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SPG-1.8K-1120AL-2X5.30-CW-ISDG-BCC.30A.120

1.8KW Solar Power Generator - 120V Output - (6) 300W Panels, (14) 80A Li-ion Batteries - (2) 5-30R - All Weather

Product ID: 268054

Please see last page for supporting documentation for this product(certificates, CAD files & drawings, IES files, wiring diagrams, etc).



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.

SPG-1.8K-1120AL-2X5.30-CW-ISDG-BCC.30A.120 All Weather Solar Generator w/ Trailer

Panels: (6) 300 Watt Panels

Method of Deployment: Rotating Axis, Hand Winch

Average Charge Capacity: 75A per Hour
Panel Protection: Fused Combiner Box
System Protection: Battery Over/under and Ground Fault
System Voltage: 24 Volts DC
Battery Bank: (14) 80aH Lithium-ion Batteries
Battery Capacity: 1120aH Total and 1120aH Usable
Backup Generator: 4 kW Diesel Generator w/ Auto Start
Runtime (1,500W Draw @ 120V): 24/7 and (2) Days of Automation w/o Sun

Trailer Coating: Powder Coated or 2-part Epoxy Steel

Trailer Axle: 3500-pound Rating
Leveling: Four 1200 lbs Crank Jacks

Inverter: 300 Watt - 24V DC to 120V AC

Receptacles: (2) 30A NEMA 5-30R [125V]

Battery Charger: 30A w/ 25' Cord and 30A L5-30P 120V Plug

Cold Climate: Heat Trace and Battery Blanket Warmer; Removable Block-off Ventilation Plates

Features

Fully Solar, No Fuel Needed
Suitable for All Weather and All Climates Across the Continental USA

Special Orders - Special Requirements

Contact us for special requirements

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The SPG-1.8K-1120AL-2X5.30-CW-ISDG-BCC.30A.120 All Weather Solar Generator from Larson Electronics includes 6 solar panels, solar charging system, lithium-ion battery bank and a backup diesel generator mounted on trailer with outriggers and removable tongue. This 1.8KW solar generator system replenishes 200 amp hours of usable battery capacity per day, assuming 4 hours of peak charging sunlight. Equipped with two receptacles, this system delivers 120 volts AC for lighting, cameras, sensors or other electronics equipment. The solar-powered unit is suitable for all weather and all climates across the Continental USA, including Texas or Michigan and all states in between.

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

Solar Panel Assembly: This unit is comprised of six 300-watt solar panels, generating a total maximum output of 1.8 KW. 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 doesn`t make a huge difference, every little bit helps.

Once the panels are set the correct solstice position, one section of panel is elevated into position via a manual crank winch 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 and manual winch support the weight of the panels during positioning. The entire process takes just a few minutes.

As part of the deployment, operators will set the 4 outriggers into position by pulling them out and pinning them into position. This will offset the effects of wind on the panels and the light mast.






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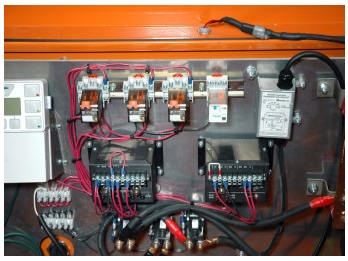


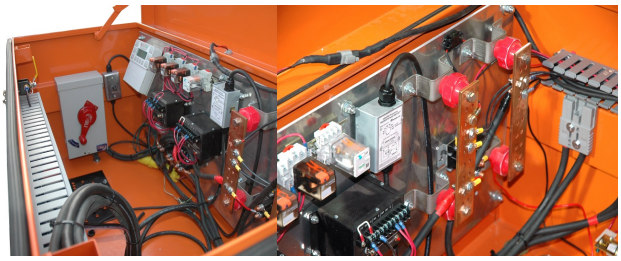
Solar Charging System: In this 24 volt system, each panel is terminated with a fused combiner box with a single lever action cut-off switch. With the switch set to the `on` position, the combiner box passes power to the 80-amp capacity Outback Extreme charge controller. A 300 watt DC to AC inverter and two 30-amp 125V 5-30R receptacles allow operators to power equipment that required 120V

AC. Operators may also access a 30-amp battery charger, which comes with a 25-foot cord and 30-amp L5-30P 120V plug. An included 4kW diesel generator provides backup power to the system when the batteries are low due to low-light conditions. The backup generator is equipped with an auto-start feature.
This solar light tower uses the Outback Extreme series 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 aren`t rated past 104 degrees 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. We improve on that capability shading the charge controller and adding additional air flow from the exhaust of a 1400 CFM component cooling system.
The charge controller charges a 1,120aH capacity battery bank. This 24 volt battery system in comprised of lithium-ion batteries tied together in series and parallel. The system is capable of operating 24/7 and two days of automation without sun (for a 1,500-watt draw at 120V).
The panels produce approximately 12.5 amps per hour to charge this system. On a bright sunny day, the six panels would generate and deliver more than 400 amps back to the batteries in 4 hours. This conservative number of 4 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.
Battery Bank System: The battery bank consists of fourteen 80aH lithium-ion batteries (1,120aH total/usable) that are mounted to a removable tray. 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.
This all-weather solar-powered system comes with heat trace and battery blanket warmer for deployment in cold-climate locations, which can be disabled when used in warm climates. Included block-off ventilation plates minimize airflow to the batteries and regulate ventilation to prevent gas buildup in the battery enclosure. In warm climates, the block-off ventilation plates can be removed (and fans can be used) to promote airflow to the enclosure.
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. 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. 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. 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 degrees 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 pneumatic mast.
Trailer: The trailer itself is built on a 3500-pound rated axle and is approximately 16 feet long and 6 feet wide. The trailer is equipped with a removable tongue for storage, transport and security purposes. For an additional charge, we offer removable wheels in addition to the removable tongue for extra security. The four built in outriggers can be folded out from the frame and pinned into place. Four 1200 lbs hand crank leveling jacks are used for leveling the unit up to a 37 degree slope. Jacks can be leveled by hand crank or attachment provided for power drills. The outrigger feet are over-sized and equipped with through holes for additional ground anchoring mechanisms into hard rock or concrete.
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.

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Frequently Asked Questions (FAQ)









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Export Control Classification Number (ECCN): EAR99

Links (Click on the below items to view):

- **HigResPic1**
- **HigResPic2**
- **HigResPic3**
- **HigResPic4**
- **HigResPic5**
- **HigResPic6**
- **ISO 9001 Certification**
- **Business Certificate**
- **Shipping Time Map**