Take the ENERGY STAR Change a Light Pledge
CHANGE A LIGHT CHANGE THE WORLD ENERGY STAR

The Atlantic Light

atlantic lighting & supply

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NEW FROM LITHONIA

Lithonia Lighting has announced their new 6" LED recessed down light for new construction and retrofit applications. Using a 12 watt LED array the fixture is rated at 50,000 hours and produces equal light to a 65 watt BR30 incandescent flood or a 50 watt PAR30 halogen. It installs into any standard 6" recessed housing that uses torsion spring constriction. The unit is UL rated for damp locations so it can be used outside in a canopy or in the exterior soffit of a building.

Based on a 65 watt BR30 at ten cents per kilowatt hour, this LED light will save the user $265.00 in electricity cost over it's life span. Priced at only $79.50, and based on 10 hours per day, the light will pay for itself more than 3 times over during it's rated 50,000 life.

For more information, call customer service at (404) 872-3521 or e-mail us at sales@atlanticlightingandsupply.com.

You can also go to the "MEDIA" page or the "PRODUCTS" page on our web site and download the spec sheet.

Inside this issue:

sensorswitch

nLIGHT

nLight® Control System Overview

nLight is a revolutionary system that cost-effectively integrates time-based, occupancy-based, daylight-based, and manual lighting control. Its purpose is to be the total lighting control solution for a building. Fundamentally, nLight is a network of occupancy sensors, photocell sensors, relay/power packs, wall switches, and dimmers that work together to control a lighting system. System control is available within the space via stylish LCD wall devices or remotely via web-based management software called SensorView.

For more information on this innovative new system from Sensor Switch, contact your Atlantic sales representative or call customer service at (404) 872-3521

RIGHT BALLAST – WRONG SOCKET

Source: Tom Gregg, Premium Quality Lighting

Lamp Evaluation (Lamp Ballast & Wiring)

Date: 8/26/2010

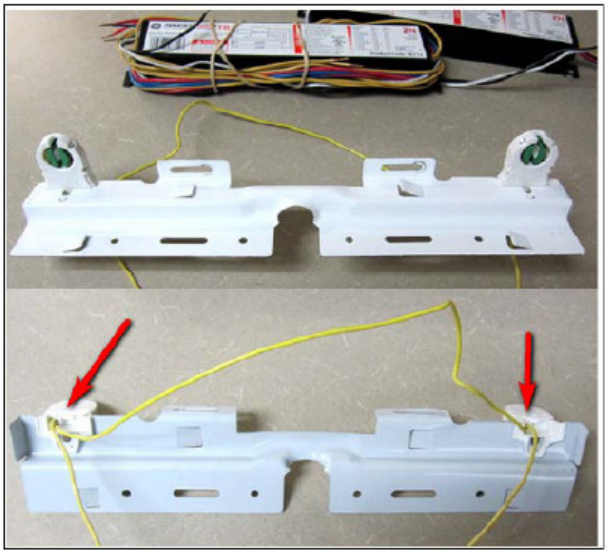
Lamp Type: F32T8/Sky-Brite Plus, Shatterproof coated by GSS

Application:

Food processing plant.
Lay in troffers and vapor tight fixtures.
Ballast GE-MVPS-N, Programmed Start with system occupancy sensors installed.

Customer complaint:

Lamps operated with occupancy sensors were experiencing failures within 3-6 months from installation. This was an ongoing problem that seemingly could not be resolved.



Findings:

I visited the location where the problem fixtures were opened and examined. The ballast was a proper match with occupancy sensors.
However this is a **Programmed Start Ballast** (Rapid Start) that had **instant start lamp holders** installed.
This effectively bypassed the cathode heating and shorted the preheat transformers in the ballast. Lamps were firing basically as instant start. Programmed start was essentially shorted causing increased cathode depletion (blackening lamp ends) and lamp failure.
Right ballast, wrong lamp holders

Comments:

GE Electronic ballast engineer E.T. confirmed the findings. He believes that the ballast may have escaped damage. It is recommended that the correct lamp holders (preheat) be installed. If the preheat cut off transformers were damaged it will show up again with premature lamp failures. At that point replace any defective ballast.

The customer has a larger investment as the replacement lamps will also have the expense of a shatterproof coating.

Recommendations:

The customer has been made aware of the findings and has contacted the fixture company who supplied the wrong lamp holder retrofit kit.

The type of ballast being installed may or may not have been specified to the retrofit supplier.

THE HISTORY OF LIGHT continued from last issue

In our last issue, we explored the creation and development of LED lighting, which in my opinion is the way to the future with energy efficient, longer life, good lumen output and great color rendering. In this issue we will look into the development of HID and Induction lighting.

1901, HID (HIGH INTENSITY DISCHARGE)

HID lamps have been in use since the early 1900's, as an alternative to the electric light bulb. The first HID lamp was introduced as the mercury vapor lamp in 1901. Later, low and high pressure sodium and metal halide lamps, were introduced. All these sources consist of an electric arc between two electrodes operating in a gas filled environment, inside a glass bulb referred to as the (arc tube). HID light sources are more efficient than the standard electric light bulbs, however they also have a limited color rendering ability, due to their 'line' spectrum (not continuous light spectrum). Many HID lamps are produced with an inside phosphor coating. This coating causes additional secondary emissions of visual radiation, providing a wider 'spectrum' of light and better color rendering. Applications for HID lamps include industrial, commercial and architectural lighting.

1901 MERCURY-VAPOR LIGHTS

The first practical HID light source was the mercury-vapor lamp developed by Peter Cooper Hewitt in 1901. This was a low pressure mercury gas filled glass tube about 4 feet long which produced light with a bluish green color. The first high pressure mercury lights similar to the ones used today, were introduced around 1934. They were 400 watts. Because of their high energy consumption to light produced, mercury vapor lamps are now being discontinued.

1960 METAL HALIDE LAMPS

The first metal halide lamps were developed in the early 1960's. Metal Halide lamps are basically mercury vapor lamps that have additional metal halides in their arc tube gases. Metal Halide lamps provide improved efficiency and improved color rendering qualities over mercury lamps. The modern metal halide lamp has a luminous efficiency of 85-115 lumens per watt.

1932 LPS (LOW PRESSURE SODIUM)

Research into low pressure sodium gas discharge lamps started in the 1920's. The first commercial application was a roadway lighting installation that was put into service between Beek and Geleen in the south of the Netherlands on July 1, 1932. The installation employed low pressure sodium lamps with a lumen efficacy 40 lumens per watt. In the same year, the Purley Way in London was also lit by low pressure sodium lamps. Today the modern low pressure sodium lamp is considered to be the most efficient HID lamp available, providing more than 220 lumens per watt, but it also have a very poor color rendering index. Low pressure sodium lamps can be recognized by their deep yellowish/amber color.

1966 HIGH PRESSURE SODIUM

HPS - The high pressure sodium lamp has steadily developed and gained in popularity, since its introduction in 1966. It provides a more economical source of illumination than mercury, fluorescent, or incandescent and has a more natural looking color than low pressure sodium. The H.P.S. sodium lamp has a luminous efficacy of approximately 80-140 lumens per watt.

1990 INDUCTION LIGHTING

Induction (electrodless) lighting is created by inducing high frequency radiation into a gas filled tube or sphere with an inside coating of special phosphors. The radiation excites the phosphors and causes them to emit visible light.

Philips introduced their *QL* induction lighting systems, operating at 2.65 MHz, in 1990 in Europe and in 1992 in the US.

In 1996, Osram started selling their *Endura* induction light system, operating at 250 kHz. It is available in the US as the Sylvania *Icetron*.

Since 1994, General Electric has produced its induction lamp *Genura* with an integrated ballast, operating at 2.65 MHz.

Induction lamps have a rated life of 100,000 hours and are very energy efficient with up to 80 lumens per watt.

It's been a long road but we've come from the old energy wasting incandescent lamps on the left to the energy saving CFL, LED & Induction lighting on the right.

GLOSSERY OF FLUORESCENT LIGHTING TERMS

BAFFLE: A single opaque or translucent element used to control light distribution at certain angles.

BALLAST: A device used to operate fluorescent and HID lamps. The ballast provides the necessary starting voltage, while limiting and regulating the lamp current during operation.

BALLAST CYCLING: Undesirable condition under which the ballast turns lamps on and off (cycles) due to the overheating of the thermal switch inside the ballast. This may be due to incorrect lamps, improper voltage being supplied, high ambient temperature around the fixture, or the early stage of ballast failure.

BALLAST EFFICIENCY FACTOR: The ballast efficiency factor (BEF) is the ballast factor divided by the input power of the ballast. The higher the BEF (within the same lamp-ballast type) the more efficient the ballast.

BALLAST FACTOR: The ballast factor (BF) for a specific lamp-ballast combination represents the percentage of the rated lamp lumens that will be produced by the combination.

CANDLEPOWER: A measure of luminous intensity of a light source in a specific direction, measured in candelas (see above).

CBM: Abbreviation for Certified Ballast Manufacturers Association.

COLOR RENDERING INDEX (CRI): A scale of the effect of a light source on the color appearance of an object compared to its color appearance under a reference light source. Expressed on a scale of 1 to 100, where 100 indicates no color shift. A low CRI rating suggests that the colors of objects will appear unnatural under that particular light source.

COLOR TEMPERATURE: The color temperature is a specification of the color appearance of a light source, relating the color to a reference source heated to a particular temperature, measured by the thermal unit Kelvin. The measurement can also be described as the "warmth" or "coolness" of a light source. Generally, sources below 3200K are considered "warm;" while those above 4000K are considered "cool" sources.

COMPACT FLUORESCENT: A small fluorescent lamp that is often used as an alternative to incandescent lighting. The lamp life is about 10 times longer than incandescent lamps and is 3-4 times more efficacious. Also called PL, Twin-Tube, CFL, or BIAX lamps.

CUT-OFF ANGLE: The angle from a fixture's vertical axis at which a reflector, louver, or other shielding device cuts off direct visibility of a lamp. It is the complementary angle of the shielding angle.

DAYLIGHT COMPENSATION: A dimming system controlled by a photocell that reduces the output of the lamps when daylight is present. As daylight levels increase, lamp intensity decreases. An energy-saving technique used in areas with significant daylight contribution.

DIFFUSER: A translucent piece of glass or plastic sheet that shields the light source in a fixture. The light transmitted throughout the diffuser will be redirected and scattered.

EFFICACY: A metric used to compare light output to energy consumption. Efficacy is measured in lumens per watt. Efficacy is similar to efficiency, but is expressed in dissimilar units. For example, if a 100-watt source produces 9000 lumens, then the efficacy is 90 lumens per watt.

ELECTRONIC BALLAST: A ballast that uses semi-conductor components to increase the frequency of fluorescent lamp operation (typically in the 20-40 kHz range. Smaller inductive components provide the lamp current control. Fluorescent system efficiency is increased due to high frequency lamp operation.

ELECTRONIC DIMMING BALLAST: A variable output electronic fluorescent ballast.

EMI: Abbreviation for electromagnetic interference. High frequency interference (electrical noise) caused by electronic components or fluorescent lamps that interferes with the operation of electrical equipment. EMI is measured in micro-volts, and can be controlled by filters. Because EMI can interfere with communication devices, the Federal Communication Commission (FCC) has established limits for EMI.

ENERGY-SAVING LAMP: A lower wattage lamp, generally producing fewer lumens.

FLUORESCENT LAMP: A light source consisting of a tube filled with argon, along with krypton or other inert gas. When electrical current is applied, the resulting arc emits ultraviolet radiation that excites the phosphors inside the lamp wall, causing them to radiate visible light.

HARMONIC DISTORTION: A harmonic is a sinusoidal component of a periodic wave having a frequency that is a multiple of the fundamental frequency. Harmonic distortion from lighting equipment can interfere with other appliances and the operation of electric power networks. The total harmonic distortion (THD) is usually expressed as a percentage of the fundamental line current. THD for 4-foot fluorescent ballasts usually range from 20% to 40%. For compact fluorescent ballasts, THD levels greater than 50% are not uncommon.

HIGH OUTPUT (HO): A fluorescent lamp or ballast designed to operate at higher currents (800 mA) and produce more light.

INSTANT START: A fluorescent circuit that ignites the lamp instantly with a very high starting voltage from the ballast. Instant start lamps have single-pin bases.

LAMP CURRENT CREST FACTOR (LCCF): The peak lamp current divided by the RMS (average) lamp current. Lamp manufacturers require <1.7 for best lamp life. An LCCF of 1.414 is a perfect sine wave.

LAMP LUMEN DEPRECIATION FACTOR (LLD): A factor that represents the reduction of lumen output over time. The factor is commonly used as a multiplier to the initial lumen rating in illuminance calculations, which compensates for the lumen depreciation. The LLD factor is a dimensionless value between 0 and 1.

LAY-IN-TROFFER: A fluorescent fixture; usually a 2' x 4' fixture that sets or "lays" into a specific ceiling grid.

LOW POWER FACTOR: Essentially, an uncorrected ballast power factor of less than 0.9 (SEE NPF)

MAINTAINED ILLUMINANCE: Refers to light levels of a space at other than initial or rated conditions. This terms considers light loss factors such as lamp lumen depreciation, luminaire dirt depreciation, and room surface dirt depreciation.

NPF (NORMAL POWER FACTOR): A ballast/lamp combination in which no components (e.g., capacitors) have been added to correct the power factor, making it normal (essentially low, typically 0.5 or 50%).

PARACUBE: A metallic coated plastic louver made up of small squares. Often used to replace the lens in an installed troffer to enhance its appearance. The paracube is visually comfortable, but the luminaire efficiency is lowered. Also used in rooms with computer screens because of their glare-reducing qualities.

POWER FACTOR: The ratio of AC volts x amps through a device to AC wattage of the device. A device such as a ballast that measures 120 volts, 1 amp, and 60 watts has a power factor of 50% (volts x amps = 120 VA, therefore 60 watts/120 VA = 0.5). Some utilities charge customers for low power factor systems.

PREHEAT: A type of ballast/lamp circuit that uses a separate starter to heat up a fluorescent lamp before high voltage is applied to start the lamp.

QUAD-TUBE LAMP: A compact fluorescent lamp with a double twin tube configuration.

RADIO FREQUENCY INTERFERENCE (RFI): Interference to the radio frequency band caused by other high frequency equipment or devices in the immediate area. Fluorescent lighting systems generate RFI.

RAPID START (RS): The most popular fluorescent lamp/ballast combination used today. This ballast quickly and efficiently preheats lamp cathodes to start the lamp. Uses a "bi-pin" base.

RECESSED: The term used to describe the doorframe of a troffer where the lens or louver lies above the surface of the ceiling.

REGULATION: The ability of a ballast to hold constant (or nearly constant) the output watts (light output) during fluctuations in the voltage feeding of the ballast. Normally specified as +/- percent change in output compared to +/- percent change in input.

RETROFIT: Refers to upgrading a fixture, room, or building by installing new parts or equipment.

SEMI-SPECULAR: Term describing the light reflection characteristics of a material. Some light is reflected directionally, with some amount of scatter.

SHIELDING ANGLE: The angle measured from the ceiling plane to the line of sight where the bare lamp in a luminaire becomes visible. Higher shielding angles reduce direct glare. It is the complementary angle of the cutoff angle. (See CUTOFF ANGLE).

SPECULAR: Mirrored or polished surface. The angle of reflection is equal to the angle of incidence. This word describes the finish of the material used in some louvers and reflectors.

STARTER: A device used with a ballast to start preheat fluorescent lamps.

T12 LAMP: Industry standard for a fluorescent lamp that is 12 one-eighths (1 inches) in diameter. Other sizes are T10 (1 inches) and T8 (1 inch) lamps.

TANDEM WIRING: A wiring option in which a ballasts is shared by two or more luminaires. This reduces labor, materials, and energy costs. Also called "master-slave" wiring.

TRIGGER START: Type of ballast commonly used with 15-watt and 20-watt straight fluorescent lamps.

TROFFER: The term used to refer to a recessed fluorescent light fixture (combination of trough and coffer).

TWIN-TUBE: (SEE COMPACT FLUORESCENT LAMP)

VERY HIGH OUTPUT (VHO): A fluorescent lamp that operates at a "very high" current (1500 mA), producing more light output than a "high output" lamp (800 mA) or standard output lamp (430 mA).

LED and Recycling from HALCO Lighting Technologies

ProLED Halco Lighting Technologies

As we have discussed in previous issues, LED lighting is the way of the future. Halco has introduced their newest generation of 120volt LED light bulbs and Night Light products. These LED products are direct replacements for incandescent and halogen bulbs in most any type of light fixture. With 20,000 to 60,000 hour life ratings, depending on the model, and low wattage consumption, they are ideal for residential and commercial buildings of all types.

With wattages ranging from 1 watt to 18 watts, these LED products are very energy efficient and contain no Mercury so they are "GREEN" and safe for the environment.

For more information and pricing, contact you Atlantic Lighting sales person or call customer service at (404) 872-3521.

Halco Lighting has all the products you need for staying "GREEN" in today's effort to do a better job of cleaning up our environment.

The 5 Gallon ballast bucket is for any type ballast, T-12 ballast, HO Sign ballast or H.I.D.

The 6" X 6" CFL box is for all types of compact fluorescent bulbs. Plug in or self ballasted screw in.

The 4 foot box is for linear bulbs up to 48" long of any diameter, T-12, T-8, T-5.

The 8 foot box is for T-12 or T-8 bulbs longer than 48".

For information and cost call you Atlantic sales representative or customer service at (404) 872-3521

5 Gal.
BALLAST BUCKET

6" X 6" X 6'
CFL BOX

4 FOOT BOX
HOLDS 68 T-12, 146 T-8

8 FOOT BOX
HOLDS 15 T-12, 30 T-8

Halco LIGHTING TECHNOLOGIES
2940 Pacific Drive
Norcross, GA 30071

May 2010

Effects of Legislation on Lighting

What you need to know.

Incandescents & Halogen Reflector Lamp Products:

- A-Type Incandescent Lamps will begin to be phased out due to federal minimum efficiency standards starting with 100W lamps in January 2012, continuing with 75W lamps the following year, and 60W & 40W lamps the year after. Because most incandescents will not be able to meet the new standards they will eventually disappear from the market.

- Standard PAR Halogens face a similar fate as incandescent reflectors starting in July 2012. Under the same legislation described above, most PAR, BR, and ER-type lamps will go away. Again, this is due to the product's general inability to meet new stricter efficiency guidelines. Some of these lamps will remain but they are likely to be the more expensive gas mixtures or IR capsule containing models. There are a few exemptions based on wattage and lamp size; however, these exemptions will likely be removed by a current bill working its way through congress.

General Service Fluorescent Lamps:

- Broadly speaking, the majority of T10 & T12 lamps will begin leaving the market by July 2012, as they are unable to meet the new federal minimum efficiency guidelines. Certain high CRI and color lamps will remain. Other specialty lamps also will be exempt from these guidelines, but likely will be further addressed by emerging legislation.
- T12 Magnetic ballasts may be imported through June 2010 and Manufacturers (that's us) can sell them through September 2010. Distributors (our customers) can still sell these ballasts for sometime after the September deadline.

High Intensity Discharge Products:

- As of January 2009 magnetic ballasted probe start Metal Halide systems may no longer be used in new fixtures with few exceptions.
- Mercury Vapor ballasts cannot be produced or imported as of January 2008, the lamps may continue to be sold and can instead be used with an appropriate standard, non-pulse start, Metal Halide ballast. Many MH ballasts are rated for Mercury Vapor lamps and include the equivalent codes for easy reference. It is likely that Mercury Vapor lamps will be completely phased out in January 2016 due to emerging regulation.

Other Legislated Categories

New efficiency requirements will also go into effect for double-ended quartz halogen lamps in January 2016, and at that time may limit offerings as the number of products able to meet the standards are likely to be fewer than the total number we carry. These standards are yet to be established.

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