

## GLV93R70501/CN-LM204\*\*\* Series

# DATA SHEET

## GLV93R70501/CN-LM204\*\*\* SERIES

The LED module consists of 4 LUXEON 5050 LEDs. It is engineered to provide customers with the flexibility to select the optimal light source for their applications. The LED module complies with EN62031.

## FEATURES & BENEFITS

- 5 Year Warranty
- High-Reliability LED Sources
- Rugged Construction
- Wide Operational Temperature Range
- Multiple Configurable Options
- Flexible Optic Options
- Wide Range Drive Current
- Multiple White CCT's Available
- Very Short Lead-time
- CE Certified
- UL-recognized Components

## TYPICAL APPLICATIONS

- High Bay
- Street
- Car park
- Tunnel
- Canopy
- Outdoor wall mount
- Area
- Flood

## APPLIED STANDARDS

EN62031



## GENERAL CHARACTERISTICS

PARAMETER	CONDITIONS
PCB	MCPCB
Emitter Type	4 x Luxeon 5050
	UL component file number: E352519
Circuit Layout	2 Series x 2 Parallel
Connector Type	AVX Connector: 009276002021106
	UL component file number: 1977

## PERFORMANCE SPECIFICATIONS

NOMINAL CCT	MINIMUM CRI	LUMINOUS FLUX (lm)		TYPICAL LUMINOUS EFFICACY (lm/W)	TEST CURRENT (mA)	PART NUMBER
		MIN	TYP			
3000K	70	2084	2288	146	320	GLV93R70501/CN-LM204730
4000K	70	2232	2440	156	320	GLV93R70501/CN-LM204740
5000K	70	2232	2440	156	320	GLV93R70501/CN-LM204750
5700K	70	2232	2440	156	320	GLV93R70501/CN-LM204757
2700K	80	1836	2016	129	320	GLV93R70501/CN-LM204827
3000K	80	1892	2080	133	320	GLV93R70501/CN-LM204830
4000K	80	2084	2200	140	320	GLV93R70501/CN-LM204840
5000K	80	2084	2200	140	320	GLV93R70501/CN-LM204850
2700K	90	1608	1716	110	320	GLV93R70501/CN-LM204927
3000K	90	1664	1776	113	320	GLV93R70501/CN-LM204930
4000K	90	1772	1892	121	320	GLV93R70501/CN-LM204940

Notes:

1. Correlated color temperature is hot targeted at  $T_j=85^\circ\text{C}$ .
2. Luminous flux and CRI are based upon mounted package on highly reflective surface at  $T_j=25^\circ\text{C}$ . Typical CRI is approximately 2 points higher than the minimum CRI specified, but this is not guaranteed.
3. Lumileds maintains a tolerance of  $\pm 2$  on CRI and  $\pm 7\%$  on luminous flux measurements.

## ELECTRICAL CHARACTERISTICS

PAREMETER	MIN	TYP	MAX
Voltage	47V	49V	53V
Current	220mA	320mA	480mA
Power	10.34W	15.68W	24.9W

**NOTES:**

Safe operation is only possible by the use of external constant current sources.

The current source used for operation, must ensure the following protection:

- Short-circuit protection
- Overload protection
- Over-temperature protection

Proper current derating must be observed to maintain junction temperature below the maximum.

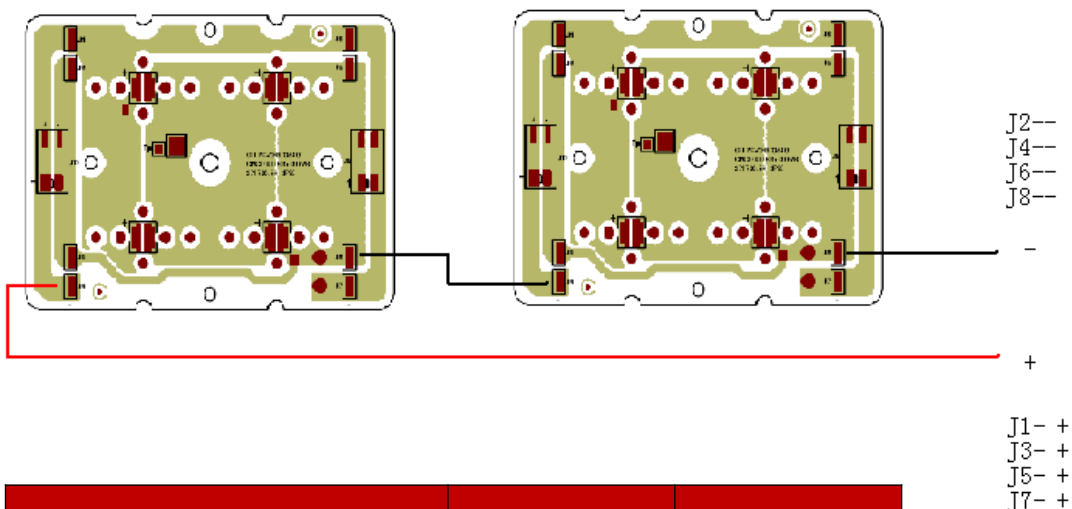
Lumileds maintains a tolerance of  $\pm 1\%$  on forward voltage measurements.

## ENVIRONMENTAL CHARACTERISTICS

PAREMETER	MIN	MAX
Storage Temperature	-20C	+77C
PCB Temperature (Tp)	-20C	+70C
IP Classification	IP00	

## INTERCONNECTIVITY OPTIONS

**Board-to-Board wiring options and drawings.**



PAREMETER	MIN	MAX
Unit Connections (In Series)	1	8

## SPECTRAL POWER DISTRIBUTION

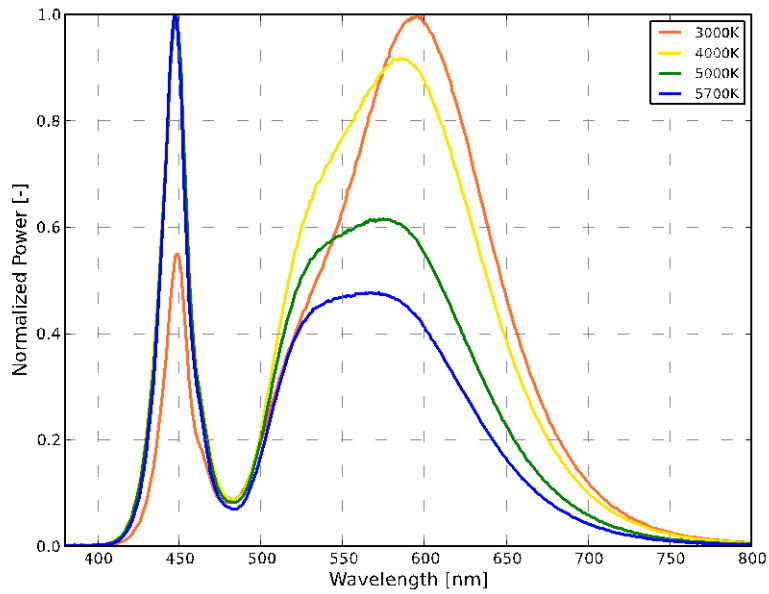


Figure 1a. Typical normalized power vs. wavelength for L150-xx70502400000 at test current,  $T_j=25^\circ\text{C}$ .

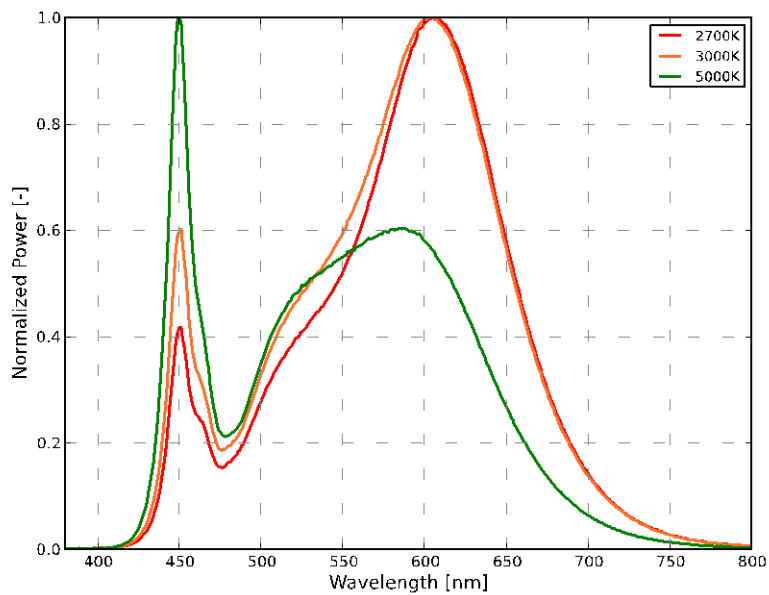


Figure 1b. Typical normalized power vs. wavelength for L150-xx80502400000 at test current,  $T_j=25^\circ\text{C}$ .

## LIGHT OUTPUT CHARACTERISTICS

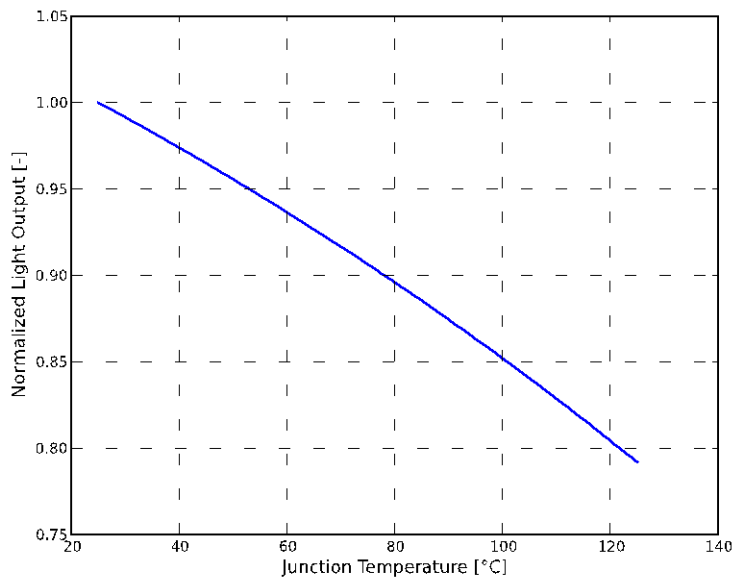


Figure 2. Typical normalized light output vs. junction temperature for L150-xxxx502400000 at test current.

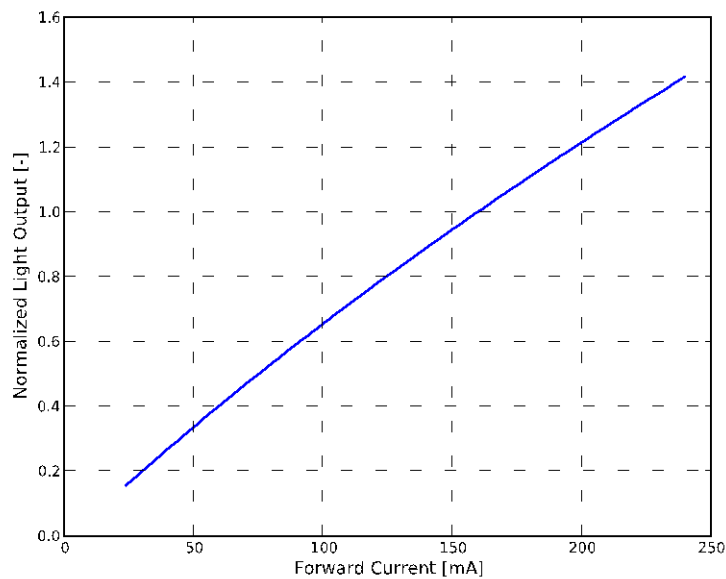


Figure 3. Typical normalized light output vs. forward current for L150-xxxx502400000,  $T_j=25^{\circ}\text{C}$ .

## FORWARD CURRENT CHARACTERISTICS

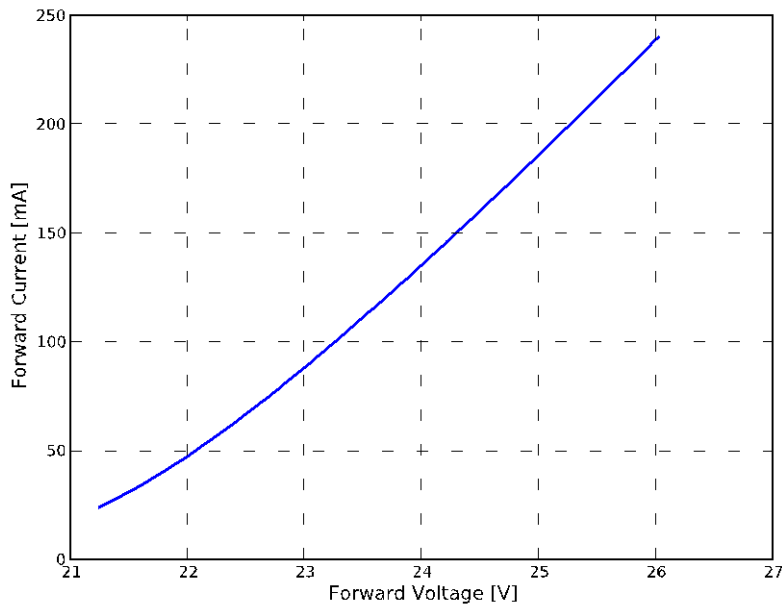


Figure 4. Typical forward current vs. forward voltage for L150-xxxx502400000,  $T_j=25^{\circ}\text{C}$ .

## RADIATION PATTERN CHARACTERISTICS

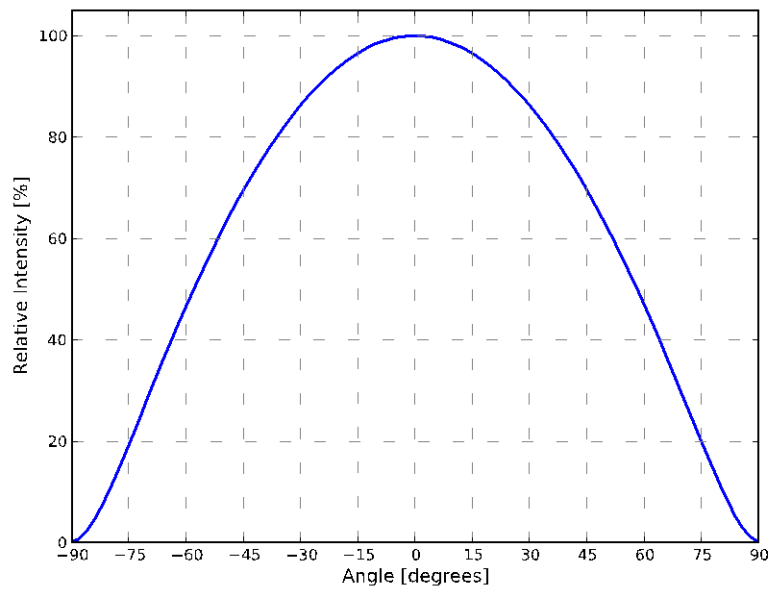


Figure 5. Typical radiation pattern for L150-xxxx502400000 at test current,  $T_j=25^{\circ}\text{C}$ .

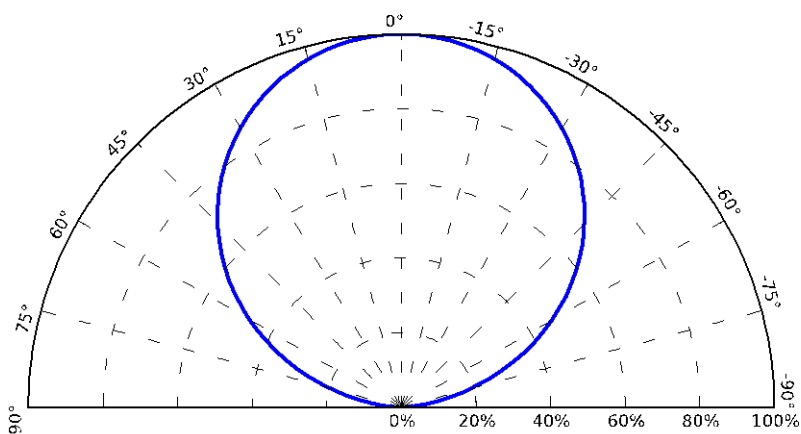


Figure 6. Typical polar radiation pattern for L150-xxxx502400000 at test current,  $T_j=25^{\circ}\text{C}$ .



## Ledil LENS COMPATIBILITY

Product Number	Family	Diameter (mm)	Height (mm)	FWHM (degrees)
C13749_HB-2X2-O	HighBay	50 + 50	10.6	29+114
C12361_HB-2X2-W	HighBay	50x50	8.5	55
C14605_HB-2X2-RW	HighBay	50x50	8.5	55
C14606_HB-2X2-WW	HighBay	50x50	8.5	61
C14607_HB-2X2-M	HighBay	50x50	8.5	34
C14724_HB-2X2-WWW	HighBay	50x50	10	93
C15021_STRADA-2X2-SCL	Strada	50	7.8	Asymmetric
C15217_STRADA-2X2-CAT-B	Strada	50	7.73	Asymmetric
C13299_STRADA-2X2-ME	Strada	50 + 50	7.1	Asymmetric
C13300_STRADA-2X2-T2	Strada	50 + 50	7.7	Asymmetric
C13301_STRADA-2X2-T3	Strada	50 x 50	7.1	Asymmetric
C13937_STRADA-2X2-C-STP	Strada	50 x 50	6.27	133
C14680_STRADA-2X2-VSM	Strada	50 x 50	6.14	Asymmetric
C12362_STRADA-2X2-DWC	Strada	50x50	6	Asymmetric
C13499_STRADA-2X2-CY	Strada	50x50	7.85	121+121
C13858_STRADA-2X2-XW	Strada	50x50	7.1	Asymmetric
C15014_STRADA-2X2-T4-B	Strada	50x50	9.02	Asymmetric
C15135_STRADA-2X2-T1	Strada	50x50	7.78	Asymmetric

## Carclo LENS COMPATIBILITY

Product Number	Family	Diameter (mm)	Height (mm)	FWHM (degrees)
12814	Mini Hubble	50x50	46 x 51	12814
12816	Mini Hubble	50x50	70	12816
12818	Freeform	50x50	73 x 36	12818

## PART NUMBERING & ORDERING INFORMATION

<p>1. PRODUCT SERIES GLV93R70501/CN-LM204*** Rectangular MCPCB with 4 LEDs</p>	<p>5. NUMBER OF LED 04 - 4 LEDs</p>
<p>2. CONNECTOR TYPE CN – AVX 009276002021106</p>	<p>6. LED CRI &amp; CCT</p> <p>730 - 3000K 70 CRI 740 - 4000K 70 CRI 750 - 5000K 70 CRI 757 - 5700K 70 CRI 827 - 2700K 80 CRI 830 - 3000K 80 CRI 840 - 4000K 80 CRI 850 - 5000K 80 CRI 927 - 2700K 90 CRI 930 - 3000K 90 CRI 940 - 4000K 90 CRI</p>
<p>3. LED TYPE LM - LUXEON® 5050</p>	
<p>4. CIRCUIT TYPE 2 - 4 LEDs, 2 Parallel X 2 Series</p>	

Part Number :

GLV93R70501 / CN – LM 2 04 \*\*\*

1
2
3
4
5
6

## PRODUCT LABELING

Every PCB is marked with specific numbers. Each marking consists of the following items (example):

Customer Part Number:

GLAYY17872-1

General Luminaire Part ID:

GLV93R70501/CN-LM204\*\*\*

Order number – Follow-up number:

50033721-4

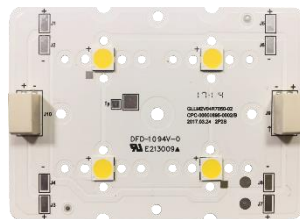
MPN LED – BIN code:

L150-3070502400000

Safety & Certification Markings:

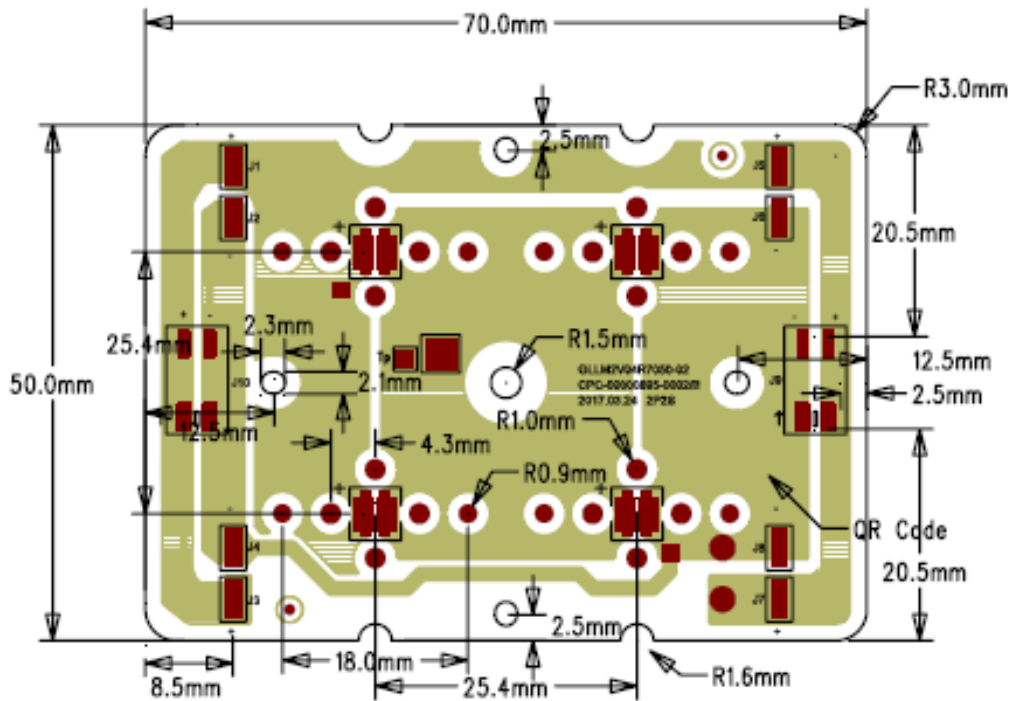


Custom QR Code:

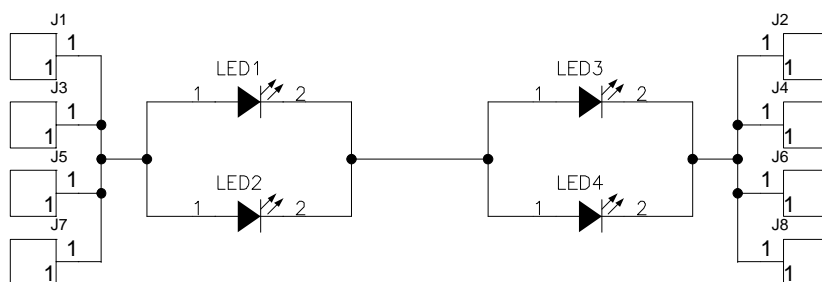


The font size used for marking is 1.5.

## MECHANICAL DRAWINGS



## ELECTRICAL DIAGRAM



## THERMAL CONSIDERATIONS

The light engines must operate under proper environmental conditions and the operating ambient air temperature must NOT exceed a certain maximum which cause the LEDs to exceed the maximum junction temperature as stated in the LED datasheet.

A heat sink can be used when operating the light engines. The objective is to maintain the junction temperature below the maximum ratings according to the LED datasheet while also not exceeding the maximum PCB temperature.

If the light engine is mounted on a heat sink the following advice must be followed:

- The surface where the light engine will be mounted on must be flat
- Avoid bending of the PCB to avoid damaging the LEDs and the solder connections
- Use a thermal interface material in between the PCB and heat sink

For an optimal lifetime performance the light engine must be placed in an environment where the air should be able to flow freely around the luminary. The heat transport is done by conduction to the heat sink and by radiation to the air. It's not recommended to expose the module to direct sunlight or any other heat source.

### Thermal Measurement

For an optimal lifetime performance the  $T_p$  point of the PCB must never exceed 77 degrees Celsius.

The maximum value must be determined under operating conditions in a thermally stable state and under worst-case conditions for the current application.

## ASSEMBLY AND SAFETY INFORMATION

Installations must be carried out under observation of the relevant regulations and standards. The following guidelines must be followed:

- Installations must be carried out in a voltage free state
- The device/module contains components that are sensitive to electrostatic discharge and may only be installed in the factory and on site if appropriate EOS/ESD protection measures have been taken
- Before installing onto a heat sink, the PCB needs to be connected with thermal interface material and fixed with screws. To maintain PCB clearances, do not use heat conducting paste. The fixing/cooling surface must be cleaned before installing the PCB to remove all dirt, dust and grease.

The light engine must not be bent to avoid damaging the LEDs. Use all screw holes to attach the light engine to the heat sink in order to provide proper heat transfer

- The TIM material can be ordered separately. Contact your local sales representative
- Use wire size AWG 24-18 for connecting the PCB to the current source power supply
- Conductors must be inserted at a 0° angle with respect to the PCB
- Wires must be stripped to a length of 6-7mm (solid & stranded)



- 1) Insert solid conductors via push-in termination.
  - 2) Inserting/removing fine-stranded conductors by lightly pressing on the push-button
- A parallel connection of the light engines is not allowed
  - Applying pressure on the LEDs will influence the reliability of the LEDs. Precautions should be taken to avoid pressure on the LEDs
  - Do not stack the PCBs on top of each other. Since the LED materials are soft this can cause LED catastrophic failures
  - It is recommended to avoid using chemicals in the LED system. Gas molecules from chemicals, even in small amounts, may damage the LEDs.
  - Using corrugated boxes as packaging is only allowed if the sulfur concentration used in the corrugated box is less than 850ppm
  - Please ensure the correct polarity of the leads. Reverse polarity connection may damage the LEDs
  - For outdoor or damp locations, care must be taken to protect the LED PCB against moisture
  - The photobiological safety of the LED modules must be classified into risk groups in accordance with EN 62471.
  - Risk group 2 (Exempt for CCT's  $\leq 3000\text{K}$ )

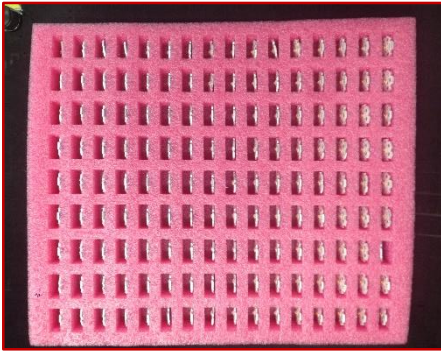
All above specifications must be met in order to qualify for the 3 year warranty.

There is the possibility to extend to a 5 year warranty.

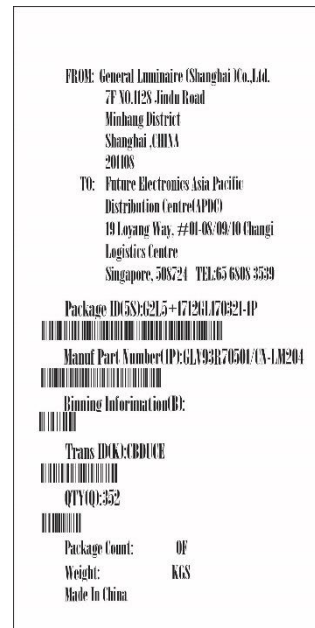
Please contact your local sales representative.

## PRELIMINARY PACKAGING INFORMATION

PACKING (TRAY)	SIZE	TRAY	PCB QTY
TRAY	345*295*60mm	1	88



PACKING (CARTON)	SIZE	TRAY	PCB QTY
OUTTER	350*300*250mm	4	352



Packaging Illustrations For Reference Only. Actual Packaging Format Will Vary By PCBA Shipment Requirement.



## COMPANY INFORMATION

### About General Luminaire Lighting Solutions

General Luminaire is an LED luminaire and light engine OEM/ODM specialist and for more than 15 years, has been a leader in the emerging, rapidly-growing market of high efficiency LED lighting technologies.

In addition to cutting edge R&D, exemplified by numerous patents, General Luminaire designs and manufactures innovative electronics and LED lighting technologies for some of the biggest names in the LED industry.

General Luminaire designs, develops and delivers optimal electronics and LED solutions for a myriad of commercial applications.

We are committed to environmental stewardship and corporate social responsibly, ensuring that our products are leading the way to a brighter and greener future.

Visit [generalluminaire.com](http://generalluminaire.com) for additional information or ask your sales representative for more information.