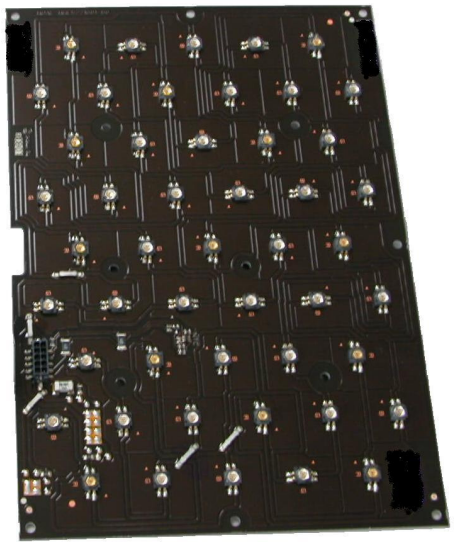
ROAL
living energy

RGB LED MODULE
200W Planar Array
Model RHPS221

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	13	24	12
Series Qty	13	24	12
Number of strings in parallel	1	1	1
LEDs Part Number	LXK2-PD12 R00	LXK2-PM14 U00	LXK2-PR14 R00
Design Forward Current (mA)	550	1100	1100
Typical Luminous Flux per LED (lm) *	62	110	632.5 mW **
Typical Luminous Flux per Array (lm) *	806	2640	7590 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	4,95	4,95
Maximum Input Voltage per Array (VDC)	45,63	118.8	59,4
Maximum Input Current per LED (mA)	700	1500	1500
Maximum Input Current per Array (mA) ***	700	1500	1500

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.

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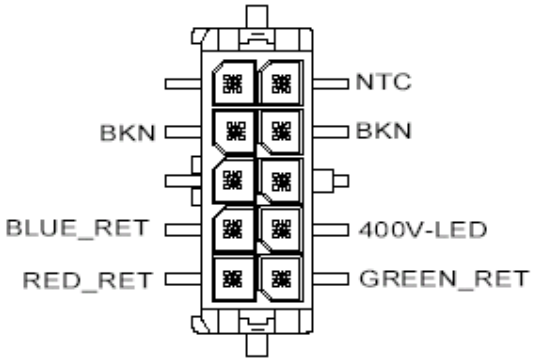
Components and Circuit Configuration



Substrate	Aluminium Clad Single Layer PCB
Red LEDs	13 Luxeon, LXK2-PD12 R00, from Lumiled; one string
Green LEDs	24 Luxeon, LXK2-PM14 U00, from Lumiled; one string
Blue LEDs	12 Luxeon, LXK2-PR14 R00, from Lumiled; one string
I/O Connector	MOLEX 43045-1018
Thermal Sensor	MAXIM, MAX6666AUT+
Shunt Voltage Reference	NATIONAL, LM4050BEM3-5.0

Environmental and Application Note

Maximum Operating Temperature	55 °C at the baseplate (thermally controlled)
Over Temperature Protection	By on board thermal sensor circuitry, 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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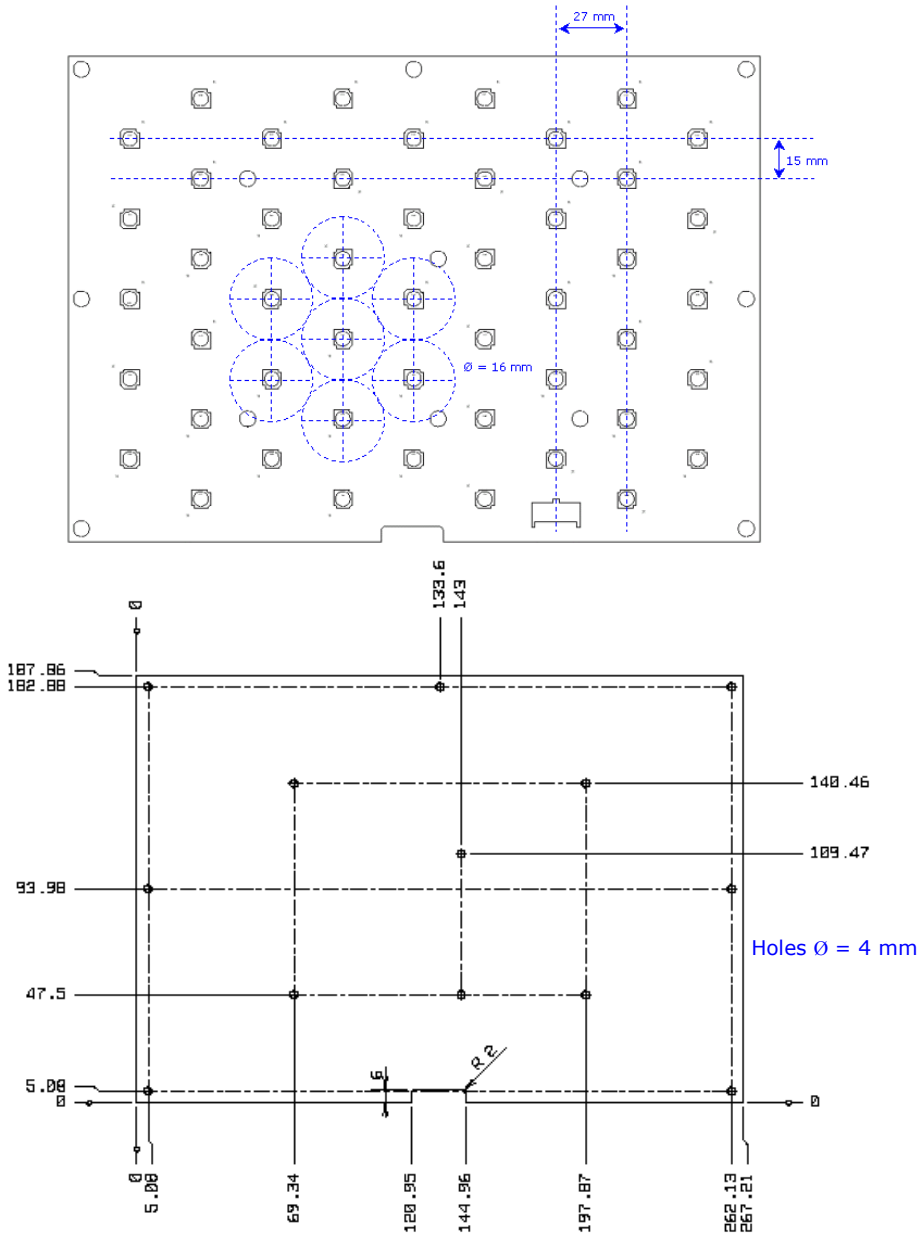
Physical Specifications

Unit dimensions (WxLxH)	188 mm x 267 mm x 7.6 mm = 7.40 in x 10.51 in x 0.3 in
Unit weight	0.27 kg = 0.6 lb

Outline Drawing and LEDs matrix pattern



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