

LED Myths, the Truth...

Myth 1: LED (Light Emitting Diode) lamps save energy???

Not True. To give the same amount of Total Brightness, an LED would take much more energy than any other form of lighting. Brightness is measured in LUMENS. The amount of power used to give a fixed amount of Lumens is measured in Watts and is given as 'Watts per Lumen produced'.

Here are some examples for different sources of brightness below:

Brightness for 1 Watt of power gives:

LED = 55 Lumens in 1 Direction ONLY
(Focussed in 1 direction. Total Lumens without Lens is ONLY 4 Lumens per Watt.)

Halogen filament lamp = 65 Lumens in ALL Directions

Fluorescent lamp = 120 Lumens in ALL Directions

Sodium lamp = 680 Lumens in ALL Directions

In fact, LED lighting uses up much MORE Energy than any other form of lighting, to give the SAME Brightness, into a ROOM, in ALL Directions.

Myth 2: LED (Light Emitting Diode) lamps are brighter???

Not True. You can see from the list of lamps and brightness per Watt, that the LED gives the lowest brightness. Some companies of LED manufacturers give false figures for the Lumens produced. This is sometimes due to their lack of knowledge of Lumens and how they are measured.

Lumens of a lamp is 'The Total Luminous Flux emitted in ALL Directions'. This used to be measured in a very expensive measuring device. A ball of sensors was used. The lamp for testing was mounted in the centre and sensors measured 360 degree in ALL Directions, giving the Total Luminous Flux produced. This method gave total brightness in ALL Directions But it was noted that each square metre of sensors received the same amount of brightness from the lamp, so a much simpler and less expensive machine was developed.

This just measured only 1 square metre of area or 1 steradian, of the sphere. Because All the 14 steradians each receive the SAME amount of light, you only need measured 1 steradian and times this figure by 14 to get total brightness in ALL Directions. So the new improved machine only measures 1/14 of the area and assumes the Total Brightness is 14 times this measured area.

This is fine for measuring the total brightness of a lamp without any reflectors or concentrators, but an LED has a Lens, which FOCUSES* ALL of its brightness into one bright spot of light. This is then assumed, by the machine, to be only 1/14 of the brightness and is then given as 14 times greater than the real Lumens.

** LED is purpose-built, by design to focus ALL the light into 1 Direction for simulated brightness. LEDs are particularly useful for display, like sign board, score board, those which only need Single Direction, because almost ALL of the light is sent forward to the surface. That is why you can watch LEDs video boards at noon.*