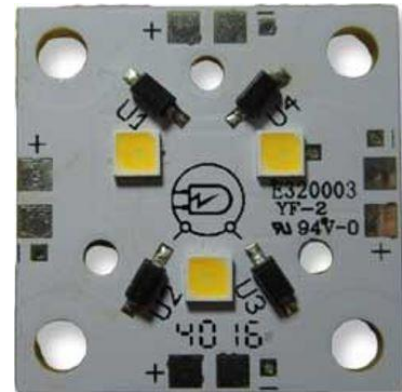


## Product Overview

LE202 is a compact constant voltage LED light engine. Implementing the newest technology in mid-power LEDs.

## Features & Benefits

- DC input voltage up to 15V
- Driver on board. Simple wiring, only need to connect to a constant voltage source
- Convenient mounting holes



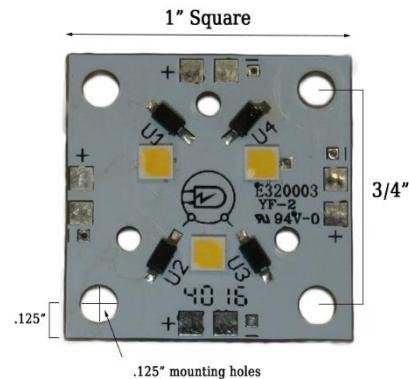
## Electrical Specifications

Specification	Min	Typical	Max	Unit
Input Voltage	11	12.7	15	VDC
Output current*		120		mA
Output Current Tolerance		±10%		%
Wattage	1.32	1.52	1.8	W
Luminous Flux	105	130	150	lm

\*Other drive currents available upon request

## Mechanical Specifications

Specification	Imperial	Metric
Length	1"	25.4 mm
Width	1"	25.4 mm
Height (without optic)	0.115"	2.92 mm
Height (with optic)	0.304"	7.72mm
Weight	0.075oz	2.1g



## Product Selection

LED Count:  
3 = 3 LEDs

Shape:  
R = Rectangle

Product Family

Size:  
01 = 1 inch

CRI:  
7 = 70+ CRI  
8 = 80+ CRI  
9 = 90+  
B = Blue  
R = Red  
G = Green  
Y = Yellow

LE202-X XX X X XX XX

CCT:  
24 = 2400K  
27 = 2700K  
30 = 3000K  
35 = 3500K  
40 = 4000K  
50 = 5000K  
65 = 6500K  
lu = Blue  
ed = Red  
re = Green  
el = Yellow

Drive Current:  
40 = 40 mA  
50 = 50 mA  
60 = 60 mA  
90 = 90 mA  
12 = 120 mA



## Available Optics

LE202 is compatible with several Carlo optics. Select from the table shown below.

Part Number	Description	Number of LEDs	Full Width Viewing Angle
CO-10507	Narrow Spot	3	16°
CO-10511	Frosted Narrow	3	22°
CO-10508	Frosted Medium	3	26°
CO-10509	Frosted Wide	3	37°
CO-10510	Elliptical	3	43° x 16°

## Heat Concerns

Thermal management should always be a consideration in any LED application. The LE202 can be powered with no thermal management when the input power supply is less than or equal to 12V. For input power supplies over 12V a heat sink is required for the light engine. The addition of a thermal adhesive or paste should be used between the light engine and the heat sink.

## Mounting

Mounting holes are provided in 4 locations on the LE202. A 4-40 machine screw should be used when using the mounting holes. The washer used should not exceed 1/4" in diameter. The use of larger washers has the potential to short circuit the board if it breaks through the soldermask.

## Dimming

The method of pulsing the current through the LEDs is known as Pulse Width Modulation (PWM) and has become the preferred method of changing the light level. LEDs being a silicon device, turn on and off rapidly in response to the current through them being turned on and off. The switching time is in the order of 100 nanoseconds, this equates to a maximum frequency of 10 Mhz, and applications will typically operate from a 100 Hz to 100 kHz. Below 100 Hz the human eye will detect a flicker from the light emitted from the LEDs. Between 500 Hz and 20 kHz the circuit may generate audible sound. See Fig.1

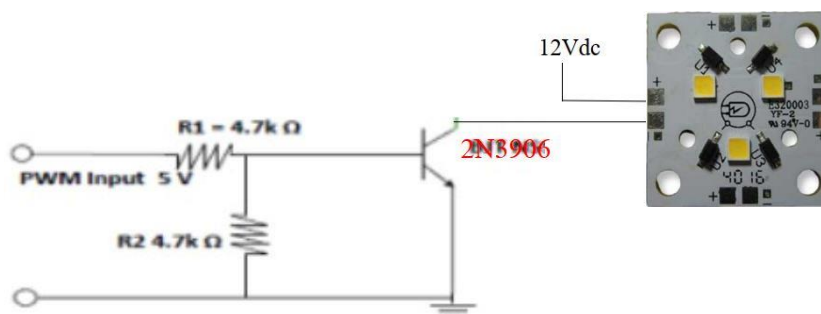


Figure 1. PWM dimming circuit