Larson Electronics LLC
9419 E US HWY 175, Kemp, TX 75143
Phone: 800.369.6671

www.LarsonElectronics.com
Email: sales@LarsonElectronics.com
Fax: 903.498.3364

SPLT-1.5K-LM40-750A-4X250W-BC

1.5KW Solar Power Generator w/ 40' Light Tower Mast - (4) 250W LED Lights, Battery Charger

Product ID: 313153



Larson Electronics LLC manufactures a wide variety of products, including custom built to spec designs. The pictures displayed for this unit are a general representation of form factor for the product line and may not accurately represent this exact configuration in every detail due to custom builds and changes between similar products in our standard catalog. The specifics for this configuration are listed in the specification table and supporting documentation (CAD files, Dimensional Drawing, Name Plate Diagram, Wiring Diagram, etc.). This means that specific details (receptacles, plugs, wires, connections, mounting brackets, external finishes, etc.) may not be accurately represented in images vs specifications. Please review specifications and do not order based solely on images.

SPLT-1.5K-LM40-750A-4X250W-BC Mobile Solar Power Light Plant

Solar System Specs:
Panels: (6) 250-Watt panels
Method of Deployment: Rotating axis, hydraulic actuator
Average charge capacity: 66 amps per hour
Panel protection: Fused combiner box
System Protection: Battery over/under and ground fault
System Voltage: 24 Volts

Battery Bank Specs:
Battery Bank: (6) 12-Volt 250aH batteries
Battery Type: 8D Sealed AGM - Maintenance Free
Battery capacity: 750ah total and 375ah usable
Inverter: -
Run Time: -
Alternate Charger: Yes - 125V or 240V Charger
Charging Cable: 100` 12/3 SOOW w/ 5-20, L5-20, 6-20, or L6-20 cord cap

Light Mast Specs:
Mast Type: Telescoping
Tower Length: 9.17' - 40'
Stages: 8
Capacity: -
Materials: Steel
Finish: Powder Coated - Gloss Blue
Operation: 2,500 lbs Manual Hand Crank Winches

Features
40' Light Tower
Fully Solar, No Fuel Needed
1.59KW Solar Generator
Hydraulic Actuator for Raising/Lowering Panels
Automatic Timer and Dusk-to-Dawn Sensor
Maximum Power Point Tracking (MPPT) Charge Controller
(6) 265 Watt Solar Panels w/ (2) Rotating Axes
Battery State/Charge Meter w/ Visual Display
1400 CFM Cooling Fan
(6) 12V DC Deep Cycle AGM Batteries - 750AH
Sealed Batteries - Maintenance Free
Lights Operational While Charging
360° Mast Rotation w/ Position Key-way Locks
Durable NEMA 3R Ventilated Housing to Protect Solar and Power Generation Components
2" Ball Hitch or 3" Pintle Hitch w/ Height Adjustment
16` x 6` Trailer Bed
High Wind Locking Stabilization Arms for Solar Panels
4-Corner D-Rings for Transportation
Side Access Forklift Skid Pockets
4-Corner Eyelets for Crane Picking and Air Transportation
Stop/Tail/Turn Light, License Plate Lights & Reflective Tape for Highway Use
High Capacity Trailer Rated Tires
Electric Brake Setup w/ Breakaway Device
Included Safety Chains
Removable Tongue for Storage, Transportation & Long Term Deployment

Mast Cable: 1/4" Aircraft Cable

LED Lamp Specs:

Lamp Quantity: (4)

Lamp Type: CREE LED

Total Watts: 1,000W (250W per lamp)

Total Lumens: 129,600 lms (32,400 lms per lamp)

Luminous Efficacy: 135 lm/w

LED Life Expectancy: 150,000+ hours

Color Temp: 5700K

Beam Angle: 10° Spot, 24° Wide Spot, 38° Narrow Flood, 60° Flood, or 90° Wide Flood

Optics Efficiency: 98% - PMMA High Transmittance Optics

LED Drive: 90%

Ambient Temp Range: -40°C to +80°C

Lamp Housing Material: Cast Aluminum

Lamp Lens Material: Polycarbonate

Lamp Settings: Automatic, Timed Interval, Manual (via 3-way Switch)

Waterproof/Vapor Proof Lamps

80,000+ Hour LED Life

IP67 Waterproof Lamps

70% Lumen Retention after 80,000 Hours

Trailer Specs:

Materials: Steel

Bed Type: Expanded Metal

Trailer Dimensions: 16`-L x 6`-W Trailer Bed

Trailer Bed Height: 23" Above Ground

Total Collapsed Height (w/o Lights): 10`-2"

Total Collapsed Height (w/ Lights): 12`

Total Extended Height (w/o Lights): 31`-11"

Total Extended Height (w/ Lights): 32`-10"

Footprint: 16`-L x 10`-W w/ Outriggers Extended & Tongue Removed

Hitch: 2" Ball Coupler or 3" Pintle Hitch - Adjustable Height

Tongue: Removable

Finish: Industrial Grade Coating

Lighting: Stop/Tail/Turn & License Plate Lights

Wiring: 7-Pin Flat Trailer Plug (standard)

Axle: (1) 3,500 lbs

Suspension: 3,500 lbs Double Eye Leaf Springs

Brakes: Electrics Brakes w/ Breakaway Switch

Outriggers: (4) 24" Retractable Outriggers w/ 2,000 lbs Manual Leveling Jacks

Wheels: (2) 15" 5x4.5 Steel Rims

Tires: ST205/75/D15 H188

Mounting: Towable Trailer, 3,500 lbs Axle, 2" Ball Coupler

Transportation: Towing, side-mount skid pockets, 4-corner pickeye for crane transport

Dry Weight: ~3,000 lbs

Shipping: Common Freight

Options: Length- Mounting-Fixtures/ Call Us for Special Requirements

Special Orders - Special Requirements

Contact us for special requirements

Toll Free: 1-800-369-6671

Intl: 1-903-270-1187

Fax: 1-903-498-3364

E-mail: sales@larsonelectronics.com

Made in the USA

The Larson Electronics SPLT-1.5K-LM40-750A-4X250W-BC Solar Powered LED Light Plant provides operators with a clean energy alternative to generator powered light towers. This solar generator is equipped with four 250-watt LED light fixtures, a 40` telescoping mast, automated actuators for raising and lowering the solar panels and battery charger. The mobile solar LED light tower can be ran continuous, operated via a dust to dawn sensor or built in timer for increased usage flexibility in the field.

PLEASE NOTE: ANY FREE SHIPPING OFFERS DO NOT APPLY TO MASTS

OR TRAILERS*

Solar Light Tower: This solar light tower includes six 265-watt solar panels, solar charging system, battery bank, dusk to dawn sensor, timer, battery charging system, four LED lights and mast mounted on trailer with outriggers and removable tongue. This 1.59KW solar generator system replenishes up to 363 amp hours of usable battery capacity per day, assuming 5.5 hours of peak charging sunlight. This system delivers 24 volts for lighting mounted atop a mast.

Solar Panel Assembly: This unit is comprised of six 265-watt polycrystalline solar panels, generating a total maximum output of 1590 watts. The panels are mounted to a rotating axis assembly. There are two assemblies, one on each side of the solar trailer. The panels can be rotated until they face inwards, which protects the panels during transport. When deployed, the panels are rotated until they face upwards. On most models, we offer a locking pin system, preset with a winter and summer angle position for the panels.

In order to optimize the sun capture, the panels are set to +/- 15 degrees of the latitude of the trailers location on the earth. Houston, Texas, for example, is at latitude of 30 degrees, so the winter setting is 45 degrees and the summer setting would be 15 degrees. While this does not make a huge difference, every little bit helps. The position of the panels are set via locking stabilization arms with key holes, which increases stabilization of the solar array during deployment in with high wind applications.

Once the panels are set the correct solstice position, one section of panel is elevated into position via a hydraulic actuating system. This sets one set of 3 panels above the other section of three panels so they make a consistent plane angle to the sun. The entire panel deployment can be done easily by one person, since the axis system supports the weight of the panels during positioning. The entire process takes just a few minutes.

As part of the deployment, operators will set the four outriggers into position by pulling them out and pinning them into position. Four 2,000 lbs hand crank leveling jacks are used for leveling. The jacks can be leveled by hand crank or attachment provided for power drills. These outriggers can be extended 2` out from the side of the trailer for added stability. This will offset the effects of wind on the panels and the light mast.







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Solar Charging System: In this 24 volt DC system, each panel is terminated with a fused combiner box with a single lever action cut-off switch. With the switch set to the 'on' position, the combiner box passes power to the 80-amp capacity Outback Extreme charge controller.

This solar light tower uses the Outback Extreme maximum power point tracking (MPPT) series charge controller system since it standard temperature threshold is more than 160 degrees Fahrenheit, due to its integrated heat sink and fan assembly. Oddly enough, most charge controllers are not rated past 104°

Fahrenheit despite the fact the will always be close to direct sunlight. In the summer time in Texas, our fabrication shop is normally warmer than that, so this solar light tower uses a charge controller that would support the southern heat. This charge controller maximizes the solar power gained from the PV array, and prevents over and under charging of the battery bank. We improve on that capability by shading the charge controller and adding additional air flow from the exhaust of a 1400 CFM component cooling system.

The charge controller charges a 750-amp capacity battery bank. This 24 volt battery system in comprised of 12-volt 8D deep cycle acid glass mat (AGM) batteries tied together in series. Of course, with most battery technology, the battery bank cannot be drained below 50% without destroying the batteries. With that in mind, this effectively reduces the total capacity of this system to 375 amps at 24 volts.

The panels produce approximately 11 amps per hour per panel to charge this system. On a bright sunny day, the six panels would generate and deliver up to 363 amps back to the batteries in 5.5 hours. This conservative number of 5.5 hours is pretty standard conservative number for the solar industry. Many parts of the world have more and some have less. While this solar trailer can be optimized for the angle of the sun, the panel assemblies do not follow the path of the sun, so we use this conservative number to ensure successful operation. In areas with longer days, additional battery banks can be purchased to increase the capacity of the system. The solar trailer has capacity for 2 additional battery banks or 1 additional battery bank and supplemental generator for areas with shorter days or sporadic sunlight.

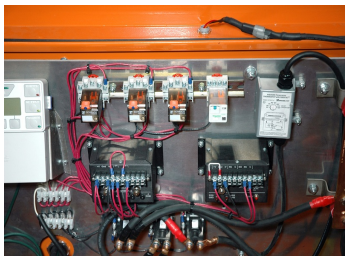
Battery Bank System: The battery bank consists of six 12-volt acid glass mat (AGM) batteries that are mounted to a removable tray. These AGM batteries are sealed and require no maintenance. The batteries are spaced apart, strapped to the battery tray and covered with a protective shield. The shield provides security and also shaded protection from the sun. The construction of the battery tray system enables the batteries to ventilate while shading and securing them. Much like a forklift battery bank, the entire battery tray system can be replaced in one operation. The trailer includes room for an additional battery bank system or a supplemental generator, both of which can be purchased separately and installed in the field.

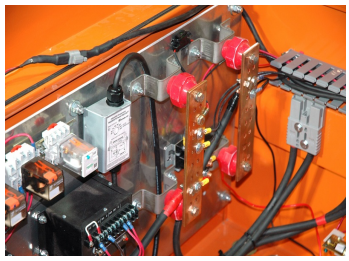
Alternate Charging System: The battery bank is equipped with a line voltage AC rapid battery charging system that allows operators to plug the trailer into 120V or 240V AC to charge the battery bank without removing the batteries. This charging system consists of a multi-stage charging algorithm with safe start, short circuit protection, and overcharge protection. 100` of 12/3 SOOW cable terminated in a 5-20P straight blade or L5-20P twist lock cord cap for 120V systems or 6-20P straight blade or L6-20 twist lock cord cap for 240V systems allows operators to plug this unit into line voltage and charge the battery bank during long periods of cloudy days or when not in use. The lights can be operated while the batteries are charging.

Component Control Center: In order to ensure that the 50% threshold on the batteries is controlled, this solar trailer includes a system of min/max voltage sensors and relays that monitor the voltage produced by the batteries and will automatically shut off power distribution when the battery capacity falls below 50%. This protects the batteries from failure. We also include ground fault protection and an Outback Mate 3 monitoring system to track and log all activities related to the charger controller and battery health, including solar panel array amperage input and battery charger meter. This monitoring system has a visual display within the control box to show current status of the entire system. In the event there is an issue with the solar trailer, the SD card can be removed from the Mate 3 and sent to Larson Electronics for analysis.

All the electrical components, including the combiner panel, charge controller, over/under battery monitoring and ground fault isolation are encapsulated in a NEMA 3R job box that is bolted to the trailer. The electrical components, including switches, breakers, and cables are are compatible with solar arrays. Since most of these components are not rated for high heat, our component cooling system

circulates air within the job box at 1400 CFM when the ambient temperature exceeds 90° Fahrenheit. The component control center also includes a terminal block so that customers can mount additional electronic gear without interfering with the charging systems. The job box that contains the component control system includes locks for security purposes.





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Wire Management: The trailer itself houses a built in wire raceway that brings power from the component control center and batteries to the light mast. At the base of the light mast there is an access panel for making connections from the power source to the cabling within the mast.
Mast: This telescoping eight stage steel light mast from Larson Electronics is designed to allow operators to quickly and safely deploy four LED lights in locations where such equipment must be elevated to heights up to 40` for effective coverage. The light boom can also be collapsed to 9.1` for applications where a smaller footprint is required. The mast is elevated using an included 2,500 lbs manual hand crank winch with 1/4" aircraft cable.
The tower is constructed of square steel tubing with a lower section 6.18` in length and 10" by 10" by 3/8" thick, second section 6.27` in length and 8" by 8" by 3/8" thick, third section 6.45` in length and 6" by 6" by 3/8" thick, and an upper section 8.45` in length and 4" by 4" by 1/2" thick. Each section has 2` of overlap.
The LM series of towers are powder coated with glossy blue finish for corrosion resistance and aesthetics. This light mast is secured to a skid platform via a 28" by 28", 1/2" thick mounting base-plate which has been drilled to accept six 1-1/4" anchor bolts. When fully collapsed, the top stage has 24" extending from the second stage, allowing operators to mount larger equipment without having to dismount when collapsed.
The LM family of telescoping towers feature a proprietary mast guidance system, which provide increased stability during high winds. When lowered to 9`, the mast can withstand winds up to 125 mph. When elevated to its full upright position, the mast can be rotated a full 360°. By loosening the T-Handle, operators can rotate the mast with ease in either direction. The mast can be positioned in any direction and locked back in place by re-tightening the T-handle. The mast itself spins freely with ease, and can typically be rotated with a single hand.
LED Light Fixtures: This solar light plant is equipped with four Larson Electronics GAU-LTL-250W-LED high output LED light fixtures. The LED lamps produce a total of 129,600 lumens of high intensity light while drawing only 1,000 watts. Twenty-four CREE high output LEDs producing 1,350 lumens each are arranged in rows and paired with PMMA high purity optics to produce a well focused 24° wide spot beam that is ideal for providing far reaching concentrated illumination while still covering a substantial amount of area. We also offer optional optics with 10° spot, 38° narrow flood, 60° flood, and 90° wide flood beam spreads. The spot beams are tightly focused and are designed for high elevation mounting to achieve distance, making spot versions ideal for high mast and spots lighting. The flood beams are designed to provide more light over a larger area nearer the fixture, making flood versions ideal for use as dedicated work and area lights. The LED lamp assembly is protected by a shatterproof polycarbonate lens.

As well as unparalleled heat control, the GAU-LTL-250W-LED series of LED lights from Larson Electronics also offer IP67 rated construction that is designed to withstand extremes of environmental and operating conditions. These units can withstand rapid temperature changes of -40° Celsius to +80° Celsius, are waterproof, and resist ingress of dust, dirt and humidity. The housings are formed from die cast aluminum and the optics are high transmission PMMA with 98% light transmittance. The CREE LEDs help these units achieve resistance to vibrations and are rated at 70% lumen maintenance after 80,000 hours of use. We recommend these LED lights for use in applications where a lot of vibration, dust, dirt, dampness and abusive working conditions are encountered.

Each LED unit is equipped with a back mount trunnion style mounting bracket that allows the light to be adjusted through 160° of vertical movement. To adjust the LED lamps, the user simply loosens the set screws located on either side of the unit, moves it into the desired position, then re-tightens the screws.

LED Technology: Unlike gas burning and arc type lamps that have glass bulbs, LEDs have no filaments or fragile housings to break during operation. Instead of heating a small filament or using a combination of gases to produce light, light emitting diodes (LEDs) use semi-conductive materials that illuminate when electric current applied and emitting light. With LED lights, there is no warm up time or cool down time before re-striking and provide instant illumination when powered on, adding to the reliability of LED technology. By nature, LED light sources run significantly cooler than traditional lamps, reducing the chance of accidental burns and increased temperatures due to heat emissions. This solid state design of light emitting diodes provides a more reliable, stable, durable, and energy efficient light source over traditional lighting.

Lamp Control: The LED lamps feature three settings for versatile operation, which is facilitated by a 3-way switch (automatic, timed interval and manual). Automatic operation is facilitated by a day/night (dusk to dawn) sensor, only turning the fixtures on when ambient light levels reach below 5 lux. Timed interval operation allows operators to set a timed schedule for the lamps. Manual operation includes standard on/off switch for manual override.

Trailer: The trailer itself is built on a 3500-lb rated axle and is approximately 16` long and 6` wide. The trailer is equipped with a removable tongue for storage, transport and security purposes. The tongue features an adjustable hitch, allowing operators to raise or lower the height of the hitch for towing purposes. Hitch options include 2" ball coupler and 3" pintle hitch. Safety chains come standard. For an additional charge, we offer removable wheels in addition to the removable tongue for extra security. The four built in outriggers can be slid out from the frame and pinned into place. A standard crank style support leg can be used to secure each outrigger to the ground. The outrigger feet are over-sized and equipped with through holes for additional ground anchoring mechanisms. D-rings allow the trailer frame to be anchored down for long term deployment and high wind applications. The trailer has an industrial grade finish for rust and corrosion resistance.

The trailer is equipped with an electric brake setup and electronic safety breakway device. All safety lighting on the trailer meet or exceed DOT and FMVSS regulations. This unit is equipped with stop, tail, turn signals, and license plate lights. Wiring is provided by an industrial grade trailer 7-pin flat trailer plug (other options available upon request). Reflective tape along the sides of the trailer provides increased night time visibility. This trailer is approved for highway use, and will clear standard height interstate bridges.

This solar powered light tower generator is shipped via common freight. Each unit is equipped with side mounted skid pockets for loading with fork lifts, and 4-corner mounted eyelets allow for crane picking and air transportation methods. The 4-corner eyelets also allow operators to secure this trailer in transportation, ensuring the unit does not move during transit.

Applications: Remote locations, outdoor illumination, temporary work sites, construction, security checkpoints, agricultural sites, emergency camps, military, concerts, stadiums and more.

At Larson Electronics, we do more than meet your lighting needs. We also provide

replacement, retrofit, and upgrade parts as well as industrial grade power accessories. Our craftsmen can custom build any lighting system and/or accessories to fit the unique demands of your operation. A commitment to honesty, quality, and dependability has made Larson Electronics a leader in the lighting and electronics business since 1973. Contact us today at 800-369-6671 or message sales@larsonelectronics.com for more information about our custom options tailored to meet your specific industry needs.









Frequently Asked Questions (FAQ)