



## Optek Power LEDs Put “Lednium Inside”

*Solid-state lighting designers now have 21st-century toolbox.*

The semiconductor revolutionized the last half of the 20th century. Today, Optek is harnessing compound semiconductors with packaging innovations that make solid-state lighting practical.

Today’s visible LED technology needs only small relative powering, which results in multicolor and sophisticated camera phones and PDAs. Solid-state devices such as outdoor LED video and backlighting of large area screens and televisions are replacing older, more power-hungry traditional light sources. A program can control architectural LED designs from any location to turn bridges, skylines, and tunnels into “eye candy.”

Designers like the optical characteristics, plus the attention paid to thermal and brightness considerations. Lumen maintenance as high as 70 percent after 50,000 hours of use is ideal for engineers needing a versatile and robust LED to enable lighting, color, or backlighting techniques.

John Montagnat, one of the inventors of the Geodesic LED package, commented, “In all applications we must first respect that bare LEDs cannot be operated efficiently from a fixed voltage—the current must be controlled! There is a certain spread to the turn-on voltage value (Vf) and a very low forward resistance. Normal practice for indicator-type LEDs is to supply current via a resistor from a constant voltage source. High-power LEDs suitable for illumination need to be operated more efficiently so we would use a constant current power supply. If we’re going to champion the efficiency of LEDs as a light source, it makes little sense to waste energy in a series resistor.”

Optek’s 33mm<sup>2</sup> design is based on complementary technologies where the new lead frame provides light in a very efficient pattern while tackling the



thermal issues inherent to solid-state lighting. This Lednium power LED is a complement to the extensive Optek High Brightness portfolio of LEDs. Designed and manufactured for automotive, industrial, and commercial products, Optek power LEDs are giving designers a new toolbox.

Optek, located in Texas, and Lednium, based in Australia, are jointly developing other wavelength technologies for medical systems and bacterial irradiation, and for surveillance, machine vision, and security.

**To request product availability, pricing, or other information, call 800-777-2776 or visit [www.arrownac.com/resource](http://www.arrownac.com/resource).**



The Optek Lednium Series is the new high-power LED product family featuring a unique package form factor. The multi-chip geodesic dome 3-D (120 degree viewing angle), 10W LEDs are now available in white, blue, red, green, and amber, as well as in color combinations. The OVTL09LGAA AMBER has a typical luminous flux of 330 Lumens, and the OVTL09GAW WHITE OPTEK Lednium has a typical flux of 250 Lumens.

### Flux Characteristics:

- Input current: 1.05A
- Junction temperature: T<sub>j</sub> = 25°degrees Celsius

Optek Part Number	Color	Viewing Angle (degrees) <sup>[1]</sup>	Typical Luminous Flux (lm)	Typical on Axis Intensity (cd)
OVTL09LGAW	White	120	250	70
OVTL09LGAB	Blue	120	60	19
OVTL09LGAR	Red	120	247	75
OVTL09LGAG	Green	120	290	100
OVTL09LGAA	Amber	120	330	67

**[1] Viewing angle defined as half-maximum intensity.**