### WHICH LAMP IS BEST?

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**Compare these popular options in critical categories**

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#### INCANDESCENT

- **Watts of Electricity Used** 60 Watts
- **Kilo-watts Used per Year** 30 incandescent bulb equivalent/1370 hrs. 2,466 KWh/yr.
- **Annual Operating Cost** 30 incandescent bulb equivalent $180.88/yr.
- **Carbon Dioxide Emissions** 30 bulbs per year 6,165 lbs./yr.
- **Operating Temperature** HIGH
- **Life Expectancy** 1,200 hours

- **Initial Cost**: $$$$ (Not specified)
- **Watts of Electricity Used**: 60 Watts
- **Kilo-watts Used per Year**: 30 incandescent bulb equivalent/1370 hrs. 2,466 KWh/yr.
- **Annual Operating Cost**: 30 incandescent bulb equivalent $180.88/yr.
- **Carbon Dioxide Emissions**: 30 bulbs per year 6,165 lbs./yr.
- **Operating Temperature**: HIGH
- **Life Expectancy**: 1,200 hours

- **Features**
  - Turns on instantly
  - Dimmable
  - NOT Very durable - glass and filament can break easily
  - Contains NO Mercury
  - RoHS (Restriction of Hazardous Substances) Compliant
  - SOME sensitivity to low temperatures
  - SOME sensitivity to humidity

#### HALOGEN*

- **Watts of Electricity Used** 43 Watts
- **Kilo-watts Used per Year** 30 incandescent bulb equivalent/1370 hrs. 1,767 KWh/yr.
- **Annual Operating Cost** 30 incandescent bulb equivalent $129.61/yr.
- **Carbon Dioxide Emissions** 30 bulbs per year 4,418 lbs./yr.
- **Operating Temperature** HIGHEST
- **Life Expectancy** 4,000 hours

- **Initial Cost**: $$$$ (Not specified)
- **Watts of Electricity Used**: 43 Watts
- **Kilo-watts Used per Year**: 30 incandescent bulb equivalent/1370 hrs. 1,767 KWh/yr.
- **Annual Operating Cost**: 30 incandescent bulb equivalent $129.61/yr.
- **Carbon Dioxide Emissions**: 30 bulbs per year 4,418 lbs./yr.
- **Operating Temperature**: HIGHEST
- **Life Expectancy**: 4,000 hours

- **Features**
  - Turns on instantly
  - Dimmable
  - Relatively durable - glass can break
  - Contains NO Mercury
  - RoHS (Restriction of Hazardous Substances) Compliant
  - SOME sensitivity to low temperatures
  - SOME sensitivity to humidity

#### CFL

- **Watts of Electricity Used** up to 15 Watts
- **Kilo-watts Used per Year** 30 incandescent bulb equivalent/1370 hrs. 617 KWh/yr.
- **Annual Operating Cost** 30 incandescent bulb equivalent $45.26/yr.
- **Carbon Dioxide Emissions** 30 bulbs per year 1,543 lbs./yr.
- **Operating Temperature** LOW
- **Life Expectancy** 8,000 hours

- **Initial Cost**: $$$$ (Not specified)
- **Watts of Electricity Used**: up to 15 Watts
- **Kilo-watts Used per Year**: 30 incandescent bulb equivalent/1370 hrs. 617 KWh/yr.
- **Annual Operating Cost**: 30 incandescent bulb equivalent $45.26/yr.
- **Carbon Dioxide Emissions**: 30 bulbs per year 1,543 lbs./yr.
- **Operating Temperature**: LOW
- **Life Expectancy**: 8,000 hours

- **Features**
  - Takes time to warm up
  - Some Dimmable
  - NOT very durable - glass can break easily
  - Contains Mercury
  - SOME RoHS (Restriction of Hazardous Substances) Compliant
  - May not work below -10F or above 120F
  - Sensitive to humidity

#### LED

- **Watts of Electricity Used** up to 9 Watts
- **Kilo-watts Used per Year** 30 incandescent bulb equivalent/1370 hrs. 534 KWh/yr.
- **Annual Operating Cost** 30 incandescent bulb equivalent $39.17/yr.
- **Carbon Dioxide Emissions** 30 bulbs per year 1,335 lbs./yr.
- **Operating Temperature** LOWEST
- **Life Expectancy** 25,000 hours

- **Initial Cost**: $$$$ (Not specified)
- **Watts of Electricity Used**: up to 9 Watts
- **Kilo-watts Used per Year**: 30 incandescent bulb equivalent/1370 hrs. 534 KWh/yr.
- **Annual Operating Cost**: 30 incandescent bulb equivalent $39.17/yr.
- **Carbon Dioxide Emissions**: 30 bulbs per year 1,335 lbs./yr.
- **Operating Temperature**: LOWEST
- **Life Expectancy**: 25,000 hours

- **Features**
  - Turns on instantly
  - Dimmable
  - Very durable - can handle jarring and bumping
  - Contains NO Mercury
  - RoHS (Restriction of Hazardous Substances) Compliant
  - NOT sensitive to low temperatures
  - NOT sensitive to humidity

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#### Light Output

<table>
<thead>
<tr>
<th>Light Output</th>
<th>Incandescent</th>
<th>Halogen</th>
<th>CFL</th>
<th>LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>450 Lumens</td>
<td>40 watts</td>
<td>29 watts</td>
<td>up to 11 watts</td>
<td>up to 9 watts</td>
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<tr>
<td>800 Lumens</td>
<td>60 watts</td>
<td>43 watts</td>
<td>up to 15 watts</td>
<td>up to 13 watts</td>
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<tr>
<td>1100 Lumens</td>
<td>75 watts</td>
<td>53 watts</td>
<td>up to 23 watts</td>
<td>up to 17 watts</td>
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<tr>
<td>1600 Lumens</td>
<td>100 watts</td>
<td>72 watts</td>
<td>up to 26 watts</td>
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<td>2600 Lumens</td>
<td>150 watts</td>
<td>100 watts</td>
<td>up to 42 watts</td>
<td>N/A</td>
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</tbody>
</table>

#### Kelvin Temperature

*Kelvin Temperature is a numerical scale to describe the color of light. A lower Kelvin rating (K) will have a more yellow tint. White light with a higher K will have a more blue tint.*

<table>
<thead>
<tr>
<th>Light Type</th>
<th>LED</th>
<th>CFL</th>
<th>Halogen</th>
<th>Incandescent</th>
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</thead>
<tbody>
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<td>2700</td>
<td>2500</td>
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<td>6000</td>
<td>2700</td>
<td>3500</td>
</tr>
</tbody>
</table>

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For more helpful information about energy efficiency visit [mpw.org/greenmuscatine](http://mpw.org/greenmuscatine)

*Because of high operating temperatures of halogen lamps, make sure fixtures are rated appropriately.*