

### Product Overview

An electrically isolated star capable of delivering over 300 lumens per LED, the TFFC Star K2 offers greater application capabilities because of its size and ease of integration into fixtures and OEM applications. Using the popular LUXEON® K2 with TFFC emitter, LUXdrive designed the TFFC Star K2 with an identical footprint as the LUXEON® I and III and V Stars. Inherent electrical isolation means thermal interface materials are not required to be electrically insulative. The TFFC Star K2 is available in cool white, neutral white, and warm white. 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, > 300 lumens in 6500K white
- Highest Drive Current - 1500mA
- Low Thermal Resistance: 8.5°C/W<sup>1</sup> or less, including LED
- Industry's Best Lumen Maintenance: 50,000 hours life at 1000mA with 70% lumen maintenance, (Tj ≤ 120°C)
- Lead free, reflow solder connections
- RoHS Compliant
- Autoclave compliant JESD22 A-102
- Thin package, easy mounting
- Simple, clearly marked electrical connections
- Superior life span and reliability
- Energy efficient
- Made in the USA

### Typical Applications

- General Illumination Lighting
- Solar & Landscape Lighting
- Architectural Lighting
- Automotive & Marine Lighting
- Point of Purchase Lighting
- Signal & Marker Lighting
- Cabinet & Display Case Lighting
- Sign Lighting
- Flashlights



<sup>1</sup> Thermal resistance specified is for blue, green, and white LUXEON® is a registered trademark of Lumileds, Inc.



## Luminous Flux

The TFFC Star K2 is available with a single emitter configuration. The color code and luminous flux figures are adapted from the LUXEON® K2 with TFFC Datasheet.

*Typical Luminous Flux at LED Junction Temperature of 25 °C*

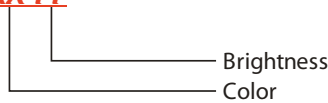
Part Number	Color	Typ. Lumens at 350mA	Typ. Lumens at 700mA	Min. Lumens at 1000mA	Typ. Lumens at 1500mA
5027-PWC-08	Cool White	85	150	180	250
5027-PWC-09	Cool White	95	170	200	275
5027-PWC-10	Cool White	105	185	220	300
5027-PWN-07	Neutral White	75	135	160	220
5027-PWN-08	Neutral White	85	150	180	250
5027-PWN-09	Neutral White	95	170	200	275
5027-PWW-06	Warm White	65	120	140	195
5027-PWW-07	Warm White	75	135	160	220
5027-PWW-08	Warm White	85	150	180	250

Custom units available upon request. Contact LUXdrive for additional details.

See LUXEON® K2 with TFFC data sheet for more details

## Part Number Identification

5027-PXX-YY



## Temperature Ratings

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

Max Surface Temp.	Power	Current
110°C	1.2W	350mA
95°C	2.5W	700mA
85°C	3.72W	1000mA
Not recommended for long life	Not recommended for long life	1500mA

Storage Temperature.....<185°C<sup>3</sup>

Recommended Operating Temperature (T<sub>opr</sub>).....<120°C

See LUXEON K2 with TFFC data sheet for more details

<sup>3</sup>Junction temperature

## Heat Sinking and Mounting

The TFFC Star K2 has 6 mounting points that use #4 screws for attachment to an appropriate heat sink. To ensure proper thermal management, the Star K2 should be affixed to an additional metal heat sink (copper or aluminum) using a thermal interface material, with the heat sink exposed to free air. Use an infrared thermometer (or similar instrument) to measure the surface temperature of the MetalCore printed circuit board to gauge heat sink performance per the chart below.

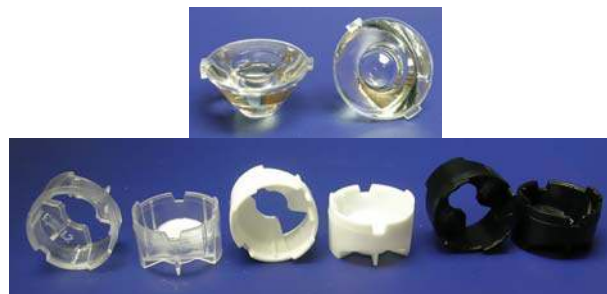
The TFFC Star K2<sup>TM</sup> MetalCore printed circuit board has a backing plate that is electrically isolated from the emitter. When selecting a thermal interface material, it is not required to be electrically insulative.

## Drivers

LUXdrive offers a line of drivers designed for use with high-power LEDs modules such as the TFFC 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](http://www.LUXdrive.com)

## Optics

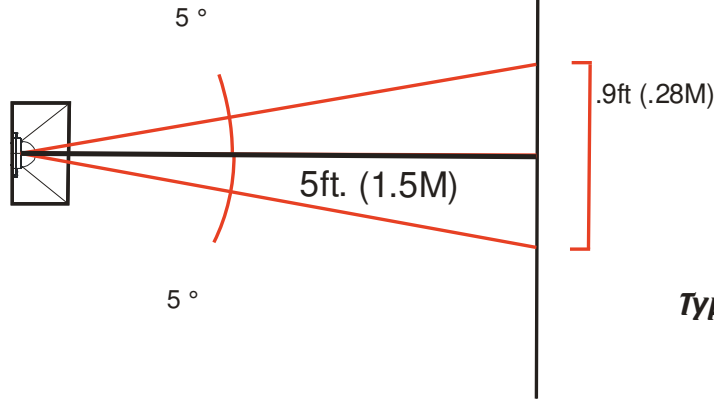
The TFFC Star K2 can be fitted with a wide range of optics, offered by LUXdrive. Available lens holders are clear, but white or black can also be specified. There are four standard illumination patterns available: spot (5°), medium (15°), wide (25°) and oval (5° x 20°). See the diagrams on page 4 for examples of typical illumination patterns.



*20mm optics and holders*

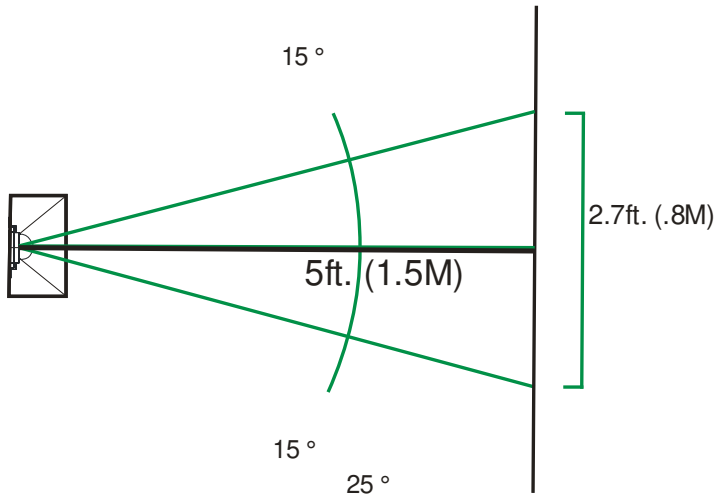
Optical Properties

**5° Optic**

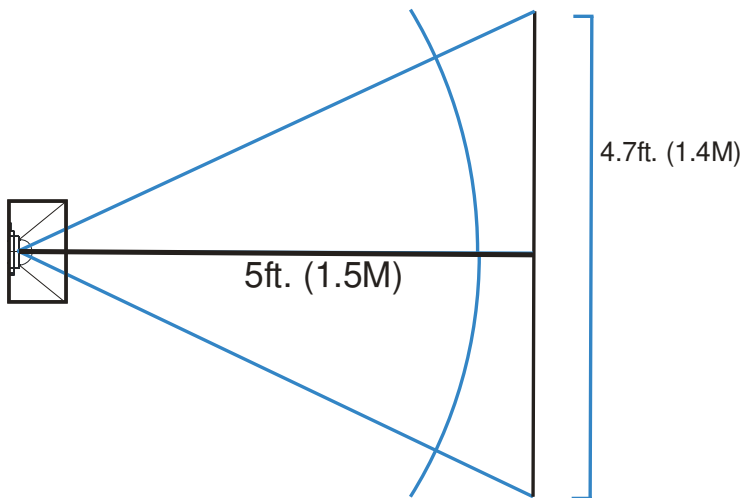


*Typical Illumination Patterns  
at 5ft (1.5M)*

**15° Optic**



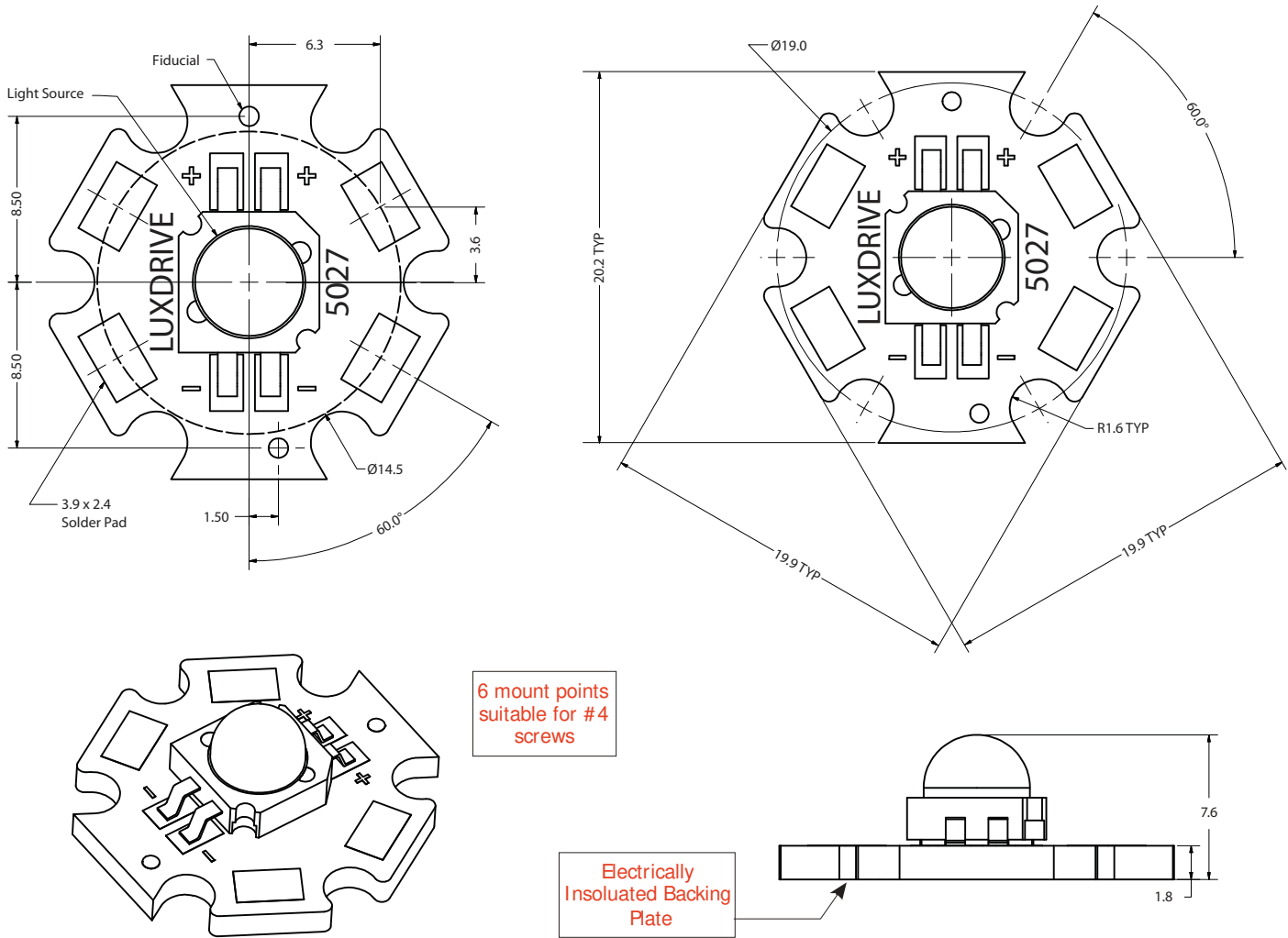
**25° Optic**



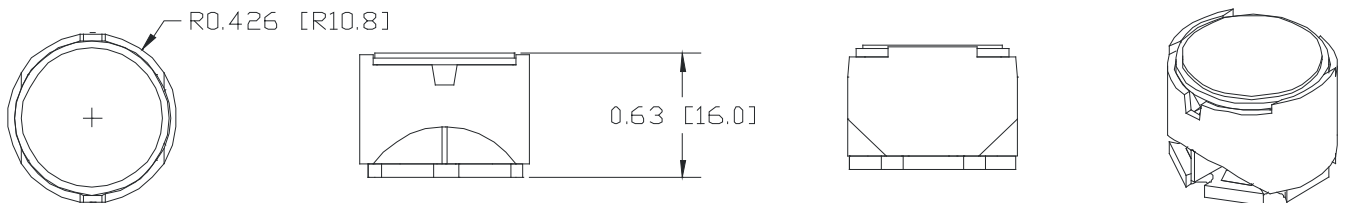
25°

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Specifications subject to change without notice. Patents Pending June, 2009 - Rev 1.0

Physical Dimensions



**Typical Physical Dimensions of TFFC 5027 Star K2**



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