Induction Lamp Luminaire Fact Sheet

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Induction lamps do not have electrodes. Electrode or filament deterioration is a main reason that fluorescent and high intensity discharge (HID) lamps fail. Consequently, induction lamps last a long time. They are suitable for areas where changing out bulbs is expensive, difficult, or disruptive.

Suitable Applications Include:
The best applications are for street, roadway, parking lot, and area lighting where lamp change-outs are costly or dangerous. Other good applications include over machinery where lamp change-out is difficult or dangerous, and in production areas where lamp change-outs are disruptive or decrease production.

Basic Lamp Specifications:

- 100,000 hour life -- Typical 25 maintenance-free years
- Medium efficacy -- Around 60 lumens/watt
- Crisp white light with 80+ CRI -- Great color rendering
- High reliability with instant start and restart
- On/off cycling does not affect lamp life
- Temperature tolerant -- Operates in hot and cold environments

These lamps are a significant improvement over HID lamps.

Product Descriptions and Other Considerations:

The light source consists of a high frequency generator, a power coupler, and the discharge vessel (or bulb). The frequency generator produces a 2.65 MHz alternating current supply to the power coupler. The power coupler can be thought of as an antenna. In turn, the coupler causes the phosphors on the interior of the vessel to fluoresce.

Currently, Philips and OSRAM/Sylvania are the only manufacturers that have available products. The Philips Quality Light (QL) product line includes 55, 85 and 165 watt systems. OSRAM/Sylvania has a 100 and 150 watt version they call the Icetron.

Strictly from an energy savings standpoint, induction lamps are only cost effective when replacing incandescent or mercury vapor lamps. Usually, the whole luminaire needs to be replaced. In some cases, the existing fixture is high enough quality and large enough that it can be retrofitted with the induction lamp system.

In order to determine if a fixture can be retrofitted, you need to send a sample of the fixture to a manufacturer that understands and designs these types of luminaires. The manufacturer will design a retrofit kit, install the kit, and perform a temperature bench test to insure the fixture's interior temperature does not exceed manufacturer's specifications.

Induction luminaires typically cost $300 more than, for instance, a new high-pressure sodium (HPS) luminaire. But, the advantages can outweigh the additional costs.

BONNEVILLE
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