

BOARDWALK STREET LAMP OWNER'S MANUAL



INSTALLATION
OPERATION
MAINTENANCE

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INTRODUCTION

Dear Boardwalk Owner,

Congratulations on purchasing your Boardwalk Hybrid Street Lamp and welcome to our family!

Enclosed in this manual is information regarding installation, operation and maintenance of your new turbine. Please read through it before installing and using your turbine.

These installation and maintenance instructions contain important information for the safe installation and maintenance of the Boardwalk Hybrid Street Lamp. The turbine should only be installed by qualified personnel such as an employee of a UGE distributor, licensed contractor or certified electrician. Yearly maintenance checks should be performed by a person with similar qualifications. The owner should retain a copy of this manual for reference and to give to future maintenance personnel.

This manual should be used in conjunction with electronics installation manuals, tower installation manuals, and the UGE Electrical Supplement. These manuals can be found on the website of the tower and electronics suppliers respectively or can be provided by your UGE distributor.

In this manual you will see several checklists to guide you through the installation of the turbine. You will be able to follow these step-by-step instructions to insure your installation is completed correctly.

To activate your warranty, please go to www.urbangreenenergy.com/warranty_form.php. You must activate your warranty before allowing your turbine to spin.

We would like to hear from you with any questions or comments that you have. Please contact us during working hours (Monday-Friday 9:00am to 6:00 pm - US Eastern Time) at:

Telephone: +1 (917) 720-5685

Website: www.urbangreenenergy.com

Email: techsupport@urbangreenenergy.com

Sincerely:



ABOUT THIS MANUAL

These instructions contain important information for the safe installation and maintenance of the Boardwalk Hybrid Wind/Solar Street Light. These instructions are designed for specialists, who, due to their technical training and experience, are accustomed to working with wind turbine installations. Only carry out these installation steps if you possess these skills. Hand these installation and maintenance instructions to your customer. Explain to the customer the function and operation of the related devices.



This equipment complies with all the fundamental requirements of the relevant standards and guidelines. All associated documents and the original Declaration of Conformity are available from the manufacturer.

SAFETY INSTRUCTIONS

CAUTION:

PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION

1. The conditions of your warranty are dependent upon proper installation.
2. Before beginning the installation familiarize yourself with all components and their handling.
3. If the wind turbine is allowed to spin at high speeds without electrical resistance, such as when the electronics are not completely and properly installed, the turbine may be “free-spinning” which can lead to extremely dangerous operation. **ALLOWING YOUR WIND TURBINE TO FREE SPIN WILL VOID YOUR WARRANTY.**

A turbine with no load on it may overspin even in very low wind conditions. Keep in mind that if you use an unauthorized controller or program a low MPPT table there may not be sufficient resistance on the turbine, indeed allowing it to overspin and voiding your warranty. Always check with a UGE engineer before making such changes.

For grid tie systems, not using an inverter, or using an inverter that is not connected to the grid, will also allow the turbine to behave dangerously. Allowing the turbine to behave in such a way will also void your warranty. Please make sure that unless the turbine is fully operational, it is completely stopped either through electrical or mechanical means.

4. Install the product in accordance with the National Electric Code (NEC) and/or local electrical codes as applicable. Use only proper grounding techniques as established by the NEC.
5. This wind generator complies with international safety standards that must not be compromised. Opening the generator cover may compromise the safety and efficiency of the generator. Furthermore, opening the generator cover without manufacturer authorization will void the warranty.
6. During installation some components must be sealed to prevent water seepage. Failure to do so may lead to premature wear of your product and would compromise the warranty.
7. The UGE system uses high voltage electricity and is potentially dangerous. Be sure to follow all safety precautions at all times.
8. The electronics associated with the UGE wind turbine must be installed by a certified electrician in accordance with the National Electric Code (NEC) and/or local electrical codes as applicable. Use only proper grounding techniques as established by the NEC.

SAFETY INSTRUCTIONS

CAUTION:
PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION

9. Some components of the eddy are very heavy. Do not attempt to lift or move them without a proper hoist or suitable machine. Doing so may result in personal injury.
10. Please fill out your warranty registration card and return the card, not doing so may affect your warranty.
11. Warning symbols to be used throughout this manual:



CAUTION



ELECTRICAL DANGER

SPECIFICATIONS

TURBINE:

eddy wind turbine

See **eddy** turbine installation manual

TOWER:

Height	7 m (23 ft)
Base diameter (Excluding bottom flange)	0.240 m (0.79 ft)
Top diameter (Excluding top flange)	0.160 m (0.53 ft)
Material	Galvanized steel
Finish	Powder coated (Specify RAL number)
Weight	kg (lb)

SOLAR PANEL:

Power	150 W
Output voltage	24V DC
Length	1.182 m (3.88 ft)
Width	0.989 m (3.25 ft)
Thickness	0.035 m (0.115 ft)
Weight	18 kg (40lb)

MOUNTING BRACKET:

Material	Galvanized Steel
Finish	Powder coated (RAL color in accordance to tower)
Range of angle	From horizontal 15° to 60°
Weight	16 kg (35 lb)

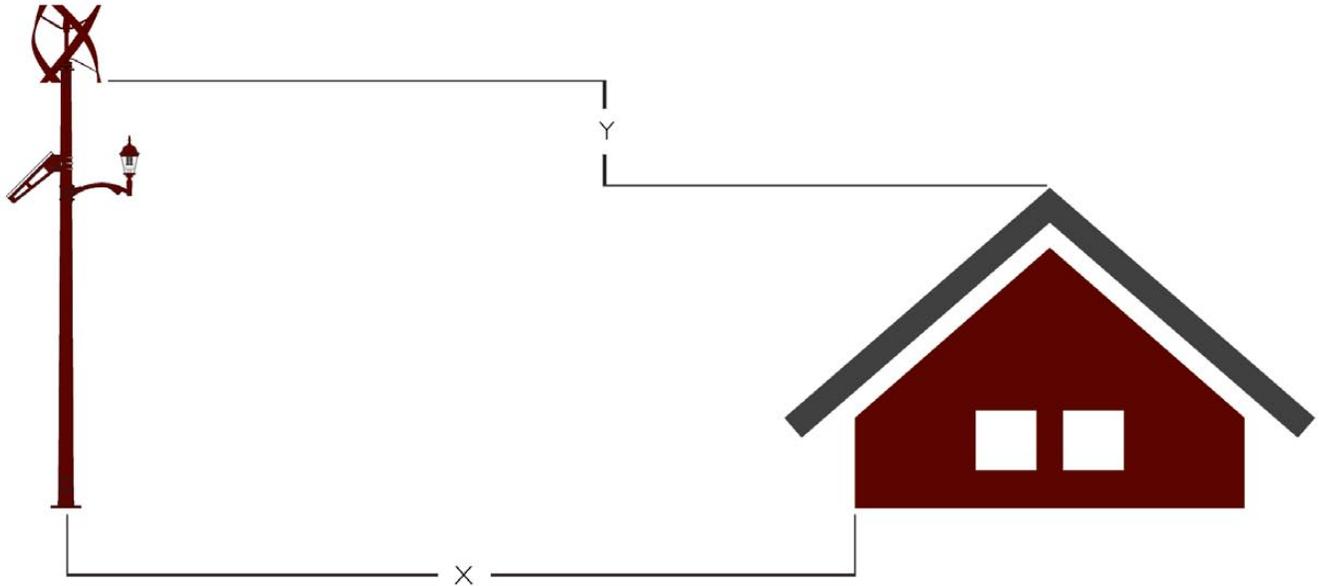
LIGHT:

Type	LED
Power	60 W
Input voltage	24V DC
Length	m (ft)
Width	m (ft)
Thickness	m (ft)
Luminous flux	LM
Effective illuminated area	m×m
Weight	kg (lb)

GETTING STARTED



GETTING STARTED



POSITIONING YOUR BOARDWALK:

Selecting the optimal location for Boardwalk Street lamp is crucial to capturing the wind power required to generate electricity. Several factors must be taken into account while selecting your location:

- Surrounding structures.
- Available wind resources.
- Estimated number of hours per night LED is on.
- Illuminated Area

Surrounding trees, buildings or obstacles can greatly reduce the efficiency of the eddy wind turbine and the solar panel. The size of the battery bank should depend on the abundance of wind or solar resources within the location. Understanding if your location is suitable for a Boardwalk installation is critical to maintaining good condition of your hardware, and minimizing maintenance costs.

Start assessing your potential site with the UGE 1st Step Anemometer, which can collect data of wind direction and speeds. Ask a UGE engineer for the minimum value of X and Y needed for your Boardwalk to have good performance at your unique location. It is also necessary to adhere to local building restrictions.

GETTING STARTED

TOWER AND FOUNDATION:

Prior to assembling the Boardwalk, the foundation must be ready for tower installation. See the Boardwalk Tower Drawings and Boardwalk sample foundation drawings, or speak to your distributor to gain access to these documents. Take caution when planning for a foundation, since the bolt locations (based on the tower base template) will dictate the direction that the LED points towards.

For projects using towers purchased through UGE, please see the “Tower Assembly Instructions” manual published by American Resource and Energy and which is available from your UGE distributor. This document explains the proper tower installation procedure as well as safety precautions to be taken when erecting the tower. Also see the tower design drawings for minimum slip overlaps between tower sections. We recommend measuring and marking these distances directly onto the outside face of the tower prior to tower installation to confirm adequate overlap of tower sections.

The tower shall be leveled after installed. Towers purchased through Urban Green Energy are designed to be installed with a gap between the bottom plate of the tower and the top of the foundation or existing building. Leveling nuts placed in this gap allow for proper leveling of the tower during installation and during the annual maintenance check (see page 38). The tower shall be leveled such that the top plate of the tower is within 1 degree of horizontal.

TORQUE VALUES:

The bolts of the **eddy** turbine must be tightened to a specific torque. You should use a torque wrench in order to make the bolts tight enough without damaging the turbine components. See below for torque values:

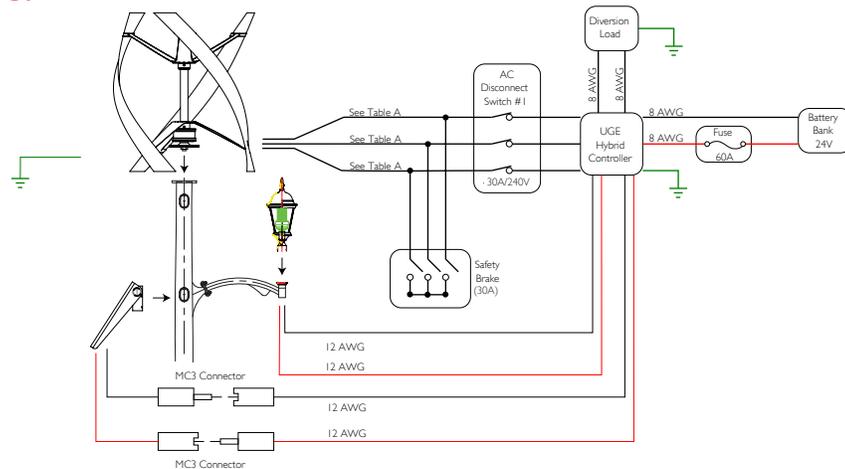
- Longer Blade Bolts 5.0 N*m (3.7 ft*lbs)
- Shorter Blade Bolts 5.6 N*m (4.1 ft*lbs)
- Connecting Arm Bolts 11.3 N*m (8.3 ft*lbs)
- Flange Bolts 115 N*m (85 ft*lbs)

GETTING STARTED

ELECTRICAL SYSTEM OVERVIEW:



CAUTION:
RISK OF ELECTRIC SHOCK. PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION, OPERATION, OR MAINTENANCE OF ELECTRICAL COMPONENTS.

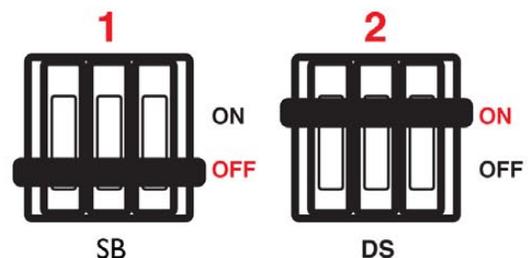


Safety Brake (SB) and Disconnect Switch (DS) are not included with this product, because configurations for every customer is different depending on the planned location of installation. These disconnect switches are easy to find, and are part of standard inventory for most electrical equipment stores. These breakers must be a 3 phase circuit breakers, supporting at least 40A current per phase and 240VAC. Breakers **MUST** be installed before positioning the turbine on the Boardwalk tower.

The following illustrates the breaker configurations during different modes of operation:

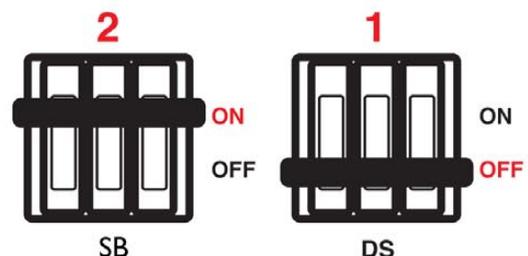
NORMAL OPERATION

- STEP 1: SAFETY SWITCH IN **OFF** POSITION
- STEP 2: DISCONNECT SWITCH IN **ON** POSITION



EMERGENCY / MAINTENANCE

- STEP 1: SAFETY SWITCH IN **ON** POSITION
- STEP 2: DISCONNECT SWITCH IN **OFF** POSITION



GETTING STARTED

WIRE SIZING:

These wire sizing directions listed in the electrical system overview are for a single Boardwalk Hybrid Street Light installation. DO NOT attempt to use these wire sizing instructions for a Boardwalk connected to a sub-panel or for multiple Boardwalk street lamps. Ensure all power is turned off before working on any electrical connections.

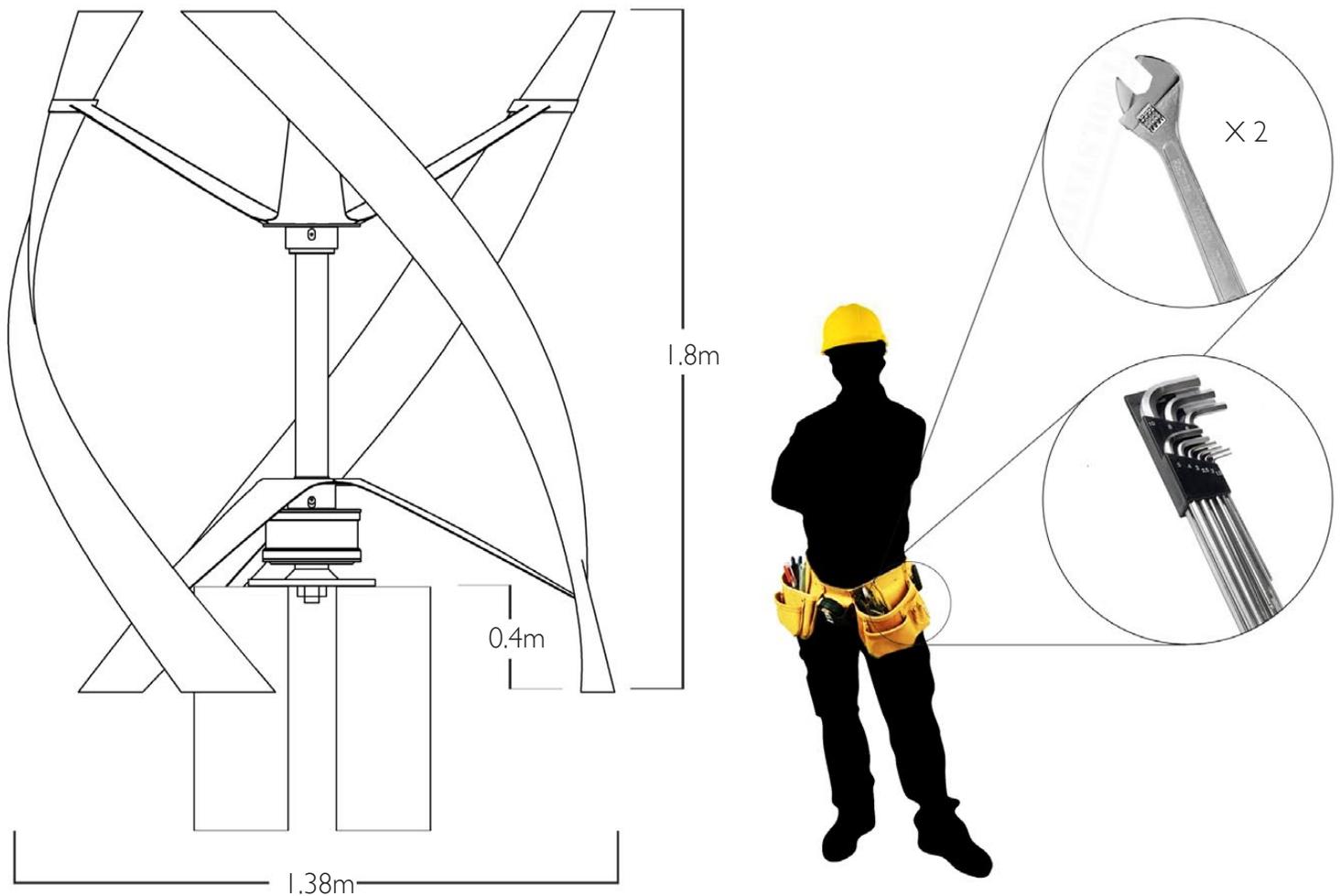
GROUPED ELECTRONICS:

If you prefer to use a single controller with a custom configuration of multiple Boardwalks or combination of turbines, solar panels, and LEDs, UGE Engineers will be happy to help you to determine the correct wiring size and battery capacity depending on your unique installation configuration. Contact us for any questions on such configurations.

IMPORTANT RECOMMENDATIONS:

- The electronics and the battery should be stored in a dry and clean place, with proper ventilation.
- The safety breaks have to be easily accessible.
- The battery terminals should be covered by insulating material to avoid any risk of electrical shock.
- Follow diagram on previous page for electrical components installation. For more information see page ????
- The diversion load produces more than 400°C at highest operation capacity. Keep this unit away from other electronics.
- We strongly recommend to put the electronics above the ground. Underground installations creates difficulties in ventilation, access to breakers, and moisture.

GETTING STARTED



TURBINE ASSEMBLY REQUIREMENTS

Before proceeding to turbine installation, the following tools will be needed to conduct safe and efficient assembly:

- A working platform capable of withstanding 80kg weight, with a slot 0.15m (6") in diameter for the bottom of the generator to rest upon.;
- 2 (or more) adjustable wrenches;
- 1 Metric Hex set (maximum required hex size: 6mm);
- Approximately 1.6mX1.6mX2.3m space for assembly.

A crane is likely required for installing the tower and turbine. Choose a crane which can safely lift 80 kg of weight 3 m above the height of your tower.

CHECKLIST I

Site Name: _____

Address of the Site: _____

Time and Date of installation: ____ \ ____ \ _____ **at** ____:____ ____

OPTIONS:

- Turbine and tower color has been chosen and communicated to UGE sales representative.
- Sail color, logo dimensions and drawings have been chosen and communicated to UGE sales representative.

RECEIVING:

- Street lamp delivery location confirmed.
Date of delivery: ____ \ ____ \ _____ at ____:____ ____
- Mode of transportation ready for turbine pickup from warehouse or shipping POA
- Payment and papers ready for street lamp pickup
- Street lamp arranged to arrive at install site
- Storage place big enough and close to the install site
- Crane or forklift available at storage location to move heavy packages
- If needed, space to assemble some components at storage location

GENERAL INSTALLATION:

- Site approved for wind
- Enough space to assemble every components at the site
- Build the foundation based on the UGE Boardwalk standard foundation drawing; reflecting local building codes and conditions, as required. The UGE Boardwalk standard foundation drawing and template is found in APPENDIX section.
- Stand ready for the turbine assembly
- Prepare all tools. Also include a camera for taking pictures and a multimeter for simple testing.
- Prepare all necessary wiring. Wires for the turbines, LED, and solar panels are not included
- Prepare all necessary circuit breakers, these are not included
- UGE engineer been contacted to confirm the date and time (if necessary)
- Check the weather for day of installation
- Schedule of the day decided
- Electrician will be at site, Time: _____
- Installation technicians will be at site Time: _____ Number of technicians: ____
- Coordinate to dispose of shipping container and waste

PERMITTING:

- Government permit for turbine site
- Government permit for grid-tie application

NOTES

PARTS LIST



PARTS LIST



CAUTION:
CHECK THAT ALL COMPONENTS ARE INCLUDED UPON RECEIVING THIS PRODUCT TO ENSURE SAFE AND EFFICIENT INSTALLATION. TURBINE PARTS ARE LISTED IN THE TURBINE INSTALLATION MANUAL.



Top Tower



Bottom Tower



PARTS LIST



Lighting arm



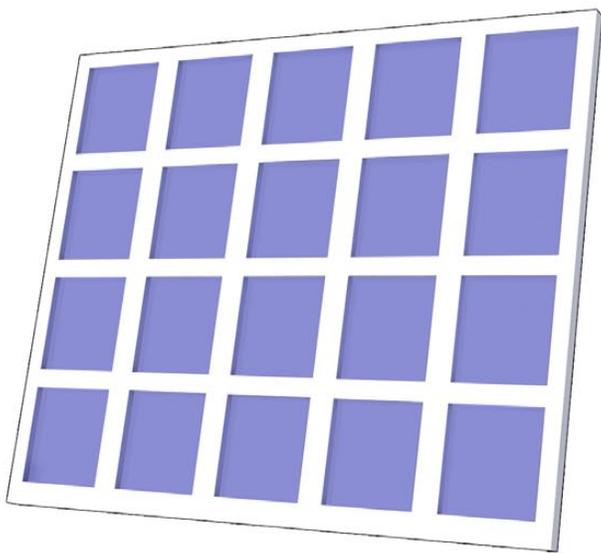
LED Enclosure



PARTS LIST



LED Bulb



Solar Panel



PARTS LIST



Mounting Bracket Frame



Mounting Bracket Back



PARTS LIST



CAUTION:
ALL BOLTS COME WITH A SET OF WASHER,
LOCK WASHER AND NUT UNLESS INDICATED.



PART

AMOUNT

NAME

LOCATION



2

M16X230

Lighting Arm



3

M4X5

LED Enclosure



2

M16 X 50

Mounting Bracket



4

M12 X 50

Mounting Bracket



8

M6X15

Mounting Bracket /
Lower Handhole Cover



3

U-bolt

Mounting Bracket



2

M8 X 30

Upper Handhole Cover

PARTS LIST



Hybrid Off-Grid Controller



Diversion Load



Enclosure (not included)



CHECKLIST 2

TOWER:

- Build the foundation based on the UGE Boardwalk standard foundation drawing; reflecting local building codes and conditions, as required. The UGE Boardwalk standard foundation drawing and template is found in APPENDIX section.
- Lighting arm and bolts present

EDDY:

- 3 lower connecting arms present
- 3 upper connecting arms present
- 3 blades present
- Axis and Generator present
- Connecting plates present
- All bolts present

SOLAR PANEL:

- Solar Panel present
- All bolts present

MOUNTING BRACKET:

- Mounting bracket shipment present

LED:

- LED present
- Two bolts and washers present

ELECTRONICS:

- Controller
- Diversion Load
- Inverter Charger (for grid-tie battery backup system only)
- Batteries (24V DC or 2 X 12V DC in series)

OTHER

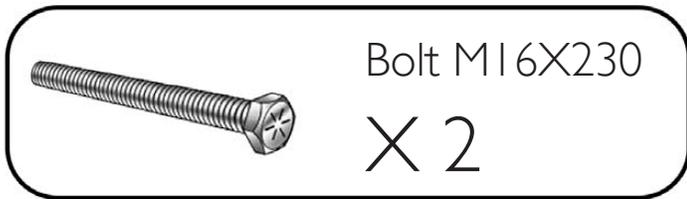
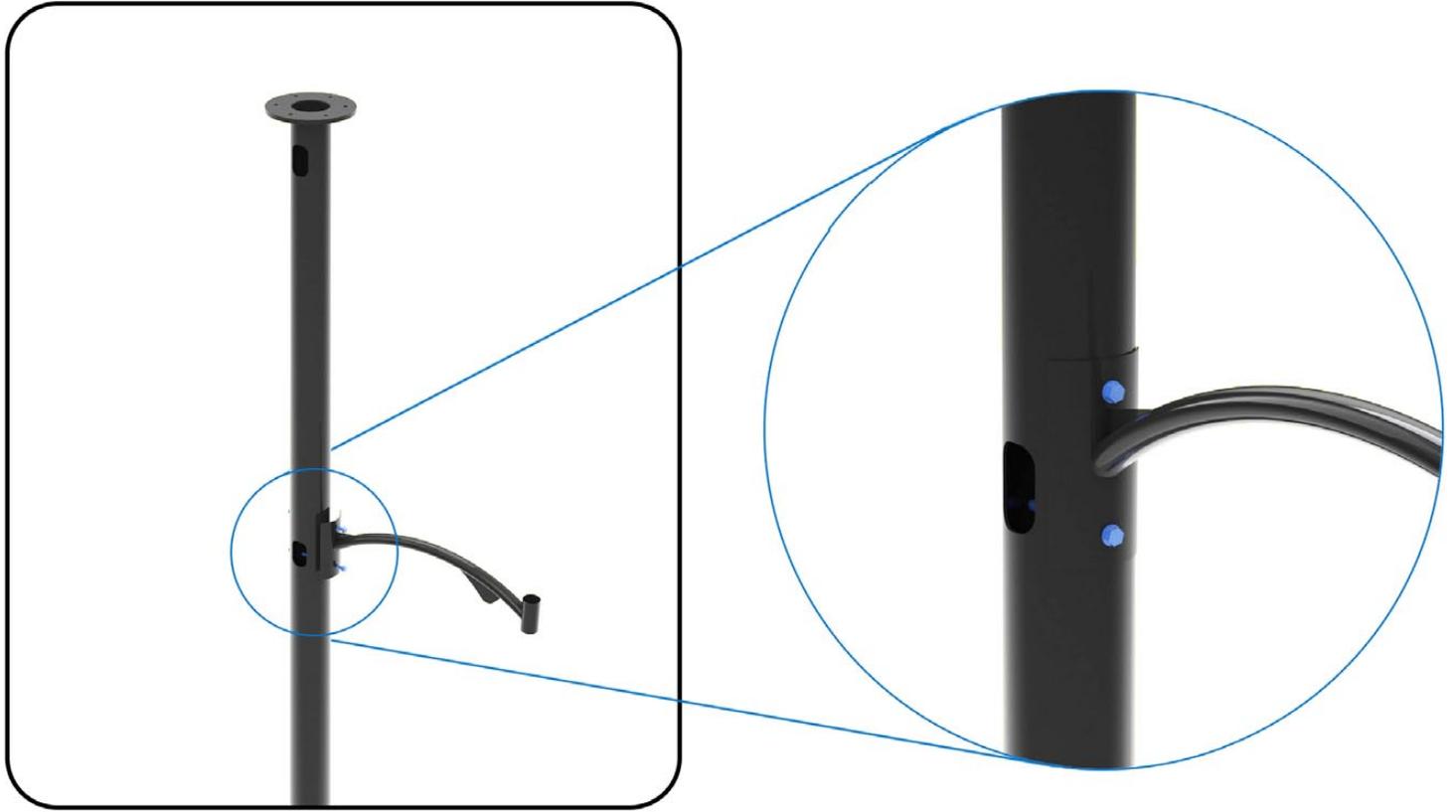
- Wires purchased (Solar Panel wires require MC3 connectors)
- Enclosure purchased
- 3 poles safety switch and purchased
- Battery or inverter terminals purchased

NOTES

INSTALLATION

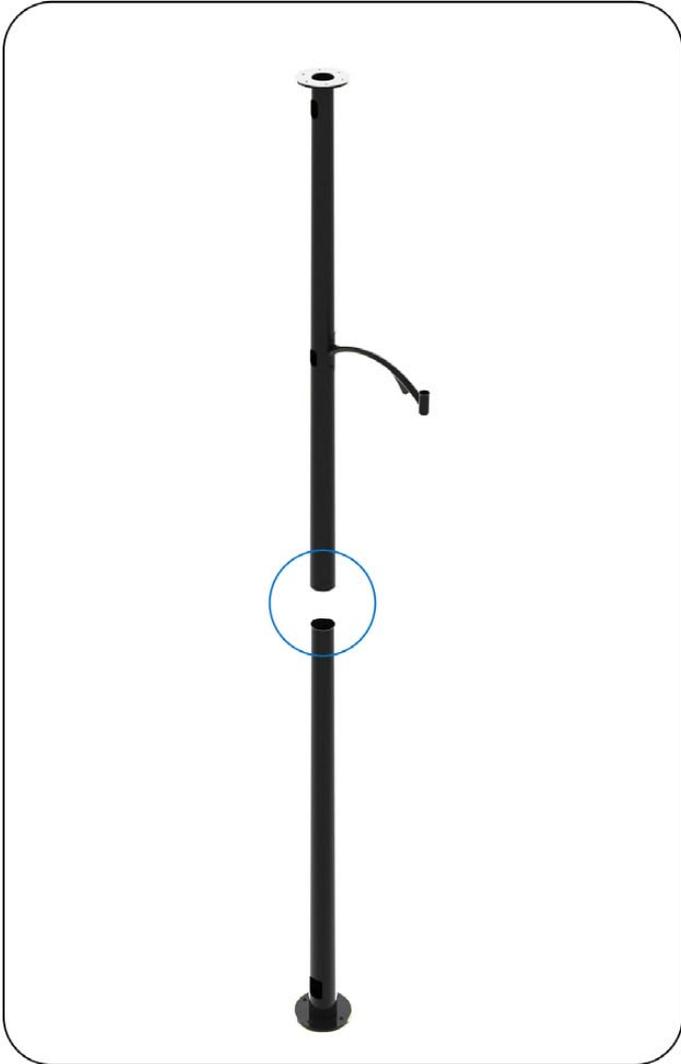


INSTALLATION:TOWER



Connect the lighting arm to the top tower with M16X230 bolts.

INSTALLATION:TOWER



Line up the two towers in sequential order, and pull together. Applying lubricant on each joint makes the jointing process easier, allowing the two sections to slide together with ease. Wrap straps around each tower section to create chain blocks, which will be used to pull the sections together.

NOTE: REFER TO THE “ARE TOWER ASSEMBLY MANUAL” AT <http://www.arendtowers.com/Manuals> FOR MORE INFORMATION



CAUTION:
AFTER CONNECTING THE TOWER SECTIONS, THEY SHOULD BE TIGHTENED SO THAT THE MINIMUM SLIP DISTANCE IS 326MM AND MAXIMUM SLIP DISTANCE IS 799MM.

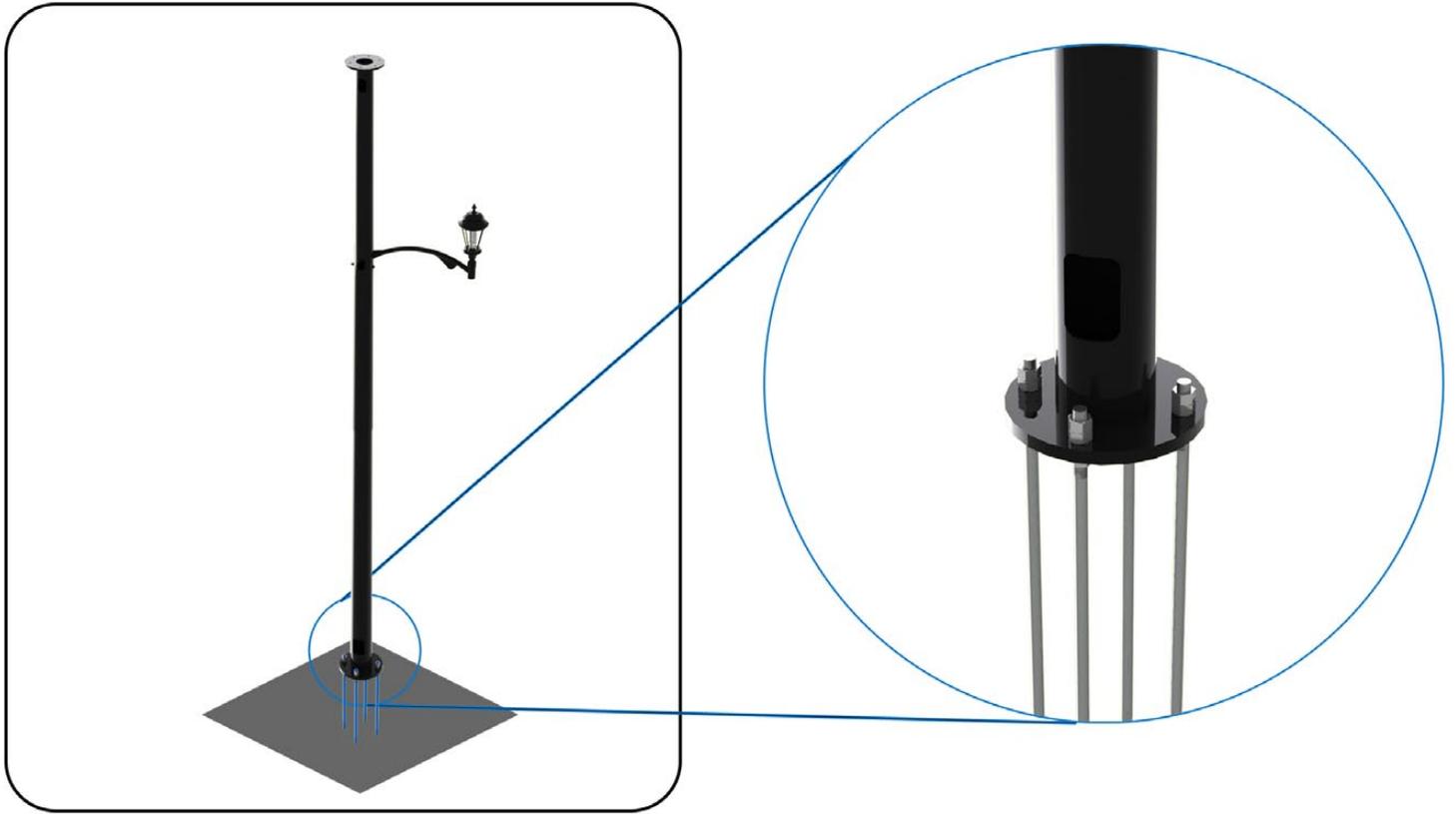
INSTALLATION:TOWER



Bolt M4X5
X 3

Install the LED bulb inside the LED enclosure. Slide the enclosure over the lighting arm, and screw the three M4X5 bolts down until enclosure is tightly attached onto the lighting arm.

INSTALLATION:TOWER



Anchor Bolt

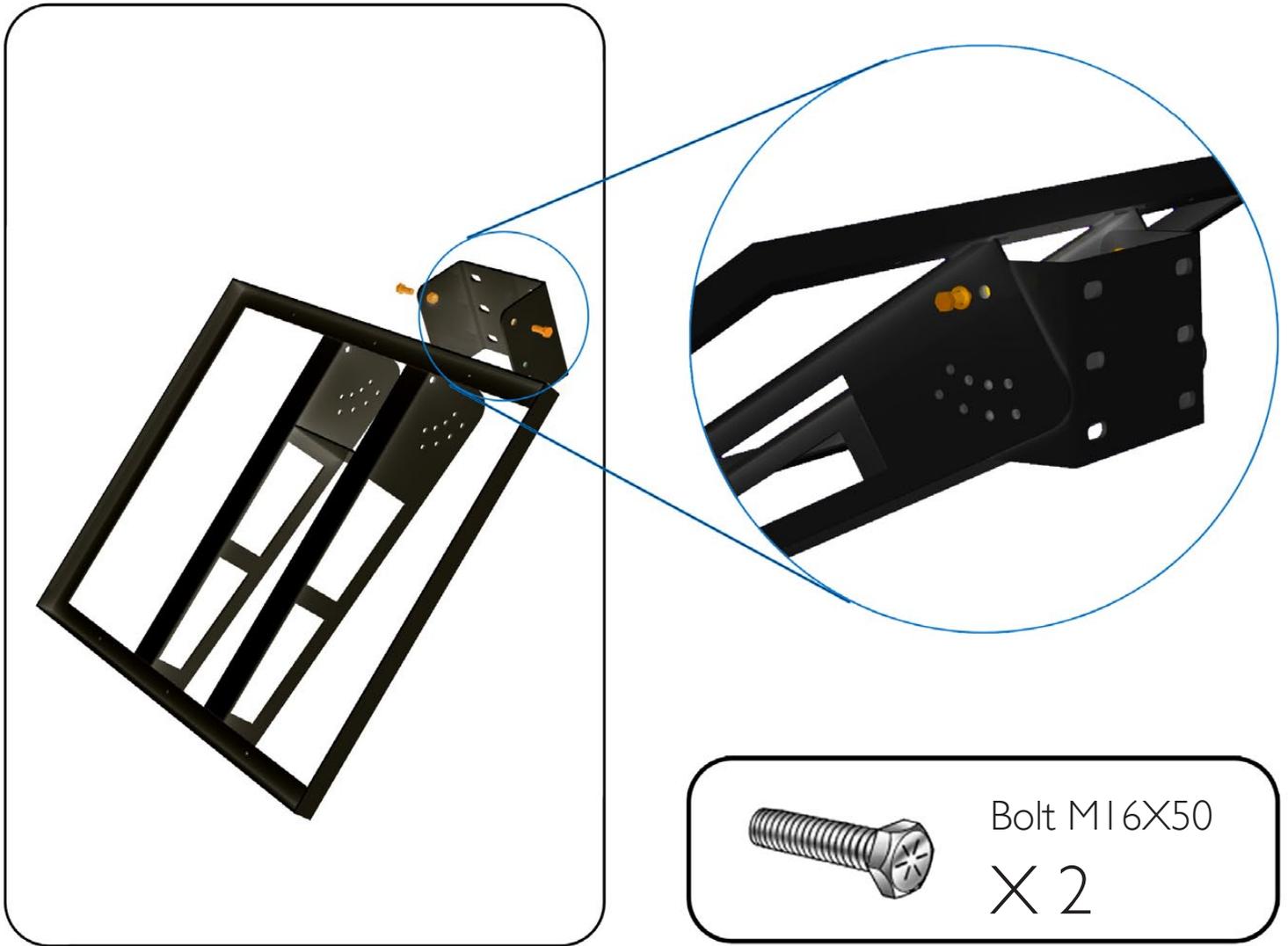
X 4

Erect the tower vertically, and bolt it to the anchor bolts. Use a leveller to ensure the tower is plumb.

NOTE:

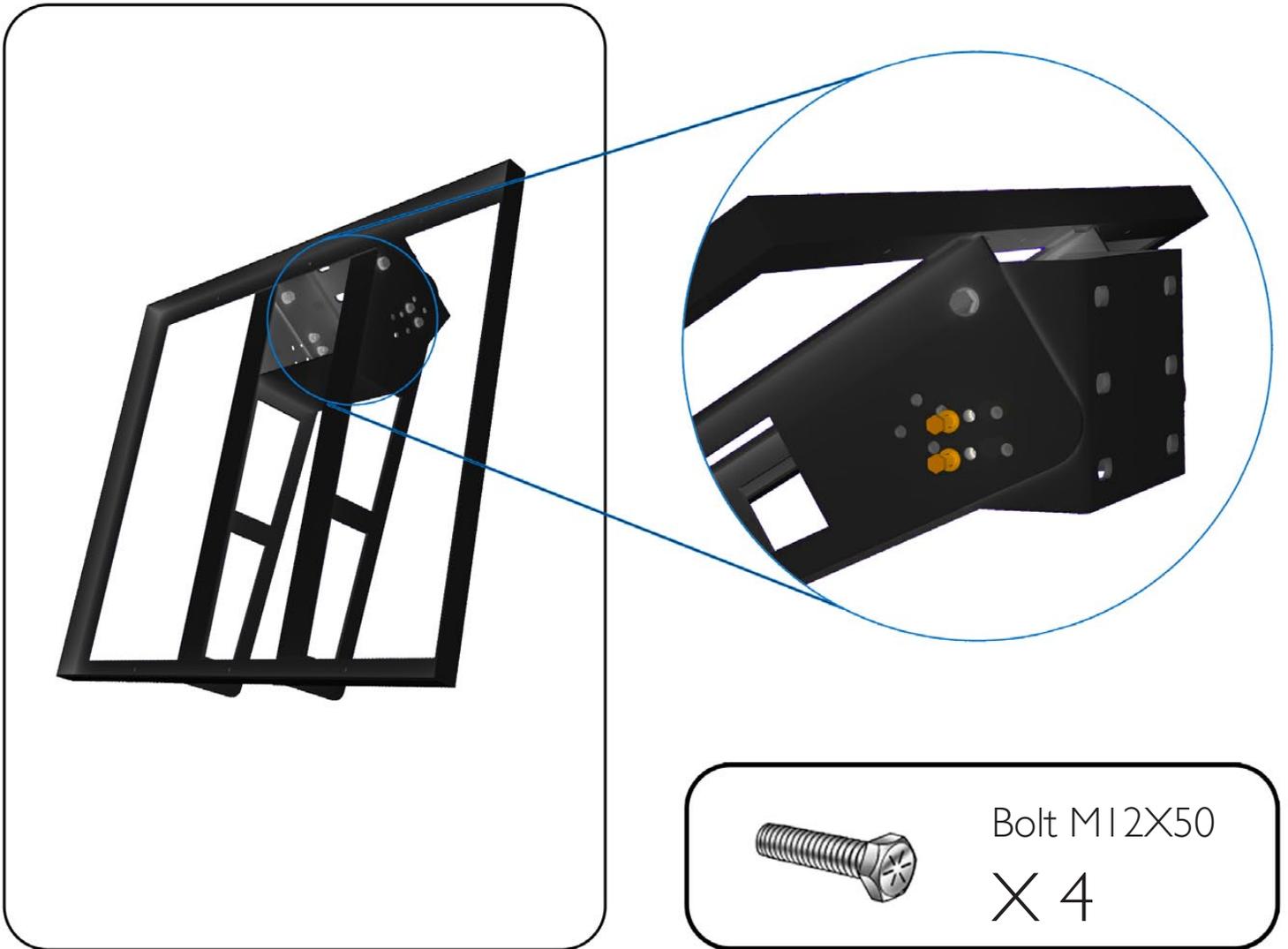
THE RECOMMENDED TORQUE VALUE FOR M36 ANCHOR BOLTS IS 457N-m.

INSTALLATION: SOLAR



Position the mounting bracket frame to the mounting bracket back so that the top bolt holes on both components align. Secure in place with two M16X50 bolts.

INSTALLATION: SOLAR

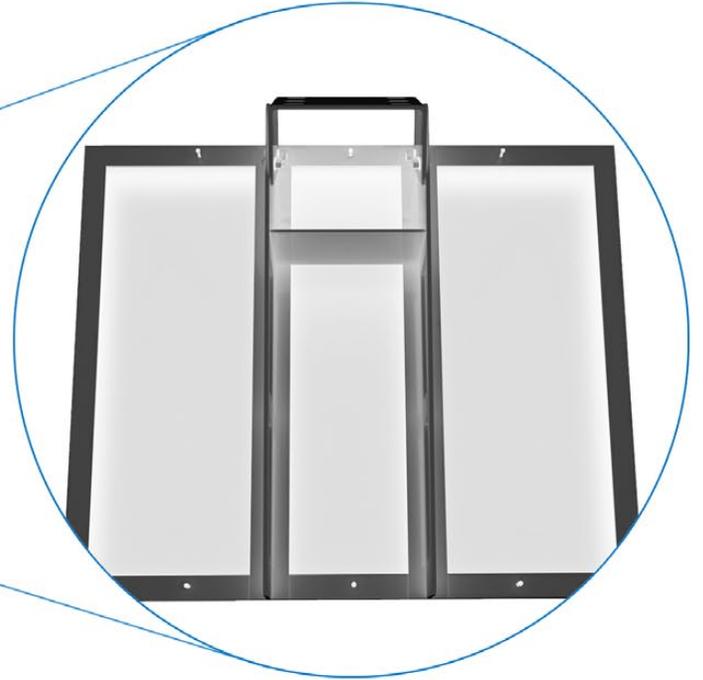
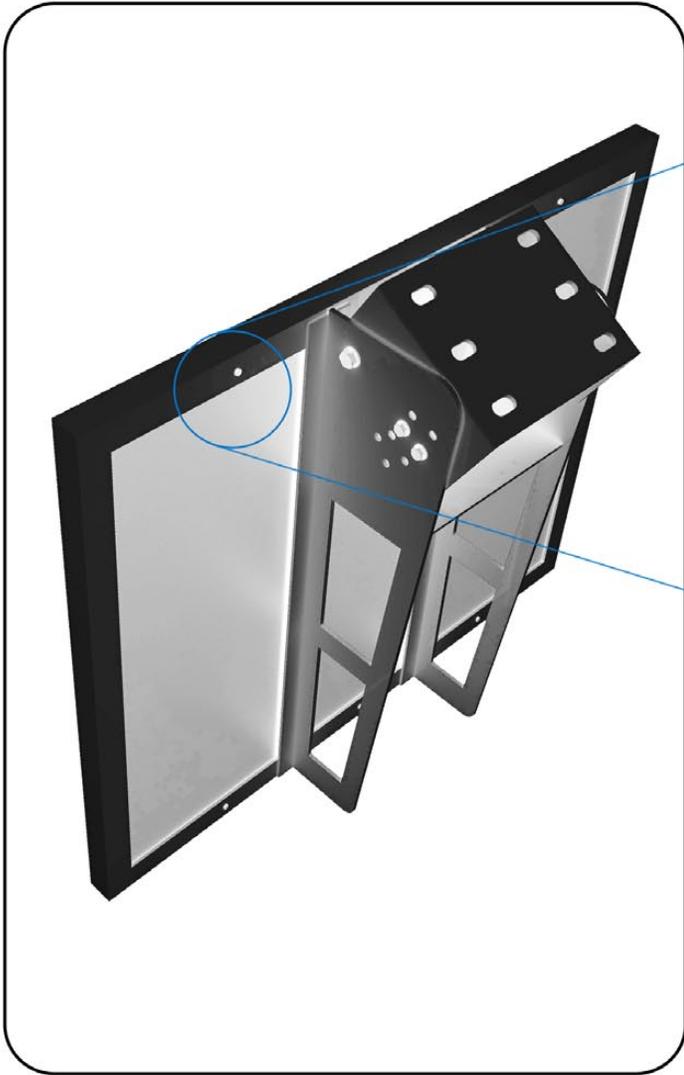


Depending of the geographical location of your install, the solar panel should be angled to optimize solar power generation. No matter the angle, the solar panel should always be facing South (North if located in the southern hemisphere).

Optimum angle for the solar panel at your installation location can be calculated by the following equation:
 $(Latitude\ of\ your\ location) \times 0.9 + 29^\circ = Optimum\ Angle\ (from\ horizontal\ plane)$

Secure the mounting bracket frame into the position closest to the optimum solar panel angle by mounting four M12X50 bolts to the lower bolt holes.

INSTALLATION: SOLAR

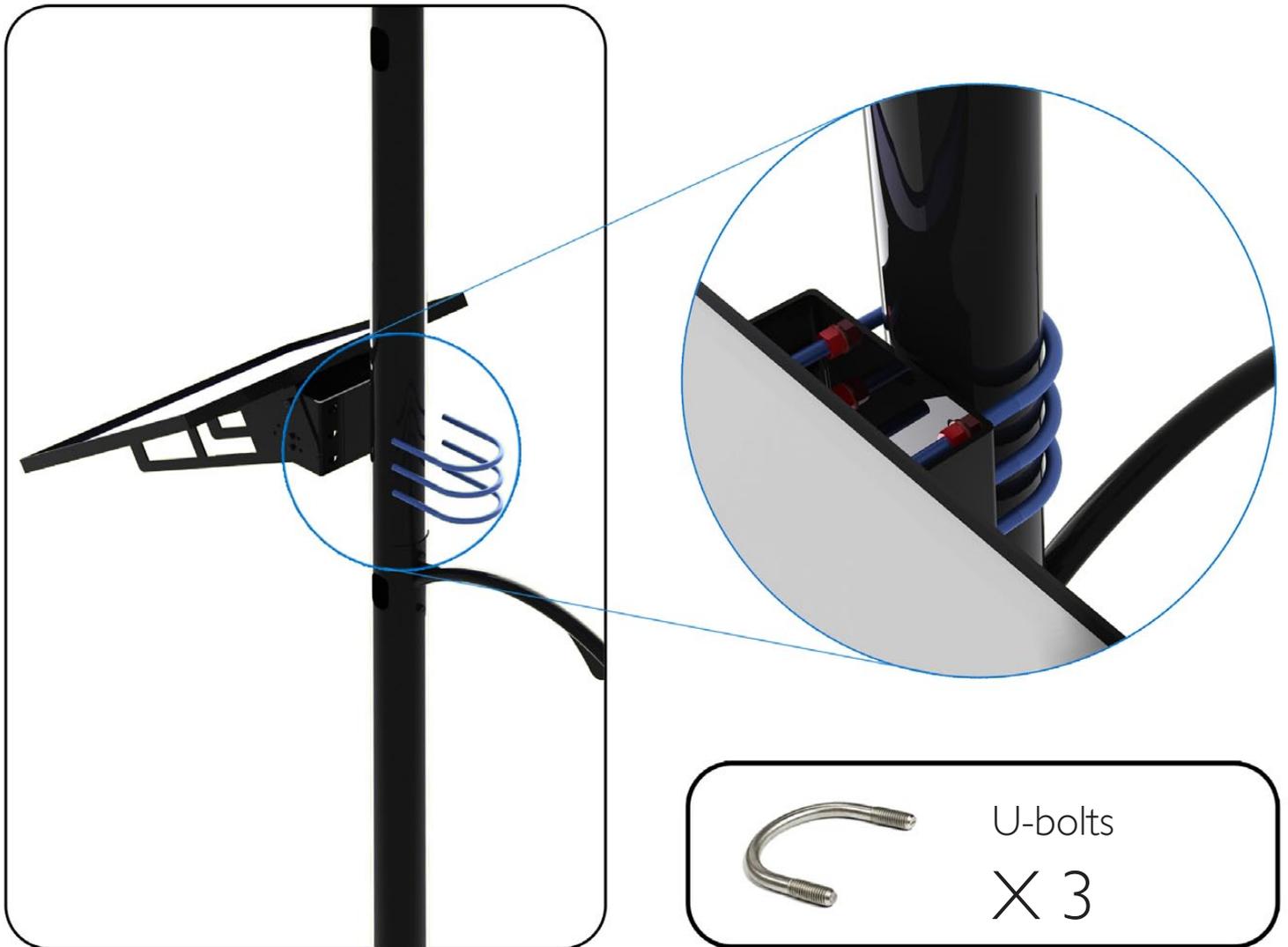


Bolt M6X15

X 6

Place the solar panel onto the newly assembled mounting bracket. Tighten the solar panel onto the bracket with six M6X15 bolts.

INSTALLATION: SOLAR



Mount the solar panel and mounting bracket to the tower with 3 U-bolts. Position the Solar Panel to face South.

The mounting bracket is now fully assembled.



CAUTION:

DO NOT INSTALL THE MOUNTING BRACKET UNTIL AFTER THE TOWER HAS BEEN VERTICALLY ERECTED AND ANCHORED INTO THE GROUND

INSTALLATION: TURBINE



Download and follow installation procedures for the **eddy** turbine. Lift the turbine by using lifting slings. Tie the lifting mechanism such that it will pull the turbine from the top plate of the axis, and not from the upper connecting arms.

For the electrical installation, refer to the controller manual, which will guide you through the steps of wiring eddy to the controller, batteries, diversion load and inverter.



CAUTION:

BEFORE PROCEEDING, RETURN TO ALL BOLTS AND ENSURE THAT THEY HAVE NOW BEEN TIGHTENED TO THE NECESSARY TORQUE REQUIREMENTS. SEALANT SHOULD BE APPLIED TO GAPS BETWEEN BLADES AND CONNECTING ARMS. TURBINE BLADES SHOULD BE PHYSICALLY TIED DOWN TO PREVENT FREE SPINNING WHEN MOUNTING ON SUPPORTING TOWER. WIND SPEED SHOULD BE LOW DURING THIS STEP.

FINAL CHECKLIST

WITH THE SYSTEM PROPERLY WIRED PER THE SUPPLIED WIRING DIAGRAM, ENGAGE THE SAFETY BRAKE AND OPEN ALL AC DISCONNECT SWITCHES BEFORE RUNNING THE FOLLOWING TESTS.

Safety Brake Switch

- Confirm the resistance between each phase is 0 Ω

AC Disconnect Switch #1

- Confirm a switch is present between the turbine and off-grid controller
- Confirm the switch rating meets or exceeds the recommended value

Controller

- Confirm model - UGE-4K-OGC
- Confirm diversion load is present and connected to controller.

Batteries

- Confirm battery voltage matches system voltage - 24V

Inverter (if applicable)

- Confirm model according to local requirements and system voltage

AC Disconnect #2 (if applicable)

- Confirm a switch is present between the inverter and the electric panel
- Confirm the switch rating meets or exceeds the recommended value

AC Disconnect #3 (if applicable)

- Confirm a switch is present between the inverter and the main panel
- Confirm the switch rating meets or exceeds the recommended value

Grounding

- Confirm the resistance between all grounding conductors is 0 Ω

WITH THE SYSTEM PROPERLY WIRED PER THE SUPPLIED WIRING DIAGRAM, CLOSE THE AC DISCONNECTS SWITCHES AND DISENGAGE THE SAFETY BRAKE.

Safety Brake Switch & AC Disconnect #1

- Confirm a voltage exists between each phase with turbine spinning at the input terminals (If there is no wind present, the turbine can be manually spun by hand to confirm voltage presence)

Controller

- Measure the voltage at the turbine input terminals and verify that the turbine light is flashing, indicating charging (If there is no wind present, the turbine can be manually spun by hand to confirm voltage presence).

OPERATION

Your UGE turbine is designed to operate with minimum action required on the part of the owner. If wired correctly, the controller or wind interface box / inverter combination will keep the turbine spinning at an optimum and safe RPM regardless of the wind speed. Please see the installation and/or owner's manuals for the turbine's electronics for more information on the proper operation of that equipment.

Please follow the instructions below to ensure proper function of your wind turbine:

- Unless the safety break is engaged, AC disconnect switch #1, the switch between the turbine and the controller or wind interface box, must be in the closed (on or engaged) position. This switch should be locked in the closed position with a combination lock, key lock, or zip tie. Locking this switch is a requirement for the activation of the warranty. Leaving this switch in the open position with the safety break not engaged can lead to a free-spinning situation, potentially damaging the turbine, and voiding the turbine's warranty.
- The covers of all electronic components shall remain on those components unless maintenance is being performed on the turbine or electronics. These covers shall only be removed by qualified personnel such as a UGE distributor, licensed contractor, or certified electrician, or by an individual under the direct supervision of UGE technical staff.
- The safety break may be engaged and disengaged at the owner's discretion. During times of high wind, the turbine may spin slowly even with the safety break engaged. This is normal. If the turbine is rotating when the safety break is engaged, the turbine should coast to a stop or very low RPM within 5 seconds. It is not recommended that the owner regularly engage the safety break when the turbine is rotating quickly.
- If the tower was purchased with a hinge and manual or motorized raising system, the owner may raise and lower the tower at their discretion. The safety break shall be engaged before raising or lowering the tower to prevent the turbine from spinning during the transition. It is recommended that the tower not be raised or lowered at times with wind speeds above 5 m/s [11 mph].
- If the turbine appears to be spinning off balance or begins to emit a noticeable sound, engage the safety break and contact UGE technical support at (917) 720-5685 ext. 6 or at techsupport@urbangreenenergy.com

MAINTENANCE

After 1 month, and every year on the anniversary of the turbine's installation, it is required that your Boardwalk Streetlight undergo a checkup. Although there is no routine or service requirement beyond this you should be aware of any unusual behavior or sounds. If this occurs it is best to utilize the safety brake to stop the turbine and then contact your distributor or the service center.



CAUTION:

THE MAINTENANCE CHECK SHOULD BE PERFORMED ON A DAY WITH CALM WINDS, 5M/S [11MPH] OR LESS. PRIOR TO PERFORMING ANY MAINTENANCE ON THE TURBINE, ENGAGE THE SAFETY BREAK TO PREVENT THE TURBINE FROM SPINNING.

Equipment that you will need for the maintenance check includes:

- Ohm meteter
- Volt meter
- Digital level
- A bucket truck or other man lifting device may be needed to clean the turbine.

The routine checkup of your turbine should include:

- Clean the blades so that they are free of dust or bug matter
- All bolts tightened to required torque values
- Blades are free of defects
- Connecting arms are free of defects
- No abnormal noises from spinning turbine
- Solar panels are free of defects or debris blockage
- LED is free of rust or other visible defects
- Tower is free of rust or other visible defects
- Controller functional
- Inverter functional and displays no error messages (if present)
- Verifying the resistance of the diversion load
- Voltage produced when spinning turbine
- All wires securely attached to ports
- No rust exists on electrical connection points or inside enclosures
- Turbine, tower, and all electrical components are still properly grounded
- Batteries are within operable life
- Top plate of tower is plumb within 1 degree of horizontal

Release the safety break after the maintenance check is complete

FAQ

1. **When should I contact the service center?**

Contact your merchant if the turbine is making loud and unusual sounds and if the turbine is not spinning in response to strong persistent wind. Your distributor may contact the UGE service center, or recommend you contact us directly.

2. **What should I do if I'm expecting a severe storm?**

Eddy is capable of lasting a severe storm, however if you have the opportunity it is advisable to turn on the safety brake and anchor the turbine with a rope or other physical anchor.

3. **How do I shut down eddy?**

Engage the safety brake to stop the turbine from spinning

4. **Can I leave eddy unattended?**

Yes, your turbine is able to operate without user feedback.

5. **If there is absolutely no wind and no sun today, will Boardwalk shine tonight?**

Yes, the Boardwalk as been designed to last 5 nights (at full charge) without any sun or any wind during the day (Per recommended specifications of components).

NOTES

WARRANTY INFO

URBAN GREEN ENERGY, INC. THREE YEAR LIMITED WARRANTY AGREEMENT

This Agreement ("Agreement") is between you and Urban Green Energy, Inc. ("UGE") and applies to UGE brand-ed products ("Product") and services purchased by you from UGE or any of its subsidiaries or affiliates or a UGE authorized reseller ("Reseller"), unless you enter into a separate written agreement with UGE.

BY PURCHASING A UGE PRODUCT YOU AGREE THAT THIS AGREEMENT APPLIES TO YOU. YOU MUST REGISTER THIS LIMITED WARRANTY AGREEMENT AND RECEIVE ACCEPTANCE BEFORE YOU TURN ON YOUR WIND TURBINE.

The term of this Limited Warranty is three (3) years (the "Limited Warranty Period"). For the UGE-600, UGE-1K, UGE-4K vertical axis wind turbine;

Serial number_____

Vertical axis wind turbine model type_____

Vertical axis wind turbine is grid tie or off grid?_____

Customer Name_____

Customer Phone Number_____

Customer Email_____

Turbine Installation Site Address_____

The Limited Warranty Period begins on the date of product installation. The installation must be performed by qualified personnel, such as a certified electrician, an employee of a licensed contractor or an employee of an UGE distributor; this list is exemplary and by no means limiting. The date of installation may occur in the 12 month period following the delivery date of the product to the distributor. The warranty must be registered within ten (10) business days from the date of installation. The unit should be installed but not turned on prior to registering the warranty. The warranty registration period will expire at midnight (local time of installation location) on the tenth (10th) day following the installation date. The expiration of the warranty registration period terminates all rights covered in this Limited Warranty Agreement.

Date of delivery to Distributor (if applicable) _____

Date of installation_____

WARRANTY INFO

I. Registration of Limited Warranty.

i. Complete the online warranty registration form at http://www.urbangreenenergy.com/warranty_form.php with the serial number, unit type, date of delivery to distributor, date of installation, customer information and installation location.

ii. Submit End-Users Agreement Statement signed and dated by the End-User. It can be downloaded from the Distributor's Section or requested from your sales representative.

iii. Take the following photographs:-

- Controller wiring
- Diversion load wiring
- Safety break and Disconnect switch wiring (3x)
- Locked AC disconnect switch #1
- Overall electrical assembly picture showing all components and conduits in between the electrical boxes and showing a zip tie or other means of ensuring the AC disconnect switch between the generator and the controller cannot be opened accidentally.

iv. In the event the product is not installed using a tower supplied by Urban Green Energy, you must submit professional detailed design drawings of the tower. For non Urban Green Energy, Inc supplied towers not installed with a standard foundation, you must submit drawings of any mounting provisions. For installations using Urban Green Energy supplied towers but not our foundations, you must submit drawings of any mounting provisions. Please note that it is not the responsibility of Urban Green Energy, Inc to review these drawings, and they will only be kept on record if needed for future troubleshooting.

Urban Green Energy, Inc does not accept responsibility for damage to Urban Green Energy, Inc manufactured products resulting from the use of non-Urban Green Energy, Inc supplied towers, roof mounts or electronics. Please note that if you chose to use non-Urban Green Energy supplied parts you should ensure that the towers are designed adequately for the loads the turbine will experience and that all other parts are suitable for the installation.

v. Email the photographs and tower design, as applicable per iv. above, to warranty@urbangreenenergy.com.

vi. You will receive confirmation within two (2) business days of submitting the required images via email.

vii. Once you have received approval by way of a UGE Warranty Certificate you will not invalidate the warranty by turning your installed turbine on.

WARRANTY INFO

1. Maintenance. To qualify for the full Limited Warranty period, the product must undergo full maintenance once within the first month of installation and following the first full maintenance, once every 12 months. Product maintenance should be registered by downloading the maintenance form from the UGE website. The form should be filled in and submitted to techsupport@urbangreenenergy.com. The form should be submitted not more than 2 months from the date of installation and within ten (10) days from the date maintenance is performed. Then annually thereafter maintenance should be performed in no more than 13 month increments. All maintenance forms must be submitted in not more than ten (10) days following the date the maintenance is performed. Annual maintenance must be performed until the life of the general or extended warranty has terminated. Please note that failure to submit annual maintenance reports will invalidate the warranty.

2. Product Limited Warranty. UGE warrants that its Products will be free from defects in materials and workmanship, under normal use for which it is intended, for the Limited Warranty Period. During the Limited Warranty Period, UGE may, at its option: (i) provide replacement parts necessary to repair the Product, (ii) repair the Product or replace it with a comparable product, or (iii) refund the amount you paid for the Product, less depreciation of ten percent (10%), upon its return, provided that UGE may, at its sole option, attempt to remediate any defects via technical support through telephone or electronic communication prior to taking any actions outlined in items (i) through (iii) listed above. It is hereby agreed and understood that UGE shall not be responsible for the installation of replacement parts or replacement products. Replacement parts and products shall be shipped at no cost to you and shall be new or serviceably used, comparable in function and performance to the original part and warranted for the remainder of the Limited Warranty Period.

3. Warranty Limitations. This limited warranty does not cover misuse or minor imperfections in units that meet design specifications or imperfections that do not materially alter functionality. This limited warranty does not cover and UGE is not responsible for (1) damages caused by misuse, abuse, accidents, fire, acts of God, theft, disappearance, misplacement, power surges, viruses, reckless, willful, or intentional conduct, including, without limitation, damages caused by tampering with or dismantling any portion of the Product including its generator, (2) damages caused by servicing not authorized by UGE, (3) damages caused by usage that is not in accordance with Product instructions, (4) damages caused by failure to follow the Product instructions, (5) damages caused by the combination of Products with other non-UGE branded products, accessories, parts or components, (6) any equipment or components that were not included in your Product as originally sold to you, (7) normal wear and tear, (8) cosmetic damage that does not affect functionality or (9) damages or loss of function sustained as a result of wind speeds exceeding 55 m/s, lightening or hail or any other insurable loss under standard fire and extended coverage policies generally available for endorsement to you (10) re-configuration or re-connection of the electronics by a non-UGE authorized distributor; (11) units which have been turned on with out approval, wherein approval is granted by way of a UGE Warranty Certificate corresponding to the unit serial number; (12) units which have been allowed to free spin. Note that if the turbine is installed first and not tied down or short circuited while the electronics are being installed and the warranty approved, the unit can still free spin and damage the blades, bearings and other parts. **DAMAGE INCURRED DUE TO FREE SPINNING IS NOT COVERED BY THIS OR ANY OTHER WARRANTY.** (13) If a non-UGE authorized distributor configures, re-configures or re-connects the electronics for any UGE product this will automatically void the warranty on all components of the product; this includes the turbine.

WARRANTY INFO

4. Services and Service Limited Warranty. Any services provided to you by UGE that are not within the scope of the Limited Warranty also are governed by this Agreement. For a period of ninety (90) days after services are performed, UGE warrants that services provided by it were performed in a professional and workmanlike manner. If your problem recurs within the 90 day service warranty period, UGE will, at its option, (1) re-perform the services, (2) replace the Product pursuant to the terms of this Agreement, or (3) permit you to return the Product and issue a refund pursuant to the terms of this Agreement. If you purchased an extended warranty, such as the UGE Extended Warranty Plan, please refer to the service plan for the coverage, duration and terms of service.

5. Instructions for Warranty Service. To obtain warranty service you must (1) notify UGE within ten (10) days of knowledge of any defect in Product, or any failure of the Product to function properly, (2) assist UGE in diagnosing issues with your Product and follow UGE's warranty processes and (3) obtain warranty service from UGE or an authorized service provider specified by UGE. UGE will not reimburse you for service performed by others.

6. Implied Warranties. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

7. Limitation of Liability. UGE SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY. UGE'S MAXIMUM LIABILITY TO YOU IS LIMITED TO PURCHASE PRICE YOU PAID FOR PRODUCTS OR SERVICES PLUS INTEREST ALLOWED BY LAW. UGE IS NOT LIABLE TO YOU IF IT IS UNABLE TO PERFORM DUE TO EVENTS IT IS NOT ABLE TO CONTROL, SUCH AS ACTS OF GOD, PROPERTY DAMAGE, LOSS OF USE, INTERRUPTION OF BUSINESS, LOST PROFITS, LOST DATA OR OTHER CONSEQUENTIAL, PUNITIVE OR SPECIAL DAMAGES, HOWSOEVER CAUSED, WHETHER FOR BREACH OF WARRANTY, CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.

8. Dispute Resolution. If a dispute or claim is not resolved by you and UGE, then it shall be finally settled by arbitration in accordance with the then current rules of arbitration of the American Arbitration Association by three (3) arbitrators, one selected by each party and the third selected in accordance with such rules. Such arbitration shall be held in New York, New York, and the proceedings and all pleadings, filings, written evidence, decisions and other relevant documents shall be in English. Any final decision issued in the arbitration shall be in writing, and binding and conclusive upon the parties to this Agreement and may be entered as a final judgment by any court of competent jurisdiction. Each Party shall bear its own costs in connection with the foregoing arbitration. This agreement shall be governed by the laws of the state of New York, without regard to conflicts of laws rules.

9. General. UGE may assign this Agreement and/or any associated service plan without your consent and without notice to you. If UGE does assign this Agreement and/or any associated service plan, the assignee will assume all obligations to you, UGE will be released of all obligations, and you agree to look solely to the assignee for the performance of all obligations under this Agreement and/or any associated service plan. UGE and its subsidiaries and affiliates are intended beneficiaries of this Agreement. If there is any inconsistency between this Agreement and any other agreement included with or relating to Products or services purchased from UGE, this Agreement shall govern. This Agreement may not be modified, altered or amended without the written agreement of UGE.

WARRANTY INFO

Any additional or altered terms shall be null and void, unless expressly agreed to in writing by UGE. If any term of this Agreement is illegal or unenforceable, the legality and enforceability of the remaining provisions shall not be affected or impaired.

10. Modifications. UGE reserves the right to change the terms of this Limited Warranty in the future. UGE reserves the right to make design changes, improvements and/or additions to its products without obligation to install such in products previously manufactured

TECHNICAL SUPPORT

If your product requires troubleshooting or warranty service, contact your merchant. If you are unable to contact your merchant, or the merchant is unable to provide service, contact Urban Green Energy directly at:

Urban Green Energy
330 West 38th Street
Suite 1103
New York, NY 10018

Tech. Support Phone: +1 (917) 720-5685
Email: techsupport@urbangreenenergy.com

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