



Energy-Saving Light Sources Features and Benefits

Pulse Start Metal Halide

1. Higher Efficacy
Lamp envelope design follows the curve of the arc stream preventing uneven temperatures in the arc tube surface. This significantly improves thermal performance as it allows more halides to be pulled into the arc and emit more light.
2. Better Color Uniformity
Color variations occur in other HID light sources due to arc tube temperature differences and poor power regulation.
3. Faster Warm Up
High voltage pulse ignition. Eliminates the starter electrode, bi-metal switch and resistor of standard probe start lamps. It also provides quicker breakdown of gases; so starting (cold or hot) is faster.
4. Improved Lumen Maintenance
Lumen output does not decay as rapidly over the lamp life as with traditional metal halide. Mean lumens improve dramatically, up to 50% higher with matched ballasts and lamp systems.
5. Longer Life
Increase of 50% lamp life over the probe start model.

Electronic HID

1. Microprocessor-controlled for Digital Precision and Reliability
Extends lamp life; greater efficiency and efficacy.
2. Micro-Start Digitally Controlled Ignition
Lumen consistency; color consistency; virtually eliminates lamp electrodes and "wall blackening"; longer lamp life.
3. Control and Communication
Extends energy saving capabilities, monitoring, control, reduces maintenance costs.
4. Full Range Dimming (optional)
Significant energy savings.
5. Automatic Scheduling
Automatic control dimming, on/off functions per lamp.
6. Sodium Lamp Hot Re-strike
Instant relighting after power outages.

Induction

1. No Electrodes or Filament to be Damaged
Long performance life up to 100,000 hours, lasting up to 100 times as long compared to incandescent lamps. High luminous maintenance rated at 95% after 2000 hours and 85% after 6000 hours.



2. Power Factor Up To .99
Very high system efficiency-increase by 50% and 20% more than magnetic ballasts and conventional electronic ballasts respectively, resulting in lower energy bills.
3. Electromagnetic Induction Lighting
Low heat output. Reduces HVAC (air-conditioning) costs in climate-controlled areas.
4. Reliable Ignition Even to -25 Degrees C
Great for very low temperature regions and applications.
5. CRI 80 (Ra) Working Frequency 210KHz
Allows color to be perceived correctly. Range of color temperatures and wavelengths. No flicker.

Compact Fluorescent

1. Same Light Output Regardless of Burning Position
Luminous flux is the same whether base up or base down.
2. Up To 80% Energy Savings
42-watt T4 initial lumens 3200 mean lumens 2690; 150-watt A21 initial lumens 2850
3. Burns Up To 12X Longer Than Most Standard Incandescent Lamps
150 watt A21 rated at 750 hours; 42 watt T4 rated 12000 hours
4. High Color Rendering Index, Ra=82
Color that we perceive is correct.
5. Available in Different Color Temperatures
Color can be specified from 3000K through 6000K
6. May be Used with Dimmable Electronic Ballasts
Solid state Electronic ballasts from Advance, Universal or Lutron.
7. End of Life Protection
A small portion of chemical material is placed near the cathode, and in case of critical overheat, the evaporating gas quenches the arc.

Fluorescent

1. Long Life
Properly matched lamps and ballasts get more than twice the life of current systems. T-12 should be looked at and retrofitted to T-8 wherever possible.
2. Energy Savings
High performance T8 combined with electronic ballasts can realize up to a 45% reduction in energy consumed.
3. Fewer Lamps per Fixture
The 30-watt T8 lamp provides comparable light output to standard T8 and extends life up to 20%. The 28-watt T8 lamp provides a 20% extension of life over the 30-watt unit and realizes an additional energy saving of 6%. High Lumen F32T8/XL/HL provides a definite advantage for fewer lamps per fixture.



4. Efficient Electronic Ballasts per fixture
High Efficiency 90% Ballast consumes 10% of total system power and meets ballast efficacy factor requirements for the NEMA Premium and CEE programs.
5. Continuous Cathode Cutout
High efficiency programmed start ballasts cut unneeded power to lamp filaments after starting and operates at instant start high efficiency levels.
6. Lamp Life
Programmed Start, extends lamp life and warranty Current Crest Factor, 1.41 or less is the optimal level to extend lamp life particularly in long burn cycles. Parallel Lamp Operation, If one lamp fails the others stay lit extending group relamping by 15% compared to series-parallel ballasts.
7. Performance
Multi-Volt, simplifies installation 108V-305V. Anti-Striation Control, Eliminates striating or spiraling lamps.
8. Fast Starting Time
Fast starting lamps provide needed convenience (100-700ms) dependent on the applied product.

Light Emitting Diodes (LED)

1. 50,000 Hours Rated Light Engine Life.
6X extended re-lamping interval vs. 8K hour HID mean ratings.
2. Consistent Light Output over Lamp Life
30% Lumen Depreciation at 50K hours.
3. Advanced Light Control / Efficiency
30-60% reduced energy consumption.
4. Improved Light Control / Photometry
Improved uniformity, improved visibility.
5. Increased CRI and Higher Color Temp.
Improved quality of light and color rendering.
6. No Mercury Content.
Reduced waste disposal costs.
7. Solid State Light Source
Robust design with excellent vibration resistance.
8. Operation in Cold Temperatures.
Maintained light levels with temperature gradients reliable cold temperature operation.
9. IP66 Rated Optical and Enclosure
High intrusion protection for long, maintenance free life.