



DATA SHEET
05712 Series

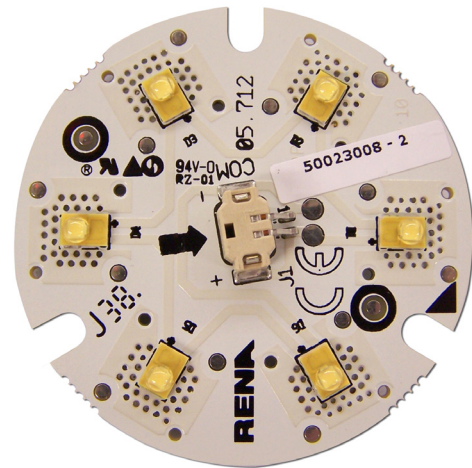
Part of the simpleLED® program

simpleLED 05712 SERIES

The light engine series consist of 6 high power LUXEON Rebel LEDs. It is engineered to provide customers with the flexibility to select the optimal light source for the applications. Customers can modify the simpleLED light source by selecting the LUXEON Rebel LED, optic and connector to best suit their needs.

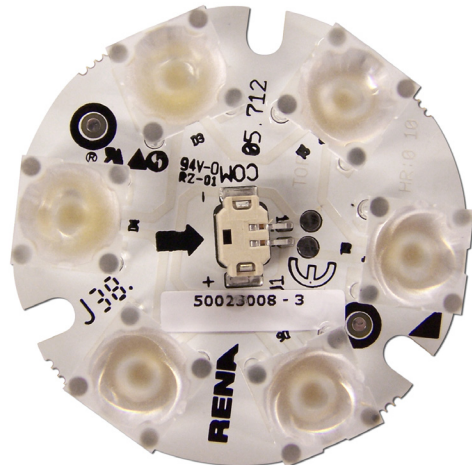
FEATURES & BENEFITS

- 3 Year Manufacturer (Rena) 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
- Short Lead Time
- CE certified, UL recognized



TYPICAL APPLICATIONS

- Under Cabinet Lighting
- Cove Lighting
- Accent Lighting
- Display Case Lighting
- Display Lighting



Note: All specifications are subject to change without notice.

MECHANICAL CHARACTERISTICS

| PARAMETER | CONDITIONS |
|---|--------------------------|
| PCB | FR-4 |
| Finish | White |
| Size | Diameter 45 mm |
| Source Type | LUXEON Rebel |
| Connector | Tyco mini CT (2106091-1) |
| Thermal Resistance (p-n junction to bottom of PCB) | Rth= 21 K/W |

ELECTRICAL CHARACTERISTICS

| PARAMETER | MIN | NOM | MAX |
|--|------|-----|-----|
| Forward Voltage (V) @350mA & Tj=25 °C | 15.3 | 18 | 24 |
| Power Consumption @350mA (W) | 5.4 | 6.3 | 8.4 |

ENVIRONMENTAL CHARACTERISTICS

| PARAMETER | MIN | MAX |
|--------------------------|-----|-----|
| Storage Temperature (°C) | -40 | +70 |
| PCB temperature (°C) | -20 | +80 |

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THERMAL STATEMENT & ASSEMBLY INSTRUCTIONS

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 Philips Lumileds datasheet. A heat sink must always be used when operating the light engines. The size of the heat sink depends on the amount of power consumed by the LEDs. The objective is to maintain the junction temperature below the maximum rating in Philips Lumileds datasheet while also not exceeding the maximum PCB temperature.

The light engine must be mounted on a flat heat sink using M3 screws. All screw holes must be used to attach the light engine to the heat sink in order to provide proper heat transfer. Also a thermal conductive interface must be used between the heat sink and light engine. This thermal conductive interface could be a thermal conductive paste such as AmasanT12 from Armack Lottechnik or a thermal interface material such as T-PCM 585 from Laird.

Note that the bottom of the PCB is not flat, since the PCB contains a thru board connector. In order to have a proper heat transfer to the heat sink, a hole at the position of the connector has to be made in the heat sink. This hole will be used for the cable which is connected to the thru board connector and at the other end to the driver.

The light engine must not be bent to avoid damaging the LED and/or dislodging the optics. All above specifications must be met in order to qualify for the 3 year warranty.

THERMAL MANAGEMENT

The graphs below show the required thermal resistance of the heat sink based on the maximum operating ambient temperature, the drive current and the maximum allowable PCB temperature. The maximum allowable T_j is a function of the target lifetime of the light engine and the LED current. This information can be found in the Philips Lumileds reliability datasheet RD07.

For example, if the maximum ambient temperature is 40°C and the drive current is 500 mA, the heat sink should have a R_{th} of 3 K/W to meet the max PCB temperature requirement. This is shown in figure 1. With the known R_{th} of the heat sink, the delta T from junction to ambient can be determined in figure 2. A R_{th} of 3 K/W has a delta T of 63 °C, which means that the LED has a T_j of 103 °C.

With the same graphs the max operating ambient temperature and the junction temperature can also be determined if the thermal resistance of the chosen heat sink is known.

Note; the graphs show that not all combinations of T_j and max ambient are possible.

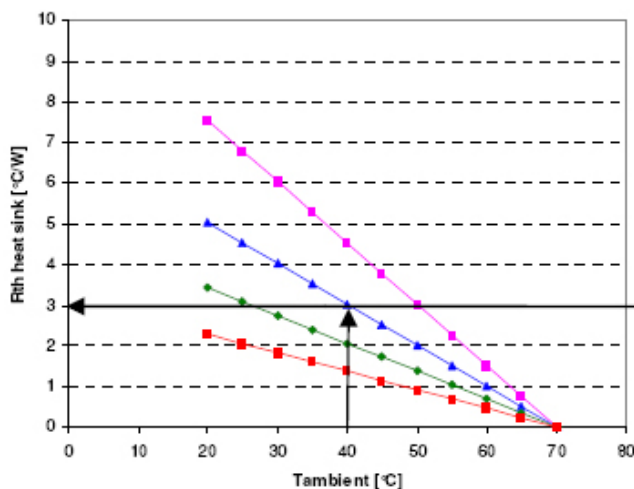


Figure 1

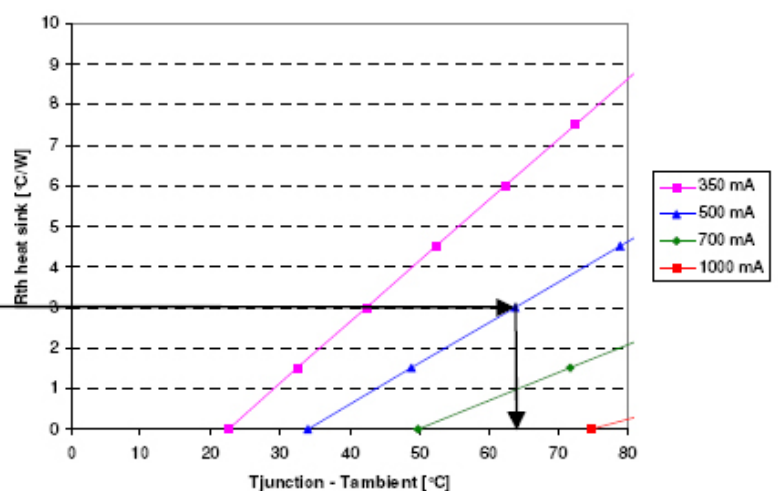
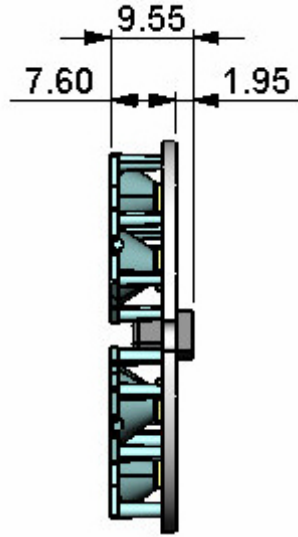
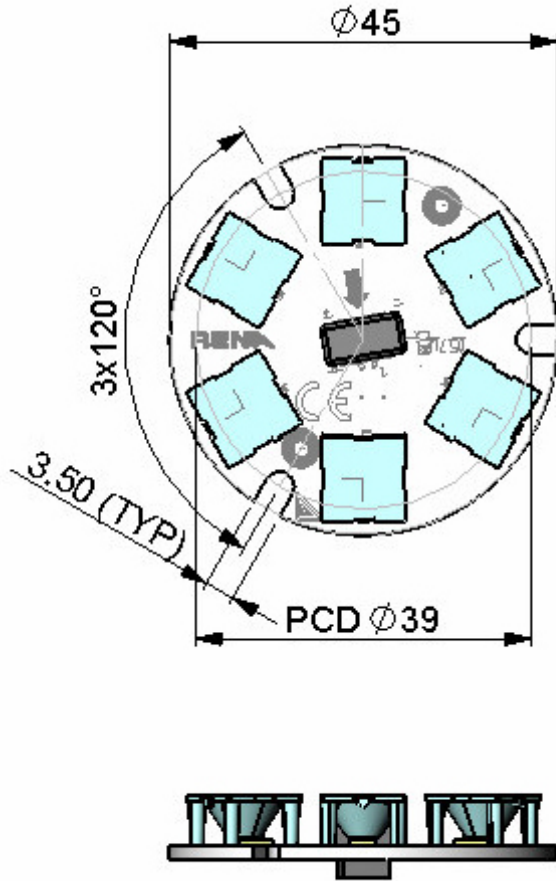


Figure 2

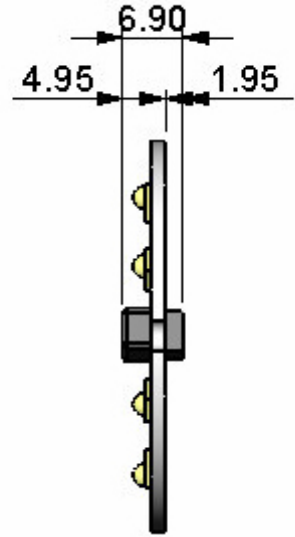
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MECHANICAL DRAWINGS

2D drawings with dimensions:



**PCB WITH
10mm OPTIC**



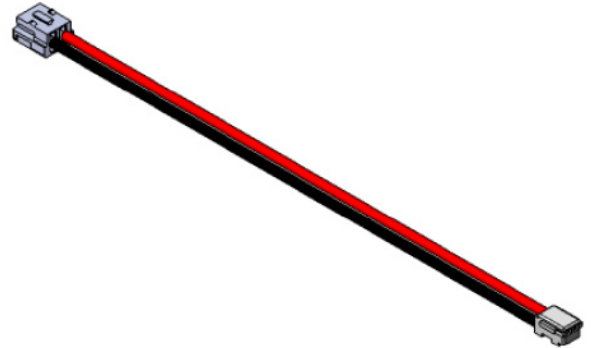
**PCB WITHOUT
OPTIC**

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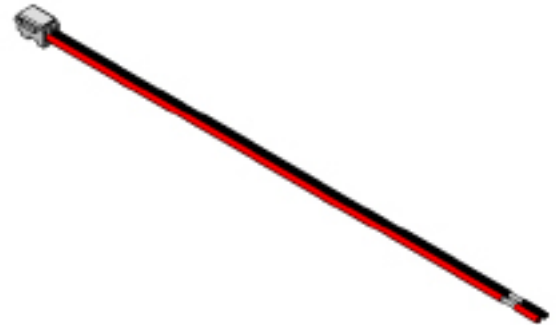
ACCESSORIES FOR INTERCONNECTIONS

Cable options for connection to LED driver
(depending on selected driver)

| Part number CT-Mini CT cable | Cable length (mm) | Wire colors |
|---------------------------------|-------------------|-------------|
| 1969328-6 | 300 | white |
| 1969328-5 | 150 | white |
| 1969328-4 | 50 | white |
| 1969328-3 | 300 | red & black |
| 1969328-2 | 150 | red & black |
| 1969328-1 | 50 | red & black |



| Part number single Mini CT cable | Cable length (mm) | Wire colors |
|-------------------------------------|-------------------|-------------|
| 1969341-6 | 300 | white |
| 1969341-5 | 150 | white |
| 1969341-4 | 50 | white |
| 1969341-3 | 300 | red & black |
| 1969341-2 | 150 | red & black |
| 1969341-1 | 50 | red & black |



* Please refer to www.FutureLightingSolutions.com for a detailed explanation on choosing the correct cable assembly.

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PART NUMBERING & ORDERING INFORMATION

1. PRODUCT SERIES (05712)

circular board with 6 LEDs in series

1. LED TYPE

R = LUXEON Rebel

2. COLOR TEMP (AAAA)

7777 = Neutral White
8888 = Warm White
9999 = Cool White

3. MINIMUM CRI* (BB)

XX = No Min CRI
55 = Min 55
60 = Min 60
65 = Min 65
70 = Min 70
75 = Min 75
80 = Min 80
85 = Min 85
90 = Min 90

4. MINIMUM FLUX* (LM) (CCC)

065 = Min 65
066 = Min 66
067 = Min 67
075 = Min 75
080 = Min 80
100 = Min 100

5. CONNECTOR (D)

C = Connector
N = No Connector

Part Number:

05712RAAAABBCCCDEFG

1
2
3
4
5
6
7
8

6. SUPPLIER COLLIMATOR (E)

X = No Optics
A = Carclo 10mm

7. OPTIC HOLDER (F)

X = No Holder

8. COLLIMATOR (G)

X = No Lens
E = Medium Beam
F = Medium Beam Frosted
H = Wide Beam Frosted
K = Elliptical Beam

* According to Lumileds datasheet
Special configurations available upon request
Contact your local sales representative

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COMPANY INFORMATION

About Future Lighting Solutions

Future Lighting Solutions (www.futurelightingsolutions.com) is a leading provider of LED lighting components and support services for solid-state lighting products and installations, including engineering expertise, concept development, full system solutions and online tools that accelerate quality application development. The company is a division of Future Electronics.

About simpleLED®

Future Lighting Solutions simpleLED program has over 500 combinations of LUXEON® LED & Optic configurations, enabling you to select the right Light Engine for your application, eliminate prototyping delays and accelerating time to market. Additional benefits include UL recognized quality and a 3 year warranty. Visit our website and start innovating.

CONTACT DETAILS

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Note: All specifications are subject to change without notice. Warranty provided by the manufacturer, Rena Electronica BV.