

GENERAL TECHNICAL DETAILS – LIGHT SOURCE

If a single requirement must be met on a lighting job, simply select the lamp best suited from the table below. Where there is no clear-cut requirement, compare the various lamp characteristics and weigh

the importance of each. If more than one light source is suitable for an application, an economic study can help determine which would be the least expensive over a number of years.

Characteristics	Incandescent	Quartz	Mercury Coated	Metal Halide	High Pressure Sodium	Low Pressure Sodium	Fluorescent	Compact Fluorescent
Lamp Cost	Low	Low	Medium	High	High	High	Low	Medium
Initial Lumens/Watt	15-24	15-24	30-60	69-115	79-130	62-150	25-100	25-80
Annual Operating Cost	Very High	Very High	Medium	Low	Low	Low	Low	Low
Fixture Size	Medium	Small	Medium	Medium	Medium	Large	Medium	Small
Long Burning Hrs. – Per-year (over 1000)	Poor	Poor	Very Good	Very Good	Excellent	Very Good	Excellent	Very Good
Short Burning Hrs. – Per-year (under 1000)	Good	Good	Good	Good	Good	Good	Good	Good
Color Acceptability	Excellent	Excellent	Good	Very Good	Fair	Very Poor	Very Good	Very Good
Degree of Light Control	Good	Very Good	Fair	Very Good	Very Good	Good	Good	Good
Maintenance Of Lumen Output	Good	Very Good	Fair	Fair	Very Good	Very Good	Very Good	Very Good
Long Range Projection (Narrow Beam)	Good	Good	Poor	Very Good	Very Good	Poor	Fair	Fair
Medium Range Projection	Good	Good	Good	Very Good	Very Good	Poor	Good	Good

FIXTURE TEMPERATURE LISTING

During the certification process the UL standard requires that the lens, socket, lamp base, ballast case, ballast core, capacitor, starter and any other sensitive components have their temperature recorded at the ambient level that the fixture is certified for. Every component must operate at less than its maximum temperature except electronic fluorescent ballasts with internal fusing. These ballasts may operate up to a 90°C case temperature regardless of the maximum listing posted on the case. UL does not care if the life is shortened as long as the ballast fails in a safe way.

Standard fixture temperature ratings are 25°C, 40°C and 55°C. Most fluorescent fixtures are rated for 25°C operation. The listing label states any temperature above 25°C.

It is the responsibility of the consultant engineer that the fixture approved is rated for the ambient temperature in the space.

Many specifiers assume that an air-conditioned space is uniformly conditioned. This is untrue in almost all cases. Anyone who has painted a ceiling in an air-conditioned house knows that heat rises. A consultant engineering firm, hired by Guth, stated that temperature increases at about 1°F a foot. If it is 75°F at 5' it is probably 95°F at 25'.

Guth temperature rates its fixtures to be suitable for likely applications. For example the 12", 16", 22" and 25" fluorescent Enviroguards are listed for a 40°C ambient temperature.