

# Charting a Course to Energy Independence

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## *New Technologies Induction lighting*

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# Induction lighting basics

- Developed by Tesla in 1891
- Uses fluorescent type tube and a generator vice a ballast.
- HPS Ballast-62W Induction Generator-3W
- Each bulb has two couplers - no electrodes
- Color Temperature – 2,700K-6,500K – 85 CRI
- Energy Efficient – 85+ Lumens per Watt
- Instant on – allows use of motion sensors
- Typical light bulb life 100,000 hours
- Light efficacy similar to typical T8 or T5
- 70% of light output at 60,000 hours
- Rated from -40 F to 105 F



# Induction lighting basics

- Typical installation in hard to reach places above 10ft or high bay application.
- Instant on lamp vice ballast and heat up
- Install 1/2 wattage of current HPS or MH lamp
- Cobra head, shoebox, wall pack, high bay pendent
- Hazardous waste
  - Mercury is only in small nodule on bulb
  - After removal bulb is safe to throw away
- Exterior fixtures night sky compliant
  - Direct the light down not out
  - Light increase to the area you need it



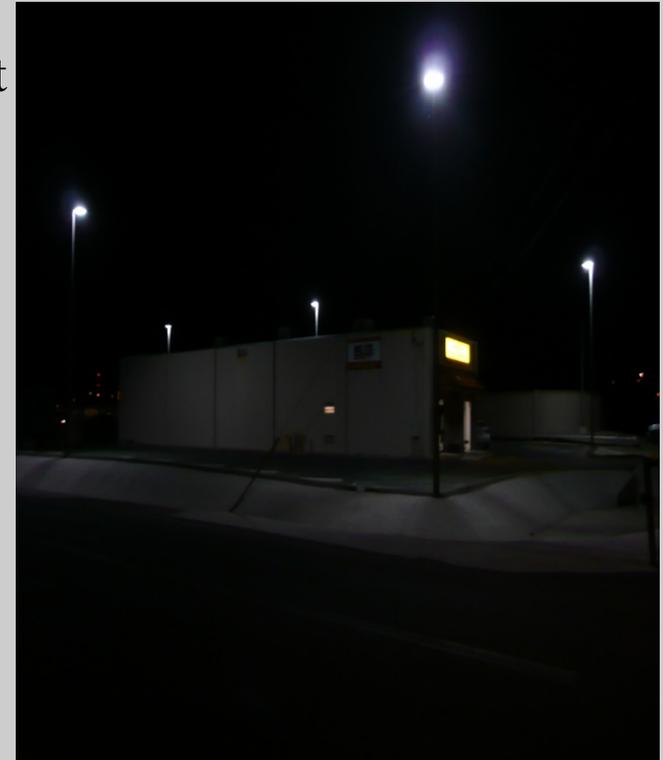
# MCAGCC lighting project test

- Measured light output photometric 250w HPS vs 120W Induction
  - 3 fc increase under light 1/2fc increase @ 30 ft

Type	size	pwr	life	avg lumens	CRI	eye lumen
•HPS	400W	465	24,000	45,000	21	25,650
•Ind	200W	203	100K	17,000	80	27,450
•MH	250W	295	10,000	17,000	65	25,330

- Energy usage

- 400watt HPS - 465watts
- 5 year warranty ballast
- Lamp life 3-4 year
  
- 200 watt Induction - 203watts
- 10 year warranty all parts





# Lighting basics

## Typical light 400W HPS



## Induction Dark sky 200W

**ATI**  
**AMERICAN INDUCTION TECHNOLOGIES**

**ROADWAY LIGHTING**

**Application**

Ideal for 200W Induction System. Patented IC Generator and lamp rated for 100,000 hours life. Applications include street lighting, highways, parking lots, rural homes, public entrances, off-street areas, or other commercial and residential applications. Available in wide range of color temperatures from 2700 – 6500°K. Also available in 120V, 208V, 220V, 240V and 277V.

**Specification Features**

- UL Listed for wet locations
- Dusk to dawn sensor w/twist-lock photo control
- Aluminum reflector is designed for maximum photometric efficiency and optimum light distribution
- Precision die-cast aluminum housing with powder coated finish
- Comes with high impact glass lens

**Model No.: LC-S106WR-200W**

**Engineering Dimensions**

**Photometric Information**

**POLAR GRAPH**

Mercury Cycle = 400 h. Located At Horizontal Angle = 0°. Vertical Angle = 0°  
 # 1 - Vertical Plane Through Horizontal Angle 0° (0°) (Through Mer. Cyl.) BLUE  
 # 2 - Vertical Plane Through Horizontal Angle 15° (15°) (Through Mer. Cyl.) GREEN  
 # 3 - Vertical Plane Through Horizontal Angle 30° (30°) (Through Mer. Cyl.) RED  
 # 4 - Horizontal Plane Through Vertical Angle 0° (Through Mer. Cyl.) RED

Calculations based on published Efficacy Methods and assumptions.  
 \*Based on measurements with 800 lumens by Light Laboratory, Inc.

DESIGNED & ASSEMBLED IN USA [www.americaninduction.com](http://www.americaninduction.com)

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# MCAGCC lighting project

- Purchase 1334 lights
- Contractor installed - JCI /Novatech/Wonder electric
  - 240 Shoebox \$593 fixture+\$200 install
  - 857 Cobra head \$569 fixture + \$200 install
  - 237 Wall pack \$599 fixture + \$200 install
- Total purchase cost \$728
- Interior - Replace indoor pendent gym lighting
- Replace all lights above 10ft with induction
- Considerations – vandalism, hours usage, location, current maintenance , safety lighting



# MCAGCC lighting project

**1588 HPS to induction**



**1518 MH to induction**





# MCAGCC lighting project

- Savings typical 400 watt HPS
- Typical HPS 24K hours lifespan
- 3 replacement bulbs and one ballast kit
- Two man crew with lift
- Bulb(\$13.00x3)+ballast\$112+labor/truck ((((\$25x2)+\$75)x2)+\$25x4+150= \$648 parts labor
- 262watts x 10hrs x 365d/y /1000= 956kwh \$172.13/yr
- Total savings 10 year \$1721.30+\$648=\$2369.30/10yr  
\$236/yr
- Cost of lamp and installation \$738 = 3.2yr payback
- 27 year life@ 10hrs/day



# Performance

- Housing areas changed before Halloween - noticed no difference or better light
- Gyms – 30% increased lighting levels
- Maintenance crews are helping to replace lights. Less work over time.
- Failure rate
  - 4 fixture failures –warranty 10 years
  - 10 photocells



# Potential problems

- GSA – Buy American Act
  - All fluorescent bulbs made in China
  - CFL, T8, T5, Induction
- No multi-tap generators
  - 120/208-240/277 no 480V
- AIS standards based on total lumen
  - Not based on visible spectrum
  - Design problem for new construction - AIS waiver for installation
  - Cost
    - Induction \$530
    - CFL \$120 \$
    - T-8, T-5 HO high bay \$180
  - Match your need to the fixture. Don't waste money



# MCAGCC lighting project

## MCAGCC dark sky initiative

