

TRACY® UV-C LED Panel for integration

LED iBond - TRACY® panel with 5 UV-C light emitting diodes for integration into equipment

LED iBond's patent protected UV-C TRACY® panel has a length of 105 mm and is fitted with 5 high-power UV-C light emitting diodes. Multiple modules can be connected in a row for extended length depending on the specific application.

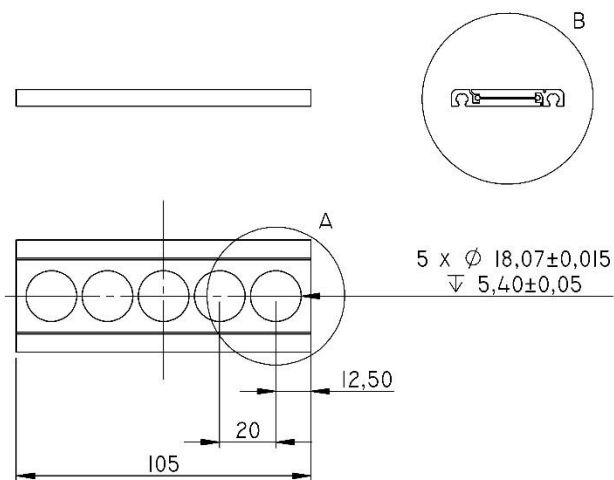


Typical applications areas:	Key features:
<ul style="list-style-type: none">• Air Purification• Water Purification• Surface Disinfection• Medical Device Disinfection• Appliance Disinfection• Food & Beverage	<ul style="list-style-type: none">• Slim construction (6 mm thickness)• Mercury free• Option for exchangeable bulbs• Long service life• Lower TCO compared to LP bulbs

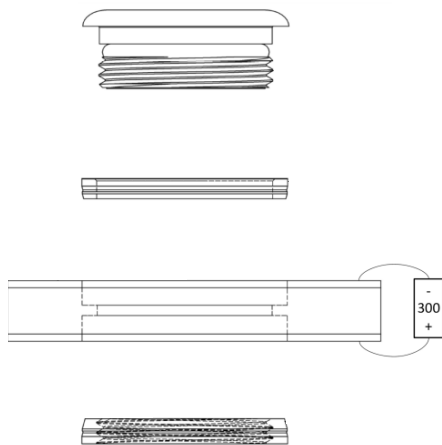
Protective cover glass (waterproof) - optional

The top of the Tracy panel (each LED) can be covered with a protective glass to ensure high water and moisture resistance (IP46 rating).

Geometrical Dimensions
(patent protected)



Special option for exchangeable LED bulb
(patent protected)



Specification – One complete module with 5 LEDs:

LEDs are tested at a drive current of 350 mA, 20 ms single pulse at 25° C (junction) and placed into BINs

UV-C LED specification example:

Flux Bin	Min. Flux (mW) 350 mA, 25°C	Max. Flux (mW) 350 mA, 25°C	Min. Flux (mW) 500 mA, 25°C	Min. Flux (mW) 650 mA, 25°C	Min. Flux (mW) 800 mA, 25°C
CE	40	45	56	74	90
(Luminus XST- 3535-UV)					

Module with 5 LEDs:	Typical data
Wavelength	270-280 nm
FWHM spectrum	10 nm
Radiation angle of each LED	60 degrees (circular)
UV-C radiation power	160 mW (5x32mW) 32 mW (at 500 mA, Tj app 60°C) 50 mW (at 500 mA, Tj app 25°C)
Number of LEDs pr module	5 pcs
Power consumption total	15 W
Drive current	2,5 A (5x 500 mA)
Voltage across panel	6V
Panel material	Aluminium
RoHS and REACH	Compliant
Expected LED Life time	+12.000 hours



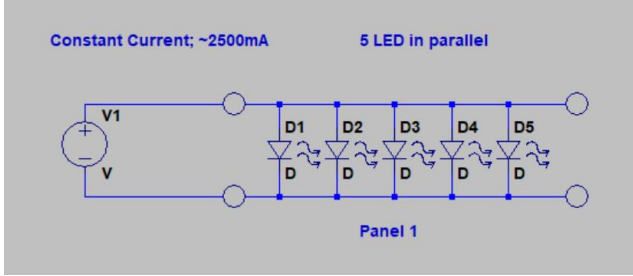
Note 1 – Regardless the application specifications attention needs to be on thermal management including ambient and surface temperature. It is essential to remove the dissipated heat (e.g. using cooling fan) to limit temperature of the panel and junction of the light emitting diodes. Each module with 5 LEDs typically generates 15 Watt that must be conducted away.

Note 2: Light emitting diode lifetime is a function of drive current. Sustained operation at absolute maximum current of 800 mA will result in a reduction of device lifetime compared to typical forward drive currents (350 mA-500 mA). Actual device lifetimes will also depend on junction temperature.

Note 3: The LEDs can without harming the lifetime be turned on/off indefinitely which can result in a significantly extended service lifetime depending on the actual use pattern.

Electrical connections

Multiple modules can be connected

<p>Tracy:</p> <p>1 x 5 LED (in parallel)</p> <p>Tracy standard connector (Art no. 51008-D27)</p>	
<p>Tracy:</p> <p>1 x 5 LED (in parallel)</p> <p>Single wire connector from each side</p>	
<p>Schematics</p>	

Modular – Any length

Multiple modules can be connected in a row for extended length depending on the specific application. LEDs are connected in parallel in each module and the modules are connected in series.

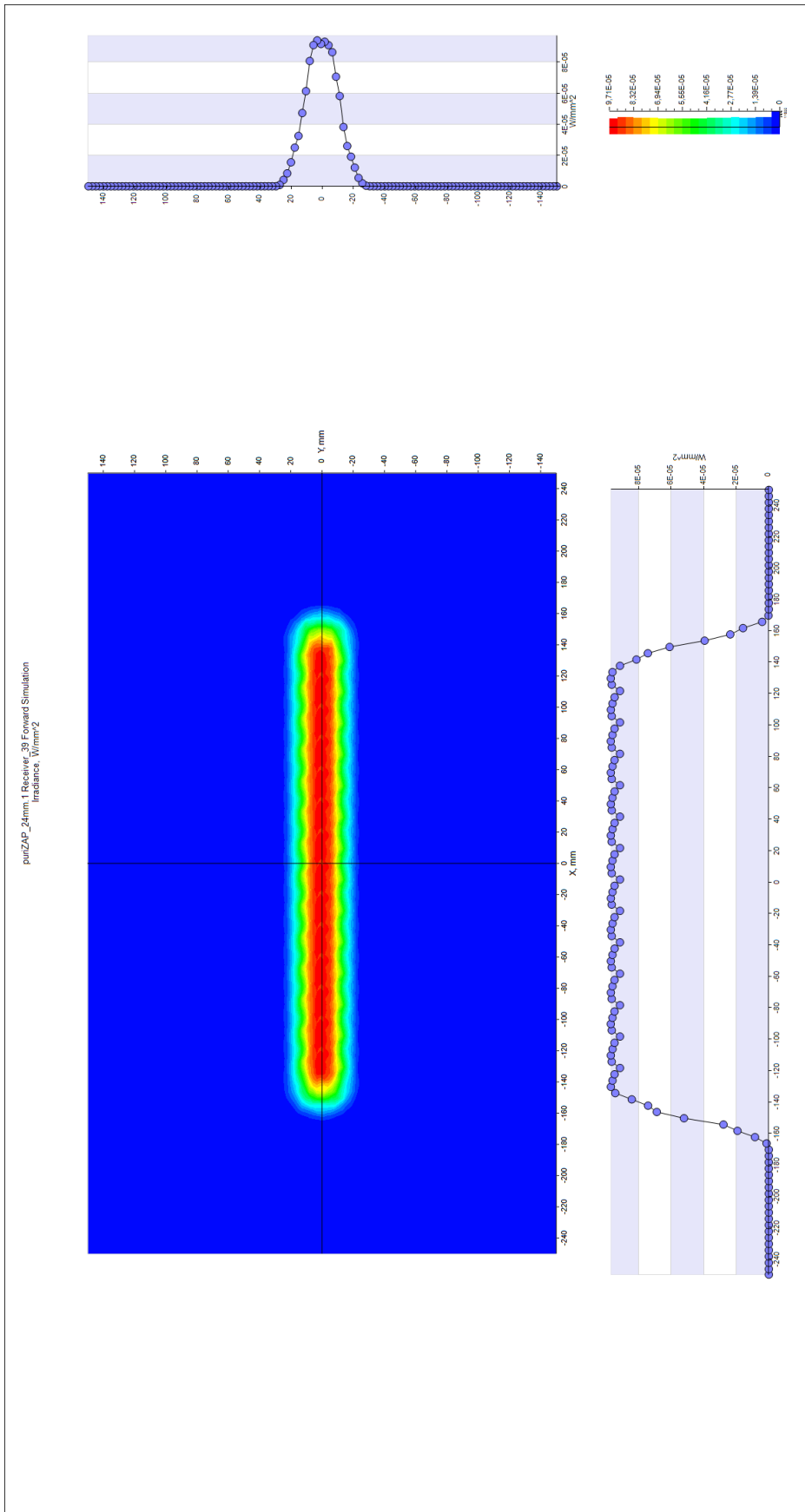
Example with 3 modules:

- 15 LEDs total
- Total length of connected modules 315 mm (3x105 mm)
- Total drive current: 2,5A at 18 Volt

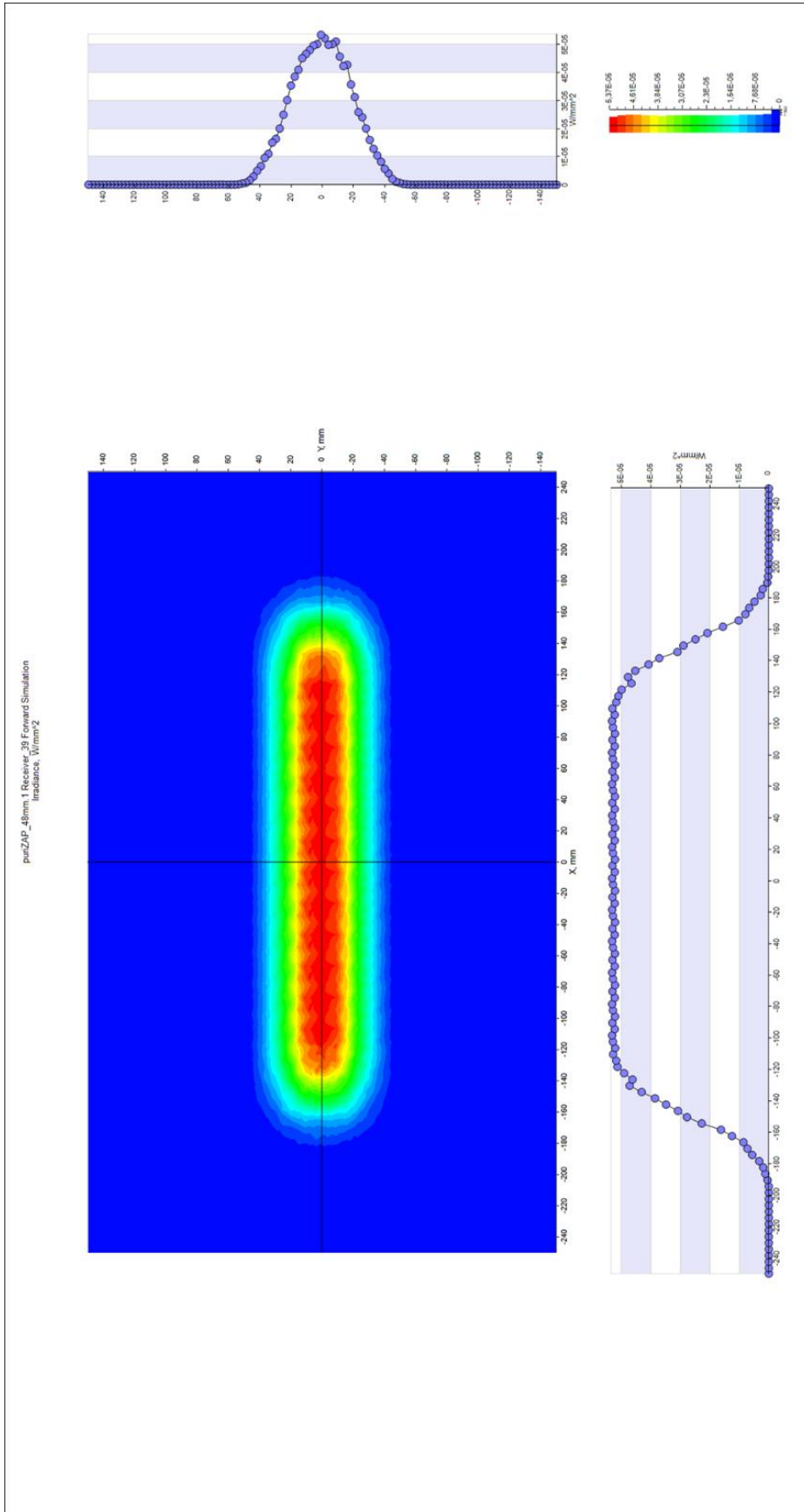


<p>Tracy: 3 x 5 LED (in parallel)</p>	
<p>Schematics</p>	<p>Constant Current; ~2500mA</p> <p>3 x (5 LED parallel) in series</p>

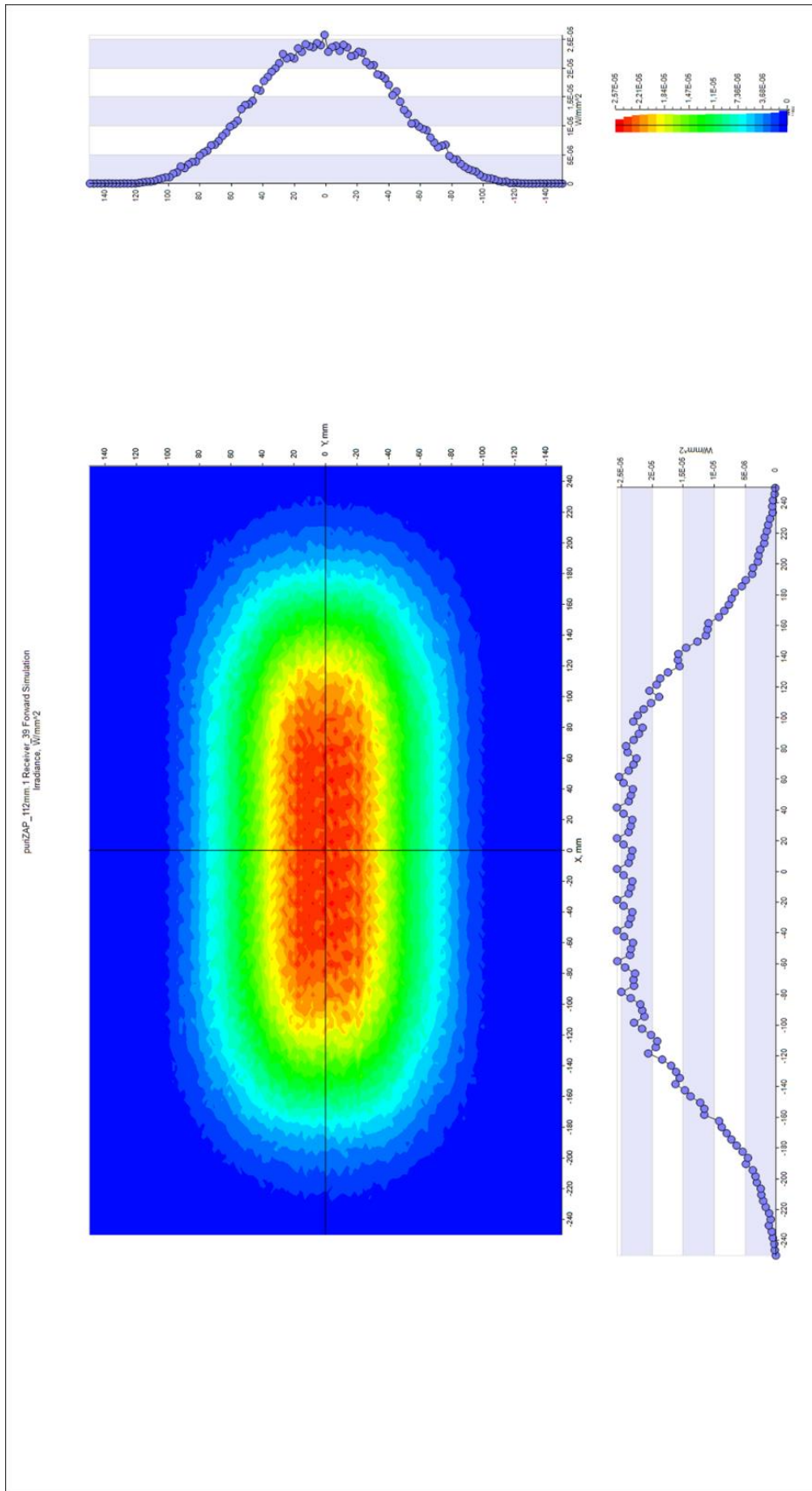
Radiation pattern from 3x Modules – 3D simulation (averaged data) 12 mm above panel installation:



Radiation pattern from 3x Modules – 3D simulation (averaged data) 36 mm above panel installation:



Radiation pattern from 3x Modules – 3D simulation (averaged data) 100 mm above panel installation:



Raw data – Example of measured data from 3 x Module - Measured 100 mm above panel installation

