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Listed are a variety of articles and information for Induction Lighting and Eco-nomical illumination solutions.

Induction Lights save significant dollars on energy.

http://www.architecturaldetailgroup.com/eco_products.htm

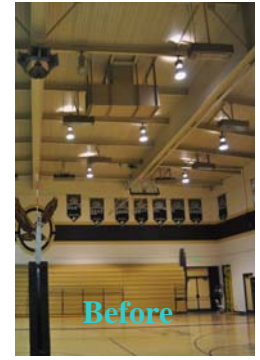


www.adgEcoLP.com Induction Lights

Induction Lighting Case Studies & Business Journal articles

July, 2008

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Induction Light Replacement

ADG Eco's Solution Manufacturing

450w MH changed to 150w Induction

ADG Eco electrode-less induction lighting leverages new technology developments to provide a high-efficiency, low-maintenance, long-term lighting solution. With a 100,000-hour rated life, Gym above is +\$200 per month in the black year one with off-set maintenance for 20 years. SoCal Power Company rebates included,

ADG Eco induction lamps are ideal for outdoor applications where re-lamping is expensive or cumbersome, as in parking lots, street lighting, tunnels, or indoors for high bay fixtures.

Induction Lighting: An Old Lighting Technology Made New Again

(Excerpt from Blog /US Department of Energy)

Induction lighting is one of the best kept secrets in energy-efficient lighting (where)... units have an extremely long life of up to 100,000 hours. To put this in perspective, an induction lighting system lasting 100,000 hours will last more than 11 years in continuous 24/7 operation, and 25 years if operated 10 hours a day.

Applications with High Potential for Induction Lighting

- In hard-to-reach locations that make maintenance costs high, such as street lighting and tunnels, or high ceilings where there is continuous operation, such as hotel rotundas
- Where high-quality lighting is required or highly desirable
- Where reliability is highly valued
- Where high lumen output is required
- In areas that require lamps to reach full illumination immediately.

Utility Involvement in Induction Lighting Utilities throughout the country are installing and/or promoting induction lighting. For example, many ... are offering incentives. One utility... has a program offering municipal customers the opportunity to replace older mercury vapor street lighting fixtures with



Characteristics,



Virtually maintenance-free operation

- High efficacy—in many cases, 60+ or 70+ lumens per watt
- Long life
- Excellent [color rendering index](#) (CRI)—80+ and in some cases 90+
- Choice of warm white to cool white (2,700–6,500 K) [color temperature](#)
- Instant start and re-strike operation
- No flickering, strobing, or noise
- Low-temperature operation
- Dimmable capability with some units
- High power factor: .90+



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Induction Light Retrofit Solution Manufacturing 40w to 200w Induction

ADG Eco electrode-less induction lighting leverages new technology developments to provide a high-efficiency, low-maintenance, long-term lighting solution. With a 100,000-hour rated life,

ADG Eco induction lamps are ideal for outdoor applications where re-lamping is expensive or cumbersome, as in parking lots, street lighting, tunnels, or indoors for high bay fixtures. Versatile mounting options make them the ideal choice for a variety of pole, ceiling and wall-mounted applications.

Induction Lighting: An Old Lighting Technology Made New Again (Blog from Department of Energy)

July 27, 2009 05:00

<http://eereblogs.energy.gov/energysavers/post/Induction-Lighting-An-Old-Lighting-Technology-Made-New-Again.aspx>

Induction lighting is one of the best kept secrets in energy-efficient lighting (where)... units have an extremely long life of up to 100,000 hours. To put this in perspective, an induction lighting system lasting 100,000 hours will last more than 11 years in continuous 24/7 operation, and 25 years if operated 10 hours a day.

The technology...is far from new. Nikola Tesla demonstrated induction lighting in the late 1890s around the same time that his rival, Thomas Edison, was working to improve the incandescent light bulb. ...

... induction lighting has many superior characteristics, including the following:

- Virtually maintenance-free operation
- High efficacy—in many cases, 60+ or 70+ lumens per watt
- Long life
- Excellent [color rendering index](#) (CRI)—80+ and in some cases 90+
- Choice of warm white to cool white (2,700–6,500 K) [color temperature](#)
- Instant start and restrike operation
- No flickering, strobing, or noise
- Low-temperature operation
- Dimmable capability with some units
- High power factor: .90+

Long Lifespan...*Experience with using induction lighting at the U.S. Department of Energy's Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico, has demonstrated the long life in actual usage. WIPP's first induction lighting system was installed in 1998, replacing high-pressure sodium (HPS) lights. More than 10 years later, all but three of the original 36 induction units are still operating after more than 88,000 hours of continuous, 24/7 operation. Additional systems were installed in 2002 and succeeding years, both indoors and outside, with excellent results.*

... induction lighting systems have an average rated life of 100,000 hours, including the ballast. Some other manufacturers only rate their ballasts for 60,000 hours, even though the bulb may last longer. Check out the warranties before buying. Some manufacturers offer full five-year warranties on the entire induction lighting system. Others offer shorter warranties on some or all components.... 100,000 hours of operation the initial lumen output of many of the induction lighting systems drops to 70%...

Applications with High Potential for Induction Lighting

- *In hard-to-reach locations that make maintenance costs high, such as street lighting and tunnels, or high ceilings where there is continuous operation, such as hotel rotundas*
- *Cold environments, such as supermarket walk-in coolers and freezers*
- *Where high-quality lighting is required or highly desirable*
- *Where reliability is highly valued*
- *Where high lumen output is required*
- *In areas that require lamps to reach full illumination immediately.*

Saving More Energy with Innovative Controls *Some manufacturers are introducing innovative control strategies for additional energy savings.*

Utility Involvement in Induction Lighting *Utilities throughout the country are installing and/or promoting induction lighting. For example, many ... are offering incentives. One utility... has a program offering municipal customers the opportunity to replace older mercury vapor street lighting fixtures with new induction lighting fixtures.*

Environmental Drawback...*induction bulbs contain a small amount of mercury, although it is in a solid state that makes it less harmful in case of breakage. Nonetheless,.. responsibly at the end of their service life like fluorescent bulbs because of the mercury content.*

...John Lippert is an employee of Energy Enterprise Solutions, a contractor for EERE. He assists with technical reviews of content on the Consumer Guide Web site

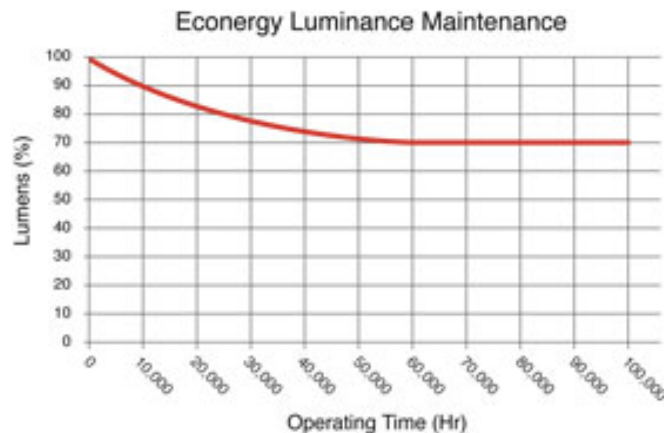
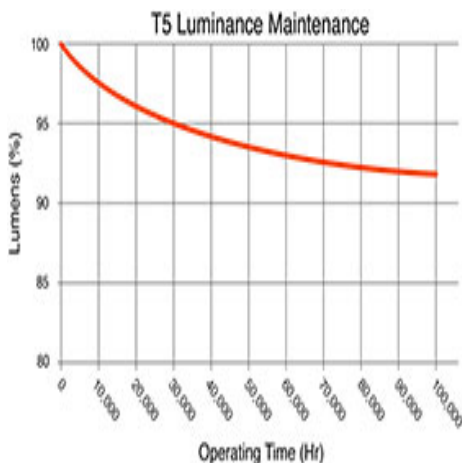




Induction Specs

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- **Very long life** – 100,000 hours rated life translates to significant savings in maintenance costs
- **High lumen output** – 2,800 initial lumens (40W lamp) to 18,750 initial lumens (250W lamp)
- **Range of input voltage** – each lamp has the ability to operate on voltages ranging from 120 to 277
 - **Gradual, minimal lumen depreciation** – still at 70% luminosity at end of life means fewer replacements, more efficient lighting
- **Outstanding color rendering** – CRI of 80 provides for vivid, natural colors
- **Range of color temperatures** – choice of warm or cool light for desired effect and particular applications
- **Stable output** – relatively unaffected by fluctuations in line voltage, the Induction lamp output remains constant over wide ranges of inputs
- **Instant-ON capability** – because it does not require warm-up time to come to full luminescence, it can be controlled by occupancy sensors to provide further energy savings
- **Hot and cold operation** – performs on a wide range of environments --from -20° to 60°
- **No flickering or noise** – a distraction-free option for indoor or outdoor applications
- **Low mercury** – uses only 6 mgs of mercury, a much more environmentally-friendly product than other alternatives



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Induction Specs

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Product Comparison Chart

	ADG Induction	High Press Sodium	Metal Halide	Pulse Start
Power consumption (W)	100W	150W	175W	150W
Luminous flux (Lm)	7,500	14,000	14,000	14,000
Luminous efficacy (Lm/W)	75	93.3	80	93.3
Color temperature (K)	3000-6500	2,000	4000-6500	4000-6500
Color rendering index (CRI)	80	28	65	65
Initial/re-start time	Instant	8~10min	8~10min	3~4min
Set weight	1kg	6kg	6kg	6kg
Heated temperature	100 C	300~400 C	300~400 C	300~400 C
Lumen depreciation	Slow	Medium	Fast	Fast
Average rated life hours	100,000	24,000	10,000	10,000
Mercury content/watt	5 mg	30 mg	30 mg	30 mg

Specifications

Watts (W)	Input Voltage (V)	Average Rated Life (Hrs)	Lumens (Lm)	Color Temp Kelvin (K)	CRI
40	120 - 277	100,000	2,800	5000	80
70	120 - 277	100,000	5,250	5000	80
100	120 - 277	100,000	7,500	5000	80
150	120 - 277	100,000	11,250	5000	80
200	120 - 277	100,000	15,000	5000	80
250	120 - 277	100,000	18,750	5000	80

continued...

Description	Luminous Flux (Lm)	Luminous Efficacy (Lm/W) (Calculated Value)	Luminous Efficacy (Lm/W) (Tested Value)	Operating Temp	MOL (in) Lamp Height [mm]	MOL (in) Heat Sink Height [mm]
40W	2,400	<70	63~64	Less than 60°C	152	min 15
70W	4,900	<75	70~72	Less than 60°C	180	min 15
100W	7,500	<75	72~74	Less than 60°C	207	min 20
150W	10,500	<75	72~74	Less than 60°C	230	min 30
200W	14,000	<80		Less than 60°C	330	min 40
250W	17,500	<80		Less than 60°C	330	TBD

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Latest Phoenix Business Journal Article 6/27

July 9, 2008 · Filed under [eco friendly lighting](#), [green lighting](#) · Tagged [miller lighting products](#), [miller eco lighting](#), [induction lighting](#), [led lighting](#), [miller induction](#), [miller led](#)

The following article about Miller Lighting Products appeared in the June 27th Phoenix Business Journal by Patrick O’Grady.

A Phoenix lighting supply company is pushing forward with new technologies in hopes of illuminating a path to money and energy savings.

Miller Lighting Products Inc. (www.millerlightingproducts.com) is branching out to help customers craft more eco-friendly options to decrease the energy used and increase brightness. The new line of **Miller Eco Lighting Products** (www.millerecolighting.com) includes ubiquitous compact fluorescent lights, new light-emitting diodes and induction lighting, which traces its history back to the late 1800s. The products represent the latest evolution in energy-saving techniques available for adoption by businesses.

Efficient lighting will last years instead of months while lowering the amount companies pay to keep them on, said Gil Miller, the company’s president.

“The issue right now is, they’re expensive,” he said.

Fitting a company with better lighting can be challenging. The cost of the newer lights might be more than what companies are used to paying, but the return on investment can make up the difference quickly, Miller said.

“These might retail for \$30 to \$50,” he said of some of the smaller LED lights. “But we’re going to replace 50 watts with 3 to 5 watts.”

Lowering the wattage brings energy bills down. Once the lights are paid for, those savings can be applied to a company’s bottom line year after year, Miller said.

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The family-owned business has operated for 33 years, but only recently started retrofitting companies' lighting systems.

It's a change in the market that will see equipment sell for higher prices as early adopters of the technology jump on board. But as the prices drop, Miller representative Tom Herman said he expects the new light models to follow the same trend as compact fluorescent lights, or CFLs, which have dropped dramatically in price since they were introduced.

"You go to the store and buy these compact fluorescents (for a few dollars), and two years ago they were \$20 apiece,"

Miller Lighting Products is uniquely qualified to save you money on retrofitting your old-style lighting.

Typical retrofitting savings offered by Miller Lighting Products for Miller Eco Lighting Bulbs are shown below (with 11 cents per kilowatt):

⇒□□□□ Parking Garage: **Save \$200,000 per year**, 2.0 year payback (1700 fixtures)

⇒□□□□ Hotel: **Save \$50,000 per year**, 3.0 year payback (125 poles, 4 fixtures per pole)

⇒□□□□ Warehouse: **Save \$50,000 per year**, 1.2 year payback (200 fixtures)

Call a representative of Miller Lighting Products today to learn more about saving 50-90% with reliable solutions that are just-right for your commercial applications.



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INDUCTION TECHNOLOGY: A NEW GENERATION OF LIGHT

Source: ARCHITECTURAL LIGHTING Magazine
Publication date: February 15, 2002

By David Houghton, Contributing Editor

»**When** the wizard Gandolf walked into the caves in Lord of the Rings, he turned the globe atop his scepter into a glowing source of light. So far, lighting engineers can only perform this trick in the movies, but they are always working on new ways to create light. One relatively new source type is the induction light, which makes phosphors glow without the usual electrodes.

The main attraction of induction lighting is incredibly long lifetime. In a fluorescent lamp, the electrodes at either end are the weakest link, and the lamp usually fails when the cathode coating on one of the electrodes is depleted after 15,000–20,000 hours. Induction lamps have no such electrodes, so their rated lifetimes are as long as 100,000 (that's over 11 years, running 24/7!). They also have good vibration resistance and low starting temperatures, making them a good choice for rugged operating environments.

Induction lamps are discharge lamps, where the idea is to get mercury or other atoms to elevate their energy level, then discharge a photon as they fall back to normal. Induction lamps differ from fluorescents—their closest relative in the lighting family—in the way they energize the mercury atoms. Instead of striking an arc between electrodes in a tube, an electromagnetic field is generated by a carefully shaped coil. The field created by the coil induces a current flow in the gas/mercury blend within the lamp. This current excites the mercury atoms and starts the flow of photons. Mercury atoms emit UV photons; phosphors lining the lamp wall absorb the UV photons and in turn emit visible photons.

Like high-quality fluorescents, induction lamps offer instant strike, instant restrike, color stability, 80+ CRI, high power factor and low THD. A ballast—in this case called a field generator—is required to provide the power electronics that drive the induced current in the lamp. Finally, induction lamps have a coupling device that wraps the induction coils around some part of the lamp itself. Induction technology is not dimmable at this time, but it could be in the future.

THE LAMPS

The first lighting product to use induction technology was the Philips QL lamp, originally introduced in Europe in 1990 and in the U.S. in 1992. The QL is a globe-shaped lamp available in three sizes at 55W, 85W and 165W, and two color temperatures at 3000K and 4000K. With the coupling device at its base, it looks a bit like an overgrown A-lamp. The separate 2.65MHz field generator is rated for operation at or below 75 degree Celsius; its lifetime is cut in half for each 10-degree Celsius rise above that temperature. Lumen maintenance is 70 percent at 60,000 hours and 55 percent at 100,000 hours. Philips product specialist, Austin Cahill, says that the QL is primarily an OEM product and that the market is growing, particularly for outdoor installations such as tunnel and freeway sign illumination.

GE Lighting's Genura lamp was the next on the scene, although its emergence in the U.S. market was fitful. This 23W lamp is a self-contained induction lamp with a standard Edison screwbase. With its relatively low light output (1100 lumens) and 15,000-hour lifetime, the Genura is really more akin to a screw-in compact fluorescent. The Genura is available in color temperatures of 2700K and 3000K and is not dimmable. Gary Crawford of GE Lighting says that

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Jeff Edelstein
Owner/ President of SOS Survival Products

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although the lamp is available in some retail stores, it is mostly a commercial product sold through distributors. Applications include downlights in hotel lobbies and hallways and retail fixtures where they can sometimes replace halogen PAR lamps. Crawford says that the Genura actually handles hot environments better than compact fluorescent alternatives.

Although it is now a forgotten chapter in history, in 1992, a media campaign blanketed the country, touting the 'lamp of the future'-the so-called E-lamp from Intersource Technologies. The E-lamp was an induction lamp that was first targeted at the downlight market. Unfortunately, the company seemed to have spent more of its funds on marketing than on engineering, and the product never made it to shelves.

The next induction lamp to reach the market was the Osram Sylvania Icetron, introduced in 1996. The Icetron lamp has two cylindrical field sources at opposite ends of a rectangular tube and is available in 100W and 150W models; a 75W version is due for release. Color temperatures are 3500K and 4100K, and lumen maintenance is 70 percent at 60,000 hours and about 64 percent at 100,000 hours. Like the QL, Icetron has a separate field generator; its rated maximum temperature is 70 degrees Celsius.

'The product's acceptance rate was slow at first, but now we're finding applications that go beyond our initial focus,' said Dwight Kitchen, manager of commercial engineering at Osram Sylvania. One such application is the Jefferson Memorial in Washington, D.C. where Icetron is used to light the portico area of the structure. Added Kitchen, 'This increased demand for Icetron has resulted in our decision to launch a 75W version later this quarter.'

THE FIXTURES

Jacques LeFevre, president of Indy Lighting, remembers the introduction of induction sources in the early '90s. 'The first applications were outdoors and the lamps were quite expensive, so we didn't get too excited,' said LeFevre. (Indy specializes in specification-grade fixtures for retail and commercial environments.) 'But a couple of years ago, our customer base started to show an interest in induction lighting because of the long life, so we began working on fixtures for places like escalator wells and ceilings over open mall areas.' Their first product was an induction downlight using the Icetron lamp that was installed above escalators and outside entrances to several Dillard's department stores. Indy now offers standard fixtures using both the 100W Icetron and the 85W QL lamps. Although LeFevre is enthusiastic about induction technology, he wants to be sure that limitations such as temperature control of the generators are addressed. He added, 'Premature failures are always bad, but in the places we're putting these fixtures, they would be very costly to replace.'

Bob Fiermuga is the owner of Eclipse Lighting, a company that specializes in decorative outdoor luminaires. He said, 'We are fascinated by induction technology-we think some of the bigger manufacturers may be overlooking this market.' Eclipse offers the 55W and 85W QL lamp in its Galileo outdoor wall sconce, as well as in several institutional and vandal-resistant fixtures. 'Induction lighting is a premium system, but the maintenance benefits are worth it,' said Fiermuga. 'The public sector in particular is always looking for ways to trim their maintenance budgets.' He also thinks that induction lighting makes sense for parking garage illumination. Although maintenance access is not difficult for these fixtures, they usually burn 24 hours a day, making the long lifetime an attractive feature. Eclipse offers four different garage fixtures that use either the 165W QL and the 150W Icetron lamp.

Another good place for induction lighting is in bollards. 'We've been amazed at the interest in induction-lit bollards,' said Kathleen Romfoe, product manager for Phoenix Products Co., an outdoor luminaire OEM. 'Owners like the fact that you can put them out there and forget about them. We're selling them to municipal governments.' Phoenix offers the 55W and 85W QL lamps in most of their bollards and in some shaded pendants and gooseneck fixtures.

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Some of the key applications for induction lighting are roadway environments, particularly in tunnels and underpasses where maintenance is a real challenge. Robert Small, an engineering specialist with the Texas Department of Transportation (TxDOT), says that to change some lamps over roadways requires a small battalion of workers, including bucket trucks equipped with crash cushions, flashing arrow vehicles, cone placement and retrieval, and even police cars. TxDOT is now installing three different types of induction fixtures on a testing basis in the Spring Valley Tunnel in Dallas. 'If we get the expected lifetime out of these lamps, we won't be going out there to touch them for 20 years,' said Small, noting that test installations are also underway or planned in El Paso, Austin and Ft. Worth.

The Texas installations demonstrate an additional benefit of induction technology: luminaire positioning. Typically, sodium fixtures are mounted to the side of the roadway for maintenance access, so they must throw light across the road. The induction fixtures can be mounted right over the road where they can more effectively and evenly illuminate the road surface.

LINGERING CONCERNS

Induction sources pose technical challenges, most of which have been addressed by vendors now that the technology is nearly a decade old. Early systems faced concerns about electromagnetic interference from the field generators, but today's products meet FCC 47CFR Part 18 Non-Consumer certification, and complaints are just about non-existent.

LeFevre points out that the relatively small lumen package of the induction sources poses a challenge for luminaire designers. He said, 'We want to put these things in high-ceiling areas to get the maintenance benefits, but you need a lot of light to reach the floor from up there.' The larger 165W Philips QL lamps have helped address this problem. Another consideration is that the induction sources are essentially big blobs of light, so it's more difficult to design an effective reflector for them than the small arc tube of HID sources. Eclipse's Bob Fiermuga notes that the shape of the QL lamp makes it more applicable for refractor-type downlights, while the flat profile of the IceTron makes it more appropriate for cutoff-type floodlights.

A final concern is the temperature sensitivity of the generator, which is a solid-state electronic device that can fail prematurely if it gets too hot. While HID systems can operate at temperatures of 90-105 degrees Celsius, induction systems are limited to the 70-75-degree Celsius range. Danny Lambeth, president of Infinity Lighting, explains that his engineers have been working for the past four years to solve the temperature limitations associated with induction technology. 'If you exceed the rated temperature, the warranty is out the window,' he said. Still, with careful design and testing, Lambeth thinks induction technology can do the job. He noted, 'If you can design an induction fixture that can handle the heat, is watertight and explosion proof, it's a home run.'

January/February 2002 Architectural Lighting Magazine

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1132 Bishop wins lighting award

Pacific Business News (Honolulu)

The Hawaii chapter of the Illuminating Engineering Society has awarded an International Illumination Design Award to the office tower at 1132 Bishop St.

Bobbie Lau, vice president and property manager for **Colliers Monroe & Friedlander**, manager of the 25-story, 450,000-square-foot building, said the award is for "the outstanding design of an energy-efficient, high-performance lighting retrofit" of the parking garage.

The lighting retrofit was successful at reducing heat, improving visual acuity, reducing the number of fixtures and reducing energy use, Lau said.

Lau said 1132 Bishop St. was the first to install the Induction Lighting System in the state of Hawaii. The design team includes Chief Building Engineer Bob Martin, and building engineers Dwayne Futa, Ceasar Galpo and Celso Alvarado.



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TRADITIONAL TECH

Lighting co. Osram Sylvania's intense R&D is building a better lightbulb

Boston Business Journal - by [Tom Witkowski](#) Journal Staff

In 1901, Frank Poor started a business in Middleton, cutting the glass off lightbulbs, replacing the burned-out filaments and resealing the bulbs. More than a century later, the present-day incarnation of Poor's company is a \$2 billion-a-year business that is the second-largest lighting and materials company in the world.

Thomas Edison's basic invention, discovered just 22 years before Poor started his company, was not much different from the incandescent bulbs still widely used today. But the strength and future of that 102-year-old business is based on research in newer lighting technology that is still being done on the North Shore.

About 800 of **Osram Sylvania's** 12,000 employees are in Massachusetts, with 200 working on research and development of new technology and developing equipment to make new kinds of lights. More research and development is done in Hillsborough, N.H.

Osram Sylvania, headquartered in Danvers, spent about \$100 million last year trying to build a better lightbulb. The company is developing lighting that is dependent on high-technology electrical systems. It is perfecting fluorescent lighting. And its headlights are found in three-quarters of the cars that roll off U.S. assembly lines today. It is a stable technology company — of sorts — that is relatively established in a region smoldering with high-tech flameouts.

Osram Sylvania strives to improve an old technology, building better lighting that brings higher margins. In so doing, the company regularly makes its previous products obsolete. And while Osram Sylvania and its competitors have yet to replace the familiar glow of Edison's incandescent lightbulb, they're trying.

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"There's an incredible amount of high-tech in what most people think is a low-tech product," says Charlie Jerabek, Osram Sylvania's CEO. Jerabek is in a conference room in Beverly surrounded by laboratories where engineers and researchers are working on light-emitting diodes (**LEDs**), smaller and better-quality fluorescent lights and high-energy discharge lighting — the blue-looking lights used in many luxury-automobile headlights today.

"Within the next three years, 50 percent of our business will consist of products that are electronic in nature. The old incandescent lightbulb will be something less than 10 percent," said Jerabek.

In recent years, especially with the focus on LEDs, Osram Sylvania has increased its annual spending on research and development from 4 percent of revenue to 5 percent. Osram Sylvania, the North American division of Munich-based Osram GmbH, itself a subsidiary of Siemens AG, brought in about \$2 billion in revenue last year, Jerabek says, having grown about 7 percent to 9 percent annually.

This year, because of the recession, the company's year-to-date sales are down 2 percent. But Osram Sylvania is still not hurting as much as its competitors — No. 1 in the market, Royal Philips Electronics NV of Amsterdam, and No. 3, General Electric Co. of Fairfield, Conn., he says. Another international player, SLI Inc. of Canton, once part of Sylvania before Osram bought Sylvania's North American business in 1993, filed for bankruptcy protection this month.

"The push into R&D is furthering the advancement of the product and is really what's allowed us to grow over time," Jerabek says. "A lot of the new products are what kept us from being in the same tailspin as the other lighting companies."

The CEO likes to hold up Osram Sylvania's automotive-lighting business as an example. He came from that division and watched firsthand as automotive lighting grew to 17 percent of Osram Sylvania's business.

"A little over 20 years ago, we weren't even in the automobile business," Jerabek says.

Materials for lighting make up another 17 percent of the business. Specialty and photo-optical products are 5 percent. Electronics, the systems that run many of the newer kinds of lights, are 10 percent. And general residential and office lighting is 50 percent of the business. That breakdown is changing because of trends in the business.

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Electronics is the growth area, the CEO says. Bulbs, even the newer-technology bulbs, are becoming more and more of a commodity. Customers are also demanding that lighting be more efficient and lower maintenance.

"It's not just a theme of 'saves energy' anymore. We're concerned about quality of life, reducing maintenance and improving lighting environment," says Peter Jacobson, lighting specialist with New York City-based utility Consolidated Edison Inc., who is working with Osram Sylvania and the New York Parks and Recreation Department to install high-tech induction lighting in New York City parks

Union Square Park, Battery Park and parts of Central Park have been converted, Jacobson says. The market is slowly accepting the technology, and these new lighting systems will eventually become the standard, he says.

"Once we install this light source, we don't have to go back for 15 years. That light source we displaced, you'd be changing that every two or three years," Jacobson says.

That is more energy efficient, but not necessarily a good model on which to build a business. "We shoot ourselves in the foot that way because longer-life products do us in," Jerabek says.

Osram Sylvania, therefore, is expecting its business to grow fastest in electronics. Eventually, that will be 50 percent of the business, the CEO says.

Still, there is no guarantee anytime soon that the incandescent bulb will be switched off permanently, says Sandra Vasconez, manager of program development for the Lighting Resource Center, a research center at Rensselaer Polytechnic Institute in Troy, N.Y.

The electrodeless lighting that New York City is installing in its parks has been available for 10 years, but is not widely used, she says. It is now only used for very specific applications, even though it is lower cost in the long run, she says. "Nobody is paying attention. Why? Because their first cost is very expensive," she says.

LEDs, which depend on electronic systems, will also become more commonly used, especially as white LEDs are perfected, she says. And the market is watching their development closely, she says.



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"I know its going to be a big light source, but I don't know that it's going to replace incandescent lamps. Incandescent lamps are most convenient, energy aside. I can go to the store, to my supermarket, to buy one for 25 cents," she says. Even though LEDs will save energy, the design must still be further advanced, and manufacturers must adopt the technology. When that happens, some issues will disappear quickly and make LEDs more competitive with incandescent lighting, she says.

Other design trends are also influencing the market. Architects and interior designers are seeking smaller sources of light to illuminate space without intruding, says Christina Trauthwein, editor in chief of New York City-based Architectural Lighting magazine.

The market for old-fashioned incandescent bulbs remains strong, however, Vasconez points out. In the United States, they are considered more convenient, and in developing countries, they are all that people will be able to afford, she says.

And for that reason, none of the big lighting manufacturers will shut the lights off on their incandescent bulb business, though it may not be where they look to make their money.

Says Jerabek, "We like to get 40 percent of our sales from products that didn't exist five years ago."

All based on one invented 123 years ago.



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Induction Lighting is the way of the future. Here's to 2 centuries of operation.

Gerald Olesker CEO/ Founder

ADGLighting.com The Best Eco-nomical Energy Efficient Solutions with Induction Bulbs

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July, 2008

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Induction Lighting Systems Saves Big Money

Monday, 21 April 2008 15:46 by [CarlyZ](#)

By now we all know that Eco-Friendly, Energy Savings and Sustainability are all contemporary verbiage used to excite and bring you into the commercialization of Saving Dollars. With Earth Day coming up this April 22nd, we thought it would be an appropriate time to let you know about induction lighting systems as another way you can conserve energy and save significant additional money off energy bills, because we do care.

Technically speaking, an induction lighting system is viable and significantly more eco-friendly lighting solution that uses innovative technology in a system composed of three different components that work together to combine the principles of induction and gas discharge to deliver over 100,000 hours of white light. This system is historic, conceived by Tesla and now available for cost savings, yet, contemporary and innovational with today's technology. According to Dave Miller, patent holder, "Induction lighting is based on technology that is fundamentally different from conventional gas sources or incandescent lamps. Instead of electrodes used in gas discharge lamps or the glowing filament of incandescent, light generation is by means of induction- the transmission of energy by way of a magnetic field - combined with a gas discharge."

Not only that, an induction lighting systems also offer the following energy saving and maintenance benefits:

- There are no filaments or electrodes as in conventional lamps that are exposed to the effects of heat, vibration malfunction, or high electrical potential, and as a result are subject to deterioration of performance and finally to failure.
- Because the induced magnetic field can easily pass through the glass wall of the lamp bulb, no throughput wires are needed as in incandescent or discharge lamps, where the glass/metal junction is another vulnerable failure area.

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- The high frequency power supply to the primary coil at 2.65 MHz – well outside normal broadcast and communication radio bands – ensures highly efficient energy transmission between the induction coil and the gas and metal vapor filling of the lamp bulb. Radiated energy levels close to an induction lighting system are no higher than from a distant radio transmitter while the UV radiated power is no more than that of a standard fluorescent lamp of the same power.

By the by, the economical benefits are significant: ADG also just completed a study that found for a big box store's domestic chain, over a 12-year period we would create a savings opportunity of approximately \$300,000,000 and 815,300 KW saved per year per big box, for 407,650,000 kWh throughout its locations in the U.S. The ROI (your Return on Investment) is increased when considering the savings in maintenance costs. The additional savings average's increase will vary up to 11%. Eco-Friendly Bulb change out will occur at an average of 100,000 hours vs. the typical 10,000 hour average to those ugly compact fluorescent. Also, every watt reduced in your lighting system results in a one-third watt reduction in your A/C load, while A/C is running.

Trying an induction lighting system is just one of many to help celebrate Earth Day this year. ADG urges you to think about your environmental impact this April 22nd, even if it's a simple act as turning off the light when you're not in the room.



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Traditional Lighting



Induction Lighting

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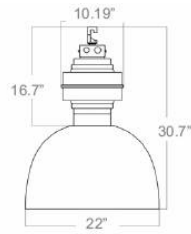


Traditional Lighting

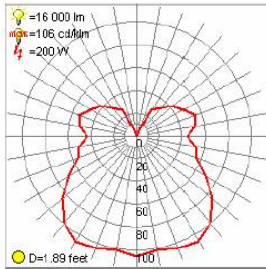


Induction Lighting

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Photometrics



Economics

Highbay Induction		Highbay Induction	
Wattage	200W	Wattage	250W
CRI	85	CRI	85
Lamp Life	100,000	Lamp Life	100,000
Pupil Lumens	27,540	Pupil Lumens	34,425
Oper Costs	\$2,144	Oper Costs	\$2,681
EZ install	Screw in lamp	EZ install	Screw in lamp
Metal Halide		Metal Halide	
Wattage	400W	Wattage	400W
CRI	65	CRI	65
Lamp Life	10,000	Lamp Life	10,000
Pupil Lumens	42,912	Pupil Lumens	42,912
Oper Costs	\$5,556	Oper Costs	\$5,556

*Based on 0.12 KW/H, 10 years of use, 8760 hours/year



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San Antonio gas and electric utility cuts power use by 25 percent

San Antonio Business Journal

CPS Energy is practicing what it is preaching when it comes to energy conservation.

The municipally owned natural gas and electric reduced its own everyday electrical usage by 25 percent over a five-year period, CPS Energy officials said Friday.

"In 2001, CPS Energy used more than 13 million kilowatt-hours at downtown facilities including in the energy-saving program," says Alan Demos, facilities project team leader at the utility. "At the end of 2006, that number had declined to approximately 9.8 million (kilowatt-hours)."

Demos and his team members began an aggressive energy-reduction effort in 2001 that included a replacement of older lighting with new induction lights or compact fluorescent lights as needed.

The utility also replaced older computer monitors with energy-saving flat screens and made it a policy for employees to turn off computer monitors, lights and office equipment when they are not in use.

Five years ago, the utility's program involved two downtown office buildings, two parking garages, parking lots and the Villita Assembly Building, which is owned by CPS Energy.

Because of the program's success, CPS Energy plans on adopting similar energy-conservation measures at other utility-owned buildings.

The Texas Legislature in 2001 passed Senate Bill 5, which encouraged government owned entities like CPS Energy to reduce electric use by 5 percent each year for five years. Demos says CPS Energy met this goal.

"Over the five-year period, we invested approximately \$250,000 for improvements and counted savings of more than \$627,000 worth of electricity," he adds.

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[What Does Green Lighting Really Mean?](#)

Friday, 29 February 2008 11:43 by [adgcom](#)

In our [first newsletter](#) of the year, we extolled the virtues of green lighting. But you probably still have questions about the different kinds of sustainable bulb options that are available. Whether you want to replace bulbs in existing light fixtures, chandeliers, sconces or lanterns or start over with ADG's decorative lighting fixtures the choice is yours as how to begin.

Among the best quick green energy investments a consumer can make is the replacement of traditional light bulbs with an [energy efficient bulb](#). But preferably not Compact Florescent Lights (CFLs). These curly-cue shaped light bulbs give off the same amount of light as a traditional light bulb, and expend dramatically less energy, so replacing old light bulbs with new CFLs can save you money on your electric bill but are filled with toxic chemicals, still produce waste that should be carted off as electronic waste and not in your regular trash bin.

So what should we all do to help spare the environment some of the burden of power production? We have solutions that will last 50,000 to 100,000 hours as compared to CFL that go about 11,000 hours. These bulbs are 5 times that of CFL and 20 to 50 times life of regular incandescent. They also produce little heat, are easy to screw into existing fixtures and look relatively similar to a regular old Edison light bulb and Tesla would be proud. LED light bulbs, (Light Emitting Diodes) are another light source that pulls significantly less power, and produces brightness. LED bulbs about 10 times more energy efficient than CFLS, but they are quite a bit more expensive to purchase upfront. And deferred maintenance and your energy bill will prove that replacing incandescent with LED will brighten your home and save you money. Even the [White House Christmas tree](#) now uses [LED technology](#). A couple other techniques for greening your lighting include the use of Solar lights for outdoor areas, or if you are doing a remodel you may consider including features such as [solar power](#), sky lights or strategically placed windows which can offer enough light during the day can give you a 0-wat lighting scheme on sunny days. [ADG](#) can help you make the decision of what kind of green lighting options will work best for your space. Contact us today for a consultation.

Click here [LED Presentation compressed.pps \(1.30 mb\)](#) to see the many ways a traditional fixture should be using LED or energy efficient bulbs. Some of these projects have been designed from the initial inception of sustainable solutions and others are on their way to being replaced

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US Department of energy on LED lamping [click here](#)

Technical Aspects of how LED works by the State of NY. [click here](#)

[Green Insurance](#) since you are replacing your home with Green energy alternatives and on the track to low carbon footprint and just being conscientious about the environment

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WASTE ISOLATION PILOT PLANT SAVES 97% ON ENERGY COSTS WITH INDUCTION LIGHTING RETROFIT

Case Study compiled and presented by James Hedin, WIPP Energy Control Project Manager

In 2002 the Department of Energy's (DOE) Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico replaced all the high-pressure sodium (HPS) bay lamps inside their water pump house with the latest technology induction lamps. Each fixture combines quality construction with the dependable long life of an induction lamp and ballast system rated at 100,000 hours of operation.

Problem: The original lighting design consisted of (18) 100-watt HPS fixtures kept in continuous operation due to the emergency related aspects of the building. Concerned with the re-strike / warm up period required with HPS lights, operations and emergency personnel departments were forced to compensate by maintaining a 24/7 light operation schedule to ensure that immediate access into the facility would not be impeded. This also caused the system's lighting components to prematurely reach design life early in the projected life of the building. Maintenance personnel were constantly required to troubleshoot the problem of intermittent lights being out in order to maintain proper lighting levels. Additional problems with elevated cooling requirements derived from the increased heat emitted from the existing fixtures.

“The ideal lighting solution would minimize energy, operation and maintenance of the system while providing longevity.”

Solution: The fixtures were replaced on a one-for-one basis so that re-piping the system would not be required. This also minimized downtime for building access as well as the costs associated with piping. The new configuration allows for maintenance / changes (if any) to be performed on a single fixture basis without any lockout / tag-out requirements. Next, the toggle switches were replaced with time-controlled switches. This allows for quick switching and permits the duration of light operation to be adjusted to the individual user's need.

The pinnacle of the solution adopts the current technology of an induction lamp and ballast system combined with a clear acrylic refractor type lens and aluminum ballast housing manufactured by 1st Source Lighting in Auburn, Ca. The lamps yield an 80 CRI @ 4100 K equal to the quality of office lighting. The result is a uniform level of light throughout the space, providing a new look in an old room. The enhanced color rendering provides an additional level of safety into the area as the previous yellow hue is now replaced with distinct color. Information tags and labels are easier to read, which ensures appropriate decisions in emergency conditions.

While the before and after photos speak for themselves, the numbers behind the power and energy reductions need to be addressed to fully appreciate the upgrade:

- **Annual energy savings is a staggering 97% (701kwh from 20442kwh), with the connected load essentially removed.**
- **The new induction lighting system is predicted to last the remaining life of the building, which would suggest a 100% reduction in future maintenance for parts and labor.**

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Facilities & Contract

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Why Customers Choose ADG for Eco Lighting Solutions.

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Services range from Consultation to Productization:

Simple Steps

Always for the right solution

1. ADG initial discussion needs
2. ADG is retained to provide Energy Audits or Design Fixtures
3. ADG provides a Comprehensive Solution
 - a. Product needs are established
 - b. Financing available to create a net cash flow program
 - c. Cost Segregation Analysis by 3rd Party firm
This is where client's eligibility for Tax Rebate or depreciation is realized
4. ADG is paid by client to manufacture/ supply fixtures
5. Fixtures installed by ---To be determined

To establish interest in proceeding with a project: 🌐

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