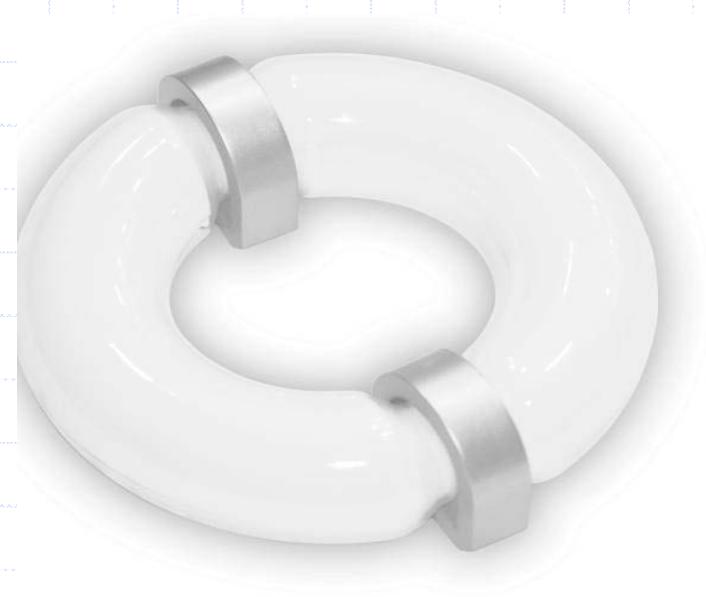




Induction Lighting Overview

- Introduction to Induction Lighting
- Induction Lighting Components
- Areas of Application
- Drawbacks
- Costs and Benefits





How does Induction Lighting Work?

- Induction Lighting uses the basic principles of induction to produce light
- Since the fixtures are void of electrodes, this new light source has a lamp life of 100,000 hours
- Induction lamps themselves are similar to fluorescent lights in that they use gasses that once excited, react with the phosphor in the lamps to produce light
- There are two main components to the system: The Lamp, and the generator/ballast



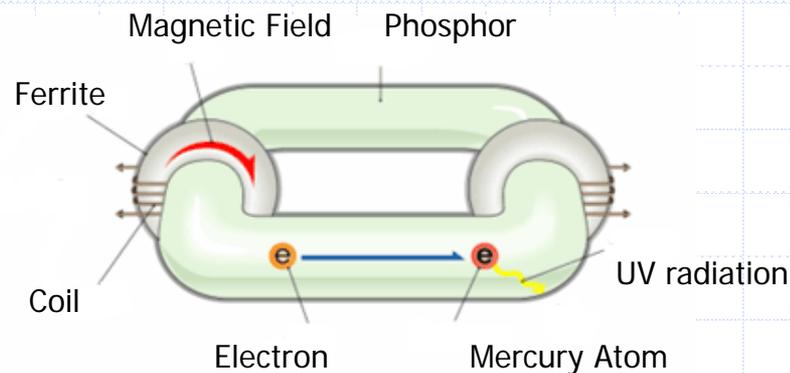
Induction Lighting Components

◆ The Lamp

- Ferrite – Produces the Magnetic Field
- Electromagnetic Coupler – Stores the Ferrite core as well as the Mercury Amalgam
- Phosphor – Reacts with the Mercury to Produce Light

◆ Generator/Ballast

- Power Coupler – Transfers Electric Current from the Generator to the Lamp
- Generator – Converts Electric Frequency of Building to the Required Frequency (Ballast)



Principle of Loop Type Induction System



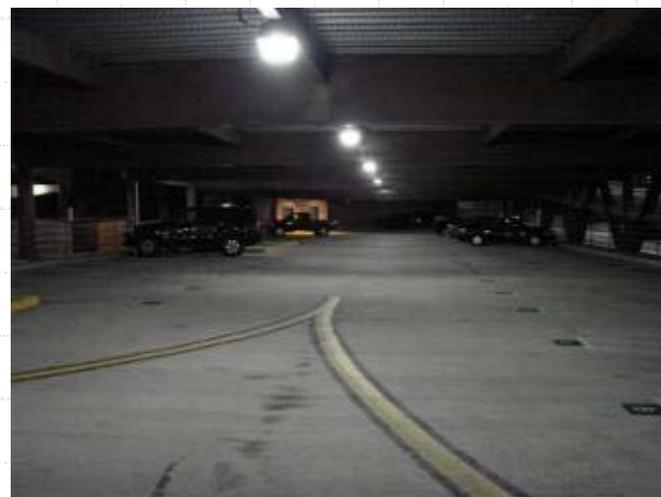
Lighting Comparison Chart

	Induction	Fluorescent	Metal Halide	High Pressure Sodium	Low Pressure Sodium
Rated Life	100,000	20,000	20,000	20,000	25,000
CRI	85	85	65	21	0
Temp Sensitive	No	Yes	No	No	No
Instant-on restrike	Yes	Yes	No	No	No
Resistant to Vibration	Yes	No	Yes	Yes	Yes
Motion Sensor	Yes	Yes	No	No	No
Source Type	Area	Linear	Point	Point	Point
Lumen Maintenance	High	High	Low	Low	Low
Light Color	White	White	White	Yellow	Yellow



Areas of Application

- Warehouses
- Production Floors
- Parking Structures





Induction Lighting Drawbacks

- ◆ Expensive – A 200 W Induction system Costs Roughly \$400
- ◆ Limited by Ceiling Height – By the way the Induction Lighting Systems spread light, heights above 40 ft
- ◆ Not as bright as a new Metal Halide



Economics

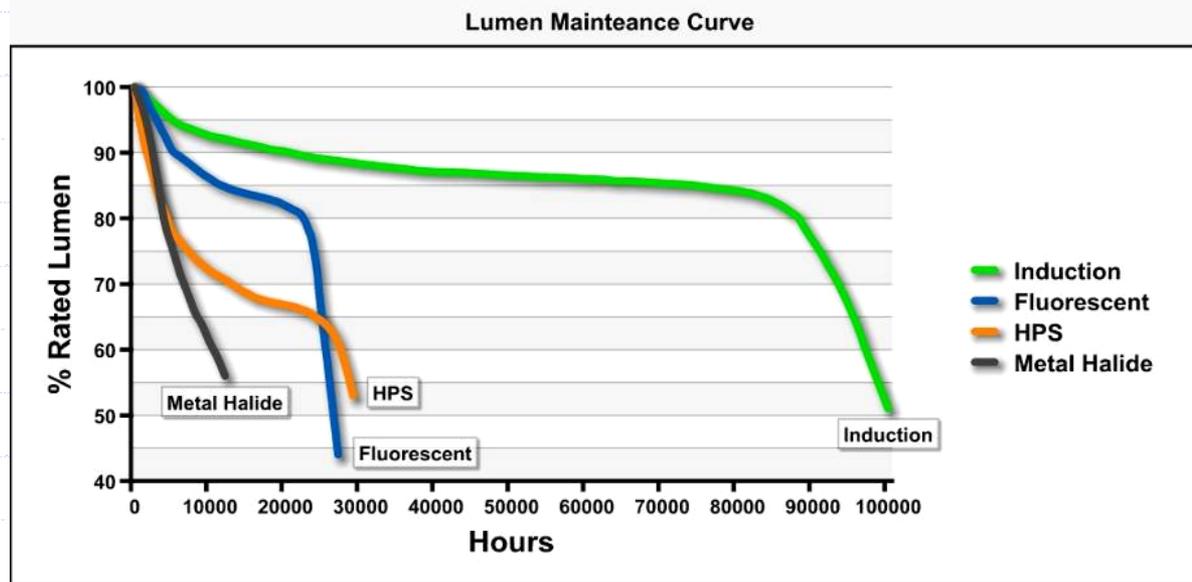
	High Pressure Sodium	Induction
Wattage	150	80
Fixture Wattage	188	82
Life	24,000	100,000
CRI	21	80
Mean Lumens	14,000	6,800
Mean Pupil Lumens	7,980	11,016
Annual Hours	8760	8760
10 Year Operating Costs	2,171,750	857,779

24/7 operation, 0.12 kwh, \$55 up/down.



Other Benefits

- ◆ Lumen degradation occurs after 90,000 hours of operation, compared to 5-7,000 hours for MH and HPS
- ◆ Simple Installation
- ◆ Operates at a 5,000 Kelvin rating, putting it near noon day sun





References

Questions Comments?

David Garon

University of Illinois at Chicago

dgaron.iac@gmail.com

312-355-3823

With a Special Thanks to US Lighting
Tech. for the photos and information.