

LED ENGINE

4W

375 LUMEN

LDH-46Wx-3A-00 (10-40VDC)

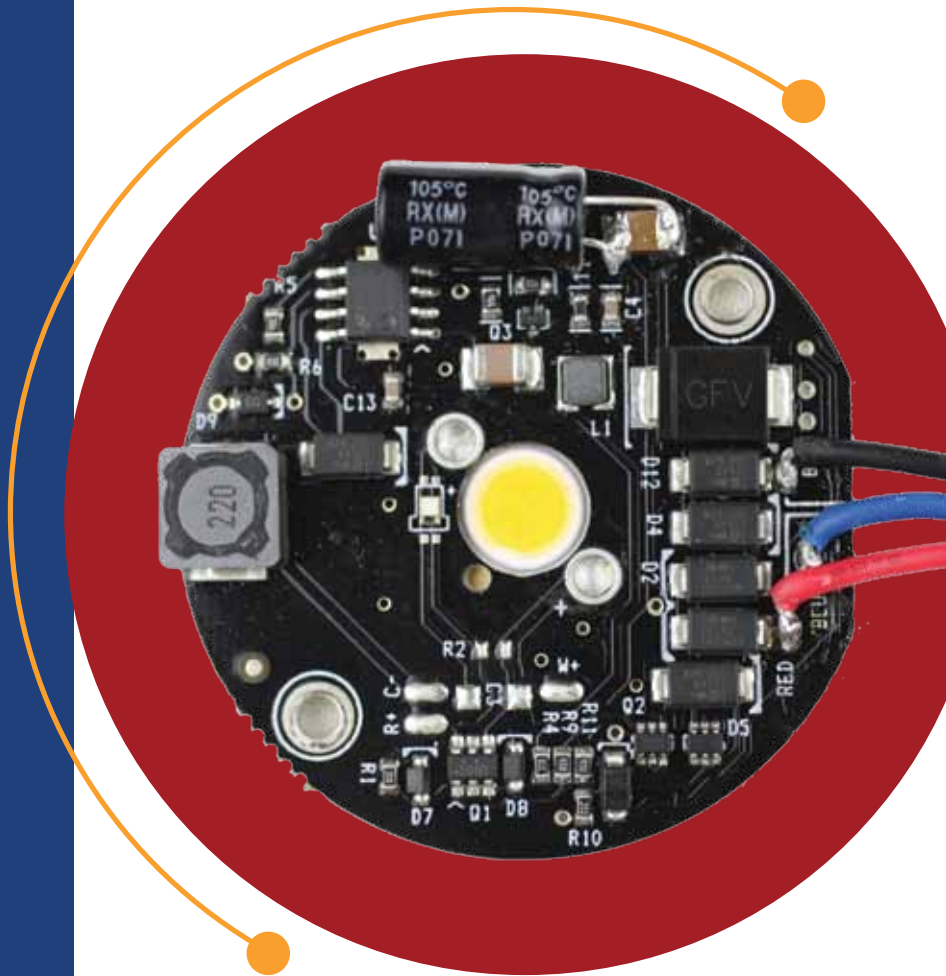
Lunasea LED Light Engine. Offering bright soft light output with a color rendering of >80 CRI. Beam angle of 120 degree great for area lighting. 12, 24, 32, 36VDC applications. Circuitry has EMI suppression and surge protection. Built in thermal protection throttles back current to LEDs if PCB experiences excessive heat. Great for area light designs.

- Small Size - 42.7mm (1.68") Diam
- Chip On Board (COB) LED
- 48V Surge Supression
- On-Board EMI Suppression
- Diode Protection Inputs
- On-Board Thermal Regulation
- Constant Current Buck Regulation

PCB 1.68 Diameter, FR4 multi-layer, black

Power: White 4 Watt / Red or Blue 1 Watt
Voltage 10-40VDC - White 12VDC 0.33A

Output: 375 Lumen >80CRI
Dimensions: 42.7 (1.68") D x 1.6 (0.063") D



LDH-46WW-3A-00 Warm White (2700K)
LDH-46WR-3A-00 Warm White (2700K) / Red
LDH-46WB-3A-00 Warm White (2700K) / Blue

THIS PRODUCT REQUIRES HEATSINK

Recommended Heatsink

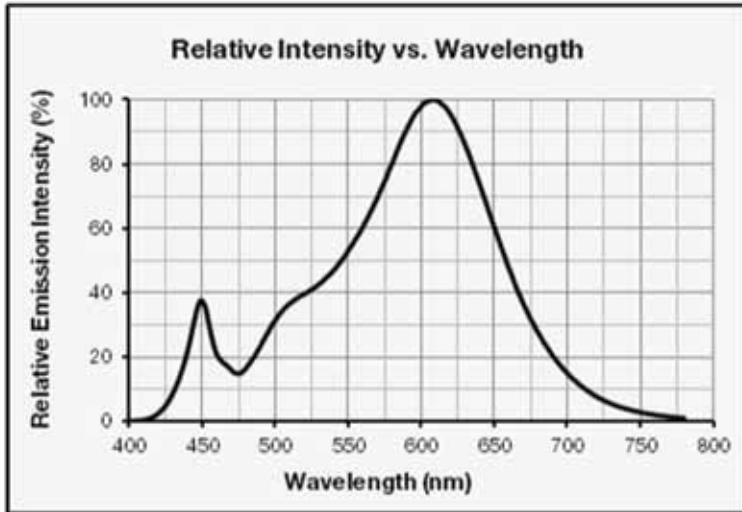
A heatsink with a surface area of 14 External Square inches is recommended for this LED Engine. Insufficient heatsink may cause damage to the PCB and its components.

Typical Characteristics Graphs



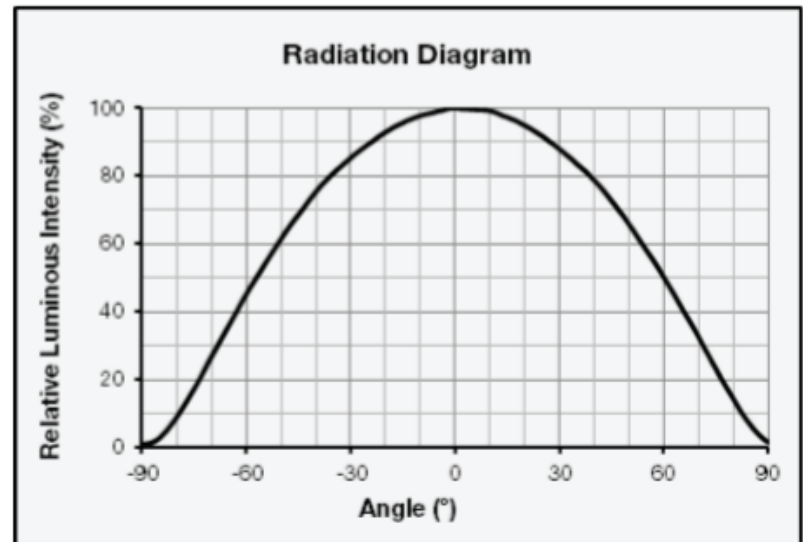
Spectrum Distribution

CCT: 2700K (85 CRI)



Beam Angle Characteristics

T_s = 25 °C)



Electrical

LDH-46WW-3A-00

Two Wire

- Red: Positive
- Black: Ground

LDH-46WR & WB-3A-00

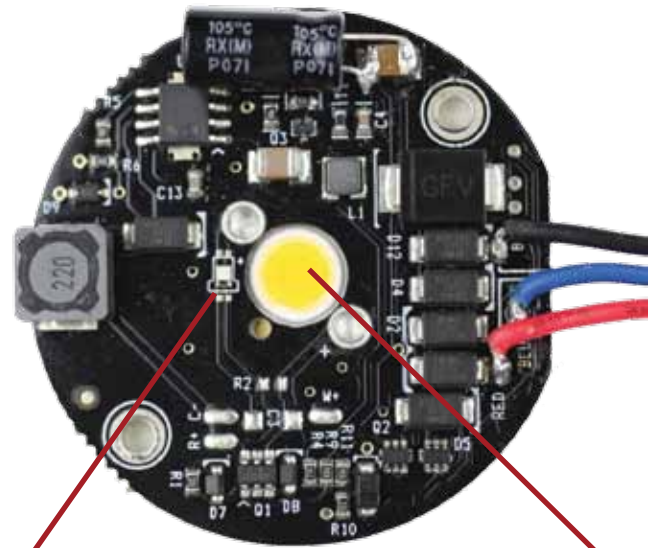
Two Wire (reverse polarity)

- Use Red & Blue wire only
- Red wire positive - White Mode
- Blue wire positive - Color Mode

Three Wire Mode

- Black: Ground
- Red: Positive (Warm White)
- Blue: Positive (Red or Blue)

(NOTE: It is possible to be in BOTH WHITE mode and COLOR mode at the same time. However, the WHITE LED will over power the COLOR LED.)

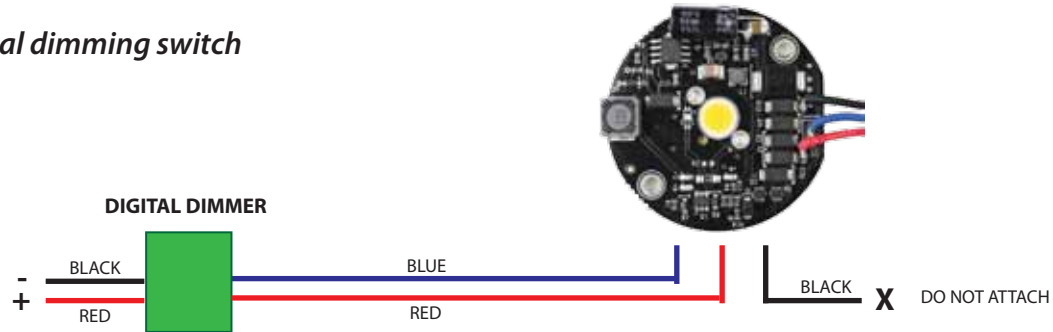


Red or Blue LED

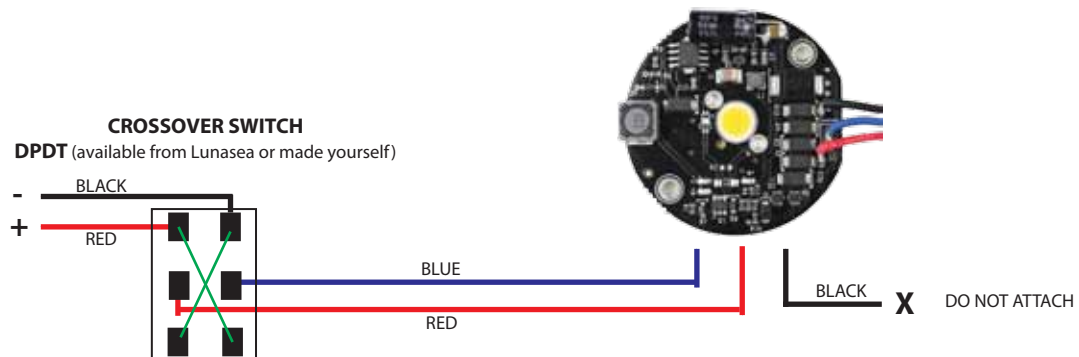
Warm White COB LED

Digital (PWM) dimming compatible. (External Dimmer required)
NOTE: Some audible noise may occur at the 'Dimming frequency' if used.

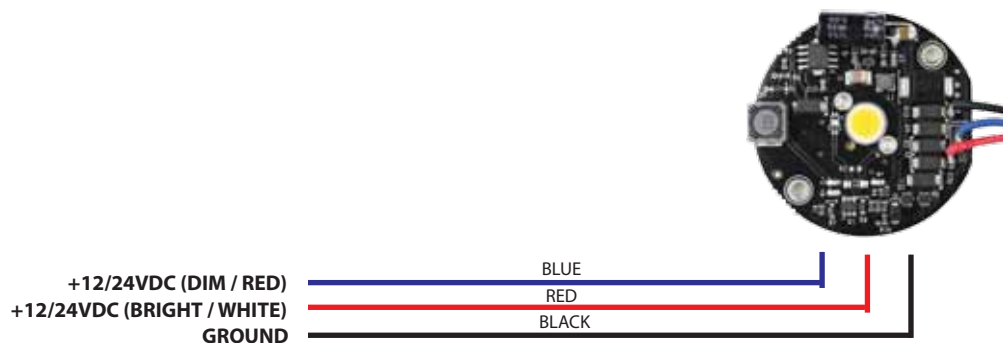
Use PWM digital dimming switch



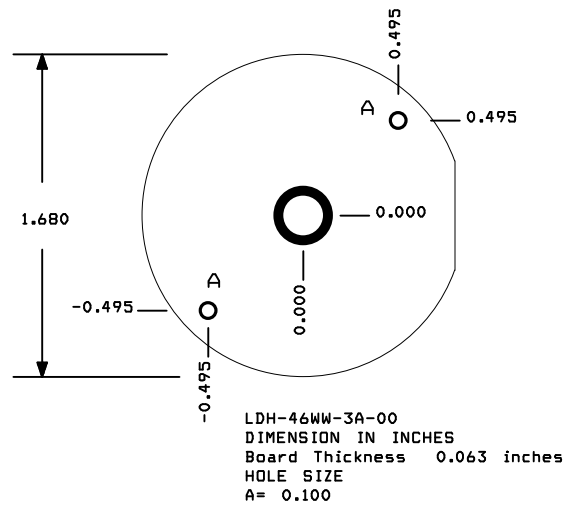
Reversing the polarity (2 wire setup) - HI/LO capability or White/Red(Blue)



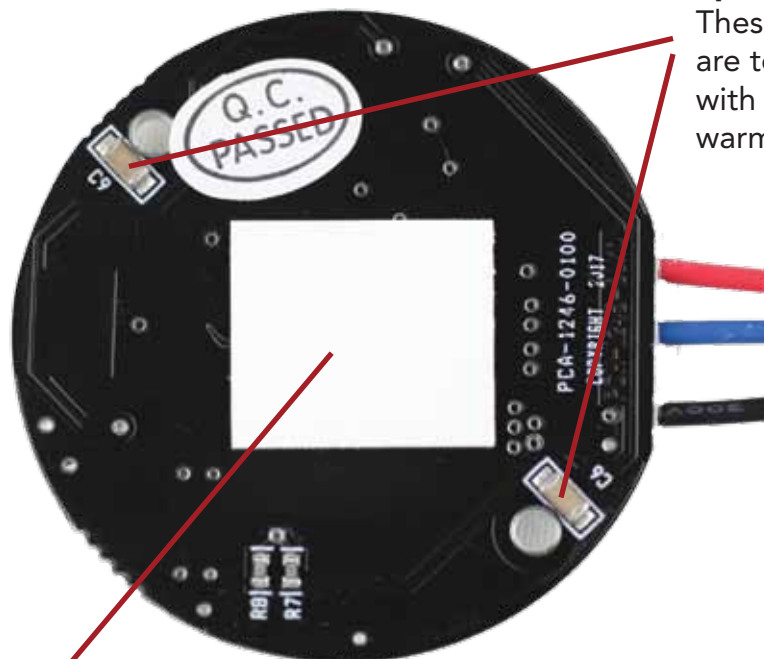
Using three wire setup apply power to either of the + leads - HI/LO or White/Red(Blue) capability



Mechanical Dimensions



COB aligned to bottom of PCB



Spacing Parts

These parts are non functional and are to meant to come in contact with the heatsink to keep PCB from warming

LED Heat Slug

The COB(exposed to the bottom of the PCB) has a Thermal Pad with a release liner installed. Remove the release liner to activate the Thermal Pad. This thermal Pad will contact the heat sink, upon installation of the assembly.

Thermal & Mechanical Design



Heat Sink Thermal Resistance

Thermal design is critical for optimal performance of the Lunasea LED engine, and it is important to choose a suitable heat sink. Design attributes such as heat sink size and shape, active or passive cooling options, material, surface finishes, and etc. need to be selected so that the thermal resistance of the heat sink is optimized for the specific environment the fixture will be operating in.

Thermal Design Guidance

A good thermal design requires very good heat transfer from the Lunasea LED PCB to the heat sink. In order to minimize air gaps and contact resistance between the PCB and the heat sink, it is common practice to use thermal interface materials (TIM) such as thermal pastes, thermal pads, phase change materials and thermal epoxies. Each material has its pros and cons depending on the design. Thermal interface materials are most efficient when the mating surfaces of the board and the heat sink are flat and smooth. Rough and uneven surfaces may have gaps with higher thermal resistances, increasing the overall thermal resistance of this interface. It is critical that the thermal resistance of the interface is low, allowing for an efficient heat transfer to the heat sink and keeping LED PCB temperatures low.

Mechanical Mounting Considerations

The mounting of Lunasea LED Engine is a critical process step. Excessive mechanical stress in the board can cause the board to warp, which can lead to substrate cracking and subsequent cracking of the LED dies.

Recommended Heatsink

A heatsink with a surface area of 14 External Square inches is recommended for this LED Engine. Insufficient heatsink may cause damage to the PCB and its components.



RoHS Compliance

LuxiTune products do not contain any restricted hazardous substances (RoHS) with levels above the threshold limits permitted in accordance with EU Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment. Declarations for this product can be obtained from your local LED Engine representative.

About Lunasea Lighting

Founded in 2004, as a subsidiary of Digitron Electronics, Lunasea was born with military and medical equipment grade design and manufacturing pedigree established through decades innovative electronics development. Lunasea Lighting's technology uses revolutionary microprocessor-controlled circuitry that is based on 25 years of research and development. These capabilities and technology enable Lunasea to provide LED lighting products that are designed and constructed to withstand the world's most harsh environments.

Today, through its design and manufacturing facility in Homosassa Florida, Lunasea offers roughly 250 lighting related products that range from LED Light Engines, festoon to high powered, explosion proof flood lights. All products are designed in this U.S. facility.