

LED 101

LEDs, or light emitting diodes become illuminated by the movement of electrons through a semiconductor material. LEDs have transformed the lighting industry, providing increased energy efficiency in a multitude of applications. They can be integrated into all sorts of products to provide white and colored light.

LED Benefits

- **Energy efficient**—use up to 75% less energy than incandescent light bulbs
- **Emit almost no heat**—potentially reducing cooling costs
- **Longer life**—last up to 25 times longer than incandescent light bulbs, resulting in lower maintenance and replacement costs
- **Quick start-up**—consistent turning bulbs on and off does not reduce their lifespan. They work great when paired with occupancy sensors and dimmers, which can further reduces utility bills.
- **Good color rendering properties**—colors under LEDs look similar to natural sunlight
- **No mercury**
- **Potential one-to-one replacement of traditional light sources**
- **Directional**—LEDs emit light in a specific direction, reducing the need to reflect and diffuse light



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- expert advising services
- rebates and incentives
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Bulb Energy Consumption

LED	CFL	Halogen	Incandescent
4W	6W	18W	25W
6W	9W	28W	40W
10W	12W	42W	60W
13W	15W	53W	75W
18W	20W	70W	100W

LED Types

LED Diode	
Screw-In	
Recessed Can	
Troffer	
Exterior Wall Pack	

LED Purchasing

Consider each of these factors when selecting LEDs.

Fit	Match bulb with fixture base
	Position LEDs in properly ventilated fixture (may require changing driver or fixture)
Shape	Can impact light distribution
Wattage	Generally a 10w LED = 60w traditional bulb
Life Span	
Dimming/Photo Sensors	Saves energy
	Extends lifespan
	Lights run cooler
Color/Lighting Temperature	The lower the number, the warmer the light (measured in kelvin or 'K')
Brightness	The higher the number, the brighter the bulb (measured in lumens or 'lm')

Contact PACE

Business Sustainability Advisors are available to answer questions and help you select an LED solution that works for your business. Contact us at 303-786-7223 or info@PACEpartners.com.