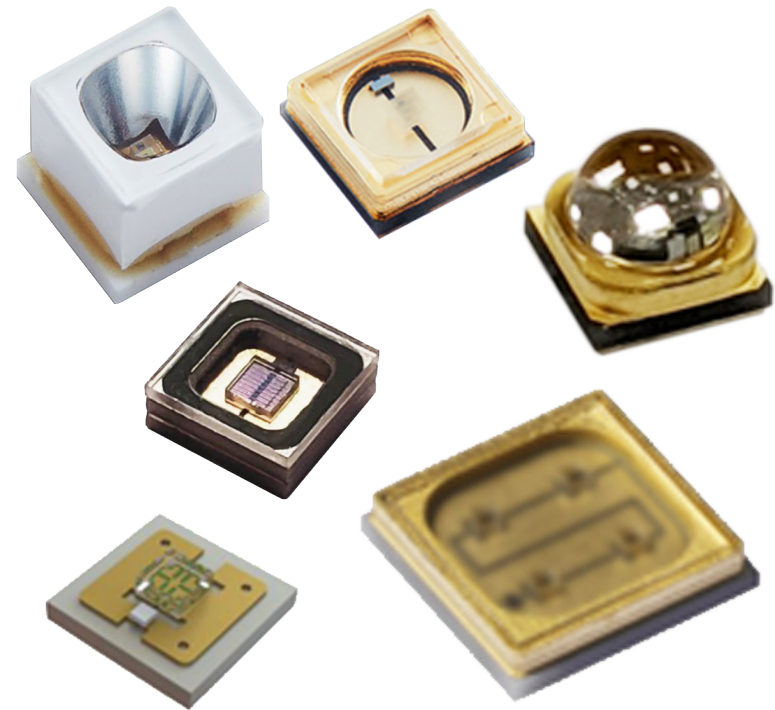
LEXTAR UV-C LED

Features

- SMD standard package
- UV-C Wavelength from 265nm to 280nm
- Different emitting angle options from 35° to 140°
- High reliability, long life
- Environmentally friendly, RoHS compliance

Applications

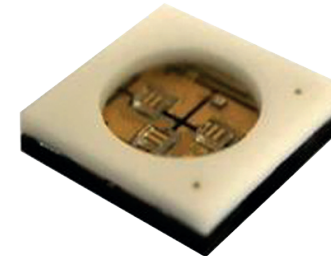
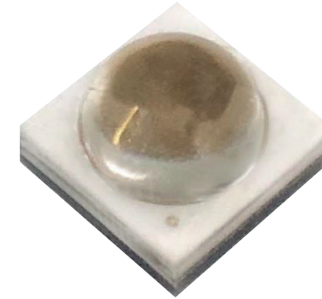
- Surface sterilization
- Food and pharmaceutical processing
- Air and water disinfection



CT MICRO UV-C LED

Features

- SMD standard package
- UV-C Wavelength from 270nm to 280nm
- Different emitting angle options from 60° to 120°
- High reliability, long life
- Environmentally friendly, RoHS compliance

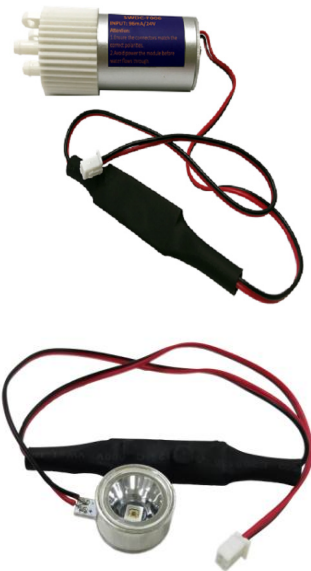


Applications

- Surface sterilization
- Food and pharmaceutical processing
- Air and water disinfection

HARVATEK

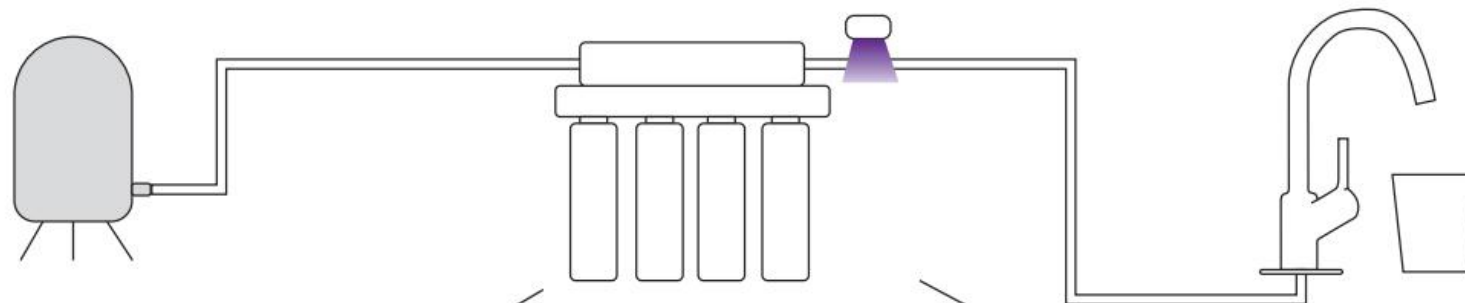
UV-C LED MODULE



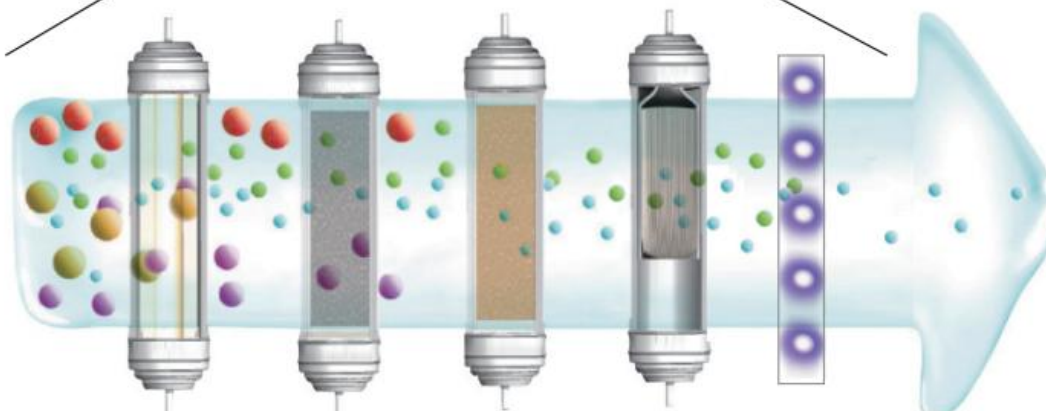
UV-C LED MODULE



HARVATEK UV-C LED MODULES



- Dust, Sand, Rust ●
- Chlorine, Organic, Substance ●
- Odor, Chemicals ●
- Mold, Virus, Bacteria, Germ ●
- Mineral ●



4 Stage Filters

UV-C



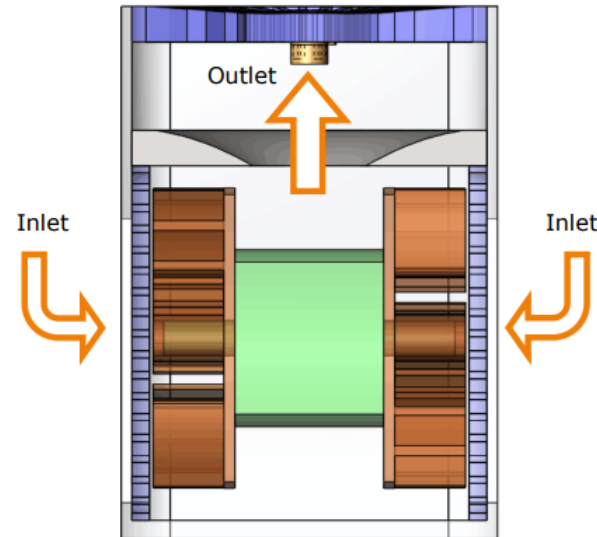
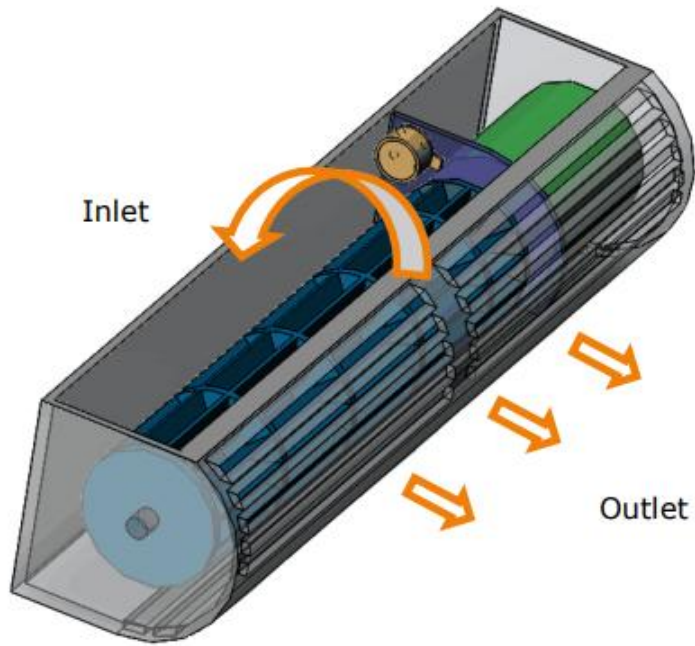
Water flux type

TEST RESULT(S):

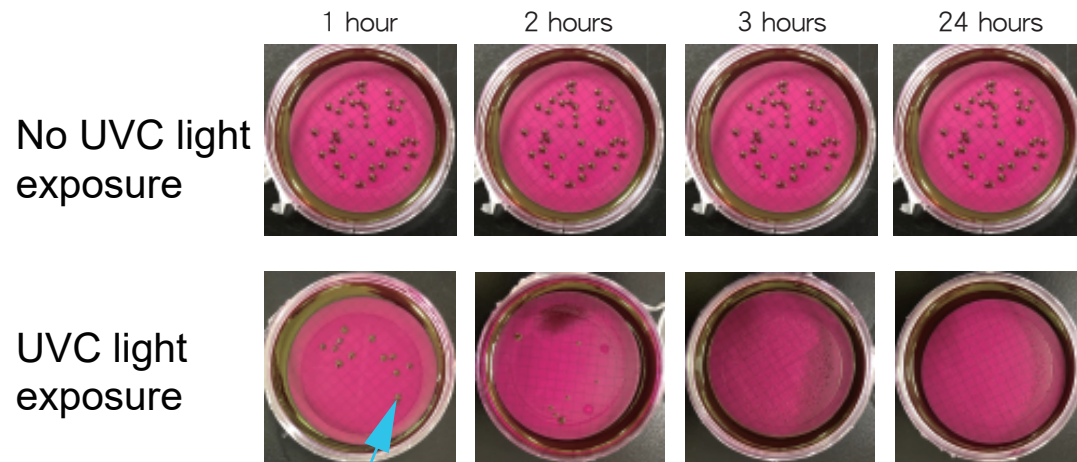
Test item(s)	Unit(s)	Test method(s)	Test result(s)		Removal rate(s)(%)**
			Influent spiked water	Effluent filtrated water	
Total coliforms*	cfu/100mL	GB/T 5750.12-2006	8.0×10^4	<1	>99.99



HARVATEK UV-C LED modules



Air type sterilization



100% sterilization rate in petri dishes after UVC LED irradiation

Bacterial contamination presence

LUX LUCIS UV-C LED modules

LUX LUCIS offers UV-C LED modules designed with highly dissipative materials and completely customized in dimension, LED wheelbase and total radiant power.

Possibility to realize spots or driven strips in 12/24Vdc voltage and different dimensions and shapes modules as well. Suitable with NICHIA, LEXTAR and CT MICRO components depending on the required application type. Suitable with a wide range of LEDiL optics.

- IMS material aluminum-based with 1/1.2/1.6 mm thickness
- Copper circuit with up to 70 μm of thickness
- Surface in passivated copper
- cUL/CE marking
- Customizable with customer mark



Optics for UV-C LED modules and components

LEDiL[®]

VIOLET



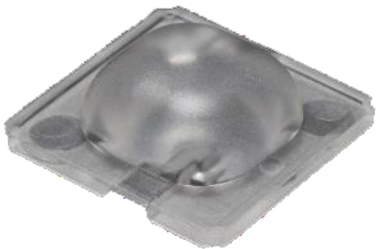
STELLA



ZORYA



JENNY



SAGA



G2-ROSE-UV / G2-NIS033U



SAKURA



LEDIL optics for UV-C LEDs



VIOLET

- 12 up lens,
- Clusters or single LEDs 3535, 6868, CSP

UV-A

UV-B

UV-C



STELLA

- Clusters up to 30 mm
- 3535, 6868 packages, CSP

UV-A

UV-B

UV-C



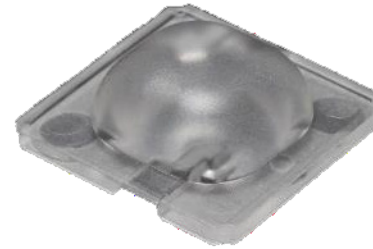
ZORYA

- Big clusters
- Clusters 3535, 6868, CSP

UV-A

UV-B

UV-C



JENNY

- Clusters up to 11 mm
- 3535, CSP

UV-A

UV-B



SAGA

- Clusters up to 14 mm
- 3535, 6868, CSP

UV-A

UV-B



G2-ROSE-UV / G2-NIS033U

- Single LEDs 3535/6868

UV-A

UV-B



SAKURA

- Clusters up to 25 mm
- 3535, 6868, CSP

UV-A

WELT ELECTRONIC SPA

Via della Treccia, 33 - 50145 Firenze

Tel. +39 055 302631

info@weltelectronic.it - weltelectronic@pec.it

gdpr@weltelectronic.it - www.weltelectronic.it

PRODUCTION

Via della Treccia, 8 - 50145 Firenze

Tel. +39 055 302631

BRANCH OFFICE

Via Cristoforo Colombo, 5/c - 20094 Corsico, Milano

Tel. +39 02 4585637

COMPANY DATA

Trib. FI45117 - R.E.A. FI388341

C.F. e P.I. 03714360488

Capitale Sociale: € 2.000.000 i.v.

Registro Pile: IT19040P00005244