

THE COMPUTER CORNER

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This article is not about computers, as such. It is about light bulbs, although there are plenty of electronics and computing circuits inside the latest style bulbs. It is really about LED (Light Emitting Diode) bulbs, which everyone should be using nowadays.

First, why should everyone be using them nowadays? Power savings. A 100 watt conventional light bulb consumes 100 watts of power, and we all know that at least a substantial portion of that is released as heat. Try unscrewing a 100 watt conventional bulb right after it was on for a long period with just your bare fingers! Painful! An LED 100 watt replacement bulb shines with about the same amount of light as the conventional bulb, but uses only about 13 to 15 watts of power. That won't burn your fingers nearly so badly! Furthermore, it will last 13 to 14 years or so, based on 3 hours use a day (most are guaranteed to last for 5 years). Bulb life also depends on brand and a bit on the type of fixture it is mounted in. But, you can get it in soft white (similar to an incandescent bulb, ~2700K), or daylight (bright white, similar to a fluorescent bulb, ~5000K). Negatives are: 1. LED bulbs are usually non-dimmable, unless you shop for ones that specifically state they will work with light dimmers. 2. many will not start (light up) if they are under 5° F or near that chilly temperature.

Yep, you can get LED bulbs in the 3-way variety, just as you can with the old incandescent style. A 3-way bulb is just that; turn the switch once and it goes on low. Turn it again and it gets brighter. A third turn and it goes on the brightest. The next click turn turns it off. You can tell if you are holding a three way bulb by looking at the base. One central contact isolated by black or white plastic or ceramic insulation, followed by a surrounding ring (the latter is part of the screw-in threads) indicates an ordinary one-way (on-off) bulb. One metal central contact, then insulation, then a metal ring contact, more insulation, followed by a surrounding metal ring base is a 3-way bulb. See Fig. 1.

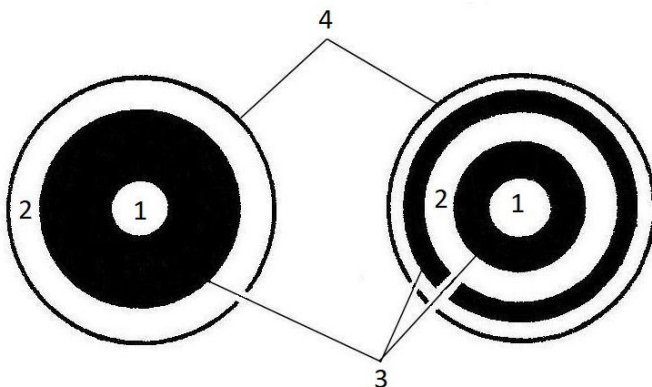


Fig. 1. Light bulb bases, as seen from the bottom. Left is a 1-way bulb (a knob click turns it on or off). Right is a 3-way bulb (a knob click turns it on low, another click turns it on medium, one more click turns it on high, and another click turns it off. 1 is the metal contact in the center of the base; 2 is also a metal contact; 3 is insulation (shown here in black) and 4 is the threaded metallic screw that allows you to screw it into a socket.

Common wattage values for LED 3-way bulbs are 40-60-100 watt and 50-100-150 watt. A 100-150-200 watt bulb also exists but those are incandescent, big and used in a larger (mogul-size) socket.

Can you use a three-way bulb in a one-way socket? You bet. But just one light level will go on, then off, when you turn the knob. Which goes on/off (low, medium or high) depends on the design of the bulb. Can you use a one way bulb in a three-way socket? You bet. But only one of the successive clicks with the knob will light the bulb, and one will turn it off. And it will light only at the single level the bulb is designed for.

I mentioned at the start that there are circuits inside LED bulbs, and when LEDs first came on the market these circuits sometimes gave us hams grief because they generated unwanted noise in our receivers. Some consumers even complained about interference with television reception. This should no longer be a problem in any case. If you come across any sort of interference and you localize it to an LED bulb, try another and take the defective one back to where you purchased it for a replacement. If it happens with more than one, take them all back and try another brand. Such interference should not be tolerated. I can tell you from experience if it happens with an occasional bulb, the store will replace it and will simply write off what they had to supply the customer. If it happens often, they will send the bulbs back to the supplier with information that they are defective, and this will get back to the manufacturer.

So there you are. Who, among us old-timers would have thought that we would be dealing with complicated electronic devices when we screwed in a new light bulb? But we must, since we live in an age of electronics! Happy computing!