



Installation and Maintenance Instructions

LED Bird Strike - Airport Solutions

AVGuardian Model BSD- 200 Series



Please read carefully and understand the contents of this manual including warranty, responsibilities and disclaimers.

Failure to read the manual may result in serious injury or even death, or serious damage to the equipment.

Make sure this manual is always accessible for all users and ensure you have read and understood the contents.

Revision	Date	Description
BSD-101-01 Rev: A1	07Jul2026	First Release

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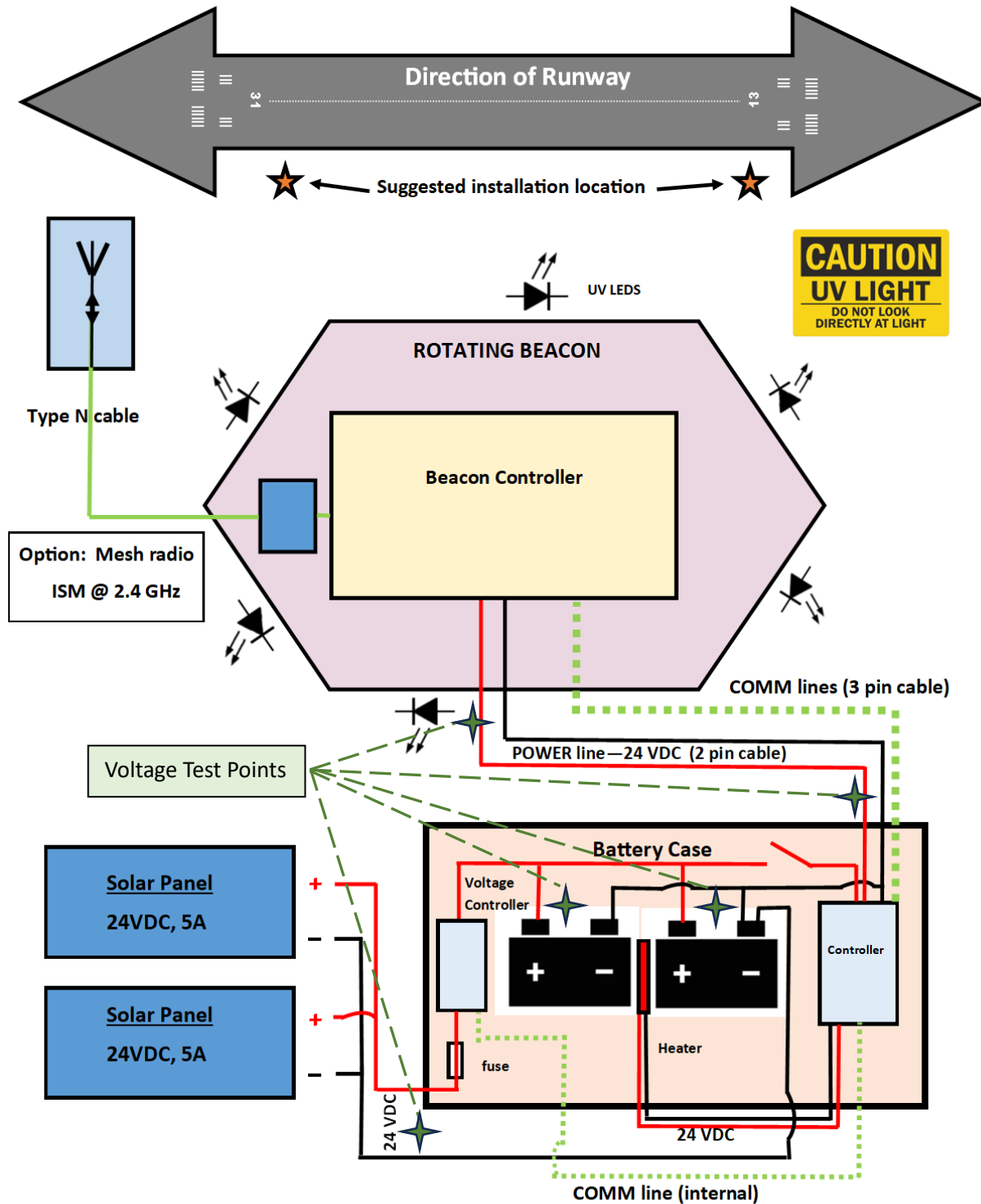
The English version of this document is the original version; this language version is verified by the manufacturer. All other language versions are translations of the original English language version.

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Lite Enterprises Inc. Airport Solutions

LED Bird Strike Light



Major Electrical and COMM Connections - Illustration only

Illustration 1. System Overview

1 About this Manual

This manual contains information about the installation and maintenance of the AVGuardian Model BSD 200 Series.

1.1 Limitations of the Document

Lite Enterprises Inc. Airport Solutions reserves the right to revise this document without notification.

The data provided in this document is based on the most recent information at the time of publication. Lite Enterprises Inc. is continually seeking to ensure that its products are developed to the latest technological standards. As a result, it is possible that there may be some differences between the product and the information in this manual.

For further information regarding adjustment, maintenance or repair which is not described in this document, please contact the Customer Service department of Lite Enterprises Inc.

The information in this document concentrates solely on use of the products as intended by the manufacturer.

This document contains useful and important information on the correct installation and maintenance of the product. This document contains instructions for preventing possible accidents and serious harm while the product is in use. We have taken all possible steps to make this document as correct and as complete as possible. If you discover any errors or omissions, please bring this to the attention of Lite Enterprises Inc., so that we can make amendments.

1.2 Liability and Warranty

Lite Enterprises Inc. cannot be held responsible for injuries or damage resulting from non-standard, unintended use, faulty or improper installation of its equipment, or failure to follow the instructions and safety guidelines in this manual. The safety of any system incorporating the AVGuardian Model BSD 200 series is the responsibility of any site installation, commissioning, maintenance, and operational personnel using the system.

Disregarding the safety instructions in this manual will result in the loss of warranty.

Refer to the general Lite Enterprises Inc. Terms and Conditions document supplied with your sales order contract for a complete liability and warranty description.

1.3 Storing the Manual

This Installation and Maintenance Instructions is a part of your product. Store the manual in a location that can be easily accessed by personnel working on the product. It is the responsibility of the company operating this equipment to ensure that its personnel are provided with a copy of this manual.

1.4 Terms and Abbreviations

BSL AVGuardian™ Bird Strike Light

FAA Federal Aviation Administration

EASA European Aviation Safety Agency

ICAO International Civil Aviation Organization

LiFePO4 Lithium Iron Phosphate battery

1.5 Manufacturer Details

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1.6 Document Information

Name : AVGuardian Model BSD 200 Series

Version : V1.0

Language : English (Original manual)

For the latest version of this document see <https://www.liteenterprises.com/#dataitem-mc0k53l2> or scan:



2 Safety Instructions

2.1 Safety

This section contains general safety instructions for using your Lite Enterprises Inc. equipment. Some safety instructions may not apply to the equipment in this manual. Note all warnings and follow all instructions carefully. Failure to do so may result in personal injury, death, or property damage.

To use this equipment safely:

- Observe all safety regulations. To avoid injuries, always remove power prior to making any wire connections and touching any live part. Solar panels and LiFePO4 batteries power the system. Refer to electrical standards applicable for your aerodrome.
- Read and become familiar with the general safety instructions provided in this section of the manual before installing, operating, maintaining, or repairing this equipment.
- Read and carefully follow the instructions given throughout this manual for performing specific tasks and working with specific equipment.
- Store this manual within easy reach of personnel installing, operating, maintaining, or repairing this equipment.
- Follow all applicable safety procedures required by your company, industry standards, and government or other regulatory agencies.

2.2 Qualified Personnel

The term "qualified personnel" is defined here as an individual who thoroughly understands the equipment and its safe installation, operation, maintenance, and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations, and have been trained to safely install, operate, maintain, and repair the equipment. It is the responsibility of the company to install, operate or maintain this equipment to ensure that its personnel meet these requirements. The manual provides specific information about the required qualifications of the working personnel for installation, maintenance, service and repair operations.

2.3 Intended Use

Use of this equipment in ways other than described in the datasheet and this manual may result in personal injury, death, or property damage. Lite Enterprises Inc. cannot be held responsible for injuries or damage resulting from non-standard, unintended application of its equipment. This equipment is designed and intended only for the purpose described in this manual. Uses not described in this manual are considered unintended use. Unintended use may result from taking the following actions:

- making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine Lite Enterprises Inc. replacement parts or accessories.
- using materials or auxiliary equipment that are inappropriate or incompatible with your Lite Enterprises Inc. equipment
- allowing unqualified personnel to perform any task

2.4 Installation

Read the safety and installation sections of all system component manuals before installing your equipment. A thorough understanding of system components and their requirements will help you install the system safely and efficiently. Failure to follow these safety procedures can result in personal injury or death. Allow only qualified personnel to install Lite Enterprises Inc. Airport Solutions and auxiliary equipment. Use only approved equipment. Make sure all equipment is rated and approved for the environment in which you are using it. Follow all instructions for installing components and accessories.

- Do not hold / carry the light assemblies by the cables.
- Install all electrical connections to applicable codes provided they are not in contradiction with the regulations.
- If additional electrical wire is required, ensure sufficient gauge and insulation is used to handle the rated current and voltage demand. All wiring must meet local codes.
- Route electrical wiring along a protected path. Make sure the wires will not be damaged by moving equipment and animals (e.g. rodents).
- Protect components from damage, wear, and harsh environmental conditions.
- Allow sufficient room for maintenance, panel accessibility (power products), and cover removal (power products).
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation or repair, install them immediately after the work is completed and check them for proper functioning.

2.5 Operation

Only qualified personnel (see *Qualified Personnel* on Section 2.2 page 7) should operate this equipment. Read all system component manuals before operating this equipment. A thorough understanding of system components and their operation will help you operate the system safely and efficiently.

- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.
- Never operate equipment with a known malfunction.
- Do not attempt to operate or service electrical equipment if standing water is present.
- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Never touch exposed electrical connections on equipment while the power is ON.
- Never look directly at the light source while the unit is energized and the beacon is operating.

2.6 Action in the event of a system or component malfunction

Do not operate a system that contains malfunctioning components. If a component malfunctions, turn the system OFF immediately.

- Power off the device and disconnect the power cables from the electrical power sources – solar cells, batteries, or grid power. Follow the troubleshooting check list in Section 5.3.
- Allow only qualified personnel to make repairs. Repair or replace the malfunctioning component according to instructions provided in its manual. Allow only qualified personnel to perform maintenance, troubleshooting, and repair tasks. Only people who are properly trained and familiar with Lite Enterprises Inc. Airport Solutions equipment are permitted to service this equipment.
- Follow the recommended maintenance procedures in your equipment manuals.
- Connect all disconnected equipment ground cables and wires after servicing equipment. Ground all conductive equipment.
- Use only approved Lite Enterprises Inc. Airport Solutions replacement parts. Using unapproved parts or making unapproved modifications to equipment may void agency approvals, impair specified performance and create safety hazards.
- Check interlock systems periodically to ensure their effectiveness.
- Do not attempt to service electrical equipment if standing water is present. Use caution when servicing electrical equipment in a high-humidity environment.
- Use tools with insulated handles when working with electrical equipment.

3 General Recommendations

3.1 Receiving, Storage and Unpacking

1. Check all packaging for visible damage upon receipt of goods. Every damaged box should be opened and its contents inspected for damage. If equipment is damaged, a claim shall be filed with the carrier immediately. It may then be necessary for the carrier to inspect the equipment.

2. Store the light assembly, preferably in its original packaging in a protected area. When stored unpacked, please take care not to damage the cable insulation.

3. Unpack the light assembly at the installation site to avoid damage during transportation and handling.

3.2 Electrical Connection

The light assemblies covered by this manual are designed for connection to solar panels and LiFePO4 batteries which are provided.

3.3 Base Earthing

Whatever the chosen installation method, it is strongly recommended to earth the base, especially in locations presenting a risk of lightning strikes. Failure to ensure the base structure has a correctly installed earth path will void the warranty for all damages occurring as a result of voltage surges.

4 Installation

About the AVGuardian Model BSD 200

Lite Enterprises Inc. Airport Solutions series 200 light fixtures are fabricated components integrated with electronic controller boards that support complex software controlling algorithms.

The rotating beacon system can easily be adjusted during installation for optimum solar and runway orientation. The light assembly has a four (4) frangible coupling, designed for 1" (60 mm) stake mounting stubs which support the structure holding the solar panels, battery case and electronically controlled rotating beacon.

4.1 Unpacking the AVGuardian Model BSD 200

Inspect the packing upon delivery for obvious damage that may have occurred during shipment. Document any damage with the shipping carrier.

The AVGuardian Model BSD 200 is shipped as major components that are individually packaged which require further assembly. Unpack the components. **Ensure that nothing is broken before starting installation.** Save the packaging material for transportation to the installation site. Do not discard the stake installation template.

A video of the installation steps is available on YouTube which is linked to our website:

4.2 Installation in the Field

The AVGuardian Model BSD 200 major components are pre-calibrated and ready for assembly.



The rotation beacon light emission is in the ultraviolet spectrum range with a small portion in the visible spectrum (purple-blue color).

Do not stare at the light emitted from the rotating beacon light when powered.

Pre-Installation steps to be followed:

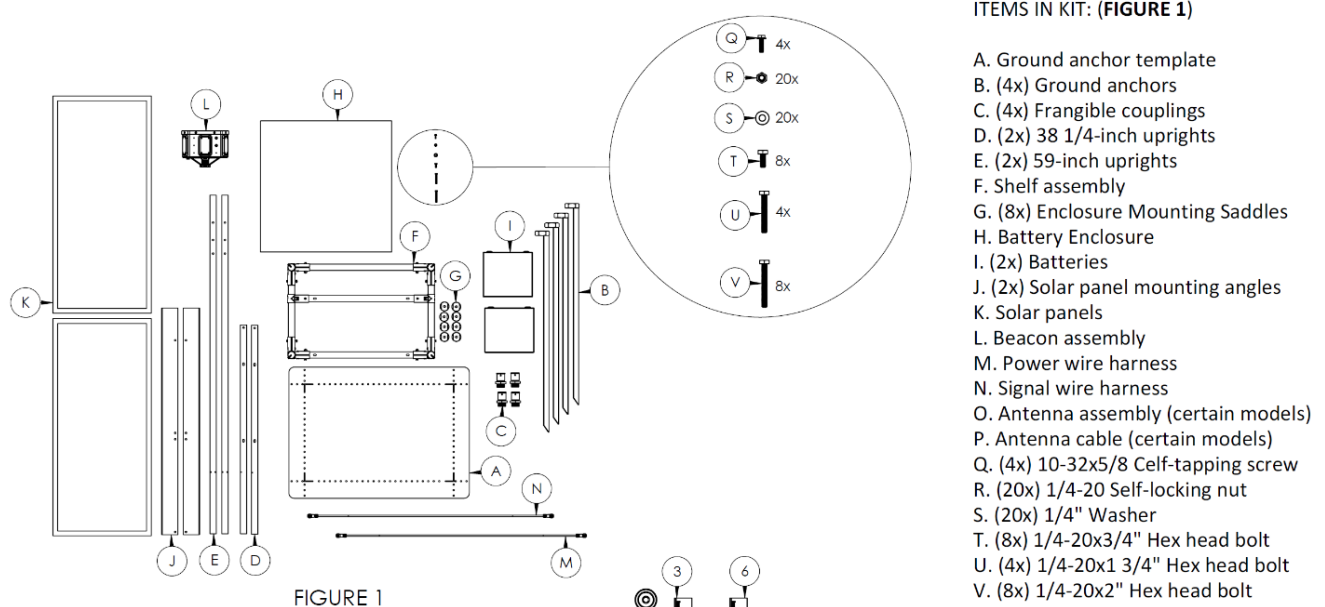
1. The suggested installation location is located adjacent to the runway. The longer sides of the beacon should be parallel to the direction of the runway to ensure maximum bird strike protection to the runway airspace. Runway setback requirements vary significantly based on the airport's size and type, with larger airports typically requiring greater setbacks. Ensure conformance with Regulatory Compliance and Standards requirements that apply to your airports identified as: Object Free Area (OFA) and Runway Safety Area (RSA). The ground space surrounding the runway may have **mandatory free of obstacles to ensure safe operations or areas to reduce the risk of damage to aircraft in the event of an overrun or excursion**. Ensure that the selected installations site complies with mandatory setback distances.

International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) Standards

The International Civil Aviation Organization, Federal Aviation Administration, and European Aviation Safety Agency have set forth standards that govern airport lighting systems worldwide. These guidelines ensure consistency and safety across international borders, helping nations align their aviation practices. Compliance with these standards assures pilots of uniform lighting cues regardless of the country they are operating in.

Adhering to these regulations, it is essential for airport operators to ensure compliance, maintain operational certification, and uphold the highest safety standards. Regular reviews of these regulations help ensure ongoing adherence as technologies and practices evolve over time.

2. Before starting the installation on the field, verify that the LiFePO₄ batteries have a nominal charge greater than 24.4V. If the voltage is less than 24.4.4V, charge the batteries before starting the installation. The full charge voltage of each of the LiFePO₄ batteries (12VDC, 100Ah) is 13.1VDC standing voltage. The two batteries are wired in series to provide 26VDC, 100 Ah to power the unit.
3. Prepare the installation location(s) that will host the unit.
4. Inspect packaging and product for damage upon delivery to the installation site. A voltage tester is suggested to be included with the tools needed **(Figure 1 & 2)**:



TOOLS NEEDED: (FIGURE 2)

1. Sledge hammer
2. Spirit level
3. 5/16" Socket
4. 3/8" Wrench
5. 5/32" Allen wrench
6. 7/16" Socket
7. 1 7/8" Wrench
8. Socket wrench

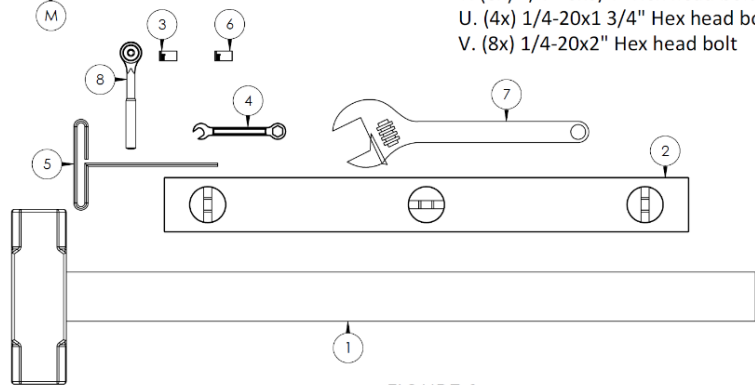


FIGURE 2

Installation steps to be followed:

1. Orient the ground anchor template so that the long side is facing the part of the sky with the most daily sun. In the Northern Hemisphere, the southern sky usually has the most daily sun (Figure 3).

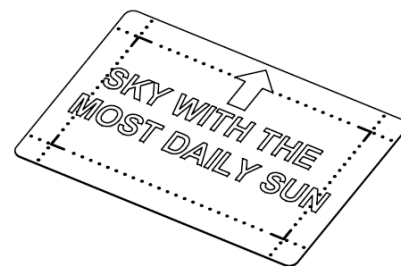


FIGURE 3

Insert all 4 of the ground anchors into the slots in the ground anchor template, driving them into approximately 6 inches. Using a spirit level, ensure the stakes are plumb (vertical) in all directions (FIGURE 4)

CAUTION: DURING INSTALLATION, ONLY STRIKE THE GROUND ANCHOR WITH THE SLEDGEHAMMER IN THE AREA PAINTED RED ON THE TOP OF THE GROUND ANCHOR. (FIGURE 5)

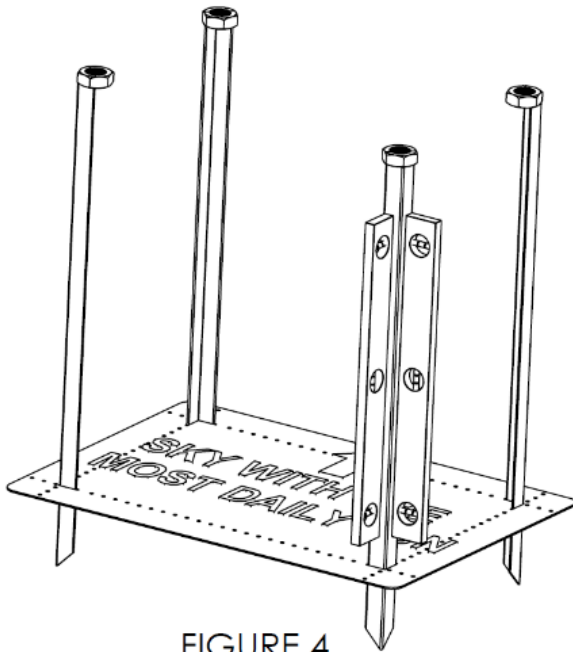


FIGURE 4

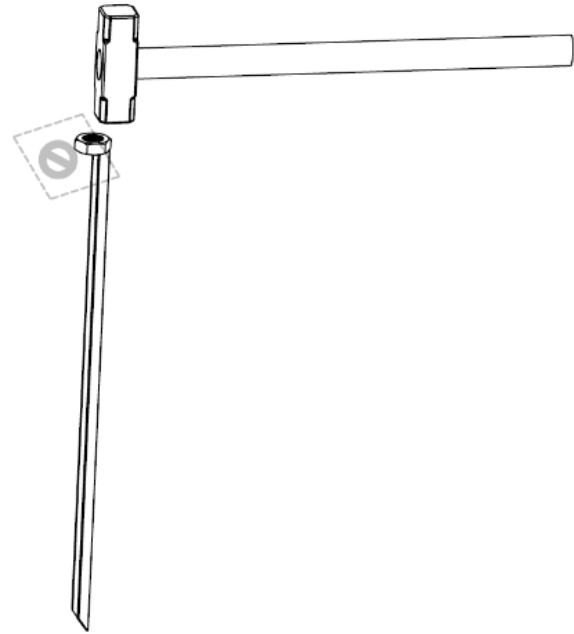


FIGURE 5

2. Using the sledgehammer, drive one ground anchor into the earth until the top of the anchor is 1 to 2 inches above grade, making sure the ground anchor remains vertical in all directions during installation.
3. Repeat steps in Figure 4 & 5 with the other three ground anchors. Use a spirit level to ensure the tops of all ground anchors are level with one another. **(FIGURE 6)**. Remove the ground anchor template by breaking it away along the perforation holes.

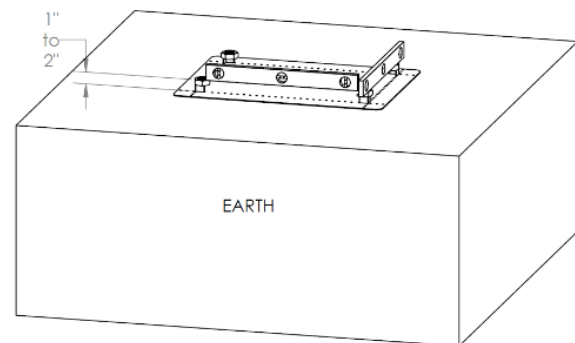


FIGURE 6

4. Using a 1 7/8" wrench, screw the 4 frangible fittings with socket (3) onto the tops of the 4 ground anchors until they are tight. **(FIGURE 7)**

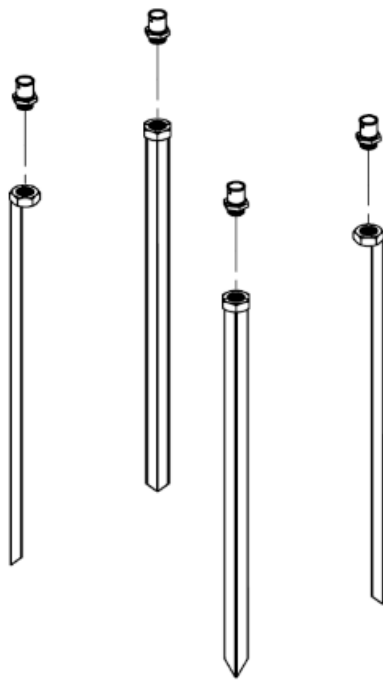


FIGURE 7

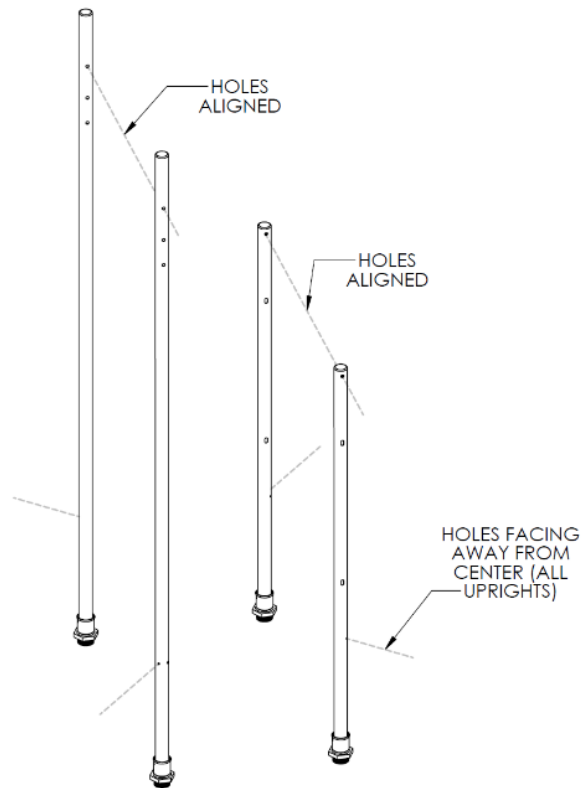


FIGURE 8

5. Place the two 38 1/4-inch uprights into the 2 frangible fittings that are CLOSEST to the part of the sky with the most daily sun. Note the orientation of these uprights: The capped ends are at the TOP of the uprights. The cross drilled holes on the top of the uprights should be in line with each other (**FIGURE 8**), AND ONE OF THE TWO SMALL HOLES NEAREST THE BOTTOM OF EACH UPRIGHT MUST ANGLE OUTWARD, AWAY FROM ALL THE OTHER UPRIGHTS.

You may need to twist the upright 180 degrees so that one of the two small holes angles outward, away from all the other uprights. Do this on both 38 1/4-inch uprights. Do not tighten the clamping bolts on the frangible fittings yet.

Place the two 59-inch uprights into the 2 frangible fittings that are FARTHEST away from the part of the sky with the most daily sun. Note the orientation of these uprights: The capped ends are at the TOP of the uprights. The cross drilled holes on the top of the uprights should be in line with each other (**FIGURE 8**), AND ONE OF THE TWO SMALL HOLES NEAREST, THE BOTTOM OF EACH UPRIGHT MUST ANGLE OUTWARD, AWAY FROM ALL THE OTHER UPRIGHTS (**FIGURE 8**).

You may need to twist the upright 180 degrees so that one of the two small holes angles outward, away from all the other uprights. Do this on both 59-inch uprights. Do not tighten the clamping bolts on the frangible fittings yet.

6. Note the orientation of the shelf assembly (**FIGURE 9**). Pass the rear corner brackets of the shelf assembly through the 59-inch uprights and slide the shelf assembly downward, passing the front corner brackets through the 38 1/4-inch uprights.

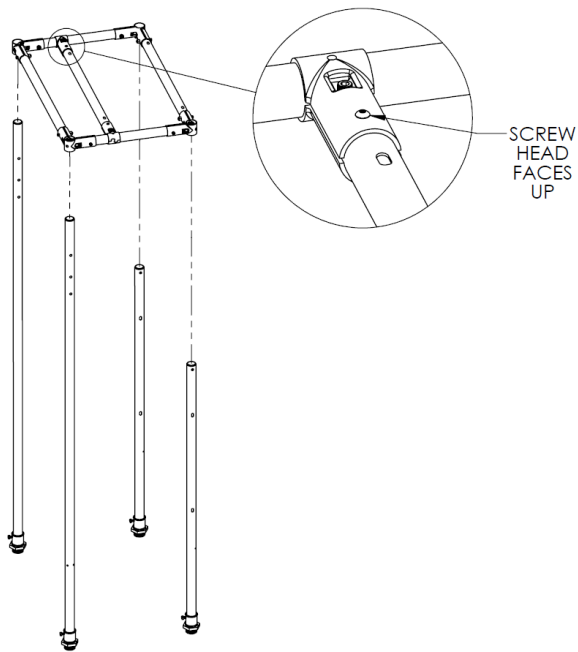


FIGURE 9

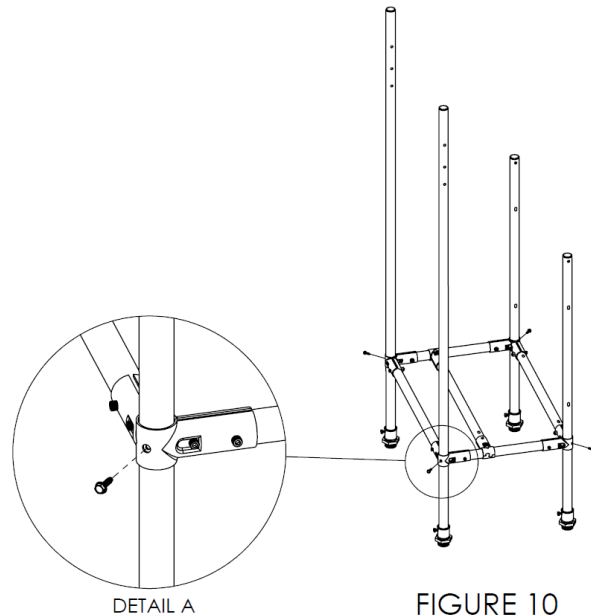


FIGURE 10

7. Align the corner hole in each corner bracket with the corner hole approximately 11 inches from the bottom of each upright (**FIGURE 10**). Insert a #10 X 5/8" self-tapping fastener through the corner bracket and into the hole in each upright and fully tighten. (**DETAIL A**). Do not overtighten the self-tapping fasteners.
8. Tighten the clamping bolt on each frangible fitting until the uprights are captivated and held firmly in place in each frangible fitting (**DETAIL B**). Do not over-tighten the clamping bolts.
9. Tighten down all remaining fasteners on each corner bracket of the shelf assembly, using a spirit level to make sure all uprights are vertical/plumb during tightening (**FIGURE 11**).
10. Place 4 enclosure mounting saddles on the battery enclosure mounting shelf as shown (**FIGURE 12**). Align holes in saddles with slots on the shelf assembly.

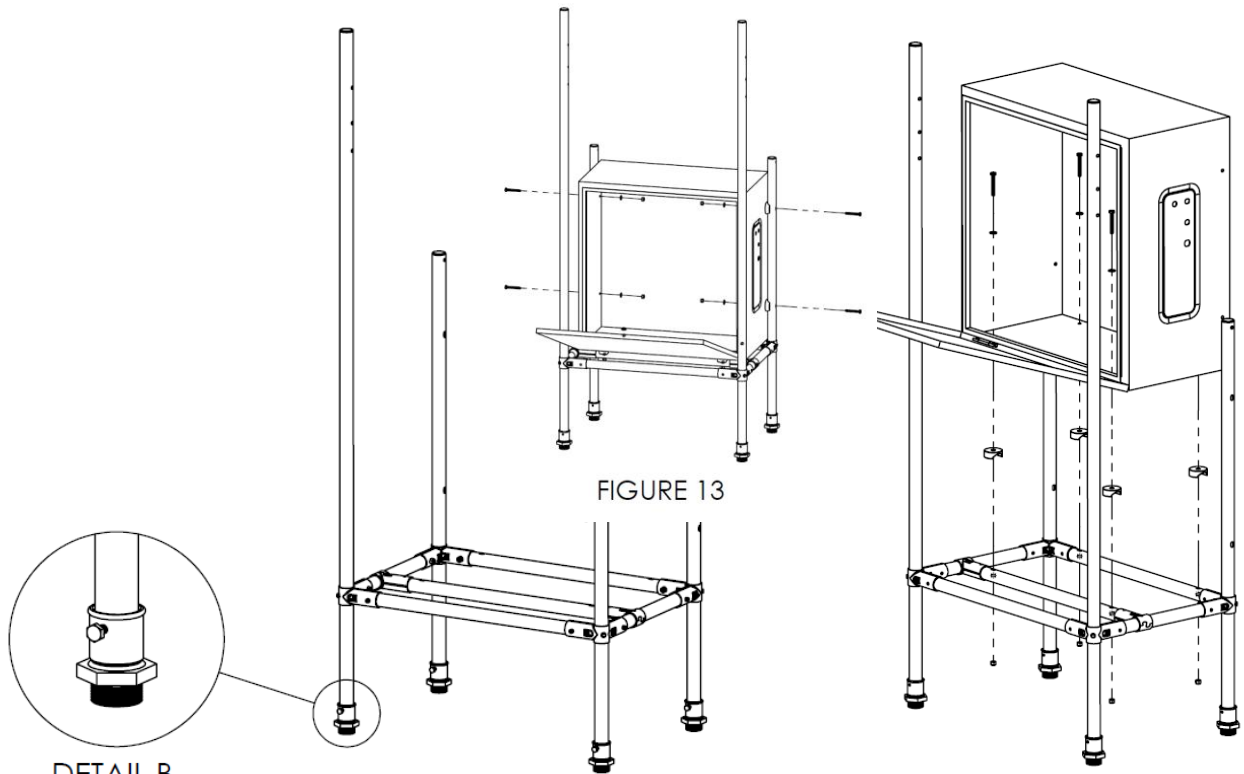


FIGURE 11

FIGURE 12

Place the battery enclosure down on the 4 mounting saddles and align the saddles with the holes in the bottom of the battery enclosure (**FIGURE 12**). Note that the battery enclosure door hinge should be on the bottom of the enclosure.

Insert a 1/4-20 x 2" hex head fastener through each hole in the bottom of the battery enclosure and place a washer and a self-locking nut on each of the fasteners but do not fully tighten them yet. (**FIGURE 12**).

11. Repeat steps 13, 14 and 15 for the mounting holes on either side of the battery enclosure. Note that the 1/4-20 x 2-inch fasteners pass through the uprights first, then the saddles, then the battery enclosure. The 1/4-inch washers and 1/4-20 self-locking nuts are on the INSIDE of the battery enclosure. (**FIGURE 13**).
12. Place the two batteries into the battery enclosure as shown. Fasten the batteries in position. Do not connect electrical leads to batteries at this time (**FIGURE 14**).
13. Unpack the 2 solar panels. Ensure there are no staples in the packaging material and lay the cardboard packaging out so that the solar panels can be gently laid out face-down on the cardboard as shown. (**FIGURE 15**). CAUTION: Do not put any weight on the solar panels or they may become permanently damaged.

14. Place the 2 solar panel mounting angles on the solar panels as shown, aligning the slots in the rear of the solar panels with the holes in the solar panel mounts. Note the orientation of the solar panel mounting angles and the solar panels **(FIGURE 16)**.

Insert a 1/4-20 x 5/8" fastener from under the lip on the back of the solar panel (DETAIL C), through the mounting slot in the lip, and then through the corresponding hole in the solar panel mounting angle. Place a 1/4" washer and a 1/4-20 self-locking nut on the fastener and tighten until just tight, then back off slightly to allow for adjustment in following steps. Do this for all 8 mounting slots on the rear of the solar panels. **(FIGURE 16)**

15. . Have 4 each of: 1/4-20 x 1 3/4 fasteners, 1/4-20 self-locking nuts and 1/4-20 washers ready for use in the next two steps. Using 2 or more people, carefully lift the solar panel assembly and align the lower mounting holes on the solar panel mounting angles with the cross-drilled holes on the top of the 38.25-inch uprights as shown **(FIGURE 17)**. Install the fasteners as shown **(DETAIL D)** and tighten the nuts until they are almost fully tight.

NOTE: The angle of the solar panel can be set to 40 degrees, 45 degrees or 50 degrees, depending on which mounting holes are selected **(DETAIL E)**.

Align the appropriate holes in the solar pane mounting angles with their corresponding cross drilled holes in the top of the 58-inch uprights and install the fasteners in the same manner as in at the start of this step. Fully tighten the fasteners.

Fully tighten ALL fasteners on the entire assembly:

- All fasteners on the corners of the enclosure shelf assembly
- All battery enclosure mounting fasteners
- All fasteners mounting the solar panels to the solar panel mounting angles
- All fasteners mounting the solar panel mounting angles to the uprights

16. Mount the beacon assembly on the top of the 58-inch upright as shown **(FIGURE 18 & 19)**. Orient the

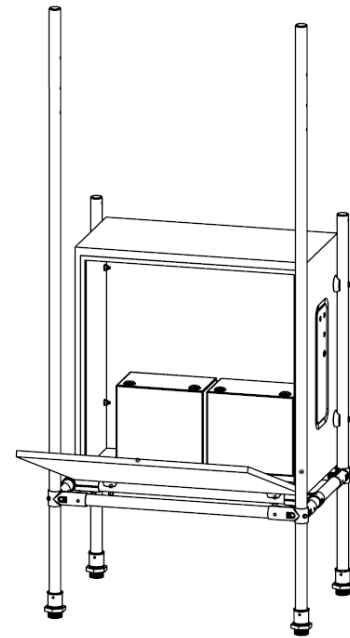


FIGURE 14

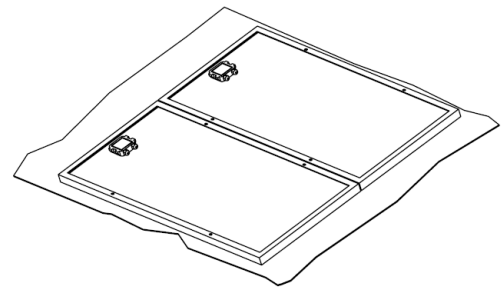


FIGURE 15

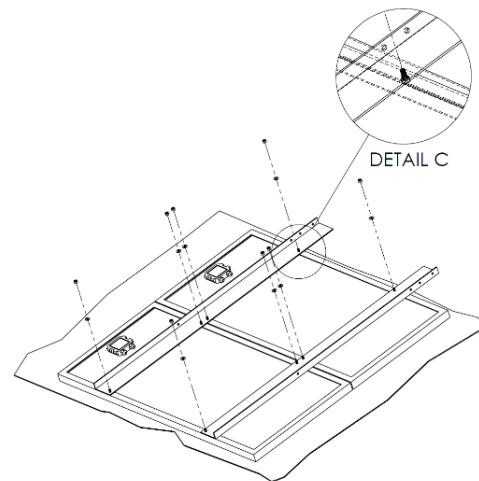


FIGURE 16

beacon assembly so that the long axis of the beacon is parallel with the runway centerline as shown. Tighten the thumbscrew on the beacon housing sufficiently to prevent rotation of the beacon assembly on the upright (**DETAIL G**). CAUTION: ENSURE THE POWER SWITCH LOCATED ON THE SIDE OF THE BATTERY ENCLOSURE IS IN THE DOWN/OFF POSITION (**DETAIL F**)!

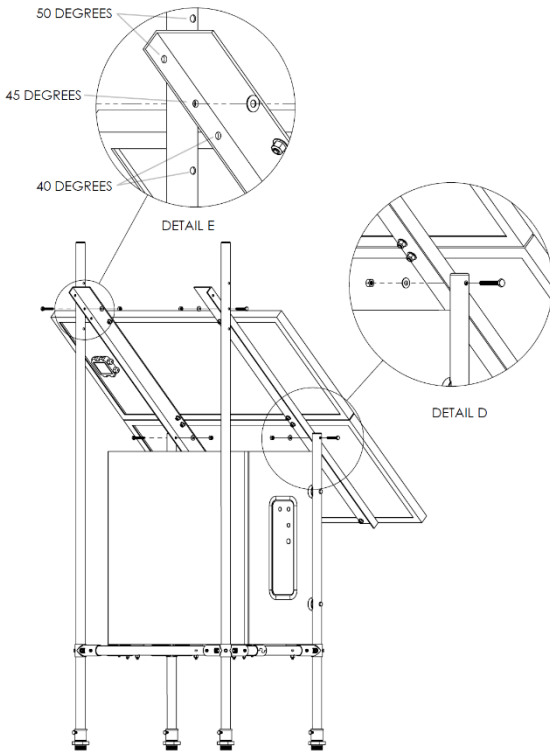


FIGURE 17

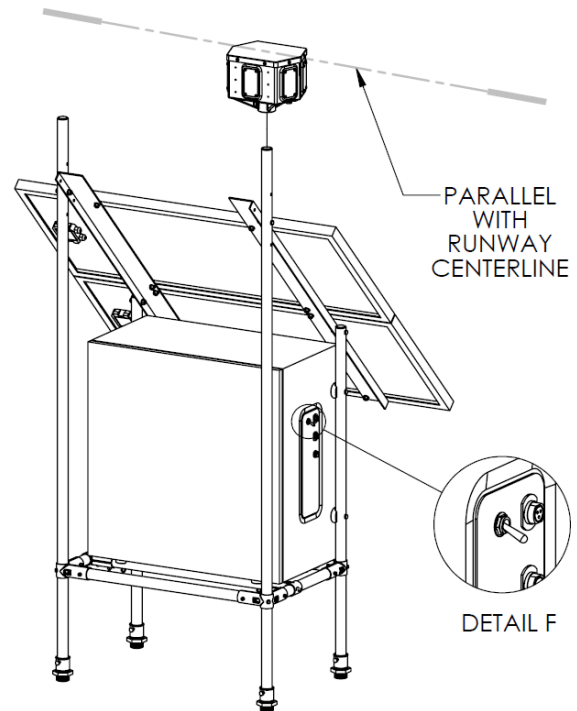


FIGURE 18

17. Note the difference between the beacon cable assemblies (**Figure 18 & 19**). The beacon power cable connector and its mating connector on the beacon have only 2 electrical contacts (**DETAIL J**), whereas the beacon signal wire harness connector and its mating connector on the beacon 3 contact openings (**DETAIL H**). Install the beacon power wire harness and the beacon signal wire harness to their respective mating connectors on the bottom of the beacon assembly by aligning the notch in each harness connector with the slot in the mating connector on the beacon housing (**DETAIL H**). Push the harness connector into the mating connector as far as it goes, then turn the locking nut clockwise until the harness is fully seated and the locking nut will not rotate any further clockwise (**DETAIL J**).

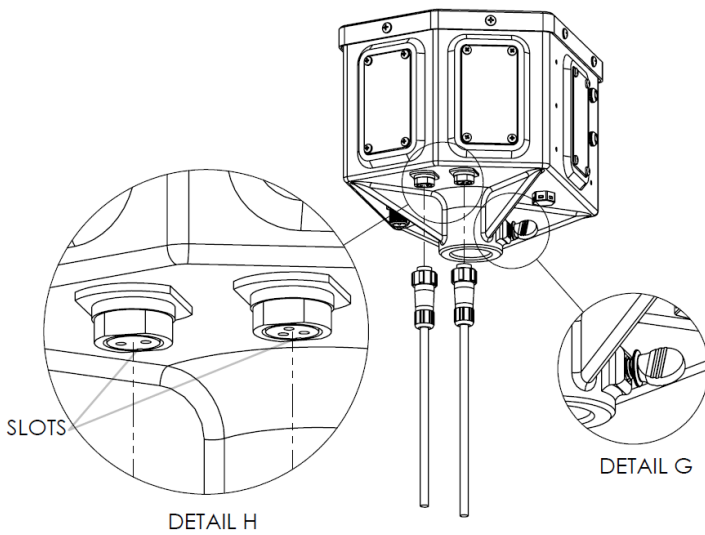


FIGURE 19

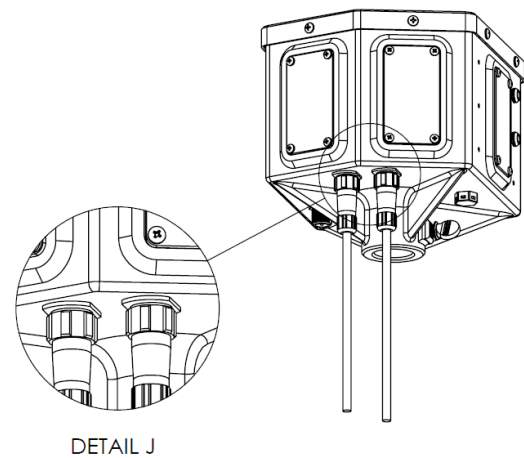


FIGURE 20

Route the power and signal wire harnesses as shown (**FIGURE 21 & 22**), using cable ties to fasten the harnesses to the beacon assembly structure. Be sure to make drip loops in each wire harness, as shown (**FIGURE 21**). To prevent possible water ingress into the battery enclosure, the drip loops **MUST** be lower than the cable entry point into the battery enclosure. Connect the power and signal wire harness connectors to their mating connectors on the battery enclosure as in step 17.

18. The LiFePO₄ batteries inside of the battery enclosure (**FIGURE 14**) are (2X) 12VDC batteries that are to be wired in series to produce a combined output of 24VDC. This involved connecting a jumper connection between the red terminal of the 1st battery to the black terminal of the 2nd battery. Connect the single unconnected red wire from the Controller block to the open red terminal of the batteries. Connect the single unconnected black wire from the Controller block to the open black terminal of the batteries.
19. The voltage test points (**Illustration 1**) are required voltages for the sustained continuous operation of the unit. The electrical connections of the complete system are illustrated (**FIGURE 21**). The cable connections between each of the major components is illustrated. The function of each end of the cable connection offers a test point to confirm the proper performance of each major component. The solar panel voltage is directly proportional to the intensity of sunlight striking the surface of the panel. The switch located on the side of the battery enclosure controls the energization of the complete unit (**FIGURE 18 - DETAIL F**). **ENSURE THE POWER SWITCH LOCATED ON THE SIDE OF THE BATTERY ENCLOSURE IS IN THE UP/ON POSITION** These test point voltages are key to any trouble shooting efforts that maybe required.

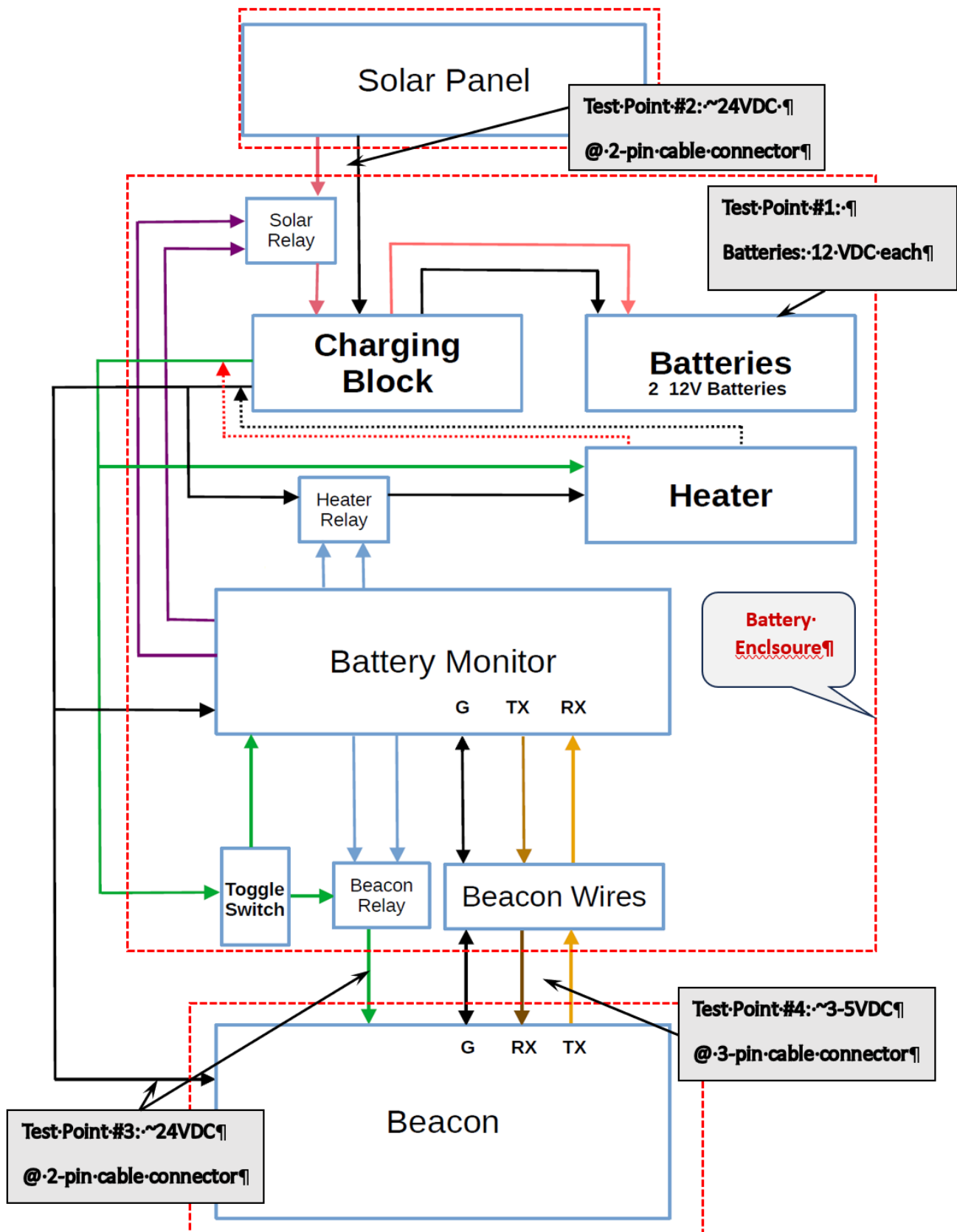


Figure 21. Nominal Voltage at Cable Connections

The controller boards power up sequence may require up to a minute to energize all circuits and initiate operations (battery voltage, temperature, solar production, etc.). The software is designed to continuously manage a sustained operation by adjusting the duty cycle to accommodate changing parameters. The software is designed to provide maximum protection during the morning and evening hours when birds are most active and move from location to location.

NOTE: LiFePO4 batteries can experience reduced capacity and efficiency, with performance dropping significantly below freezing temperatures. Improper charging in freezing conditions can lead to irreversible damage which is called lithium plating.

As the available battery power and temperature decreases, the beacon ON cycles is actively managed to reduce power consumption in a stair step manner. At extremely low battery voltage levels the controller will reduce power consumption. At low temperatures, the controller will manage the battery warm-up cycles and overall power management cycles to ensure the optimum safe operation of the device.

During the first minutes, the Controllers rotating beacon unit will begin to emit light. Check to ensure that all six LED light panels are momentarily blinking. The blinking pattern should be simulating a rotating 360° blinking pattern. If they do not blink, check that all connectors are properly fastened.

20. Confirm that all connections are ensure securely fastened. Add zip tie to organize loose connections or cables from risk of abrasion due to wind vibrations. Close and secure the battery enclosure. The installation is complete.

5 Maintenance

5.1 General Maintenance

Routine maintenance practices include periodic inspections and cleaning of light fixtures to remove debris and ensure optimal performance. Field maintenance is limited to:

- Check that cabling has not been subject to wear, corrosion, excessive pressure, vibration, sharp edges, or other adverse environmental effects. The check shall take into account the effects of aging, or other environmental conditions.
- Cleaning the surface of the front glass if necessary.
- Every 6 months, check the unit for damage and loose connections.

Replace the rotating beacon light assembly or the LiFePO4 batteries if it malfunctions in the field, or at end-of-life (after about 50,000 operating hours).

5.2 Troubleshooting Procedures

Troubleshooting Common Issues

The AVGuardian Model BSD 200 rotating beacon architectural design utilizes electronic components requiring no moving parts. The product incorporates solar panels, LiFePO4 batteries, and beacon are operated through controller boards involving dynamic microcontroller operational and power management algorithms which compensate for necessary temperature, power, and time-of-day adjustments, to provide optimum beacon functions. The system automatically manages its operational functions to provide long term sustained

performance without requiring maintenance or operator intervention. Additionally, optional mesh radio connectivity integrates multiple units to either base or remote controller system to provide real-time monitoring or remote control. Long term data logging features can be monitored real-time from the base unit via a mesh network involving multiple AVGuardian Model BSD 200 units.

The master ON/OFF switch located on the side of the battery case controls all power circuits within the battery case and beacon except the power produced by the solar cells. The beacon unit has small green and red LED indicator lights located on the side of the rotating beacon head which indicate the power and operational status of the product. The operational status of the indicator lights is easily observable from a great distance. Indicator light status is as follows:

- Solid green – full charge and operational condition
- Blinking green –reduced operational condition due to power management.
- Solid red – enhanced reduction of operational condition due to power management
- Blinking red – extreme reduction of operational condition due to power management
- No light – Critical reduction of operational condition due to power management or component failure.

The unit will automatically transition through the operating conditions as the availability of solar power and battery conditions changes induced by low solar cell output and/or extreme temperature conditions. The product will automatically recover to its normal operational condition as the low solar cell output and/or extreme temperature conditions passes.

The utilization of common diagnostic tools can aid maintenance personnel in tracking performance and pinpointing problems. By employing a strategic approach to troubleshooting, maintenance teams can enhance the reliability of airport lighting systems.

Despite routine maintenance efforts, issues can arise within any lighting system. Common problems may include faulty electrical connections, and control system failures. A well-trained maintenance team with general skill levels of electrical systems and tools should be equipped to diagnose these issues quickly and implement fixes efficiently to minimize downtime. In the event that a serious sub-system component failure is suspected, the measurement of the normal voltages of each major subsystem (see Illustration 1 on page 4 and discussion on Installation Step 19 on page 18-20). Do not apply any permanent inductive or capacitive loads to the circuits without ensuring that this will not exceed the permissible voltage or current permitted for the equipment in use.

PROBLEM	Possible Cause	Solution
Beacon does not operate (indicator light not illuminated)	On/OFF switch is not energized	Cycle the power switch OFF/ON
	Battery voltage is dead (~0.0VDC)	Charge the battery with charger
	Controller boards experienced a COMM error	Cycle the power switch OFF, then ON to reset the controller boards
	Subsystems not connected	Check cable voltage at cable connections (test points)
	Subsystem failure	Identify which subsystem failed Contact Customer Support
Indicator light is slowly blinking red	Deep power conservation	Wait for the solar panels to charge the battery
		Charge the battery with charger
		Identify Subsystem Failure Points By checking voltages of battery, and cable test points *see electrical diagram #1.

5.3 Tools Required

In addition to the general tools identified in **(Figure 2)**, a voltage tester is required to identify proper function at the cable connections between the system components.

6 Warranty Limitation

The beacon light and battery controller boards are delivered fully tested and sealed. Lite Enterprises Inc. warrants this product for materials and workmanship for a period of one year starting from the date of installation. Lite Enterprises Inc, at its sole discretion, will either repair or replace this product if found to be defective due to material or workmanship during this period and under normal use.

This limited warranty does not cover units which have been opened, disassembled, altered, modified, or tampered with in any form. This warranty does not apply to cosmetic damage, damage caused by accident, misuse, abuse, fire or flood, theft, improper connections, or installation errors.

All repairs and/or replacements under this warranty are free to the customer. However, the customer is responsible for any shipping charges and any related removal and reinstallation costs. This warranty covers the original purchase only and is not transferrable.

Lite Enterprises Inc., its staff, dealers, resellers and their staff in no event shall be liable for remedies, direct, incidental, consequential, or indirect damages from the use or operation of the equipment in manner that was not intended.

7 More Information

- We provide design assistance for lighting projects with custom runway layouts. Just give us a little info and our lighting designers will start work on your project.
- For technical data refer to the datasheet for your product at <https://www.tkh-airportsolutions.com/airfieldproducts/> or scan:
- If you have any questions about installation or maintenance, please contact Lite Enterprises Inc. or <https://www.liteenterprises.com/#dataItem-mc0k53l2> or scan:

