

Product Overview

An electrically isolated star capable of delivering over 140 lumens per LED, the Star K2 offers greater application capabilities because of its size and ease of integration into fixtures and OEM applications. Using the popular LUXEON[®] K2 emitter, LuxDrive designed the star with an identical footprint as LUXEON[®] I and III and V Stars. Inherent electrical isolation means thermal interface materials are not required to be electrically insulative. The Star K2 is available in low or high current in white, red, blue, and green. It also can be used with any of the 20mm optics available from LuxDrive.



Features

- Electrically isolated heat sinking surface
- Highest operating junction temperatures available
- Industry leading lumen performance, > 140 lumens in 6500K white
- Highest Drive Currents - 700mA, 1500mA
- Low Thermal Resistance: 12°C/W¹ or less, including LED
- Lead free, reflow solder connections
- RoHS Compliant
- Autoclave compliant JESD22 A-102
- Industry's Best Lumen Maintenance: 50,000 hours life at 1000mA with 70% lumen maintenance, (TJ ≤ 90°C)
- Thin package
- Simple, clearly marked electrical connections
- Superior life span and reliability
- Energy efficient
- Easy mounting

¹ Thermal resistance specified is for blue, green, and white

Typical Applications

- Solar & Landscape Lighting
- Architectural Lighting
- Automotive & Marine Lighting
- Point of Purchase Lighting
- Signal & marker Lighting
- Cabinet & Display Case Lighting
- Sign Lighting
- Flashlights
- Much More...



5027 Star K2

LUXEON[®] is a registered trademark of Lumileds, Inc.



Optics

The LuxDrive Star K2 can be fitted with any of a wide range of optics, also offered by LuxDrive. Standard lens holders are clear, but white or black can also be specified. There are four standard illumination patterns available: spot (5°), medium (15°), wide (25°) and oval (5° x 20°). See the diagrams on page 5 for examples of typical illumination patterns.



LuxDrive
20mm optics and holders

Part Number Identification

5027-**XXYY**

Typical Luminous Flux at LED Junction Temperature of 25 °C

XXYY	Color	Current	Light Output²
PB12	Blue	Low	12.5 lm @ 350mA 21 lm @ 700mA
PB14	Blue	High	27 lm @ 1000mA 35 lm @ 1500mA
PD12	Red	Low	45 lm @ 350mA 75 lm @ 700mA
PM12	Green	Low	60 lm @ 350mA 100 lm @ 700mA
PM14	Green	High	100 lm @ 1000mA 130 lm @ 1500mA
PW12	White	Low	45 lm @ 350mA 75 lm @ 700mA
PW14	White	High	100 lm @ 1000mA 140 lm @ 1500mA

² LUXEON Rating

Drivers

LuxDrive offers a line of drivers designed for use with high-power LEDs modules such as the Star K2. The choice of driver will depend upon number of LED modules to be driven, the input voltage source, and the desired forward drive current. See the full line of LuxDrive products at www.LuxDrive.com



**RoHS
Compliant
2002/95/EC**

Specifications

**Maximum Surface Temperature of Metal Core Board
(required to maintain 70% light output after 50,000 hours)**

Max Surface Temp.	Power	Current
105°C	1.2W	350mA
90°C	2.5W	700mA
75°C	3.72W	1000mA
Not recommended for long life	Not recommended for long life	1500mA

Storage Temperature..... <185°C
Recommended Operating Temperature (T_{opr})..... <120°C³

See LUXEON K2 data sheet for more details

³Junction temperature

Heat Sinking and Mounting

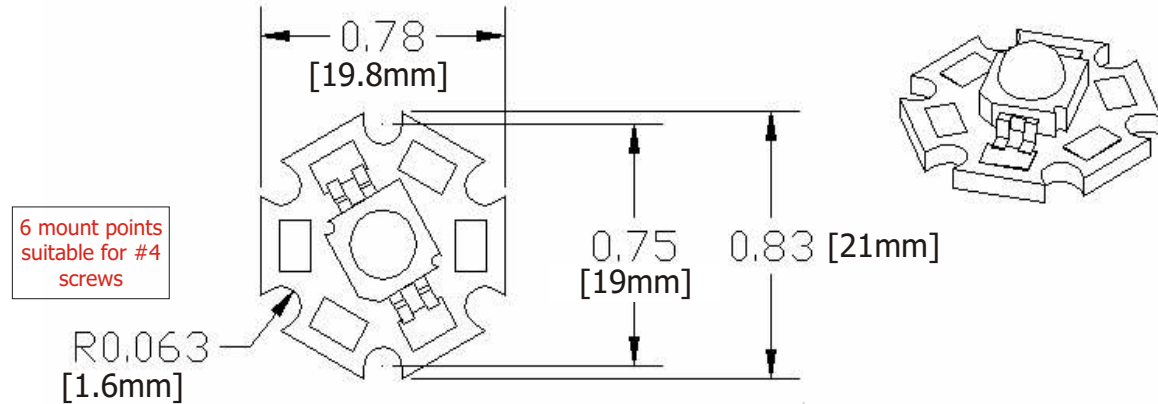
The Star K2™ has 6 mounting points for #4 screws. It should be attached to additional heat sinking for proper thermal management. At minimum, a heat sink of a metal plate (copper or aluminum), attached using a thermal interface material, should be used to increase the area exposed to free air. The surface temperature of the MetalCore printed circuit board can be measured (such as with an infrared thermometer), and used to gauge heat sink adequacy according to the chart above.

The Star K2™ MetalCore printed circuit board has a backing plate that is electrically isolated from the emitter. When selecting a thermal interface material, it is not required to be electrically insulative.

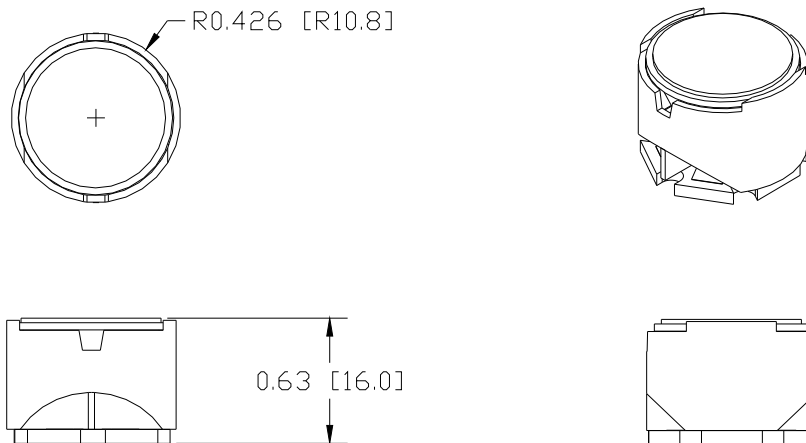
Future revisions of this datasheet will include a more detailed discussion of thermals.



Physical Dimensions



Typical Physical Dimensions of 5027 Star K2



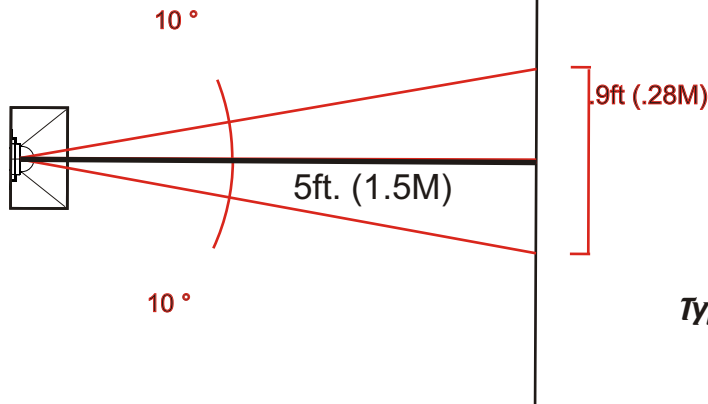
**Typical Physical Dimensions of Star K2
with Optional LuxDrive 20mm Optics Holder**



**RoHS
Compliant
2002/95/EC**

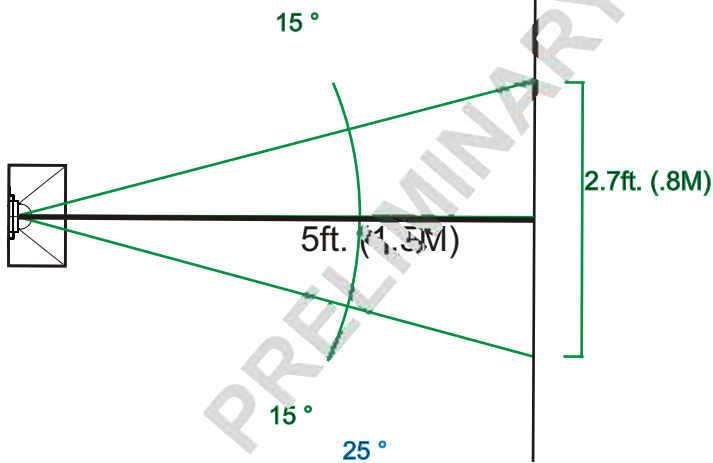
Optical Properties

10° Optic



Typical illumination patterns at 5ft (1.5M)

15° Optic



25° Optic

