

Features

- Independent Red, Green, Blue LED channels for infinite colour control (external driver required)
- Selected LUXEON High Brightness LEDs
- Luxeon Optics Compatible
- High Luminous Output
- High Lumen Maintenance
- No UV
- Aluminium-Core PCB
- Over Temperature sensor
- Optimised thermal management
- Energy efficient
- Compact low profile design
- RoHS 6 compliant (Directive 2002/95/EC)



Optical & Electrical Characteristics

ROAL's planar LED arrays are designed to operate under constant current operating conditions, and controlled operating temperatures. The parameters listed below are designed to detail limitations of the device. These limitations are specific to the LEDs deployed on the board. For more detail we recommend you consult the LED manufacturer's datasheets. All parameters assume a junction temperature of 25°C.

Parameter	Channel	Red	Green	Blue
Qty LEDs		10	10	10
Series Qty		10	10	10
Number of strings		1	1	1
LEDs Part Number		LXHL-PD01	LXHL-PM09	LXHL-PR03
Design Forward Current (mA)		350	700	350
Typical Luminous Flux per LED (lm) *		44	64	220 mW **
Typical Luminous Flux per Array (lm) *		440	640	2200 mW **
Minimum Dominant Wavelength (nm)		620,5	520	440
Maximum Dominant Wavelength (nm)		645	550	460
Radiation Pattern		Lambertian	Lambertian	Lambertian
Secondary Optics		Available	Available	Available
Maximum Input Voltage per LED (VDC)		3.51	4.47	3.99
Maximum Input Voltage per Array (VDC)		35.1	44.7	39.9
Maximum Input Current per LED (mA)		385	1000	350
Maximum Input Current per Array (mA) ***		385	1000	350

Notes:

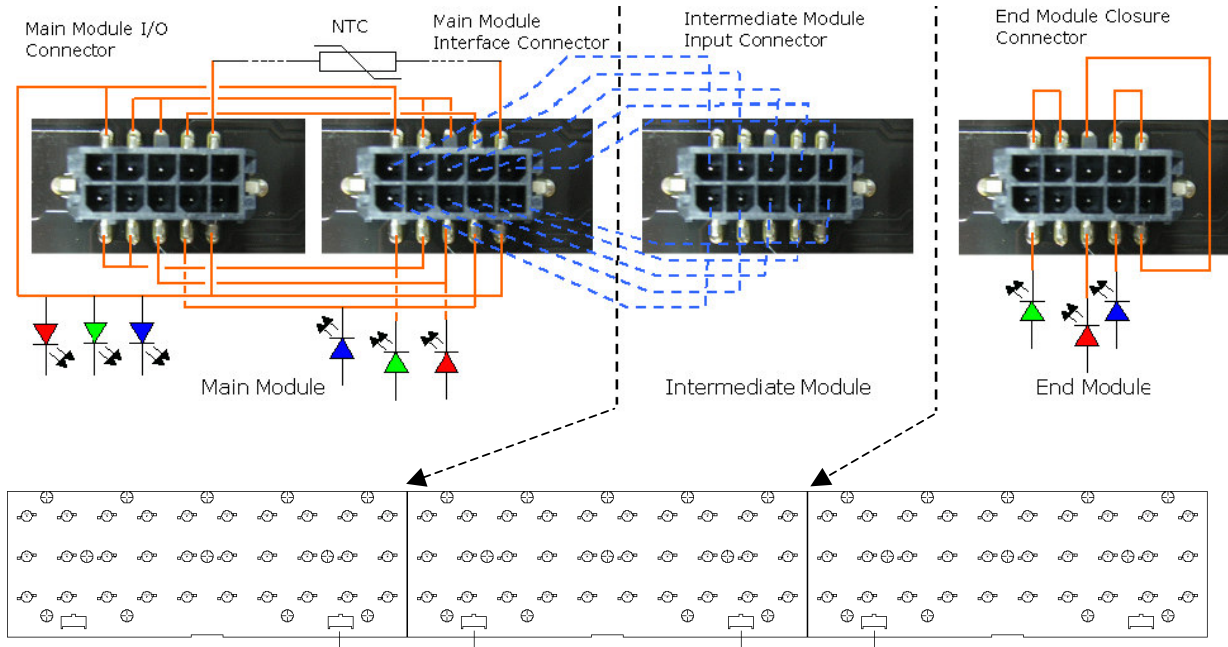
* Typical Flux is per LED manufacturer's data sheets at the design forward current listed.

** LED manufacturer bins this part according to radiometric output in mW.

*** This is an absolute maximum rating based on LED limitations only. It does not factor in thermal design.



Components, Circuit Configuration, Modules connection



Substrate	Aluminium Clad Single Layer PCB
Red LEDs	10 Luxeon I, LXHL-PD01 from Lumiled; one 10 LEDs string
Green LEDs	10 Luxeon III, LXHL-PM09 from Lumiled; one 10 LEDs string
Blue LEDs	7 Luxeon I, LXHL-PR03 from Lumiled; one 10 LEDs string
I/O Connector	MOLEX 43045-1018
Thermal Sensor	10 kΩ Epcos B57621C103J62

Environmental and Application Note

Maximum Operating Temperature	55 °C at the baseplate (thermally controlled)
Over Temperature Protection	By on board thermal sensor, providing feedback to the LED Driver module.
Absolute Maximum PCB Temperature	105 °C
Humidity	10% to 95% (operating), RH, non-condensing
Cooling	Natural Convection*

* To enhance luminous performance flux and/or when the thermal condition are demanding, it is recommended the use of an additional heat-sink as per LED manufacturer's thermal design guide.

Eu and RoW

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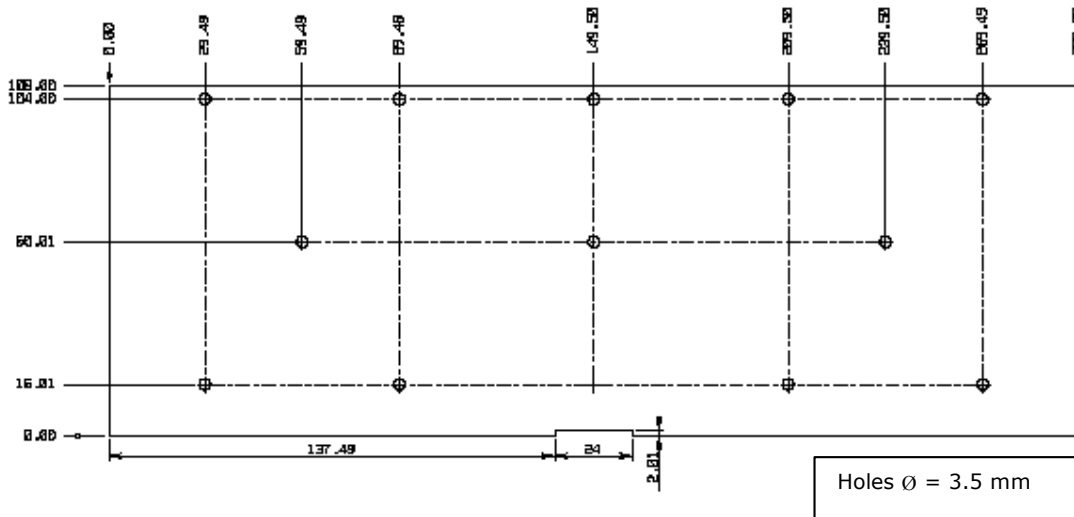
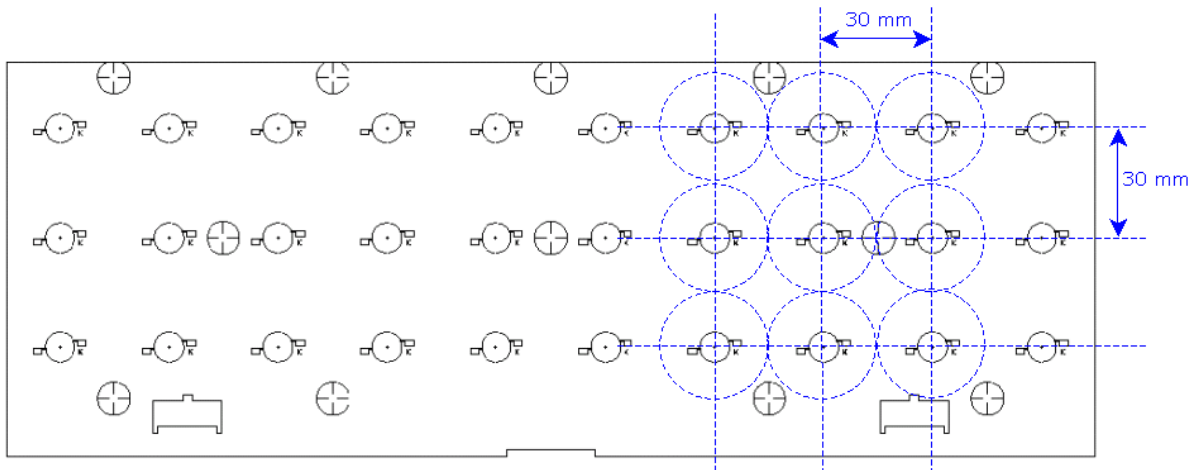
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Physical Specifications

Unit dimensions (WxLxH) 299 mm x 108 mm x 7.6 mm = 11.8 in x 4.3 in x 0.3 in
 Unit weight 0.19 kg = 0.2 lb

Outline Drawing and LEDs matrix pattern



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