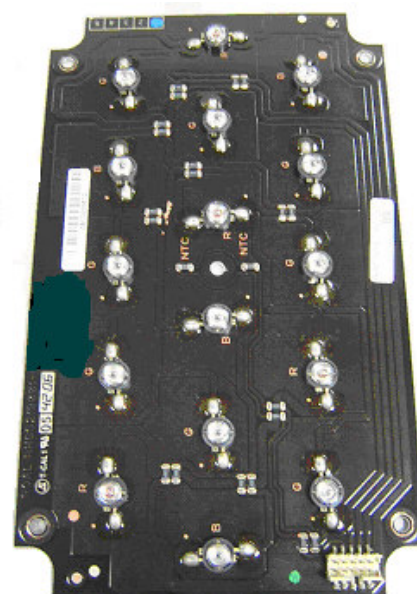


Features

- 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 | | 4 | 8 | 4 |
| Series Qty | | 4 | 4 | 4 |
| Number of strings in parallel | | 1 | 2 independent | 1 |
| LEDs Part Number | | LXHL-PD09 | LXHL-PM09 | LXHL-PR09 |
| Design Forward Current (mA) | | 700 | 2x700 | 700 |
| Typical Luminous Flux per LED (lm) * | | 85 | 64 | 340 mW ** |
| Typical Luminous Flux per Array (lm) * | | 340 | 2x256 | 1360 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 | 4,47 |
| Maximum Input Voltage per Array (VDC) | | 14,04 | 17,88 | 17,88 |
| Maximum Input Current per LED (mA) | | 1540 | 1000 | 1000 |
| Maximum Input Current per Array (mA) *** | | 1540 | 1000 | 1000 |

Notes:

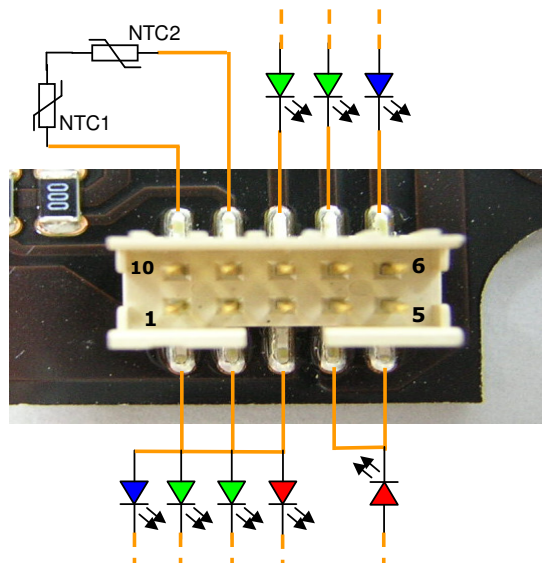
* Typical Flux is per LED manufacturer's data sheets at the design forward current listed.

** 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 and Circuit Configuration



| | |
|-----------------|---|
| Substrate | Aluminium Clad Single Layer PCB |
| Red LEDs | 4 Luxeon IIII, LXHL-PD09 from Lumiled; one x4 LEDs string |
| Green LEDs | 8 Luxeon III, LXHL-PM09 from Lumiled; two x4 LEDs independent strings |
| Blue LEDs | 4 Luxeon III, LXHL-PR09 from Lumiled; one x4 LEDs string |
| I/O Connector | FCI 98424-G52-10A |
| Thermal Sensors | two, 10 k Ω 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 conditions are demanding, it is recommended the use of an additional heat-sink as per LED manufacturer's thermal design guide.

Eu and RoW

ROAL Electronics S.p.A
 Via Jesina 56/A
 60022 – Castelfidardo (AN) - Italy
 Tel: +39 071 721461
 Fax: +39 071 72146 480

www.roallivingenergy.com

North America

ROAL Electronics USA, Inc.
 701 Main St. Suite 405
 Stroudsburg, PA 18360
 Phone: + 1 570 421 5750
 Fax: +1 570 421 5687
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Physical Specifications

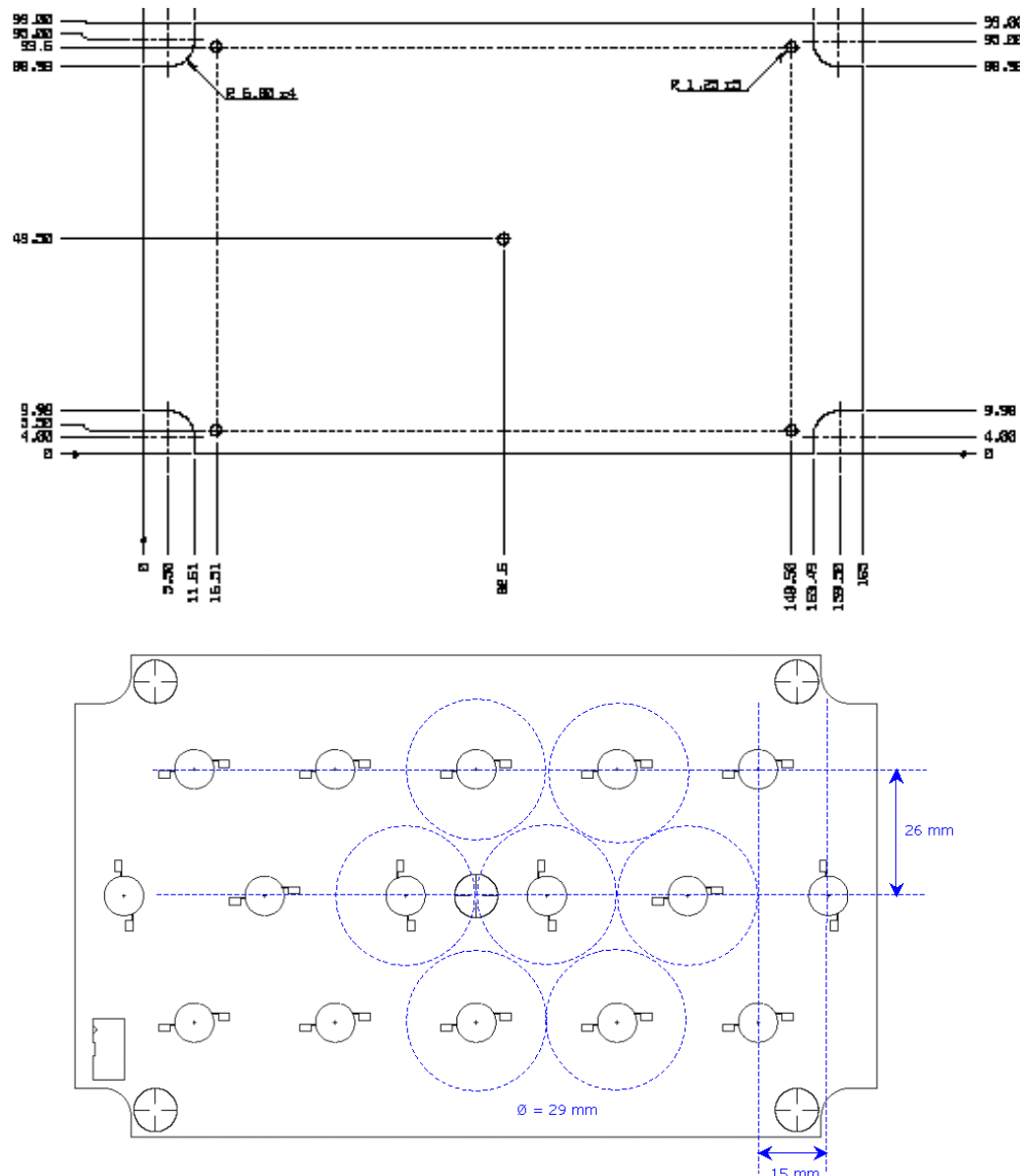
Unit dimensions (WxLxH)

165 mm x 99 mm x 7.6 mm = 4.72 in x 3.72 in x 0.30 in

Unit weight

0.09 kg = 0.20 lb

Outline Drawing and LEDs matrix pattern



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ROAL Electronics S.p.A.
 Via Jesina 56/A
 60022 – Castelfidardo (AN) - Italy
 Tel: +39 071 721461
 Fax: +39 071 72146 480

www.roallivingenergy.com

North America

ROAL Electronics USA, Inc.
 701 Main St. Suite 405
 Stroudsburg, PA 18360
 Phone: +1 570 421 5750
 Fax: +1 570 421 5687
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