L0-282019-UVC-C0160-K311

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INTRODUCTION

LED module is an advanced light source designed for the best energy efficient and eco-friendly indoor lighting. It is based on UV power LEDs produced by the leader of the LED technology. Using newest technology we provide the best solution for lighting. Push terminals provide quick installation of the entire lighting system.

LED Type	Luminus XBT-1313-UV
LED Quantity	48 pcs
Dimension	282x19 mm
Power Supply Type	Constant Current (CC)
Input Current	max. 160 mA
Viewing Angle	120°
Material Thickness	1,5 mm
Cable Connection	Push Terminals
Max Ambient Temperature	45°C
Wavelength	280 - 286 nm

FEATURES

LEDs have significant advantages compared to other types of lighting and are easy to use. LEDs are versatile and virtually maintenance free.

- Efficiency of the module up to 125 mW @ 80 mA
- Rigid board LED module
- Viewing angle at 50% I_V: 60°
- Small wavelength tolerance
- Small radiant power tolerances
- Push terminals for quick and simple wiring
- Dimmable
- Simple installation
- Long lifetime

APPLICATIONS

- Lamp for disinfection

CALCULATED PARAMETERS AT T_J = 25°C

Input Current [mA]	Forward Voltage [V]	Power [W]	Wavelength [λ]	Color	Radiant power* [mW]	Module Efficacy* [mW/W]	Article Number
40	62,2	2,5	275-280 nm	UV-C	78	31	L0-282019-UVC-C0160-K311
80	62,4	5,0	275-280 nm	UV-C	125	25	L0-282019-UVC-C0160-K311

* - Parameters were calculated for temperatures T_J= 25°C

Value of these parameters were calculated for default bin and with tolerances of 15%.

Parameters shown in table above are default and for temperatures T_J=25°C. Some of these parameters are temperature dependent and can be different during long time of operation. So it is impossible to order modules with the same parameters after some time. LED technology is developed fast and producers are creating new LEDs with better features very quick. If you need LED modules with different value of some parameters, we provide other LEDs with different colour temperature and features. It is possible to make modification of LED modules or create a new one. In such cases and for more information, please contact us before ordering. Please have all of this in mind when ordering LED modules.

SAFETY

UV radiation is harmful to both skin and eyes, and light sources should not be used in any fixture or application that was not designed specifically to prevent exposure to humans or animals. UV radiation is not felt immediately. User may not realize the danger until after the exposure has caused damage. Symptoms typically occur from 4 to 24 hours after exposure. The effects on skin are of two types: acute and chronic. Acute effects appear within a few hours of exposure, while chronic effects are long-lasting and cumulative and may not appear for years. An acute effect of UV radiation is redness of the skin called erythema (similar to sunburn). Chronic effects include accelerated skin aging and skin cancer. Working unprotected for even a few minutes can cause injury.

UV radiation is easily absorbed by clothing, plastic or glass. Once absorbed, UV radiation is no longer active. When working with open UV radiation during maintenance, service or other situations, personal protective equipment covering all exposed areas is recommended. When working around UVC devices, one should:

a) Use UV goggles and/or full-face shields,

b) Cover any exposed skin using lab coats, nitrile gloves or other lab attire.

Prescription glasses and normal safety glasses may not protect eyes from UV exposure, so ANSI Z87 rated eyeglasses with wrap around lens to protect the side exposure is recommended. Consult with ANSI Z87 manufacturers for proper UV exposure protection equipment.

UV LED modules should be used in luminaires in area which is monitored by safety sensors or any other device which will not allow for accidental human exposure to UV light. Biosafety cabinets may be used.

PROTECTION MEASURES AGAINST DAMAGE

LED modules are delicate, even small mechanical stress may damage modules. Especially sensitive are LEDs. Such stresses should be avoided. If it is impossible, it should be reduced to minimum. Mechanical stresses such as pressure, bending, breaking, drilling, etc. may cause irreversible damage. Damaged LED modules aren't suitable for use.

Serious threat to LEDs is ESD. People generate very high electrostatic voltage. Such voltage decreases lifetime of LEDs and in worst case may destroy electronic components. Best way to avoid damage is use of electrostatic protection. Do not touch electronic components.

Additionally LED modules can be damaged by some chemical substances. Depends of elements the damage may be different. It is important not to use chemical substances like acids, organic acids, sulphur, alkalis, organic solvents, mineral oils, vegetable oils and synthetic oils, etc. We are not responsible for any loss, or damage resulting from improper use of modules! Guarantee become void in such cases.

Do not operate LED modules, when they aren't working properly. If modules are working incorrectly, turn off power supply. Damaged LED modules may cause electric shock or short circuit.

CONNECTIONS

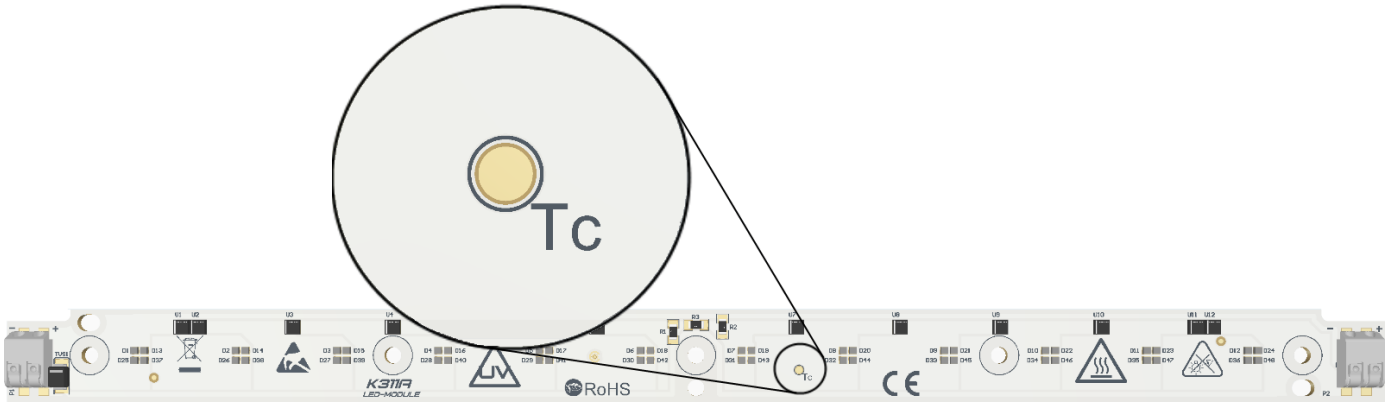
Connecting few LED modules allows to create complex lighting. Push terminals provide quick installation of the entire lighting system. The LED modules must be operated with power supply that is suitable for LEDs. When connecting a few LED modules use of appropriate power supply is important. Power supply should have sufficient maximum power to maintain all LED modules. Power supply must be connected properly. Wrong polarization can destroy modules in very short time. We are not responsible for any loss, or damage resulting from improper use of modules! Guarantee become void in such cases. Modules can be operated using a LED controller. It allows to use light effects, dimmer, etc. Thanks to dimmer it is possible to eliminate almost immediately change of light intensity. It is possible because LEDs are full controlled.

WIRING DIAGRAM FOR LED CC MODULES WITH SERIAL WIRING

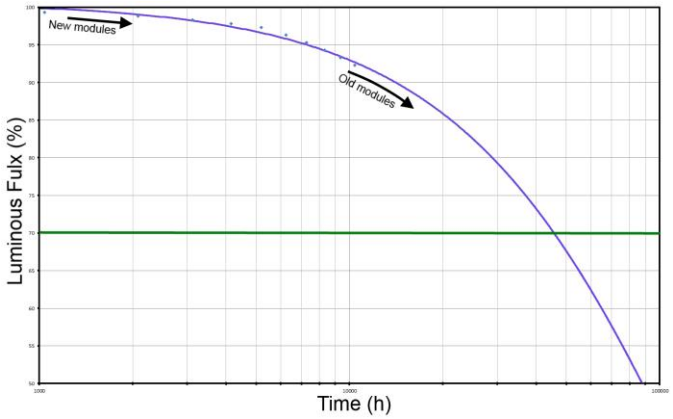
Advantages of this solution are very effective operation and uniform distribution of light. Higher voltage supply is require, when large number of LED modules are connected. If too many LED modules are connected, the voltage value may not meet requirements of SELV. Non-SELV voltage need additional protection. All above connections are examples and may be different from the actual.

COOLING

The modules are usually self-cooling but if temperature on T_c point exceeds 70°C, then a heat-sink is required. Temperature test point (T_c) for measurement should be localized in the middle of the board near LED's thermal pad. The temperature at the T_c point can be measured with thermocouple or simple temperature probe. Example of T_c point is shown on the photo below.



The lifetime of the module depends to operating temperature and used LEDs. If temperature at T_c will be lower than 65°C, the predicted lifetime should be longer than 12.000h. If temperature is too high then lifetime can be significantly decreased or damage LEDs. Another disadvantage of high temperature is reduction of relative luminous intensity. LED modules produces heat. They must be provided with good air ventilation. Modules without air ventilation can overheat. Overheat can damage or destroy some elements or entire LED modules. We are not responsible for any loss, or damage resulting from improper use of modules! Guarantee become void in such cases.



Most common problem using new modules in old installation is differences in brightness of modules. This is result of radiant power degradation over time of use. Degradation is normal effect and applies to all LEDs. This effect is different for each LEDs and can be only predicted by testing and estimation. It is complicate issue that mostly depends on temperature and current. Good solution to this problem is reduce of current in new modules, but degradation will be different for each modules. Above characteristic is examples for LEDs in temperature above 100°C and different from the actual.

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Subject to technical changes and errors.