

## August Tip of the Month: LED Bulbs in Refrigeration Equipment

On average, lighting contributes **20% to 50%** of a business' electricity usage. As an operator of a walk-in cooler or freezer, your choice of lighting is of even greater importance. Every bit of heat that is added to the walk-in's environment is going to increase the load on your refrigeration, ultimately resulting in inflated energy costs. While fluorescents offer a huge step up from incandescent bulbs in energy efficiency, they still create nearly **9X the heat** of LED lights.



Fluorescent lights are generally standard in walk-in cooler and freezer installations, with LEDs being available as an upgrade. LEDs offer advantages in a walk-in because they don't run the risk of failure in low temperatures and high humidity environments as other lighting types do. LEDs turn on instantly and don't need time to warm up to reach full brightness. They also don't contain mercury, which could contaminate your stored food if a fluorescent bulb breaks.

The fluorescent tubes in a freezer environment typically last only 6-12 months. The difference in heat generated between LED fixtures and fluorescent tubes can amount to 100 BTU per door. Most of the LED fixtures are able to last for 50,000 hours or five years. LEDs allow up to **80% energy saving** when compared to low voltage halogen lamps - resulting in significant cost savings, as well. Decreased energy usage significantly lowers CO<sub>2</sub> emissions, while long life reduces material waste.

**View our full lighting comparison chart on the next page.**

# Lighting Comparison Chart

## Light Output

	LEDs	Incandescent	Fluorescents
450 lumens	4-5 watts	40 watts	9-13 watts
800 lumens	6-8 watts	60 watts	13-15 watts
1,100 lumens	9-13 watts	75 watts	18-25 watts
1,600 lumens	16-20 watts	100 watts	25-30 watts
2,600 lumens	25-28 watts	150 watts	30-50 watts

## Energy Efficiency and Energy Costs

<b>Average Life Span</b>	50,000 hours	1,200 hours	8,000 hours
<b>Watts of Electricity Used</b> <i>Equivalent to 60 watt bulb</i>	6-8 watts	60 watts	13-15 watts
<b>Kilo-watts of Electricity Used</b> <i>Equivalent to 30 Incandescent bulbs per year</i>	329 KWh/yr	3285 KWh/yr	767 KWh/yr
<b>Annual Operating Cost</b> <i>Equivalent to 30 Incandescent bulbs per year</i>	\$32.85/yr	\$328.59/yr	\$76.65/yr

## Environmental Impact

<b>Contains Mercury</b>	No	No	Yes
<b>RoHS Compliant</b>	Yes	Yes	No
<b>Carbon Dioxide Emissions</b> <i>30 bulbs per year</i>	451 pounds/yr	4,500 pounds/yr	1,051 pounds/yr

## Important Facts

<b>Sensitivity to Low Temperatures</b>	None	Some	Yes
<b>Sensitive to Humidity</b>	None	Some	Yes
<b>On/off Cycling</b>	No Effect	Some	Yes
<b>Turns on Instantly</b>	Yes	Yes	No
<b>Durability</b>	Very Durable	Not Very Durable	Not Very Durable
<b>Heat Emitted</b>	3.4 btu's/hour	85 btu's/hour	30 btu's/hour
<b>Failure Modes</b>	Not typical	Some	Yes