230388

OCALA ELECTRIC UTILITY
OCALA, FLORIDA

FIRST REVISED SHEET NO. 19.0
CANCELS ORIGINAL SHEET NO. 19.0

APPLICATION FOR INTERCONNECTION OF CUSTOMER-OWNED RENEWABLE GENERATION SYSTEMS

TIER 1 - Ten (10) kW or Less
TIER 2 - Greater than 10 kW and Less Than or Equal to 100 kW
TIER 3 - Greater than 100 kW and Less Than or Equal to Two (2) MW

Note: These customer-owned renewable generation system size limits may be subject to a cumulative enrollment limit on net-metering customers located in the area served by the City of Ocala Electric Utility. Please refer to the Ocala Electric Utility Net-Metering Rate Schedule.

Ocala Electric Utility customers who install customer-owned renewable generation systems (RGS) and desire to interconnect those facilities with the Ocala Electric Utility system are required to complete this application. When the completed application and fees are returned to Ocala Electric Utility, the process of completing the appropriate Tier 1, Tier 2 or Tier 3 Interconnection Agreement can begin. This application and copies of the Interconnection Agreements may be obtained at Ocala Electric Utility, located at 201 SE 3rd Street, Ocala, Florida 34471, or may be requested by email from OEU@ocalafl.org.

1. Customer Information

Name: Michelle Spires

Mailing Address: 1215 SE 40th Ct

City: Ocala State: FL Zip Code: 34471

Phone Number: 9046258792 Alternate Phone Number: _____

Email Address: michelle@encompasslife.com Fax Number: _____

Ocala Electric Utility Customer Account Number: 538011-233821

2. RGS Facility Information

Facility Location: 1215 SE 40th Ct

Ocala Electric Utility Customer Account Number: 538011-233821

RGS Manufacturer: Jinko Solar

Manufacturer's Address: 595 Market Street, Suite 2200
San Francisco, CA 94105

Reference or Model Number: JKM405M-72HL

Serial Number: _____

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3. Facility Rating Information

Gross Power Rating: 7.6 ("Gross power rating" means the total manufacturer's AC nameplate generating capacity of an on-site customer-owned renewable generation system that will be interconnected to and operate in parallel with Ocala Electric Utility's distribution facilities. For inverter-based systems, the AC nameplate generating capacity shall be calculated by multiplying the total installed DC nameplate generating capacity by 0.85 in order to account for losses during the conversion from DC to AC.)

Fuel or Energy Source: Solar

Anticipated In- Service Date: 11/21/2022

4. Application Fee

The application fee is based on the Gross Power Rating and must be submitted with this application. The non-refundable application fee is $375 for Tier 2 and $750 for Tier 3 installations. There is no application fee for Tier 1 installations.

5. Interconnection Study Fee

For Tier 3 installations, a deposit in the amount of the estimated costs of the study (to be determined at time of application) must be paid along with this application in addition to the application fee referenced in Article 4 above. This deposit will be applied toward the cost of an interconnection study. The customer will be responsible for the actual costs of the study. Should the actual cost of the study be less than the deposit, the difference will be refunded to the customer. Customer agrees to comply with all interconnection requirements identified in the interconnection study report.

6. Required Documentation

Prior to completion of the Interconnection Agreement, the following information must be provided to the Ocala Electric Utility by the customer.

A. Documentation demonstrating that the installation complies with (or most current version at time of inspection approval):

1. IEEE 1547 (2018) Standard for Interconnecting Distributed Resources with Electric Power Systems.
2. IEEE 1547.1 (2005) Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems.
3. UL 1741 (2010) Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources.

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B. Documentation that the customer-owned renewable generation has been inspected and approved by local code officials prior to its operation in parallel with the Ocala Electric Utility system to ensure compliance with applicable local codes. OEU will also require proof of commission testing by a qualified 3rd party testing company (not affiliated in any way with the manufacturer, vendor or installation contractor), for compliance with all required and applicable codes, standards, and interconnection study requirements, prior to setting of OEU metering equipment.

C. Proof of insurance in the amount of:
Tier 1 - $100,000.00
Tier 2 - $1,000,000.00
Tier 3 - $2,000,000.00

Customer

By: Michelle Spires Date: 10/28/22
(Print Name)

Michelle Spires
(Signature)

Tier 1 – Standard Interconnection Agreement
Customer-Owned Renewable Generation System

This **Agreement** is made and entered into this _____day of _____, 20_____, by and between Michelle Spires, (hereinafter called "**Customer**"), located at 1215 SE 40th Ct in Ocala, Florida, and the City of Ocala doing business as Ocala Electric Utility (hereinafter called OEU), a body politic. Customer and OEU shall collectively be called the "**Parties**". The physical location/premise where the interconnection is taking place: 1215 SE 40th Ct.

WITNESSETH

Whereas, a Tier 1 Renewable Generation System (RGS) is an electric generating system that uses one or more of the following fuels or energy sources: hydrogen, biomass, solar energy, geothermal energy, wind energy, ocean energy, waste heat, or hydroelectric power as defined in Section 377.803, Florida Statutes, rated at no more than ten (10) kilowatts (10 kW) alternating current (AC) power output and is primarily intended to offset part or all of the Customer's current electric requirements; and

Whereas, OEU operates an electric system serving the City of Ocala; and

Whereas, Customer has made a written Application to OEU, a copy being attached hereto, to interconnect its RGS with OEU' electrical supply grid at the location identified above; and

Whereas, the City of Ocala and the Florida Municipal Power Agency (hereinafter called "FMPA") have entered into the All-Requirements Power Supply Contract pursuant to which the City of Ocala has agreed to purchase and receive, and FMPA has agreed to sell and supply OEU with all energy and capacity necessary to operate the OEU electric system, which limits OEU' ability to directly purchase excess energy from customer-owned renewable generation; and

Whereas, in order to promote the development of small customer-owned renewable generation by permitting OEU to allow its customers to interconnect with OEU's electric system and to allow OEU customers to offset their electric consumption with customer-owned renewable generation, FMPA, in accordance with the terms and conditions of this agreement, has agreed to purchase excess customer-owned generation from OEU customers interconnected to OEU's electric system; and

Whereas, the OEU desires to provide interconnection of a RGS under conditions which will insure the safety of OEU customers and employees, reliability and integrity of its distribution system;

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements herein set forth, the parties hereto covenant and agree as follows:

(Continued on Sheet No. 21.1)

1. The Customer shall be required to enter into a Tri-Party Net-Metering Purchase Power Agreement with FMPA and the City of Ocala Electric Utility (OEU).

2. "Gross power rating" (GPR) means the total manufacturer's AC nameplate generating capacity of an on-site customer-owned renewable generation system that will be interconnected to and operate in parallel with OEU's distribution facilities. For inverter-based systems, the GPR shall be calculated by multiplying the total installed DC nameplate generating capacity by 0.85 in order to account for losses during the conversion from DC to AC.

3. This agreement is strictly limited to cover a Tier 1 RGS as defined above. It is the Customer's responsibility to notify OEU of any change to the GPR of the RGS by submitting a new application for interconnection specifying the modifications at least 30 days prior to making the modifications. Increase in GPR above the ten kilowatt (10 kW) limit would necessitate entering into a new agreement at either Tier 2 or Tier 3 which may impose additional requirements on the Customer. In no case does the Tier 1, Tier 2 or Tier 3 agreement cover increases in GPR above two megawatts (2MW).

4. The RGS GPR must not exceed 90 percent (90%) of the Customer's OEU calculated distribution service rating at the Customer's location (including shared electric facilities). If the GPR does exceed the 90 percent (90%) limit, the Customer shall be responsible to pay the cost of upgrades to the distribution facilities required to accommodate the GPR capacity and ensure the 90 percent (90%) threshold is not breached. OEU will not allow a RGS GPR greater than required to offset the customer's annual kWh energy consumption (based on customer's historical consumption data or by means of estimated usage of similar type of service as determined by OEU).

5. The Customer shall not be required to pay any special fees due solely to the installation of the RGS.

6. The Customer shall fully comply with OEU's Design Standards following NEC standards as those documents may be amended or revised by OUS from time to time.

7. The Customer certifies that its installation, its operation and its maintenance shall be in compliance with the following standards (or most current version at time of inspection approval):

a. IEEE-1547 (2018) Standard for Interconnecting Distributed Resources with Electric Power System;
b. IEEE-1547.1 (2005) Standard Conformance Test Procedures for Equipment Interconnection Distributed Resources with Electric Power Systems;
c. UL-1741 (2010) Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed *Energy Resources.*
d. The National Electric Code, state and/or local building codes, mechanical codes and/or electrical codes;
e. The manufacturer's installation, operation and maintenance instructions.

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8. The Customer is not precluded from contracting for the lease, operation or maintenance of the RGS with a third party. Such lease may not provide terms or conditions that provide for any payments under the agreement to any way indicate or reflect the purchase of energy produced by the RGS. Customer shall not enter into any lease agreement that results in the retail purchase of electricity; or the retail sale of electricity from the customer-owned renewable generation. Notwithstanding this restriction, in the event that Customer is determined to have engaged in the retail purchase of electricity from a party other than OEU, then Customer shall be in breach of this Agreement and may be subject to the jurisdiction of the Florida Public Service Commission and to fines/penalties.

9. The Customer shall provide a copy of the manufacturer's installation, operation and maintenance instructions to OEU. If the RGS is leased to the Customer by a third party, or if the operation or maintenance of the RGS is to be performed by a third party, the lease and/or maintenance agreements and any pertinent documents related to these agreements shall be provided to OEU.

10. Prior to commencing parallel operation with OEU's electric system, Customer shall have the RGS inspected and approved by the appropriate code authorities having jurisdiction. Customer shall provide a copy of this inspection and approval to OEU.

11. The Customer agrees to permit OEU, if it should so choose, to inspect the RGS and its component equipment and the documents necessary to ensure compliance with this Agreement both before and after the RGS goes into service and to witness the initial testing of the RGS equipment and protective apparatus. OEU will provide Customer with as much notice as reasonably possible, either in writing, email, facsimile or by phone as to when OEU may conduct inspections and or document review. Upon reasonable notice, or at any time without notice in the event of an emergency or hazardous condition, Customer agrees to provide OEU access to the Customer's premises for any purpose in connection with the performance of the obligations required by this Agreement or, if necessary, to meet OEU's legal obligation to provide service to its customers. At least ten (10) business days prior to initially placing the customer-owned renewable generation system in service, Customer shall provide written notification to OEU advising of the date and time at which Customer intends to place the system in service, and OEU shall have the right to have personnel present on the in-service date in order to ensure compliance with the requirements of this Agreement.

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12. The Customer's RGS must have an appropriately sized grid-tie inverter system that includes applicable protective systems. Customer certifies that the RGS equipment includes an OEU interactive inverter or interconnection system equipment that ceases to interconnect with the OEU system upon a loss of OEU's electric power. The inverter shall be considered certified for interconnected operation if it has been submitted by a manufacturer to a nationally recognized testing laboratory (NRTL) to comply with UL 1741. The NRTL shall be approved by the Occupational Safety & Health Administration (OSHA).

13. If Customer adds another RGS that (i) utilizes the same OEU interactive inverter for both systems, or (ii) utilizes a separate OEU interactive inverter for each system, Customer shall provide OEU with sixty (60) days advance written notice of the addition.

14. The Customer shall not energize the OEU system when OEU's system is deenergized. The Customer shall cease to energize the OEU system during a faulted condition on the OEU system and/or upon any notice from OEU that the deenergizing of Customer's RGS equipment is necessary. The Customer shall cease to energize the OEU system prior to automatic or non-automatic reclosing of OEU's protective devices. There shall be no intentional islanding, as described in IEEE 1547, between the Customer's and OEU' systems.

15. The Customer is responsible for the protection of its generation equipment, inverters, protection devices, and other system components from damage from the normal and abnormal operations that occur on OEU system in delivering and restoring system power. Customer agrees that any damage to any of its property, including, without limitation, all components and related accessories of its RGS system, due to the normal or abnormal operation of OEU system, is at Customer's sole risk and expense. Customer is also responsible for ensuring that the customer-owned renewable generation equipment is inspected, maintained, and tested regularly in accordance with the manufacturer's instructions to ensure that it is operating correctly and safely.

16. The Customer must install, at their expense, a manual disconnect switch of the visible load break type to provide a separation point between the AC power output of the customer-owned renewable generation system and any Customer wiring connected to OEU's system, such that back feed from the customer-owned renewable generation system to OEU's system cannot occur when the switch is in the open position. The manual disconnect switch shall be mounted separate from the meter socket on an exterior surface adjacent to the meter. The switch shall be readily accessible to OEU and capable of being locked in the open position with an OEU padlock. When locked and tagged in the open position by OEU, this switch will be under the control of OEU.

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17. Subject to an approved inspection, including installation of acceptable disconnect switch, this Agreement shall be executed by OEU within thirty (30) calendar days of receipt of a completed application. Customer must execute this Agreement and return it to OEU at least thirty (30) calendar days prior to beginning parallel operations with OEU's electric system, subject to the requirements of Section 18, below, and within one (1) year after OEU executes this Agreement.

18. Once OEU has received Customer's written documentation that the requirements of this Agreement have been met, all agreements and documentation have been received and the correct operation of the manual switch has been demonstrated to an OEU representative, OEU will, within fifteen (15) business days, send written notice that parallel operation of the RGS may commence.

19. OEU requires the Customer to maintain general liability insurance for personal injury and property damage in the amount of not less than one hundred thousand dollars ($100,000.00).

20. OEU will furnish, install, own and maintain metering equipment capable of measuring the flow of kilowatt-hours (kWh) of energy. The Customer's service associated with the RGS will be metered to measure the energy delivered by OEU to Customer, and measure the energy delivered by Customer to OEU. Customer agrees to provide safe and reasonable access to the premises for installation, maintenance and reading of the metering and related equipment. The Customer shall not be responsible for the cost of the installation and maintenance of the metering equipment necessary to measure the energy delivered by the Customer to OEU.

21. The Customer shall be solely responsible for all legal and financial obligations arising from the design, construction, installation, operation, maintenance and ownership of the RGS.

22. The Customer must obtain all permits, inspections and approvals required by applicable jurisdictions with respect to the generating system and must use a licensed, bonded and insured contractor to design and install the generating system. The Customer agrees to provide OEU with a copy of the local building code official inspection and certification of installation. The certification shall reflect that the local code official has inspected and certified that the installation was permitted, has been approved, and has met all electrical and mechanical qualifications.

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23. In no event shall any statement, representation, or lack thereof, either express or implied, by OEU, relieve the Customer of exclusive responsibility for the Customer's system. Specifically, any OEU inspection of the RGS shall not be construed as confirming or endorsing the system design or its operating or maintenance procedures or as a warranty or guarantee as to the safety, reliability, or durability of the RGS. OEU's inspection, acceptance, or its failure to inspect shall not be deemed an endorsement of any RGS equipment or procedure. Further, as set forth in Sections 15 and 26 of this Agreement, Customer shall remain solely responsible for any and all losses, claims, damages and/or expenses related in any way to the operation or misoperation of its RGS equipment.

24. Notwithstanding any other provision of this Interconnection Agreement, OEU, at its sole and absolute discretion, may isolate the Customer's system from the distribution grid by whatever means necessary, without prior notice to the Customer. To the extent practical, however, prior notice shall be given. The system will be reconnected as soon as practical once the conditions causing the disconnection cease to exist. OEU shall have no obligation to compensate the Customer for any loss of energy during any and all periods when Customer's RGS is operating at reduced capacity or is disconnected from OEU' electrical distribution system pursuant to this Interconnection Agreement. Typical conditions which may require the disconnection of the Customer's system include, but are not limited to, the following:

a. OEU system emergencies, forced outages, uncontrollable forces or compliance with prudent electric OEU practice.
b. When necessary to investigate, inspect, construct, install, maintain, repair, replace or remove any OEU equipment, any part of OEU's electrical distribution system or Customer's generating system.
c. Hazardous conditions existing on OEU's system due to the operation of the Customer's generation or protective equipment as determined by OEU.
d. Adverse electrical affects (such as power quality problems) on the electrical equipment of OEU's other electric consumers caused by the Customer's generation as determined by OEU.
e. When Customer is in breach of any of its obligations under this Interconnection Agreement or any other applicable policies and procedures of OEU.
f. When the Customer fails to make any payments due to OEU by the due date thereof.

25. Upon termination of services pursuant to this Agreement, OEU shall open and padlock the manual disconnect switch and remove any additional metering equipment related to this Agreement. At the Customer's expense, within thirty (30) working days following the termination, the Customer shall permanently isolate the RGS and any associated equipment from OEU's electric supply system, notify OEU that the isolation is complete, and coordinate with OEU for return of OEU's lock.

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26. To the fullest extent permitted by law, and in return for adequate, separate consideration, Customer shall indemnify, defend and hold harmless OEU, any and all of their members of its governing bodies, and its officers, agents, and employees for, from and against any and all claims, demands, suits, costs of defense, attorneys fees, witness fees of any type, losses, damages, expenses, and liabilities, whether direct, indirect or consequential, related to, arising from, or in any way connected with:

a. Customer's design, construction, installation, inspection, maintenance, testing or operation of Customer's generating system or equipment used in connection with this Interconnection Agreement, irrespective of any fault on the part of OEU.
b. The interconnection of Customer's generating system with, and delivery of energy from the generating system to, OEU's electrical distribution system, irrespective of any fault on the part of OEU.
c. The performance or nonperformance of Customer's obligations under this Interconnection Agreement or the obligations of any and all of the members of Customer's governing bodies and its officers, agents, contractors (and any subcontractor or material supplier thereof) and employees.

Customer's obligations under this Section shall survive the termination of this Interconnection Agreement.

27. Customer shall not have the right to assign its benefits or obligations under this Agreement without OEU's prior written consent and such consent shall not be unreasonably withheld. If there is a change in ownership of the RGS, Customer shall provide written notice to OEU at least thirty (30) days prior to the change in ownership. The new owner will be required to assume, in writing, the Customer's rights and duties under this Agreement, or execute a new Standard Interconnection Agreement. The new owner shall not be permitted to net meter or begin parallel operations until the new owner assumes this Agreement or executes a new Agreement.

28. This Agreement supersedes all previous agreements and representations either written or verbal heretofore made between OEU and Customer with respect to matters herein contained. This Agreement, when duly executed, constitutes the only Agreement between parties hereto relative to the matters herein described. This Agreement shall continue in effect from year to year until either party gives sixty (60) days' notice of its intent to terminate this Agreement.

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29. This Agreement shall be governed by and construed and enforced in accordance with the laws, rules and regulations of the State of Florida and OEU's tariff as it may be modified, changed, or amended from time to time, including any amendments modification or changes to OEU's Net-Metering Service Rate Schedule, the schedule applicable to this Agreement. The Customer and OEU agree that any action, suit, or proceeding arising out of or relating to this Interconnection Agreement shall be initiated and prosecuted in the state court of competent jurisdiction located in Marion County, Florida, and OEU and the Customer irrevocably submit to the jurisdiction and venue of such court. To the fullest extent permitted by law, each Party hereby irrevocably waives any and all rights to a trial by jury and covenants and agrees that it will not request a trial by jury with respect to any legal proceeding arising out of or relating to this Interconnection Agreement.

None of the provisions of this Interconnection Agreement shall be considered waived by either Party except when such waiver is given in writing. No waiver by either Party of any one or more defaults in the performance of the provisions of this Interconnection Agreement shall operate or be construed as a waiver of any other existing or future default or defaults. If any one or more of the provisions of this Interconnection Agreement or the applicability of any provision to a specific situation is held invalid or unenforceable, the provision shall be modified to the minimum extent necessary to make it or its application valid and enforceable, and the validity and enforceability of all other provisions of this Interconnection Agreement and all other applications of such provisions shall not be affected by any such invalidity or unenforceability. This Interconnection Agreement does not govern the terms and conditions for the delivery of power and energy to non-generating retail customers of OEU's electrical distribution system.

30. This Agreement incorporates by reference the terms of the tariff filed with the Florida Public Service Commission by OEU, including OEU's Net-Metering Service Rate Schedule, and associated technical terms and abbreviations, general rules and regulations and standard electric service requirements (as may be applicable) are incorporated by reference, as amended from time to time. To the extent of any conflict between this Agreement and such tariff, the tariff shall control.

31. OEU and Customer recognize that the Florida Statutes and/or the Florida Public Service Commission Rules, including those directly addressing the subject of this Agreement, may be amended from time to time. In the event that such statutes and/or rules are amended that affect the terms and conditions of this Agreement, OEU and Customer agree to supersede and replace this Agreement with a new Interconnection Agreement, which complies with the amended statutes/rules.

(Continued on Sheet No. 21.8)

32. Customer acknowledges that its provision of electricity to OEU hereunder is on a first-offered, first-accepted basis and subject to diminution and/or rejection in the event the total amount of electricity delivered to OEU pursuant to the OEU's Net-Metering Service Rate Schedule, (as filed with the Florida Public Service Commission), from all participating OEU customers, exceeds two and one-half percent (2.5%) of the aggregate customer peak demand on the OEU system.

33. This Agreement is solely for the benefit of OEU and Customer and no right nor any cause of action shall accrue upon or by reason, to or for the benefit of any third party not a formal party to this Agreement. Nothing in this Agreement, expressed or implied, is intended or shall be construed to confer upon any person or corporation other than OEU or Customer, any right, remedy, or claim under or by reason of this Agreement or any of the provisions or conditions of this Agreement; and, all provisions, representations, covenants, and conditions contained in this Agreement shall inure to the sole benefit of and be binding upon OEU and Customer and their respective representatives, successors, and assigns. Further, no term or condition contained in this Agreement shall be construed in any way as a waiver by OEU of the sovereign immunity applicable to OEU as established by Florida Statutes, 768.28.

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IN WITNESS WHEREOF, Customer and OEU have executed this Agreement the day and year first above written.

City of Ocala Electric Utility:

By: DocuSigned by: Ken Whitehead

Title: Assistant City Manager

Date: 4/6/2023

Customer:

By: Michelle Spires
(Print Name)

(Signature)

Date: 10/28/22

City of Ocala Electric Utility Account Number:

538011-233821

Approved as to form and legality:

DocuSigned by: William E. Sexton

William E. Sexton
City Attorney

Tri-Party Net-Metering Power Purchase Agreement

This Tri-Party Net-Metering Power Purchase Agreement (this "Agreement") is entered into this ____ day of _____, 20____, by and between the Florida Municipal Power Agency, a governmental joint action agency created and existing under the laws of the State of Florida (hereinafter "FMPA"), the City of Ocala doing business as Ocala Electric Utility, a body politic (hereinafter "OEU"), and Michelle Spires, a retail electric customer of OEU (hereinafter "Customer").

Section 1. Recitals

1.01. OEU and Customer have executed OEU's Standard Interconnection Agreement for a Customer-Owned Renewable Generation System (RGS) pursuant to which OEU has agreed to permit interconnection of Customer's renewable generation to OEU's electric system at Customer's presently-metered location, and Customer has agreed to deliver excess electric energy generated by Customer's Renewable Generation System to OEU's electric distribution system;

1.02. The City of Ocala and FMPA have entered into the All-Requirements Power Supply Contract, dated as of May 1, 1986, (hereinafter the "ARP Contract") pursuant to which the City of Ocala has agreed to purchase and receive, and FMPA has agreed to sell and supply OEU with all energy and capacity necessary to operate the OEU electric system, which limits OEU's ability to directly purchase excess energy from customer-owned renewable generation.

1.03. In order to promote the development of small customer-owned renewable generation by permitting OEU to allow its customers to interconnect with OEU's electric system and to allow OEU's electric customers to offset their electric consumption with customer-owned renewable generation, FMPA, in accordance with the terms and conditions of this agreement, has agreed to purchase excess customer-owned generation from OEU's electric customers interconnected to OEU's electric system.

NOW THEREFORE, for and in consideration of the mutual covenants and agreements set forth herein, the Parties covenant and agree as follows:

Section 2. Interconnection

2.01. Customer shall not begin parallel operations with the OEU electric distribution system until Customer has executed OEU's electric Standard Interconnection Agreement for Small Customer-Owned Renewable Generation and is in compliance with all terms and conditions

OEU requires that the customer install and operate the RGS in accordance with all applicable safety codes and standards. OEU shall establish and enforce terms and conditions of operation and disconnection of all interconnected customer-owned renewable generation as it relates to the effect of the RGS on OEU's electric distribution system.

(Continued on Sheet No. 20.1)

Section 3. Metering

3.01 In accordance with the OEU's Standard Interconnection Agreement for Customer-Owned Renewable Generation, OEU shall install metering equipment at the point of delivery capable of recording two separate kWh meter readings: (1) the flow of electricity from OEU to the Customer (Delivered), and (2) the flow of excess electricity from the Customer to OEU. OEU shall take meter readings on the same cycle as the otherwise applicable rate schedule.

Section 4. Purchase of Excess Customer-Owned Renewable Generation

4.01. Customer-owned renewable generation shall be first used for Customer's own load and shall offset Customer's demand for OEU's electricity. All electric power and energy delivered by OEU to Customer shall be received and paid for by Customer to OEU (Received) pursuant to the terms, conditions and rates of the OEU otherwise applicable rate schedule.

4.02. Excess customer-owned renewable generation shall be delivered to the OEU Electric distribution system. For purposes of this Agreement, the term "excess customer-owned renewable generation" means any kWh of electrical energy produced by the customer-owned renewable generation system that is not consumed by Customer and is delivered to the OEU electric distribution system. FMPA agrees to purchase and receive, and Customer agrees to sell and deliver, all excess customer-owned renewable generation at the energy rate established by FMPA, which shall be calculated in accordance with Schedule A. Excess customer-owned renewable generation shall be purchased in the form of a credit on Customer's monthly energy consumption bill from OEU.

4.03. In the event that a given monthly credit for excess customer-owned renewable generation exceeds the total billed amount for Customer's consumption in any corresponding month, then the excess credit shall be applied to the subsequent month's bill. Excess energy credits produced pursuant to the preceding sentence shall accumulate and be used to offset Customer's energy consumption bill for a period of not more than twelve (12) months. At the end of each calendar year, any unused excess energy credits shall be paid by OEU to the Customer in accordance with the OEU Electric Net-Metering Service Rate Schedule.

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4.04. FMPA and OEU shall not be required to purchase or receive excess customer-owned renewable generation, and may require Customer to interrupt or reduce production of customer-owned renewable generation, (a) when necessary in order to construct, install, maintain, repair, replace, remove, investigate, or inspect any OEU equipment or part of OEU's system; or (b) if either FMPA or OEU determine, in their sole judgment, that curtailment, interruption, or reduction is necessary because of emergencies, forced outages, force majeure, or compliance with any applicable electric code or standard.

4.05. Customer acknowledges that its provision of electricity to OEU hereunder is on a first-offered, first-accepted basis and subject to diminution and/or rejection in the event the total amount of electricity delivered to OEU pursuant to the Net-Metering Service Rate Schedule (as filed with the Florida Public Service Commission), from all participating OEU customers, exceeds two and one-half percent (2.5%) of the aggregate customer peak demand on the OEU electric system.

Section 5. Renewable Energy Credits

5.01. Customer shall offer FMPA a first right of refusal before selling or granting to any third party the right to the Green Attributes associated with its customer-owned renewable generation that is interconnected to OEU electric distribution system. The term "Green Attributes" shall include any and all credits, certificates, benefits, environmental attributes, emissions reductions, offsets, and allowances, however entitled, attributable to the generation of electricity from the customer-owned-renewable generation and its displacement of conventional energy generation.

5.02. Any additional meter(s) installed to measure total renewable electricity generated by the Customer for the purposes of measuring Green Attributes, including and renewable energy certificates (or similarly titled credits for renewable energy generated), shall be installed at the expense of the Customer, unless determined otherwise during negotiations for the sale of the Customer's credits to FMPA.

Section 6. Term and Termination

6.01. This Agreement shall become effective upon execution by all Parties, and shall remain in effect thereafter on a month-to-month basis until terminated by any Party upon thirty (30) days written notice to all other Parties.

6.02. This Agreement shall terminate immediately and without notice upon: (a) termination of the electric distribution service by OEU or (b) failure by Customer to comply with any of the terms and conditions of this Agreement or OEU's Standard Interconnection Agreement for Customer-Owned Renewable Generation.

(Continued on Sheet No. 20.3)

Section 7. Miscellaneous Provisions

7.01. Assignment. It is understood and agreed that no party may transfer, sell, mortgage, pledge, hypothecate, convey, designate, or otherwise assign this Agreement, or any interest herein or any rights or obligations hereunder, in whole or in part, either voluntarily or by operation of law, (including, without limitation, by merger, consolidation, or otherwise), without the express written consent of the other parties (and any such attempt shall be void), which consent shall not be unreasonably withheld. Subject to the foregoing, this Agreement shall inure to the benefit of and be binding upon the parties and their respective successors and permitted assigns.

7.02 Amendment. It is understood and agreed that FMPA and OEU reserve the right, on no less than an annual basis, to change any of the terms and conditions, including pricing, in this Agreement on sixty (60) days advance written notice. FMPA and OEU may make such changes on an immediate basis in the event any applicable law, rule, regulation or court order requires them. In such event, FMPA and OEU will give Customer as much notice as reasonably possible under the circumstances.

7.03. Indemnification. To the fullest extent permitted by laws and regulations, and in return for adequate, separate consideration, Customer shall defend, indemnify, and hold harmless FMPA and OEU, their officers, directors, agents, guests, invitees, and employees from and against all claims, damages, losses to persons or property, whether direct, indirect, or consequential (including but not limited to fees and charges of attorneys, and other professionals and court and arbitration costs) arising out of, resulting from, occasioned by, or otherwise caused by the operation or misoperation of the customer-owned renewable generation, or the acts or omissions of any other person or organization directly or indirectly employed by the Customer to install, furnish, repair, replace or maintain the customer-owned renewable generation system, or anyone for whose acts any of them may be liable.

7.04. Governing Law. The validity and interpretation of this Agreement and the rights and obligations of the parties shall be governed and construed in accordance with the laws of the State of Florida without regard for any conflicts of law provisions that might cause the law of other jurisdictions to apply. All controversies, claims, or disputes arising out of or related to this Agreement or any agreement, instrument, or document contemplated hereby, shall be brought exclusively in the County or Circuit Court for Marion County, Florida, or the United States District Court sitting in Marion County, Florida, as appropriate.

(Continued on Sheet No. 20.4)

7.05. Enforcement of Agreement. In the event that either party is required to enforce this Agreement by court proceedings or otherwise, the prevailing party shall be entitled to recover all fees and costs incurred, including reasonable attorney's fees and costs for trial, alternative dispute resolution, and/or appellate proceedings.

7.06. Severability. To the extent any provision of this Agreement is prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement.

7.07. Third Party Beneficiaries and Sovereign Immunity. This Agreement is solely for the benefit of FMPA, OEU, and Customer and no right nor shall any cause of action accrue upon or by reason, to or for the benefit of any third party not a formal party to this Agreement. Nothing in this Agreement, expressed or implied, is intended or shall be construed to confer upon any person or corporation other than FMPA, OEU, or Customer, any right, remedy, or claim under or by reason of this Agreement or any of the provisions or conditions of this Agreement; and, all provisions, representations, covenants, and conditions contained in this Agreement shall inure to the sole benefit of and be binding upon FMPA, OEU, and Customer and their respective representatives, successors, and assigns. Further, no term or condition contained in this Agreement shall be construed in any way as a waiver by either FMPA or OEU of the sovereign immunity applicable to either or both of them as established by Florida Statutes, 768.28.

(Continued on Sheet No. 20.5)

IN WITNESS WHEREOF, Customer and OEU have executed this Agreement the day and year first above written.

City of Ocala Electric Utility

By: DocuSigned by: Ken Whitehead 5677F71E38874F4...

Title: Assistant City Manager

Date: 4/6/2023

Florida Municipal Power Agency

By: DocuSigned by: 087F58EBB34B474...

Title: VP of IT/OT and System Ops

Date: 4/6/2023

Customer

By: Michelle Spires (Print Name) Date: 10/28/22

Michelle Spires (Signature)

Customer's City of Ocala Electric Utility Account Number: 538011-233821

Approved as to form and legality:

DocuSigned by: William E. Sexton B07DCFC4E85E429...

William E. Sexton
City Attomcy

(Continued on Sheet No. 20.6)

Tri-Party Net-Metering Power Purchase Agreement
Schedule A

I. All-Requirements Project Calculation of Excess Customer-Owned Renewable Generation Credit

a) FMPA shall pay OEU for the excess kWh energy delivered by customer-owned renewable generation to OEU's electric system. Every month, OEU shall determine the total kWh of customer-owned renewable generation that is delivered to OEU's electric system, and shall send the information to FMPA as soon as it becomes available, but no later than the second working day of every month. FMPA will then provide a monthly payment to OEU in the form of a credit on the ARP power bill for the excess energy delivered to the distribution grid. The ARP Renewable Generation Credit will be calculated as follows:

ARP Renewable Generation Credit = Quarterly Energy Rate * Monthly kWh of excess customer-owned renewable generation

Quarterly Energy Rate = 3 month average of ARP energy rate. FMPA will update the Quarterly Energy Rate every April 1, July 1, October 1 and January 1.

b) As part of the monthly bill adjustment, FMPA will also increase OEU's kWh billing amount by the same kWh amount as the customer-owned renewable generation purchased by FMPA. This adjustment is necessary because excess customer generation that flows onto OEU's electric system has been purchased by FMPA, but will remain on OEU's electric system and be used by OEU to meet its other customers' electric needs. As a result, OEU's monthly ARP bill will be adjusted accordingly to reflect FMPA's subsequent sale of this energy to OEU.

II. Payment for Unused Excess Energy Credits

a) Monthly excess energy credits shall accumulate and be used to offset the Customer's following month energy consumption bill for a period of not more than twelve (12) months.

b) At the end of each calendar year, OEU shall pay the Customer for any unused excess energy credits in accordance with the OEU Electric Net-Metering Service Rate Schedule.

ECUIP ENGINEERING

EAGLE 72HM G2

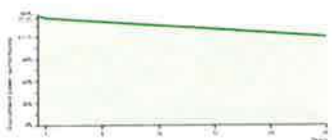
390-410 WATT • HALF CELL MONO PERC MODULE

Positive power tolerance of 0~+3%

- NYSE-listed since 2010, Bloomberg Tier 1 manufacturer
- Best-selling module globally for last 3 years
- Top performance in the strictest 3rd party labs
- 99.9% on-time delivery to the installer
- Automated manufacturing utilizing artificial intelligence
- Vertically integrated, tight controls on quality
- Premium solar panel factories in USA and Malaysia

LINEAR PERFORMANCE WARRANTY

25-Year Performance Warranty



KEY FEATURES

Diamond Half Cell Technology
World-record breaking efficient mono PERC half cut solar cells deliver high power in a small footprint

Designed for Long Life
Uses the same DuPont protective film as the Space Station, Mars Lander, and jetliners. 25-year warranty

Shade Tolerant
Twin array design allows continued performance even with shading by trees or debris

Power Boost in Cloudy Conditions
A special film diffuses light, boosting performance even with shading by trees or debris

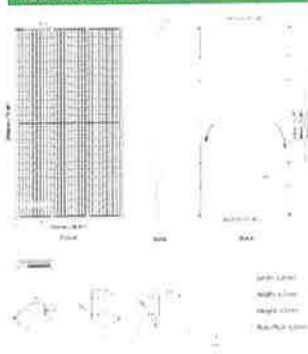
Protected Against All Environments
Certified to withstand humidity, heat, rain, marine environments, wind, hailstorms, and packed snow

- ISO9001:2008 Quality Standards
- ISO14001:2004 Environmental Standards
- IEC61215, IEC61730 certified products
- OHSAS18001 Occupational Health & Safety Standards
- UL1703 certified products

BUILDING YOUR TRUST IN SOLAR. JINKOSOLAR.US

JinKO

Engineering Drawings

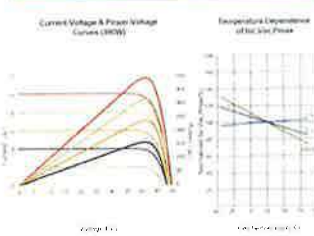


Packaging Configuration

(Two pallets = One stack)

27pcs/pallet, 54pcs/stack, 594pcs/40'HQ Container

Electrical Performance & Temperature Dependence



Mechanical Characteristics

Cell Type	Mono PERC Diamond Cell (158.75 x 158.75 mm)
No. of Half-cells	144 (6×24)
Dimensions	2008×1002×40mm (79.06×39.45×1.57 inch)
Weight	22.5 kg (49.6 lbs)
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP67 Rated
Output Cables	12AWG 1400mm (55.12in) or Customized Length
Fire Type	Type 1
Pressure Rating	5400Pa (Snow) & **4000Pa (Wind)

SPECIFICATIONS

Module Type	JKM390M-72HL-V		JKM395M-72HL-V		JKM400M-72HL-V		JKM405M-72HL-V		JKM410M-72HL-V	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	390Wp	294Wp	395Wp	298Wp	400Wp	302Wp	405Wp	306Wp	410Wp	310Wp
Maximum Power Voltage (Vmp)	41.1V	39.1V	41.4V	39.3V	41.7V	39.6V	42.0V	39.8V	42.3V	40.0V
Maximum Power Current (Imp)	9.49A	7.54A	9.55A	7.60A	9.60A	7.66A	9.65A	7.72A	9.69A	7.76A
Open-circuit Voltage (Voc)	49.3V	48.0V	49.5V	48.2V	49.8V	48.5V	50.1V	48.7V	50.4V	48.8V
Short-circuit Current (Isc)	10.12A	8.02A	10.23A	8.09A	10.36A	8.18A	10.48A	8.22A	10.60A	8.28A
Module Efficiency STC (%)	19.38%		19.63%		19.88%		20.13%		20.38%	
Operating Temperature (°C)	-40°C~+85°C									
Maximum System Voltage	1500VDC (UL/IEC)									
Maximum Series Fuse Rating	20A									
Power Tolerance	0~+3%									
Temperature Coefficients of Pmax	-0.35%/°C									
Temperature Coefficients of Voc	-0.28%/°C									
Temperature Coefficients of Isc	0.048%/°C									
Nominal Operating Cell Temperature (NOCT)	45±2°C									

STC: Irradiance 1000W/m² | Cell Temperature 25°C | AM=1.5

NOCT: Irradiance 800W/m² | Ambient Temperature 20°C | AM=1.5 | Wind Speed 1m/s

* Power measurement tolerance: ± 3%

MICHELLE SPIRES	CONTRACTOR: EC13011090	ECUIP ENGINEERING	Ryan S Gittens 2022.08.26 13:24:22-04'00'	DATE	BY	VER	DESCRIPTION	ED01
1215 SE 40TH CT, OCALA, FL 34471, USA	FLORIDA ECO ELECTRIC 413 E ALFRED ST. TAVARES, FL 32778 352-460-0402	3140 W KENNEDY BLVD #106, TAMPA FL 33609 CA: 33343		08.22.22	RG	00	INITIAL DESIGN	PAPER: ARCHB SCALE: NTS
PROJECT ID: 082222-FEE-SPIRES								

1 2 3 4 5 6 7 8 9

ECUIP ENGINEERING

/ Single Phase Energy Hub Inverter with Prism Technology

For North America

SE3000H-US / SE3800H-US / SE6000H-US / **SE7600H-US** / SE10000H-US / SE11400H-US[1]

	SE3000H-US	SE3800H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	UNITS
OUTPUT - AC ON GRID							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OUTPUT - AC BACKUP[2]							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OUTPUT - SMART EV CHARGER AC							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INPUT - DC (PV AND BATTERY)							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INPUT - DC (PV)							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

/ Single Phase Energy Hub Inverter with Prism Technology

For North America

SE3000H-US / SE3800H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US[1]

	SE3000H-US	SE3800H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	UNITS
INPUT - DC (BATTERY)							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SMART ENERGY CAPABILITIES							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ADDITIONAL FEATURES							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
STANDARD COMPLIANCE							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INSTALLATION SPECIFICATIONS							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

RoHS

MICHELLE SPIRES	CONTRACTOR: EC13011090			DATE	BY	VER	DESCRIPTION	ED02
1215 SE 40TH CT, OCALA, FL 34471, USA	FLORIDA ECO ELECTRIC 413 E ALFRED ST. TAVARES, FL 32778 352-460-0402	ECUIP ENGINEERING 3140 W KENNEDY BLVD #106, TAMPA FL 33609 CA: 33343	Ryan S Gittens 2022.08.26 13:24:59-04'00'	08.22.22	RG	00	INITIAL DESIGN	PAPER: ARCHB
PROJECT ID: 082222-FEE-SPIRES								SCALE: NTS

ECUIP ENGINEERING

/ SolarEdge Home Backup Interface
For North America
BI-EUSGN-02 / BI-NUSGN-02

	BI-EUSGN-02	BI-NUSGN-02	
INPUT FROM GRID			
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		[illegible]
OUTPUT TO MAIN DISTRIBUTION PANEL			
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
INPUT FROM INVERTER			
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		
GENERATOR(2)			
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		
ADDITIONAL FEATURES			
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]		

/ SolarEdge Home Backup Interface
For North America
BI-EUSGN-02 / BI-NUSGN-02

	BI-EUSGN-02	BI-NUSGN-02	
STANDARD COMPLIANCE			
[illegible]	[illegible]		
	[illegible]	[illegible]	
[illegible]	[illegible]		
INSTALLATION SPECIFICATIONS			
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		
[illegible]	[illegible]		[illegible]

CE FC

MICHELLE SPIRES	CONTRACTOR: EC13011090	ECUIP ENGINEERING	Ryan S Gillens 2022.08.26 13:25:18-04'00'	DATE / BY / VER	DESCRIPTION	ED03
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PROJECT ID: 082222-FEE-SPIRES						SCALE: NTS

ECUIP ENGINEERING

/ Power Optimizer

For North America

P370 / P400 / P401 / P485 / P505

Optimizer model (typical module compatibility)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96 cell modules)	P401 (for high power 60 and 72 cell modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
INPUT						
Rated Input DC Power	370	400		485	505	W
Absolute Maximum Input Voltage	[illegible]	[illegible]	[illegible]	125	[illegible]	Vdc
MPPT Operating Range	8 - 60	[illegible]	[illegible]	12.5 - 105	12.5 - 83	Vdc
Maximum Short Circuit Current	[illegible]	[illegible]	[illegible]	11	14	Adc
Maximum Efficiency			99.5			%
Weighted Efficiency			98.8			%
Overvoltage Category			II			
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)						
Maximum Output Current			15			Adc
Maximum Output Voltage		60		85		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)						
Safety Output Voltage per Power Optimizer			1 ± 0.1			Vdc
STANDARD COMPLIANCE						
Photovoltaic Rapid Shutdown System		NEC 2014, 2017 & 2020		NEC 2014, 2017 & 2020	NEC 2014, 2017 & 2020	
EMC			[illegible]			
Safety			[illegible]			
Material			[illegible]			
RoHS			Yes			
INSTALLATION SPECIFICATIONS						
Maximum Allowed System Voltage			1000			Vdc
Compatible inverters			All SolarEdge Single Phase and Three Phase inverters			
Dimensions (W x L x H)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	mm / in
Weight (including cables)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	gr / lb
Input Connector		MC4		[illegible]	MC4	
Input Wire Length	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	m / ft
Output Wire Type / Connector			[illegible]			
Output Wire Length			1.2 / 3.9			m / ft
Operating Temperature Range			-40 to +85 / -40 to +185			°C / °F
Protection Rating			IP68 / NEMA6P			
Relative Humidity			0 - 100			%

PV System Design Using a SolarEdge Inverter		Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P370, P400, P401	8		10	18	
	P485, P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50	
Maximum Nominal Power per String		[illegible]	5250	6000	12750	W
Parallel Strings of Different Lengths or Orientations				Yes		

RoHS

/ SolarEdge Energy Bank

10kWh Battery

For North America

	BAT-10K1P	
BATTERY SPECIFICATION		
[illegible]	[illegible]	[illegible]
STANDARD COMPLIANCE		
Safety	[illegible]	
Emissions	[illegible]	
MECHANICAL SPECIFICATIONS		
[illegible]	[illegible]	[illegible]

SolarEdge Energy Bank Battery – Accessories (purchased separately)	
Accessory	**PN**
[illegible]	[illegible]

CE RoHS

MICHELLE SPIRES	CONTRACTOR: EC13011090	ECUIP ENGINEERING	Ryan S Giltens 2022.08.26 13:25:38-04'00'
1215 SE 40TH CT, OCALA, FL 34471, USA	FLORIDA ECO ELECTRIC 413 E ALFRED ST. TAVARES, FL 32778 352-460-0402	3140 W KENNEDY BLVD #106, TAMPA FL 33609 CA: 33343	
PROJECT ID: 082222-FEE-SPIRES			

DATE	BY	VER	DESCRIPTION
08.22.22	RG	00	INITIAL DESIGN

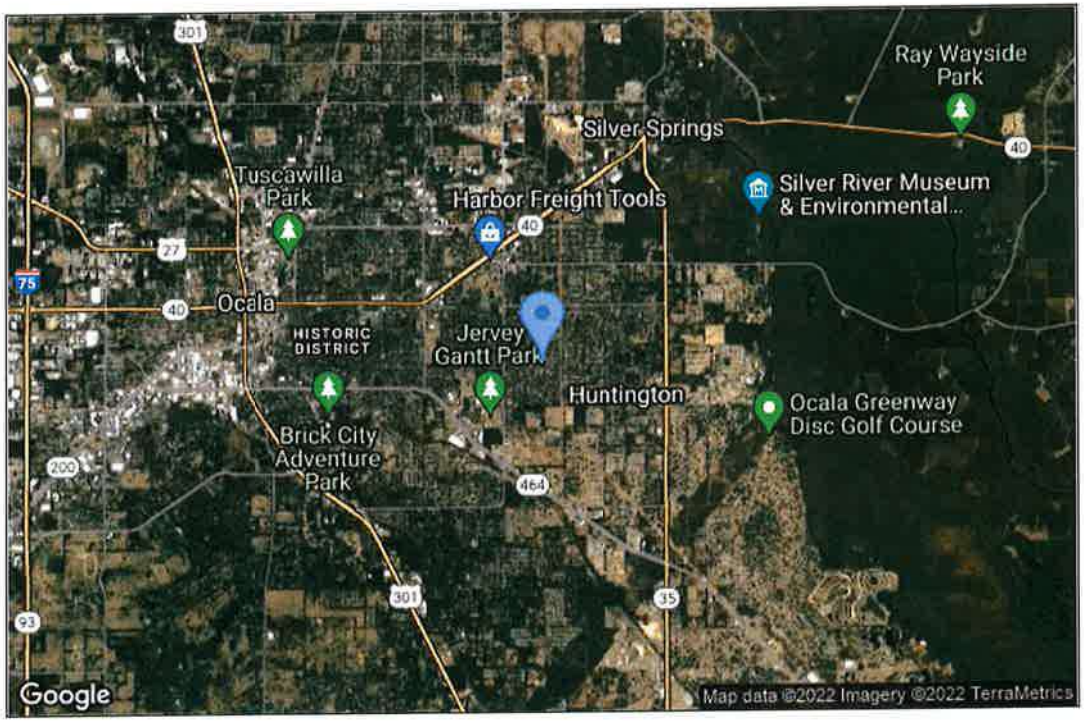
ED04

PAPER: ARCHB

SCALE: NTS

MICHELLE SPIRES

1215 SE 40TH CT, OCALA, FL 34471, USA



01 VICINITY

02 AERIAL

PROJECT INFORMATION

DISTRICTS
COUNTY: MARION COUNTY
JURISDICTION: CITY OF OCALA

DESIGN SPECS
WIND EXPOSURE: B
WIND SPEED (MPH): 130
SNOW LOAD (PSF): 0

GOVERNING CODES
BUILDING: FBC 2020/ASCE 7-16
ELECTRICAL: NEC 2017
FIRE: FFPC, 7th ed. (2020)/NFPA 1 2018 ed.

SYSTEM
SIZE (KWDC): 8.91
PANELS: 22
PANEL: JKM405M-72HL
INVERTER(S): SE7600H-US
VOLTAGE (V): 240

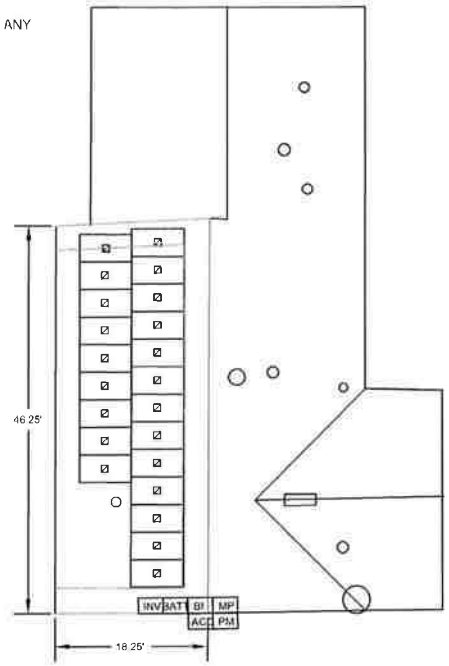
SHEET INDEX

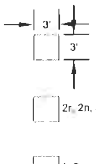
MICHELLE SPIRES	CONTRACTOR: EC13011090	ECUIP ENGINEERING	Ryan S Gittens 2022.08.26 13:22:06-04'00'	DATE	BY	VER	DESCRIPTION	T01
1215 SE 40TH CT, OCALA, FL 34471, USA	FLORIDA ECO ELECTRIC 413 E ALFRED ST. TAVARES, FL 32778 352-460-0402	3140 W KENNEDY BLVD #106, TAMPA FL 33609 CA: 33343		08.22.22	RG	00	INITIAL DESIGN	PAPER: ARCHB
PROJECT ID: 082222-FEE-SPIRES								SCALE: NTS

ECUIP ENGINEERING

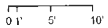
INV	-INVERTER/COMBINER
PM	-POWER METER
ACD	-AC DISCONNECT
MP	-MAIN PANEL/DISC
	-1,2e
	-OTHER

MODULES ARE PLACED A MINIMUM OF 10" FROM ANY ROOF EDGE





EXPOSED MODULE BOUNDARY
(0.5H = 7.5' FROM ROOF EDGE)



ROOF 1
MEAN HEIGHT:15'
MATERIAL: SHINGLE
SHAPE: GABLE
ATTACHMENT: (38) UNIRAC-FLASHLOC
RAIL: (146') UNIRAC-SM-LIGHT
MAX POINT DEADLOAD: 34 lbs
MAX ANCHOR LOAD: -203 lbf
MIN SAFETY FACTOR: 3.92

FRAMING
RAFTER/TRUSS SIZE: MIN 2X4
RAFTER/TRUSS SPACING: 24" OC

ARRAY(S)
MODULES: (22) JKM405M-72HL
ARRAY AREA: 477 SQFT

02 SYSTEM SUMMARY

GENERAL
1.1 EXISTING VENTS, SKYLIGHTS OR EXHAUST OUTLETS SHALL NOT BE COVERED BY THE SOLAR PV SYSTEM.
1.2 MODULES SHALL NOT OVERHANG ANY RIDGE, HIP OR ROOF EDGE.
1.3 CONTRACTOR SHALL NOTIFY ENGINEER/DESIGNER OF ANY CHANGES.

03 NOTES

AN ANALYSIS OF THE ROOF CONSTRUCTION AT THE REFERENCED PROPERTY WAS DONE AND IT HAS BEEN DETERMINED THAT THE STRUCTURE IS ADEQUATE TO SUPPORT THE ADDITIONAL SOLAR PV LOAD.

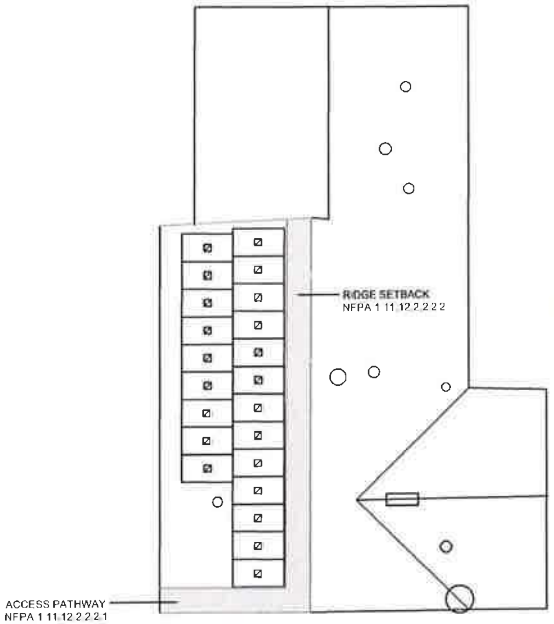
BASED ON OUR REVIEW, THE EXISTING MEMBERS COMPLY WITH FBC 2020/ASCE 7-16 DESIGN SPAN RATINGS WITH SUFFICIENT CAPACITY TO SUPPORT THE NEW LOADS IMPOSED BY THE PROPOSED SOLAR ARRAY.

THE SPECIFICATIONS SHOWN IN THIS CONSTRUCTION PLAN WERE DESIGNED PER FBC 2020/ASCE 7-16 FOR A WIND SPEED OF 130 MPH, EXPOSURE CATEGORY B FOR RISK CATEGORY II BUILDING WITH 0 PSF SNOW LOAD.

04 CERTIFICATION

01 PLAN VIEW

MICHELLE SPIRES	CONTRACTOR: EC13011090	ECUIP ENGINEERING	Ryan S Gitlens 2022.08.26 13:22:17-04'00'	DATE	BY	VER	DESCRIPTION	S01
1215 SE 40TH CT, OCALA, FL 34471, USA	FLORIDA ECO ELECTRIC 413 E ALFRED ST. TAVARES, FL 32778 352-460-0402	3140 W KENNEDY BLVD #106, TAMPA FL 33609 CA: 33343		08.22.22	RG	00	INITIAL DESIGN	PAPER: ARCHB
PROJECT ID: 082222-FEE-SPIRES								SCALE: NTS



NFPA 1 11.12.2.2.2 FOR RESIDENTIAL HOMES

.1 PATHWAYS:

NOT LESS THAN TWO 36IN WIDE PATHEWAYS ON SEPARATE ROOF PLANES FROM GUTTER TO RIDGE, SHALL BE PROVIDED ON ALL BUILDINGS. ONE PATHWAY SHALL BE PROVIDED ON THE STREET OR DRIVEWAY SIDE OF THE ROOF. FOR EACH ROOF PLANE WITH A PV ARRAY, A 36IN WIDE PATHWAY FROM GUTTER TO RIDGE SHALL BE PROVIDED ON THE SAME ROOF PLANE OR STRADDLING THE SAME AND ADJACENT ROOF ADJACENT ROOF PLANES. PATHWAYS SHALL BE LOCATED IN AREAS WITH MINIMAL OBSTRUCTIONS SHUCH AS VENT PIPES, CONDUIT, OR MECHANICAL EQUIPMENT.

.2 33 PERCENT RULE:

FOR PV ARRAYS OCCUPYING UP TO 33 PERCENT OF THE PLAN VIEW ROOF AREA, A MINIMUM 18IN PATHWAY SHALL BE PROVIDED ON EITHER SIDE OF A HORIZONTAL RIDGE. FOR PV ARRAYS OCCUPYING MORE THAN 33 PWECENT OF THE PLAN VIEW AREA, A MINIMUM OF 36IN PATHWAY SHALL BE PROVIDED ON EITHER SIDE OF A HORIZONTAL RIDGE.

01 FIRE SAFETY OFFSETS

MICHELLE SPIRES

1215 SE 40TH CT, OCALA, FL 34471, USA

PROJECT ID: 082222-FEE-SPIRES

CONTRACTOR: EC13011090

FLORIDA ECO ELECTRIC

413 E ALFRED ST. TAVARES, FL 32778

352-460-0402

ECUIP ENGINEERING

3140 W KENNEDY BLVD #106, TAMPA FL 33609 CA: 33343

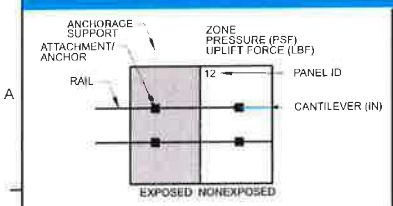
Ryan S Giltens 2022.08.26 13:22:30-04'00'

DATE	BY	VER	DESCRIPTION
08.22.22	RG	00	INITIAL DESIGN

SF01

PAPER: ARCH B

SCALE: NTS



ARRAY
MODULE: (22) JKM405M-72HL
TOTAL AREA: 476 5 SQFT

HARDWARE
RAIL: 146' UNIRAC-SM-LIGHT
ATTACHMENT: (38) UNIRAC-FLASHLOC
ANCHORAGE: RAFTER/TRUSS

FRAMING
SIZE: MIN. 2X4
SPACING: 24" OC

ROOF
MEAN HEIGHT: 15'
MATERIAL: SHINGLE
SHAPE: GABLE

GEOGRAPHY
EXPOSURE CAT: B
WIND SPEED: 130 MPH
SNOW LOAD: 0 LBS

DEAD LOAD CALC

LOADS
Panel = 49 6lbs
Anchors = 1 2lbs
Rail = 0 72lbs/ft
Misc = 1 6lbs/panel

DEADLOAD PER ROW, Fdr:
Fdr = (lbs/panel*#panels/row) + (lbs/ft rail*ft rail/row)*2 + (lbs/anchor*#anchors/row) + (misc lbs/panel*#panels/row) (lbf)

DIST DEADLOAD, Fdd:
Fdd = Fdr/(area/panel*#panels/row) (psf)

DEADLOAD PER ANCHOR, Fda:
Fda = Fdr/(#anchors/row) (lbs)

FLUSH MOUNTED PANELS ON ANY ROOF

CRITERIA:
- Panels parallel to roof surface (within 2 deg)
- Max height of panel above roof, h1 & h2 OF 10"
- Min panel gap of 0 25"
- Min edge distance 2"h2
- Max panel chord length of 6 7'

UPLIFT ON ONE PANEL, Fup = P*A (lbf)
Per ASCE 2.4, 26.10.2 & 29.4.4
P = psd = 0 6*p = 0 6*qh*(GCp)*(YE)*(Ya), A = load area

UPLIFT PER ROW, Fur = SUM(Fup(0):Fup(n)) (lbf)
Where Fup(0):Fup(n) = loads from first to last panel in row

UPLIFT PER ANCHOR, Fua = Fur/(#ANCHORS/ROW) (lbf)

LOAD PER ANCHOR, Fa = 0 6*Fda + Fua (lbf)

SAFETY FACTOR, SF = Ftest/Fa

VELOCITY PRESSURE qh = 0 00256*Kz*Kzt*Kd*Ke*V^2 = 21 (lb/sqft)
Where Kz = 0 57, Kzt = 1, Kd = 0 85, Ke = 1, V = 130

EXT PRESSURE COEFFICIENT, GCp
GCp varies per roof & zone, 30 3-2A-I to 30 3 7, Aeff = 5 41 sqft

EXPOSURE FACTOR, YE:
YE = 1 5 for uplift loads on panels that are exposed and within a distance 1 5Lp from the end of a row at an exposed edge of the array, YE = 1 0 elsewhere for uplift loads and for all downward loads, as illustrated in Fig. 29 4-7. A panel is defined as exposed if d1 to the roof edge > 0 5h and one of the following applies: 1. d1 to the adjacent array > max (4h2, 4 ft (1 2m) or 2. d2 to the next adjacent panel > max (4h2, 4 ft (1 2m).

PRESSURE EQUALIZATION FACTOR, Ya:
Ya is given as 0 7 per SEAOC 5 3 5 with h2 = 6" & panel gap = 0 37"

ZONES
f0: 1' (Flat)
f1: 1 (Flat)
f2: 2 (Flat)
f3: 3 (Flat)
g1: 1 (Gable)
g2e: 2e (Gable)
g2n: 2n (Gable)
g2r: 2r (Gable)
g3r: 3r (Gable)
g3e: 3e (Gable)
h1: 1 (Hip)
h2r: 2r (Hip)
h2e: 2e (Hip)
h3: 3 (Hip)

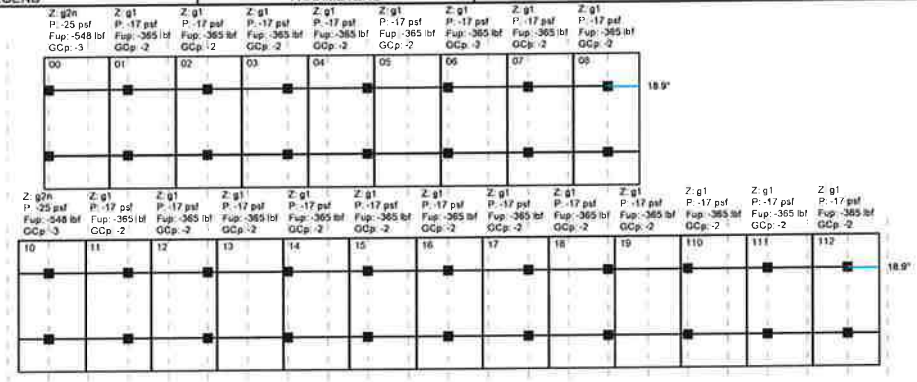
LEGEND

PARAMETERS

LOAD CALCS PER ASCE 7-16 & SEAOC PV2-2017

ROW: 0 (9 MODS)
NOM SPAN: 48"
MAX SPAN: 64"
MAX CANTILEVER: 19"
UPLIFT/ROW, Fur: -3456 lbf
#ANCHORS: 16
LOAD/ANCHOR, Fa: -197 lbf
TEST LOAD/ANCHOR: -798 ibf
SF: 4 05
DIST LOAD, Fdd: 2 68 psf
POINT LOAD, Fda: 32 88 lbs
ROOF PITCH: 7-20 deg
PANEL TILT: 0-2 deg

ROW: 1 (13 MODS)
NOM SPAN: 48"
MAX SPAN: 64"
MAX CANTILEVER: 19"
UPLIFT/ROW, Fur: -4928 lbf
#ANCHORS: 22
LOAD/ANCHOR, Fa: -203 lbf
TEST LOAD/ANCHOR: -798 lbf
SF: 3 92
DIST LOAD, Fdd: 2 68 psf
POINT LOAD, Fda: 34 27 lbs
ROOF PITCH: 7-20 deg
PANEL TILT: 0-2 deg

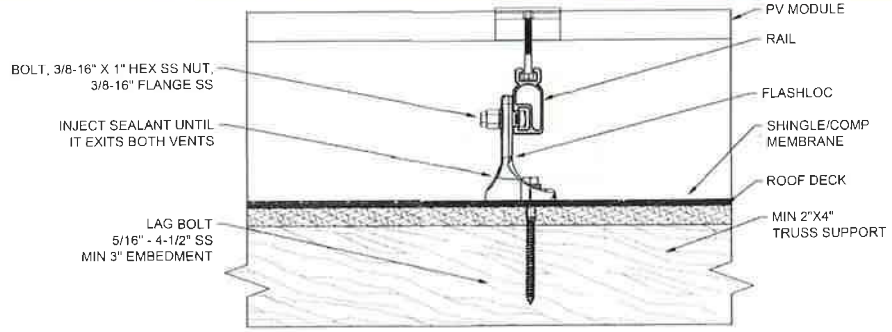


01 ATTACHMENT PLAN (SHINGLE ROOF)

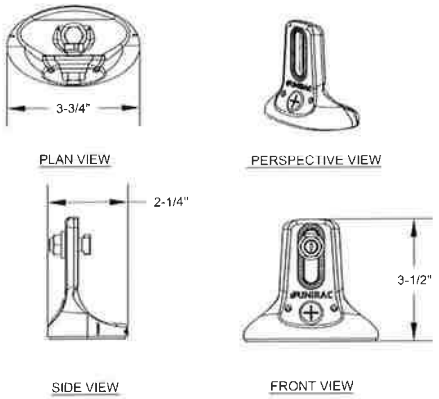
MICHELLE SPIRES	CONTRACTOR: EC13011090	ECUIP ENGINEERING	Ryan S Gittens 2022.08.26 13: 22:45-04'00'	DATE	BY	VER	DESCRIPTION
1215 SE 40TH CT, OCALA, FL 34471, USA	FLORIDA ECO ELECTRIC	3140 W KENNEDY BLVD #106, TAMPA FL 33609 CA: 33343		08.22.22	RG	00	INITIAL DESIGN
PROJECT ID: 082222-FEE-SPIRES	413 E ALFRED ST. TAVARES, FL 32778 352-460-0402						

SP01
PAPER: ARCHB
SCALE: NTS

ECUIP ENGINEERING



01 ANCHORAGE DETAIL



FLASHLOC

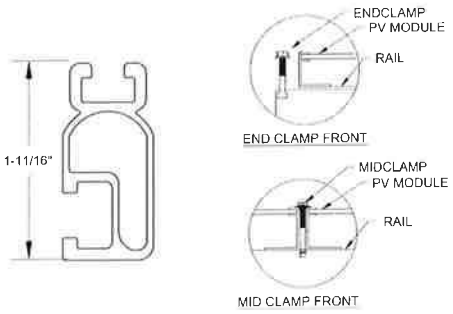
GENERAL

1.1 DESIGNED PER FBC 2020/ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.
1.2 CONTRACTOR IS RESPONSIBLE FOR INSTALLING PV MODULES, RACKING & RACKING SUPPORTS IN ACCORDANCE WITH THE MANUFACTURER INSTALLATION INSTRUCTIONS NOT SHOWN IN THIS PLAN.
1.3 WITHDRAWAL VALUES GIVEN PER NDS 2015 BASED ON SG OF 0.5 OR MANUFACTURER SUPPLIED 3RD PARTY UPLIFT TESTING REPORTS WITH APPLICABLE SAFETY FACTORS.
1.4 ALL PENETRATIONS SHALL BE FLASHED OR SEALED IN A MANNER THAT PREVENTS MOISTURE FROM ENTERING THE WALL AND ROOF USING ASTM C920 COMPLAINT SEALANT IN PILOT HOLES AND AROUND FASTENERS.
1.5 THE SUPPORTING ROOF STRUCTURE SHALL BE CONVENTIONAL WOOD FRAMED CONSTRUCTION WITH PRE-ENGINEERED TRUSSES OR ROOF FRAMING MEMBERS AT A SPACING OF 24 IN MAXIMUM ON CENTER.
1.6 EXISTING STRUCTURE IS ASSUMED TO BE IN COMPLIANCE WITH APPLICABLE BUILDING CODES AT THE TIME OF CONSTRUCTION.
1.7 CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CONDITION CHANGES.

02 NOTES

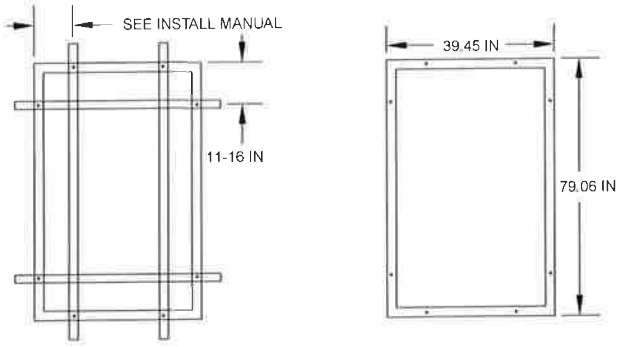
03 ANCHOR DETAIL

04 RAIL & CLAMPS DETAIL



UNIRAC SOLARMOUNT LIGHT RAIL AND CLAMPS

05 MODULE DETAILS



JKM405M-72HL

MICHELLE SPIRES	CONTRACTOR: EC13011090	ECUIP ENGINEERING	Ryan S Gittens 2022.08.26 13:22:58-04'00'
1215 SE 40TH CT, OCALA, FL 34471, USA	FLORIDA ECO ELECTRIC 413 E ALFRED ST. TAVARES, FL 32778 352-460-0402	3140 W KENNEDY BLVD #106, TAMPA FL 33609 CA: 33343	
PROJECT ID: 082222-FEE-SPIRES			

DATE	BY	VER	DESCRIPTION
08.22.22	RG	00	INITIAL DESIGN

SA01
PAPER: ARCHB
SCALE: NTS

FLASH LOC

UNIRAC
BETTER SOLAR STARTS HERE

FLASHLOC is the ultimate attachment for composition shingle and rolled comp roofs. The all-in-one mount installs fast — no kneeling on hot roofs to install flashing, no prying or cutting shingles, no pulling nails. Simply drive the lag bolt and inject sealant into the base. **FLASH**LOC's patented TRIPLE SEAL technology preserves the roof and protects the penetration with a permanent pressure seal. Kitted with lag bolts, sealant, and hardware for maximum convenience. Don't just divert water, **LOC it out!**

TESTED TO TAS-100 WIND DRIVEN RAIN TEST AND UL441 RAIN TEST

PROTECT THE ROOF

Install a high strength waterproof attachment without lifting, prying or damaging shingles

LOC OUT WATER

With an outer shield 1 contour-conforming gasket 2 and pressurized sealant chamber 3, the Triple Seal technology delivers a 100% waterproof connection.

HIGH-SPEED INSTALL

Simply drive lag bolt and inject sealant into the port 4 to create a permanent pressure seal

FLASH LOC

INSTALLATION GUIDE

UNIRAC
BETTER SOLAR STARTS HERE

PRE-INSTALL

Snap chalk lines for attachment rows. On shingle roofs, snap lines 1 3/4" below upslope edge of shingle course. Locate rafters and mark attachment locations.

At each location, drill a 7/32" pilot hole. Clean roof surface of dirt, debris, snow, and ice. Next, BACKFILL ALL PILOT HOLES WITH SEALANT.

NOTE: Space mounts per racking system install specifications.

STEP 1: SECURE

Place **FLASH**LOC over pilot hole with lag on down slope side. Align indicator marks on sides of mount with chalk line. Pass included lag bolt and sealing washer through **FLASH**LOC into pilot hole. Drive lag bolt until mount is held firmly in place.

NOTE: The EPDM in the sealing washer will expand beyond the edge of the metal washer when proper torque is applied

STEP 2: SEAL

Insert tip of UNIRAC provided sealant into port. Inject until sealant exits both vents.

Continue array installation, attaching rails to mounts with provided T-bolts.

NOTE: When **FLASH**LOC is installed over gap between shingle tabs or vertical joints, fill gap/joint with sealant between mount and upslope edge of shingle course.

NOTE: When installing included rail attachment hardware, torque nut to 30 ft/lbs.

USE ONLY UNIRAC APPROVED SEALANTS: Chemlink Duralink 50 (included in kit) or Chemlink M-1

FASTER INSTALLATION. 25-YEAR WARRANTY.

FOR QUESTIONS OR CUSTOMER SERVICE VISIT UNIRAC.COM OR CALL (505) 248-2702

FASTER INSTALLATION. 25-YEAR WARRANTY.

FOR QUESTIONS OR CUSTOMER SERVICE VISIT UNIRAC.COM OR CALL (505) 248-2702

MICHELLE SPIRES 1215 SE 40TH CT, OCALA, FL 34471, USA PROJECT ID: 082222-FEE-SPIRES	CONTRACTOR: EC13011090 FLORIDA ECO ELECTRIC 413 E ALFRED ST. TAVARES, FL 32778 352-460-0402	ECUIP ENGINEERING 3140 W KENNEDY BLVD #106, TAMPA FL 33609 CA: 33343	Ryan S Giltens 2022.08.26 13:23:13-04'00'

DATE	BY	VER	DESCRIPTION
08.22.22	RG	00	INITIAL DESIGN

SD01
PAPER: ARCH B
SCALE: NTS

ECUIP ENGINEERING

SM SOLAR MOUNT — SPAN TABLE-Non-Exposed

ASCE 7-16

SOLARMOUNT - FLUSH TO ROOF

Load				Rail Span *											
Snow (psf)	Roof Zone	Exposure Category	Wind Speed (mph)	16 in	24 in	32 in	36 in	48 in	60 in	64 in	72 in	80 in	96 in	112 in	120 in	144 in
			85	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
			90	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
			95	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
			100	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
			105	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
			110	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
			115	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
	1,2e	B	120	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
			125	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	LM	SM	SM	SMHD
			130	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	LM	SM	SM	SMHD
			140	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	LM	SM	SM	SMHD
			150	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	LM	SM	SM	SMHD
			160	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	LM	SMHD	SMHD	SMHD
			170	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD	SMHD	SMHD	SMHD
			180	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD	SMHD	SMHD	SMHD
			85	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
			90	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
			95	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
			100	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
			105	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	LM	SM	SM	SMHD
			110	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	LM	SM	SM	SMHD
			115	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	LM	SM	SM	SMHD
	2n,2r,3e	B	120	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	LM	SM	SM	SMHD
			125	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	LM	SM	SM	SMHD
			130	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	LM	SMHD	SMHD	SMHD
			140	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	LM	SMHD	SMHD	SMHD
			150	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD	SMHD	SMHD	SMHD
			160	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD	SMHD	SMHD	SMHD
			170	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			180	SMLT	SMLT	SMLT	SMLT	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			85	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			90	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			95	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			100	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			105	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			110	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD
			115	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD
	3e	B	120	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD
			125	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD	SMHD	SMHD
			130	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD	SMHD	SMHD
			140	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD	SMHD	SMHD	SMHD
			150	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			160	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			170	SMLT	SMLT	SMLT	SMLT	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			180	SMLT	SMLT	SMLT	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*

Note: Rail spans are based on ASCE 7-16, Building Risk Category II, Roof Slope of 9.46° to 18.43°, Mean Roof Height of 30 ft, Seism c Coefficient Ss = 1.5,Pro series mid and end clamps, modules mounted parallel to roof surface with up slope dimension of 67 in, and 2 rails per row of modules running perpendicular to the roof slope attached to L-feet mounted on the up slope side of the rail. The installation of SolarMount products is subject to the requirements in the SolarMount Installation Guide.

Note:* Please contact Unirac commercial services at commercialservices@unirac.com for design assistance.

SM SOLAR MOUNT — SPAN TABLE-Exposed

ASCE 7-16

SOLARMOUNT - FLUSH TO ROOF

Load				Rail Span *											
Snow (psf)	Roof Zone	Exposure Category	Wind Speed (mph)	16 in	24 in	32 in	36 in	48 in	60 in	64 in	72 in	80 in	96 in	112 in	120 in	144 in
			85	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			90	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			95	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			100	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			105	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			110	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD
			115	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD
	1,2e	B	120	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD
			125	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD
			130	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD
			140	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD
			150	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD
			160	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD	SMHD	SMHD	SMHD
			170	SMLT	SMLT	SMLT	SMLT	SM	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			180	SMLT	SMLT	SMLT	SMLT	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			85	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			90	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			95	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			100	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD
			105	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD
			110	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD	SMHD	SMHD
			115	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD	SMHD	SMHD
	2n,2r,3e	B	120	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD	SMHD	SMHD
			125	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			130	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			140	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			150	SMLT	SMLT	SMLT	SMLT	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			160	SMLT	SMLT	SMLT	SMLT	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			170	SMLT	SMLT	SMLT	SMLT	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			180	SMLT	SMLT	SMLT	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			85	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			90	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			95	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			100	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			105	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SMHD
			110	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD
			115	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD
	b	B	120	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD
			125	SMLT	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD	SMHD	SMHD
			130	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	SMHD	SMHD	SMHD
			140	SMLT	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SMHD	SMHD	SMHD	SMHD
			150	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	SM	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			160	SMLT	SMLT	SMLT	SMLT	SM	SM	SM	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			170	SMLT*	SMLT*	SM*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*
			180	SMLT*	SM*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*	Add Rail*

Note: Rail spans are based on ASCE 7-16, Building Risk Category II, Roof Slope of 9.46° to 18.43°, Mean Roof Height of 30 ft, Seismic Coefficient Ss = 1.5,Pro series mid and end clamps, modules mounted parallel to roof surface with up slope dimension of 67 in, and 2 rails per row of modules running perpendicular to the roof slope attached to L-feet mounted on the up slope side of the rail. The installation of SolarMount products is subject to the requirements in the SolarMount Installation Guide.

Note:* Please contact Unirac commercial services at commercialservices@unirac.com for design assistance.

MICHELLE SPIRES	CONTRACTOR: EC13011090	ECUIP ENGINEERING	Ryan S Giltens 2022.08.26 13:23:28-04'00'	DATE / BY / VER / DESCRIPTION	SD02
1215 SE 40TH CT, OCALA, FL 34471, USA	FLORIDA ECO ELECTRIC 413 E ALFRED ST. TAVARES, FL 32778 352-460-0402	3140 W KENNEDY BLVD #106, TAMPA FL 33609 CA: 33343		08.22.22 / RG / 00 / INITIAL DESIGN	PAPER: ARCHB
PROJECT ID: 082222-FEE-SPIRES					SCALE: NTS

ECUIP ENGINEERING

1 GENERAL NOTES

GENERAL

1.1. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH FBC 2020/ASCE 7-16 AND NEC 2017 REQUIREMENTS AND EQUIPMENT INSTALLATION INSTRUCTIONS NOT SHOWN IN THIS PLAN.
1.2. CONDUCTOR TYPES SHALL MEET THE REQUIREMENTS SET FOURTH IN NEC 310.10 BASED ON INSTALLATION LOCATION.
1.3. DIRECT-CURRENT PHOTOVOLTAIC SOURCE AND OUTPUT CIRCUITS INSIDE A BUILDING SHALL BE CONTAINED IN METAL RACEWAYS 690.31(G).
1.4. ALL EQUIPMENT SHALL BE LISTED PER NEC 690.4(B).
1.5. CONDUCTOR SIZING IS BASED ON RACEWAYS NOT EXPOSED TO DIRECT SUNLIGHT, 10% OF CIRCUIT LENGTH CAN BE EXPOSED DIRECT SUNLIGHT UP TO 10FT, NEC 310.15(A)(2).

SYSTEM SPECIFIC

2.1. THE OUTPUT VOLTAGE OF THE POWER OPTIMIZERS ARE REGULATED BY THE INVERTER AT 380V AND ARE NOT IMPACTED BY THE NUMBER OF MODULES IN THE STRING. THE CONTINUOUS CURRENT OF A SINGLE STRING IS EQUAL TO THE MAXIMUM OUTPUT CURRENT OF THE OPTIMIZER OF 15A.
2.2. THE INVERTER IS EQUIPPED WITH A RAPID SHUTDOWN FEATURE WHICH CONFORMS TO NEC 690.12.
2.3. THE INVERTER IS NON-ISOLATED AND UNGROUNDED. NEITHER THE NEGATIVE NOR POSITIVE CONDUCTOR IS GROUNDED AND HAS A COMMON AC AND DC EQUIPMENT GROUNDING TERMINAL THEREFORE NO DC GEC IS REQUIRED.
2.4. INTEGRATED DC DISCONNECT IS PROVIDED WITH INVERTER.
2.5. INTERCONNECTION SHALL BE MADE BY LINE-SIDE-TAP PER ARTICLE 705.12(A) USING INSULATED, PIERCING CONNECTORS UL LISTED FOR THIS PURPOSE. TAP CONDUCTORS SHALL BE NO MORE THAN 10FT PER 705.31. TAP & ENCLOSURE SHALL COMPLY WITH NEC 312.8(A) (CROSS SECTIONAL AREA FILL).
2.6. INTEGRATED SHUTOFF SWITCH PROVIDED WITH BATTERY FOR CONDUCTOR RUNS LONGER THAN 5FT OR WHERE CONDUCTORS PASS THROUGH PARTITION PER NEC 706.7(E).
2.7. DC GROUND FAULT DETECTOR IS INVERTER INTEGRATED.

GROUNDING

3.1. ALL EQUIPMENT SHALL BE PROPERLY GROUNDED PER THE REQUIREMENTS OF NEC ARTICLES 250 & 690.
3.2. PV MODULES SHALL BE GROUNDED TO MOUNTING RAILS USING MODULE LUGS OR RACKING INTEGRATED GROUNDING CLAMPS AS ALLOWED BY LOCAL JURISDICTION. EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ACCORDANCE WITH NEC 250.120(C).
3.3. EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED ACCORDING TO NEC ARTICLE 690.45, AND BE A MINIMUM OF #10 AWG WHEN NOT EXPOSED TO DAMAGE, AND #6 AWG SHALL BE USED WHEN EXPOSED TO DAMAGE.

OPTIMIZER RATINGS		
OPTIMIZER MAKE	SOLAREDGE	
OPTIMIZER MODEL	P485	
RATED INPUT DC POWER	485	W
MAX DC INPUT VOLTAGE	125	V
MAX INPUT CURRENT	11	A
MAX OUTPUT CURRENT	15	A
MAX STRING POWER	6000	W

2 OPTIMIZER RATINGS

PV MODULE RATINGS (STC)		
MODULE MAKE	JINKO	
MODULE MODEL	JKM405M	
RATED POWER	405	W
OPEN CIRCUIT VOLTAGE	50.1	V
SHORT CIRCUIT CURRENT	10.48	A
MAX. POWER POINT VOLTAGE	40.42	V
MAX. POWER POINT CURRENT	9.65	A

3 MODULE RATINGS

INVERTER 1: SE7600H-US			
STRING OPTIONS:	A: 9-14 MODS B: 8-14 MODS		
# MODULES	STC DC POWER (KW)	DC/AC SIZING (%)	Imp
22	8.91	117	23.45

4 STRING OPTIONS

INVERTER RATINGS		
INVERTER MAKE	SOLAREDGE	
INVERTER MODEL	SE7600H-US	
MAX INPUT POWER	15200	W
MAX INPUT VOLTAGE	420	V
NOM INPUT VOLTAGE	380	V
MAX INPUT CURRENT	240	A
NOM AC VOLTAGE	32	V
MAX AC CURRENT	97.5	A
NOM AC POWER	7600	W

5 INVERTER RATINGS

BATTERY RATINGS		
BATTERY MAKE	SOLAREDGE	
BATTERY MODEL	BAT10K3P	
USABLE ENERGY	9700	WH
NOM AC POWER	5	KW
MAX AC POWER	7.5	KW
INPUT/OUTPUT VOLTAGE	350-450	V
ROUNDTRIP EFFICIENCY	94.5	%

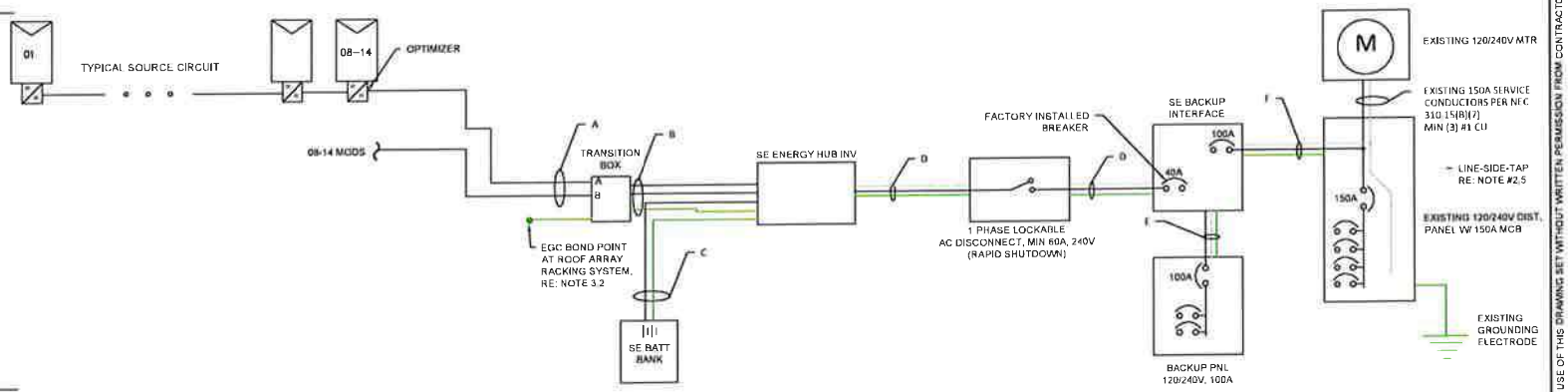
6 BATTERY RATINGS

WIRE RUN	V_{mp}	I_{mp}	R (OHMS/K FT)	L (FT)	# CONDUCTORS	ADJUSTMENT FACTOR	CONDUIT	CONDUCTOR TYPE	SIZE	TEMP RATING (C)	AMPACITY (A)	EGC SIZE
A: PV TO JBOX	380	15.00	1.24	96	4	NA	NONE	PV WIRE	#10	75	35	NA
B: JBOX TO INVERTER	380	15.00	1.24	96	4	0.80	¾" PVC/FMC/EMT	THHN/THWN-2	#10	75	32	#10
C: BATT TO INVERTER	380	15.00	1.24	102	2	1.00	¾" PVC/FMC/EMT	THHN/THWN-2	#10	75	35	#10
D: INV TO BI	240	32	0.778	48	3	1.00	¾" PVC/FMC/EMT	THHN/THWN-2	#8	75	50	#10
E: BKUP TO BI	240	32	0.245	153	3	1.00	1-1/4" PVC/FMC/EMT	THHN/THWN-2	#3	75	100	#8
F: BI TO PCC	240	32	0.245	153	3	1.00	1-1/4" PVC/FMC/EMT	THHN/THWN-2	#3	75	100	#8

CIRCUIT LENGTH BASED ON 1% VOLTAGE DROP

7 CONDUCTOR SCHEDULE & VOLTAGE CALCS

PER FL STATUTE 377.705: I RYAN S GITTENS, PE PE#: PE90605 AN ENGINEER LICENSED PURSUANT TO CHAPTER 471, CERTIFY THAT THE PV ELECTRICAL SYSTEM AND ELECTRICAL COMPONENTS ARE DESIGNED AND APPROVED USING THE STANDARDS CONTAINED IN THE MOST RECENT VERSION OF THE FLORIDA BUILDING CODE, FBC 107



8 ELECTRICAL DIAGRAM SCALE NTS

MICHELLE SPIRES	CONTRACTOR: EC13011090	ECUIP ENGINEERING	Ryan S Gittens 2022.08.26 13:23:47-04'00'	DATE	BY	VER	DESCRIPTION
1215 SE 40TH CT, OCALA, FL 34471, USA	FLORIDA ECO ELECTRIC 413 E ALFRED ST. TAVARES, FL 32778 352-460-0402	3140 W KENNEDY BLVD #106, TAMPA FL 33609 CA: 33343		08.22.22	RG	00	INITIAL DESIGN
PROJECT ID: 082222-FEE-SPIRES							

E01 | PAPER: ARCHB | SCALE: NTS

ECUIP ENGINEERING

WARNING
ELECTRICAL SHOCK HAZARD
TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

NEC 690.13(B)
LOCATION(S): 3, 4

PHOTOVOLTAIC DISCONNECT

NEC 690.13(B)
LOCATION(S): 3, 4

WARNING: PHOTOVOLTAIC POWER SOURCE

NFPA 1 11.12.2.1.3, NEC 690.31(G)(3)
LOCATION(S): 1, 2

WARNING: DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

NEC 705.12(B)(3)
LOCATION(S): 5

MAXIMUM VOLTAGE	240	V
MAXIMUM CIRCUIT CURRENT	32	A

NEC 690.54
LOCATION(S): 5

CAUTION
POWER TO THIS BUILDING IS ALSO SUPPLIED FROM A PHOTOVOLTAIC SYSTEM WITH DISCONNECTS CO-LOCATED WITH UTILITY DISCONNECT

NFPA 1 11.12.2.1.4
LOCATION(S): 4, 5

MAXIMUM VOLTAGE	480	V
MAXIMUM CIRCUIT CURRENT	32	A
MAX RATED OUTPUT CURRENT OF CHARGE CONTROLLER OR DC-DC CONVERTER (IF INSTALLED)	15	A

NEC 690.53
LOCATION(S): 3 (INV 1)

SYSTEM SERVICED BY:
FLORIDA ECO ELECTRIC
352-460-0402

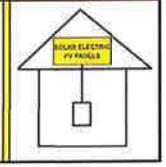
NFPA 1 11.12.2.1.5, NEC 690.56(B), 705.10
LOCATION(S): 5

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

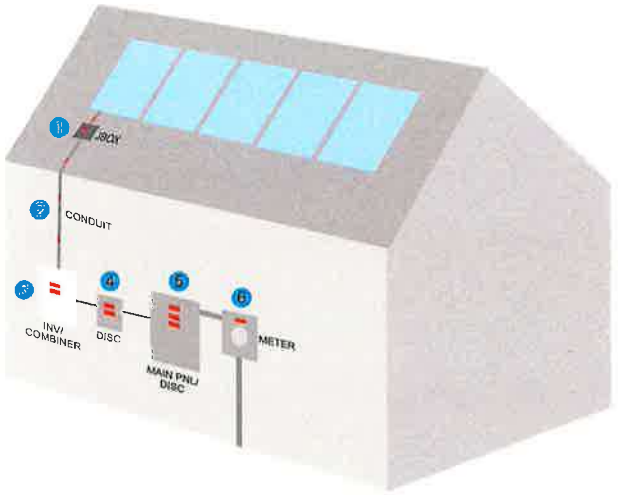
NFPA 1 11.12.2.1.1.6, NEC 690.56(C)(3)
LOCATION(S): 4

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY



NFPA 1 11.12.2.1.1.1, NEC 690.56(C)(1)
LOCATION(S): 5



01 LABELS

02 NOTES

GENERAL
1.1 LABEL MATERIALS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT, NEC 110.21(B)(3).
1.2 EXACT MATERIALS USED ARE SUBJECT TO THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
1.3 LABELS SHALL BE A MINIMUM LETTER HEIGHT OF 3/8" AND PERMANENTLY AFFIXED.
1.4 LABELS WILL BE REFLECTIVE AND MEET THE REQUIREMENTS OF NFPA 1-11.12.2.1.1.2

MICHELLE SPIRES
1215 SE 40TH CT, OCALA, FL 34471, USA
PROJECT ID: 082222-FEE-SPIRES

CONTRACTOR: EC13011090
FLORIDA ECO ELECTRIC
413 E ALFRED ST. TAVARES, FL 32778
352-460-0402

ECUIP ENGINEERING
3140 W KENNEDY BLVD
#106, TAMPA FL 33609
CA: 33343

Ryan S Gitlens
2022.08.26 13:24:03-04'00'

DATE	BY	VER	DESCRIPTION
08.22.22	RG	00	INITIAL DESIGN

EL01
PAPER: ARCHB
SCALE: NTS

EAGLE
MODULES

THE MOST DEPENDABLE SOLAR BRAND

EAGLE 72HM G2

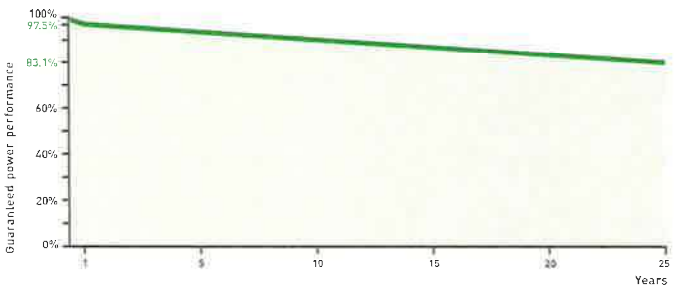
390-410 WATT • HALF CELL MONO PERC MODULE

Positive power tolerance of 0~+3%

- NYSE-listed since 2010, Bloomberg Tier 1 manufacturer
- Best-selling module globally for last 4 years
- Top performance in the strictest 3rd party labs
- 99.9% on-time delivery to the installer
- Automated manufacturing utilizing artificial intelligence
- Vertically integrated, tight controls on quality
- Premium solar panel factories in USA and Malaysia

LINEAR PERFORMANCE WARRANTY

25-Year Performance Warranty



LISTED

KEY FEATURES

Diamond Half Cell Technology
World-record breaking efficient mono PERC half cut solar cells deliver high power in a small footprint.

Designed for Long Life
Uses the same DuPont protective film as the Space Station, Mars Lander, and jetliners. 25-year warranty.

Shade Tolerant
Twin array design allows continued performance even with shading by trees or debris.

Power Boost in Cloudy Conditions
A special film diffuses light, boosting performance even with shading by trees or debris.

Protected Against All Environments
Certified to withstand humidity, heat, rain, marine environments, wind, hailstorms, and packed snow.

- ISO9001:2008 Quality Standards
- ISO14001:2004 Environmental Standards
- IEC61215, IEC61730 certified products
- OHSAS18001 Occupational Health & Safety Standards
- UL1703 certified products

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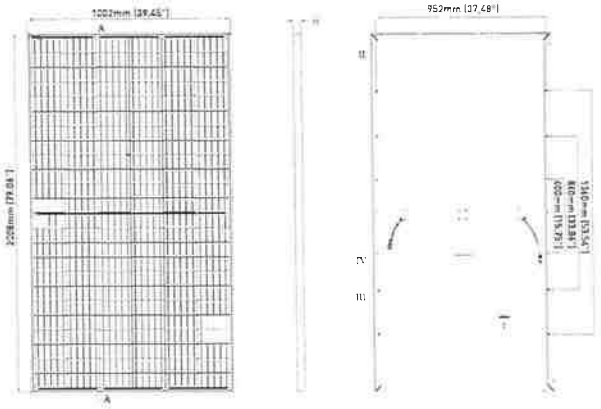
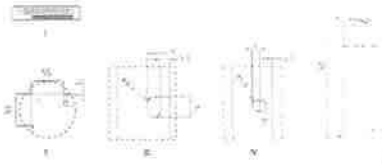
Solar JinKO

ENGINEERING DRAWINGS

Front Side Back





Length: ± 2mm
Width: ± 2mm
Height: ± 1mm
Row Pitch: ± 2mm

MECHANICAL CHARACTERISTICS

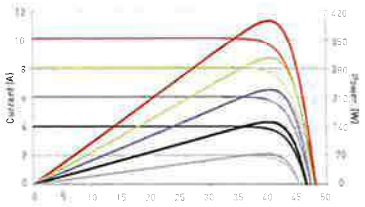
Cells	Mono PERC Diamond Cell (158.75x158.75mm)
No. of Half Cells	144 (2x72)
Dimensions	2008×1002×40mm (79.06×39.45×1.57in)
Weight	22.5kg (49.6lbs)
Front Glass	3.2mm, Anti-Reflection Coating High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP67 Rated
Output Cables	12 AWG, 1400mm (55.12in) or Customized Length
Fire Type	Type 1
Pressure Rating	5400Pa (Snow) & 2400Pa (Wind)

TEMPERATURE CHARACTERISTICS

Temperature Coefficients of Pmax	-0.35%/°C
Temperature Coefficients of Voc	-0.29%/°C
Temperature Coefficients of Isc	0.048%/°C
Nominal Operating Cell Temperature (NOCT)	45±2°C

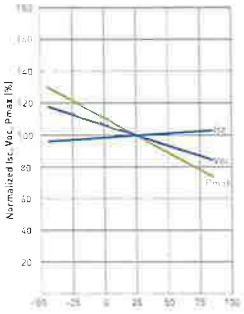
ELECTRICAL PERFORMANCE & TEMPERATURE DEPENDENCE

Current-Voltage & Power-Voltage Curves (410W)



Voltage (V)

Temperature Dependence of Isc, Voc, Pmax



Cell Temperature (°C)

MAXIMUM RATINGS

Operating Temperature (°C)	-40°C~+85°C
Maximum System Voltage	1500VDC (UL and IEC)
Maximum Series Fuse Rating	20A

PACKAGING CONFIGURATION

(Two pallets = One stack)

27pcs/pallet, 54pcs/stack, 594pcs/40'HQ Container

ELECTRICAL CHARACTERISTICS

Module Type	JKM390M-72HL-V		JKM395M-72HL-V		JKM400M-72HL-V		JKM405M-72HL-V		JKM410M-72HL-V	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	390Wp	287Wp	395Wp	291Wp	400Wp	294Wp	405Wp	298Wp	410Wp	302Wp
Maximum Power Voltage (Vmp)	39.64V	37.0V	39.90V	37.4V	40.16V	37.6V	40.42V	37.8V	40.68V	38.0V
Maximum Power Current (Imp)	9.84A	7.75A	9.90A	7.77A	9.96A	7.82A	10.02A	7.88A	10.08A	7.94A
Open-circuit Voltage (Voc)	48.6V	45.8V	48.8V	46.0V	49.1V	46.2V	49.4V	46.5V	49.6V	46.7V
Short-circuit Current (Isc)	10.46A	8.45A	10.54A	8.51A	10.61A	8.57A	10.69A	8.63A	10.76A	8.69A
Module Efficiency STC (%)	19.38%		19.63%		19.88%		20.13%		20.38%	

***STC:** Irradiance 1000W/m² Cell Temperature 25°C AM = 1.5
NOCT: Irradiance 800W/m² Ambient Temperature 20°C AM = 1.5 Wind Speed 1m/s

*Power measurement tolerance: ±3%

The company reserves the final right for explanation on any of the information presented hereby. JKM390-410M-72HL-V-A4-US

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Jinko Solar

INVERTERS

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking 99% weighted efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014, NEC 2017 and NEC 2020 per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)

solaredge

/ Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/ SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXXBXX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5(1)							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, Adjustable - 0.85 to 0.85							
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V(2)	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V(2)	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

(1) For other regional settings please contact SolarEdge support
(2) A higher current source may be used; the inverter will limit its input current to the values stated

/ Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/ SE7600H-US / SE10000H-US / SE11400H-US

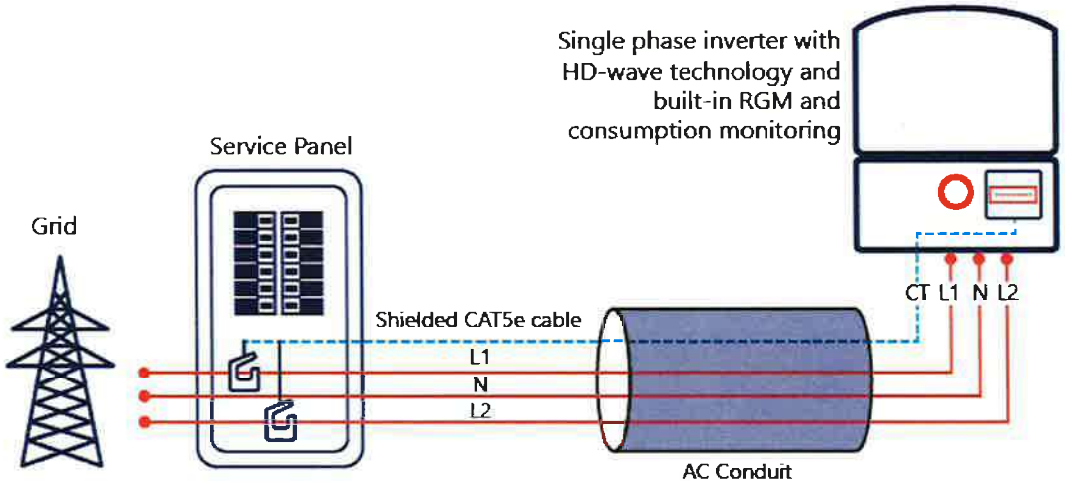
MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Metering, ANSI C12.20	Optional[3]							
Consumption metering								
Inverter Commissioning	With the SetApp mobile application using Built-in Wi-Fi Access Point for Local Connection							
Rapid Shutdown - NEC 2014, NEC 2017 and NEC 2020, 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect							
STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	1" Maximum / 14-6 AWG					1" Maximum /14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	1" Maximum / 1-2 strings / 14-6 AWG					1" Maximum / 1-3 strings / 14-6 AWG		
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174					21.3 x 14.6 x 7.3 / 540 x 370 x 185		in / mm
Weight with Safety Switch	22 / 10		25.1 / 11.4		26.2 / 11.9	38.8 / 17.6		lb / kg
Noise	< 25					<50		dBA
Cooling	Natural Convection							
Operating Temperature Range	-40 to +140 / -40 to +60[4]							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

(3) Inverter with Revenue Grade Meter P/N: SExxxxH-US000BNC4; Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxxH-US000BNI4 . For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20. 20 units per box

(4) Full power up to at least 50°C / 122°F, for power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf

How to Enable Consumption Monitoring

By simply wiring current transformers through the inverter's existing AC conduits and connecting them to the service panel, homeowners will gain full insight into their household energy usage helping them to avoid high electricity bills



RoHS

AMERICAN TRADITIONS INSURANCE COMPANY

T.J. Jerger MGA, LLC
7785 66th Street N.
Pinellas Park, FL 33781

Homeowners Declarations Page

If you have any questions regarding this policy which your agent is unable to answer please contact us at 866-561-3433.

Agent Name and Address: Whitco Insurance Agency LLC
5308 Gulfport Blvd S
Gulfport, FL 33707
Suite B

Agent Phone #: (727)209-8888 **Agency Code:** AF2539

Policy Number: ATH1096107
Named Insured: Michelle Spires
Mailing Address 1215 Se 40th Ct
Ocala, FL 34471

Insuring Company:
American Traditions Insurance Company
P.O. Box 2800
Pinellas Park, FL 33781

Mortgagee(s) #1: PennyMac Loan Services, LLC ISAOA
PO Box 6618
Springfield, OH 45501
8198065999

#2:

Effective Dates: From: **07/09/2022 12:01 am** To: **07/09/2023 12:01 am** Effective date of this transaction: **07/09/2022 12:01am**

Activity: Change Policy Interest Informa **Additional Insured:**

Insured Location: 1215 Se 40th Ct
Ocala, FL 34471

Coverage at the residence premises is provided only where a limit of liability is shown or a premium is stated

Coverages and Premiums:

Coverage Section	Limits	Non-Hurricane	Hurricane	Total
A. Dwelling	356000	353.00	410.00	763.00
B. Other Structures	7120	0.00	0.00	Included
C. Personal Property	178000	0.00	0.00	Included
D. Loss of Use	35600	0.00	0.00	Included
E. Personal Liability	300000	15.00	0.00	15.00
F. Medical Payments to Others	5000	10.00	0.00	10.00
Policy Fee		25.00	0.00	25.00
Emergency Management Preparedness		2.00	0.00	2.00
Premium Adjustments:		592.00	-101.00	491.00

Total Policy Premium **$1,306.00**

Deductible: ***Hurricane Deductible: $7,120 / 2%***

All Other Perils Deductible: **$1,000**

Krista A Cioffi — 06/29/2022

Krista A. Cioffi
Countersignature

Date

Special Messages:

THIS POLICY CONTAINS A SEPARATE DEDUCTIBLE FOR HURRICANE LOSSES, WHICH MAY RESULT IN HIGH OUT-OF-POCKET EXPENSES TO YOU.

Any person who knowingly and with intent to injure, defraud, or deceive any insurer files a statement of claim or an application containing false, incomplete or misleading information is guilty of a felony in the third degree.

Forms and Endorsements:	NOC - LWDC HO 09 20	HO 09 PC 04 06	HO 04 96 04 91	AT 04 90 03 06	LWDC HO 09 20
	NOC - WDE HO 09 20	ATIC HO Outline 01 19	ATICCGCCNotice0707	AT HO 09 WBU 03 06	NMR PCKT 05 21
	NOC - HO SP 0920 to 0721	ATI HO 09 OLN 03 06	OIR B1 1670 01 01 06	HO 04 46 04 91	
	ATI HO 09 MLD 02 06	INDEX 1205	ATIC Privacy 05 15	HO 03 55 01 06	
	ATIC HO jkt 04 09	HO 09 SP 07 21	NOASA - A 07 15	HO SPE 09 20	
	ATI HO 09 DN 03 06	HO 00 03 04 91	OIR-B1-1655 02 10	WDE HO 09 20	

Pay Plan:	Number of Payments: 0	Bill to: Mortgagee	
Rating Information:	Program: HO3	Construction Type:	Masonry
	Territory: 522	Year Constructed:	1973
	Dwelling Roofing Material: Asphalt Shingle	Date of Roof Installation:	2015

Scheduled Property: Description:

LAW AND ORDINANCE: LAW AND ORDINANCE COVERAGE IS AN IMPORTANT COVERAGE THAT YOU MAY WISH TO PURCHASE. PLEASE DISCUSS WITH YOUR INSURANCE AGENT.

FLOOD INSURANCE: YOU MAY ALSO NEED TO CONSIDER THE PURCHASE OF FLOOD INSURANCE. YOUR HOMEOWNER'S INSURANCE POLICY DOES NOT INCLUDE COVERAGE FOR DAMAGE RESULTING FROM FLOOD EVEN IF HURRICANE WINDS AND RAIN CAUSED THE FLOOD TO OCCUR. WITHOUT SEPARATE FLOOD INSURANCE COVERAGE, YOU MAY HAVE UNCOVERED LOSSES CAUSED BY FLOOD. PLEASE DISCUSS THE NEED TO PURCHASE SEPARATE FLOOD INSURANCE COVERAGE WITH YOUR INSURANCE AGENT.

YOUR POLICY CONTAINS AN INFLATION GUARD RIDER. YOUR HURRICANE DEDUCTIBLE MAY BE HIGHER THAN INDICATED WHEN LOSS OCCURS, DUE TO APPLICATION OF THE INFLATION GUARD RIDER

In the event of a claim please call toll free (866) 270-8430. We are available 24 hours a day 7 days a week.

Coverage Section	Limits	Flood Limits	Non-Hurricane	Hurricane	Total
2022 Florida Insurance Guaranty Association Assessment			0.00	9.00	9.00
2022-A Florida Insurance Guaranty Association Assessment			0.00	16.00	16.00
Age Of Dwelling (HUR)			0.00	-249.00	-249.00
Age Of Dwelling (NHR)			118.00	0.00	118.00
Age of Roof Discount			0.00	-40.00	-40.00
Building Code Effectiveness Grading			14.00	13.00	27.00
Construction Type			0.00	-389.00	-389.00
Electronic Policy Distribution Discount			-14.00	0.00	-14.00
Financial Responsibility Credit			-144.00	0.00	-144.00
Increase Deductibles (NHR / HUR)	1000/7120		-164.00	-83.00	-247.00
Inflation Guard (Annual Increase)	4%		0.00	0.00	Included
Key Factor	356000		1155.00	1536.00	2691.00
Limited Fungi Property Coverage per loss/aggregate	10,000/20,000		0.00	0.00	Included
Limited Fungi Liability (sublimit of Personal Liability)	50000		0.00	0.00	Included
Limited Water Damage Coverage	10000		130.00	0.00	130.00
Loss Assessment Coverage	1000		0.00	0.00	Included
PC / Construction Factors			-196.00	0.00	-196.00
Rejects 25%/50%. 10% provided Ordinance or Law			0.00	0.00	Included
Replacement Cost on Contents			138.00	34.00	172.00
Secured Community / Building Credit			-144.00	0.00	-144.00
Water Back-Up and Sump Overflow	5000		25.00	0.00	25.00
Water Damage Exclusion			-280.00	0.00	-280.00
Windstorm Loss Mitigation Credit			-46.00	-948.00	-994.00

A premium adjustment 1% is included to reflect the building code effectiveness grade for your area. Adjustments range from a 1% surcharge to a 12% credit.

DocuSign

Certificate Of Completion

Envelope Id: 565F1102D00F484E93436E3735C80FCF
Status: Completed
Subject: Tri-Party Net Metering Agreement (Michelle Spires) [ELE/230388]
Source Envelope:
Document Pages: 41
Signatures: 5
Certificate Pages: 5
Initials: 0
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-05:00) Eastern Time (US & Canada)

Envelope Originator:
Savannah Lewis
110 SE Watula Avenue
City Hall, Third Floor
Ocala, FL 34471
slewis@ocalafl.org
IP Address: 216.255.240.104

Record Tracking

Status: Original
4/3/2023 5:36:18 PM
Holder: Savannah Lewis
slewis@ocalafl.org
Location: DocuSign

Security Appliance Status: Connected
Pool: StateLocal

Storage Appliance Status: Connected
Pool: City of Ocala - Procurement & Contracting
Location: DocuSign

Signer Events	Signature	Timestamp
William E. Sexton wsexton@ocalafl.org City Attorney City of Ocala Security Level: Email, Account Authentication (None)	DocuSigned by: William E. Sexton B07DCFC4E86E429... Signature Adoption: Pre-selected Style Using IP Address: 216.255.240.104	Sent: 4/3/2023 5:45:08 PM Viewed: 4/6/2023 11:36:03 AM Signed: 4/6/2023 11:36:27 AM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
Ken Whitehead kwhitehead@ocalafl.org Assistant City Manager City of Ocala Security Level: Email, Account Authentication (None)	DocuSigned by: Ken Whitehead 5677F71E38874F4... Signature Adoption: Pre-selected Style Using IP Address: 216.255.240.104	Sent: 4/6/2023 11:36:28 AM Viewed: 4/6/2023 2:37:06 PM Signed: 4/6/2023 2:45:57 PM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
Chris Gowder chris.gowder@fmpa.com VP of IT/OT and System Ops Security Level: Email, Account Authentication (None)	DocuSigned by:  087F58EBB34B474... Signature Adoption: Uploaded Signature Image Using IP Address: 38.77.131.2	Sent: 4/6/2023 2:45:58 PM Viewed: 4/6/2023 4:19:37 PM Signed: 4/6/2023 4:19:54 PM
Electronic Record and Signature Disclosure: Accepted: 4/6/2023 4:19:37 PM ID: 724ffd64-8be5-4e97-898f-ef9a6d06a6d6		

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	4/3/2023 5:45:08 PM
Certified Delivered	Security Checked	4/6/2023 4:19:37 PM
Signing Complete	Security Checked	4/6/2023 4:19:54 PM
Completed	Security Checked	4/6/2023 4:19:54 PM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

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If you decide to receive notices and disclosures from us electronically, you may at any time change your mind and tell us that thereafter you want to receive required notices and disclosures only in paper format. How you must inform us of your decision to receive future notices and disclosure in paper format and withdraw your consent to receive notices and disclosures electronically is described below.

Consequences of changing your mind

If you elect to receive required notices and disclosures only in paper format, it will slow the speed at which we can complete certain steps in transactions with you and delivering services to you because we will need first to send the required notices or disclosures to you in paper format, and then wait until we receive back from you your acknowledgment of your receipt of such paper notices or disclosures. Further, you will no longer be able to use the DocuSign system to receive required notices and consents electronically from us or to sign electronically documents from us.

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Unless you tell us otherwise in accordance with the procedures described herein, we will provide electronically to you through the DocuSign system all required notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you during the course of our relationship with you. To reduce the chance of you inadvertently not receiving any notice or disclosure, we prefer to provide all of the required notices and disclosures to you by the same method and to the same address that you have given us. Thus, you can receive all the disclosures and notices electronically or in paper format through the paper mail delivery system. If you do not agree with this process, please let us know as described below. Please also see the paragraph immediately above that describes the consequences of your electing not to receive delivery of the notices and disclosures electronically from us.

How to contact City of Ocala - Procurement & Contracting:

You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:
To contact us by email send messages to: contracts@ocalafl.org

To advise City of Ocala - Procurement & Contracting of your new email address

To let us know of a change in your email address where we should send notices and disclosures electronically to you, you must send an email message to us at contracts@ocalafl.org and in the body of such request you must state: your previous email address, your new email address. We do not require any other information from you to change your email address.

If you created a DocuSign account, you may update it with your new email address through your account preferences.

To request paper copies from City of Ocala - Procurement & Contracting

To request delivery from us of paper copies of the notices and disclosures previously provided by us to you electronically, you must send us an email to contracts@ocalafl.org and in the body of such request you must state your email address, full name, mailing address, and telephone number. We will bill you for any fees at that time, if any.

To withdraw your consent with City of Ocala - Procurement & Contracting

To inform us that you no longer wish to receive future notices and disclosures in electronic format you may:

i. decline to sign a document from within your signing session, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;

ii. send us an email to contracts@ocalafl.org and in the body of such request you must state your email, full name, mailing address, and telephone number. We do not need any other information from you to withdraw consent.. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process..

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To confirm to us that you can access this information electronically, which will be similar to other electronic notices and disclosures that we will provide to you, please confirm that you have read this ERSD, and (i) that you are able to print on paper or electronically save this ERSD for your future reference and access; or (ii) that you are able to email this ERSD to an email address where you will be able to print on paper or save it for your future reference and access. Further, if you consent to receiving notices and disclosures exclusively in electronic format as described herein, then select the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

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- You can access and read this Electronic Record and Signature Disclosure; and
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- Until or unless you notify City of Ocala - Procurement & Contracting as described above, you consent to receive exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you by City of Ocala - Procurement & Contracting during the course of your relationship with City of Ocala - Procurement & Contracting.