

## SCHEDA TECNICA 110381

### Descrizione

Il modulo LED UV-C 110381 è un modulo sviluppato appositamente per la sanificazione e sterilizzazione di aria, superfici di lavoro. Realizzato con PCB in alluminio (IMS) altamente performante che garantisce un'ottima dissipazione termica. Le dimensioni molto ridotte lo rendono perfetto per essere utilizzato all'interno di profili resinati e non.

### Caratteristiche

- Bassa resistenza termica
- Dimensioni ridotte (44x11x3.4mm)
- Senza piombo

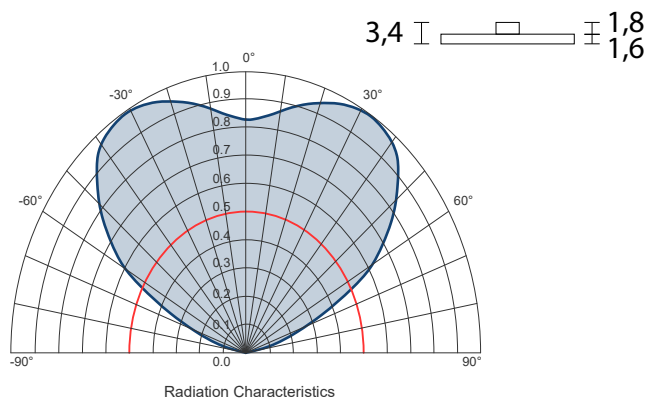
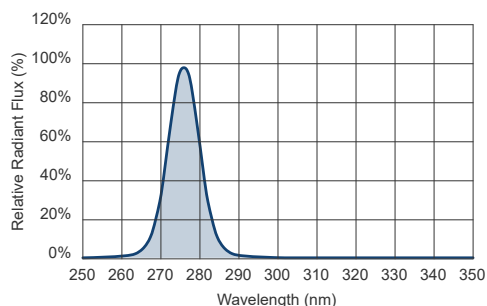
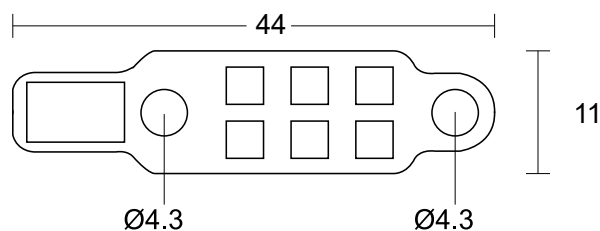
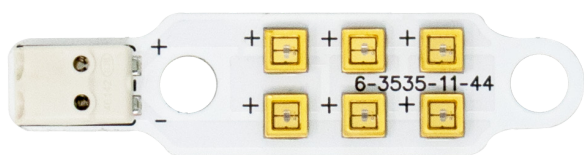
codice	corrente di alimentazione	potenza tipica	flusso radiante	Numero di LED	PCB	picco lunghezza d'onda	angolo di emissione	dimensioni
110381-GB	300mA	4,32W	60mW	6 UV-C	IMS	275nm	120°	44 x 11 x 3.4 (mm)
110381-GC	300mA	3,78W	60mW					
110381-GR	450mA	5,4W	126mW					
110381-GM	750mA	7,8W	165mW					
110381-GZ	1050mA	13,1W	282mW					

I dati riportati nella presente documentazione sono da intendersi con una tolleranza del +/- 5%.

La lunghezza d'onda riportata nella presente documentazione è da intendersi con una tolleranza del +/- 5nm.

Verificare che le temperature di lavoro dei LED rientrino nelle specifiche tecniche, anche in funzione del lifetime necessario. Per maggiori informazioni rivolgersi all'ufficio tecnico FuocoFreddo.

PCB thickness 1.6mm  
Tolerance +/- 0.1mm



### Possibili applicazioni

- Sanificazione e disinfezione
- Sanificazione e disinfezione di strumenti o oggetti
- Sanificazione e disinfezione dell'acqua (tramite opportuna resinatura)
- Sanificazione e disinfezione delle superfici

### Accessori

- Alimentatori ON/OFF e dimmerabili
- Alimentatori controllabili IoT (Alexa, Google, Apple, Casambi)
- Schede elettroniche di controllo
- Timer programmabili
- Sensori di presenza / attivazione e sicurezza
- Dissipatori termici in alluminio
- Ottiche secondarie per il controllo del flusso UV-C
- Resinature protettive IP e trasparenti agli UV-C



## SCHEMA TECNICA 110381

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Installation must be carried out under observation of the relevant regulations and standards. The LED modules are designed for operation within a casing or luminaire. Installation must 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 of 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 of 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 (I<sub>max</sub>. 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 60598-1). 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)



### Precauzioni per lo stoccaggio

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

Se il modulo UV 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 UV sempre all'interno dei sacchetti antistatici e a prova di umidità. L'esposizione prolungata all'umidità può influire negativamente sul corretto funzionamento del modulo UV.

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.

Il modulo UV è incapsulato con materiale speciale. Quindi deve essere gestito con cura come di seguito

- Evitare di toccare parti in vetro quarzo, specialmente con strumenti affilati come le pinzette
- Evitare di lasciare impronte digitali o depositi di sporcizia sulle parti in vetro quarzo

I prodotti emettono luce ultravioletta ad alta intensità che può danneggiare gli occhi e la pelle, quindi non guardare direttamente la luce UV e indossare dispositivi di protezione durante il funzionamento.

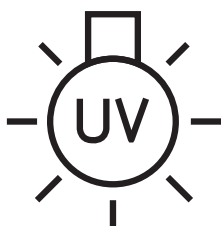
Assicurarsi di utilizzare sempre fonti di alimentazione che presentino le debite protezioni a scariche elettrostatiche ed eventuali correnti di spunto. La mancanza di un sistema di pilotaggio adeguato e debitamente protetto può causare il danneggiamento irreparabile dei LED UV.

Sono necessari ionizzatore, messa a terra e tasso di umidità adeguata per l'ambiente di lavoro.

### Precauzioni per la pulizia

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.

L'aspetto, le specifiche tecniche e i rendimenti del prodotto possono essere modificati a fine migliorativo da parte di FUOCOFREDDO, in qualsiasi momento e senza preavviso. Per maggiori informazioni invitiamo a contattare i nostri uffici tecnici info@fuocofreddo.it o a visitare l'area download all'indirizzo www.fuocofreddo.it.



### ! ATTENZIONE !

I LED UV-C emettono luce ultravioletta ad alta intensità che può danneggiare gli occhi e la pelle.  
Non guardare direttamente la luce UV-C e indossare dispositivi di protezione durante il funzionamento.

**Evitare l'esposizione diretta di occhi e pelle con la luce emessa dai LED UV-C.**  
**Tenere fuori dalla portata dei bambini.**

### Description

The UV-C 110381 LED module is a module specially developed for the sanitization and sterilization of air, work surfaces. Made with high-performance aluminum PCB (IMS) that guarantees excellent heat dissipation. The very small size makes it perfect for use inside resin-coated and non-resin profiles.

### Features

- Low thermal resistance
- Small size (44x11x3.4mm)
- Lead-free

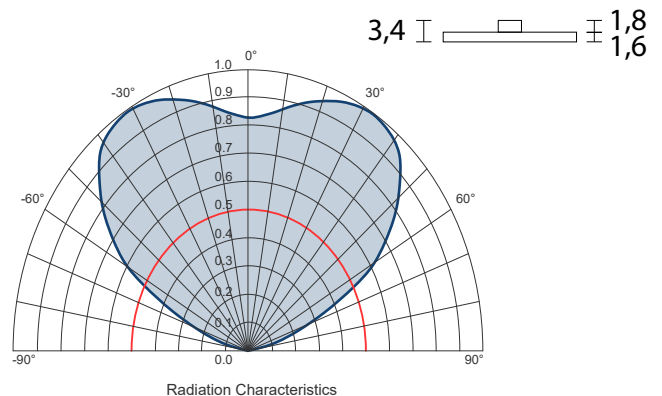
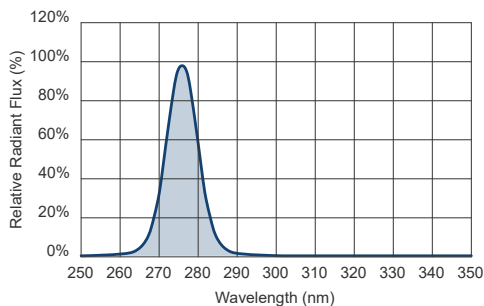
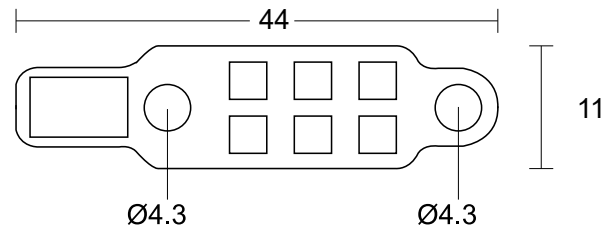
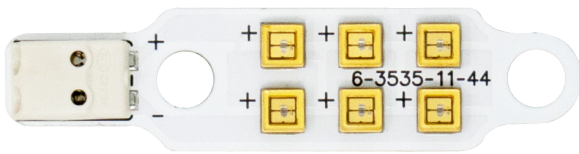
Code	supply current	typical power	radiant flow	Number of LEDs	PCB	peak wavelength	emission angle	dimension
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The data shown in this documentation are intended with a tolerance of +/- 5%.

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Check that the operating temperatures of the LEDs fall within the technical specifications, also in relation to the lifetime required. For more information, contact the Fuocofreddo technical office.

PCB thickness 1.6mm  
 Tolerance +/- 0.1mm



### Possible applications

- Sanitation and disinfection
- Sanitization and disinfection of tools or objects
- Sanitation and disinfection of water (through appropriate resin coating)
- Surface sanitation and disinfection

### Accessories

- ON / OFF and dimmable power supplies
- IoT controllable power supplies (Alexa, Google, Apple, Casambi)
- Electronic control cards
- Programmable timers
- Presence / activation and safety sensors
- Aluminum heat sinks
- Secondary optics for UV-C flux control
- IP protective resin and UV-C transparent



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# TECHNICAL SHEET 110381

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## Storage precautions

To avoid the penetration of moisture, it is advisable to store the UV 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 UV 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 UV modules inside the antistatic and moisture-proof bags. Prolonged exposure to humidity can adversely affect the proper functioning of the UV module.

Do not use (or store) together 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.

The UV module is encapsulated with special material. So it needs to be handled with care as below

-Avoid touching quartz glass parts, especially with sharp tools such as tweezers

-Avoid leaving fingerprints or dirt deposits on the quartz glass parts

The products emit high intensity ultraviolet light which can damage the eyes and skin, so do not look directly into the UV light and wear protective gear during operation.

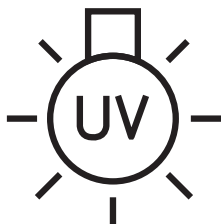
Make sure to always use power sources that have the necessary electrostatic discharge protections and any inrush currents. The lack of an adequate and duly protected driving system can cause irreparable damage to the UV LEDs.

An ionizer, grounding and adequate humidity for the work environment are required.

## Cleaning precautions

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.

The appearance, technical specifications and performance of the product can be changed for improvement purposes by FUOCOFREDDO at any time and without notice. For more information, please contact our technical offices info@fuocofreddo.it or visit the download area at [www.fuocofreddo.it](http://www.fuocofreddo.it).



## ! ATTENTION !

UV-C LEDs emit high intensity ultraviolet light which can damage the eyes and skin.  
Do not look directly into the UV-C light and wear protective equipment during operation.

**Avoid direct exposure of eyes and skin with the light emitted by UV-C LEDs.**  
**Keep out of reach of children.**