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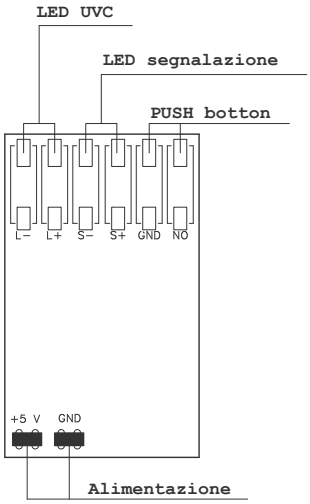
# CONVERTITORE UV-C
# 9L113X

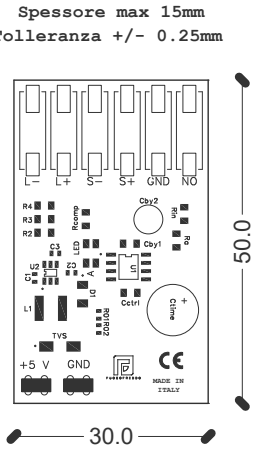
## Descrizione

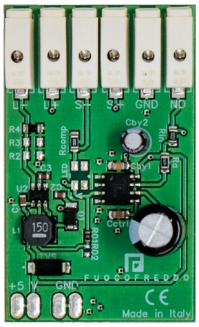
Convertitore Tensione Corrente per LEDs UVC con uscita in Corrente DC. Alimentazione a 5Vdc o 12Vdc secondo il modello richiesto (vedi codici). Uscita in corrente da 50mA a 300mA, secondo il modello richiesto (vedi codici). Disponibile in diverse versioni a seconda anche della temporizzazione richiesta (30sec, 60sec, 90sec, 120sec, 150sec, 180sec). Il modulo può essere equipaggiato con led di segnalazione dello stato di funzionamento on board o remotizzato.

## Caratteristiche tecniche

- Diverse temporizzazioni de 30sec a 180sec.*
- Iout led 50/150/200/300 mA*
- Vin typ 5 Vdc o 12Vdc*
- Uscita per alimentazione eventuale LED di segnalazione stato remoto
- Uscita per alimentazione eventuale Push button remoto
- Protezioni LED driver IC : open LED protection, soft start up, UV lockout sotto i 2,2 V, thermal shutdown
- Protezioni aggiuntive: TVSP parallelo ai 5 V
- Possibile Led on board per segnalazione timing



## Precauzioni per lo stoccaggio

Per evitare la penetrazione di umidità, si consiglia di conservare il modulo in una scatola asciutta provvista di dispositivi essiccanti, ad una temperatura compresa tra 5°C e 30°C e un'umidità relativa non superiore al 50%.

Se il modulo viene conservato per oltre 3 mesi dopo la spedizione da parte di FUOCOFREDDO, deve essere utilizzato un contenitore sigillato con atmosfera di azoto.

Conservare i moduli sempre all'interno dei sacchetti antistatici e a prova di umidità. L'esposizione prolungata all'umidità può influire negativamente sul corretto funzionamento del modulo stesso.

Non utilizzare (o conservare) insieme a materiali contenenti zolfo.

## Precauzioni per la manipolazione

Non toccare a meno che non venga utilizzata la protezione ESD.

Non utilizzare materiale infiammabile vicino al prodotto.

Non toccare il prodotto con le mani bagnate

Non riparare o rimodellare il prodotto.

Preservare il prodotto da cadute o urti.

Assicurarsi di utilizzare sempre fonti di alimentazione che presentino le debite protezioni a scariche elettrostatiche ed eventuali correnti di spunto. La mancanza di un sistema di pilotaggio adeguato e debitamente protetto può causare il danneggiamento irreparabile del modulo.

Non mettere a diretto contatto il prodotto con liquidi quali: acqua, olii o solventi. Eseguire la pulizia del modulo soltanto attraverso strumenti adeguati quali spazzole o pennelli.

# DRIVER UV-C
# 110380

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| Versioni disponibili a catalogo | | | | |
|---|---|---|---|---|
| **cod.prodotto** | **temporizzazione*** | **tensione di ingresso*** | **corrente in uscita*** | **potenza in uscita*** |
| **110380-05050000LE** | 0sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150000LE** | 0sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200000LE** | 0sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300000LE** | 0sec. | 5VDC | 300mA | 3,60W @ 12Vdc |
| **110380-05050030LE** | 30sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150030LE** | 30sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200030LE** | 30sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300030LE** | 30sec. | 5VDC | 300mA | 3,60W @ 12Vdc |
| **110380-05050060LE** | 60sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150060LE** | 60sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200060LE** | 60sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300060LE** | 60sec. | 5VDC | 300mA | 3,60W @ 12Vdc |
| **110380-05050090LE** | 90sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150090LE** | 90sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200090LE** | 90sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300090LE** | 90sec. | 5VDC | 300mA | 3,60W @ 12Vdc |
| **110380-05050120LE** | 120sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150120LE** | 120sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200120LE** | 120sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300120LE** | 120sec. | 5VDC | 300mA | 3,60W @ 12Vdc |
| **110380-05050150LE** | 150sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150150LE** | 150sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200150LE** | 150sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300150LE** | 150sec. | 5VDC | 300mA | 3,60W @ 12Vdc |
| **110380-05050180LE** | 180sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150180LE** | 180sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200180LE** | 180sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300180LE** | 180sec. | 5VDC | 300mA | 3,60W @ 12Vdc |

* considerare una tolleranza del +/- 10%

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# CONVERTITORE UV-C
# 9L113X

| Versioni disponibili a catalogo | | | | |
|---|---|---|---|---|
| **cod.prodotto** | **temporizzazione*** | **tensione di ingresso*** | **corrente in uscita*** | **potenza in uscita*** |
| **110380-12050000LE** | 0sec. | 12VDC | 50mA | 1.20W @ 24Vdc |
| **110380-12150000LE** | 0sec. | 12VDC | 150mA | 3.60W @ 24Vdc |
| **110380-12200000LE** | 0sec. | 12VDC | 200mA | 4.80W @ 24Vdc |
| **110380-12300000LE** | 0sec. | 12VDC | 300mA | 7.20W @ 24Vdc |
| **110380-12050030LE** | 30sec. | 12VDC | 50mA | 1.20W @ 24Vdc |
| **110380-12150030LE** | 30sec. | 12VDC | 150mA | 3.60W @ 24Vdc |
| **110380-12200030LE** | 30sec. | 12VDC | 200mA | 4.80W @ 24Vdc |
| **110380-12300030LE** | 30sec. | 12VDC | 300mA | 7.20W @ 24Vdc |
| **110380-12050060LE** | 60sec. | 12VDC | 50mA | 1.20W @ 24Vdc |
| **110380-12150060LE** | 60sec. | 12VDC | 150mA | 3.60W @ 24Vdc |
| **110380-12200060LE** | 60sec. | 12VDC | 200mA | 4.80W @ 24Vdc |
| **110380-12300060LE** | 60sec. | 12VDC | 300mA | 7.20W @ 24Vdc |
| **110380-12050090LE** | 90sec. | 12VDC | 50mA | 1.20W @ 24Vdc |
| **110380-12150090LE** | 90sec. | 12VDC | 150mA | 3.60W @ 24Vdc |
| **110380-12200090LE** | 90sec. | 12VDC | 200mA | 4.80W @ 24Vdc |
| **110380-12300090LE** | 90sec. | 12VDC | 300mA | 7.20W @ 24Vdc |
| **110380-12050120LE** | 120sec. | 12VDC | 50mA | 1.20W @ 24Vdc |
| **110380-12150120LE** | 120sec. | 12VDC | 150mA | 3.60W @ 24Vdc |
| **110380-12200120LE** | 120sec. | 12VDC | 200mA | 4.80W @ 24Vdc |
| **110380-12300120LE** | 120sec. | 12VDC | 300mA | 7.20W @ 24Vdc |
| **110380-12050150LE** | 150sec. | 12VDC | 50mA | 1.20W @ 24Vdc |
| **110380-12150150LE** | 150sec. | 12VDC | 150mA | 3.60W @ 24Vdc |
| **110380-12200150LE** | 150sec. | 12VDC | 200mA | 4.80W @ 24Vdc |
| **110380-12300150LE** | 150sec. | 12VDC | 300mA | 7.20W @ 24Vdc |
| **110380-12050180LE** | 180sec. | 12VDC | 50mA | 1.20W @ 24Vdc |
| **110380-12150180LE** | 180sec. | 12VDC | 150mA | 3.60W @ 24Vdc |
| **110380-12200180LE** | 180sec. | 12VDC | 200mA | 4.80W @ 24Vdc |
| **110380-12300180LE** | 180sec. | 12VDC | 300mA | 7.20W @ 24Vdc |

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Installation must be carried out under observation ot the relevant regulations and standards. The LED modules are designed for operation within a casing or luminaire. Installation musi be carried out in a voltage-free state (i.e. disconnection from the mains).
The following advice must be observed; non-observance can result in the destruction ot the LED assembly modules, fire and/or other hazards.

- Consider safety regulations acc. EN 60598 in the luminaire design, especially when the operating LED driver is not galvanic isolated.
- In mode of operation regard to sufficient isolation.
- Live parts must not be touched in operation mode. Danger in life!!!
- ESD (electrostatic discharge) protection measures must be observed when handling and installing the LED modules. See VS's application notes on ESD protection.
- Adequate anti-static electricity measures, including the use ot conductive shoes, ionizers, work bench grounding, wrist straps, flooring and stools should be used.
- LED assembly modules must not be subjected to any undue mechanical stress, e. g.:
- do not treat as bulk cargo
- avoid shear and compressive forces during handling and installation
- do not damage circuit paths
- avoid any pressure on the light emitting surface
- Safe operation only possible by the use of external constant current sources (Imax. see table "Electrical Characteristics").
- Operation only with power supply units that feature the following protection:
- Short-circuit protection
- Overload protection
- Overheating protection
- The module can be fixed with M3 screws. Fixation only with flat or cylinder head screws (M3) (no countersank screws) Max. torque: 1.2 Nm (M3)
- Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- For interconnection the LED modules is equipped with push-in terminals (WAGO 2060).
- Safety regulations acc. to EN 60598 (or further standards) has to be observed if the maximum output voltage exceed the permitted touchable value.
- The following points must be observed when connecting LED modules in parallel:
- All LED strings that are wired in parallel must contain the same number of LEDs (symmetrical loading).
- Owing to differing forward biases, there can be a difference of up to 10% in brightness between modules connected in parallel.
- To ensure problem-free operation, the specified maximum temperature at the tp point (see "Operating Life") must be observed (and measured in accordance with EN 60598-l). To satisfy this point, it may be necessary to put measures in place to ensure any heat is dissipated from the PCB to the environment.
- In the event of outdoor applications or applications in damp locations, care must be taken to protect LED assembly modules against humidity, splashes and jets of water. Any corrosion damage resulting from humidity or contact with condensation will not be recognized as a defect or manufacturing fault. LED assembly modules are not specially protected against foreign bodies or dust. Depending on the type of application, further protection must be ensured to prevent dust and foreign bodies from entering.
- Due to the manufacturing process, the PCBs of the LED assembly modules can have sharp edges and corners. Care must therefore be taken during handling and installation to avoid injury.
- For optimal load of used constant current driver the modules can only be connected in series. The quantity of LED modules is limited by the sum of forward voltage and the capacity of used constant current driver. Safety regulations acc. to EN 60598 has to be observed if the sum of forward voltage exceed the permitted touchable value.
- Operating LED modules in the presence of certain chemical substances or in chemically enriched (aggressive) environments can impair module functionality or even cause total module failure.
- The photobiological safety of the LED modules must be classified into risk groups in accordance with IEC / TR 62778: risk group 1 (except HB, 6500 K, > 500 mA: risk group 2)

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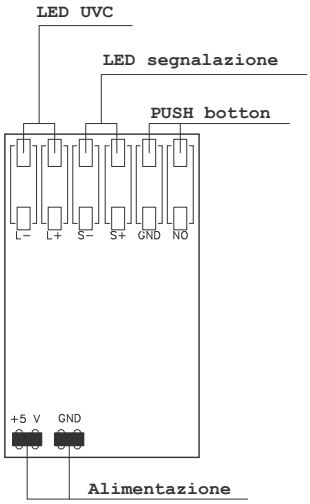
# CONVERTITORE UV-C
# 9L113X

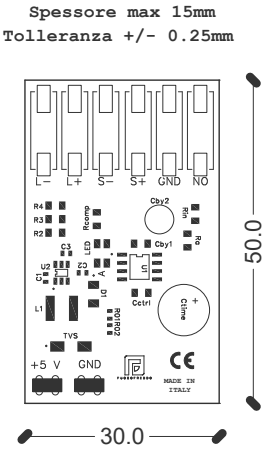
## Description

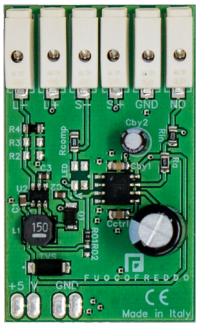
Voltage Current Converter for UVC LEDs with DC Current output. 5Vdc or 12Vdc power supply according to the model required (see codes). Current output from 50mA to 300mA, according to the model required (see codes). Available in different versions also depending on the timing required (30sec, 60sec, 90sec, 120sec, 150sec, 180sec). The module can be equipped with LEDs for signaling the on board or remote operating status.

## Technical features

- Different timings from 30sec to 180sec. *
- Iout led 50/150/200/300 mA *
- Vin typ 5 Vdc or 12Vdc *
- Output for power supply, if any, LED for signaling remote status
- Remote push button power supply output
- LED driver IC protections: open LED protection, soft start up, UV lockout under 2.2V, thermal shutdown
- Additional protections: TVSP parallel to 5 V
- Possible Led on board for timing signaling



## Storage precautions

To avoid the penetration of moisture, it is recommended to store the module in a dry box equipped with drying devices, at a temperature between 5 ° C and 30 ° C and a relative humidity not exceeding 50%.

If the module is stored for more than 3 months after shipment by FUOCOFREDDO, a sealed container with a nitrogen atmosphere must be used.

Always store the forms inside the antistatic and moisture-proof bags. Prolonged exposure to humidity can adversely affect the correct functioning of the module itself.

Do not use (or store) in conjunction with materials containing sulfur.

## Handling precautions

Do not touch unless ESD protection is used.

Do not use flammable material near the product.

Do not touch the product with wet hands

Do not repair or remodel the product.

Protect the product from falls or bumps.

Make sure to always use power sources that have the necessary electrostatic discharge protections and any inrush currents. The lack of an adequate and duly protected driving system can cause irreparable damage to the module.

Do not put the product in direct contact with liquids such as: water, oils or solvents. Clean the module only with suitable tools such as brushes or paintbrushes.

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| Versions available in the catalog | | | | |
|---|---|---|---|---|
| **product code** | **timing *** | **input voltage *** | **output current *** | **output power *** |
| **110380-05050000LE** | 0sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150000LE** | 0sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200000LE** | 0sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300000LE** | 0sec. | 5VDC | 300mA | 3,60W @ 12Vdc |
| **110380-05050030LE** | 30sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150030LE** | 30sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200030LE** | 30sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300030LE** | 30sec. | 5VDC | 300mA | 3,60W @ 12Vdc |
| **110380-05050060LE** | 60sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150060LE** | 60sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200060LE** | 60sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300060LE** | 60sec. | 5VDC | 300mA | 3,60W @ 12Vdc |
| **110380-05050090LE** | 90sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150090LE** | 90sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200090LE** | 90sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300090LE** | 90sec. | 5VDC | 300mA | 3,60W @ 12Vdc |
| **110380-05050120LE** | 120sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150120LE** | 120sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200120LE** | 120sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300120LE** | 120sec. | 5VDC | 300mA | 3,60W @ 12Vdc |
| **110380-05050150LE** | 150sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150150LE** | 150sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200150LE** | 150sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300150LE** | 150sec. | 5VDC | 300mA | 3,60W @ 12Vdc |
| **110380-05050180LE** | 180sec. | 5VDC | 50mA | 0.60W @ 12Vdc |
| **110380-05150180LE** | 180sec. | 5VDC | 150mA | 1.80W @ 12Vdc |
| **110380-05200180LE** | 180sec. | 5VDC | 200mA | 2.40W @ 12Vdc |
| **110380-05300180LE** | 180sec. | 5VDC | 300mA | 3,60W @ 12Vdc |

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| Versions available in the catalog | | | | |
|---|---|---|---|---|
| **product code** | **timing *** | **input voltage *** | **output current *** | **output power *** |
| **110380-12050000LE** | 0sec. | 12VDC | 50mA | 1.20W @ 24Vdc |
| **110380-12150000LE** | 0sec. | 12VDC | 150mA | 3.60W @ 24Vdc |
| **110380-12200000LE** | 0sec. | 12VDC | 200mA | 4.80W @ 24Vdc |
| **110380-12300000LE** | 0sec. | 12VDC | 300mA | 7.20W @ 24Vdc |
| **110380-12050030LE** | 30sec. | 12VDC | 50mA | 1.20W @ 24Vdc |
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| **110380-12200030LE** | 30sec. | 12VDC | 200mA | 4.80W @ 24Vdc |
| **110380-12300030LE** | 30sec. | 12VDC | 300mA | 7.20W @ 24Vdc |
| **110380-12050060LE** | 60sec. | 12VDC | 50mA | 1.20W @ 24Vdc |
| **110380-12150060LE** | 60sec. | 12VDC | 150mA | 3.60W @ 24Vdc |
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| **110380-12150120LE** | 120sec. | 12VDC | 150mA | 3.60W @ 24Vdc |
| **110380-12200120LE** | 120sec. | 12VDC | 200mA | 4.80W @ 24Vdc |
| **110380-12300120LE** | 120sec. | 12VDC | 300mA | 7.20W @ 24Vdc |
| **110380-12050150LE** | 150sec. | 12VDC | 50mA | 1.20W @ 24Vdc |
| **110380-12150150LE** | 150sec. | 12VDC | 150mA | 3.60W @ 24Vdc |
| **110380-12200150LE** | 150sec. | 12VDC | 200mA | 4.80W @ 24Vdc |
| **110380-12300150LE** | 150sec. | 12VDC | 300mA | 7.20W @ 24Vdc |
| **110380-12050180LE** | 180sec. | 12VDC | 50mA | 1.20W @ 24Vdc |
| **110380-12150180LE** | 180sec. | 12VDC | 150mA | 3.60W @ 24Vdc |
| **110380-12200180LE** | 180sec. | 12VDC | 200mA | 4.80W @ 24Vdc |
| **110380-12300180LE** | 180sec. | 12VDC | 300mA | 7.20W @ 24Vdc |

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- Live parts must not be touched in operation mode. Danger in life!!!
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- LED assembly modules must not be subjected to any undue mechanical stress, e. g.:
- do not treat as bulk cargo
- avoid shear and compressive forces during handling and installation
- do not damage circuit paths
- avoid any pressure on the light emitting surface
- Safe operation only possible by the use of external constant current sources (Imax. see table "Electrical Characteristics").
- Operation only with power supply units that feature the following protection:
- Short-circuit protection
- Overload protection
- Overheating protection
- The module can be fixed with M3 screws. Fixation only with flat or cylinder head screws (M3) (no countersank screws) Max. torque: 1.2 Nm (M3)
- Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- For interconnection the LED modules is equipped with push-in terminals (WAGO 2060).
- Safety regulations acc. to EN 60598 (or further standards) has to be observed if the maximum output voltage exceed the permitted touchable value.
- The following points must be observed when connecting LED modules in parallel:
- All LED strings that are wired in parallel must contain the same number of LEDs (symmetrical loading).
- Owing to differing forward biases, there can be a difference of up to 10% in brightness between modules connected in parallel.
- To ensure problem-free operation, the specified maximum temperature at the tp point (see "Operating Life") must be observed (and measured in accordance with EN 60598-l). To satisfy this point, it may be necessary to put measures in place to ensure any heat is dissipated from the PCB to the environment.
- In the event of outdoor applications or applications in damp locations, care must be taken to protect LED assembly modules against humidity, splashes and jets of water. Any corrosion damage resulting from humidity or contact with condensation will not be recognized as a defect or manufacturing fault. LED assembly modules are not specially protected against foreign bodies or dust. Depending on the type of application, further protection must be ensured to prevent dust and foreign bodies from entering.
- Due to the manufacturing process, the PCBs of the LED assembly modules can have sharp edges and corners. Care must therefore be taken during handling and installation to avoid injury.
- For optimal load of used constant current driver the modules can only be connected in series. The quantity of LED modules is limited by the sum of forward voltage and the capacity of used constant current driver. Safety regulations acc. to EN 60598 has to be observed if the sum of forward voltage exceed the permitted touchable value.
- Operating LED modules in the presence of certain chemical substances or in chemically enriched (aggressive) environments can impair module functionality or even cause total module failure.
- The photobiological safety of the LED modules must be classified into risk groups in accordance with IEC / TR 62778: risk group 1 (except HB, 6500 K, > 500 mA: risk group 2)