



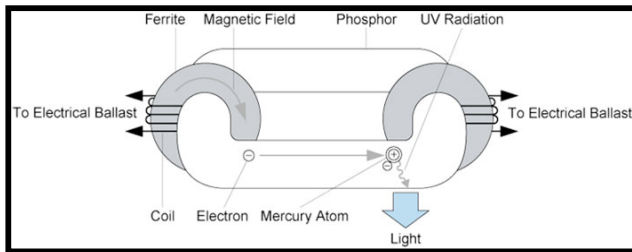
INDUCTION LIGHTING FACT SHEET

Would you use a light rated to last 100,000 hours or 11.4 continuous years? This is a lifespan five times longer than H.I.D. Imagine the cost savings in energy and maintenance.

This is a possibility with Induction Lighting. Induction lighting may be new to some but it is not a new concept. It's hard to imagine but induction lighting has been around since the 1800's when Nicola Tesla lit 200 lamps without wires from 25miles away.

Although it's not breakthrough science, until recently it has not been so commercially viable. New developments have broken down the barriers of costs and technological setbacks such as EMC interference, lumen depreciation, ability to dim and a useful range of available wattages. Today it's obvious benefits make it a clear-cut choice for many lighting applications over traditional light sources.

EXTERNAL INDUCTION LAMP

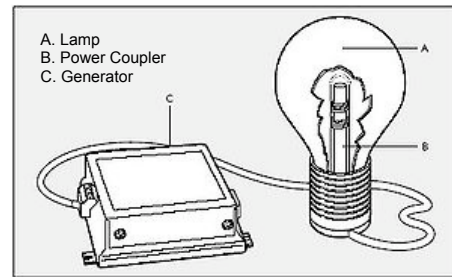


External Magnetic Induction Lamps are essentially fluorescent lamps with electromagnets wrapped around a section of the lamp tube. High frequency energy from the electronic generator is sent through wires which are wrapped in a coil around the ferrite inductor creating a powerful magnet.

The induction coil produces a very strong magnetic field which travels through the glass and excites the mercury atoms in the interior which are provided by a pellet of amalgam (a solid form of mercury). The mercury atoms emit UV light and, just as in a fluorescent tube, the UV light is up converted to visible light by the phosphor coating on the inside of the tube. The system can be considered as a type of transformer where the inductor is the primary coil while the mercury atoms within the envelope/tube form a single turn secondary coil.



INTERNAL INDUCTION LAMP



In a variation of this technology, **Internal Magnetic Induction Lamps** use a light bulb shaped glass lamp which has a test tube like re-entrant central cavity. This cavity is coated with phosphors on the interior filled with inert gas and a pellet of mercury amalgam. The induction coil is wound around a ferrite shaft which is inserted into the central test tube like cavity. The inductor is excited by high frequency energy provided by an external electronic ballast (generator) causing a magnetic field to penetrate the glass. This excites the mercury atoms which emit UV light that is converted to visible light by the phosphor coating.



Some of the specifications of induction lighting include:

- * Long Life—100,000 hours
 - * Color Rendering—85 CRI
 - * Color Temperature—2700 Kelvin to 6500 Kelvin
 - * Energy Efficient—85+ Lumens per Watt
 - * Lumen Maintenance—70% of its light output at 100,000 hours
 - * Maintenance Costs—Go 10 years without a change out
 - * Instant On Capability—Can be used with photocell or motion sensor
 - * High Output—70 Watt to 400 Watt
 - * No Flickering, Strobging or Noise
 - * Minimal Color Shifting
 - * Starting Temperatures as low as –40 Degrees Fahrenheit
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Induction Lighting Frequently Asked Questions:

Q: What is the induction lamp system and how does induction lighting work?

A: The induction lamp system uses a revolutionary technology of light generation that combines the basic principles of induction and gas discharge. Void of electrodes this new technology delivers an unprecedented 100,000 hours of high quality white light.

Q: What are the components of the system?

A: The system is comprised of three components: the generator, the power coupler and the lamp. The power coupler transfers energy from the HF generator to the discharge inside the glass bulb using an antenna that contains the primary induction coil and its ferrite core. The power coupler also has a heat conducting rod with mounting flange. The mounting flange allows the induction lamp system to be mechanically attached to the luminaires.

Q: Why induction lighting?

A: Induction lamps offer an amazing 100,000 hours life making it virtually maintenance free. It offers crisp white light with 85 CRI and a choice of color temperatures. The high CRI light makes colors look brighter, more vibrant and more attractive. It produces up to 80 lumens of light for each watt of energy. Induction lamps offer high reliability and instant on and off with less heat output.

Q: Do induction lamps need a dedicated fixture?

A: Yes. Due to operating and thermal requirements the system needs to be properly installed in a suitable fixture.

Q: Can running a lamp interfere with computers or any other electronic device?

A: No. It runs at a low 210 KHz and complies with FCC rules with no interference under normal circumstances.

Q: Is the light output of an induction lamp affected by low or high temperatures?

A: The lamps amalgam fill technology and the heat conduction rod in the center create stable light output over a wide range of ambient temperatures maintaining at least 85% of nominal lumens from –30 to 130 Degrees Fahrenheit. Induction lamps can start at temperatures as low as –40 Degrees Fahrenheit.

Q: At the end of life, must all components be replaced?

A: All three components are separately replaceable, however, induction lights are almost always supplied as a three-component system even for re-lamping. End of life usually means the generator must be replaced and at that time it is usually recommended to replace the bulb as phosphor degeneration at 100,000 hours lowers lumen output up to 37%.

Q: Why is induction lighting technology worth more?

A: Induction lighting systems offer five to ten times the life of HID systems for only two to three times the cost of the HID lamp and ballast. In almost all cases the payback in maintenance savings will more than offset the additional cost of the initial system.