PHOTOVOLTAIC POWERED SYSTEMS
 Indianapolis.IN
 317.926.7000/ Toll-Free 866.987.6648

eSOlarPowerLUMENS™ PHOTOVOLATIC POWER-LIGHT SYSTEMS

2018



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Earth-SOlar Technologies Corporation

... is a USA based solar-power design-engineering company. It is in the business of producing, design-engineering, selling, and maintaining photovoltaic power, urban-scale wind and integrated systems. Earth-Solar is a global leader in the design and supply of complete clean energy, waste and water infrastructure for 100% off-grid communities. Earth-Solar has refined a High Efficiency Applications Technical Portfolio (HEAT) that consist of the highest efficiency lighting, appliances and equipment available to integrate with solar and urban-scale wind energy networks. The eSOlarPowerLUMENSTM Photovoltaic Power Lighting Systems outlined herein are a core part of the HEAT Portfolio.

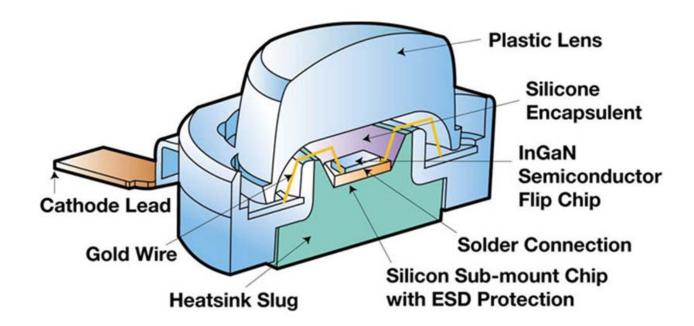
- 1. **DESIGN-ENGINEERING:** Subject to preliminary Memorandum of Understanding Earth-Solar will design-engineer all components and systems at no extra charge.
- 2. **eSOlarPowerLUMENS™ DELIVERED**: Earth-Solar delivers the LED lighting components as herein described.
- 3. BALANCE OF SYSTEMS (BOS) LOCALLY ASSEMBLED: Earth-Solar supplies Technical Dimensions & Specifications for lamps, fixtures, wiring, plugs, light poles, brackets and battery cabinets for both Indoor and Outdoor Street Lighting so that locally owned businesses and locally based people can assemble and supply these structural components and local industries can form and expand around producing them.
- 4. **BOS DELIVERED BY EARTH-SOLAR:** If it is preferred then Earth-Solar can also supply the Balance of Systems (BOS).

eSolarPowerLUMENS™ PHOTOVOLATIC INTERNAL POWER-LIGHTING SYSTEMS are core components of Sustainable Community Development. Any community that is advancing in the modern world must have reliable and efficient lighting for comfort, safety, commerce and the well-being of all citizens 24 hours/ day.

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LED BULBS

LED is the abbreviation for Light Emitting Diode. The LED is a solid-state semiconductor device that converts electrical energy directly into visible light. The following is the typical construction of an LED.



LEDs offer:

- ▲ Long life up to 50,000 hours/ 6 7 Years
- ♣ 50-90% less energy required than incandescent
- No glass
- No filament
- No heat
- ▲ No UV
- No mercury
- ▲ Lower maintenance/replacement costs

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Lumens to Watts

How Many Lumens Do You Need? More Lumens = More Light

If you used to buy this in INCANDESCENT	Look for this much LIGHT in LUMENS	LED (most efficient)	CFL (more efficient)	Halogen (more efficient incandescent)
100 W	1600	up to 22 W	up to 26 W	up to 72 W
75 W	1100	up to 20 W	up to 23 W	up to 53 W
60 W	800	up to 12 W	up to 15 W	up to 43 W
40 W	450	up to 9 W	up to 11 W	up to 29 W

Output & Wattages based on most common products available for each medium screw-based light bulb. Actual output may vary by product.

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COMPONENT: LED 13 Watt A19 Bulb, Dimmable, Frosted Replaces 75 Wt Incandescent

Order # eSOlarPowerLUMENS #LT101



Operating Parameters

13W Replace Up to 75W Incandescent Bulb, E26 Base

Base Type	E26 (Medium Screw)
Style	A19
Color	Warm White
Color Temp	3000K
Voltage	120 - 240 VAC
Power	13.0 W
Current	0.118 A
Operating Temp	~-30°C to ~+50°C
Efficacy	70 lm/W
Lumens	956 lm
Max Candela	89 cd
CRI	80+
Viewing Angle	300°
	Omni-directional

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COMPONENT: LED 7 Watts Replaces 60W Incandescent -- Dimmable

Order # eSOlarPowerLUMENS #LT103



LED Light Bulb, A19 Size, Frosted or Clear Lens, Operating Paramet Only 7 Watts

Base Type	E26 (Medium Screw)
Style	A19
Color	Halogen White 2700K, Other Color Temps Available
Color Temp	2400K to 2700K
Voltage	120 - 240 VAC 50 Hz
Power	6 W
Current	0.055 A
Operating Temp	~-20°C to ~+45°C
Efficacy	87 lm/W
Lumens	540 lm
Max Candela	57 cd
CRI	>80
Viewing Angle	Omnidirectional

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COMPONENT: LED 8W Replace Up to 60W to 75W Incandescent

Order # eSOlarPowerLUMENS #LT104







Operating Parameters

Base Type	E26 (Medium Screw)
Style	A19
Color	Warm White
Color Temp	3000K to 3200K
Voltage	100 240 VAC
Power	7.7 W
Current	0.069 A
Operating Temp	~-30°C to ~+50°C
Efficacy	90 lm/W
Lumens	694 lm
Max Candela	179cd
CRI	85
Viewing Angle	124°

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eSOlarPowerLUMENS CLL2X4-60W-XWW-101D LED Ceiling Panel Lights, Thin Profile, Dimmable, 2 x 4 ft Only 67 Watts, Replaces up to 135W 4-Tube Flourescent Fixture 100~277Vac,Wide Beam 115°, Natural White 4100K

Fits Standard T-Bar Mounting

Major Reduction in Energy Consumption

ATTRIBUTES:

Dimensions	2 x 4 ft
Color	Natural White
Color Temp	4100 K
Voltage	100-277 VAC
Power	44.0 W
Power Factor	1.0
Efficacy	96 lm/W lm/W

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Lumens	6414 lm
Max Candela	1480 cd
CRI	>80
Viewing Angle	115°







FEATURES

- 5 Year Warranty
- Over 50,000 hr LED. Lumen Maintenance over 70%
- High >80 CRI/ High Lumen
- No UV/IR. No Glass. No Heat
- Dimmable 0-10V, 0-100KΩ, PWM
- Producer has 30+ Yrs Design & Manufacturing

APPLICATIONS

- School/College/University Lighting
- Industrial Area Lighting
- o Replace standard dropped ceiling

Troffer and Parabolic Fixtures

- o Office Lighting
- Hospital Lighting
- Hotel Lighting
- Conference Room Lighting
- Retail Store Lighting
- Convenience Store Lighting
- Commercial Area Lighting

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LED T8 Tube Lights, 48 inch, Dimmable, Clear, 17 Watts



eSOlarPowerLUMENS #LT104

Replaces 32 to 36W Fluorescent, 2-Pin G13 Base, Wide Beam

120Vac, Natural White Color Temp, Other Colors available

Directly Replace Fluorescent with Simple Ballast Bypass. Ceiling Lights in Office, Schools, Hallways

Parking Garage, Retail Store Display, Coolers, Freezers, Vending Machines, Signage

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OPERATING PARAMETERS

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Length	48 inch		
Color	Natural White		
Color Temp	3800K to 4300K		
Lens	Clear		
Connection	T8 2-pin (G13)		
Voltage	120Vac Dimmable		
Power	17W to 18W		
Current	0.144 A		
Operating Temp	~-20°C to ~+40°C		
Power Factor	0.99		
Efficacy	118 lm/W		
Lumens	2023 lm		
Max Candela	700cd		
CRI	>80		
Viewing Angle	144°		



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FEATURES

- Dimmable
- ETL Classified/Recognized (p/n: DG02B)
- 5 Year Limited Warranty
- No UV. No Toxic Mercury.
- Energy Savings of up to 50%
- Direct Retrofit into Fluorescent T8, T10, T12 Fixtures
- Over 50,000 hr LED. Lumen Maintenance over 70%
- Adjustable Illumination Direction
- Even Lighting, No Buzzing, No Flickering
- 30+ Yrs Design & Manufacturing

APPLICATIONS

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Ceiling Lights in Office, Schools, Hallways

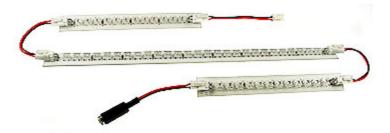
- Parking Garage, Parking Structure Lighting
- Lighting in Production Area, Warehouse
- Coolers, Freezers, Vending Machines
- Retail Store Display Lighting
- Transportation, Railroad, Buses
- Undercabinet or Cabinet Lights
- Light Boxes, Signage Backlighting

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White LED Light Strip, Interconnectable, Wide Angle

12VDC, Choice of 6"/12"/24" Long, Accent, Area, Cabinet, Counter Lighting





Energy-Efficient, Incandescent or Fluorescent Replacement

Ideal for use with Alternate and Renewable Energy resources like Solar Power & Wind Power Major Reduction in Energy Use, Reduces Light Pollution, "Dark Skies" Initiative Friendly

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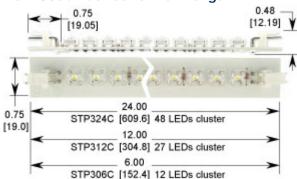
OPERATING PARAMETERS

Each strip comes with 1 (one) Modules inter-connector CONN-WIRE-STP301-3 and 2 (Two) MTG-CLIP-STP-002 clips All Series under this Category:

STP306C Interconnectable 12-LED (Hi-Flux) Strip

STP312C Interconnectable 27-LED (Hi-Flux) Strip STP324C Interconnectable 42-LED (Hi-Flux) Strip MTG-CLIP-STP-002 3/4"-Wide Clip for Light Strips

STP306CT Series 6-inch Length



Dimensions: in inches [mm

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PLEASE REFER TO www.eSOlarMarket.com

The complete "eSOlarPowerCELL Offgrid Generator" is a self-contained turnkey power system. It is connected quickly and easily. It comes with plugs for a 12 volts DC low voltage, 120 Volts, AC Voltage 60Hz or 230 Volts 50 Hz connection.

The entire system consists of three primary components: 1) PV modules that convert sunlight into electricity, 2) Power-Control Generator Center and a 3) Battery Storage that regulate electricity into the batteries that store the generated electricity - safe and simple. You receive a customized, cost-effective and complete system, which operates at the highest efficiency.

In this application, we are using only a high strength, highly stable, long life module, specifically designed for hot and cold regions (desert modules HPTP technology) with up to three (3) times longer life spans and operating effectively in temperatures up to 125 degrees F.

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