

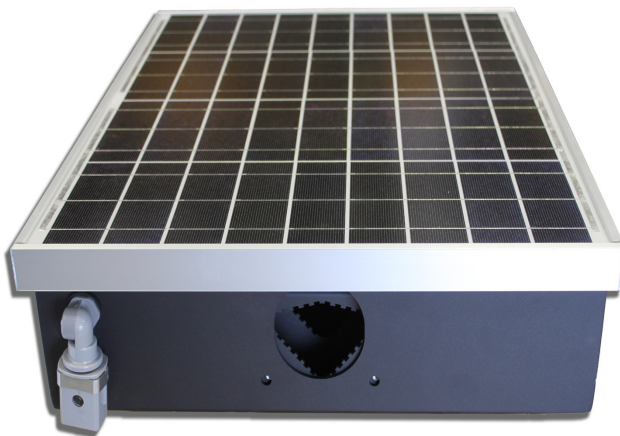


Solar Powered Street Light
ESS-3400 Factsheet



Solar Powered Street Lights - The alternative clean power solution


Enertia Engineering Ltd. Manufactures the first fully-integrated Solar Powered LED Street Light. Our innovative design has no external solar array or battery box. We utilize industry standard Street Light designs and mounting methods. Our products are manufactured in North America and meet international quality assurance standards.



Every year, millions of street lights are installed worldwide. The demand for street lighting is creating a significant impact on the available electrical generation. One solution is to remove the lighting from the grid using solar power. This concept is a viable, proven alternative to traditional lighting methods.

Comparisons - which is best for your application?

A comparison table between traditional utility powered High Pressure Sodium (HPS) street light, traditional solar street light and Enertia integrated solar street light is presented in the table below. In the table the RED highlights demonstrate disadvantages and GREEN highlights represent advantages.

	Regular Street Light	Traditional Solar Street Light	ENERTIA ESS-3400 EnerSolar Street Light
Pole Type	Uses standard size/connection	Uses standard size/connection	<i>Uses standard size/connection</i>
Power Consumption	90 W high pressure sodium	40W LED array	<i>30W Ultra High Efficient Array</i>
Light Output	5500 Lumens (3850 effective)	3000 Lumens	<i>3400 Lumens</i> 
Efficacy	30-50 Lumen / Watt	50-75 Lumen / Watt	<i>113.3 Lumen / Watt</i>
On/Off Control	Photo-sensor or wire control	Photo-sensor	<i>Photo-sensor, wire or solar panel</i>
Backup Power Source?	None	External battery in Box at top or bottom of Lamp Pole, Inefficient design needs large cables between components (1 - 2 nights reserve)	<i>Internal Battery, fully integrated into Street Light Head (Over 3 nights autonomous operation / battery reserve)</i>
Alternative Power	No solar array	Separate solar array	<i>54W Integrated solar array</i>
Source of Power	Requires Electricity	Solar powered	<i>Solar powered</i>
Outages	Works only when grid is energized	Works during power outages	<i>Works during power outages</i>
Trenching	Cable requires expensive trenching	No trenching	<i>No trenching</i>
Additional wiring in the ground	Wire in the ground	No wire in ground	<i>No wire in ground</i>
Additional wiring on the pole	Wire in the pole	Wire in pole for Solar - Battery - Light power connections	<i>No wire in pole</i>
Installation	Significant resources to install	Specialized crew to install	<i>Single piece, simple install</i>
Safe Installation	Special crews for safe installation	Safe to install	<i>Safe to install</i>
Light Output Bandwidth	Attracts insects	Does not attract insects	<i>Does not attract insects</i>

- Recent advances in high performance LED lights, solar panels, and batteries, now make it more-cost effective to consider solar powered lighting.
- We intelligently apply High Efficiency, High Output LED's (130lumens/W) with Net output of up to 113 Lumens per Watt.
- We carefully control the power flow within the Street Light with automated microprocessor control of the power going to the LED's, coming from the sole or combined power sources - Solar and Battery.
- To maximize the solar panel efficiency we use a central microprocessor to perform Maximum Peak Power control which intelligently controls the voltage and current drawn.



Costs - How much does a Street Light cost?

When all of the costs are considered, It is less expensive to purchase and install solar lights than traditional



To properly package the integrated solar street light system we custom manufacture our street light to contain all of the components within the head, this includes the battery which is located inside the housing, and for equatorial or high solar radiation areas the solar panel is affixed directly to its top.

Enertia Solar Street Light Specification*

Component/Function	ESS Enertia Solar Powered Street Light
Housing	Powder Coated Aluminum
Connection Type	Standard 50mm to 76.2mm (2" to 3") Pole Connection
Lamp	32 LED Ultra-High Efficiency CREE LEDs
Lumens	30W - 3400 Lumens (Gross Efficacy 130 lm/w, Net Efficacy - 113 lm/W)
Lens	Tempered-glass lens, flat
Photo-Sensor	12 V with built in nuisance time delay
Battery Type	75Ah, Designed for up to 3 days autonomous operation
Solar Array	Integrated: 54W Kyocera Multi Crystalline Optional kit for external mounting of solar panel with 360 degree pointable swivel base
Light Dimensions WxHxD mm (inch)	54W, 639mm (25.2in) × 652mm (25.7in) × 254mm (10in)
Battery Weight (Kg)	75Ah - 25.4kg (56.1lbs)
Light Weight (Kg)	11.8kg (25.9lbs) + Battery
Total Light Weight (Kg)	37.2kg (82.0lbs) + Battery
Total Packed Weight (Kg)	41.8kg (92.0lbs) + Battery
Warranty	2 year parts & materials on LED, Driver Board & Housing, 1 year battery / solar panel

*Information subject to change without notice.

Benefits of Enertia Solar Street Lighting

Lower Initial Cost – It is less expensive to purchase and install a solar powered street light than a traditional street light.

Lower Operation Cost – It is less expensive to operate a solar powered street light than a traditional street light.

Compact Design - Our design and technology implementation have been driven by our desire to eliminate the need for bulky external battery boxes and external solar panels and achieve a FULLY INTEGRATED Solar Powered Street Light. To achieve this, we have designed our system to have maximum light output with minimum power consumption using our proprietary high efficiency solar cells located directly on the light fixture.

Reduced Damage/Theft - By locating the solar technology directly on the light fixture and placing the battery within the light fixture, the risk of damage, theft or tampering is greatly reduced. There are no wires in the street pole, which means that the wire itself (which exists in regular street lights) can't be stolen and sold for scrap.

Ruggedized Technology – The solar powered street light is designed based upon our extensive experience of using electrical and electronic equipment in harsh environments, our engineered solutions require less maintenance and reduced parts replacement due to initially incorporating higher quality components.

Insect Swarms – The solar powered street light uses LED lighting which does not produce Infrared light, and therefore will not attract insects. (No more moths and other flying insects swarming around the light.)

Improved Safety – The solar powered street light does not require connection to an electrical grid. It is safer and easier to install. In the event of a power outage, the light remains on. This reduces the chance of car accidents and the constant light deters theft/vandalism from nearby businesses.

Anywhere/anytime – The solar powered street light can be used in any location. Since no electrical grid is required, it can be installed on buildings, in parking lots, in remote locations simply by hanging it on a pole.

Faster Installation – Since you don't need to trench power lines to the pole, run wires up the pole, connect wires to an electrical grid, or hard wire the street light, the installation is significantly faster. In fact, it is so easy, it can be installed on the pole before its erected, and thereby reducing a step completely from

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