

ENERGY EFFICIENCY

▶ THE NEED OF THE HOUR

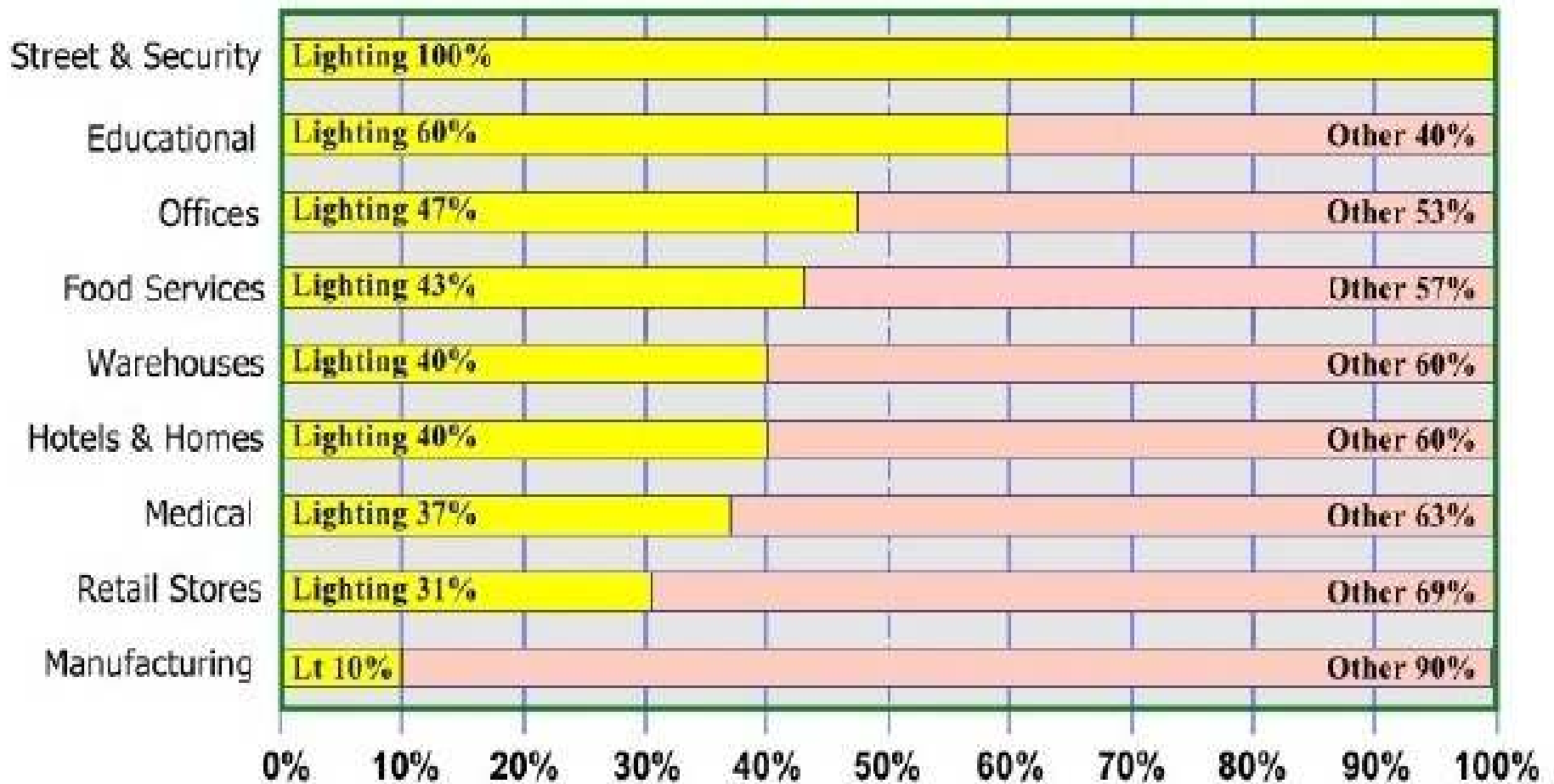
A presentation by:
KAREE LIGHTING (INDIA)
New Delhi

Energy scenario

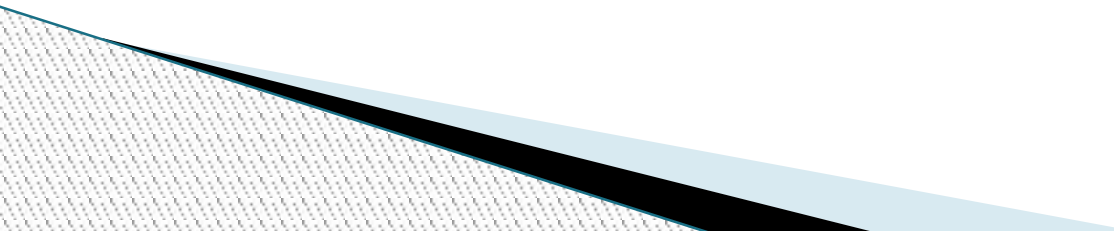
Actual power supply and shortage position during 2010-11



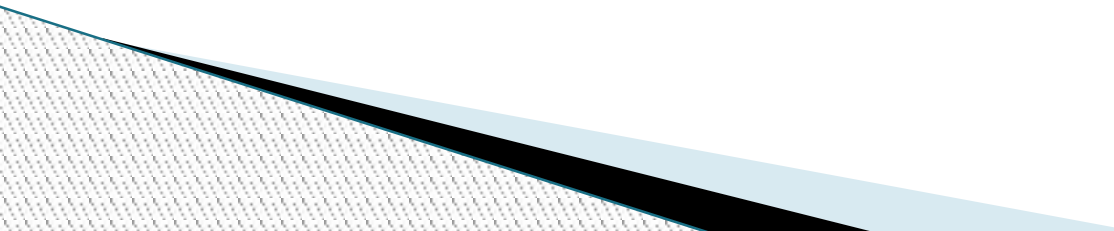
Lighting Vs. Other Energy Consumption by Sector



Pointers for implementing energy conservation through innovative energy efficient lighting

- ▶ Lighting upgrades yield quick savings on energy bills but more efficient lights release less heat—an indirect benefit for the air-conditioning systems.
 - ▶ For optimal lighting solutions, the total system involving daylighting, lamps, fixtures, controls, configuration, materials, and furnishing needs to be considered holistically.
 - ▶ Broader impacts of lighting choices, including the persistence of energy efficiency measures, with implications for the type of technologies, are to be considered.
 - ▶ It is necessary to upgrade information on energy-efficient lighting technologies, which have been changing drastically for the last 60 years.
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Barriers in India for implementing Energy-Efficient Lighting solutions:

- ▶ Emphasis on minimization of first cost by end-users
 - ▶ Capital availability constraints
 - ▶ Spread of imported solutions to some inherently Indian problems
 - ▶ One-solution-fits-all attitude.
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KAREE LIGHTING (INDIA)

Induction Lamp Luminaires

....a new concept in energy efficient lighting

"The inventor's endeavour is essentially life saving. Whether he harnesses forces, creates devices, or provides new comforts and conveniences, he is adding to the safety of our existence."

— Nikola Tesla

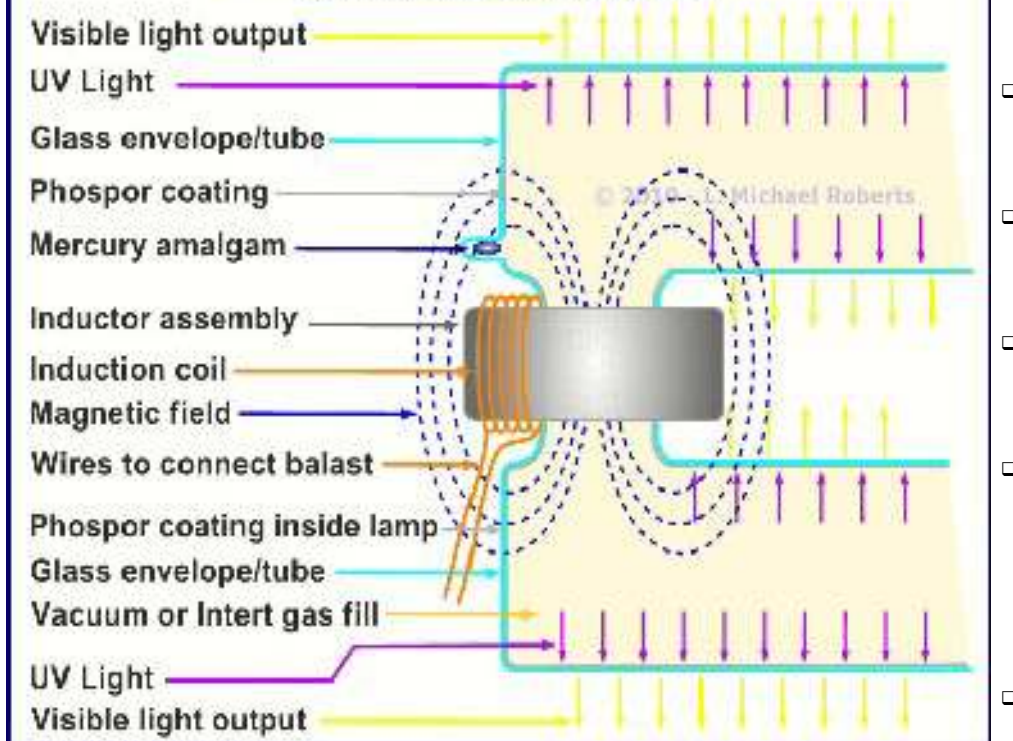
The Induction Chronicles!

2011: Karee Lighting (India), **1st Indian Manufacturer** , begins production of Induction Lighting systems.

Induction Lamps–The inside

External Inductor Type Lamp

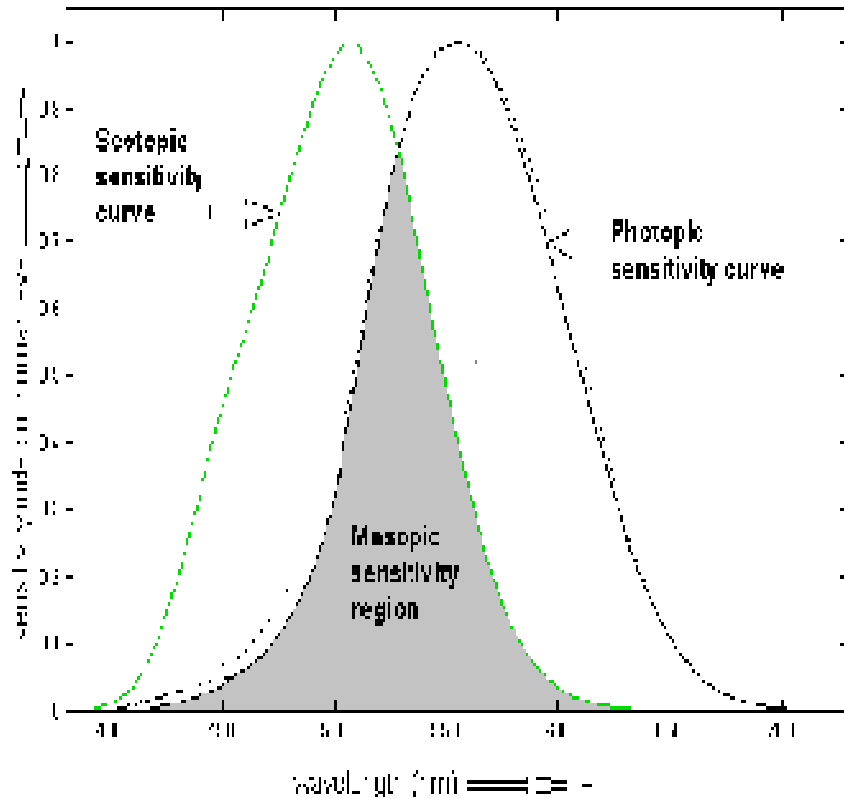
Illustration courtesy of L. Michael Roberts



Why Induction Lamps?



VISIBILITY:



- The human eye is not equally sensitive to all wavelengths of visible light.

- This function shifts according to the lighting conditions.

- Human Vision in “Day Light” is **“PHOTOPIC VISION”**.

- Human Vision in “Dark” is **“SCOTOPIC VISION”**.

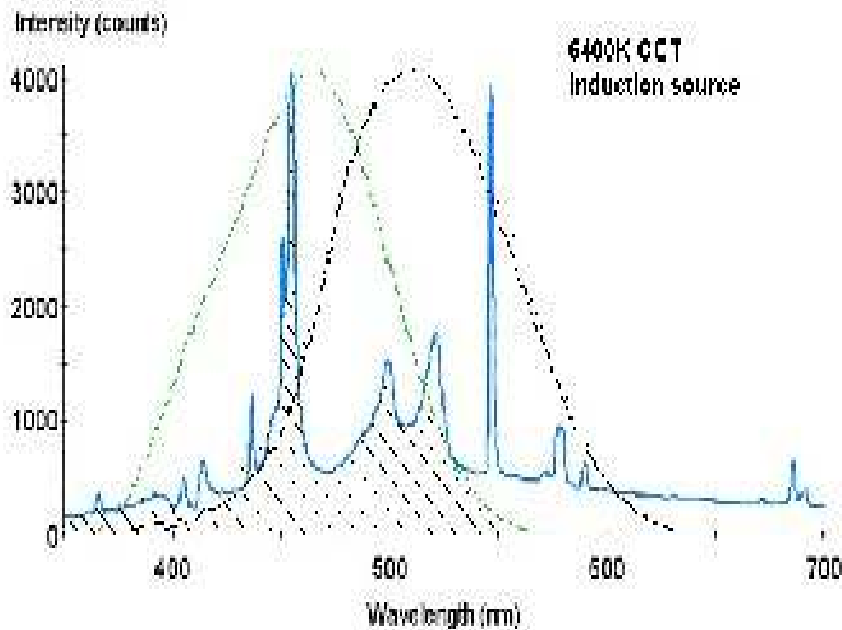
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Comparison of Metal Halide source with Induction Source

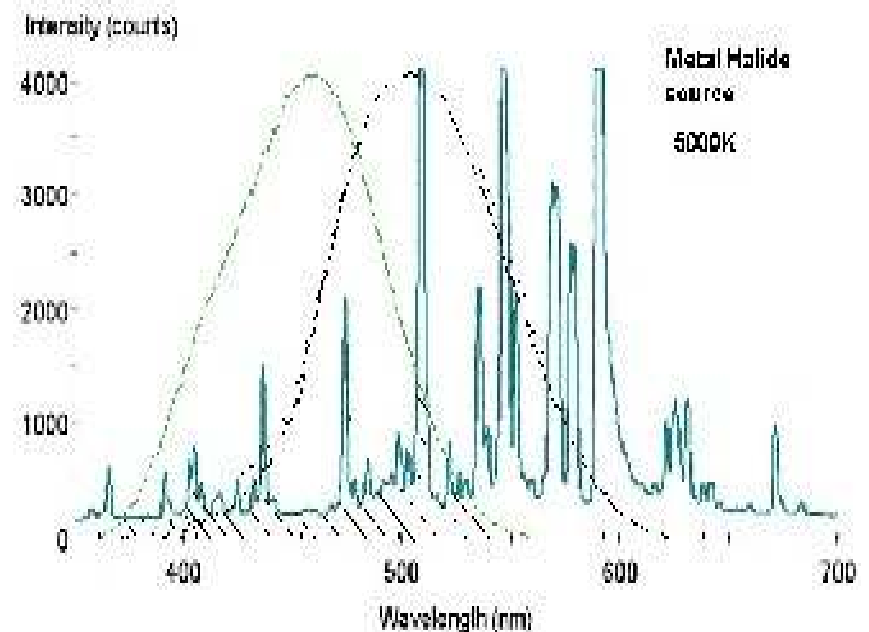
▶ Metal Halide

Gives **less visibility**

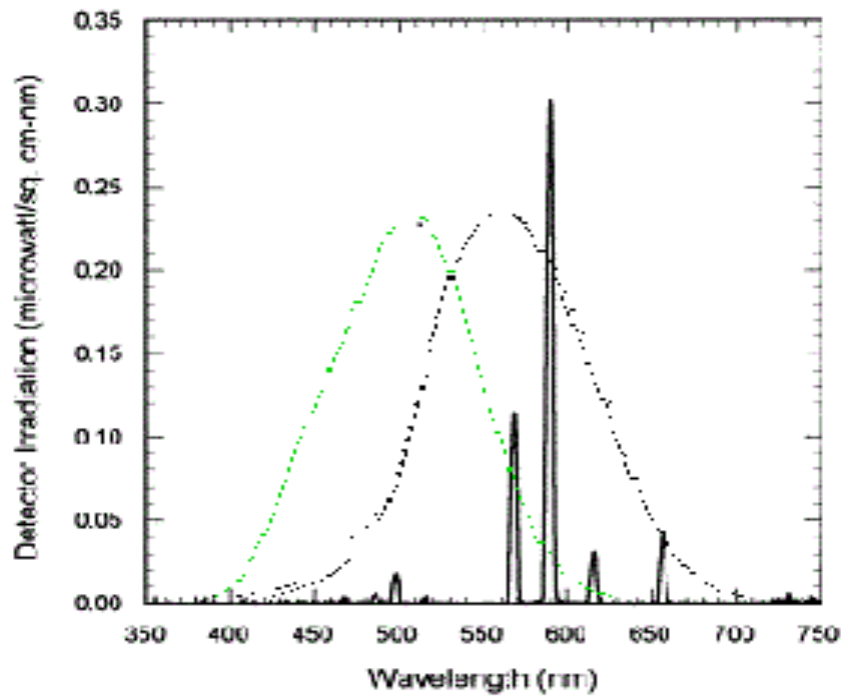


▶ Induction

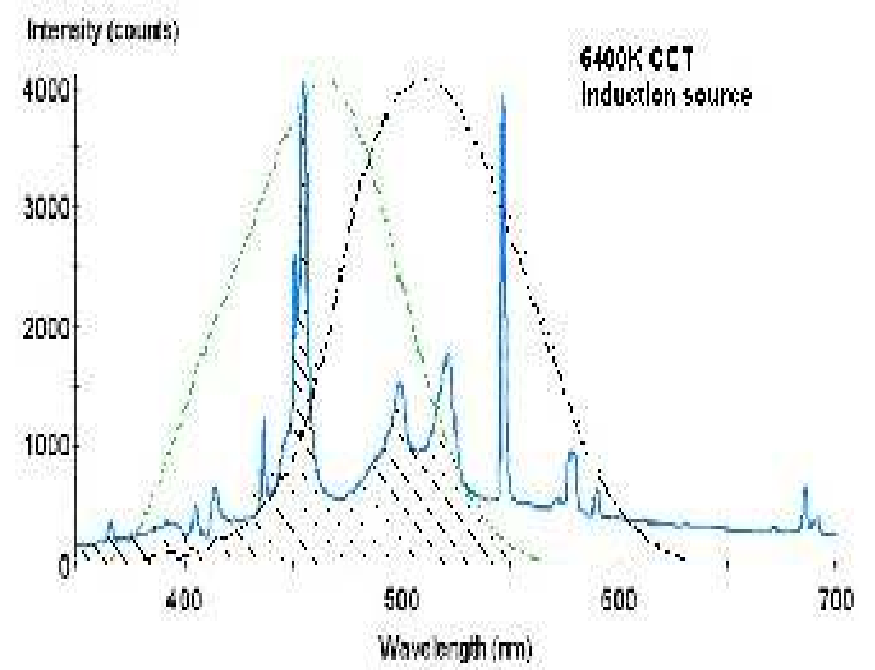
Gives **more visibility** in scotopic/mesopic range)



▶ High-Pressure Sodium Vapour **very low**



▶ **more**



SCOTOPIC/PHOTOPIC (S/P) RATIO

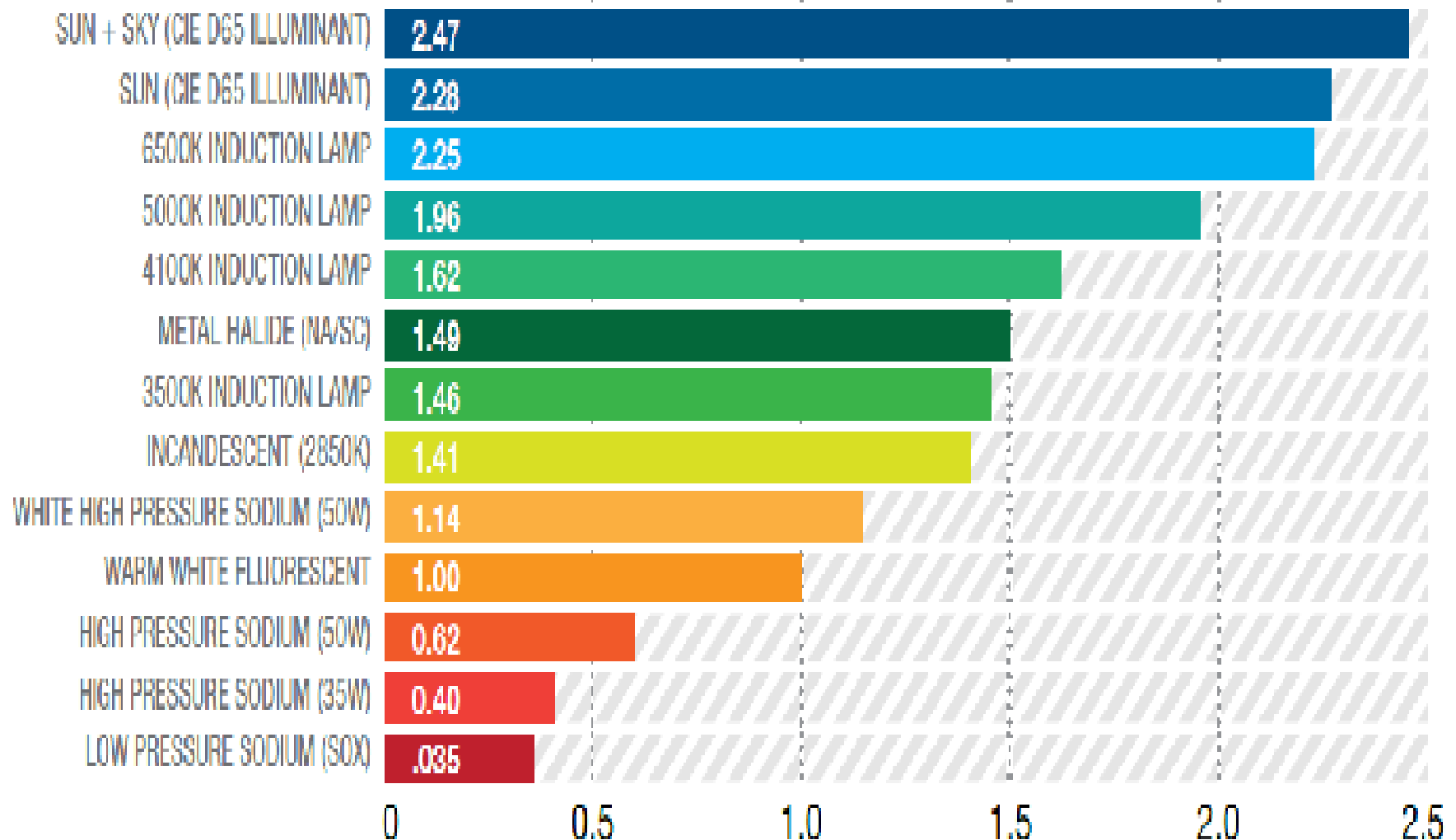
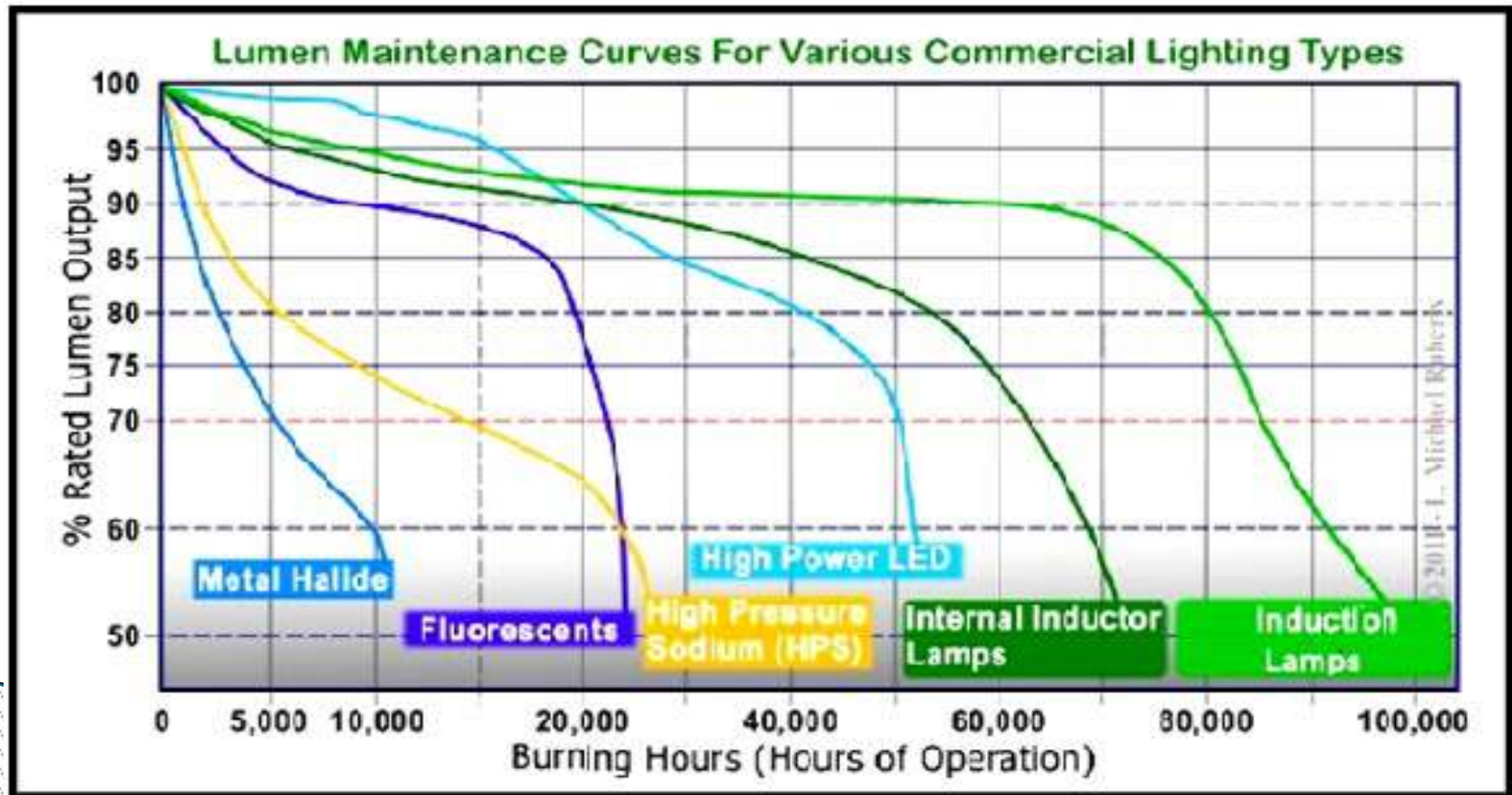


Chart calculations by Berkley Labs - actual selection of Induction lamp wattage and type will vary with installation and user requirement.

INDUCTION LAMPS

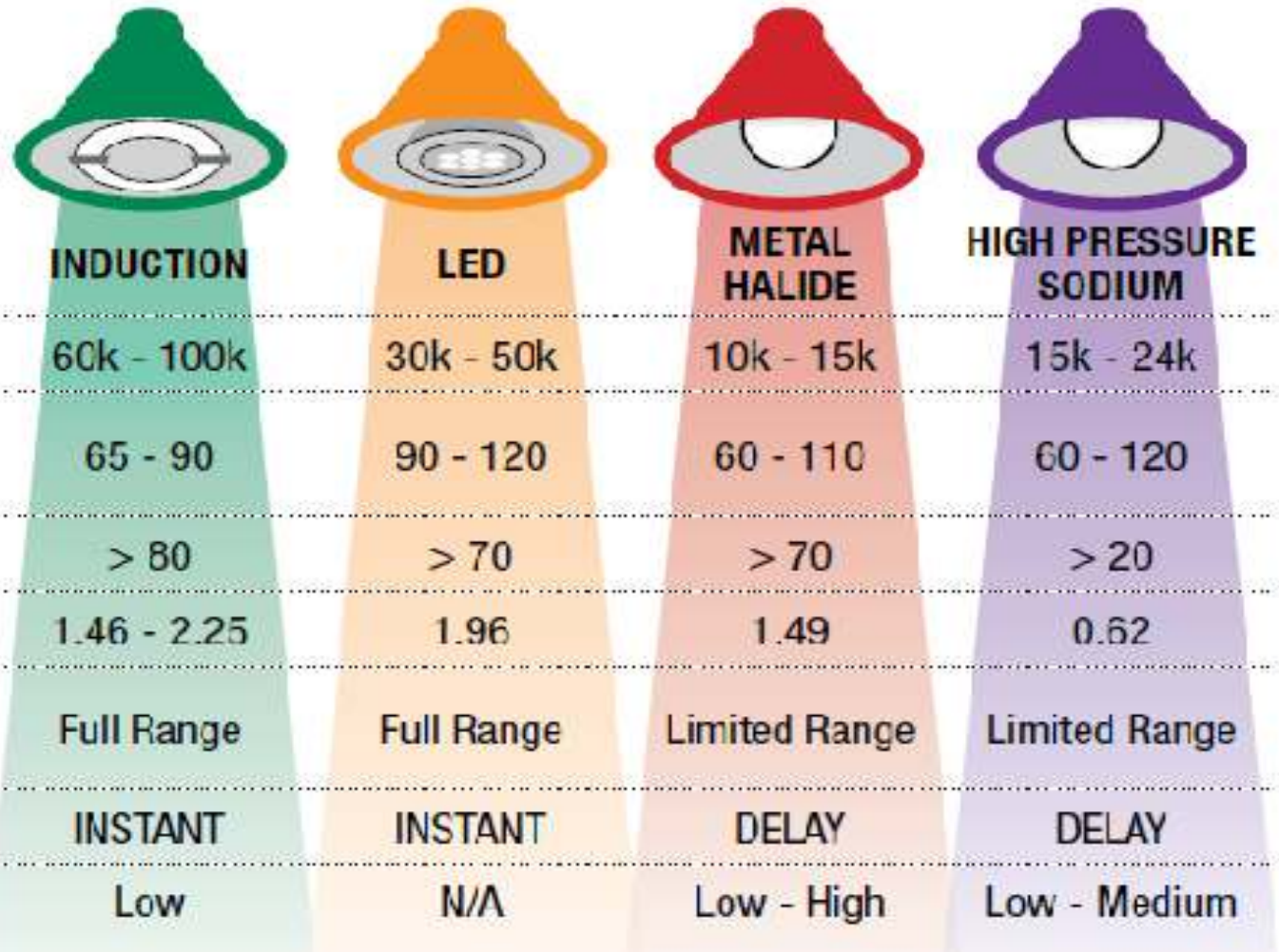
“Long-Haul Trucks of the Lighting Industry”

- › Long lifespan due to absence of Electrodes(filaments)
- › Minimal lumen depreciation over lifespan.



Light sources at a glance

When compared to other common light sources, Induction's specifications clearly dominate the competition



KAREE

INDUCTION LAMP LUMINAIRES

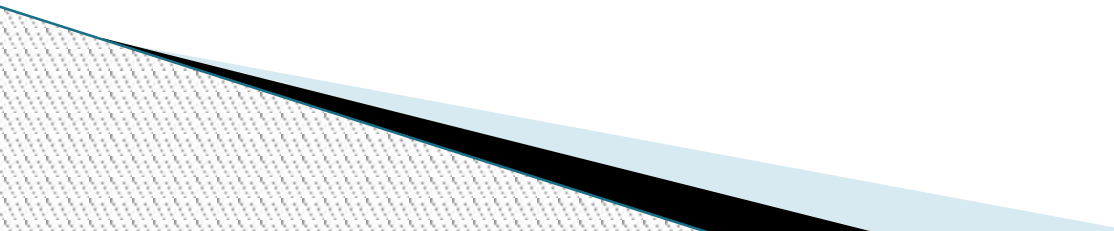


- ▶the Indian advantage

"The scientific man does not aim at an immediate result. He does not expect that his advanced ideas will be readily taken up. His work is like that of the planter - for the future. His duty is to lay the foundation for those who are to come, point the way"

- Nikola Tesla

The “MADE IN INDIA” advantage!

- Rugged electronics design architecture to suit local conditions.
 - High ambient temperature sustainability (-20 to 60°C)
 - Recommended operating range : 140V–280V
 - Overvoltage and Under voltage protection.
 - Prompt and efficient technical service and support.
 - Capability for customized solutions.
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Karee Induction Luminaires

Street lighting range:



KL-201SDS Induction



KL-202SDS Induction



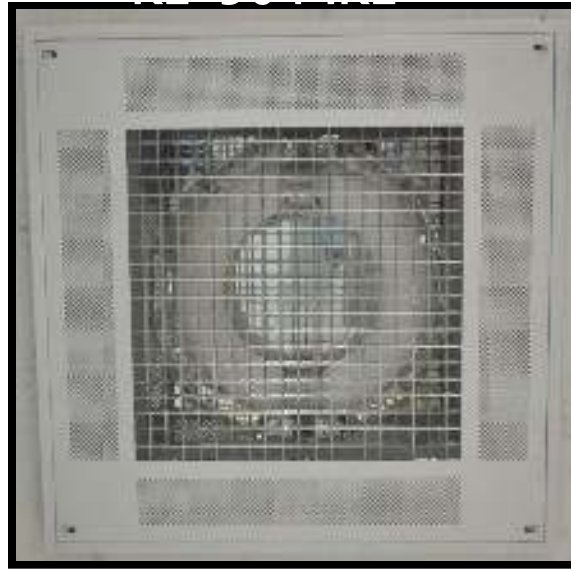
KL-203SDS Induction



Industrial/Commercial range:



Induction Indoor range



Induction Garden Light Luminaire

PAY BACK PERIOD & SAVINGS
'FOR NEW PROJECT/INSTALLATIONS
KAREE INDUCTION LIGHT

V / S

Parameters	Unit	MH/SV	Karee Lighting
Rated Lamp Power	Watts	400	200
Power Factor		0.85	0.98
Power consumed (including ballast)	Watts	471	204
Energy Consumption / day @ 10hrs	KWh	4.71	2.04
Energy Consumption for 1 month (30 days)	KWh	141.30	61.20
Energy bill @ Rs. 7/KWh for 1 month	Rs.	989.10	367.20
Cost (For complete fixture)	Rs.	5500.00	15600.00

PAY BACK PERIOD

Saving in energy consumed / month	Rs.	622.00
Additional saving due to elimination of replacement cost of HID lamps and ballast per month (1 lamp @ Rs 500/- per year and 1 ballast @ Rs1500/- in 2 years)	Rs.	104.00
Total saving in one month	Rs.	726.00
PAYBACK PERIOD for additional investment – diff in cost of fixtures/ saving per month	Months	14

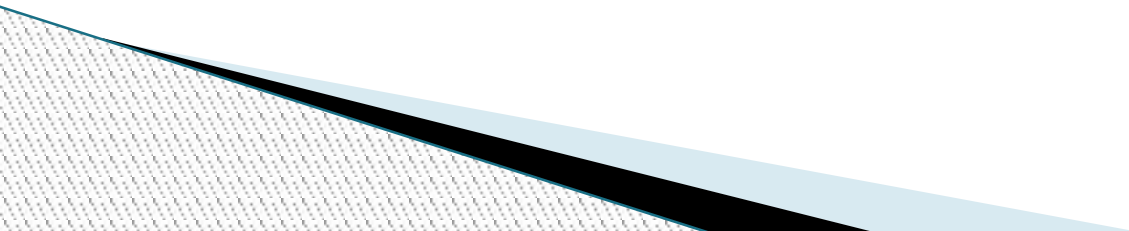
'(Note: The Maintenance/Labour charges, production losses etc., have not been considered in the above calculations.)

GUARANTEED SAVINGS IN 3 YEARS

Net Saving in 3 Years (Warranty period) per Luminaire beyond the payback period	Rs.	15,972.00
Net Saving in 3 Years (Warranty period) per Luminaire beyond the payback period	Rs.	1,597,200.00

In case Induction Lights are installed, due to lower power requirements, lower size of cables/wires, transformers, MCB's etc. can be used and therefore the overall lighting project cost will go down.

CUSTOMER INSTALLATIONS



Application – Street Light



NORTH DELHI POWER LTD., SECTOR-3, ROHNI, NEW DELHI-110025

Application – Warehouse



INDO AUTO TECH, BALLABHGARH, HARYANA

Application – Flood Light



ACE FARM HOUSE FARIDABAD, HARYANA

Application – Garden Light



MUSOORIE

Some prestigious customers...

- ACTION CONSTRUCTION EQUIPMENT FARIDABAD
- RELIANCE CHEMOTEX PVT.L TD. UDAIPUR
- DCM SRIRAM INDIA LTD. KOTA,RAJ
- EXIDE INDUSTRIES LTD. BAWAL,HARYANA
- DAIKIN AIRCONDITIONING INDIA PVT. LTD. NEEMRANA,RAJ.
- KAMANA INDUSTRIES LTD.(KUBER KHENI) SONIPAT,HARYANA
- MARKET DYNAMICS KOLKATA
- BHAGWATI CONSTRUCIONS NEEMRANA,RAJ.
- KAGAZ PRINT NEEMRANA,RAJ.
- STOTZ GEAR PVT. LTD. GHAZIABAD
- PEARL INTNL. TOUR & TRAVEL(P)LTD. NEW DELHI
- INDO AUTO TECH FARIDABAD
- OSWAL INDUSTRIES FARIDABAD
- JHALANI EXTRUSION NEEMRANA,RAJ.

THANK YOU

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