# High Efficiency Super Bright LED Bulb

## SILVERLED–1N6V

### FEATURES

**Five Times Longer Battery Usage Time than Using Incandescent Bulb**

**High Luminous Flux:** > 90 lumens

**High Immunity to RF Interference**

**High Efficiency:** 96%

**Long Lasting:** > 10 Years

**100 % Lead (Pb)-free and RoHS Compliant**

**Low Cost:** pay off by itself in 12 days by saving the batteries for railway companies

### APPLICATIONS

Drop-in replacement for incandescent bulbs in railway lanterns or 4 cell flash lights (battery polarity must be reversed when installing the batteries).

### DESCRIPTION

The SILVERLED™–1N6V is an LED bulb, as shown in Figure 1, it is designed to be a drop-in replacement for the incandescent bulbs used in 6V lanterns or 4 cell flashlights. Table 1 shows the part numbers for the incandescent bulbs it can replace, Figure 2 shows their physical photo. This LED bulb can run off either from a 6V lantern battery or a 4 cell battery bank, and can be installed instantly into the industrial lanterns as shown in Figure 4 in next page or regular 4 cell flashlights, and can be installed instantly as a drop-in replacement for the original incandescent bulb.

Table 1

| **Incandescent Bulb Part #** | PR12 | PR13 | PR17 | K12 | K15 |
|---|---|---|---|---|---|
| **Rate Voltage (V)** | 5.95 | 4.75 | 4.90 | 5.95 | 4.80 |
| **Rate Current (A)** | 0.50 | 0.50 | 0.30 | 0.70 | 0.70 |
| **Incandescent Bulb Part #** | HPR36 | HPR40 | HPR50 | HPR55 | HPX53 |
| **Rate Voltage (V)** | 5.50 | 6.00 | 5.20 | 5.20 | 6.00 |
| **Rate Current (A)** | 1.00 | 0.67 | 0.85 | 0.50 | 0.975 |

Since the controller works at high efficiency within a wide input voltage range, 3.2 V to 6.2 V, the energy in the battery is drained out deeply, resulting in a longer battery usage time of the battery.

This bulb uses a highly stable current stabilization circuit to keep the output current constant, so that it can tolerate strong interferences from other electronics, such as Walkie-Talkies.

The SILVERLED comes with over temperature protection function. In case the LED gets too hot due to improper heat-sinking or high ambient temperature, the controller will keep working but lower the driving current sent to the LED, the bulb temperature will stop rising, the controller will be working under constant temperature control mode, so that the life time of the LED would not be shortened, nor its electrical-to-optical conversion efficiency will be degraded.

### SPECIFICATIONS

Table 2 Characteristics ($T_{ambient}$ = 25°C)

| Parameter | Value | Unit/Note |
|---|---|---|
| Input working voltage | 3.2 ~ 6.2 | V |
| Output current | 350 ± 20 | mA |
| Output voltage | 3.3 ± 0.2 | Volt |
| LED electric power | 1.2 ± 0.1 | Watt |
| Luminous output | > 90 | lumen |
| Illumination intensity | > 2800 | lux @ 2 meters |
| Typical efficiency | 96% | $V_{IN}$ = 4.8V |
| Operating ambient temperature | –40 ~ 55 | °C |
| Protection trigger temp. | 85 | °C |

Figure 1. Physical Photo of SILVERLED-1N6V

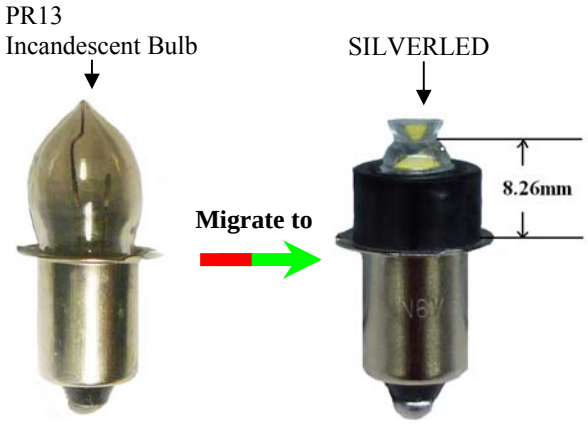


Figure 2. Incandescent Bulb Is Replaced By SILVERLED



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## CONDUCTOR INTRODUCTION

**Negative Terminal:** It is the center nipple of the bulb and connects to the negative terminal of the battery, see Figure 3 below.

**Positive Terminal:** It is the main body of the bulb and connects to the positive terminal of the battery, see Figure 3 below.

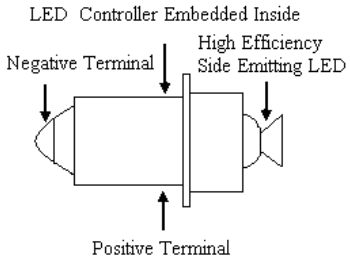


Figure 3. Side View of SILVERLED-1N6V

## MARKING

A. The SILVERLED–1N6V bulb is marked "1N6V" on the bulb body.

B. The SILVERLED–1N6V bulb has a **BLACK COLOR** ring on the top.

## INSTALLATION

A. When using the SILVERLED–1N6V bulb in the industrial type of lanterns as shown in the Figure 4 below, just remove the incandescent bulb and insert the LED bulb.

B. When using the SILVERLED-1N6V in 4 cell flashlights, **make sure to reverse the orientation of the batteries** and then install the LED bulb.

Figure 4. Physical Photos of Flashlights Using SILVERLED-1N6V


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## ORDERING INFORMATION

Table 3 Part Number

| Part # | Description |
|---|---|
| SILVERLED–1N6V | 1 Watt LED, $\eta_{MAX.}$= **96%**, Luminous Flux > **90 lumens**, $V_{IN}$ = 3.2 V to 6.2 V @ $I_{OUT}$ = 350 mA. |

Table 4 Prices

| Quantity | 1 – 9 PC | 10 – 99 PC | 100 – 999 PC | ≥1000 PC |
|---|---|---|---|---|
| SILVERLED–1N6V | $7.89 | $7.39 | $6.79 | $6.09 |

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