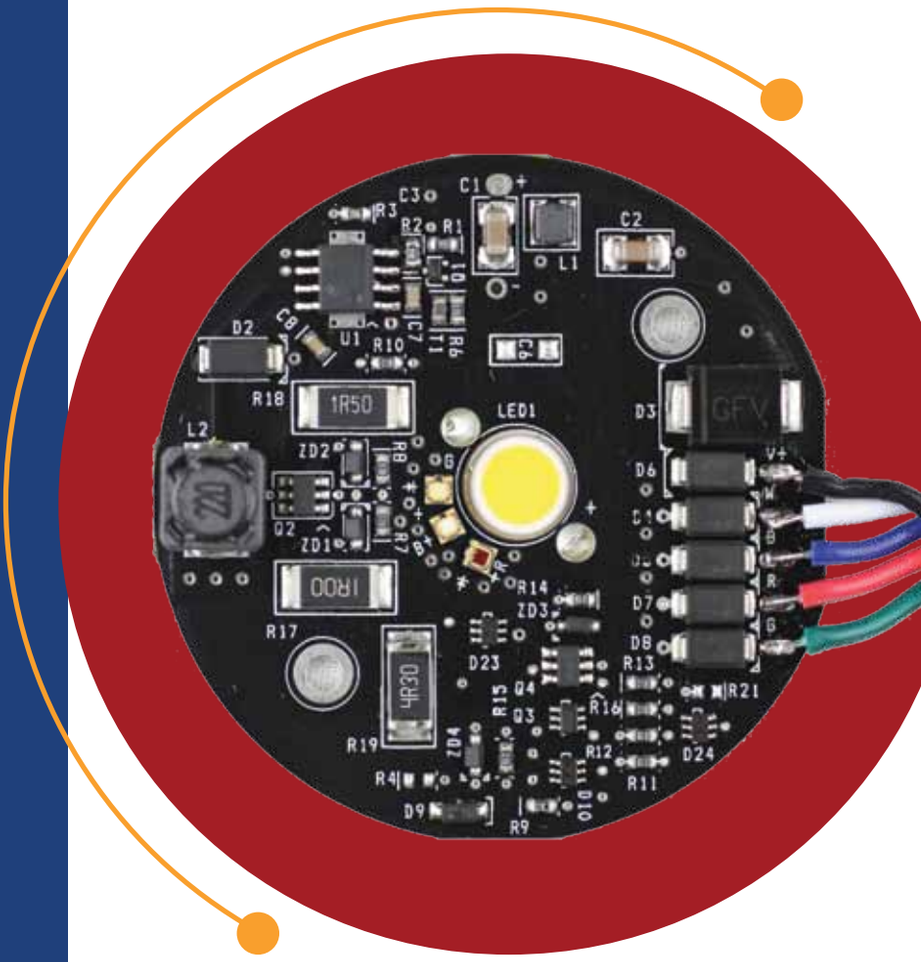
LED ENGINE
3.75W RGBW
375 LUMEN

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

Lunasea LED Light Engine. Offering bright soft warm white light output with a color rendering of >80 CRI and high output RGB. 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.

- Small Size - 50mm (1.97”) 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 3.75 Watt / Red / Green / Blue 1 Watt
Voltage	10-40VDC - White 12VDC 0.33A
Output (White):	375 Lumen >80CRI
Dimensions:	50 (1.97”) D x 1.6 (0.063”) H



LDH-46RG-3A-00 RGB / Warm White (2700K)

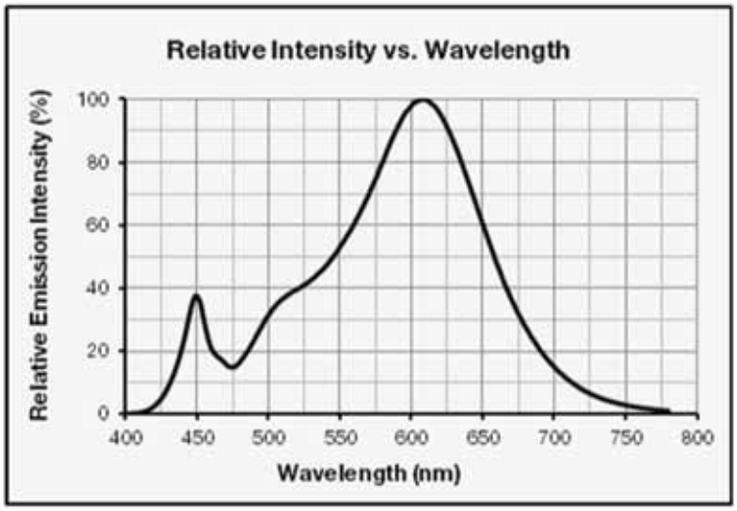
Recommended Heatsink

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

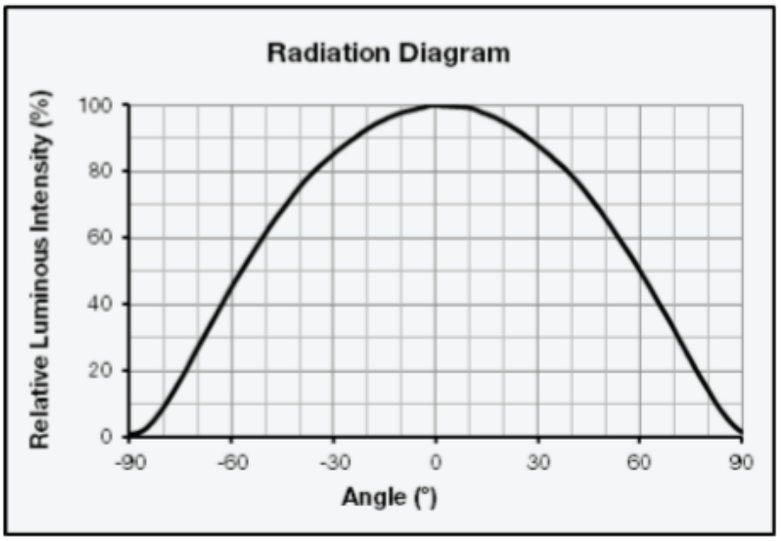
Spectrum Distribution

CCT: 2700K (85 CRI)



Beam Angle Characteristics

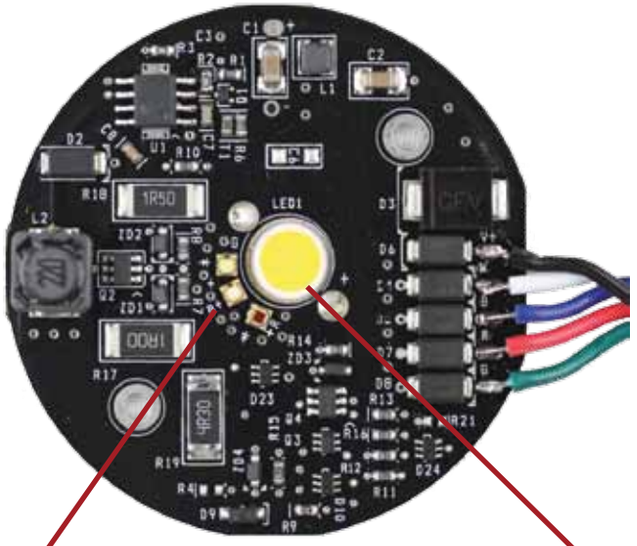
T_s = 25 °C)



Electrical

LDH-46RG-3A-00
Five Wire

White:	+ Warm White
Red:	+ Red
Green:	+ Green
Blue:	+ Blue
Black:	Ground



Red, Green & Blue LEDs

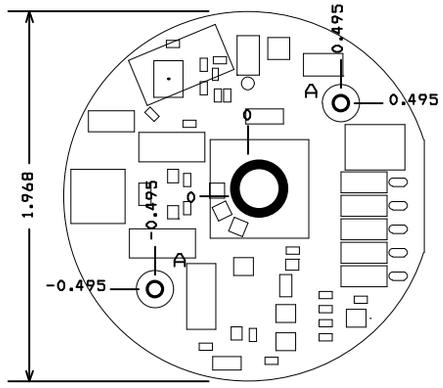
Warm White COB LED

Output White:	375 Lumen, 2700K, >80CRI	
Output RGB:	Red:	31 Lumen, 630NM
	Green:	99 Lumen, 530NM
	Blue:	33 Lumen, 475NM

(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.)

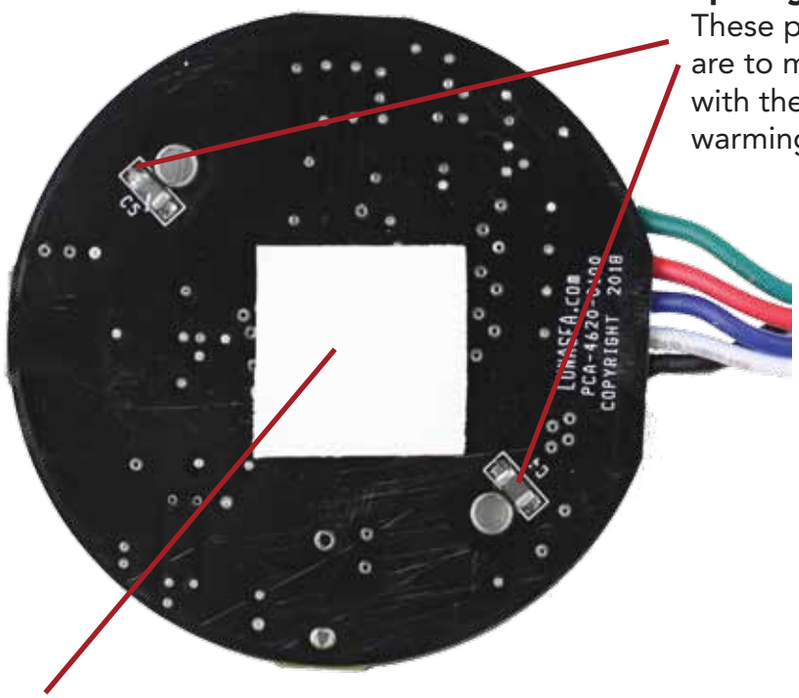
Digital (PWM) dimming compatible. (External Dimmer required)
NOTE: Some audible noise may occur at the 'Dimming frequency' if used.

Mechanical Dimensions



LDH-46RG-3A-00
DIMENSION IN INCHES
Board Thickness .063 inches
HOLE SIZE
A= 0.100

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.

Optional Wireless Controllers

RGB+W
LED CONTROLLERS

LLB-45WG-01-00 Remote Transmitter (Black)

LLB-45WW-91-00 Wall Mount Transmitter (White)
LLB-45WB-91-00 Wall Mount Transmitter (Black)

LLB-45WZ-91-00 Remote Transmitter - 4 Zone (Black)

LLB-45WR-91-00 Receiver

Full Color Mixing RGBW Controllers and Receiver

Color Mixing Controllers

Designed to control our newest generation LED RGBW LED Engine. Full color mixing offers over 1 million colors. Allows for control of each color individually or combined for easy dimming

PART NUMBERS

LLB-45WR-91-00 Receiver

LLB-45WW-91-00 Wall Mount Transmitter (White)
LLB-45WB-91-00 Wall Mount Transmitter (Black)
LLB-45WZ-91-00 Remote Transmitter - 4 Zone (Black)
LLB-45WG-01-00 Remote Transmitter (Black)

SPECIFICATIONS

LLB-45WG-01-00 RGBW RF Transmitter, Hand Held, Four (4) zone, Color Wheel, Brightness, Speed, 4 Save Modes, w/ battery)

LLB-45WW-91-00 RGBW RF Transmitter Touch Wall Mount, One (1) zone, Color, Brightness, Save mode, play mode, 12 or 24 Vdc White background

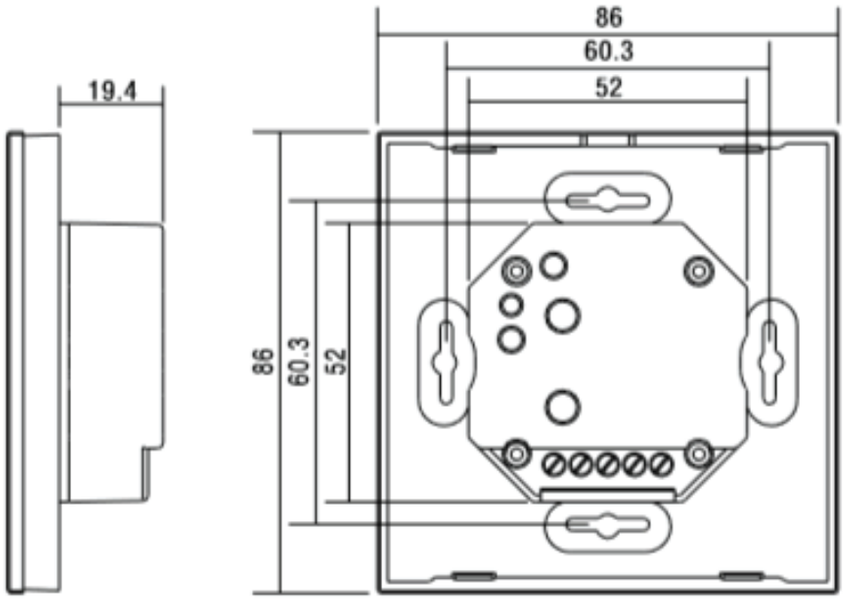
LLB-45WB-91-00 RGBW RF Transmitter Touch Wall Mount, One (1) zone, Color, Brightness, Save mode, play mode, 12 or 24 Vdc Black background

LLB-45WZ-91-00 RGBW RF Transmitter Touch Wall Mount, Four (4) zone, Color, Brightness, Save mode, play mode, 12 or 24 Vdc Black background

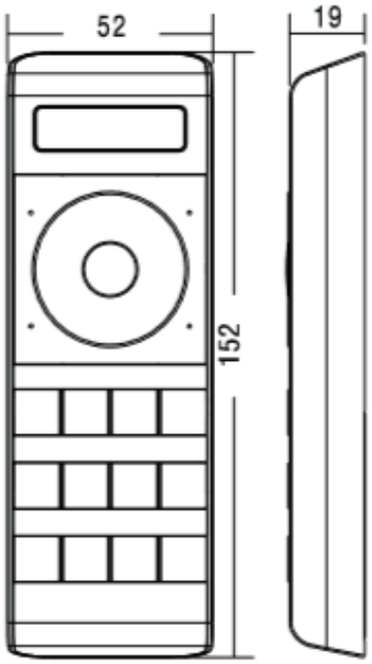
LLB-45WR-91-00 RGBW RF Receiver On/Off/DIM 4x5Amp (5A per color) single (1) zone control 12, 24, 36 VDC w/ Master/Slave function
Voltage in is voltage out. Example: 12VDC in = 12VDC out, 24VDC in = 24VDC out.

Receiver can drive up to 12 LLB-46RG-3A-xx fixtures. If more lights on a single switch are required additional receivers can be paired.

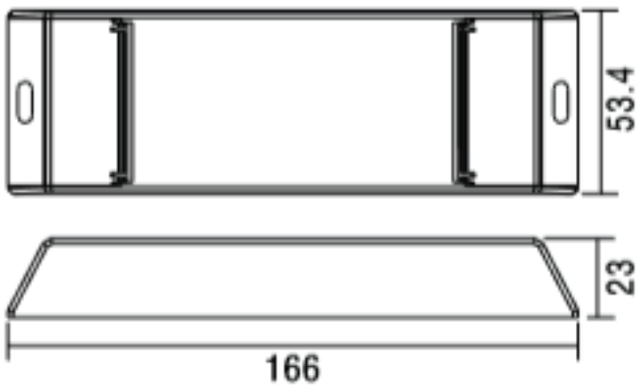
DIMENSIONS



LLB-45WW/WB/WZ-91-00



LLB-45WG-01-00



LLB-45WR-91-00

Measurements in mm

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 Engin 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.