Dialight

# Based LEDs *SELECTOR GUIDE*

With the technological advancements in Light Emitting Diodes (LEDs) brightness can now rival the incandescent lamp when used in similar packages. These advancements have allowed for a new type of product called the *Based LED* - an LED with the fit and functionality of an incandescent light bulb.

Dialight's line of based LEDs were designed with flexibility and efficiency in mind.

- ▲ RoHS compliant
- ▲ Longer life - up to 100,000 hrs
- ▲ Energy savings - 90% less power required
- ▲ High reliability - vibration and shock resistant
- ▲ Multi-chip, Cluster, and Single Ultra-Bright Chip
- ▲ AlInGaP and InGaN die technology
- ▲ Polarized and non-polarized
- ▲ Single and multi-voltage input

| BASE STYLE | CONFIG. | RED | GREEN | YELLOW | BLUE | WHITE | 6 VDC | 12/14* VDC | 24/28* VDC | 120 VAC | POLARIZED | NON-POLARIZED | 6-36 AC/DC | RoHS Compliant |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 3/4 Midget Flange | Single Chip | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | ✔ | | | ✔ |
| T1 3/4 Bi-Pin | Single Chip | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | ✔ | | | ✔ |
| T2 Telephone Slide | Single Chip | ✔ | ✔ | ✔ | ✔ | ✔ | | | ✔ | | | ✔ | | ✔ |
| T3 1/4 Miniature Screw (E10) | Single Chip | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | | ✔ | ✔ | ✔ |
| T3 1/4 Miniature Bayonet (BA9s) | Single Chip | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ | ✔ |
| T1 3/4 Wedge (T5) | Cluster | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | | ✔ | | ✔ |
| T3 1/4 Wedge (T10) | Cluster | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | | ✔ | | ✔ |
| T3 1/4 Miniature Bayonet (BA9s) | Cluster | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | ✔ |
| 15mm Bayonet (BA15s) | Cluster | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | ✔ | | | ✔ |
| T1 3/4 Midget Flange | Multi Chip | ✔ | ✔ | ✔ | | | ✔ | ✔ | ✔ | | ✔ | ✔ | | |
| T1 3/4 Bi- Pin | Multi Chip | ✔ | ✔ | ✔ | | | ✔ | ✔ | ✔ | | ✔ | ✔ | | |
| T1 3/4 Wedge (T5) | Multi Chip | ✔ | ✔ | ✔ | | | ✔ | ✔ | ✔ | | ✔ | ✔ | | |

* Check data sheet for voltage

ENERGY STAR PARTNER

A4703 UL REGISTERED FIRM Dialight Corporation ISO 9001

RoHS COMPLIANT

**Key** ✔ **Available**

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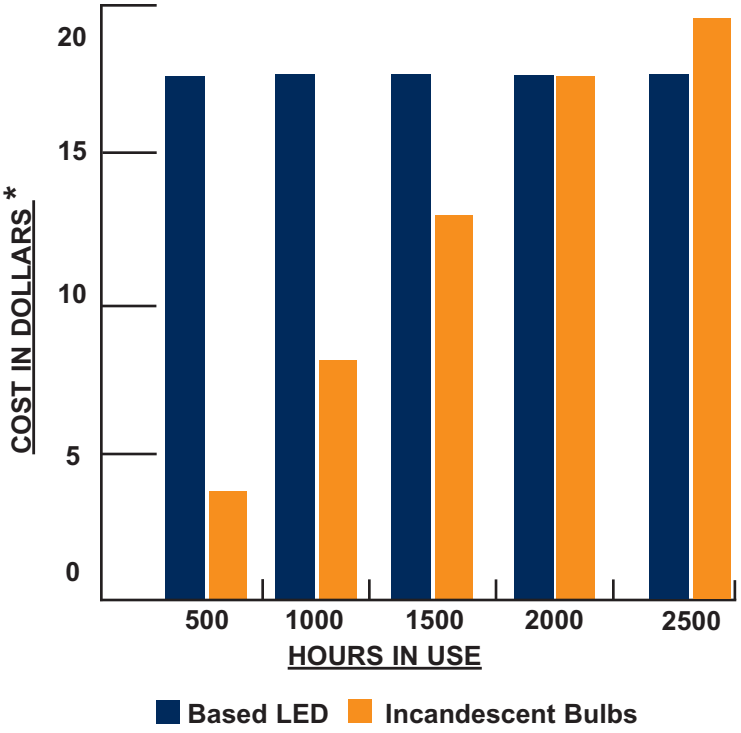
# UNDERSTANDING BASED LEDS

## A COMPARISON BETWEEN LED AND INCANDESCENT

| LED | INCANDESCENT |
|---|---|
| Light produced through luminescence | Generate heat to produce light |
| Typical 100K hours of life | Typical 2K hours of operation |
| Semiconductor based light | Light source being burned away |
| Constant current | Subject to inrush current |
| Epoxy encapsulation is rugged under exposure to shock and vibration | Susceptible to catastrophic failures |
| Up to 90% less power required | Uses high power |
| Responds 0.2 seconds faster | Slow response |
| Low maintenance | Frequent maintenance |

## COST COMPARISON BETWEEN LED AND INCANDESCENT BULBS




*Cost includes -replacement of bulb, labor, and energy savings

### LED Configuration:

**Single Chip** - The single chip design consists of a single ultra-bright LED of the latest LED technology, AlInGaP or InGaN, which is mounted onto an incandescent base. Even though there is only one LED, this high intensity product can provide equivalent light output of the bulb it replaces. This design has a slightly narrower viewing angle than either the multi-chip or cluster, yet is one of the most cost-effective designs available.

**Cluster** - The cluster uses multiple discrete SMD or 3 mm (T1) LEDs mounted into the appropriate incandescent base. The viewing angle of the cluster is 120°, however the use of multiple LEDs increases the overall light output. The overall design provides flexibility where the latest in LED technology, AlInGaP and InGaN, can be employed.

**Multi-chip -** The multi-chip device incorporates 6 LED die-mounted on a specially designed ceramic header which is then placed onto a traditional incandescent base. It's unique construction enables versatility; not only can the die be mounted on this header but additional components can be added. Typical viewing angle of the multi-chip is 120°.

### Polarity

LEDs are diodes which allow current to flow in only one direction. If you are unfamiliar with the polarity of your circuit, a rectifying circuit must be used. Dialight's non-polarized based LEDs incorporate a full wave rectifier and all the necessary components to allow proper operation in any circuit providing the correct voltage is used.

### Maximizing Light Output

Since lens caps act as filters for the light emitted from the based LED, it is important to match the emitting color of the LED. If not matched properly, the overall light output may be substantially reduced. Dialight recommends using transparent lenses which will optimize the light output.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