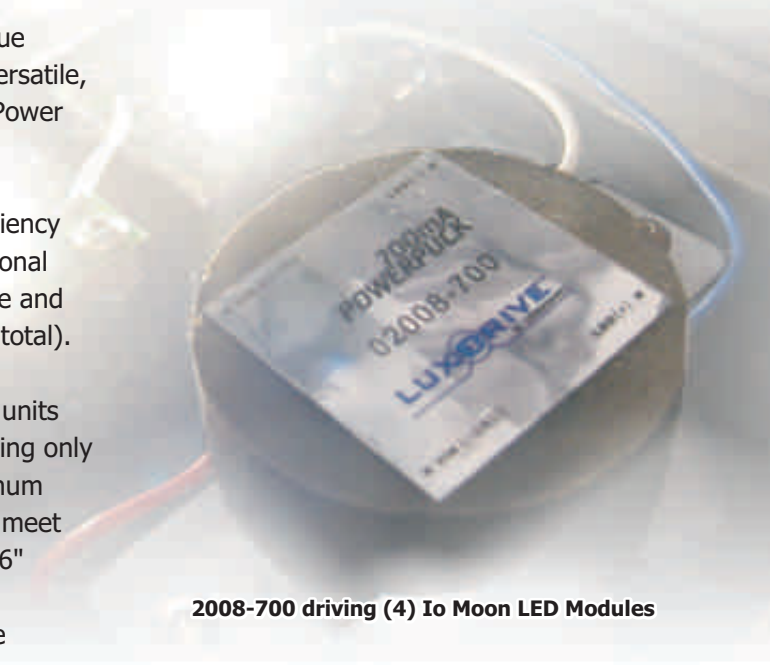


## Product Overview

The 2008 PowerPuck series of LED drivers are a line of true current regulated power supplies for LEDs. Simple and versatile, the 2008 offers a cost effective solution for driving High-Power LED for many applications.

The line of 2008 PowerPuck drivers exhibit very high efficiency and require no external current-limiting resistors or additional heat sinking. The 2008 accepts a wide input voltage range and can power up to (6) High-Power LEDs in series (up to 18 total).

A wide range of current outputs are available. Standard units are fully potted in an extremely small form factor, measuring only 1.5" diameter by .5" tall and the 2008 includes an aluminum mounting bracket. Other custom sizes can be created to meet the customer's needs. The unit is supplied with 24 AWG 6" colored leads for easy connection to the LED(s). Visit [www.LuxDrive.com](http://www.LuxDrive.com) or contact LuxDrive Support for more information.



2008-700 driving (4) Io Moon LED Modules

## Features

- Low Voltage DC input power up to 32V
- 350mA, 700mA, or 1.0A constant current output
- Extremely small form factor\* measuring just 1.5" dia x 0.5" tall
- Supplied with 24 AWG 6" colored leads for simple connection
- Output short circuit protection up to 15 seconds
- Output open circuit protection
- Optional mounting bracket

## Typical Applications

- Solar & Landscape Lighting
- Architectural Lighting
- Track Lighting
- Automotive & Marine Lighting
- Portable Lighting & Flashlights
- Point of Purchase Lighting
- Desk & Reading Lamps
- Signal & marker Lighting
- Cabinet & Display Case Lighting
- Sign & Channel Letters
- Much More...

### Typical Application



PowerPuck 2008-700 driving (4)  
Luxeon I LEDs from 12VDC.

**For Technical and  
Application  
Information Visit  
[www.LuxDrive.com](http://www.LuxDrive.com)**

## Specifications

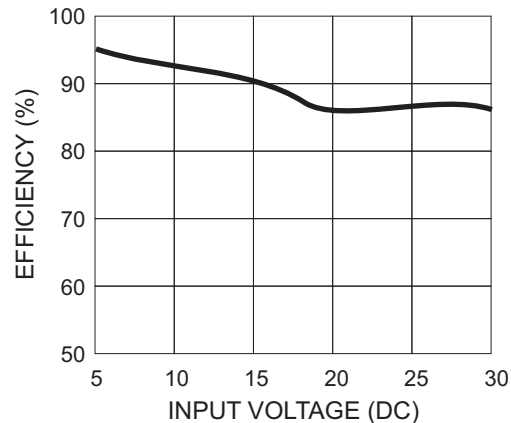
Output Current, 2008B-350 . . . . .	350mA <sup>1</sup>
Output Current, 2008B-700 . . . . .	700mA <sup>1</sup>
Output Current, 2008B-1000 . . . . .	1000mA <sup>1</sup>
Operating Temperature . . . . .	-40-+85°C
Storage Temperature . . . . .	-40-+125°C

## Absolute Maximum Ratings

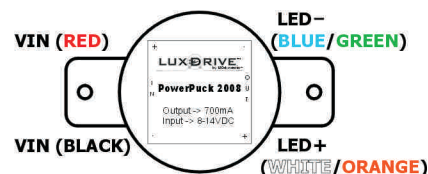
Input Voltage, DC Model. . . . .	32V
Output Voltage . . . . .	32V

## Typical Characteristics

Output tolerance (within specified temp. range) . . . . .	±5%
Efficiency . . . . .	95%
Input Voltage Minimum . . . . .	5V <sub>DC</sub>
Input Margin (350mA unit <sup>1</sup> , add to LED Vf MAX) . . . . .	2V <sub>DC</sub>



**Figure 1.**  
Efficiency vs. Vin



**Figure 2.**  
Wiring Connections

## Application Information

### Description

The 2008 Wide Range LED Power Module is a high efficiency dc to dc converter which delivers a fixed output current by varying the output voltage as required to maintain the specified current. Many current output options are available allowing for use with many types of LEDs and in a variety of applications.

### Fixed Current Drive

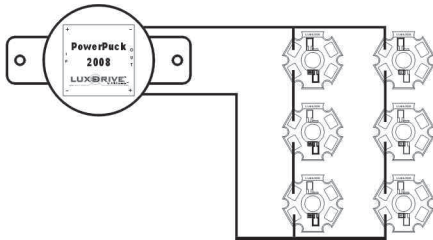
The fixed output current of the 2008 drivers are designed to supply their rated current to one or more LED junctions. For example, a 350 mA rated unit will drive up to six Luxeon<sup>®</sup> I LEDs connected in series. Due to the nature of the buck regulator, the input voltage must always be higher than the total forward voltage drop of the LED junction(s) connected in series (2.0V for DC models). Thus, for a series string of six junctions having an average forward drop of 3.5V, the required minimum input voltage will be 21V<sub>DC</sub>. A standard 24V<sub>DC</sub> power supply is a good choice for this application.

Figures 3 through 8 show 700mA (02008B-700) and 1000mA (02008B-1000) units driving various LED circuits. Note that parallel strings of LEDs can be driven directly with no additional circuitry required to insure current sharing. The nature of the LEDs themselves will often provide good current sharing if the parallel strings comprise 3 or more junctions each. Figure 7 shows a 700mA unit driving a Luxeon<sup>®</sup> V. This could also represent a 350mA unit driving a Luxeon<sup>®</sup> I, a 1000mA unit driving Luxeon<sup>®</sup> III, or a 500mA unit driving a Nichia Jupiter<sup>™</sup>.

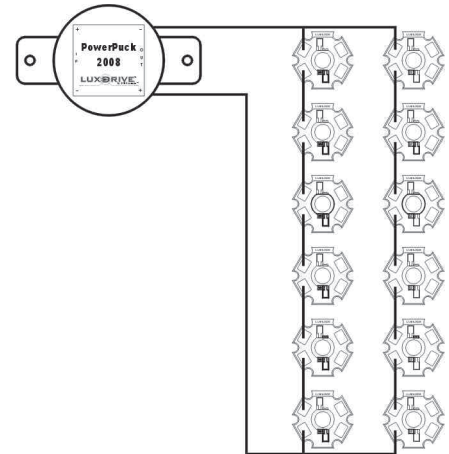
\* - Luxeon is a registered trademark of LumiLEDs Corporation  
\*\* - Jupiter is a registered trademark of Nichia Chemical Corporation

<sup>1</sup> - Measured with single emitter; output current drops slightly with additional series junctions to limit maximum power dissipation.

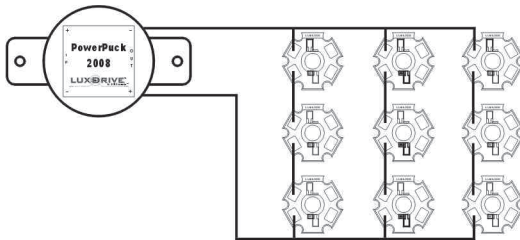
**Application Figures**



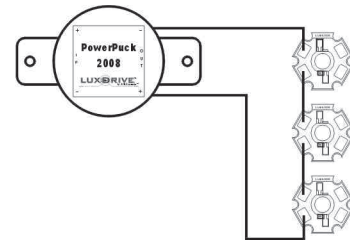
**Figure 3.**  
700mA unit driving LumiLEDs  
6-ring ( $V_{IN} \geq 12VDC$ )



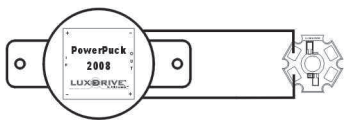
**Figure 4.**  
700mA unit driving LumiLEDs  
12-ring ( $V_{IN} \geq 24VDC$ ,  $I_{OUT}$  limited to 600mA)



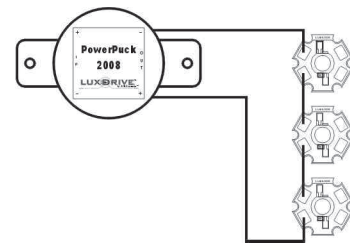
**Figure 5.**  
1000mA unit driving nine Luxeon\* I emitters  
( $V_{IN} \geq 12VDC$ )



**Figure 6.**  
1000mA unit driving three Luxeon\* III emitters  
( $V_{IN} \geq 12VDC$ )



**Figure 7.**  
700mA unit driving one Luxeon\* V emitter  
( $V_{IN} \geq 12VDC$ )



**Figure 8.**  
700mA unit driving three Luxeon\* V emitters  
( $V_{IN} \geq 24VDC$ )

\* - Luxeon is a registered trademark of LumiLEDs Corporation

**Connections**

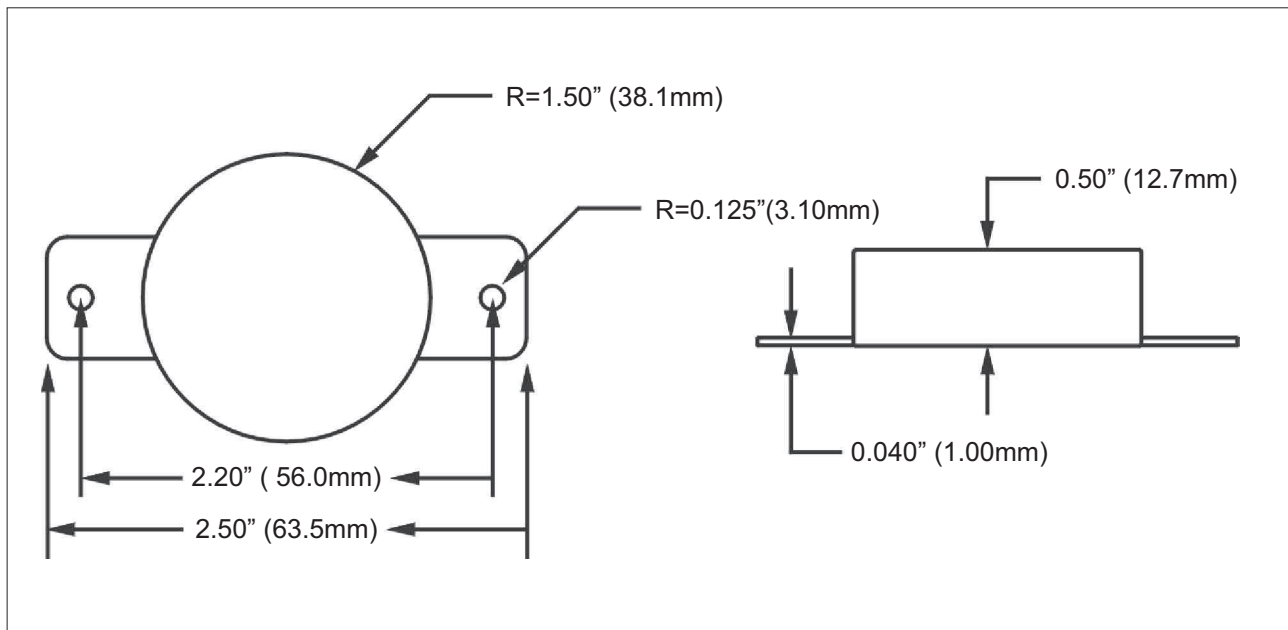
In all cases, the LEDs being driven should be located as close to the 2008 LED output as possible. When the use of long leads is required, use heavier gauge wire.

The power input wires/traces should also be kept short. Where DC input units are located more than 18" from the source, a 220µF, 50V capacitor should be placed across the input terminals as shown in Figure 9.



**Figure 17.**  
Place a capacitor across the input terminals when the distance to the DC power source is greater than 18 inches

**Physical Dimensions**



**Shown approximately actual size**