

230249

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: Jacquelyn Thomas

Mailing Address: 4205 SE 17th Ln

City: Ocala State: FL Zip Code: 34471

Phone Number: (352) 502-2375 Alternate Phone Number: _____

Email Address: jackebell77@yahoo.com Fax Number: _____

Ocala Electric Utility Customer Account Number: 533245-189197

2. RGS Facility Information

Facility Location: 4205 SE 17th Ln

Ocala Electric Utility Customer Account Number: 533245-189197

RGS Manufacturer: CANADIAN SOLAR

Manufacturer's Address: 1350 Treat Blvd. Ste 500
Walnut Creek, CA 94597

Reference or Model Number: CS3N-395MS

Serial Number: _____

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Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
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FIRST REVISED SHEET NO. 19.1
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3. Facility Rating Information

Gross Power Rating: 9.40 ("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: 11/28/2022

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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Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

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Ocala, Florida
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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: Jacquelyn Thomas
(Print Name)

Date: 10/26/22

Jacquelyn Thomas
(Signature)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

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

This **Agreement** is made and entered into this 15th day of February, 2023, by and between Jacquelyn Thomas, (hereinafter called "**Customer**"), located at 4205 SE 17th Ln 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: 4205 SE 17th Ln

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's 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's 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)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

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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Electric Utility Director

Effective: October 1, 2019

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's 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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Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

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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Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

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's 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.

(Continued to Sheet No. 21.6)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

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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Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

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)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
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FIRST REVISED SHEET NO. 21.8
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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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Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

Ocala Electric Utility
Ocala, Florida
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FIRST REVISED SHEET NO. 21.9
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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: Ken Whitehead

Title: Asst. City Manager

Date: 02 / 15 / 2023

Customer:

By: Jacquelyn Thomas
(Print Name)

Jacquelyn Thomas
(Signature)

Date: 10/26/22

City of Ocala Electric Utility Account Number:

533245-189197

Approved as to form and legality:

William E. Sexton

William E. Sexton
City Attorney

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

Tri-Party Net-Metering Power Purchase Agreement

This Tri-Party Net-Metering Power Purchase Agreement (this "Agreement") is entered into this 15th day of February, 2023, 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 Jacquelyn Thomas, 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.

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Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

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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Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

4.04. FMPP 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 FMPP 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 FMPP 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 FMPP.

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)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

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)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

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)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

OCALA ELECTRIC UTILITY
OCALA, FLORIDA
(Continued from Sheet No. 20.4)

FIRST REVISED SHEET NO. 20.5
CANCELS ORIGINAL 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: Ken Whitehead

Title: Asst. City Manager

Date: 02 / 15 / 2023

Florida Municipal Power Agency

By: [Signature]

Title: VP IT/OT and Sys Ops

Date: 02 / 15 / 2023

Customer

By: Jacquelyn Thomas

Date: 10/24/22

(Print Name)

[Signature]
(Signature)

Customer's City of Ocala Electric Utility Account Number: 533245-189197

Approved as to form and legality:

William E. Sexton

William E. Sexton
City Attorney

(Continued on Sheet No. 20.6)

Issued by: Michael Poucher, P.E.
Electric Utility Director

Effective: October 1, 2019

**Tri-Party Net-Metering Power Purchase Agreement
Schedule A**

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

- a) FMPPA 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 FMPPA as soon as it becomes available, but no later than the second working day of every month. FMPPA 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. FMPPA will update the Quarterly Energy Rate every April 1, July 1, October 1 and January 1.

- b) As part of the monthly bill adjustment, FMPPA will also increase OEU's kWh billing amount by the same kWh amount as the customer-owned renewable generation purchased by FMPPA. This adjustment is necessary because excess customer generation that flows onto OEU's electric system has been purchased by FMPPA, 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 FMPPA'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.



American Integrity Insurance Company of Florida
5426 Bay Center Drive, Suite 600
Tampa, FL 33609
POLICY NUMBER: AGH0017865

HOMEOWNERS POLICY DECLARATIONS

POLICY FORM: HO3**IMPORTANT PHONE NUMBERS:**

Your Agency: (888) 254-5014

Customer Service: (866) 968-8390

Claims Reporting: (866) 277-9871

☐ New Issue ☒ Renewal ☐ Change

Policy Effective Date: 03/20/2022

Policy Expiration Date: 03/20/2023

12:01 a.m. STANDARD TIME at the residence premises

INSURED NAME AND MAIL ADDRESS:

Bryan Thomas
Jacquelyn Thomas
4205 SE 17th LN
Ocala, FL 34471-5618

YOUR AMERICAN INTEGRITY AGENCY IS:

Brightway Insurance, Inc.
3733 University Blvd W Ste 100
Jacksonville, FL 32217-2154

Residence Premises covered by this policy is:

4205 SE 17th LN, Ocala, FL 34471-5618

County: Marion

TOTAL ANNUAL POLICY PREMIUM:

\$1,887.70

The Hurricane portion of the premium is:

\$435.82

The non-Hurricane portion of the premium is:

\$1,411.77

Insurance is provided only with respect to the following coverages for which a limit of liability and/or premium is specified, subject to all conditions of this policy. Based on the information available to us, the premium shown is the lowest we offer for which you qualify.

SECTION I – PROPERTY COVERAGES

	LIMIT OF LIABILITY	PREMIUM
Coverage A – Dwelling	\$340,000	\$2,003.00
Coverage B – Other Structures	\$3,400	Included
Coverage C – Personal Property	\$170,000	Included
Coverage D – Loss of Use	\$34,000	Included
Ordinance or Law: 10% of Coverage A	\$34,000	-\$155.41

SECTION I – DEDUCTIBLES:

In case of a property loss, we only cover that part of the loss over the deductible(s) stated:

All Other Perils:	\$1,000
Windstorm or Hail (Other Than Hurricane)	\$1,000
HURRICANE:	2% of Coverage A
Sinkhole:	Not Included

SECTION II – LIABILITY COVERAGES

Coverage E - Personal Liability	\$100,000	Included
Coverage F - Medical Payments to Others	\$1,000	Included

PHOTOVOLTAIC ROOF MOUNT SYSTEM

28 MODULES-ROOF MOUNTED - 11.060 kWDC, 8.12 kWAC

4205 SE 17TH LN, OCALA, FL 34471 USA



DEL MAR, CA 92014, USA

SYSTEM SUMMARY:

- (N) 28 - CANADIAN SOLAR CS3N-395W5 (395W) MODULES
- (N) 28 - ENPHASE ENERGY IQ8PLUS-72-2-US MICRO-INVERTERS
- (N) JUNCTION BOX
- (N) 200A MAIN SERVICE PANEL WITH (N) 150A MAIN BREAKER
- (N) 60A NON-FUSED AC DISCONNECT
- (N) ENPHASE IQ COMBINER 4

MSP UPGRADE: YES

EXISTING MSP INFORMATION

- (E) 150A MAIN SERVICE PANEL WITH (E) 150A MAIN BREAKER

INTERCONNECTION METHOD : BACKFEED BREAKER

DESIGN CRITERIA:

ROOF TYPE: - STANDING SEAM METAL
ROOF FRAME: - 2"x4" TRUSSES @ 24" O.C.
SEAM SPACING @ 12" O.C.

STORY: - ONE STORY

SNOW LOAD: - 0 PSF

WIND SPEED: - 130 MPH

WIND EXPOSURE: - C

RISK CATEGORY: - II

GOVERNING CODES:

- 2020 7TH EDITION FLORIDA BUILDING CODE: BUILDING
- 2020 7TH EDITION FLORIDA BUILDING CODE: RESIDENTIAL
- 2020 7TH EDITION FLORIDA BUILDING CODE: MECHANICAL
- 2020 7TH EDITION FLORIDA BUILDING CODE: PLUMBING
- 2020 7TH EDITION FLORIDA BUILDING CODE: FUEL GAS
- 2020 7TH EDITION FLORIDA BUILDING CODE: ENERGY CONSERVATION
- 2020 7TH EDITION FLORIDA BUILDING CODE: EXISTING BUILDING
- 2020 7TH EDITION FLORIDA BUILDING CODE: ACCESSIBILITY
- 2020 7TH EDITION FLORIDA FIRE PREVENTION CODE (NFPA)
- 2017 NATIONAL ELECTRIC CODE (NEC)



This item has been electronically signed and sealed by Saddam Ahmad PE using a Digital Signature and date. Printed copies of this document must be countersigned and dated by the signatory. Signature must be verified on any electronic copies.

Digitally signed by

Saddam Ahmad

Date: 2022.07.07

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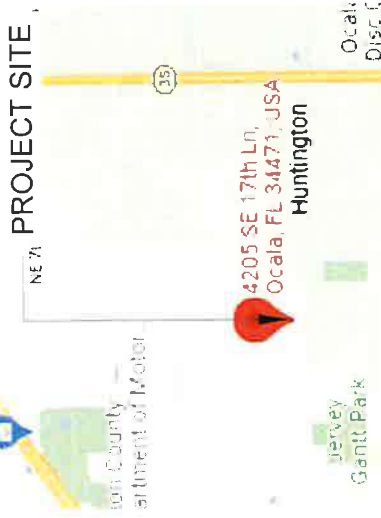
Saddam Ahmad

GENERAL NOTES:

1. APPLICABLE CODE: 2020 FLORIDA BUILDING CODE (7TH EDITION) & ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.
2. LAG SCREW DIAMETER AND EMBEDMENT LENGTHS ARE DESIGNED PER 2020 FLORIDA BUILDING CODE (7TH EDITION) REQUIREMENTS. ALL BOLT CAPACITIES ARE BASED ON SOUTHERN YELLOW PINE (SYP) RESIDENTIAL WOOD ROOF RAFTERS AS EMBEDMENT MATERIAL.
3. ALL WIND DESIGN CRITERIA AND PARAMETERS ARE FOR HIP AND GABLE RESIDENTIAL ROOFS, CONSIDERING FROM A 7° TO A MAXIMUM 23° (5/12 TO A MAXIMUM 7/12 PITCH) ROOF IN SCHEDULE. CONTRACTOR TO FIELD VERIFY THAT MEAN ROOF HEIGHT DOES NOT EXCEED 30'-0".
4. ROOF SEALANTS SHALL CONFORM TO ASTM C920 AND ASTM 6511, AND IS THE RESPONSIBILITY OF THE CONTRACTOR TO PILOT DRILL AND FILL ALL HOLES.
5. ALL DISSIMILAR MATERIALS SHALL BE SEPARATED WITH NEOPRENE WASHERS, PADS, ETC OR SIMILAR.
6. ALL ALUMINUM COMPONENTS SHALL BE ANODIZED ALUMINUM 6105-T5 UNLESS OTHERWISE NOTED.
7. ALL LAG SCREW SHALL BE ASTM A276 STAINLESS STEEL UNLESS OTHERWISE NOTED.
8. ALL SOLAR RAILING AND MODULES SHALL BE INSTALLED PER MANUFACTURER INSTRUCTIONS.
9. CONTRACTOR SHALL ENSURE ALL ROOF PENETRATIONS TO BE INSTALLED AND SEALED PER 2020 FLORIDA BUILDING CODE (7TH EDITION) OR LOCAL GOVERNING CODE

SHEET INDEX

- PV-0 COVER SHEET
- PV-1 SITE PLAN WITH ROOF PLAN
- PV-2 ROOF PLAN WITH MODULES
- PV-3 ROOF ZONING AND ATTACHMENT PLAN
- PV-3.1 BRANCH LAYOUT
- PV-4 ELECTRICAL LINE DIAGRAM
- PV-5 ELECTRICAL CALCULATION
- PV-6 WARNING LABELS
- PV-7 ADDITIONAL NOTES
- PV-8 EQUIPMENT SPEC SHEETS
- PV-8+ EQUIPMENT SPEC SHEETS



1 AERIAL PHOTO

PV-0

SCALE: NTS

2 VICINITY MAP

PV-0

SCALE: NTS

PROJECT NAME

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME

COVER SHEET

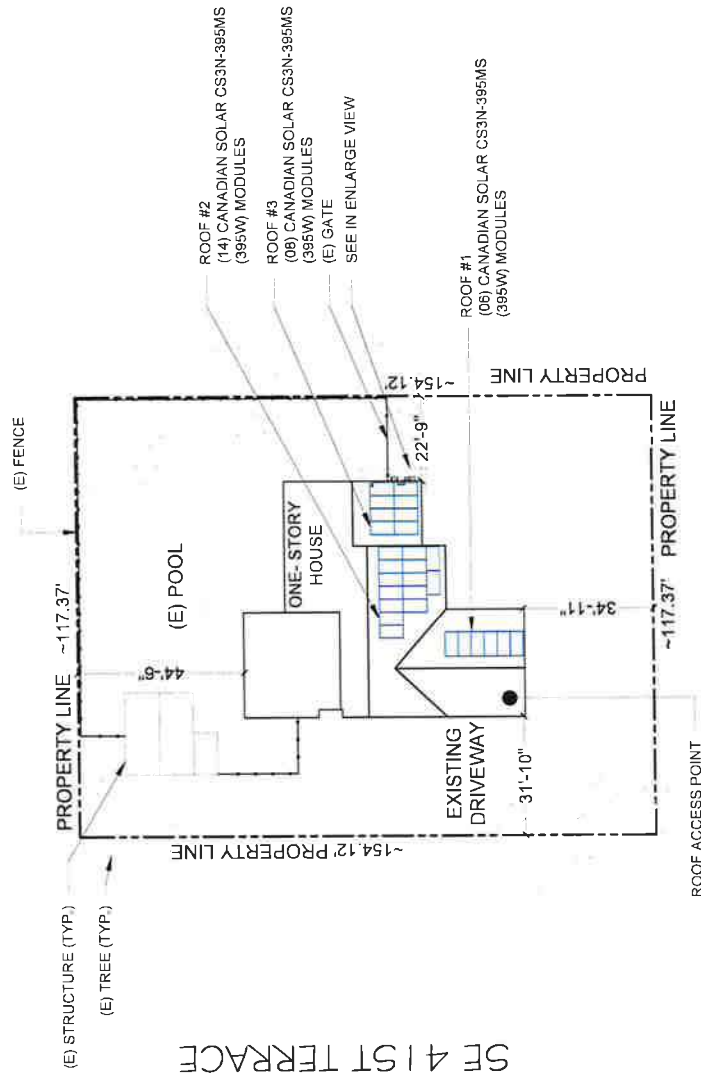
SHEET SIZE

ANSI B
11" X 17"

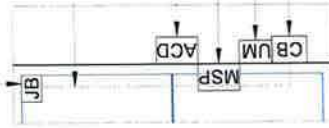
SHEET NUMBER

PV-0

● ROOF ACCESS POINT SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION IN LOCATIONS WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREE LIMBS, WIRES OR SIGNS.



(N) JUNCTION BOX



ENLARGE VIEW

(N) 3/4" OR GREATER EMT CONDUIT RUN (IN ATTC.)

(N) 60A NON-FUSED AC DISCONNECT

(N) 200A MAIN SERVICE PANEL WITH (N) 150A MAIN BREAKER

(E) UTILITY METER

(N) ENPHASE IQ COMBINER BOX 4



This item has been electronically signed and sealed. The digital signature and date are provided for verification. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by
Saddam Ahmad
Date: 2022.07.07
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Saddam
Ahmad

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

PROJECT NAME

REVISIONS	DATE	REV
DESCRIPTION		
INITIAL RELEASE	06/20/2022	UR

DEL MAR, CA 92014, USA



SHEET NAME
SITE PLAN WITH
ROOF PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-1

NOTE:
ALL ELECTRICAL EQUIPMENT, COMBINER, DISCONNECTS, MAIN SERVICE PANELS, ETC. SHALL NOT BE INSTALLED WITHIN 3' OF THE GAS METERS' SUPPLY OR DEMAND PIPING.

1 SITE PLAN WITH ROOF PLAN

SCALE: 1/32" = 1'-0"



MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 28 MODULES
MODULE TYPE = CANADIAN SOLAR CS3N-395MS (395W) MODULES
MODULE WEIGHT = 49.6 LBS / 22.5 KG.
MODULE DIMENSIONS = 76.4" X 41.3" = 21.91 SF
UNIT WEIGHT OF ARRAY = 2.26 PSF

R324.6.2 - PROVING ARRAYS TAKE LESS THAN 33% OF TOTAL ROOF AREA WHEN THE ARRAYS TAKE LESS THAN 33% WE CAN JUSTIFY AN 18" SETBACK ON BOTH SIDES OF THE RIDGE. WHEN IT TAKES MORE THAN 33% OF THE ROOF AREA WE MUST USE A 3' SETBACKS AT THE RIDGE.
TOTAL ROOF AREA:
3485.46 sqft

AREA OF ARRAYS:
76.4" X 41.3" (PANEL DIMENSIONS)
76.4" X 41.3" = 21.91 sqft (PER PANEL)
21.91 sqft X 28 panels = 613.63 sqft (TOTAL PANEL AREA)

PERCENTAGE OF TOTAL ROOF AREA:
(613.63 sqft / 3485.46 sqft)(100) = 17.60%
THE PANELS USE 17.60% OF THE TOTAL ROOF AREA

PHOTOVOLTAIC MODULES
CANADIAN SOLAR CS3N-395MS (395W)



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Saddam Ahmad
Date: 2022.07.07
11:26:04 -05'00'

PLUMBING VENTS, SKYLIGHTS AND MECHANICAL VENTS SHALL NOT BE COVERED, MOVED, RE-ROUTED OR RE-LOCATED.

1 ROOF PLAN WITH MODULES

SCALE: 3/32" = 1'-0"

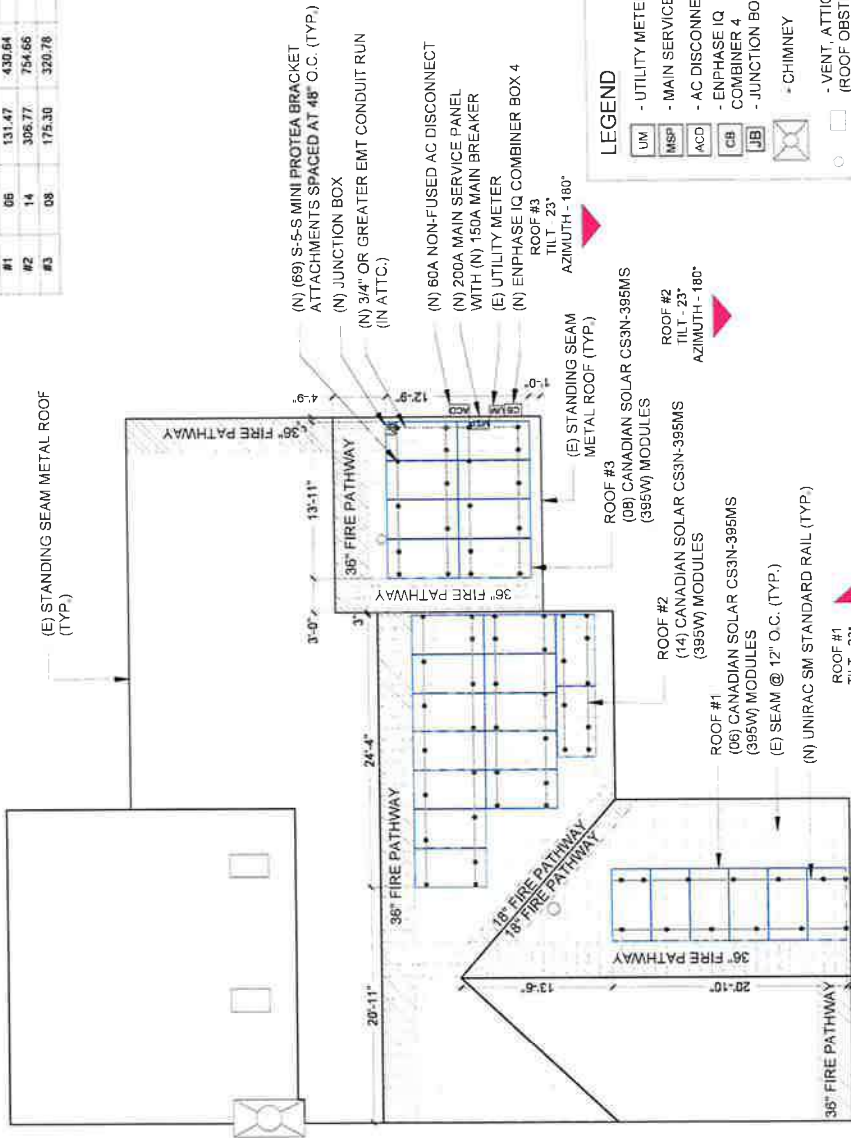


SE 17TH LN
FRONT YARD

REAR YARD

BILL OF MATERIALS		ROOF DESCRIPTION	
EQUIPMENT	QTY	DESCRIPTION	ROOF TYPE
RAIL	15	UNIRAC SM STANDARD RAIL 168" MILL	STANDING SEAM METAL ROOF
SPLICE	06	BND SPLICE BAR PRO SERIES MILL	
MID CLAMP	44	UNIVERSAL AF SERIES MID CLAMP	
END CLAMP	24	UNIVERSAL AF SERIES END CLAMP	
ATTACHMENT	06	S-S MINI PROTEA BRACKET	
GROUNDING LUG	06	GROUND LUG	

ARRAY AREA & ROOF AREA CALC'S			
ROOF	# OF MODULES	ARRAY AREA (sq ft)	ROOF AREA COVERED BY ARRAY (%)
#1	06	131.47	30.53
#2	14	306.77	40.55
#3	08	175.30	320.78
			94.85



LEGEND	
UM	- UTILITY METER
MSP	- MAIN SERVICE PANEL
ACD	- AC DISCONNECT
CB	- ENPHASE IQ COMBINER 4
JB	- JUNCTION BOX
	- CHIMNEY
	- VENT, ATTIC FAN (ROOF OBSTRUCTION)
	- ROOF ATTACHMENT
	- SEAM
	- CONDUIT
	- FIRE PATHWAY

NOTE: ACTUAL ROOF CONDITIONS AND TRUSSES (OR SEAM) LOCATIONS MAY VARY. INSTALL PER MANUFACTURER(S) INSTALLATION GUIDELINES AND ENGINEERED SPANS FOR ATTACHMENTS

ROOF DESCRIPTION

ROOF	ROOF TILT	TRUSSES SIZE	TRUSSES SPACING	SEAM
#1	23°	2"x4"	24" O.C.	12" O.C.
#2	23°	2"x4"	24" O.C.	12" O.C.
#3	23°	2"x4"	24" O.C.	12" O.C.

BILL OF MATERIALS

EQUIPMENT	QTY	DESCRIPTION
RAIL	15	UNIRAC SM STANDARD RAIL 168" MILL
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PROJECT NAME

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME

ROOF PLAN WITH MODULES

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-2

(E) STANDING SEAM METAL ROOF (TYP.)

36" FIRE PATHWAY

36" FIRE PATHWAY

36" FIRE PATHWAY

36" FIRE PATHWAY

36" FIRE PATHWAY

36" FIRE PATHWAY

36" FIRE PATHWAY

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MODULE TYPE, DIMENSIONS & WEIGHT

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MODULE WEIGHT = 48.6 LBS / 22.5 KG.
MODULE DIMENSIONS = 76.4" X 41.3" = 21.91 SF
UNIT WEIGHT OF ARRAY = 2.26 PSF

ROOF LAYOUT NOTE

ROOF SOLAR PANEL LAYOUT IS CONCEPTUAL, BUT AS PROVIDED, CONFORMS WITH THE REQUIREMENTS SET IN SHEET PV-3. CONTRACTOR MAY ADJUST PANEL LOCATION, SOLID CORNERS (4"x4") SHOWN THE PLAN IS WIND ZONE 3. SEE 2020 FLORIDA RESIDENTIAL CODE (7TH EDITION) FOR MORE DETAILS

APPLICABLE CODE: 2020 FLORIDA BUILDING CODE (7TH EDITION) & ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

LAG SCREW DIAMETER AND EMBEDMENT LENGTHS ARE DESIGNED PER 2020 FLORIDA BUILDING CODE (7TH EDITION) REQUIREMENTS. ALL BOLT CAPACITIES ARE BASED ON A SOUTHERN YELLOW PINE (SYP) RESIDENTIAL WOOD ROOF RAFTERS AS EMBEDMENT MATERIAL.

ALL WIND DESIGN CRITERIA AND PARAMETERS ARE FOR HIP AND GABLE RESIDENTIAL ROOFS, CONSIDERING FROM 47° TO A MAXIMUM 23° (7/12 TO A MAXIMUM 7/12 PITCH) ROOF IN SCHEDULE. CONTRACTOR TO FIELD VERIFY THAT MEAN ROOF HEIGHT DOES NOT EXCEED 30'-0".

ROOF SEALANTS SHALL CONFORM TO ASTM C920 AND ASTM 6611, AND IS THE RESPONSIBILITY OF THE CONTRACTOR TO PILOT DRILL AND FILL ALL HOLES.

ALL DISSIMILAR MATERIALS SHALL BE SEPARATED WITH NEOPRENE WASHERS, PADS, ETC OR SIMILAR.

ALL ALUMINUM COMPONENTS SHALL BE ANODIZED ALUMINUM 6105-T5 UNLESS OTHERWISE NOTED.

ALL LAG SCREW SHALL BE ASTM A276 STAINLESS STEEL UNLESS OTHERWISE NOTED.

ALL SOLAR RAILING AND MODULES SHALL BE INSTALLED PER MANUFACTURER INSTRUCTIONS.

CONTRACTOR SHALL ENSURE ALL ROOF PENETRATIONS TO BE INSTALLED AND SEALED PER 2020 FLORIDA BUILDING CODE (7TH EDITION) OR LOCAL GOVERNING CODE.

NOTE TO INSTALLER:
NOTE FIELD ADJUSTMENTS CAN BE MADE TO THE LAYOUT OF THE ARRAY.

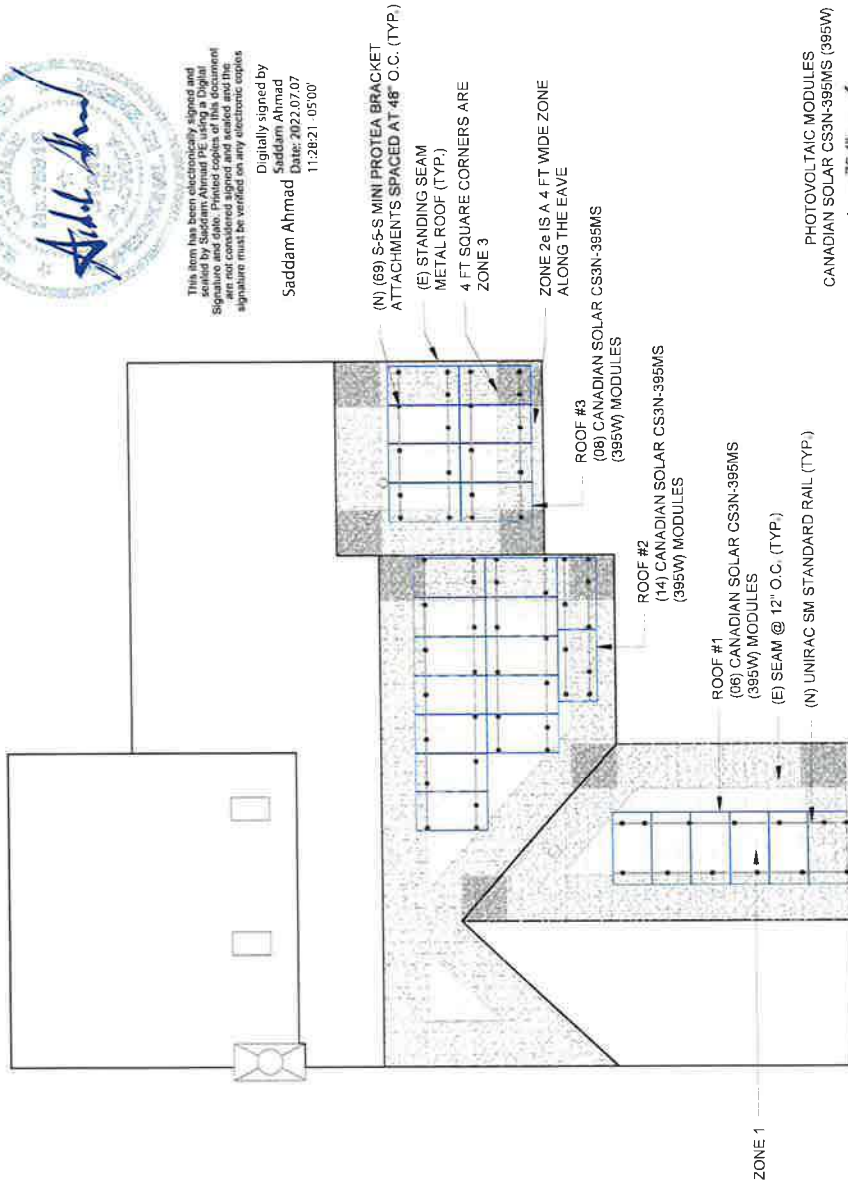
PLUMBING VENTS, SKYLIGHTS AND MECHANICAL VENTS SHALL NOT BE COVERED, MOVED, RE-ROUTED OR RE-LOCATED.

ROOF ZONES
WIND ZONE 1, 2e
WIND ZONE 2i
WIND ZONE 3



This item has been electronically signed and sealed by Saddam Ahmad, using a digital signature. The signature and seal of the document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by
Saddam Ahmad
Date: 2022.07.07
11:28:21 -05'00'



SE 41ST TERRACE

SE 17TH LN
FRONT YARD



1 ROOF ZONING AND ATTACHMENT PLAN

SCALE: 3/32" = 1'-0"

NOTE: ACTUAL ROOF CONDITIONS AND TRUSSES (OR SEAM) LOCATIONS MAY VARY. INSTALL PER MANUFACTURER(S) INSTALLATION GUIDELINES AND ENGINEERED SPANS FOR ATTACHMENTS



DEL MAR, CA 92014, USA

REVISIONS	DATE	REV
DESCRIPTION		
INITIAL RELEASE	06/29/2022	UR

PROJECT NAME

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME

ROOF ZONING AND
ATTACHMENT PLAN

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-3

NOTE: ACTUAL ROOF CONDITIONS AND TRUSSES (OR SEAM) LOCATIONS MAY VARY. INSTALL PER MANUFACTURER(S) INSTALLATION GUIDELINES AND ENGINEERED SPANS FOR ATTACHMENTS

ALUMN, "L" BRACKET
W/3/8" SS BOLT & NUT

Saddam Ahmad
Digitally signed by Saddam Ahmad
Date: 2022.07.07 11:28:38 +05'00'

Ahmad

Ahmad

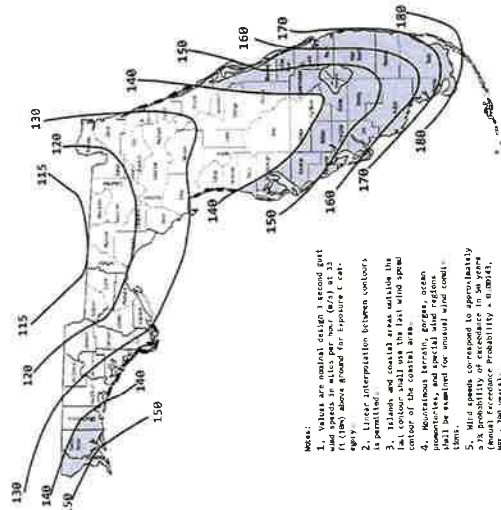
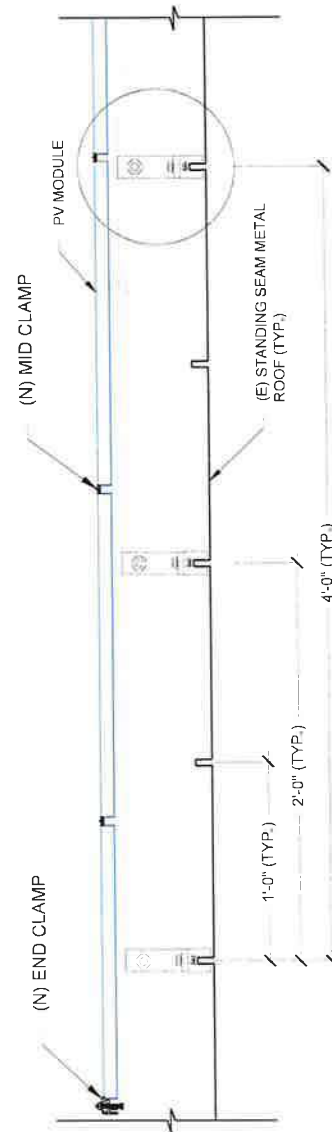
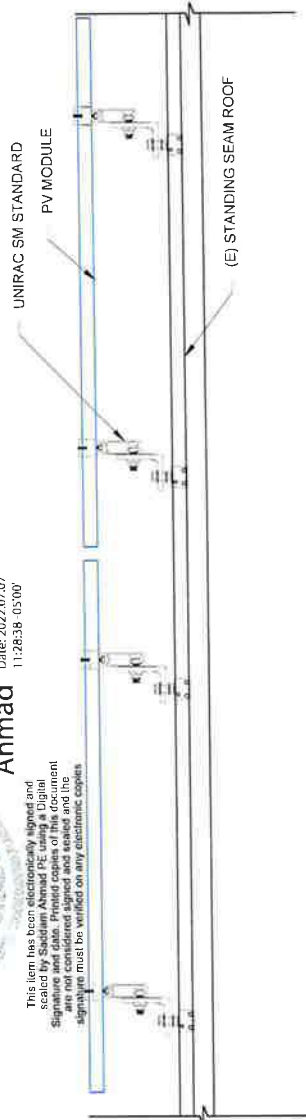
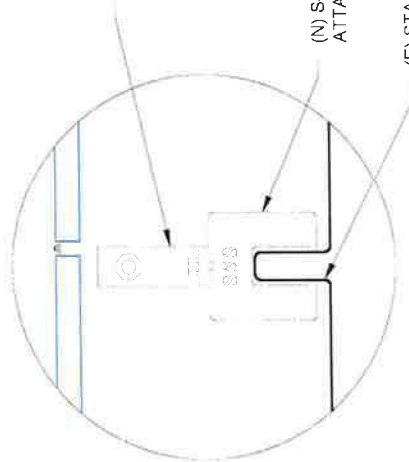
This item has been electronically signed and sealed by Saddam Ahmad PE using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

UNIRAC SM STANDARD

(N) S-5-S MINI CLAMP
ATTACHMENT

(E) STANDING SEAM
METAL ROOF (TYP.)

ENLARGE DETAIL



Notes:

1. Values are minimal design 1 second gust wind speeds, U_{1s} , in m/s, for a 10% probability of exceedance in 1 year, based on ground for exposure category 1.
2. Linear interpolation between contours is permitted.
3. Islands and coastal areas outside the fair contour shall use the fair wind speed factor of the coastal area.
4. Rectangular islands, peninsulas, etc., shall be treated as special wind regions. They shall be studied for special wind conditions.
5. Wind speeds correspond to approximately a 1% probability of exceedance in 50 years (i.e. 100-year return period). A 1% annual probability of exceedance is a 10% annual probability of exceedance in 10 years.

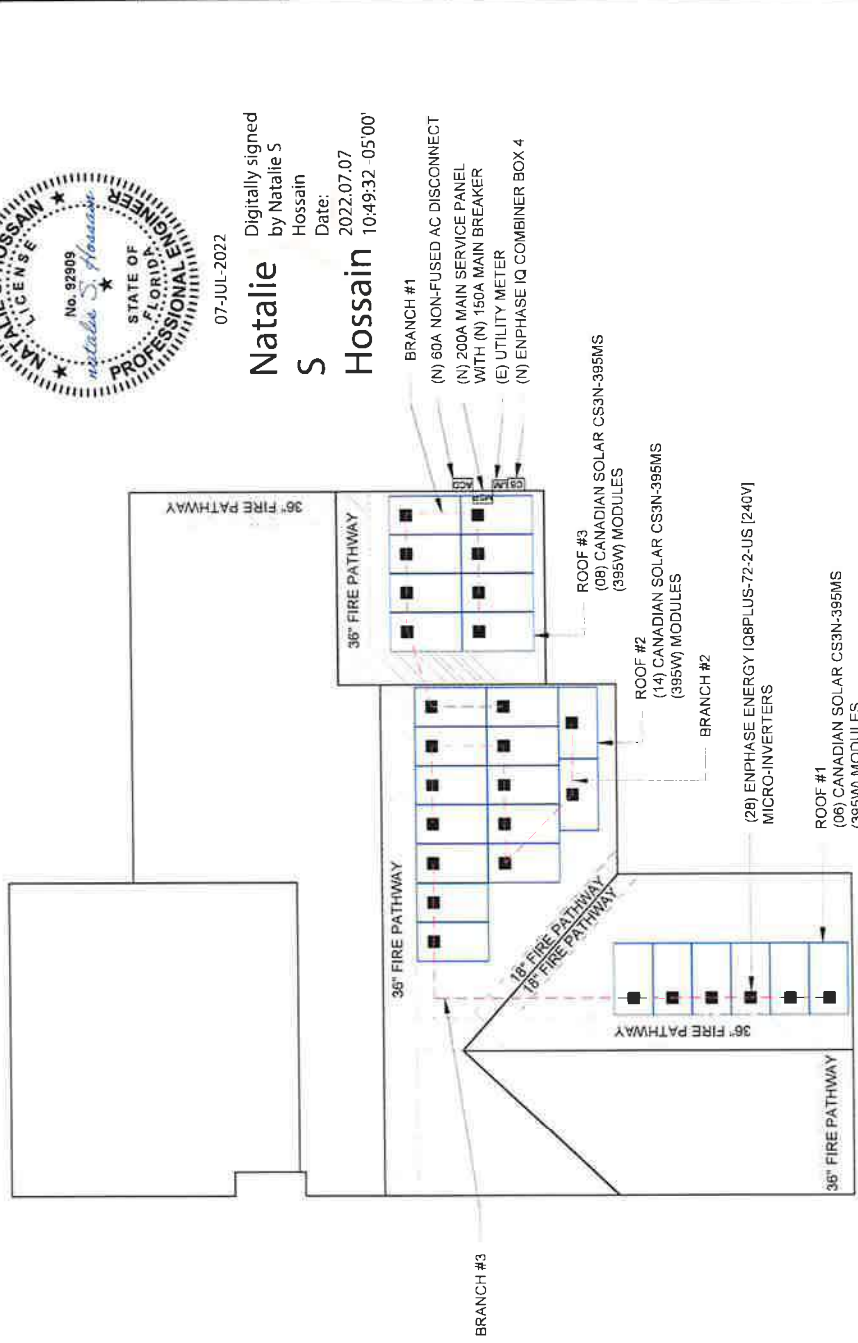
Figure 1609A Wind-Borne Debris Region, Category II and III Buildings and Structures except health care facilities

2 ATTACHMENT DETAIL (ENLARGED VIEW) SCALE: NTS

(28) CANADIAN SOLAR CS3N-395MS (395W) MODULES
(28) ENPHASE ENERGY IQ8PLUS-72-2-US MICRO-INVERTERS
(02) BRANCHES OF 09 MODULES &
(01) BRANCH OF 10 MODULES CONNECTED IN PARALLEL PER BRANCH

REAR YARD

SE 41ST TERRACE



36" FIRE PATHWAY

3'-0"



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by Natalie S
Hossain
Date: 2022.07.07
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- BRANCH #1
- (N) 60A NON-FUSED AC DISCONNECT
 - (N) 200A MAIN SERVICE PANEL WITH (N) 150A MAIN BREAKER
 - (E) UTILITY METER
 - (N) ENPHASE IQ COMBINER BOX 4

- ROOF #3
(08) CANADIAN SOLAR CS3N-395MS (395W) MODULES
- ROOF #2
(14) CANADIAN SOLAR CS3N-395MS (395W) MODULES
- BRANCH #2
- (28) ENPHASE ENERGY IQ8PLUS-72-2-US [240V] MICRO-INVERTERS
- ROOF #1
(06) CANADIAN SOLAR CS3N-395MS (395W) MODULES

PHOTOVOLTAIC MODULES
CANADIAN SOLAR CS3N-395MS (395W)



SE 17TH LN
FRONT YARD



1 BRANCH LAYOUT
SCALE: #####



DEL MAR, CA 92014, USA

REVISIONS			
DESCRIPTION	DATE	REV	UR
INITIAL RELEASE	06/29/2022	UR	

PROJECT NAME
JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME
BRANCH LAYOUT

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4

(28) CANADIAN SOLAR CS3N-395WS (395W) MODULES
(28) ENPHASE ENERGY IQ8PLUS-72-2-US MICRO-INVERTERS
(02) BRANCHES OF 09 MODULES &
(01) BRANCH OF 10 MODULES CONNECTED IN PARALLEL PER BRANCH

SYSTEM SIZE:- 28 x 395W = 11.06 kWDC
SYSTEM SIZE:- 28 x 290W = 8.1 kWAC

10 MICRO-INVERTERS IN BRANCH CIRCUIT #1

09 MICRO-INVERTERS IN BRANCH CIRCUIT #2

09 MICRO-INVERTERS IN BRANCH CIRCUIT #3

INTERCONNECTION

120% RULE - NEC 705.12(B)(2)(3)(b)

UTILITY FEED + SOLAR BACKFEED

150A + 50A = 200A

BUSS RATING x 120%

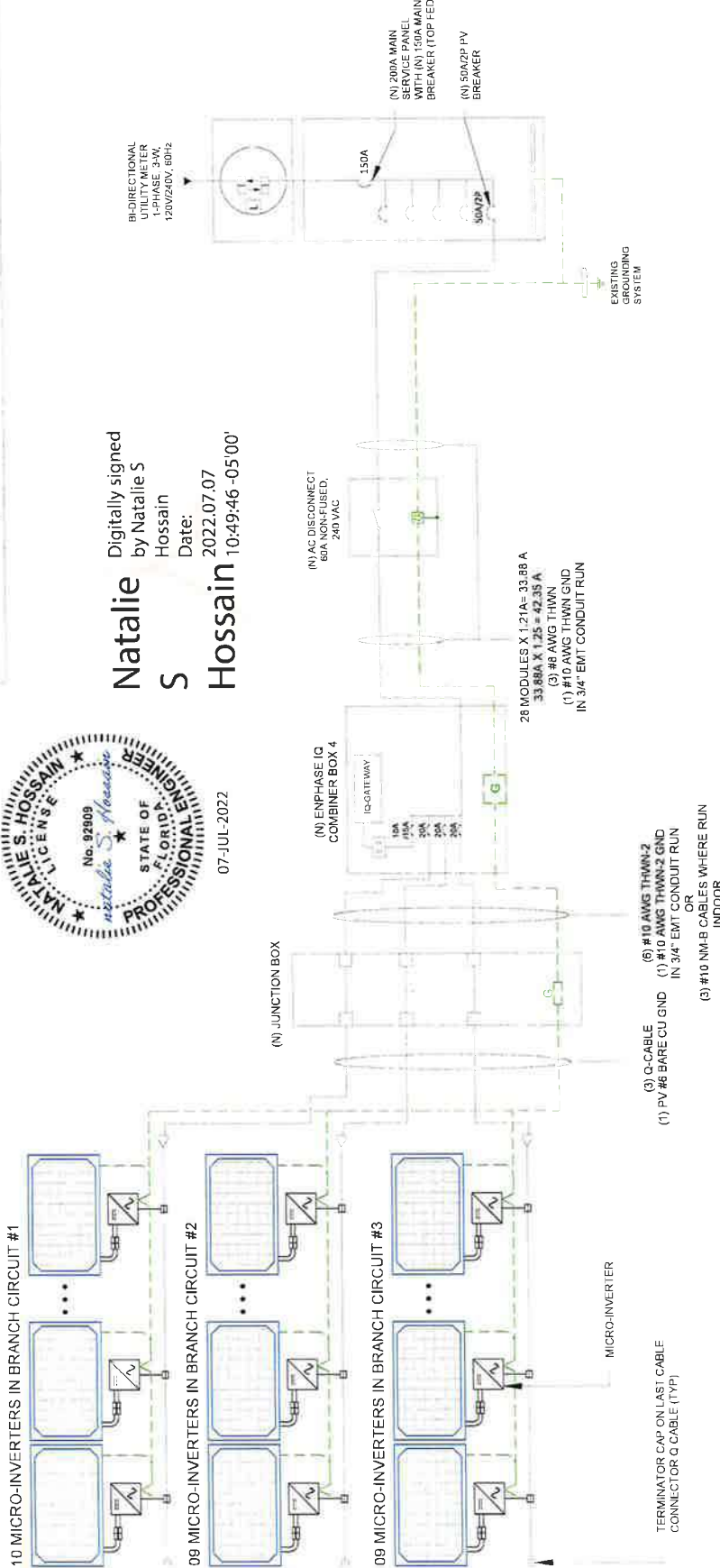
200A x 120% = 240A



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Hossain
Date: 2022.07.07
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BILL OF MATERIALS

EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	28	CANADIAN SOLAR CS3N-395WS (395W) MODULES
INVERTER	28	ENPHASE ENERGY IQ8PLUS-72-2-US MICRO-INVERTERS
JUNCTION BOX	1	600V, 55A MAX, 4 INPUTS, MOUNTED ON ROOF FOR WIRE & CONDUIT TRANSITION
COMBINER BOX	1	ENPHASE IQ COMBINER BOX 4
AC DISCONNECT	1	240VAC, 60A NON-FUSED, NEMA 3R, UL LISTED



SERVICE INFO.
UTILITY PROVIDER: CITY OF OCALA ELECTRIC
MAIN SERVICE VOLTAGE: 240V
MAIN PANEL BRAND: GOULD
MAIN SERVICE PANEL: (N) 200A
MAIN CIRCUIT BREAKER RATING: (N) 150A
MAIN SERVICE LOCATION: EAST
SERVICE FEED SOURCE: OVERHEAD

1 ELECTRICAL LINE DIAGRAM
SCALE: NTS



DEL MAR, CA 92014, USA

REVISIONS	DATE	REV
DESCRIPTION		
INITIAL RELEASE	06/26/2022	UN

PROJECT NAME

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME

ELECTRICAL LINE
DIAGRAM

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-5

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

LABEL LOCATION:
AC & DC DISCONNECT AND SUB PANEL
(PER CODE: NEC 690.13(B))

WARNING DUAL POWER SOURCE
SECONDARY SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION:
MAIN SERVICE PANEL & NET METER
(PER CODE: NEC 705.12(D)(3), NEC
705.12(B)(3-4) & NEC 690.59)

PHOTOVOLTAIC

AC DISCONNECT

LABEL LOCATION:
AC DISCONNECT
NEC 690.13(B)

**RAPID SHUTDOWN SWITCH
FOR SOLAR PV SYSTEM**

LABEL LOCATION:
RAPID SHUTDOWN
(PER CODE: NEC 690.56(C)(3))

WARNING
IN CASE OF EMERGENCY, CONTACT:
FLORIDA ECO ELECTRIC LLC ▲
PH. NO.: 321-888-3388

LABEL LOCATION:
MAIN DISCONNECT
(PER CODE: NFPA 11.12.2.1.5)

PHOTOVOLTAIC SYSTEM AC DISCONNECT
RATED AC OPERATING CURRENT 33.88 AMPS
AC NOMINAL OPERATING VOLTAGE 240 VOLTS

LABEL LOCATION:
AC DISCONNECT & INVERTER
(PER CODE: NEC 690.54)

WARNING
POWER SOURCE OUTPUT
CONNECTION
DO NOT RELOCATE THIS
OVERCURRENT DEVICE

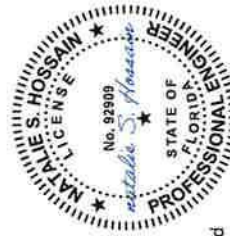
LABEL LOCATION:
SERVICE PANEL IF SUM OF BREAKERS EXCEEDS
PANEL RATING
(PER CODE: NEC 705.12 (B)(2)(3)(b))

**WARNING: PHOTOVOLTAIC
POWER SOURCE**

LABEL LOCATION:
EMT / CONDUIT RACEWAYS
(PER CODE: NEC 690.31(G)(3))

**MAIN PHOTOVOLTAIC
SYSTEM DISCONNECT**

LABEL LOCATION:
MAIN SERVICE DISCONNECT / UTILITY METER
(PER CODE: NEC 690.13(B))



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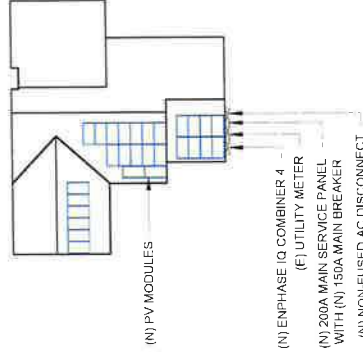
**SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN**



LABEL LOCATION
AC DISCONNECT, DC DISCONNECT, POINT OF
INTERCONNECTION
(PER CODE: 695.11.3.1(1) & 690.56(C)(1)(a))

CAUTION !

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE
FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN
AT: MAIN SERVICE PANEL & UTILITY METER, AC
DISCONNECT & ENPHASE IQ COMBINER 4



4205 SE 17TH LN



DEL MAR, CA 92014, USA

REVISIONS		
DESCRIPTION	DATE	REV
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PROJECT NAME

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME

WARNING LABELS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-7

1. EACH MODULE TO BE GROUNDED USING THE SUPPLIED CONNECTION POINT PER MANUFACTURER'S REQUIREMENTS. ALL SOLAR MODULES, EQUIPMENT, AND METALLIC COMPONENTS ARE TO BE BONDED. IF THE EXISTING GROUNDING ELECTRODE SYSTEM CAN NOT BE VERIFIED OR IS ONLY METALLIC WATER PIPING, IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE.
2. ALL PLAQUES AND SIGNAGE REQUIRED BY THE LATEST EDITION OF NATIONAL ELECTRICAL CODE. LABEL SHALL BE METALLIC OR PLASTIC, ENGRAVED OR MACHINE PRINTED IN A CONTRASTING COLOR TO THE PLAQUE. PLAQUE SHALL BE UV RESISTANT IF EXPOSED TO SUNLIGHT.
3. DC CONDUCTORS SHALL BE RUN IN EMT AND SHALL BE LABELED, "CAUTION DC CIRCUIT" OR EQUIV. EVERY 5 FT.
4. EXPOSED NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH 250.134 OR 250.136(A).
5. CONFIRM LINE SIDE VOLTAGE AT ELECTRIC UTILITY SERVICE PRIOR TO CONNECTING INVERTER. VERIFY SERVICE VOLTAGE IS WITHIN INVERTER VOLTAGE OPERATIONAL RANGE.
6. OUTDOOR EQUIPMENT SHALL BE NEMA-3R RATED OR BETTER.
7. ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT EXPANSION JOINTS AND ANCHOR CONDUIT RUNS AS REQUIRED PER NEC.
8. ALL WIRING MUST BE PROPERLY SUPPORTED BY DEVICES OR MECHANICAL MEANS DESIGNED AND LISTED FOR SUCH USE, AND FOR ROOF-MOUNTED SYSTEMS, WIRING MUST BE PERMANENTLY AND COMPLETELY HELP OFF OF THE ROOF SURFACE. NEC 110.2 - 110.4 / 300.4



07-JUL-2022

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REVISIONS			
DESCRIPTION	DATE	REV	UR
INITIAL RELEASE	06/06/2022		

PROJECT NAME

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME

ADDITIONAL NOTES

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-8



HiKu Mono PERC (All-Black)

380 W ~ 400 W
CS3N-380 | 385 | 390 | 395 | 400MS

MORE POWER

Module power up to 400 W
Module efficiency up to 17.7%

Lower LCOE & BOS cost

Comprehensive LID / Light Induced Degradation technology, up to 50% lower degradation

Better shading tolerance

MORE RELIABLE

Minimizes micro crack impacts

Heavy snow load up to 5400 Pa,
enhanced wind load up to 2400 Pa*

12 Years

Enhanced Product Warranty on Materials and Workmanship*

25 Years

Linear Power Performance Warranty*

1st year power degradation no more than 2%
Subsequent annual power degradation no more than 0.55%

*As per applicable Canadian Solar Limited Warranty Statement.

MANAGEMENT SYSTEM CERTIFICATES*
ISO 9001: 2015 / Quality management system
ISO 14001: 2015 / Environmental management system
ISO 45001: 2018 / International standards for occupational health & safety

PRODUCT CERTIFICATES*

IEC 61215 / IEC 61730 / CE
UL 61010 / UL 61730 / UL 62116
UN 38.3 / UN 38.3 / UN 38.3

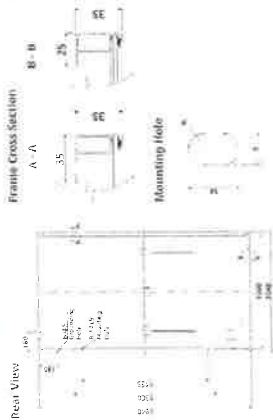


*For detailed information, please refer to the product manual.
Canadian Solar (USA) Inc. is committed to providing high quality solar products, solar system solutions and services to customers around the world. Canadian Solar was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey, and is a leading PV project developer and manufacturer of solar modules, with over 52 GW deployed around the world since 2001.

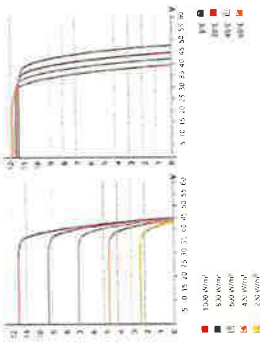
*For detailed information, please refer to the product manual.

Canadian Solar (USA) Inc.
3000 Oak Road, Suite 400, Walnut Creek, CA 94597, USA, www.cs-solar.com/na, service.ca@cs-solar.com

ENGINEERING DRAWING (mm)



CS3N-400MS / I-V CURVES



MECHANICAL DATA

Specification	Data
Cell Type	Mono-crystalline
Cell Arrangement	132 (2 X 11 X 6)
Dimensions	1940 X 1048 X 35 mm (76.4 X 41.3 X 1.38 in)
Weight	22.5 kg (50.6 lbs)
Front Cover	3.2 mm tempered glass
Frame	Anodized aluminum alloy
J-Box	4 mm ² (IEC), 12 AWG (UL)
Cable Length (including Connector)	Port: 400 mm (15.7 in) / 280 mm (11.0 in) / 120 mm (4.7 in) / 150 mm (5.9 in)
Connector	T4 Series or MC4
Per Container (40' HQ)	720 pieces
Per Pallet	30 pieces

*For detailed information, please contact your local Canadian Solar sales and technical representatives.

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.35 % / °C
Temperature Coefficient (Voc)	-0.27 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	42 ± 3 °C

PARTNER SECTION



*The specifications and features listed in this datasheet may deviate slightly from our actual products due to ongoing innovation and product development. Our Solar Co. Ltd. reserves the right to make necessary adjustments to the information described herein at any time without notice. Please be kindly advised that the modules should be handled and installed by qualified people who have professional skills, and please carefully read the safety and installation instructions before using the any module.

Canadian Solar (USA) Inc., May 2021 | All rights reserved | Module Product Datasheet v2.2 F90 J1_NA

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME
SPEC SHEETS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-9



DEL MAR, CA 92014, USA

REVISIONS	DESCRIPTION	DATE	REV
INITIAL RELEASE		06/29/2022	UR



Our newest iC8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 35nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



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Easy to Install

- ### High productivity and reliability

- Microgrid-forming

- Complies with the latest advanced grid support
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements

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[illegible]

(1) The i2011-2018 variant will be operating in grid-tied mode only at 2018V AC. (2) No selected DC/AC ratio. See the compatibility calculator at <https://rla.emphase.com/module-compat-failty>. (3) Maximum continuous input DC current is 10.0A. Nominal voltages should be extended beyond nominal regardless of the utility. (4) Total max. var. Below is local requirements to define the number of microinverters per branch in your area.

108SE-DS-0001-01-EN-US-2021-10-10

SHEET NUMBER
PV-10

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 29660004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME
SPEC SHEETS

ANSI B SHEET SIZE

SHEET NUMBER
PV-10

PROJECT NAME

REVISIONS	
DESCRIPTION	DATE
INITIAL RELEASE	06/29/2023



DEL MAR, CA 92014, USA

REVISIONS			
DESCRIPTION	DATE	REV	UR
INITIAL RELEASE	09/26/2023	UR	

PROJECT NAME

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME

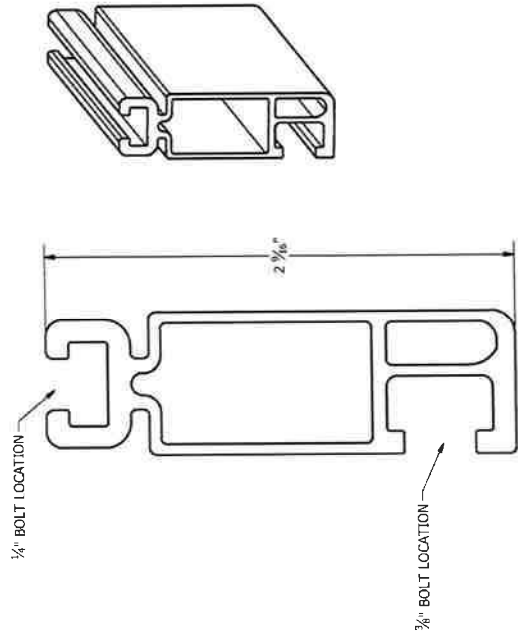
SPEC SHEETS

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-12



PART # TABLE		
P/N	DESCRIPTION	LENGTH
320132M	SM RAIL 132" MILL	132"
310132C	SM RAIL 132" CLR	132"
320168M	SM RAIL 168" MILL	168"
310168C	SM RAIL 168" CLR	168"
320168D	SM RAIL 168" DRK	168"
320208M	SM RAIL 208" MILL	208"
310208C	SM RAIL 208" CLR	208"
320240M	SM RAIL 240" MILL	240"
310240C	SM RAIL 240" CLR	240"
310240D	SM RAIL 240" DRK	240"

SM-P01

SHEET

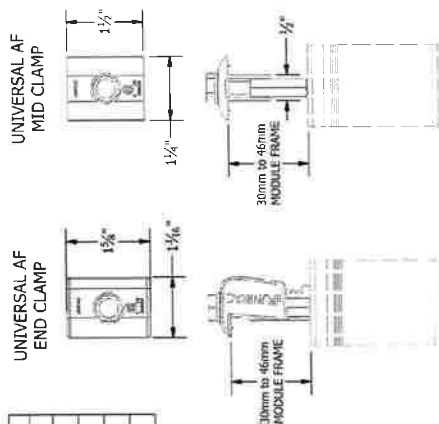
DRAWING NOT TO SCALE
ALL DIMENSIONS ARE
NOMINAL

PRODUCT PROTECTED BY
ONE OR MORE US PATENTS
LEGAL NOTICE

PRODUCT LINE: SOLARMOUNT
DRAWING TYPE: PART DETAIL
DESCRIPTION: STANDARD RAIL
REVISION DATE: 9/11/2017



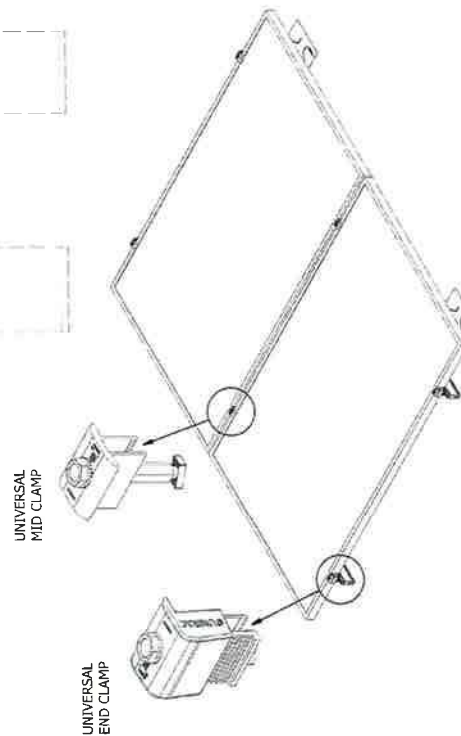
1411 BROADWAY BLVD. NE
ALBUQUERQUE, NM 87102 USA
PHONE: 505.242.6411
WWW.UNIRAC.COM



UNIVERSAL AF
MID CLAMP

UNIVERSAL AF
END CLAMP

PART # TABLE	
P/N	DESCRIPTION
302045M	UNIVERSAL AF MID CLAMP - MILL
302045D	UNIVERSAL AF MID CLAMP - DRK
302050M	UNIVERSAL AF END CLAMP - MILL
302050D	UNIVERSAL AF END CLAMP - DRK



UNIVERSAL
MID CLAMP

UNIVERSAL
END CLAMP

SM-A01B

SHEET

DRAWING NOT TO SCALE
ALL DIMENSIONS ARE
NOMINAL

PRODUCT PROTECTED BY
ONE OR MORE US PATENTS
LEGAL NOTICE

PRODUCT LINE: SOLARMOUNT
DRAWING TYPE: PART & ASSEMBLY
DESCRIPTION: UNIVERSAL AF
CLAMPS
REVISION DATE: 9/28/2020



1411 BROADWAY BLVD. NE
ALBUQUERQUE, NM 87102 USA
PHONE: 505.242.6411
WWW.UNIRAC.COM

UNIVERSAL AF

EXPECT MORE

FROM A UNIVERSAL FASTENER.

Ditch the Spacers

The Universal Aesthetic Fastener (Universal AF) accommodates every module between 30 and 46 mm without extra spacers, while providing the fast intuitive install experience that installers require, and a refined aesthetic home owners will love.

More than just Universal

- Self standing, twist-and-lock install
- Guaranteed T-bolt engagement
- 1-tool installation
- Integrated bonding mid and end clamps

Sleek Aesthetics

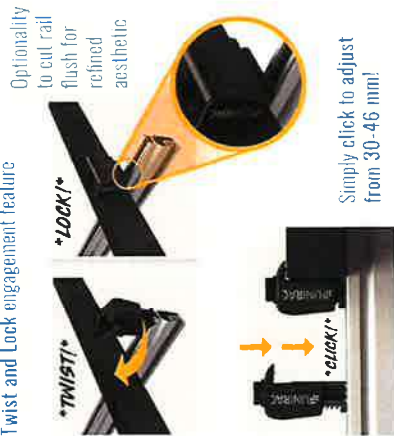
- Low profile hardware
- 1/2" module gap, end caps
- Optionality to cut rail flush
- Rail endcaps available for refined finish.

Product Specifications

PART #	PRODUCT DESCRIPTION	LIST PRICE	PACK SIZE
#320454	UNIVERSAL AF SERIES MID CLAMP W/LL	\$2.29	20
#320455	UNIVERSAL AF SERIES MID CLAMP D/CK	\$2.52	20
#320661B	UNIVERSAL AF SERIES END CLAMP W/LL	\$2.69	20
#320590	UNIVERSAL AF SERIES END CLAMP D/CK	\$2.90	20

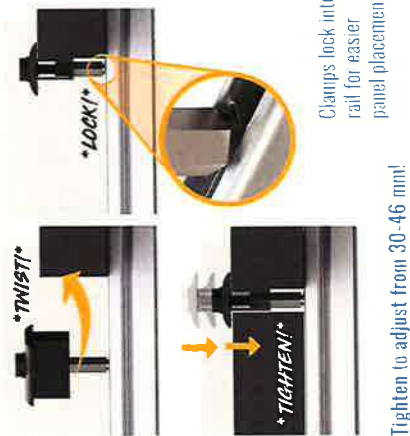
END-CLAMP

Twist and Lock engagement feature



MID-CLAMP

Twist and Lock engagement feature



DEL MAR, CA 92014, USA

REVISIONS			
DESCRIPTION	DATE	REV	UR
INITIAL RELEASE	06/09/2022		

PROJECT NAME

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME

SPEC SHEETS

SHEET SIZE

ANSI B

11" X 17"

SHEET NUMBER

PV-15



CONTACT: 505-242-6411 | SALES@UNIRAC.COM | WWW.UNIRAC.COM

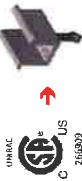
BETTER SOLAR STARTS HERE

SYSTEM LEVEL FINE CLASSIFICATION

[illegible]

A-5. System Level (in Ratings are listed below)					
Run Type	Module Type	System Level the Rating	Bus Direction	Module Orientation	Integration Requirement
Standard Rail	Type 1, Type 2, Type 3 & Type 10	Class A, Class B & Class C	East-West North-South	Landward OR Portward Landward OR Portward	None Required None Required
Light Rail	Type 1 & Type 2	Class A, Class B & Class C	East-West North-South	Landward OR Portward Landward OR Portward	None Required None Required

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UL723 CERTIFICATION MARKING LABEL

UL 2703 CERTIFICATION MARKING LABEL:
UL 2703 CERTIFICATION is listed to UL 2703. Certification marking is embossed on all end clamps as shown. Labels with additional information may be provided. After the ratcheting system is fully installed, a single label should be applied to the 5000lb HOUTT rail at the edge of the array. Before applying the label, the corners of the label that do not pertain to the system being installed must be removed so that only the ratcheted system type is showing.

NOTE: The sticker label should be placed such that it is visible, but not outward facing.



APPENDIX C UNIVERSAL AE MUDCLAMP INSTALLATION GUIDE PAGE 8

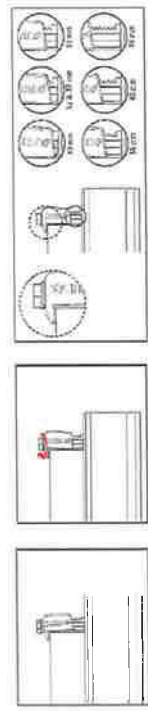
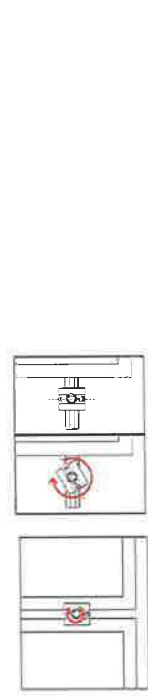
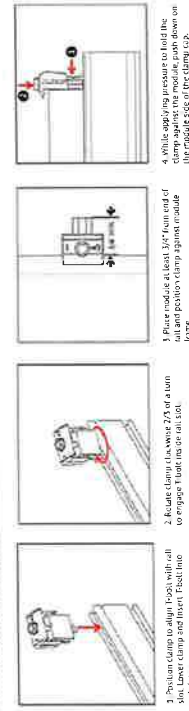
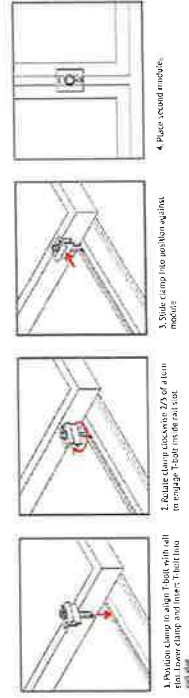
APPENDIX C

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME
SPEC SHEETS

ANSI B
4" X 17"

SHEET NUMBER
PV-16



NOTE: If excessive force is applied in step 2, the cap may over-tighten causing it to be mis-aligned with the module frame. If this occurs, keep rotating the cap clockwise until it returns to the original position.

5. Tighten bolt and torque to 15 ft-lbs

2. Center clamp is engaged in correct module notch position and that the top of the cap is sitting level with the module frame.

6 Tighten bolt and torque to 15 ft-lbs.

5. When the cap contacts the module frame, release and it will re-engage to



DEL MAR, CA 92014, USA



January 20, 2021

Unirac
1411 Broadway Blvd. NE
Albuquerque, NM 87102

Attn.: Unirac - Engineering Department

Re: Engineering Certification for the Unirac U-Builder 2.0 SOLARMOUNT Flush Rail

PZSE, Inc. - Structural Engineers has reviewed the Unirac SOLARMOUNT rails, proprietary mounting system constructed from modular parts which is intended for rooftop installation of solar photovoltaic (PV) panels; and has reviewed the U-builder Online tool. This U-Builder software includes analysis for the SOLARMOUNT LIGHT rail, SOLARMOUNT STANDARD rail, and SOLARMOUNT HEAVY DUTY rail with Standard and Pro Series hardware. All information, data and analysis contained within are based on, and comply with the following codes and typical specifications:

1. 2020 Florida Building Code, by Florida Building Commission
2. Minimum Design Loads for Buildings and other Structures, ASCE/SEI 7-16
3. 2018 International Building Code, by International Code Council, Inc. w/ Provisions from SEAOC PV-2 2017.
4. 2018 International Residential Code, by International Code Council, Inc. w/ Provisions from SEAOC PV-2 2017.
5. AC408, Acceptance Criteria for Modular Framing Systems Used to Support Photovoltaic (PV) Panels, November 1, 2012 by ICC-ES.
6. 2015 Aluminum Design Manual, by The Aluminum Association, 2015

Following are typical specifications to meet the above code requirements:

Design Criteria:

Ground Snow Load = 0 - 100 (psf)
Basic Wind Speed = 85 - 130 (mph)
Roof Mean Height = 0 - 60 (ft)
Roof Pitch = 0 - 45 (degrees)
Exposure Category = B, C & D

Per U-Builder Engineering report.

Attachment Spacing:

Cantrilever: Maximum cantilever length is $L/3$, where "L" is the span noted in the U-Builder online tool.

Clearance: 2" to 10" clear from top of roof to top of PV panel.

Tolerances: 1.0" tolerance for any specified dimension in this report is allowed for installation.

Installation Orientation: See SOLARMOUNT Rail Flush Installation Guide.
Landscape - PV Panel long dimension is parallel to ridge/leave line of roof and the PV panel is mounted on the long side.
Portrait - PV Panel short dimension is parallel to ridge/leave line of roof and the PV panel is mounted on the short side.

Components and Cladding Roof Zones:

The Components and Cladding Roof Zones shall be determined based on ASCE 7-16 Component and Cladding design.

Notes:

1) U-Builder Online tool analysis is only for Unirac SM SOLARMOUNT Rail Flush systems only and do not include roof capacity check.

2) Risk Category II per ASCE 7-16.

3) Topographic factor, K_t is 1.0.

4) Array Edge Factor $F_e = 1.5$

5) Average parapet height is 0.0 ft.

6) Wind speeds are LRFD values.

7) Attachment spacing(s) apply to a seismic design category E or less.

Design Responsibility:

The U-Builder design software is intended to be used under the responsible charge of a registered design professional where required by the authority having jurisdiction. In all cases, this U-builder software should be used under the direction of a design professional with sufficient structural engineering knowledge and experience to be able to:

- Evaluate whether the U-Builder Software is applicable to the project, and
- Understand and determine the appropriate values for all input parameters of the U-Builder software.

This letter certifies that the Unirac SM SOLARMOUNT Rails Flush, when installed according to the U-Builder engineering report and the manufacture specifications, is in compliance with the above codes and loading criteria.

This certification excludes evaluation of the following components:

- 1) The structure to support the loads imposed on the building by the array, including, but not limited to: strength and deflection of structural framing members, fastening and/or strength of roofing materials, and/or the effects of snow accumulation on the structure.
- 2) The attachment of the SM SOLARMOUNT Rails to the existing structure.
- 3) The capacity of the solar module frame to resist the loads.

This requires additional knowledge of the building and is outside the scope of the certification of this racking system.

If you have any questions on the above, do not hesitate to call.

Prepared by:
PZSE, Inc. - Structural Engineers
Roseville, CA

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY PAUL K. ZAGHER, PE ON 01/20/2021 USING A SHA-1 AUTHENTICATION CODE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SHA-1 AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.



DIGITAL SIGNATURE

01/20/2021

1478 Stone Point Drive, Suite 190, Roseville, CA 95661
T 916.961.3960 F 916.961.3965 W www.pzse.com
Experience | Integrity | Empowerment

PROJECT NAME

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
ELECTRIC
AHJ: CITY OF OCALA

SHEET NAME

SPEC SHEETS

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-17



Certificate of Compliance

Certificate: 70131735 Master Contract: 266909 Date Issued: 2022-02-28

Project: 80111014
Unirac
1411 Broadway NE
Albuquerque, New Mexico, 87102
United States

Attention: Klaus Nicolaeidis

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.



Issued by: Michael Hoffmann
Michael Hoffmann

PRODUCTS

CLASS - C531302 - POWER SUPPLIES - PHOTOVOLTAICS-PV Racking and clamping systems
CLASS - C531382 - POWER SUPPLIES - PHOTOVOLTAICS-PV Racking and clamping systems
Certified to US Standards

Models:	SM	-	SOLARMOUNT Flush-to-Roof is an extruded aluminum rail PV racking system that is installed parallel to the roof in landscape or portrait orientations.
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Certificate: 70131735 Master Contract: 266909 Date Issued: 2022-02-28

Project: 80111014

ULA	-	Unirac Large Array is a ground mount system using the SolarMount (SM) platform for the bonding and grounding of PV modules.
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Solarmount

The system listed is designed to provide bonding/grounding, and mechanical stability for photovoltaic modules. The system is secured to the roof with the L-Foot components through the roofing material to building structure. Modules are secured to the racking system with stainless steel or aluminum mid clamps and Aluminum end clamps. The modules are bonded to the racking system with the stainless-steel bonding mid clamps with piercing points. The system is grounded with 10 AWG copper wire to bonding/grounding lugs. Fire ratings of Class A with Type 1, 2, 3 (with metallic frame), 10 (with metallic frame), 19, 22, 25, 29, or 30 for steep slope. Tested at 5" interstitial gap which allows installation at any stand-off height.

The grounding of the system is intended to comply with the latest edition of the National Electrical Code, to include NEC 250 & 690. Local codes compliance is required, in addition to national codes. All grounding/bonding connections are to be torqued in accordance with the Installation Manual and the settings used during the certification testing for the current edition of the project report.

The system may employ optimizers/micro-inverters and used for grounding when installed per installation instructions.

UL 2703 Mechanical Load ratings:

Downward Design Load (lb/ft²)	113.5
Upward Design Load (lb/ft²)	50.7
Down-Slope Load (lb/ft²)	16.13

Test Loads:

Downward Load (lb/ft²)	170.20
Upward Load (lb/ft²)	76.07
Down-Slope Load (lb/ft²)	24.2

Unirac Large Array

ULA is a ground mount system using the SolarMount (SM) platform for the bonding and grounding of PV modules. ULA aluminum components merge with SM rails and installer-supplied steel pipes. The SM rail system is secured to the horizontal Pipe using the Rail Bracket components. The Rear and Front cap secures the horizontal Pipe to the vertical Pipe. The Front cap is also used to secure the Cross brace. A Slider is attached to the vertical Pipe to secure the Cross brace. The SM rails, caps, slider, rail brackets, and cross braces materials are



DEL MAR, CA 92014, USA

REVISIONS			
DESCRIPTION	DATE	REV	UR
INITIAL RELEASE	06/29/2022		

PROJECT NAME

JACQUELYN THOMAS
4205 SE 17TH LN,
OCALA, FL 34471, USA
APN# 2960004008
UTILITY: CITY OF OCALA
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11" X 17"

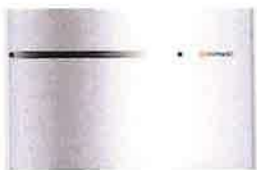
SHEET NUMBER

PV-18



IQ8 Series Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.



IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.



IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

Easy to install

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produce power even when the grid is down*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements

IQ8 Series Microinverters

INPUT DATA (DC)		IQ8-60-2-US	IQ8PLUS-72-2-US	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US ¹
Commonly used module pairings ²	W	235 – 350	235 – 440	260 – 460	295 – 500	320 – 540+	295 – 500+
Module compatibility		60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell					
MPPT voltage range	V	27 – 37	29 – 45	33 – 45	36 – 45	38 – 45	38 – 45
Operating range	V	25 – 48				25 – 58	
Min/max start voltage	V	30 / 48				30 / 58	
Max input DC voltage	V	50				60	
Max DC current ³ [module Isc]	A					15	
Overvoltage class DC port						II	
DC port backfeed current	mA					0	
PV array configuration		1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit					
OUTPUT DATA (AC)		IQ8-60-2-US	IQ8PLUS-72-2-US	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US ¹
Peak output power	VA	245	300	330	366	384	366
Max continuous output power	VA	240	290	325	349	380	360
Nominal (L-L) voltage/range ⁴	V	240 / 211 – 264				208 / 183 – 250	
Max continuous output current	A	1.0	1.21	1.35	1.45	1.58	1.73
Nominal frequency	Hz	60					
Extended frequency range	Hz	50 – 68					
AC short circuit fault current over 3 cycles	Arms	2				4.4	
Max units per 20 A (L-L) branch circuit ⁵		16	13	11	11	10	9
Total harmonic distortion		<5%					
Overvoltage class AC port		III					
AC port backfeed current	mA	30					
Power factor setting		1.0					
Grid-tied power factor (adjustable)		0.85 leading – 0.85 lagging					
Peak efficiency	%	97.5	97.6	97.6	97.6	97.6	97.4
CEC weighted efficiency	%	97	97	97	97.5	97	97
Night-time power consumption	mW	60					
MECHANICAL DATA							
Ambient temperature range				–40°C to +60°C (–40°F to +140°F)			
Relative humidity range				4% to 100% (condensing)			
DC Connector type				MC4			
Dimensions (HxWxD)				212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")			
Weight				1.08 kg (2.38 lbs)			
Cooling				Natural convection – no fans			
Approved for wet locations				Yes			
Pollution degree				PD3			
Enclosure				Class II double-insulated, corrosion resistant polymeric enclosure			
Environ. category / UV exposure rating				NEMA Type 6 / outdoor			
COMPLIANCE							
CA Rule 21 (UL 1741-SA), UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01							
Certifications: This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's instructions.							

(1) The IQ8H-208 variant will be operating in grid-tied mode only at 208V AC. (2) No enforced DC/AC ratio. See the compatibility calculator at <https://link.enphase.com/module-compatibility> (3) Maximum continuous input DC current is 10.6A (4) Nominal voltage range can be extended beyond nominal if required by the utility. (5) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ8SE-DS-0001-01-EN-US-2022-03-17



HiKuBlack Mono PERC

BLACK FRAME ON BLACK BACKSHEET

F23 Frame

380 W ~ 410 W

CS3N-380 | 385 | 390 | 395 | 400 | 405 | 410MS

MORE POWER



Module power up to 410 W
Module efficiency up to 20.2 %



Lower LCOE & BOS cost



Comprehensive LID / LeTID mitigation technology, up to 50% lower degradation



Better shading tolerance

MORE RELIABLE



Minimizes micro-crack impacts



Heavy snow load up to 8100 Pa,
enhanced wind load up to 6000 Pa*



Industry Leading Product Warranty on Materials and Workmanship*



Linear Power Performance Warranty*

1st year power degradation no more than 2%

Subsequent annual power degradation no more than 0.55%

*Subject to the terms and conditions contained in the applicable Canadian Solar Limited Warranty Statement. Also this 25-year limited product warranty is available only for products installed and operating on residential rooftops in certain regions.

MANAGEMENT SYSTEM CERTIFICATES*

ISO 9001: 2015 / Quality management system
ISO 14001: 2015 / Standards for environmental management system
ISO 45001: 2018 / International standards for occupational health & safety

PRODUCT CERTIFICATES*

IEC 61215 / IEC 61730 / CE
FSEC (US Florida) / UL 61730 / IEC 61701 / IEC 62716



* The specific certificates applicable to different module types and markets will vary, and therefore not all of the certifications listed herein will simultaneously apply to the products you order or use. Please contact your local Canadian Solar sales representative to confirm the specific certificates available for your Product and applicable in the regions in which the products will be used.

CSI SOLAR (USA) CO., LTD. is committed to providing high quality solar photovoltaic modules, solar energy and battery storage solutions to customers. The company was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey. Over the past 20 years, it has successfully delivered over 63 GW of premium-quality solar modules across the world.

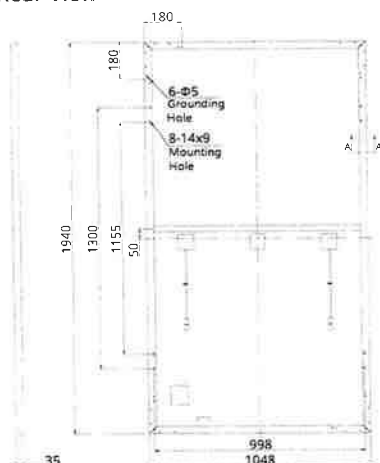
* For detailed information, please refer to Installation Manual.

CSI SOLAR (USA) CO., LTD.

1350 Treat Blvd. Suite 500, Walnut Creek, CA 94598, USA | www.csisolar.com/na | service.ca@csisolar.com

ENGINEERING DRAWING (mm)

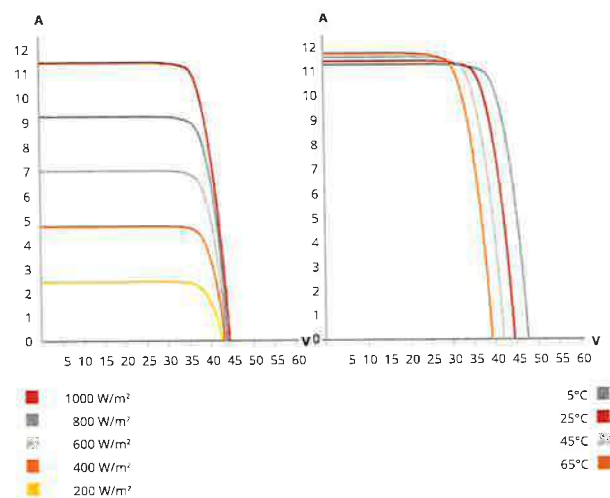
Rear View



Frame Cross Section



CS3N-400MS / I-V CURVES



ELECTRICAL DATA | STC*

CS3N	380MS	385MS	390MS	395MS	400MS	405MS	410MS
Nominal Max. Power (Pmax)	380 W	385 W	390 W	395 W	400 W	405 W	410 W
Opt. Operating Voltage (Vmp)	36.4 V	36.6 V	36.8 V	37.0 V	37.2 V	37.4 V	37.6 V
Opt. Operating Current (Imp)	10.44 A	10.52 A	10.60 A	10.68 A	10.76 A	10.83 A	10.92 A
Open Circuit Voltage (Voc)	43.7 V	43.9 V	44.1 V	44.3 V	44.5 V	44.7 V	44.9 V
Short Circuit Current (Isc)	11.26 A	11.32 A	11.38 A	11.44 A	11.50 A	11.56 A	11.62 A
Module Efficiency	18.7%	18.9%	19.2%	19.4%	19.7%	19.9%	20.2%
Operating Temperature	-40°C ~ +85°C						
Max. System Voltage	1000V (UL)						
Module Fire Performance	TYPE 2 (UL 61730 1000V)						
Max. Series Fuse Rating	20 A						
Application Classification	Class A						
Power Tolerance	0 ~ + 10 W						

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

ELECTRICAL DATA | NMOT*

CS3N	380MS	385MS	390MS	395MS	400MS	405MS	410MS
Nominal Max. Power (Pmax)	284 W	288 W	291 W	295 W	299 W	303 W	306 W
Opt. Operating Voltage (Vmp)	34.0 V	34.2 V	34.4 V	34.6 V	34.7 V	34.9 V	35.1 V
Opt. Operating Current (Imp)	8.35 A	8.42 A	8.48 A	8.54 A	8.60 A	8.66 A	8.73 A
Open Circuit Voltage (Voc)	41.2 V	41.4 V	41.6 V	41.8 V	41.9 V	42.1 V	42.3 V
Short Circuit Current (Isc)	9.08 A	9.13 A	9.18 A	9.23 A	9.28 A	9.33 A	9.37 A

* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m², spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

MECHANICAL DATA

Specification	Data
Cell Type	Mono-crystalline
Cell Arrangement	132 [2 X (11 X 6)]
Dimensions	1940 X 1048 X 35 mm (76.4 X 41.3 X 1.38 in)
Weight	23.4 kg (51.6 lbs)
Front Cover	3.2 mm tempered glass
Frame	Anodized aluminium alloy
J-Box	IP68, 3 bypass diodes
Cable	12 AWG (UL)
Cable Length (Including Connector)	Portrait: 400 mm (15.7 in) (+) / 280 mm (11.0 in) (-) (supply additional cable jumper: 2 lines/pallet); landscape: 1250 mm (49.2 in)*
Connector	T4 or MC4 series
Per Pallet	30 pieces
Per Container (40' HQ)	720 pieces

* For detailed information, please contact your local Canadian Solar sales and technical representatives.

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.34 % / °C
Temperature Coefficient (Voc)	-0.26 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	42 ± 3°C

PARTNER SECTION



* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. CSI Solar Co., Ltd. reserves the right to make necessary adjustment to the information described herein at any time without further notice. Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

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IP: 216.255.240.104



02 / 14 / 2023
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The document has been completed.