



Eco-Smart, Inc.
 (888) 329-2705
www.eco-smart.com
info@eco-smart.com

Cost - Benefit / Commercial Building Eco-Smart Retrofit



Building Size (square feet under air) 20,000

	Standard Building	Eco-Smart Retrofit
<u>Eco-Smart Retrofit Features / Costs</u>		
Demand Buster Water-Cooled A/C Retrofit	No	\$82,500
Eco-Flector Window Radiant Barrier / Insulator	No	\$90,000
LED / Induction Lighting, Interior and Exterior	No	\$104,000
Solar Water Heating	No	\$65,000
Photovoltaic System	No	\$150,000
Retrofit Cost		\$409,000.00
Monthly Electric Bills (50% Lower w/Eco-Smart)	\$23,800.00	\$11,900.00
Increased Occupant Comfort, Productivity	No	Yes
Low Noise Transmission	No	Yes
Enhanced Lighting Effectiveness	No	Yes
Improved Pest Resistance	No	Yes
Low Maintenance	No	Yes
Lease Option Monthly Payment (5 year lease at 12%):		-\$9,097.98
Monthly Energy Savings:		\$11,900.00
Immediate Positive Cash Flow Per Month:		\$2,802.02
Or, Cash / Payback Example: Savings, First Month:		\$11,900.00
Savings, First Year:		\$142,800.00
Payback Period (Yrs.):		2.86

all costs estimated

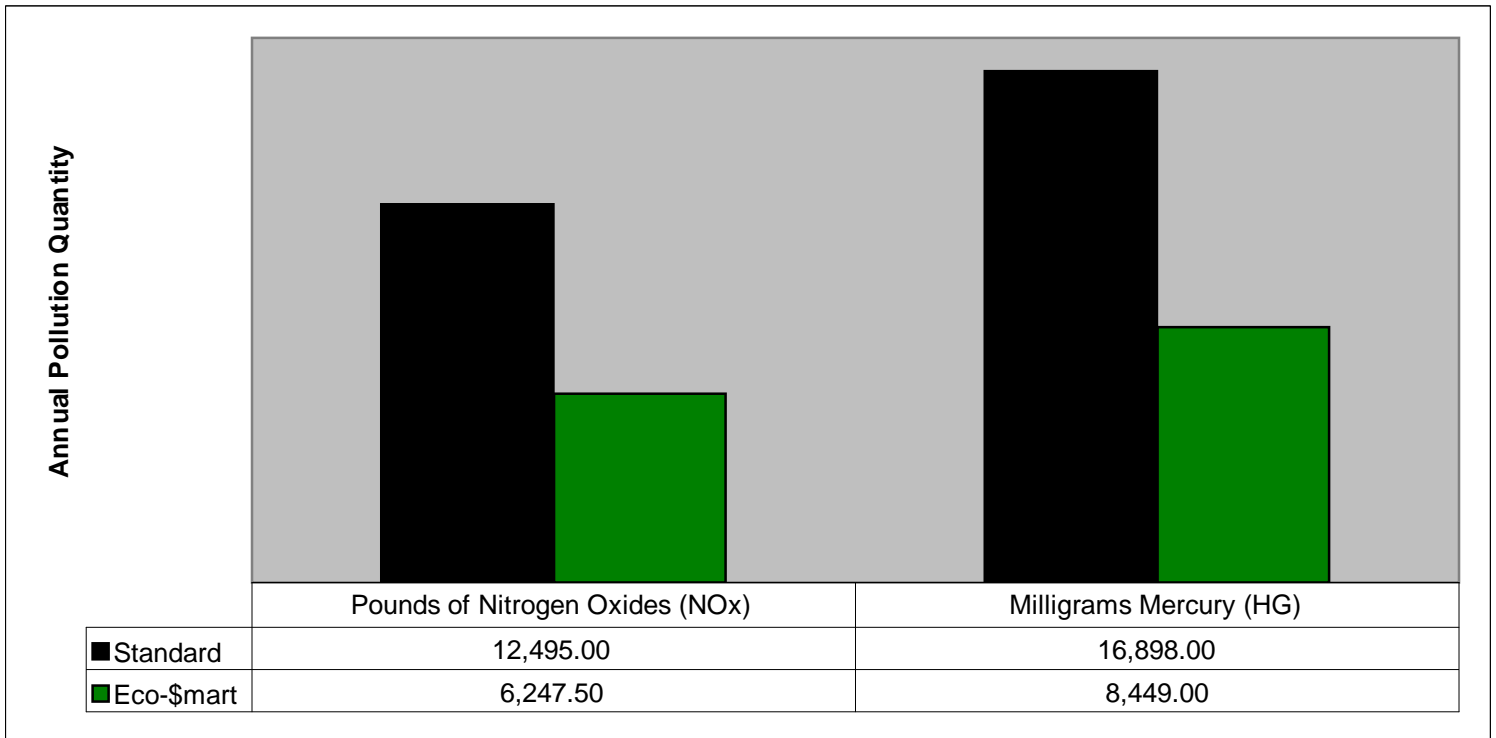
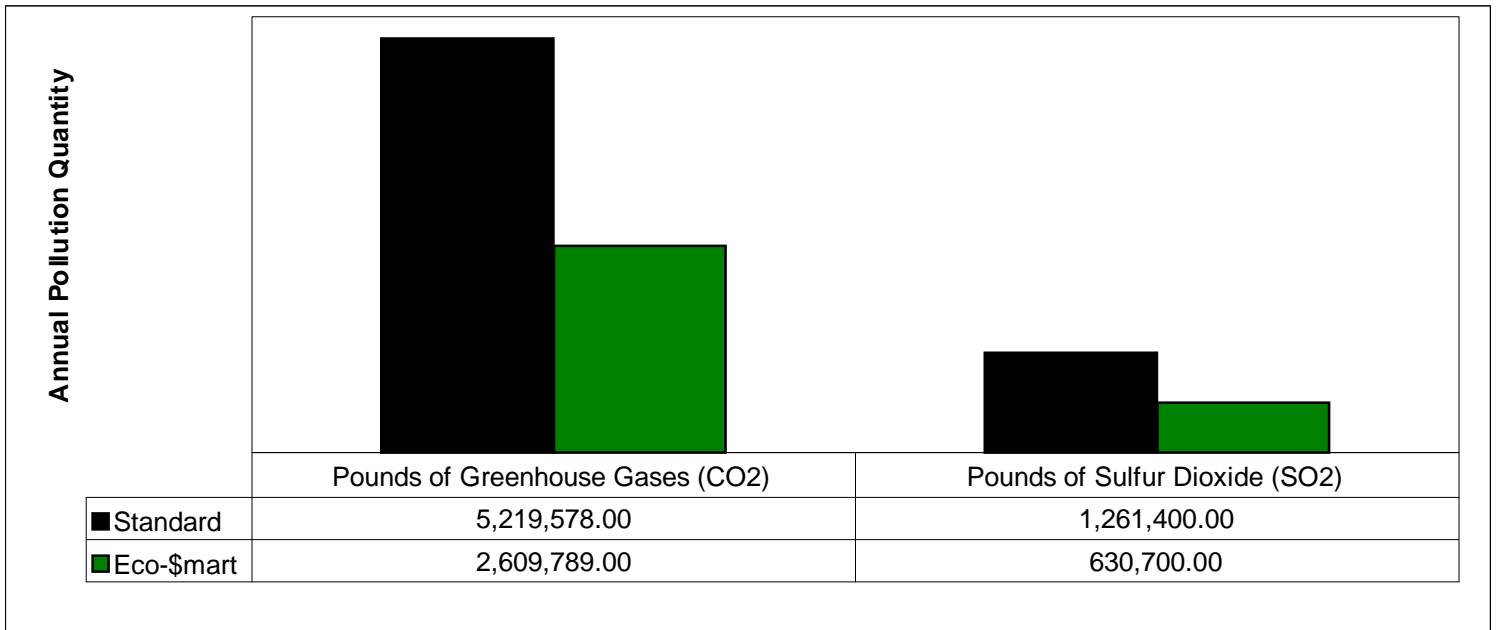
Energy use is based on the national average in commercial buildings (\$1.19 per square foot). The average for office buildings is \$1.51 per square foot. Source - DOE / Energy Information Administration, January 2001. Energy savings estimated by: Eco-Flector / Demand Buster will typically reduce A/C costs by 50%, LED lighting will reduce lighting cost by 50 to 75 percent.

Additional Options: Solar A/C, Greywater Recycling, Cisterns, Atmospheric Water Generators, Window Replacements, HVAC Replacements, Radiant Floor Heating, Energy Recovery, Ventillation, and more.

Annual Pollution Reduction from Eco-\$mart Retrofit

<u>Type of Pollution</u>	<u>Standard Building</u>	<u>Eco-\$mart Retrofit</u>	<u>Annual Pollution Reduction</u>
Pounds of Greenhouse Gases (CO2)	5,219,578.00	2,609,789.00	2,609,789.00
Pounds of Sulfur Dioxide (SO2)	1,261,400.00	630,700.00	630,700.00
Pounds of Nitrogen Oxides (NOx)	12,495.00	6,247.50	6,247.50
Milligrams Mercury (HG)	16,898.00	8,449.00	8,449.00
Pounds of Carbon Monoxide (CO)	833.00	416.50	416.50
Pounds of Volatile Organic Compounds (VOC)	119.00	59.50	59.50
Pounds of Particulates (PM 10)	238.00	119.00	119.00

Emissions from electrical generation are based on National fuel types used at power plants: www.cleanerandgreener.org





The Eco-Smart Catalog

Heating, Ventilating, and Air Conditioning



Healthy, Efficient, Disaster Resistant Products for Better Living

Commercial and Residential Water Cooled Air Conditioning "Demand-Buster" Thermal-Loop Commercial Retrofit System

This Energy Efficiency retrofit will yield reductions of peak kW demand from 30% - 60%. The Thermal-Flow Demand-Buster Evaporative Condenser Retrofit system can utilize the existing AC compressor, or a new high efficiency Thermal-Flow compressor module can be installed.

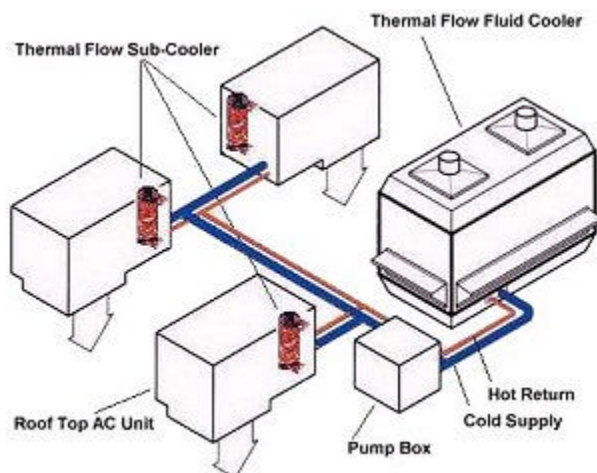
The Thermal-Flow evaporative fluid cooler tower is the only closed circuit tower that is lightweight enough to be installed on a roof with out structural upgrades. The unique design of the Demand-Buster Thermal-Loop system allows one fluid cooler to service a number of roof top HVAC systems. The largest amount of savings occurs during the heat of the day thereby offsetting expensive peak demand charges that many utilities are now charging commercial customers. Many utilities offer rebate or financial incentive programs aimed at commercial users of peak kW demand. A Thermal-Flow Demand-Buster HVAC Retrofit can double the operating efficiency at half the cost of replacing the equipment, and qualify for utility demand reduction program incentives.



Case Study: [Home Depot Report PDF](#)

Engineered for Commercial Roof-Top Retrofit Applications:

- ◆ Light Weight, Modular, Durable, Low Maintenance requiring no Structural Upgrades
- ◆ 30%-60% Reduction in Peak kW
- ◆ Up to 17 EER Performance
- ◆ Proven Commercial Water Cooled Technology with a Record of Operational Success
- ◆ 15 Year Limited Warranty



30-ton Demand-Buster System servicing three 10-Ton commercial roof top unitary systems.

Patented Evaporative Fluid Cooler features:

- ◆ **Construction:** All fiberglass cabinet, cannot corrode. High quality materials throughout. High Efficiency evaporative design allows one tower to service multiple HVAC systems in Thermal-Loop.
- ◆ **Water Spray Nozzles:** Durable plastic, non-corrosive and non-fouling.
- ◆ **Fans:** Aluminum, epoxy coated frame, and precision balanced plastic blades for quiet, trouble-free service.
- ◆ **Service:** Easy access for routine maintenance

Eco-Smart, Inc. (888) 329-2705 info@eco-smart.com

----- Original Message -----

From: [Rick Bofinger](#)

To: 'Matt Ross'

Cc: 'MacWord'

Sent: Wednesday, September 10, 2008 11:08 AM

Subject: Demand Buster

Dear Matt:

We are a mechanical contractor in Northern California that uses a number of techniques to reduce energy use. We recently completed a test of the Thermal Flow "Demand Buster" cooling tower on a Home Depot. I am attaching a report that is getting a lot of notice. We achieved a 28.9% reduction in peak demand, and a 55% reduction in kWh, while actually INCREASING the capacity of the a/c unit.

We were able to retrofit and downsize the compressors due to the increased cooling capacity created by the Thermal Flow Demand Buster addition, but we estimate that 75% of the energy savings would have been achieved with the Demand Buster alone.

We have also used this product on low temp refrigeration systems with excellent results. I am attaching the Home Depot report for your consideration, as well as a couple of pictures of the installation.

Rick Bofinger
Jerico Mechanical
Office 916-925-0151 x 112 Cell 825-8880

www.jericoenergy.com



The Eco-Smart Catalog



[Windows, Doors & More](#)

Healthy, Efficient, Disaster Resistant Products for Better Living

« Back **Eco-Flector Window Retrofit** Next »



Item Number: WIN-Efect

Price: Quoted

Documentation

- ◆ [Infra-Red Winter Demonstration](#) PDF
- ◆ [Installation](#) PDF
- ◆ [Measuring Instructions](#) PDF
- ◆ [Test Report](#) PDF
- ◆ [Vertical Blinds](#) PDF

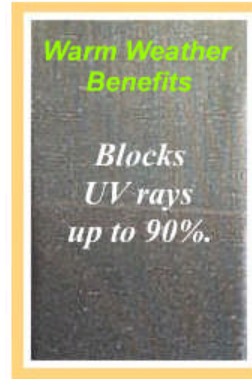
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The See-Through Radiant Barrier Window Insulator

Eco-Flector Window Retrofit is a See Through Insulating Panel retrofitted to the inside of existing windows, doors or skylights. Regardless of your present heating and cooling system Eco-Flector Window Retrofit can save up to 40% of energy costs, extend the life of your HVAC system, and make your home or building a more comfortable place.

The Eco-Flector Insulating material is an aluminum material bonded to a black PVC material that is embossed, perforated, then coated with a clear Uv protecting laminate. Every aspect of Eco-Flector is designed to improve window inefficiencies. The aluminum is non-emmissive so it is a radiant barrier, it is also reflective to stop 2/3 of the solar gain, it is solid to create an insulating air barrier which reduce infiltration/exfiltration and convection/conduction issues. It also is reversible to become a solar collector and the laminate eliminates up to 90% of Uv rays!

TURN SINGLE PANE WINDOWS INTO DOUBLE PANE HEAT REJECTING WINDOWS!



[Testing for a Commercial Application](#)



[Eco-Flector Vertical Blinds](#)

Catalog Home	HVAC	Appliances	Building Systems	Carpentry Wood	Controls	Counter Tops
Day Lighting	Decking	Flooring	Home Safety	House Plans	Insulation	Landscape Lighting
Paints	Paving	Roofing	Solar	Storm	Water Heating	Water Purification
Water Saving	Windows					



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Graphic Art by d.a.gordon.dart

Hand Crafted At: kwgrubbs.com

RID:

Table 6 . Analysis of Window Systems for Summer Condition

Window Condition	U (Btu/h-ft ² -F)	SC	SHGC	VT
Base	1.16	0.95	0.82	0.76
Black	0.76	0.49	0.42	0.28
Aluminized	0.72	0.42	0.36	0.27

Table 7 . Analysis of Window Systems for Winter Condition

Window Condition	U (Btu/h-ft ² -F)	SC	SHGC	VT
Base	1.23	-	-	0.76
Black	0.72	-	-	0.28
Aluminized	0.74	-	-	0.27

4 Conclusions

As noted earlier the scope of this study included simulation testing only base on previously measured thermal properties of the Eco-Flector solar screen and existing optical data for the glazing.

As seen in the results, the data shows that the heat gain attributed to the windows of a building using the Eco-Flector solar glazing will be significantly reduced. Specifically, the U-value of the glazing improved by an average of 54% for the winter condition and 50% for the summer condition (Table 8 ; Table 9). It is also noted that the system performs best with the aluminized system facing outward during the summer and with the black surface facing outward during the winter. When factoring framing, the U-value of the window system improved by an average of 41% for the winter condition and 36% for the summer condition (Table 10 ; Table 11).

Table 8 . Effects of Solar Screen for Summer Conditions on Glazing

Window Condition	Uc(Btu/h-ft ² -F)	SCc	SHGCc	VTc
Base	-	-	-	-
Black	47.6%	55.0%	54.7%	63.3%
Aluminized	52.4%	63.0%	62.8%	64.4%

Table 9 . Effects of Solar Screen for Winter Conditions on Glazing

Window Condition	Uc (Btu/h-ft ² -F)	SCc	SHGCc	VTc
Base	-	-	-	-
Black	55.0%	-	-	63.3%
Aluminized	54.1%	-	-	64.4%

Like the glazing only condition, the window system performs best with the aluminized system facing outward during the summer and with the black surface facing outward during the winter. In addition, the framing around the window has a significant effect on the window's overall performance and requires a more detailed analysis and accurate framing data to improve the predictive capability of the simulation for a select building.

Table 10 . Effect of Solar Screen for Summer Conditions on Window

Window Condition	U (Btu/h-ft ² -F)	SC	SHGC	VT
Base	-	-	-	-
Black	34.5%	48.4%	48.8%	63.2%
Aluminized	37.9%	55.8%	56.1%	64.5%

Table 11 . Effect of Solar Screen for Winter Conditions on Window

Window Condition	U (Btu/h-ft ² -F)	SC	SHGC	VT
Base	-	-	-	-
Black	41.5%	-	-	63.2%
Aluminized	39.8%	-	-	64.5%

In review of these findings, the researcher recommends three levels of analysis: 1) glazing specific window analysis, 2) glazing and framing specific window analysis, and 3) a thermal energy simulation of the selected building which uses specific glazing and framing data to determine an overall effect of the window glazing on the energy consumption of the building. A thermal simulation of a select building would factor the building's materials, configuration, and mechanical systems.

5 References

- Arasteh, D., 1989. An Analysis of Edge Heat Transfer in Residential Windows. Presented at the ASHRAE/DOE/BTECC/CIBSE Conference on Thermal Performance of the Exterior Envelopes of Buildings IV, Orlando, Florida, December 4-7, 1989.
- Sylvester, K. and J. Haberl. 2000. Semi Transparent PV Glazing: Development of Window Properties for Input Within the DOE-2 Window Library. Solar 2000 Conference Proceedings. American Solar Energy Society. Madison, Wisconsin (June) (CD-ROM).
- NFRC, 2002. NFRC 300: Standard Test Method for Determining the Solar and Infrared Optical Properties of Glazing materials and Fading Resistance Systems. National Fenestration Rating Council.
- Yellot, J. and D. Talt, 1982. Report No. 8219-1. John Yellott Engineering Associates, Inc. Phoenix, AR.
- E. Finlayson, D. Arasteh, C. Huizenga, M. Rubin, S. Reilly (1993). Window 4.0: Documentation of Calculation Procedures. LBL-33943, Windows and Daylighting Group, Lawrence Berkeley Laboratory, Berkeley, CA 94720.
- Ishikawa, N. 1994. Building Integrated PV Mounting Technologies in Japan, Proceeding of the Third International Workshop on Photovoltaics in Buildings. Cambridge, MA. (September)



The Eco-Smart Catalog



Lighting

Healthy, Efficient, Disaster Resistant Products for Better Living

LED Replacement Lamps

LED is the most efficient light source available. LED lamps last 3 to 5 times longer than fluorescent and 20 to 30 times longer than incandescent bulbs. LED costs less to maintain, reduces energy costs and reduces the need for higher rated cable, transformers and ballasts. Virtually waterproof, LED lamps are durable, shock and vibration proof. LED lamps are much safer as well, producing little heat, no UV rays and no harmful gases.

Item Number: LTL-
Unit of Issue: Each
Price: [Price List](#) PDF

LED Fluorescent Tube Retrofit

Strip Light (T5)



Sized to replace T5 fixtures, strip lights are available in lengths 12 to 58" & custom. All

aluminum body with snap-in installation. Spring steel mounting clips, power cord and jumpers.

T8 Lamp Retrofit



Fully encapsulated, 110 or 277 Volt, T8 medium bi-pin mounting

integrates energy saving LED technology into a standard T8 fluorescent format.

Tube Light



Designed for commercial coolers, tube lights are water tight and produce little to no heat. Mounted with two snap-in steel clips.

LED Incandescent & CFL Standard Bulb Retrofit

A19 Series



Fully encapsulated, 120 Volt, 3 Watt, A19 medium base mount retrofit LED

bulb. Also available with frosted acrylic envelope.

E50 & E60 Series



Fully encapsulated, 120 Volt, 7 Watt, E26 or E27 medium base mounting integrates energy saving High

Power LED technology into a standard incandescent format.

CFL Hi Lumen Series



Fully encapsulated, 120 Volt, 6 Watt or 10 Watt, medium base

mounting integrates energy saving LED technology into a standard A19 or CFL format.

LED Incandescent Candelabra & Small Base Globe Retrofit

Candelabra Medium Base



Fully encapsulated, 120 Volt, 2 Watt, E26 base mounting integrates energy saving LEDs into a clear poly envelope in standard 'candle' format.

Candelabra Small Base



Fully encapsulated, 120 Volt, 2 Watt, candelabra E12 base mounting integrates energy saving LED technology into a clear poly envelope in standard 'candle' format.

G16 Globe Small Base



Fully encapsulated, 120 Volt, 2 Watt, E12 candle base mounting integrates energy saving LED technology into a standard G16 format.

LED Flood Lamp, Site Roadway, and Rope Light Page 2

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LED Flood Lamp Retrofit - GU Series

GU10 Flood (MR16)



Fully encapsulated, 120 Volt, 3 Watt, GU10 mounting integrates energy saving LED

technology into a MR16 format.

GU10 Hi Power (MR16)



Fully encapsulated, 120 Volt, 3 Watt, GU10 mounting integrates energy saving Hi Power LED

technology into a MR16 format.

GU10 Mount (PAR20)



Fully encapsulated, 120

Volt, 6 Watt, GU10 base integrates energy saving Hi Power LED technology into a standard PAR20 format.

LED Flood Lamp Retrofit - JDR Series

JDR Flood (MR20)



Fully encapsulated, 120 Volt, 3 Watt or 6 Watt, JDR E26 med. base mounting that integrates energy saving Hi Power LED technology into a JDR or MR20 format.

JDR Decorative Flood (PAR20)



Fully encapsulated, 120 Volt, 9 Watt, JDR / E26 med. mounting that integrates energy saving High Power LED technology into an unusual and decorative format.

LED Flood Lamp Retrofit - MR Series

MR11 Flood



Fully encapsulated, 12 Volt, 3 Watt, G4 bi-pin mounting that integrates energy saving LED technology into a MR11 format.

MR16 Flood



Fully encapsulated, 12 Volt, 2 or 3 Watt, GX5.3 bi-pin mounting or 120 Volt, 3 Watt JDR Mounting, integrate energy saving LED technology into a lensed MR16 format.

MR16 Flood Hi Lumen



Fully encapsulated, 12 Volt, 3 Watt, bi-pin mounting or 120 Volt JDR mounting both integrating energy saving High Power LED technology into a standard MR16 format.

MR20 Flood



Fully encapsulated, 120 Volt, 6 Watt, bi-pin base mounting that integrates energy saving hi power LED technology into a standard MR20 format.

LED Flood Lamp Retrofit - PAR Series

LED PAR Series



♦ [PAR20](#) ♦ [PAR30](#) ♦ [PAR38](#)
Fully encapsulated, 120 Volt, 3 Watt, screw-in medium base mounting integrates energy saving LED technology into a standard PAR format.

LED PAR Mount Series



Fully encapsulated, 120 Volt, 7 Watt, screw-in medium base mounting that integrates energy saving Hi Power LED technology into a standard PAR format.

LED Road and Site Lighting

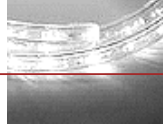
Site Roadway / Wall Pack Lamp



Mogul base Hi Power 38W LED Site Roadway or Wall Pack lamp that produces the equivalent of 300W HPS light output in an energy saving, 50,000 hr. alternative to Metal Halide, HPS, Fluorescent, or Incandescent lighting.

LED Rope Light

Rope Light



Flexible transparent 1/2" diameter rope houses horizontally arranged LED diodes to create a unique linear glow for architectural illumination, accent lighting, and colorful linear light displays without heat, flicker and utilizing extremely low energy levels.



The Eco-\$mart Catalog



Lighting

Healthy, Efficient, Disaster Resistant Products for Better Living

HID Retrofit LED Lighting



Item Number: LT-HIDLED-

Price: Quoted

Features and Benefits

- Long maintenance free life span
- Easy 15 minute installation
- Save up to 75% on your light bill
- Does not attract insects
- Variable outputs 250-400+ watts
- No light pollution
- Full five year warranty

Eco-\$mart HID Retrofit LED Lighting replaces wasteful Metal Halide and Mercury Vapor Lighting for Parking Lots, Garages, and Service Stations with efficient and long lasting LED Solid State Lighting. With recent advances in LED technology, we can now produce the output necessary to directly replace High Intensity Discharge (HID) lamps that are expensive to operate and maintain.

Solid State Lighting is the energy efficient alternative, combining lower energy costs and longer life. Energy efficiency and durability are just the beginning. LED light is better light, and can be focused, reducing light pollution and glare.

We can convert virtually any commercial or industrial HID light fixture to energy efficient solid state lighting (LED's). This retrofit is fast and efficient. Replace your existing high cost & high maintenance Mercury Vapor, Metal Halide and High Pressure Sodium bulbs without replacing the fixture.

Lighting Fixtures that we can retrofit:

- ◆ Wall Packs
- ◆ Street Lighting
- ◆ Service Station Canopy Lights
- ◆ Parking Lot Lighting

Information we need to quote:

- ◆ A stock number of the fixture to retrofit
- ◆ Or a Picture of the fixture
- ◆ Or send a fixture in



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The Eco-Smart Catalog

Lighting

Healthy, Efficient, Disaster Resistant Products for Better Living



Induction Lighting

Solar Wind Hybrid



Induction Lighting is so energy efficient, it makes possible a fully functioning street light that is off the grid! Installed indoors and out, Induction Lighting can reduce energy use by up to 60%, making businesses more competitive. Municipalities and schools can spend limited funds on more sustainable efforts than the constant consumption of costly energy. All will benefit from fewer power plant emissions.

Item Number: LTIL-
Unit of Issue: Unit
Price: Quoted

Unmatched Energy & Maintenance Savings

Indoor Lights



High-Bay, Low Bay and Recessed Lighting for warehouses, factories, showrooms, gymnasiums, retail and grocery stores and more.

Outdoor & Security Lights



Garage Lights, Canopy Lights, Flood Lights and Wall Packs for parking lots and garages, gas stations, schools, shopping malls and more.

Street & Walk Lights



Street Lights, Walk Lights, and Yard Lights for freeway, roadway, secondary roads, parkways, drives, lots, and off street areas and more.

Benefits

- ◆ 100,000 hour rated lamp life
- ◆ Replaces metal halides 1-for-1
- ◆ Reduces energy costs up to 60%
- ◆ 2 times more light output than LEDs
- ◆ Lowest lifetime cost of any light source
- ◆ Superb lumen maintenance, 70%/10 years

- ◆ Universal voltage standard 120/208/240/277
- ◆ Unlimited On/off cycles with instant re-strike
- ◆ Easy installation for new and retrofit
- ◆ Dimming and Step-dimming for added savings
- ◆ Operates 800 degrees cooler than HID
- ◆ Scotopically enhanced 5000K, 90+CRI light

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Thermosiphon Passive Solar Water Heating

Thermosiphon Passive Solar Water Heating Benefits:

- Reduces Water Heating Costs by over 90 Percent
- Can Lower Overall Electric Bills by 20 Percent or More
- Can Act as Stand Alone Water Heater – No Garage Storage Required
- No Moving Parts, Virtually Maintenance Free
- Creates Positive Cash Flow / Tax Free Return on Investment (10 to 20% annual)
- Acts as an Emergency Source of Hot Water
- Reduces Environmental Impact of Utility Power Generation
- Why Buy Oil from Overseas to Heat Water? Solar Water Heating is the Single Largest Step We Can Take Toward Energy Independence

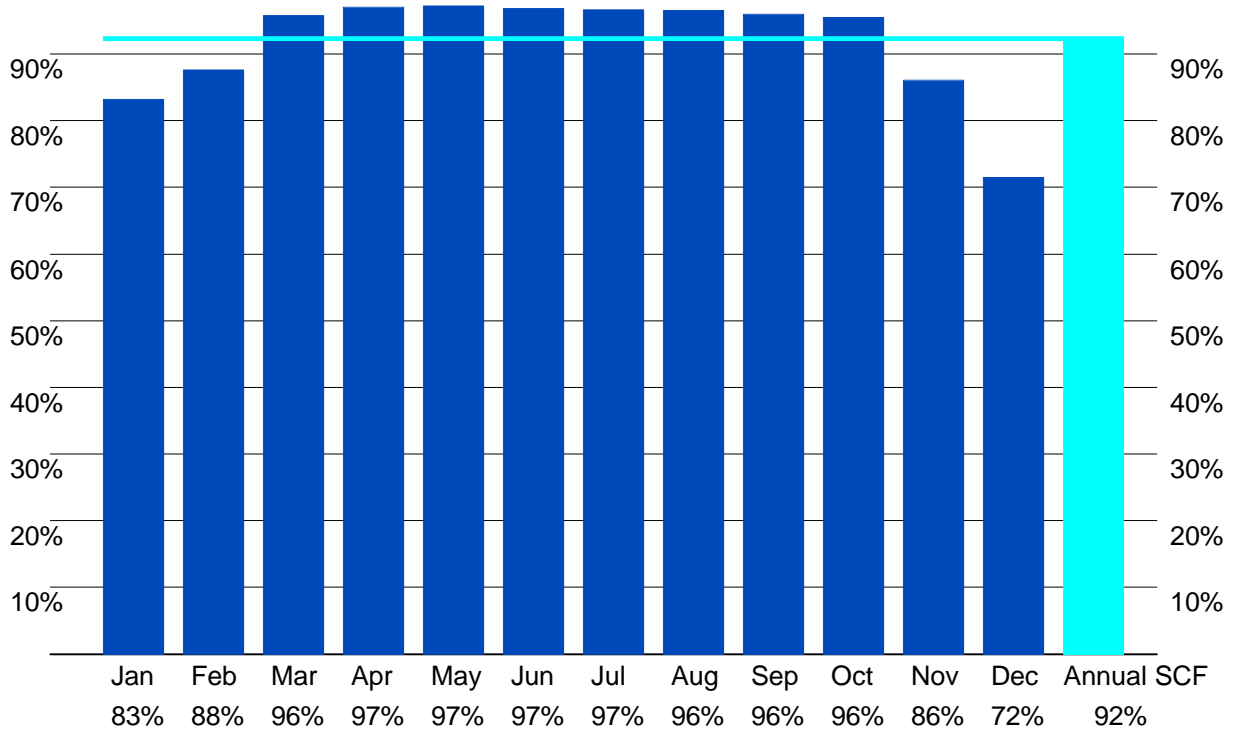
System Description: Two 4' x 5' panels with an 80 gallon storage tank are installed on the roof, typically facing South. The panels contain food grade glycol, which, when heated by the sun, rises up to circulate through the ceramic lined water tank, heating the water. The system can act as a stand alone water heater, as the tank contains its own heating element, or the system can act as a non-electric pre-heater to a standard electric or gas water heater in the home. Savings in water heating cost exceed 90 percent in Florida, saving over 20 percent of the typical electric bill. This system does not freeze, and corrosive water will not damage the collector copper tubes, as only the glycol comes into contact with the copper.



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Energy Savings with Solahart 302J

Location.. Tampa Latitude.. 30.38° N Inclination.. 20° Orientation .. South



Total energy from the sun.....3353 kWh/year under average conditions.***

Savings relative to a 150 litre electric water heater.**

Average use 72 US Gal./day at 120.2°F (28434 Btu/day)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Radiation	1015	1268	1617	1966	2029	1934	1839	1744	1554	1395	1141	983	Btu/sqft.day
Ambient	78.1	61.5	66.4	71.2	77.2	81.0	82.0	82.0	81.0	74.8	67.6	62.2	°F
Cold Water	77.0	60.8	66.2	69.8	77.0	80.6	80.6	80.6	80.6	73.4	66.2	60.8	°F
Solar Input	8.24	9.2	9.87	9.8	9.62	9.49	9.37	9.36	9.41	9.55	8.87	7.51	kWh/day
Boost input	5.98	4.68	1.56	1.09	1.0	1.13	1.19	1.23	1.41	1.62	5.14	10.74	kWh/day
Electric HWS*	9.2	13.6	12.1	11.1	9.2	8.3	8.3	8.3	8.3	10.2	12.1	13.6	kWh/day
Energy saved	7.6	12.3	11.6	10.8	9.0	8.0	8.0	8.0	8.0	9.7	10.6	10.6	kWh/day
	80165	711704	562301	781050	254793	382208	384755	384652	381407	210268	408887	311179	Btu/day

Total Annual Savings on Energy Use vs. an Electric water heater.....3470 kWh/year

* 150 litre electric water heater container loss of 1.98 kWh/day.

** Estimated savings are calculated with hot water use distributed throughout the day.

2/1/2003

Solahart Industries Pty Ltd

A Southcorp Company.

Corporate Headquarters: 112 Pilbara Street, Welshpool, Western Australia 6106. Postal Address: P.O. Box 95, Welshpool, Western Australia 6986.



ACN 064 945 848



The Eco-\$mart Catalog



Solar Energy

Healthy, Efficient, Disaster Resistant Products for Better Living

«Back **Solar Modules** Next»



Item Number: Sol-MOD-
Unit of Issue: Each
Price: Quoted

More Information

- ◆ [Specifications \(All\)](#) PDF
- Incentives & Rebates**
- ◆ [Database of State Incentives for Renewables & Efficiency](#) Website
- ◆ [FPSC Rule 25-6.065 Interconnection of Small PV](#)

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Solar Modules are designed to convert sunlight into electricity, with high efficiency and reliability. We provide modules that range from 5 to 280 W by unit power output. All modules are designed and manufactured to meet international safety standards and are all certified.

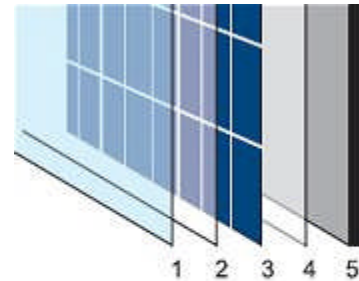
Our modules feature a heavy-duty anodized frame to provide strength and convenient mounting access as well as weather-resistant junction boxes for easy and safe field interconnection. The solar cells we source are designed to withstand the most severe environmental conditions. We encapsulate cells between a tempered glass cover and an EVA film with a triple-layer back sheet. Our solar modules have a 25-year warranty on their output, and a 5-year warranty on materials and workmanship.

Solar Modules from 5 watts to 280 watts



Poly-Crystalline

Model	Watts	Dimensions(in)	PDF
-P672	240-280	77x39.1x1.97	Specs
-P660	200-240	64.57x39.06x1.97	Specs
-P654	180-215	58.35x39.06x1.97	Specs
-P648	155-195	52.13x39.06x1.97	Specs
-P636	115-145	58.3x26.6x1.3	Specs



- 1 Tempered glass
- 2 EVA
- 3 Cells
- 4 EVA
- 5 Triple-layer back sheet



Mono-Crystalline

Model	Watts	Dimensions(in)	PDF	Model	Watts	Dimensions(in)	PDF
-M572	155-185	62.20x31.81x1.97	Specs	-M53930	30	24.9x16.8x1.3	Specs
-M536	70-85	47.44x21.46x1.38	Specs	-M53620	20	26.1x11.8x1.3	Specs
-M54050	50	28.3x21.9x1.3	Specs	-M53610	10	15.1x11.8x1.3	Specs
-M53640	40	32.99x16.81x1.34	Specs	-M53605	5	15.8x6.9x1.3	Specs

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