

CERTIFICATION IN LIEU OF OATH

I. OWNER SECTION (to be completed if the applicant is the owner in fee)

I hereby certify that I am the owner in fee of the property listed on Page 1.

Mark the following applicable boxes:

- A. ☐ I further certify that a new home (private residence) will be constructed on this property for my own use and occupancy. This dwelling is to be occupied by myself and is not to be used for any purpose other than single family residential use. I attest that all construction, plumbing, or electrical work will be done, in whole or in part, by me or by subcontractors under my supervision, in accordance with all applicable laws; and, I further acknowledge that said new home is not covered under the New Home Warranty and Builders Registration Act (N.J.S.A. 46:3B-1 et seq.) and that such fact shall be disclosed to any person purchasing this property within ten years of the date of issuance of a certificate of occupancy.

I UNDERSTAND THAT IN MARKING BOX A, I ACKNOWLEDGE THAT I AM ASSUMING RESPONSIBILITY FOR THE WORK DONE ON SAID PROPERTY, THE CONDITION OF THE PROPERTY PRIOR TO, DURING, AND AFTER ANY WORK PERFORMED, AND FOR THE PERFORMANCE OF THE SUBCONTRACTORS I HIRE, EMPLOY, OR OTHERWISE CONTRACT OR WITH WHOM I MAKE AGREEMENTS TO PERFORM WORK. I AM VOLUNTARILY AND KNOWINGLY ASSUMING THIS RESPONSIBILITY.

- B. ☐ I further certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:23-2.15(f)1.ix:

I personally prepared the plans submitted for: 1) the new home referred to in A.; or, 2) an addition, alteration, renovation, or repair to an existing single family residence owned and occupied by myself and located on the property listed on Page 1; or, 3) a new structure that will be physically separate from, but that will be deemed part of, an existing single family residence that is owned and occupied by myself and located on the property listed on Page 1.

- C. ☐ I further certify that I will perform or supervise the following work:

C.1. ☐ Building C.2. ☐ Fire Protection

I further certify that I will perform the following work:

C.3. ☐ Electrical C.4. ☐ Plumbing

- D. ☐ I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I understand that if any of the above statements are willfully false, I am subject to punishment.

Signature _____ Date _____

II. AGENT SECTION (to be completed if the applicant is not the owner in fee)

I hereby certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(d): the proposed work is authorized by the owner in fee; and I have been authorized by the owner in fee to make this application as his agent.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I understand that if any of the above statements are willfully false, I am subject to punishment.

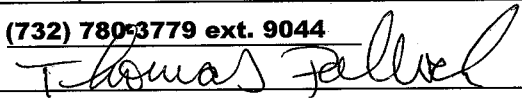
☒ Check if contractor.

Agent Name **Trinity Solar**

Address **2211 Allenwood Rd.**

Wall, NJ 07719

Telephone **(732) 780-3779 ext. 9044**

Signature 

- III. ☐ LEAD HAZARD ABATEMENT: Include Homeowner or Building Owner Affidavit as per N.J.A.C. 5:17.



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 7/14/2016
Control Number C-16-001750
Permit Number 16-1625
Permit Issue Date 5/16/2016
Certificate Number 16-1625

Certificate

Construction Code Division

(Certificate of Approval)

Identification

Work Site Location: 214 CHARD PL. Brick Township, NJ Block: 1205.03 Lot: 1 Qual: _____
Owner in Fee: PARTINGTON-DINKLAGE, TAMERA
Owner Address: 214 CHARD PL BRICK NJ 08724
Telephone: (772) 634-5344
Contractor Trinity Solar
Address 2211 Allenwood Rd. Wall NJ 07719
Telephone: (732) 780-3779 Fax: (732) 780-6671
License Number or Builders Registration Number: 15474A 13VH01244300 Federal Emp. Number: 22-3292324
15821C

Home Warranty Number: _____

Type of Warranty Plan: ☐ State ☐ Private

Use Group: R-5 Construction Classification: _____

Maximum Live Load: 0 Maximum Occupancy Load: 0

Description of Work/Use: SOLAR PANELS ...INSTALL 7.02 kw ROOF MOUNT PHOTOVOLTAIC SOLAR SYSTEM

Certificate Comments:

☐ **Certificate of Occupancy**

This serves notice that said building or structure has been constructed in accordance with the New Jersey Uniform Construction Code and is approved for occupancy.

☒ **Certificate of Approval**

This serves notice that the work completed has been constructed or installed in accordance with the New Jersey Uniform Construction Code and is approved. If the permit was issued for minor work, this certificate was based upon what was visible at the time of inspection.

☐ **Certificate of Continued Occupancy**

This serves notice that based on a general inspection of the visible parts of the building there are no imminent hazards and the building is approved for continued occupancy.

☐ **Temporary Certificate of Compliance**

The following conditions must be met no later than or the owner will be subject to fine or order to vacate:

This certificate has an expiration date of:

Conditions to be met:

☐ **Certificate of Clearance - Lead Abatement 5:17**

This serves notice that based on written certification, lead abatement was performed as per NJAC5:17 to the following extent.

☐ Total removal of lead-based paint hazards in scope of work

☐ Partial or limited time period (years); see file

☐ **Certificate of Clearance - Asbestos Abatement**

This serves notice that based on written certification, asbestos abatement was performed to the following extent.

☐ Total removal of asbestos hazards in scope of work

☐ Partial or limited time period (years); see file

☐ **Certificate of Compliance**

This serves notice that said potentially hazardous equipment has been installed and/or maintained in accordance with the New Jersey Uniform Construction Code and is approved for use until

☐ **Temporary Certificate of Occupancy**

The following conditions must be met no later than: or the owner will be subject to fine or order to vacate:

This certificate has an expiration date of:

Conditions to be met:

Daniel F. Neuman

Construction Official

KB

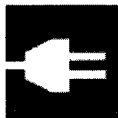
Fee: \$0.00

Check Number: _____

Collected By: _____



ELECTRICAL SUBCODE TECHNICAL SECTION



A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 1205.03 Lot 1 Qualification Code _____
Work Site Location 214 Chard Lane, Brick, NJ

Owner in Fee: Dinklage, Tamara-

Tel. (772) 634-5344 e-mail dinklage3@aol.com

Address 214 Chard Lane
street municipality zip code

Contractor: **Trinity Solar** Tel. (732) 780-3779 Ext 9044

Address 2211 Allenwood Rd. e-mail _____

Wall, NJ 07719 e-mail: trinity.permitting@trinitysolarsystems.com

Contractor License No. **15474A** Exp. Date **3-31-18**

Home Improvement Contractor Registration No. or Exemption Reason _____

Federal Emp. ID No. **223292324** FAX: **(848) 220-9139**

B. ELECTRICAL CHARACTERISTICS

Use Group Present _____ Proposed _____

[] Pole/Pad # _____ [] Temporary [] Other _____

Building Occupied as _____ Utility Co. _____

Est. Cost of Elec. Work \$ **21,544**

JOB SUMMARY (Office Use Only)		INSPECTIONS		Dates (Month/Day)	
PLAN REVIEW	Type:	Failure	Failure	Approval	Initial
[] No Plans Required	Rough	_____	_____	_____	_____
[] Partial -Underslab Utilities Approved	Barrier-Free	_____	_____	_____	_____
Date: _____ Approved by: _____	Trench	_____	_____	_____	_____
[X] Electric Plans Approved	Temp. Serv.	_____	_____	_____	_____
Date: <u>4/22/16</u> Approved by: <u>PJC</u>	Constr. Serv.	_____	_____	_____	_____
Joint Plan Review Required:	TCO	_____	_____	_____	_____
[] Bldg. [] Plumb. [] Fire. [] Elev.	Other	_____	_____	_____	_____
SUBCODE APPROVAL for PERMIT	Service	_____	_____	_____	_____
Date: <u>4/22/16</u>	Final	_____	_____	_____	_____
Approved by: <u>PJC</u>	Barrier-Free	_____	_____	_____	_____
SUBCODE APPROVAL for CERTIFICATE	Temp. Cut-in-Card Date Issued	_____	_____	_____	_____
[] CO [] CCO [X] CA	Final Cut-in-Card Date Issued	_____	_____	_____	_____
Date: <u>4/22/16</u>	Annual Pool Inspection	_____	_____	_____	_____
Approved by: <u>PJC</u>	Date of Grounding and Bonding Certification	_____	_____	_____	_____

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application and perform the work listed on this application.

Applicant sign/Contractor sign and seal here: Charles P Bonicker

Print name here: **Charles Bonicker**

[X] Licensed Elec. Contractor [] Certifd Landscape Irrigation Contr [] Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK: **7.02 KW SYSTEM**
INSTALLATION OF INVERTERS AND PV SOLAR PANELS

QTY.	SIZE	ITEMS	FEE (Office Use Only)
_____	_____	Lighting Fixtures	_____
_____	_____	Receptacles	_____
_____	_____	Switches	_____
_____	_____	Detectors	_____
_____	_____	Light Poles	_____
_____	_____	Motors—Fract. HP	_____
_____	_____	Emergency & Exit Lights	_____
_____	_____	Communications Points	_____
_____	_____	Alarm Devices/F.A.C. Panel	_____
_____	_____	PRODUCTION METER <u>ntc</u>	_____
_____	_____	TOTAL NUMBERS	\$ _____
_____	_____	Pool Permit/with UW Lights	_____
_____	_____	Storable Pool/Spa/Hot Tub	_____
_____	_____	KW Elec. Range/Receptacle	_____
_____	_____	KW Oven/Surface Unit	_____
_____	_____	KW Elec. Water Heater	_____
_____	_____	KW Elec. Dryer/Receptacle	_____
_____	_____	KW Dishwasher	_____
_____	_____	HP Garbage Disposal	_____
_____	_____	KW Central A/C Unit	_____
_____	_____	HP/KW Space Heater/Air Handler	_____
_____	_____	KW Baseboard Heat	_____
_____	_____	HP Motors 1/+ HP	_____
1	40	KW Transformer/Generator AMP	_____
1	60	AMP Service Disconnect Disconnect	_____
_____	_____	AMP Subpanels	_____
1	6.0	AMP Motor Control Center KW Inverter	_____
_____	_____	KW Elec. Sign/Outline Light Inverter	_____
1	7.02	KW PV Solar System	_____

Administrative Surcharge \$ _____
Minimum Fee \$ _____
State Permit Surcharge Fee \$ _____
TOTAL FEE \$ _____

Optimize Engineering Co., LLC

P.O. Box 264•Farmville•VA 23901

Ph: 434.574.6138•E-mail: grichardpe@aol.com

Richard B. Gordon, P.E.
President

May 25, 2016

**Brick Building Department
Brick, NJ**

Re: Solar Electric Panels Installation

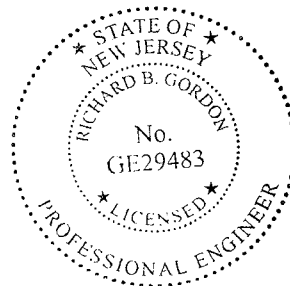
To Whom It May Concern:

I hereby certify that I am a Licensed Professional Engineer in the State of New Jersey. The Solar Photovoltaic System installed at the residence of Tamera Dinklage- 214 Chard Lane, Brick, NJ is installed as per manufacturer's requirements-specifications, N.J.A.C. 5:23-6 (Rehabilitation Subcode), International Residential Code/ IRC 2015 NJ Edition, N.J.A.C. 5:23-3.21, 2014 NEC, and NJ 2015 ICC Energy Code, and will perform as designed. All penetrations and racking are accomplished per town approved-released drawings.

Very truly yours,
Optimize Engineering Co., LLC



Richard B. Gordon, P.E.
New Jersey P.E. License No. 29483



Trinity-Solar

2211 Allenwood Road, Wall, NJ 07719

Date: 5/26/16

To: Electric Inspector

Tom Olson

Attached is the revised electric diagram for the following customer:

Customer Name: Tamera Dinklage

Address: 214 Chard Lane

Block: 1205.03 Lot: 1 Permit #: 16-1625

The 60amp unfused utility disconnect was removed completely.

Please review these changes and let me know if you have any questions or require more information.

Our office # is 732-780-3779 Ext. 9045

Thank You,



Kevin McCormack

Kevin McCormack

Permitting Department T: (732) 780-3779 ext. 9040 E: trinity.permitting@trinitysolarsystems.com



BUILDING SUBCODE TECHNICAL SECTION



A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block 1205.03 Lot 1 Qualification Code _____

Work Site Location _____

214 Chard Lane, Brick, NJ

Owner in Fee: Dinklage, Tamara-

Tel. (772) 634-5344 e-mail dinklage3@aol.com

Address 214 Chard Lane

street municipality zip code

Contractor: Trinity Solar Tel. (732) 780-3779 ext. 9044

Address 2211 Allenwood Rd. e-mail _____

Wall, NJ 07719 email: Trinity.permitting@trinitysolarsystems.com

Contractor License No. or Builder Registration No. 13VH01244300 Exp. Date 3-31-17

Home Improvement Contractor Registration No. or Exemption Reason _____

Federal Emp. ID No. 223292324 FAX: (848) 220-9139

JOB SUMMARY (Office Use Only)			
PLAN REVIEW	Date	Initial	INSPECTIONS
			Type: Failure Failure Approval Initial
☐ No Plans Required			Footings
☐ All <u>4/28/16 PM</u>			Footings Bonding
☐ Footings/Foundations			Foundation
☐ Structural/Framework			Slab
☐ Exterior			Frame
☐ Interior			Truss Sys./Bracing
Joint Plan Review Required:			Barrier-Free
☐ Elec. ☐ Plumb. ☐ Fire ☐ Elevator			Insulation
SUBCODE APPROVAL for PERMIT			Finishes -Base Layer
Date: <u>05/12/16</u>			Finishes -Final
Approved by: <u>KEH</u>			Energy
SUBCODE APPROVAL for CERTIFICATE			Mechanical
☐ CO ☐ CCO ☒ CA			TCO
Date: <u>07/06/16</u>			Other
Approved by: <u>KEH</u>			Final
			Barrier-Free

B. BUILDING CHARACTERISTICS

Use Group Present _____ Proposed _____ Constr. Class Present _____ Proposed _____

No. of Stories _____ If Industrialized Building: State Approved _____ HUD _____

Height of Structure _____ ft.

Area — Largest Floor _____ sq. ft.

New Bldg. Area/All Floors _____ sq. ft.

Volume of New Structure _____ cu. ft.

Max. Live Load _____

Max. Occupancy Load _____

Est. Cost of Bldg. Work:

1. New Bldg. \$ _____
2. Rehabilitation \$ _____
3. Total (1 + 2) \$ 1,622

U.C.C. F110 (rev. 11/09)
Internet version

Date Received
Control #

Date Issued
Permit #

5/16/16

16-1625

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Sign here: Thomas Pollock

Print name here: Tom Pollock

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

INSTALLATION OF RACKING ON ROOF FOR SOLAR PANELS

TYPE OF WORK:

- ☐ New Building
- ☐ Addition
- ☐ Rehabilitation
- ☐ Roofing
- ☐ Siding
- ☐ Fence _____ Height (exceeds 6')
- ☐ Sign _____ Sq. Ft.
- ☐ Pool
- ☐ Retaining Wall _____ Sq. Ft.
- ☐ Asbestos Abatement Subchapter 8
- ☐ Lead Haz. Abatement NJAC 5:17
- ☐ Radon Remediation
- ☒ Other Racking
- ☐ Demolition

FEE (Office Use Only)

\$ _____

Administrative Surcharge \$ _____

Minimum Fee \$ _____

State Permit Surcharge Fee \$ _____

TOTAL FEE \$ _____

Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.



Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.

Optimize Engineering Co., LLC

P.O. Box 264•Farmville•VA 23901

Ph: 434.574.6138•E-mail: grichardpe@aol.com

Richard B. Gordon, P.E.
President

May 25, 2016

**Brick Building Department
Brick, NJ**

Re: Solar Electric Panels Installation

To Whom It May Concern:

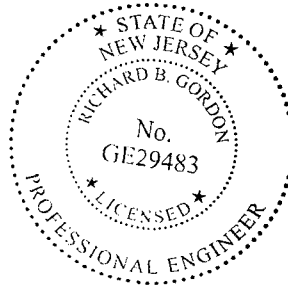
I hereby certify that I am a Licensed Professional Engineer in the State of New Jersey. The Solar Photovoltaic System installed at the residence of Tamera Dinklage- 214 Chard Lane, Brick, NJ is installed as per manufacturer's requirements-specifications, N.J.A.C. 5:23-6 (Rehabilitation Subcode), International Residential Code/ IRC 2015 NJ Edition, N.J.A.C. 5:23-3.21, 2014 NEC, and NJ 2015 ICC Energy Code, and will perform as designed. All penetrations and racking are accomplished per town approved-released drawings.

Very truly yours,
Optimize Engineering Co., LLC



Richard B. Gordon, P.E.

New Jersey P.E. License No. 29483





PERMIT UPDATE

Date Update Issued 6/9/16
Control # C-16-001750+A
Permit # 16-1625+A

IDENTIFICATION Block: 1205.03 Lot: 1 Qualifier _____
Work Site Location: 214 CHARD PL. Brick Township, NJ Contractor Trinity Solar
Address 2211 Allenwood Rd. Wall NJ 07719
Owner in Fee PARTINGTON-DINKLAGE, TAMERA
214 CHARD PL. BRICK NJ 08724 Telephone: (732) 780-3779 / Ext 9045
Telephone: (772) 634-5344 Lic. No. or Bldrs. Reg. No. 13VH01244300 15821C 13VH01244300
Federal Employee No. 223292324

Is hereby granted permission to perform the following work:

- ☒ BUILDING ☐ PLUMBING ☐ LEAD HAZARD ABATEMENT
☐ ELECTRICAL ☐ FIRE PROTECTION ☐ DEMOLITION
☐ ELEVATOR DEVICES ☐ ASBESTOS ABATEMENT (Subchapter 8 only) ☐ OTHER

DESCRIPTION OF WORK:

SOLAR PANELS...UPDATE +A- CHANGE TO RAIL-LESS MOUNT SYSTEM

Note: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work \$100

D. Newman Jr.
Construction Official

Date 6/6/16

U.C.C. F170
equiv (rev 1/04)

1 WHITE - INSPECTOR

2 CANARY - OFFICE

3 PINK - TAX ASSESSOR

4 GOLD - APPLICANT

PAYMENTS (Office Use Only)

Building	\$150
Electrical	\$0
Plumbing	\$0
Fire Protection	\$0
Elevator Devices	\$0
Other	\$0.00
DCA Training Fee	\$0
CO Fee	
Other	\$0
Total	\$150

Check No. 3290 105881048

Cash 1003 SERV \$0

Credit 1625 \$0

Collected By CW \$150.00

REQUIRED INSPECTIONS

Construction work must be inspected in accordance with the State Uniform Construction Code Regulations N.J.A.C. 5:23-2.18. This agency will carry out such periodic inspections during the progress of work as are necessary to insure that the work installed conforms with the requirements of the Uniform Construction Code.

The owner or other responsible person in charge of work must notify this agency when work is ready for any required inspections specified below. Requests for inspections must be made at least 24 hours prior to the time the inspection is desired. Inspections will be performed within three business days of the time for which they are requested. The work must not proceed in a manner which will preclude the inspection until it has been made and approval granted.

☒ Required inspections for all subcodes for one- and two-family dwellings are as follows:

1. The bottom of footing trenches before placement of footings, except that in cases of pile foundations, inspections shall be made in accordance with the requirements of the building subcode.
2. Foundations and all walls up to grade level prior to back filling.
3. All structural framing, connections, wall and roof sheathing and insulation; electrical rough wiring, panel and service installation; rough plumbing. The framing inspection shall take place after the rough electrical and plumbing inspections and after the installation of the heating, ventilation and /or air conditioning duct system. The insulation inspection shall be performed after all other subcode rough inspections and prior to the installation of any interior finish material.
4. Installation of all finished materials, sealings of exterior joints, plumbing piping, trim and fixtures; electrical wiring, devices and fixtures; mechanical systems equipment.

Additional required inspections for all subcodes of construction, for other than one- and two-family dwellings, are fire suppression systems, heat producing devices and Barrier Free subcode accessibility, if applicable.

☐ Required special inspections. The applicant by accepting the permit will be deemed to have consented to these requirements:

☒ A final inspection is required for each applicable subcode area before a final Certificate of Occupancy or Approval may be issued. The final inspections include the installation of all interior and exterior finish materials, sealing of exterior joints, mechanical system and other required equipment; electrical wiring, devices and fixtures; plumbing pipes, trim and fixtures; tests required by any provision of the adopted subcodes, Barrier Free accessibility, if applicable; and verification of compliance with NJAC 5:23-3.5, "Posting structures".

☒ A complete copy of released plans must be kept on the job site.

If you do not understand any of this information, please ask.

FILE COPY

Optimize Engineering Co., LLC

P.O. Box 264•Farmville•VA 23901
Ph: 434.574.6138•E-mail: grichardpe@aol.com

Richard B. Gordon, P.E.
President

May 25, 2016

Brick Building Dept.
Brick, NJ

Re: Solar Panels Roof Structural Framing Support

To Whom It May Concern:

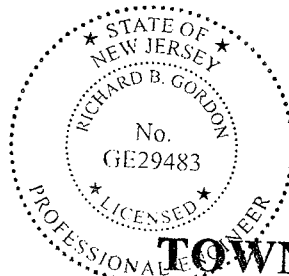
I hereby certify that I am a Licensed Professional Engineer in the State of New Jersey. Please note the following conclusions regarding framing structure, roof loading, and proposed site location of installation:

1. Existing roof framing: Conventional framing at roof 1 is 2x6 at 16" o.c. with 14' span (horizontal rafter projection). This existing structure is definitely capable to support all of the loads that are indicated below for this photovoltaic project.
2. Roof Loading
 - 4.33 psf dead load (modules plus all mounting hardware)
 - 12 psf snow live load (20 psf ground snow live load reference)
 - 4.5 psf roof materials
 - Exposure Category B, 125 mph wind uplift live load of 23.09 psf (wind resistance)
3. Address of proposed installation: Residence of Tamera Dinklage, 214 Chard Lane, Brick, NJ

This installation design will be in general conformance to the manufacturer's specifications, and is in compliance with all applicable laws, codes, and ordinances, and specifically N.J.A.C. 5:23-6 (Rehabilitation Subcode), International Residential Code/ IRC 2015 NJ Edition, N.J.A.C. 5:23-3.21. The spacing and fastening of the EcoX (by Ecolibrium Solar), or equal, mounting supports is to have a maximum of 48" o.c. span between mounting supports and secured using 5/16" diameter corrosive resistant steel lag bolts. In order to evenly distribute the load across the roof rafters, there shall be a minimum of 2 mounting supports per rafter & min. 3" penetration of lag bolt per support, which is adequate to resist all 125 mph wind live loads including wind shear. The mounting supports shall alternate between adjacent rafters for better distribution of roof load.

Very truly yours,
Optimize Engineering Co., LLC


Richard B. Gordon, P.E.
New Jersey P.E. License No. 29483



TOWNSHIP OF BRICK

RELEASED FOR PERMIT

INITIAL

DATE

Building Subcode _____

Plumbing Subcode _____

Fire Subcode _____

Electrical Subcode _____

Plan Reviewer _____

Plans Released _____

Construction Official _____

Trinity-Solar

2211 Allenwood Road, Wall, NJ 07719

Date: 5/31/15

From: *trinity-permitting@trinitysolarsystems.com*

To: Construction Department

Hi,

Once the Update or Revision has been approved, please contact our office so that we may schedule final inspections. If you could please fax, email, or call us directly, it would be appreciated.

Our office # is 732-780-3779 Ext. 9045

Our office fax # is 848-220-9139

Customer Name: Dinklage, Tamera

Address: 214 Chard Lane

Block: 1205.03 Lot: 1 Permit #: 16-1625

Description of work done for the following:

Update, or Revision	Update, or Revision	Update, or Revision	Update, or Revision
For:	For:	For:	For:
<u>Building</u>	Electrical	Plumbing	Fire

Thank You,

Kevin McCormack



Permitting Department T: (732) 780-3779 ext. 9040 E: trinity.permitting@trinitysolarsystems.com



CONSTRUCTION PERMIT

Date Issued 5/16/16
Control # C-16-001750
Permit # 16-1625

IDENTIFICATION Block: 1205.03 Lot: 1 Qualifier _____
Work Site Location: 214 CHARD PL. Brick Township, NJ Contractor Trinity Solar
Address 2211 Allenwood Rd. Wall NJ 07719
Owner in Fee PARTINGTON-DINKLAGE, TAMERA
214 CHARD PL. BRICK NJ 08724 Telephone: (732) 780-3779 / Ext.9045
Lic. No. or Bldrs. Reg. No. 13VH01244300 15821C 13VH01244300
Telephone: (772) 634-5344 Federal Employee No. 22-3292324

Is hereby granted permission to perform the following work:

- ☒ BUILDING ☐ PLUMBING ☐ LEAD HAZARD ABATEMENT
☒ ELECTRICAL ☐ FIRE PROTECTION ☐ DEMOLITION
☐ ELEVATOR DEVICES ☐ ASBESTOS ABATEMENT (Subchapter 8 only) ☐ OTHER

DESCRIPTION OF WORK:

SOLAR PANELS ...INSTALL 7.02 kw ROOF MOUNT PHOTOVOLTAIC SOLAR SYSTEM

Note: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work \$23,166

[Signature]
Construction Official

5/13/16
Date

U.C.C. F170
equiv (rev 1/04)

1 WHITE - INSPECTOR

2 CANARY - OFFICE

3 PINK - TAX ASSESSOR

PAYMENTS (Office Use Only)	
Building	\$150
Electrical	\$375
Plumbing	\$0
Fire Protection	\$0
Elevator Devices	\$0
Other	\$0.00
DCA Training Fee	\$44
CO Fee	
Other	\$0
Total	\$569
Check No.	<u>31751</u>
Cash	<u>00/00/16 10:03PM 001558ND438 \$0</u>
Credit	<u>0003 SERV. 003 \$0</u>
Collected By	<u>CW</u>

150
619-
BUILDING \$150.00
ELECTRIC \$375.00
DCA 4 GOLD - APPLICANT \$44.00
ZPA \$0.00
CHECK \$619.00

REQUIRED INSPECTIONS

Construction work must be inspected in accordance with the State Uniform Construction Code Regulations N.J.A.C. 5:23-2.18. This agency will carry out such periodic inspections during the progress of work as are necessary to insure that the work installed conforms with the requirements of the Uniform Construction Code.

The owner or other responsible person in charge of work must notify this agency when work is ready for any required inspections specified below. Requests for inspections must be made at least 24 hours prior to the time the inspection is desired. Inspections will be performed within three business days of the time for which they are requested. The work must not proceed in a manner which will preclude the inspection until it has been made and approval granted.

☒ Required inspections for all subcodes for one- and two-family dwellings are as follows:

1. The bottom of footing trenches before placement of footings, except that in cases of pile foundations, inspections shall be made in accordance with the requirements of the building subcode.
2. Foundations and all walls up to grade level prior to back filling.
3. All structural framing, connections, wall and roof sheathing and insulation; electrical rough wiring, panel and service installation; rough plumbing. The framing inspection shall take place after the rough electrical and plumbing inspections and after the installation of the heating, ventilation and /or air conditioning duct system. The insulation inspection shall be performed after all other subcode rough inspections and prior to the installation of any interior finish material.
4. Installation of all finished materials, sealings of exterior joints, plumbing piping, trim and fixtures; electrical wiring, devices and fixtures; mechanical systems equipment.

Additional required inspections for all subcodes of construction, for other than one- and two-family dwellings, are fire suppression systems, heat producing devices and Barrier Free subcode accessibility, if applicable.

☐ Required special inspections. The applicant by accepting the permit will be deemed to have consented to these requirements:

☒ A final inspection is required for each applicable subcode area before a final Certificate of Occupancy or Approval may be issued. The final inspections include the installation of all interior and exterior finish materials, sealing of exterior joints, mechanical system and other required equipment; electrical wiring, devices and fixtures; plumbing pipes, trim and fixtures; tests required by any provision of the adopted subcodes, Barrier Free accessibility, if applicable; and verification of compliance with NJAC 5:23-3.5, "Posting structures".

☒ A complete copy of released plans must be kept on the job site.

If you do not understand any of this information, please ask.

NOT AN
ELECTRICIAN'S
OR PLUMBER'S
LICENSE

State Of New Jersey
New Jersey Office of the Attorney General
Division of Consumer Affairs

THIS IS TO CERTIFY THAT THE
Division of Consumer Affairs

HAS REGISTERED

Trinity Heating & Air, Inc.
Tom Pollock
2211 Allenwood Road
Wall NJ 07719

FOR PRACTICE IN NEW JERSEY AS A(N): Home Improvement Contractor

New Jersey Office of the Attorney General
Division of Consumer Affairs
THIS IS TO CERTIFY THAT THE
Division of Consumer Affairs
HAS REGISTERED
Trinity Heating & Air, Inc.
Home Improvement Contractor

NOT AN ELECTRICIAN'S OR PLUMBER'S LICENSE
03/30/2016 TO 03/31/2017
VALID
13VH01244300
SIGNATURE
ACTING DIRECTOR

03/30/2016 TO 03/31/2017
VALID

13VH01244300
LICENSE/REGISTRATION/CERTIFICATION #

Tom Pollock
Signature of Licensee/Registrant/Certificate Holder

Steve L.
ACTING DIRECTOR

PLEASE DETACH HERE
IF YOUR LICENSE/REGISTRATION/
CERTIFICATE ID CARD IS LOST
PLEASE NOTIFY:
Division of Consumer Affairs
P.O. Box 46016
Newark, NJ 07101

PLEASE DETACH HERE

THIS DOCUMENT IS PRINTED ON WATERMARKED PAPER, WITH A MULTI-COLORED
BACKGROUND AND MULTIPLE SECURITY FEATURES. PLEASE VERIFY AUTHENTICITY.

State Of New Jersey
New Jersey Office of the Attorney General
Division of Consumer Affairs

THIS IS TO CERTIFY THAT THE
Board of Exam of Electrical Contractors

HAS LICENSED

TRINITY HEATING & AIR INC DBA TRINITY SOLAR
CHARLES P BONICKER
1371 Bridport Drive
Toms River NJ 08755

FOR PRACTICE IN NEW JERSEY AS A(N): Electrical Business Permit

03/03/2015 TO 03/31/2018
VALID

34EB01547400
LICENSE/REGISTRATION/CERTIFICATION #

Charles P Bonicker
Signature of Licensee/Registrant/Certificate Holder

Steve L.
ACTING DIRECTOR

ENGINEERING PERMIT APPLICATION

BLOCK: 1205.03 LOT: 1 ADDRESS: 214 Chard Pl.

RECEIVING CLERK: _____

PERMIT #: _____

IDENTIFICATION:

1. WORK SITE ADDRESS: 214 Chard Pl.
2. NAME OF OWNER IN FEE: Drinklage, Tamera
ADDRESS: 214 Chard Pl. PHONE #: (732) 814-9294
Brick, NJ 08723 FAX #: ()
3. PRINCIPAL CONTRACTOR: Trinity Solar
ADDRESS: 2211 Allenwood Road PHONE #: (732) 780-3779
Wall, NJ 07719 FAX #: (848) 220-9139
4. ARCHITECT OR ENGINEER: Chen
ADDRESS: _____ PHONE #: ()
5. RESPONSIBLE PERSON FOR WORK: Charles Bonicker
ADDRESS: 2211 Allenwood Rd Wall, NJ 07719
PHONE #: (732) 780-3779 FAX #: (848) 220-9139 MAIL: _____

PROJECT DESCRIPTION: ☐ GRADING/CLEARING ☐ ROAD OPENING
☐ SOIL REMOVAL/FILL ☐ RETAINING WALL ☐ POOL
☐ BULKHEAD/DOCK ☐ DWELLING ☐ TREE REMOVAL
☐ OTHER Install 20kw solar panels on roof. Panels not to exceed
roof width but will add 6" to roof height.
LENGTH: _____ WIDTH: _____ HEIGHT: _____

FEE SUMMARY:

APPLICATION FEE: \$ _____
REVIEW FEE: \$ _____
INSPECTION FEE: \$ _____
OTHER: \$ _____
BOND(S): \$ _____
TOTAL: \$ _____

SPECIAL CONDITIONS:

OCEAN COUNTY SOILS: _____
DRAINAGE EASEMENTS: _____
UTILITY EASEMENTS: _____
CONSERVATION EASEMENTS: _____
FEMA REQUIREMENTS: _____
D.E.P. PERMITS: _____
BOARD APPROVAL: ☐ PB ☐ ZB

APPLICATION NUMBER: _____

APPROVED DATE: _____

ENGINEERING REVIEW:

DATE RECEIVED: _____ DATE REJECTED: _____ DATE APPROVED: _____ INITIALS: _____

TOWNSHIP OF BRICK
OCEAN COUNTY, NEW JERSEY
401 CHAMBERS BRIDGE ROAD, BRICK, NJ. 08723

John G. Ducey, Mayor

Township Council:
Susan Lydecker - President
Jim Fozman - Vice President
Heather deJong
Bob Moore
Paul Mummolo
Marianna Pontoriero
Andrea Zapic



Department of Land Use and Community
Development
Division of Land Use & Planning
732-262-1027
Fax: 732-262-2941

www.twp.brick.nj.us

Date: 4/13/16

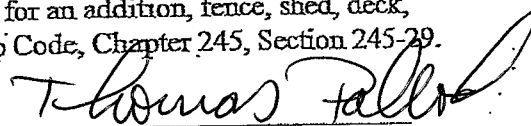
**ENGINEERING
PLOT PLAN EXEMPT FORM
(ONLY IF NOT IN A FLOOD ZONE)**

Block: 1205.03 Lot: 1

Property Address: 214 Chard Pl. Brick, NJ 08724

I, Trinity Solar of 2211 Allenwood Road Wall, NJ 07719
(name) (address)

request to be exempt from the plot plan requirement for an addition, fence, shed, deck,
pool, retaining wall, etc. as outlined in the Township Code, Chapter 245, Section 245-29.


Applicant's Signature

The following shall be submitted with this request:

1. Submit surveys locating existing dwelling and proposed addition. Dimensions of the addition should be included.
2. Proof that the property is not located in a Flood Hazard Area.

Note: Prior to approval a site inspection by the Engineering Department will be performed to verify that the proposed addition will not create a drainage problem.

FOR OFFICE USE ONLY

Approved on: _____

Signed: _____

Rejected on: _____

Signed: _____

Comments:

RECEIVING CLERK MPFDATE REC'D 9/14/16

ZONING PERMIT APPLICATION

PERMIT # ZP-16-00716DATE ISSUED 5/16/16BLOCK: 1205.03 LOT: 1 QUALIFIER: _____ SITE ADDRESS: 214 Chard Ln

IDENTIFICATION:

1. NAME OF OWNER IN FEE: Dinklage, TameraCOMPLETE ADDRESS: 214 Chard Ln
Brick, NJ 08724PHONE # (772) 634-5341 EMAIL: _____2. NAME OF APPLICANT: Trinity SolarAPPLICANT ADDRESS: 2211 Allenwood Rd
Wall, NJ 07719PHONE # (732) 780-3779 EMAIL: _____3. RESPONSIBLE PERSON FOR WORK: Charles BonichurPHONE # (938) 780-3779 FAX# (848) 220-91394. SIGNATURE OF APPLICANT: Thomas Talley

FOR OFFICE USE ONLY

FEE SUMMARY:

APPLICATION FEE: \$ 50-

OTHER: \$ _____

TOTAL: \$ 50-

REQUIRED BY APPLICANT

RESIDENTIAL: Single family

COMMERCIAL: _____

EXISTING USE: Single familyPROPOSED USE: Solar

BOARD APPROVAL: _____ PB _____ ZB _____

RESOLUTION#: _____

APPROVAL DATE: _____

PROJECT DESCRIPTION: (PLEASE CHECK APPLICABLE WORK & DESCRIBE)

*NEW BUILDING: _____ *ADDITION _____ *ALTERATION _____ *PORCH _____ *DECK _____

POOL: ABOVE GROUND _____ IN GROUND _____ FENCE: HEIGHT _____ TYPE _____ MATERIAL _____

HEIGHT: _____ (*IF APPLICABLE)

OTHER Install solar on roof.DESCRIPTION: Install 7.02 kW PV solar system on roof w/ 27 modules, not to exceed roof peak

ZONING REVIEW: _____

DATE REVIEWED: _____

DATE DENIED: _____

DATE APPROVED: _____

INTLS: _____

(SEE BACK PAGE)

TOWNSHIP OF BRICK ZONING CHECKLIST

1) Four (4) copies of plot plan containing:

- All existing and proposed structures
- All dimensions of the lot and structures
- All setbacks from the structures to the property lines
- All adjacent streets and waterways
- If applicable, include a copy of the Zoning Board of Adjustment Resolution, the date that the map was signed, and/or the date that the subdivision map was filed with the Ocean County Clerk, along with the file map and number.

2) Two copies of the plans with dimensions and heights noted:

- Floor plans and elevations
- Signed site plans
- Property map
- Survey map

Choose which is applicable for submission

3) Plot plans and building plans must match for complete review

NOTE: NO PARTIAL, TAPED, FAXED, REDUCED OR ENLARGED COPIES CAN BE ACCEPTED

OFFICE USE ONLY

RECEIVED

APR 21 2016

ZONING

1928

ZONING REVIEW:

DATE REVIEWED: 4/21/16 DATE DENIED: — DATE APPROVED: 4/21/16 INTLS: 230

[illegible]

LAND USE

245 Attachment 5

Township of Brick

SCHEDULE OF AREA, YARD AND BUILDING REQUIREMENTS

Township of Brick
Ocean County, New Jersey

[Amended 6-26-1979 by Ord. No. 354-2B-79; 4-22-1980 by Ord. No. 354-2H-80; 10-14-1980 by Ord. No. 354-2N-80; 9-23-1980 by Ord. No. 354-1B-80; 8-25-83 by Ord. No. 354-2SS-83; 11-5-1984 by Ord. No. 354-2AAA-84; 11-5-1984 by Ord. No. 354-2CCC-84; 6-24-1986 by Ord. No. 354-2WWW-86; 9-13-1988 by Ord. No. 354-2TTT-88; 9-27-1988 by Ord. No. 354-2XXX-88; 9-12-2000 by Ord. No. 354-2EE-00; 5-9-2000 by Ord. No. 354-2Z-00; 3-26-2002 by Ord. No. 354-2C-02; 11-26-2002 by Ord. No. 354-2L-02; 3-25-2003 by Ord. No. 354-2D-03; 6-13-2006 by Ord. No. 19-06]

Zone	Minimum Lot Size						Minimum Required Yard Depth						Maximum Lot Coverage by Building	Maximum Building Height				Minimum Floor/ Building Area (square feet) 2 stories/1 story	Maximum Allowable Impervious Coverage
	Interior Lots			Corner Lots			Principal Building				Accessory Building			Maximum Building Height					
	Area (square feet)	Width (feet)	Depth (feet)	Area (square feet)	Width (feet)	Depth (feet)	Front Yard (feet)	Side Yard, Each (feet)	Both Sides Combined (feet)	Rear Yard (feet)	Side Yard (feet)	Rear Yard ¹ (feet)		Stories	Eaves (feet)	Feet	Ridge (feet)		
R-R	40,000	150	150	40,000	150	150	50	25		50	25	25	25%	—	25			—	
RR-2	See § 245-90.																		
RR-3	See § 245-103.																		
R-20	20,000	100	125	25,000	100	125	40	15	—	40	10	10	25%	—	25	35	38.5	—	
R-15	15,000	100	115	17,250	100	115	35	12	—	35	10	10	25%	—	25	35	38.5	—	
R-10	10,000	90	100	10,500	100	100	30	6	20	20	5	5	30%	—	25	35	38.5	—	
R-7.5	7,500	75	90	9,000	75	90	25	6	15	15	5	5	30%	—	25	35	38.5	—	
R-5	5,000	50	75	6,000	50	75	20	5	12	15	5	5	35%	—	25	35	38.5	—	
O-P	15,000	100	150	15,000	100	150	50	10	—	50	20	50	35% ²	2	—	35	38.5	1,500	70%
B-1	10,000	100	90	12,500	100	125	30	10	—	20	10	20	30% ²	2	—	35	38.5	1,000	60%
B-2	20,000	125	125	20,000	125	125	50	10	—	50	10	50	30% ²	2	—	35	38.5	2,000	65%
B-3	2 acres	200	200	2 acres	200	200	75	30	—	50	20	50	25% ²	—	—	35	38.5	2,000	65%
B-4	5 acres	300	300	—	—	—	100	50(150) ¹	—	100(150) ¹	20	50	25%	3	—	35	38.5	30,000	70%
M-1	5 acres	300	300	5 acres	300	300	100	50	—	150	75	150	30% ²	—	—	35	38.5	5,000	65%
R-M	25 acres	350	200	—	—	—	50	50	—	30	30	30	20%	—	25	35	38.5	—	65%
O-P-T	40,000	150	150	40,000	150	150	50	20	—	50	20	50	25% ²	2	—	35	38.5	2,000	50%
H-S	See § 245-261.																		

NOTES:

- ¹ If adjacent to residential zone or use.
- ² The maximum lot coverage shall refer only to that percentage of an affected lot which is suitable for building.
- ³ For rear yard setback requirements for accessory buildings on waterfront property, see § 245-10D.

FOR REFERENCE ONLY



Brick Township
401 Chambers Bridge Rd.

Brick, NJ 08723
(732) 262-1336

Date Issued:

Application Number: 5/16/16
ZA-16-00622

Application Date: 04/20/2016

Project Number:

Permit Number:

Fee:

2P-16-00716
\$50

Zoning Permit

Worksite **214 CHARD PL.**
Location: **Brick Township, NJ 08724**

Block: 1205.03

Lot: 1

Qualifier:

Zone: R-7.5

Owner: **PARTINGTON-DINKLAGE, TAMERA**
Address: **214 CHARD PL**
BRICK, NJ 08724

Applicant: **Trinity Solar**
Address: **2211 Allenwood Rd.**
Wall, NJ 07719

Application Approved Date: 04/21/2016

This Certifies that an application for the issuance of a Zoning Permit has been examined.

Use is: Single-Family Residential

Nonconforming Use is: _____

Work Description:

Solar Energy System - 27- 260W Trina Solar, 7.02kW ENPHASE micro-inverters, mounted on the roof of the house.

Additional Zoning Permit is required for additional work.

Upon review it was determined that the Zoning Permit:

- ☒ Permitted by Ordinance
- ☐ Permitted by Variance approved on: _____
- ☐ Valid Nonconforming Use is established by
 - ☐ Zoning Board of Adjustment
 - ☐ Zoning Officer

Christopher J. Romano, Assistant Zoning Officer

04/21/2016

Date

Sean Kinnevy, Zoning Officer

4/21/16

Date

Optimize Engineering Co., LLC

P.O. Box 264•Farmville•VA 23901
Ph: 434.574.6138•E-mail: grichardpe@aol.com

Zoning Review
Approval

FILE COPY

Richard B. Gordon, P.E.
President

By: ca
Date: 4-21-16 S. Gordon

April 6, 2016

Brick Building Dept.
Brick, NJ

Re: Solar Panels Roof Structural Framing Support

To Whom It May Concern:

I hereby certify that I am a Licensed Professional Engineer in the State of New Jersey. Please note the following conclusions regarding framing structure, roof loading, and proposed site location of installation:

1. Existing roof framing: Conventional framing at roof 1 is 2x6 at 16" o.c. with 14' span (horizontal rafter projection). This existing structure is definitely capable to support all of the loads that are indicated below for this photovoltaic project.
2. Roof Loading
 - 4.33 psf dead load (modules plus all mounting hardware)
 - 12 psf snow live load (20 psf ground snow live load reference)
 - 4.5 psf roof materials
 - Exposure Category B, 115 mph wind uplift live load of 19.6 psf (wind resistance)
3. Address of proposed installation: Residence of Tamera Dinklage, 214 Chard Lane, Brick, NJ

This installation design will be in general conformance to the manufacturer's specifications, and is in compliance with all applicable laws, codes, and ordinances, and specifically N.J.A.C. 5:23-6 (Rehabilitation Subcode), International Residential Code/ IRC 2015 NJ Edition, N.J.A.C. 5:23-3.21. The spacing and fastening of the mounting brackets is to have a maximum of 64" o.c. span between mounting brackets and secured using 5/16" x 3 1/2" length corrosive resistant steel lag bolts. In order to evenly distribute the load across the roof rafters, there shall be a minimum of 2 mounting brackets per rafter & min. 2" penetration of lag bolt per bracket, which is adequate to resist all 115 mph wind live loads including wind shear. The mounting brackets shall alternate between adjacent rafters for better distribution of roof load. Penetration of anchors for modules mounted within 18" of ridge and edges of roof is to be 3" minimum.

Very truly yours,
Optimize Engineering Co., LLC

Richard B. Gordon, P.E.
New Jersey P.E. License No. 29483



FILE COPY

TOWNSHIP OF BRICK

RELEASED FOR PERMIT INITIAL DATE
Building Subcode 7/11 4/28/16
Plumbing Subcode _____
Fire Subcode _____
Electrical Subcode PSC 4/29/16
Plan Reviewer _____
Plans Released _____
Construction Official _____

FILE COPY

THE Universal MODULE

60 CELL
MULTICRYSTALLINE MODULE

245-260W
POWER OUTPUT RANGE

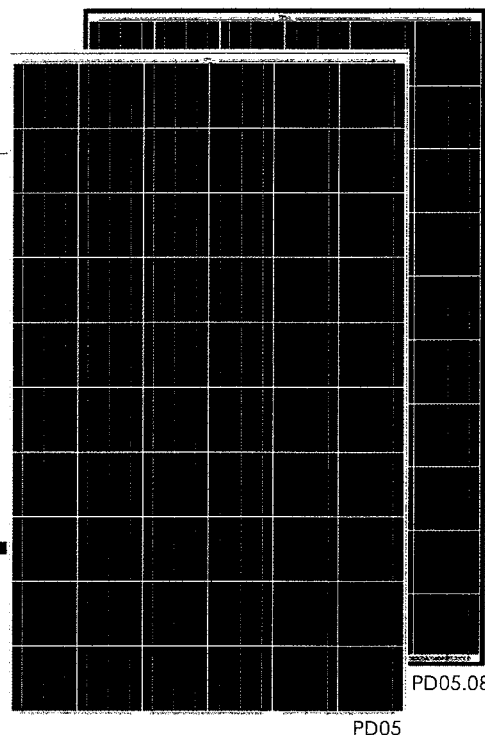
15.9%
MAXIMUM EFFICIENCY

0~+3%
POWER OUTPUT GUARANTEE

As a leading global manufacturer of next generation photovoltaic products, we believe close cooperation with our partners is critical to success. With local presence around the globe, Trina is able to provide exceptional service to each customer in each market and supplement our innovative, reliable products with the backing of Trina as a strong, bankable partner. We are committed to building strategic, mutually beneficial collaboration with installers, developers, distributors and other partners as the backbone of our shared success in driving Smart Energy Together.

Trina Solar Limited
www.trinasolar.com

Trinasolar
Smart Energy Together



PD05.08

PD05



Our most versatile product

- Compatible with all major BOS components and system designs
- 1000V UL/1000V IEC certified



One of the industry's most trusted modules

- Field proven performance



Highly reliable due to stringent quality control

- Over 30 in-house tests (UV, TC, HF, and many more)
- In-house testing goes well beyond certification requirements
- PID resistant

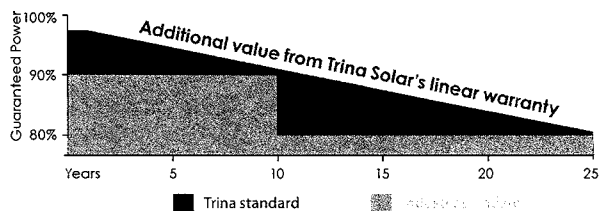


Certified to withstand challenging environmental conditions

- 2400 Pa wind load
- 5400 Pa snow load

LINEAR PERFORMANCE WARRANTY

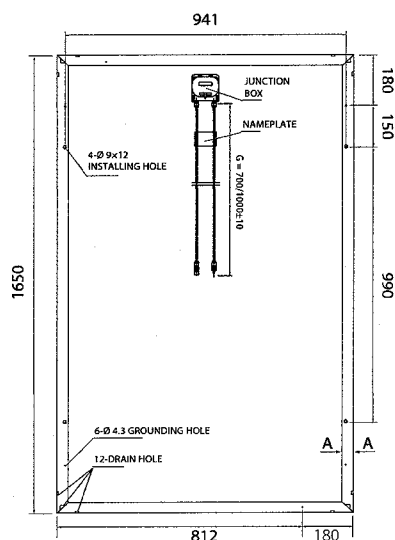
10 Year Product Warranty • 25 Year Linear Power Warranty



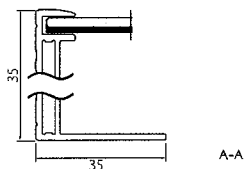
THE Universal MODULE

PRODUCTS	POWER RANGE
TSM-PD05	245-260W
TSM-PD05.08	245-260W

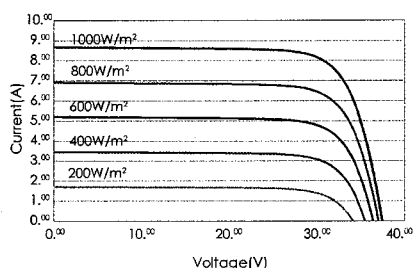
DIMENSIONS OF PV MODULE
unit:mm



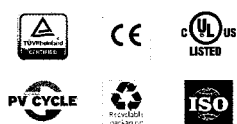
Back View



I-V CURVES OF PV MODULE (245W)



CERTIFICATION



ELECTRICAL DATA (STC)

Peak Power Watts-P _{MAX} (Wp)	245	250	255	260
Power Output Tolerance-P _{MAX} (%)	0 ~ +3			
Maximum Power Voltage-V _{MPP} (V)	29.9	30.3	30.5	30.6
Maximum Power Current-I _{MPP} (A)	8.20	8.27	8.37	8.50
Open Circuit Voltage-V _{OC} (V)	37.8	38.0	38.1	38.2
Short Circuit Current-I _{SC} (A)	8.75	8.79	8.88	9.00
Module Efficiency η_m (%)	15.0	15.3	15.6	15.9

STC: Irradiance 1000 W/m², Cell Temperature 25°C, Air Mass AM1.5.
Typical efficiency reduction of 4.5% at 200 W/m² according to EN 60904-1.

ELECTRICAL DATA (NOCT)

Maximum Power-P _{MAX} (Wp)	182	186	190	193
Maximum Power Voltage-V _{MPP} (V)	27.6	28.0	28.1	28.3
Maximum Power Current-I _{MPP} (A)	6.59	6.65	6.74	6.84
Open Circuit Voltage-V _{OC} (V)	35.1	35.2	35.3	35.4
Short Circuit Current-I _{SC} (A)	7.07	7.10	7.17	7.27

NOCT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s.

MECHANICAL DATA

Solar cells	Multicrystalline 156 × 156 mm (6 inches)
Cell orientation	60 cells (6 × 10)
Module dimensions	1650 × 992 × 35 mm (64.95 × 39.05 × 1.37 inches)
Weight	18.6 kg (41lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Tempered Glass
Backsheet	White
Frame	Silver Anodized Aluminium Alloy (PD05); Black (PD05.08)
J-Box	IP 65 or IP 67 rated
Cables	Photovoltaic Technology cable 4.0mm ² (0.006 inches ²), 700 mm (27.56 inches)/1000mm (39.37 inches)
Connector	MC4

TEMPERATURE RATINGS

Nominal Operating Cell Temperature (NOCT)	44°C (±2°C)
Temperature Coefficient of P _{MAX}	-0.41%/°C
Temperature Coefficient of V _{OC}	-0.32%/°C
Temperature Coefficient of I _{SC}	0.05%/°C

MAXIMUM RATINGS

Operational Temperature	-40 ~ +85°C
Maximum System Voltage	1000V DC (IEC) 1000V DC (UL)
Max Series Fuse Rating	15A

WARRANTY

10 year Product Workmanship Warranty
25 year Linear Power Warranty
(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 30 pieces
Modules per 40' container: 840 pieces

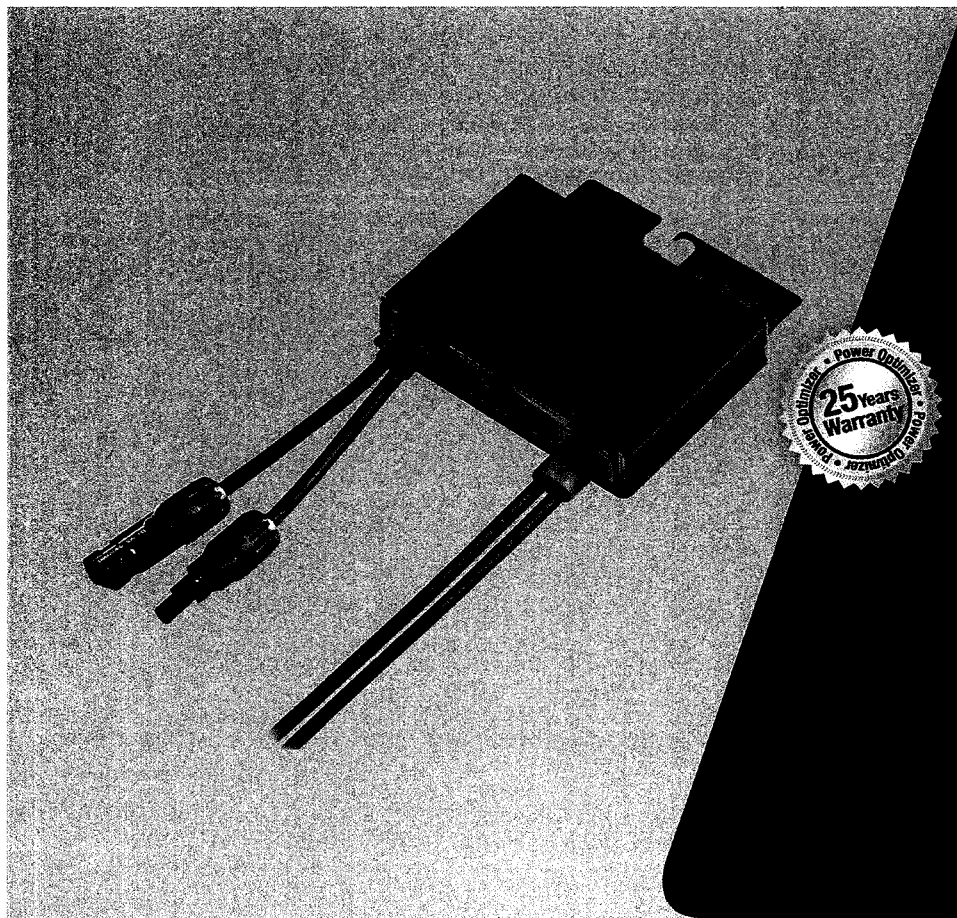
TSM_EN_August_2014_A [US]



SolarEdge Power Optimizer

Module Add-On For North America

P300 / P320 / P400 / P405



POWER OPTIMIZER

PV power optimization at the module-level

- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Module-level voltage shutdown for installer and firefighter safety



SolarEdge Power Optimizer

Module Add-On for North America

P300 / P320 / P400 / P405

	P300 (for 60-cell modules)	P320 (for high-power 60-cell modules)	P400 (for 72 & 96-cell modules)	P405 (for thin film modules)	
INPUT					
Rated Input DC Power ⁽¹⁾	300	320	400	405	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		80	125	Vdc
MPPT Operating Range	8 - 48		8 - 80	12.5 - 105	Vdc
Maximum Short Circuit Current (Isc)	10	11	10.1		Adc
Maximum DC Input Current	12.5	13.75	12.63		Adc
Maximum Efficiency	99.5				%
Weighted Efficiency	98.8				%
Overvoltage Category	II				
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)					
Maximum Output Current	15				Adc
Maximum Output Voltage	60			85	Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)					
Safety Output Voltage per Power Optimizer	1				Vdc
STANDARD COMPLIANCE					
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3				
Safety	IEC62109-1 (class II safety), UL1741				
RoHS	Yes				
INSTALLATION SPECIFICATIONS					
Maximum Allowed System Voltage	1000				Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters				
Dimensions (W x L x H)	128 x 152 x 27.5 / 5 x 5.97 x 1.08	128 x 152 x 35 / 5 x 5.97 x 1.37		128 x 152 x 48 / 5 x 5.97 x 1.89	mm / in
Weight (including cables)	760 / 1.7	830 / 1.8		1064 / 2.3	gr / lb
Input Connector	MC4 Compatible				
Output Wire Type / Connector	Double Insulated; MC4 Compatible				
Output Wire Length	0.95 / 3.0	1.2 / 3.9			m / ft
Operating Temperature Range	-40 - +85 / -40 - +185				°C / °F
Protection Rating	IP68 / NEMA6P				
Relative Humidity	0 - 100				%

⁽¹⁾ Rated STC power of the module. Module of up to +5% power tolerance allowed.

PV SYSTEM DESIGN USING A SOLAREEDGE INVERTER ⁽²⁾	SINGLE PHASE	THREE PHASE 208V	THREE PHASE 480V	
Minimum String Length (Power Optimizers)	8	10	18	
Maximum String Length (Power Optimizers)	25	25	50	
Maximum Power per String	5250	6000	12750	W
Parallel Strings of Different Lengths or Orientations	Yes			

⁽²⁾ It is not allowed to mix P405 with P300/P400/P600/P700 in one string.



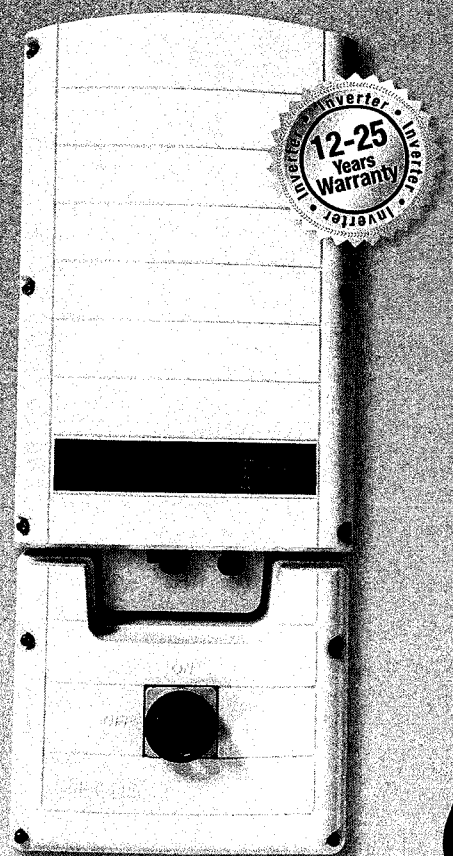


SolarEdge Single Phase Inverters

For North America

SE3000A-US / SE3800A-US / SE5000A-US / SE6000A-US /
SE7600A-US / SE10000A-US / SE11400A-US

INVERTERS



The best choice for SolarEdge enabled systems

- Integrated arc fault protection for NEC 2011 690.11 compliance
- Rapid shutdown for NEC 2014 690.12
- Superior efficiency (98%)
- Small, lightweight and easy to install on provided bracket
- Built-in module-level monitoring
- Internet connection through Ethernet or Wireless
- Outdoor and indoor installation
- Fixed voltage inverter, DC/AC conversion only
- Pre-assembled Safety Switch for faster installation
- Optional – revenue grade data, ANSI C12.1

USA - GERMANY - ITALY - FRANCE - JAPAN - CHINA - AUSTRALIA - THE NETHERLANDS - UK - ISRAEL

www.solaredge.us



Single Phase Inverters for North America

SE3000A-US / SE3800A-US / SE5000A-US / SE6000A-US /
SE7600A-US / SE10000A-US / SE11400A-US

	SE3000A-US	SE3800A-US	SE5000A-US	SE6000A-US	SE7600A-US	SE10000A-US	SE11400A-US	
OUTPUT								
Nominal AC Power Output	3000	3800	5000	6000	7600	9980 @ 208V 10000 @ 240V	11400	VA
Max. AC Power Output	3300	4150	5400 @ 208V 5450 @ 240V	6000	8350	10800 @ 208V 10950 @ 240V	12000	VA
AC Output Voltage Min.-Nom.-Max. ⁽¹⁾ 183 - 208 - 229 Vac	-	-	✓	-	-	✓	-	
AC Output Voltage Min.-Nom.-Max. ⁽¹⁾ 211 - 240 - 264 Vac	✓	✓	✓	✓	✓	✓	✓	
AC Frequency Min.-Nom.-Max. ⁽¹⁾	59.3 - 60 - 60.5							Hz
Max. Continuous Output Current	12.5	16	24 @ 208V 21 @ 240V	25	32	48 @ 208V 42 @ 240V	47.5	A
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							Yes
INPUT								
Maximum DC Power (STC)	4050	5100	6750	8100	10250	13500	15350	W
Transformer-less, Ungrounded	Yes							
Max. Input Voltage	500							Vdc
Nom. DC Input Voltage	325 @ 208V / 350 @ 240V							
Max. Input Current ⁽²⁾	9.5	13	16.5 @ 208V 15.5 @ 240V	18	23	33 @ 208V 30.5 @ 240V	34.5	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600k Ω Sensitivity							
Maximum Inverter Efficiency	97.7	98.2	98.3 97 @ 208V	98.3	98	98 97 @ 208V	98	%
CEC Weighted Efficiency	97.5	98	98 @ 240V	97.5	97.5	97.5 @ 240V	97.5	%
Nighttime Power Consumption	< 2.5							< 4
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, RS232, Ethernet, ZigBee (optional)							
Revenue Grade Data, ANSI C12.1	Optional ⁽³⁾							
Rapid Shutdown – NEC 2014 690.12	Yes							
STANDARD COMPLIANCE								
Safety	UL1741, UL1699B, UL1998, CSA 22.2							
Grid Connection Standards	IEEE1547							
Emissions	FCC part15 class B							
INSTALLATION SPECIFICATIONS								
AC output conduit size / AWG range	3/4" minimum / 16-6 AWG					3/4" minimum / 8-3 AWG		
DC input conduit size / # of strings / AWG range	3/4" minimum / 1-2 strings / 16-6 AWG					3/4" minimum / 1-3 strings / 14-6 AWG		
Dimensions with Safety Switch (HxWxD)	30.5 x 12.5 x 7.2 / 775 x 315 x 184					30.5 x 12.5 x 10.5 / 775 x 315 x 260		
Weight with Safety Switch	51.2 / 23.2		54.7 / 24.7			88.4 / 40.1		in / mm lb / kg
Cooling	Natural Convection				Natural convection and internal fan (user replaceable)	Fans (user replaceable)		
Noise	< 25				< 50			
Min.-Max. Operating Temperature Range	-13 to +140 / -25 to +60 (-40 to +60 version available ⁽⁴⁾)							dBA °F / °C
Protection Rating	NEMA 3R							

⁽¹⁾ For other regional settings please contact SolarEdge support.

⁽²⁾ A higher current source may be used; the inverter will limit its input current to the values stated.

⁽³⁾ Revenue grade inverter P/N: SExxxxA-US000NNR2 (for 7600W inverter:SE7600A-US002NNR2).

⁽⁴⁾ .40 version P/N: SExxxxA-US000NNU4 (for 7600W inverter:SE7600A-US002NNU4).

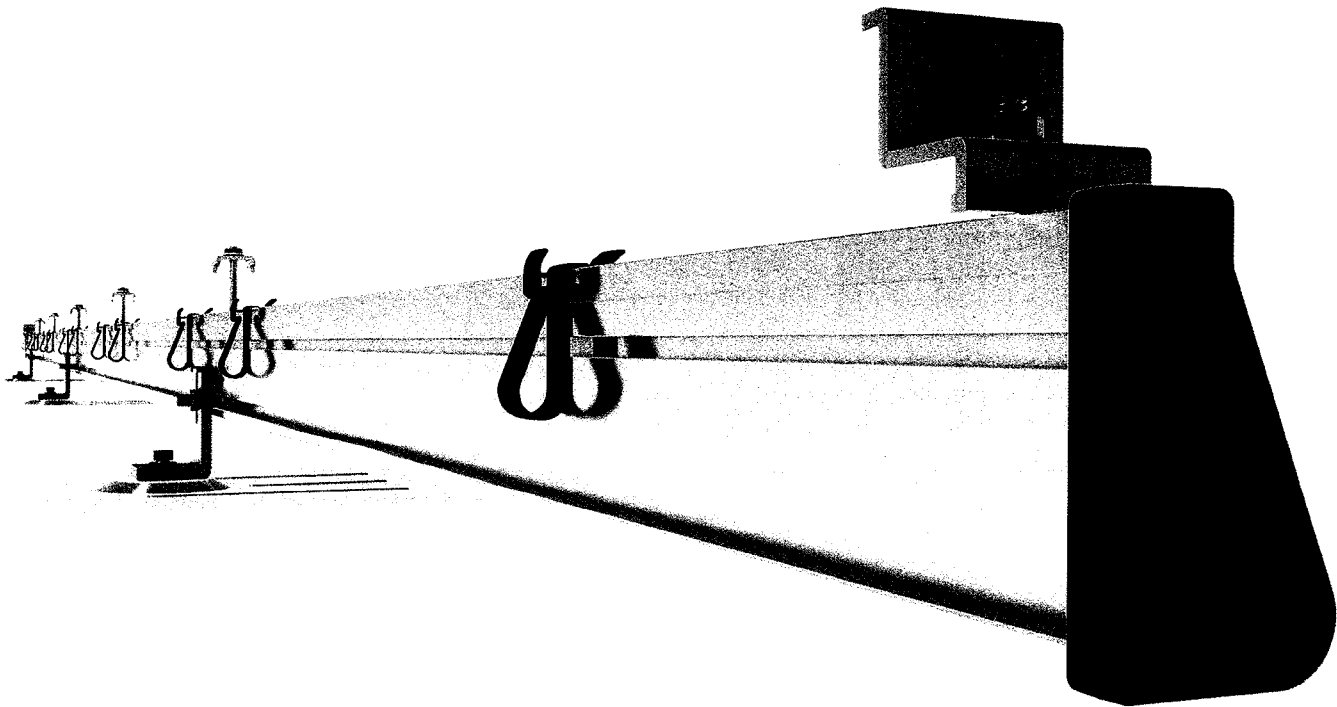


RoHS

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Roof Mount System



Built for solar's toughest roofs.

Anchored by the strongest rails in solar, the IronRidge Roof Mount System provides the durability and versatility to handle virtually any residential or commercial rooftop.

The unique curved profile of the XRS Rail increases its strength while also giving it an attractive look, making it very customer-friendly. In addition, IronRidge Rails are certified for integrated grounding, which eliminates separate module grounding components and procedures, making it very installer-friendly.



Strongest Rails

Longer spans between attachments, fewer roof penetrations.



PE Certified

Pre-stamped engineering letters available in most states.



Simple Assembly

Versatile and adjustable components simplify any array design.



Design Software

Online tool generates a complete bill of materials in minutes.



Integrated Grounding

UL 2703 system eliminates separate module grounding components.

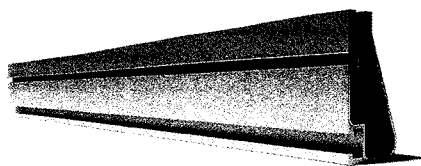


20 Year Warranty

Twice the protection offered by competitors.

Rails

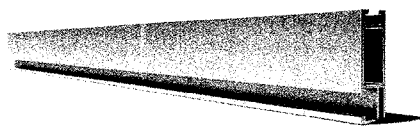
Standard Rails (XRS)



Curved rails increase spanning capabilities and aesthetics.

- Available in clear and black anod.
- Multiple sizes between 12' and 18'
- Made of corrosion resistant alum.

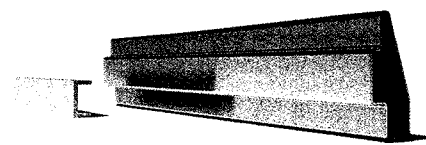
Light Rails (XRL)



Lightweight rails reduce cost for lighter load conditions.

- Available in clear and black anod.
- Multiple sizes between 12' and 18'
- Made of corrosion resistant alum.

Rail Splices ☺



Internal splices seamlessly connect rails, allowing easy L-foot installation.

- Different versions for XRS and XRL
- Includes self-tapping screws
- Available with grounding straps

Attachments

Flashings



FlashFoot™ is an all-in-one mounting product for composition shingle roofs.

- Integrated L-Foot and hardware
- Certified compliant with IBC & IRC
- PE certified with IronRidge Rails

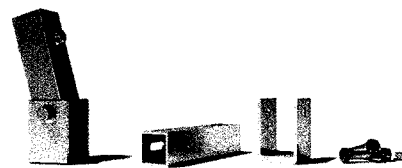
Adjustable L-Feet



Slotted L-feet provide adaptable attachment to standoffs and flashings.

- Available in clear and black anod.
- Works with XRS and XRL rails
- Compatible with third-party parts

Tilt Leg Kits



Fixed and adjustable tilt legs allow adjustment in all three axes.

- Attaches directly to XRS and XRL
- Ships with all required hardware
- Multiple sizes for 5-45 deg. tilts

Clamps & Accessories

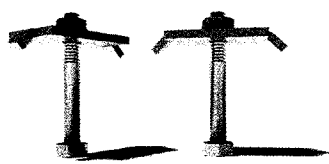
End Clamps



Secure modules to the end of the rails.

- Clear and black anod.
- Sizes from 1.22" to 2.3"
- Optional bottom clamps

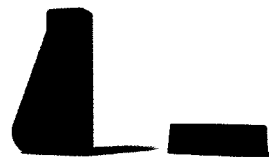
Mid Clamps ☺



Fasten modules in the middle of the rails.

- Clear and black anod.
- T-bolt or hex nut designs
- Grounding clamp offered

End Caps



Provide a finished look for rails.

- Keeps out debris
- Black polycarbonate
- UV protected

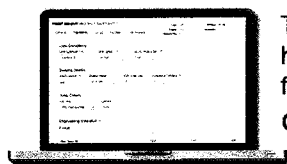
Wire Clips



Organize both DC and AC wiring along the rails.

- Attaches to both rails
- Supports ten 5mm wires
- UV protected

Online Software



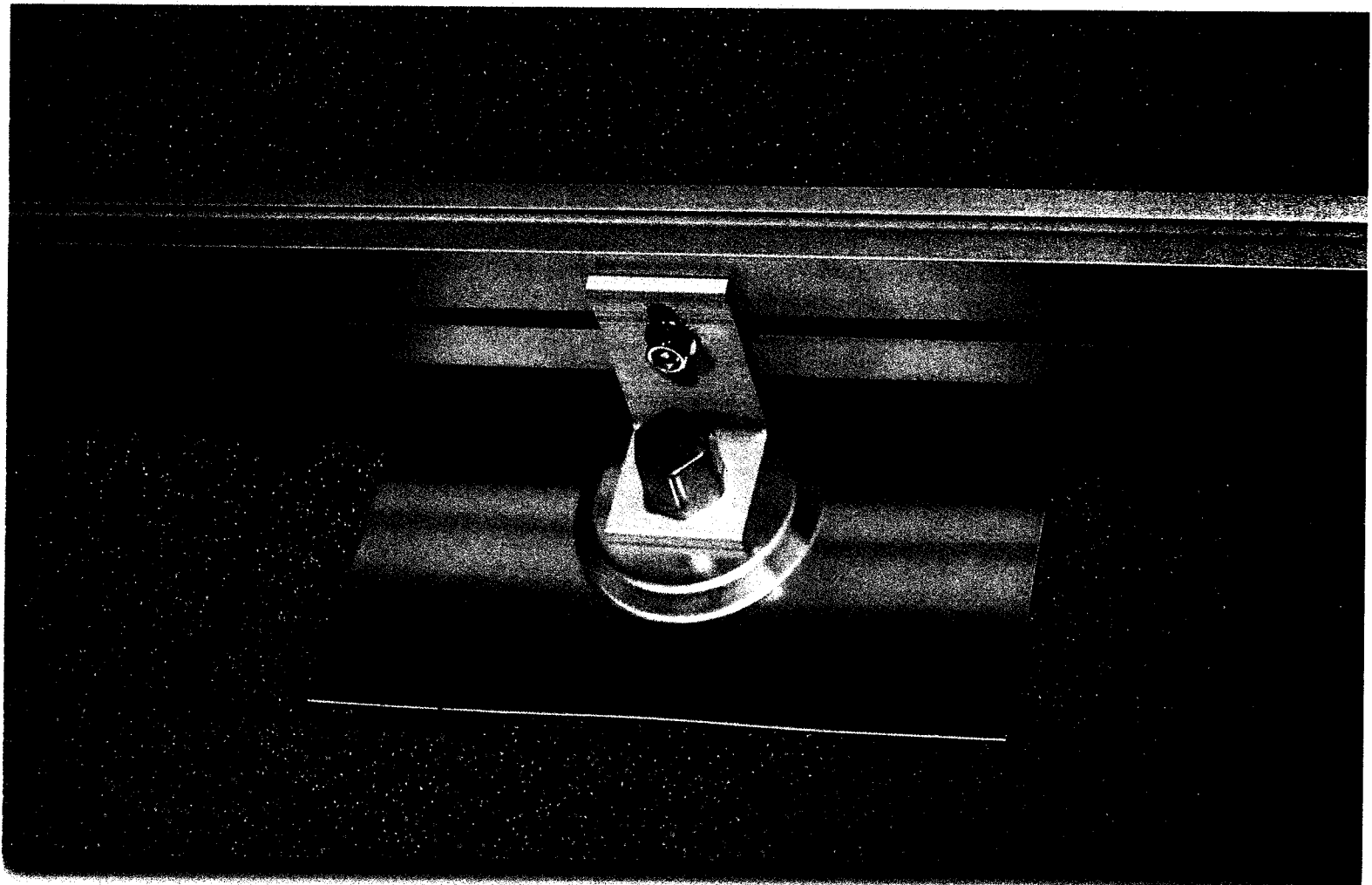
The IronRidge Design Assistant helps you go from rough layout to fully engineered system. For free. Go to ironridge.com/rm



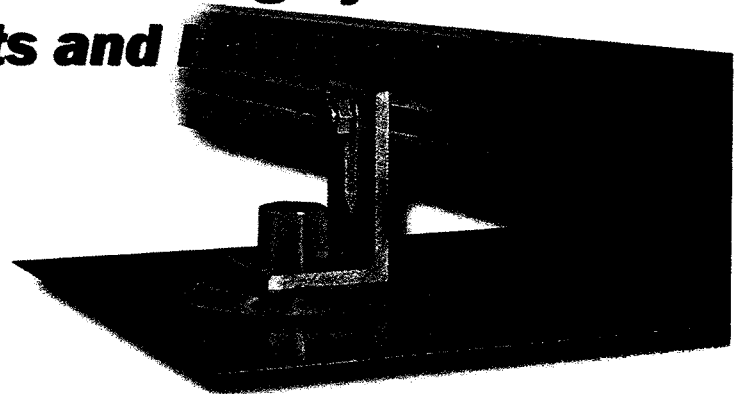
Available with Integrated Grounding
IronRidge offers UL 2703 certified components that automatically bond modules and rails to ground. Go to ironridge.com/ig

Ez Mount L Foot * Patent Pending

for Shingle Roofs



- * All in One Roof Flashing & Mount**
- * Mounts with all Standard Racking Systems**
- * Stainless Steel Lag Bolts and**
- * All Aluminum**
- * Easy to install**



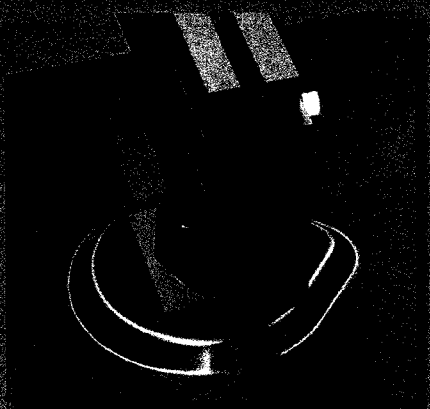
SUNMODO 

1915 E 5th St., Ste. C
Vancouver, WA 98661

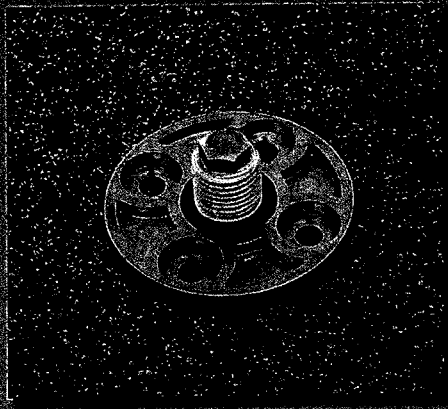
Phone: 360-335-3037 www.sunmodo.com

Ez Roof Mount

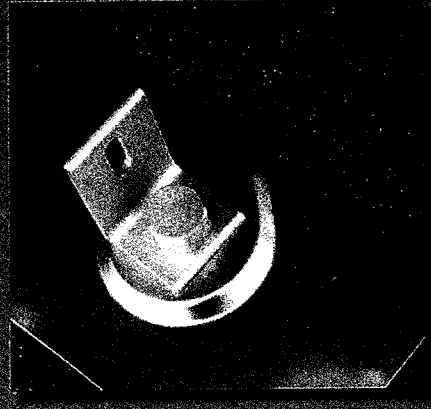
Engineered and Designed for easy installation, our roof mounting system is watertight and durable for any composite/shingle roof.



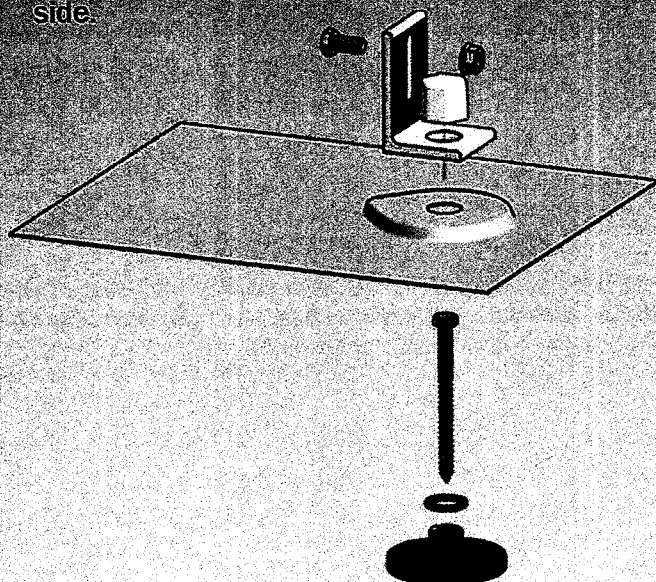
Serrated L Foot allows for rail mounting on either side.



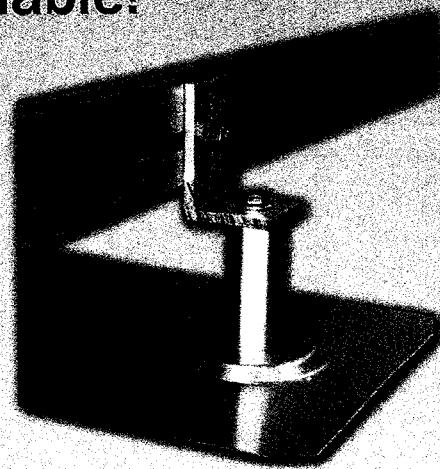
Versatile aluminum base for multiple configurations.



Flashing designed to redirect water flow.

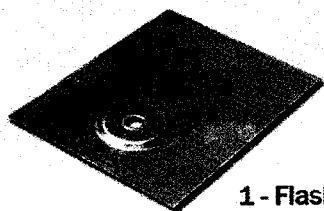


Optional Standoff Kits available!



Ez Mount L-Foot Kit for Shingle Roofs Kit# K10068-001

All kits come complete with the following parts:



1 - Flashing
Part# A20052-001



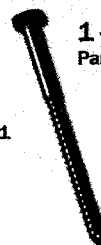
1 - Al Shoe
Part# A20065-001



1 - Hex Cap
Part# A20066-001



1 - Ez L Foot
Part# A20064-001



1 - Lag Bolt SS 5/16 x 4
Part# B15015-002



1 - Bolt 3/8 - 16 x 3/4"
1 - Flange Nut 3/8"

SUNMODO

1915 E 5th St., Ste. C
Vancouver, WA 98661

Phone: 360-335-3037 www.sunmodo.com

EcoX

The new EcoX is an innovative, rail-less racking system, proven to organize the installation process. The flexible design offers a clean aesthetic, simplified logistics, and delivers a higher quality installation at a lower cost per watt.



Fast.

Modules drop in from above and there is never a need to reach over or walk on modules. Pre-assembled components and quick connections make EcoX easy to install.

Simple.

Universal components mount to standard framed modules. With a single socket size and a wide range of adjustment, it is quick and easy to install any array with a clean, finished look.

Supported.

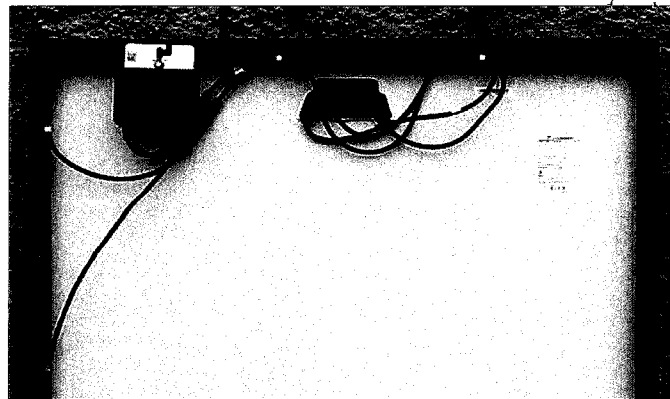
The Ecolibrium field support team offers on-site installation training and ongoing technical support. And from project planning to logistics to installation, we are dedicated to customer service.





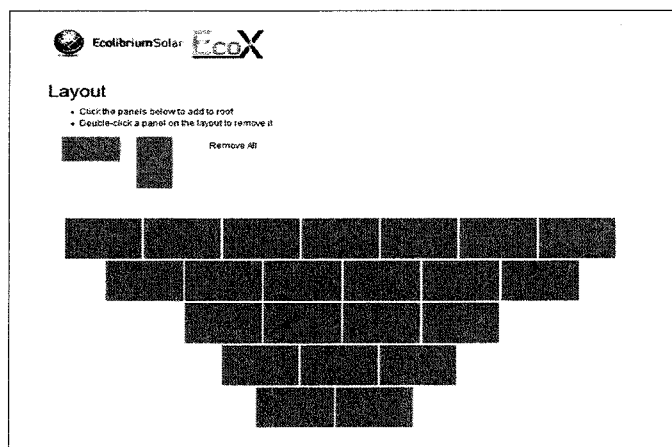
Aesthetic Design

A wide range of adjustment makes it easy to install a straight, level system. Components are designed to blend into the array, and the aesthetic skirt creates a finished look. Alternatively, a skirt free option is available to provide a more traditional look.



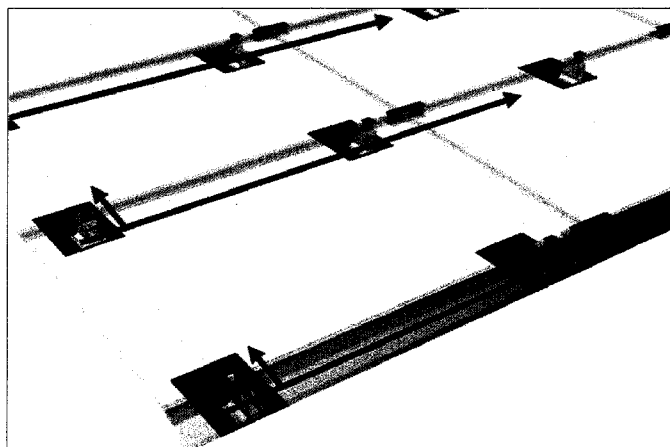
Cable Management

Whether installing with Microinverters, Power Optimizers, or String Inverters, EcoX provides wire management provisions to both prep the modules, and to route homerun or trunk cables throughout the array.



Flexible System Design

The EcoX Estimator is a powerful racking system design tool. The user inputs all site conditions and can layout multiple roof surfaces. The EcoX Estimator outputs a site specific design package with engineering specs and bill of materials.



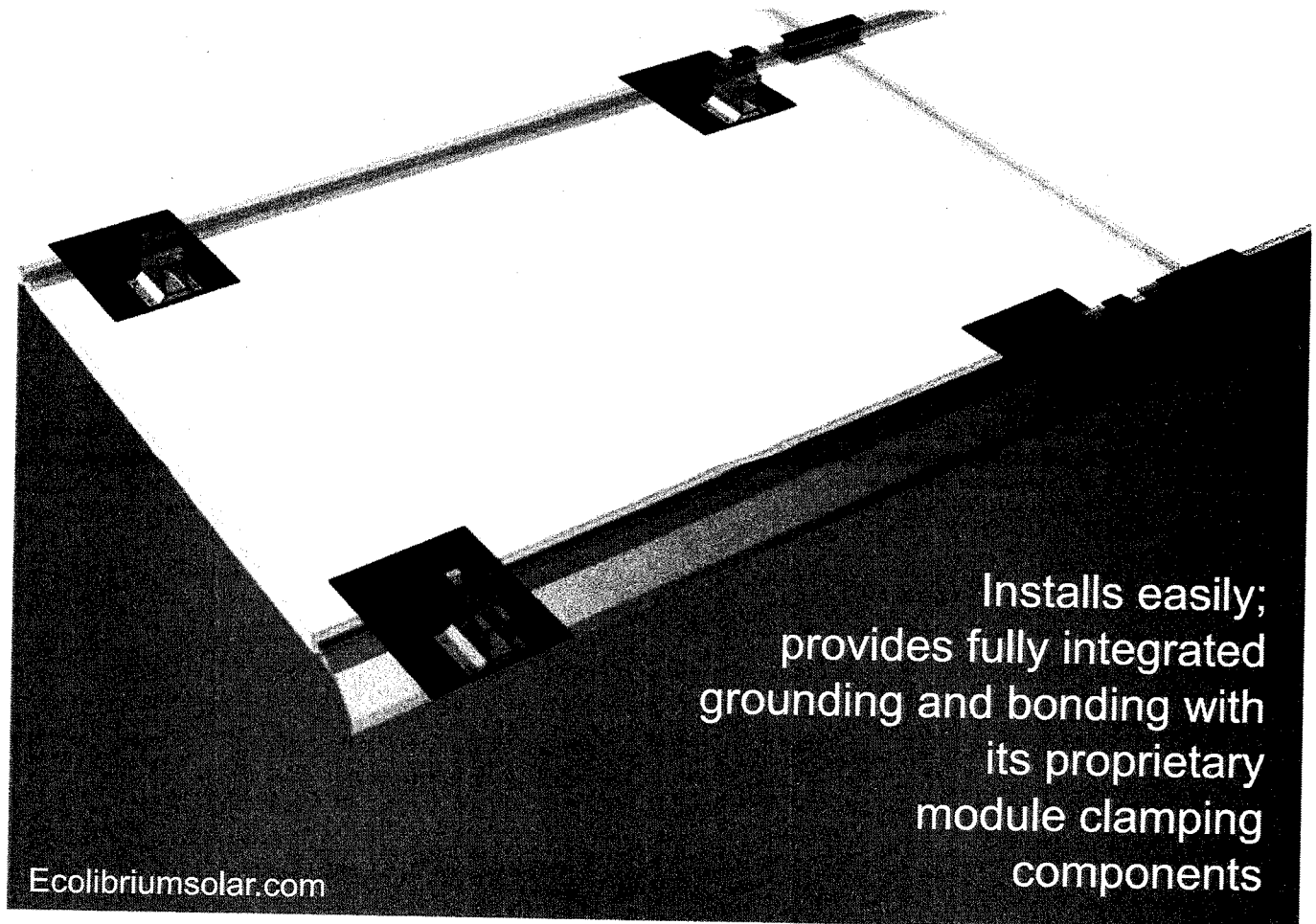
Single Point Grounding

EcoX and approved modules create a continuously bonded system. The installer can connect a finished array to ground with a single bonding lug.

Technical Specifications	
Materials	Racking components: Aluminum, stainless hardware, dark bronze anodized upper surface, mill finish lower surfaces Flashings: Aluminum, black powder coated finish
Grounding/Bonding Validation	UL2703 – <i>see installation manual for specific module approvals</i>
Fire Resistance Validation	UL2703 – Class A, Type 1 and Type 2 modules
Mechanical Load Validation	UL2703 – <i>see installation manual for specific module approvals</i>
Flashing Validation	ICC-ES AC286/UL441 Rain Test For Roof Flashing
Adjustability	1" vertical range, 3.5" North/South range, connect anywhere in East/West direction
Warranty	15 years



EcolibriumSolar



Installs easily;
provides fully integrated
grounding and bonding with
its proprietary
module clamping
components

Ecolibriumsolar.com

EcoX is an innovative, simple, and easy to install flush-mount solar racking system. By eliminating the mounting rail, EcoX offers a flexible system layout and streamlines the installation process.

EcoX utilizes aluminum components with stainless steel hardware, ensuring the system will withstand harsh installation environments. With EcoX, the racking and modules work together as a system, creating an interconnected, continuously bonded structure.

EcoX Features & Benefits

- Certified to UL2703
- Certified System Grounding and Bonding via module Clamp and Coupling Assemblies
- Load tested to UL2703, Section 21
- Rain tested to ICC AC286-12, Section 4.1
- Certified for use with approved 60 cell modules
- Class A Fire Rating (with or without Skirt)

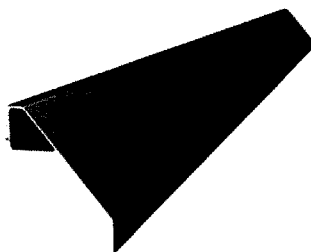
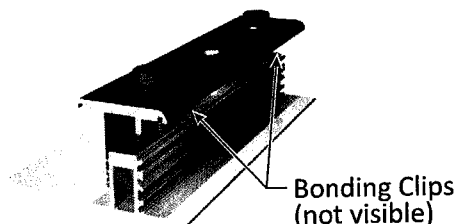
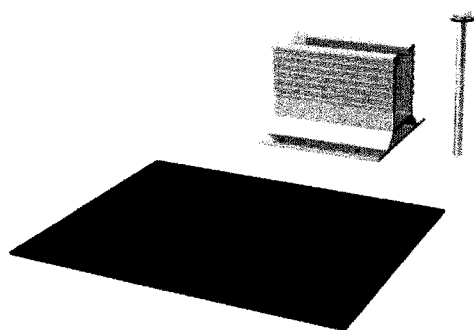
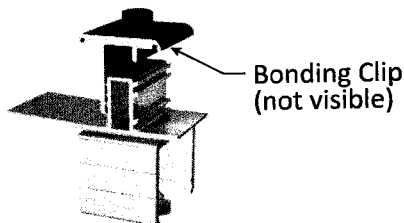


US Office:

Email: Sales@EcolibriumSolar.com

Telephone: 740-249-1877

System Components

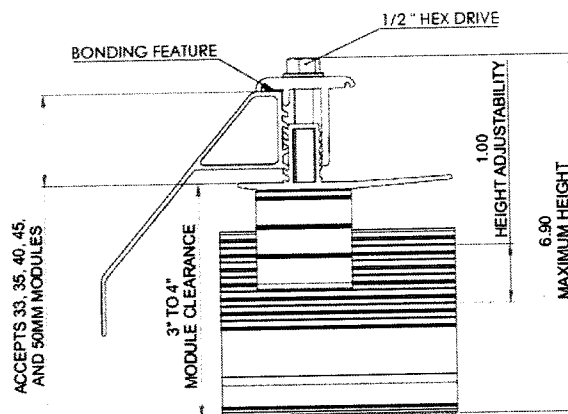


Clamp Assembly

The Clamp Assembly is mounted to the Base of the Attachment Kit. Upper and Lower Clamp secures edges of Modules and engage Skirt on Skirt row. The Strut Bolt and Strut Nut secure Clamp Assembly to Base and Modules to Clamp Assembly. Factory installed Bond Clip bonds Skirt to Attachment Kit on south row, and Module to Attachment Kit on subsequent rows.

Attachment Kit

The Attachment Kit is secured to the roof and supports the array via the Clamp Assembly. Its features include grooves along the sides of Base which provide adjustability of the Clamp Assembly in *height* and *uphill-downhill* directions. The base is attached via a single lag screw with a pre-installed sealing washer or utilizing its alternate four attachment holes.

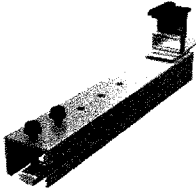
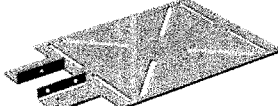
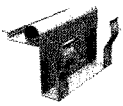


Coupling Assembly

Couplings connect up to four Modules together, they include indicator marks to set a 1/2" gap between Modules. On the first downhill row, Couplings secure adjacent Skirts at their joints. Couplings include factory installed Bond Clips (two per Coupling) bond Modules left and right.

Skirt

Skirts are used on the first downhill row to enhance the appearance along the edge of the array. Dovetail Engagement positions height of and locks Skirt to Clamp Assemblies and Couplings. Factory cut to length to match specific Modules. Available in three configurations (height variances) to fit the most common Module sizes.

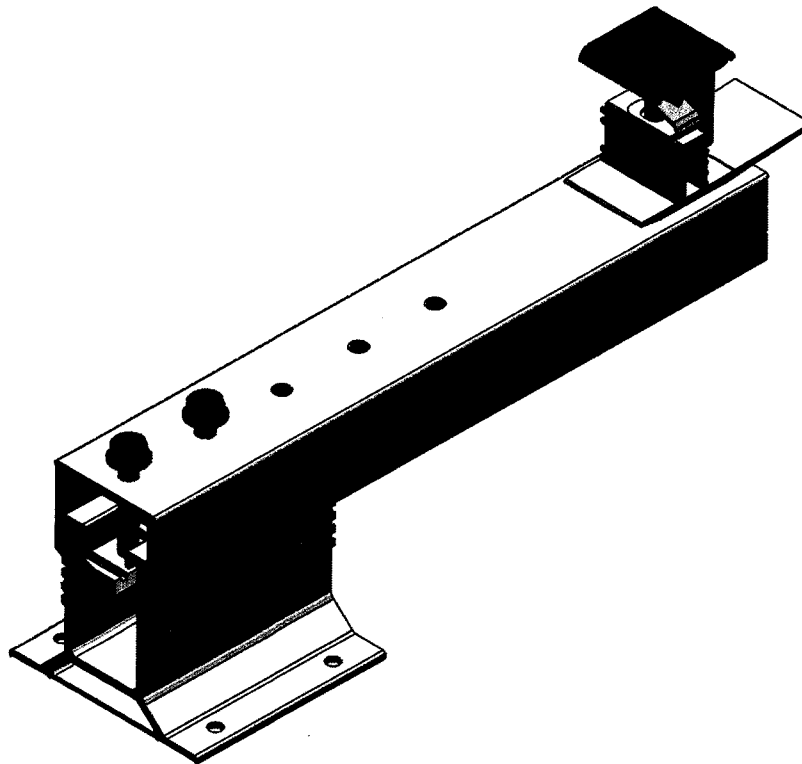
Bonding Clip	North Row Extension	Junction Box Bracket	Power Accessory Bracket	Dynobond Jumper	Connector Bracket
					
US Office:			Email: Sales@EcolibriumSolar.com		Telephone: 740-249-1877

2016-05-12

To Whom It May Concern:

Ecolibrium Solar (Ecolibrium) provides the North Row Extension (part number ES10186) pictured below. It extends the clamp location up to 10" towards the peak of the roof from the lag location. This part has been designed to replace the clamp assembly where used.

The applicable use of this part is limited to composition shingle roofs where installation of the module course nearest the roof peak would ordinarily require a base or row of bases which could not be properly flashed. In these cases, the base can be installed two tile courses down from the peak of the roof and the North Row Extension can be installed on the base in order to reach the module edge.



Feel free to contact me if you have any questions,



Ben J. Stuart Jr., CMS | Validation Engineer

Office | 740.249.1877 x 7024

Email | bstuart@ecolibrumsolar.com



Grounding and Bonding



Ecolibrium Solar

Bonding Approval:

Grounding and Bonding is a challenge with any solar installation. This paper outlines the grounding and bonding certification and approval of the EcoX rail-less racking system, and outlines specific bond connections between components.

What is EcoX?

EcoX is a rail-less racking system designed to support flush-to-roof Solar PV installations. The EcoX system attaches to the roof, and the EcoX components connect individual modules together into an array. EcoX system provides a reliable mechanical support system to mount modules to the roof for the life of a PV installation. In addition, EcoX racking and approved modules create a continuously bonded system. This paper outlines the bonding certification, and shows how bond points are established with the EcoX system.

How EcoX Grounding and Bonding Certified?

EcoX is certified to UL2703. UL2703 is a system certification, designed to rate the racking system with specific approved modules. This testing ensures the EcoX components combined with approved modules create a reliable bond path. The testing consists of multiple test cycles to simulate weathering and corrosion, and validates that the system will remain bonded over time. A copy of the test certificate is included on the following page.

What modules are approved for use with EcoX?

The UL2703 certification includes specific modules that have been tested and validated for use with EcoX. Additional modules may be added over time.

What agency certifies EcoX?

EcoX has been tested and certified to UL2703 by TUV Rheinland PTL, a Nationally Recognized Test Laboratory.

How is the EcoX system labeled?

The EcoX label applied to the back of the skirt component documents the system certification. The bond connections within the EcoX system are documented in this paper. The EcoX UL Certificate documents that the system and all provided EcoX components, along with the listed modules, have passed the UL2703 bonding testing.



Grounding and Bonding



Ecolibrium Solar



Solar / Fuel Cell Technologies
Photovoltaic Modules

Attn: Mr. Chris Bamat
Lead Validation Engineer
Ecolibrium Solar
340 West State Street
Unit 22
Athens, OH 45701

July 06, 2015

Letter of Conformance – Bonding Tests

Type of Equipment: PV Mounting System
Model Designation: EcoX2
Serial Number: N/A
Test Requirement: UL 2703

TÜV Rheinland Reference File: L1-ELS150128a (RevB)
TÜV Rheinland Project Number: ELS150128a

Dear Mr. Bamat,

Ecolibrium Solar's **EcoX2 PV mounting system** has been successfully evaluated for electrical Bonding according to the requirements of UL 2703.

Congratulations on this achievement.

The following modules have been evaluated and qualified for use on the EcoX2 racking system with respect to Bonding.

Manufacturer	Module Type/Series
Wingli Solar	WGE 60 (YL200P-296)
Wingli Solar	Panda 60 (YL200C-306)
Trina Solar	TSM-PRO3.XX
SunEdison	F-Series: F200000-KX
SolarWorld	Pro - SW XXX POLY
SolarWorld	Plus - SW XXX MONO BLACK
SolarWorld	Plus - SW XXX MONO
Canadian Solar	CS6P Monocrystalline (CS6P-K00M)
Canadian Solar	CS6P Polycrystalline (CS6P-K00P)
Hyundai	HIS-K000RM (60-cell)
Hyundai	HIS-K000RG (60-cell)
Hyundai	HIS-K000MG (60-cell)

Manufacturer	Module Type/Series
Q-Cells	Q.PRO-G3
Q-Cells	Q.PRO BFR-G3
LG Solar	LGXXXN1C-A3 (Mono Mono)
LG Solar	LGXXXS1K-A3
LG Solar	LGXXXS1C-A3
LG Solar	LGXXXN1C-G3
LG Solar	LGXXXA1C-B3
Jinko Solar	JKMXXXP-60
Jinko Solar	JKMXXXM-60
Jinko Solar	JKMXXXM-60
Jinko Solar	JKMXXXP-60
Suniva	OPT XXX-60-4-180

TÜV Rheinland PTL, LLC

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Member of
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This letter may be used as a letter of conformance (LOC) indicating these PV modules are suitable for use on the EcoX2 PV mounting system with respect to electrical Bonding. The EcoX2 racking system installation manual may be updated to include these modules.

Sincerely,

Jack Castagna, PE
Solar Components Program Manager
TÜV Rheinland PTL

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EcoX Bonding Description:

The outline below provides a general guide to explain how the EcoX system functions.

Integrated Bonding:

EcoX components feature integrated bonding. In general, these features “bite” or embed into the aluminum of the module frame and racking components during clamping, creating a bonded connection. The continuity of these connections, and of the EcoX components, is verified and documented by the UL2703 Certification.

Torque requirements:

All EcoX components should be torqued to 14 ft-lbs.

Bonding Continuous Rows:

The clamps and couplings in the EcoX system create a continuous bonded row. Clamps, couplings, and other components bond on the south (or downhill) side of the component. Once a given row of clamps and couplings is installed, all EcoX components in that row are bonded to the skirt or row of modules on the *downhill* side.

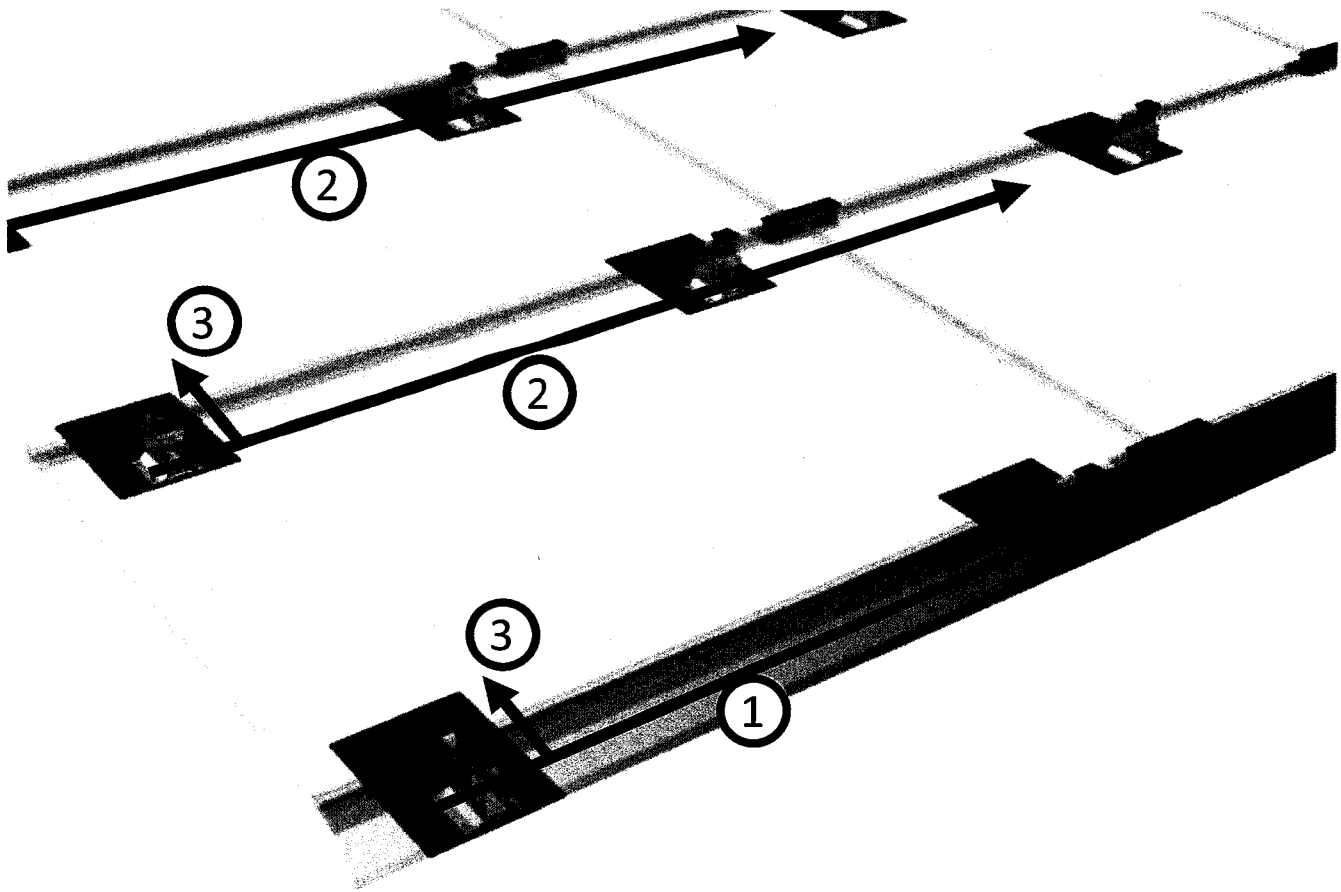
Row to Row Bonding:

Once continuous rows are installed, a bonding clip is used on a single clamp in each row. This bonds the row of skirts to the first row of modules, and each row of modules to the adjacent row. The result is a continuously bonded array, with all racking components and module frames bonded together.

Final Ground Connection:

It is the installer’s responsibility to connect the array to a final ground point.

System Bonding Overview:



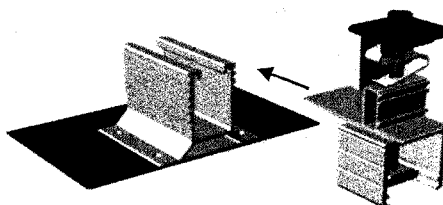
- ① Skirt row continuous bond:**
Continuous bond from base and clamp to skirt. Couplings bond skirt to skirt. Complete row of skirts and EcoX components clamped to skirt are bonded.
- ② Module row continuous bond:**
Continuous bond from flashing through clamp to module. Couplings bond module to module. Complete row of modules and EcoX components clamped to modules are bonded.
- ③ Row to row bonding:**
Bond clip added to uphill side of one clamp per row. This bonds skirt row to modules on downhill row, and module row to next module row on each subsequent row.

Component Connections:

The following outlines bond connection mechanisms between Components:

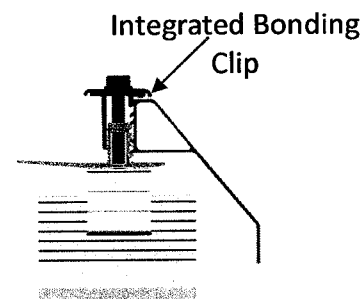
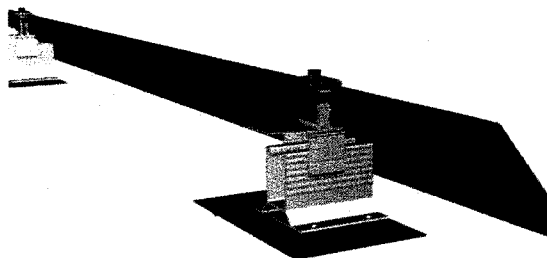
Clamp Assembly to Base:

The clamp slides onto the base. The strut nut (highlighted in yellow) has teeth that embed in the base.



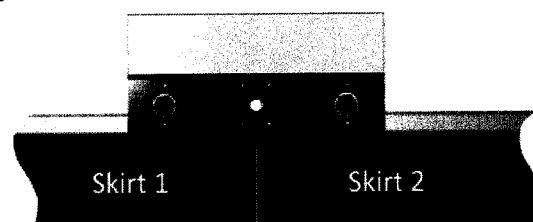
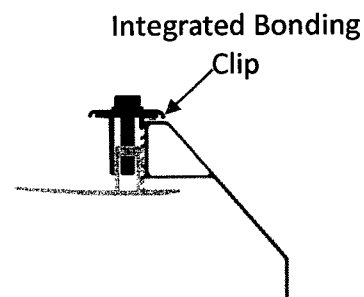
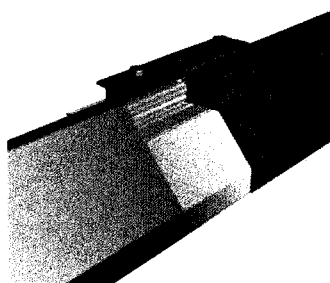
Clamp to Skirt:

The clamp features an integrated bonding clip. This clip bites onto the skirt on the downhill row.



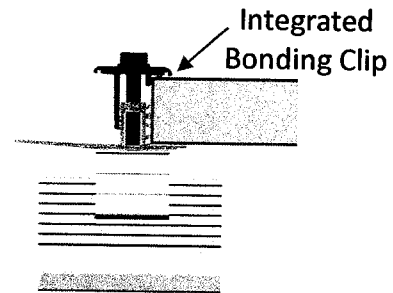
Coupling Bonds Skirt to Skirt:

The coupling features two integrated bond clips. These clip bond each skirt to the neighboring skirt.



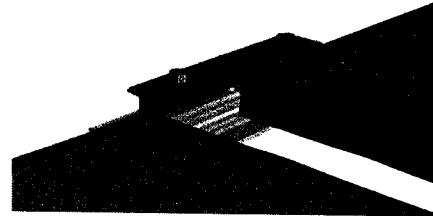
Clamp to Module:

The clamp features an integrated bonding clip. The clamp bonds to the module downhill from the clamp.



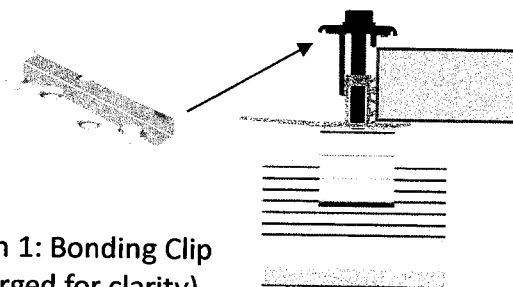
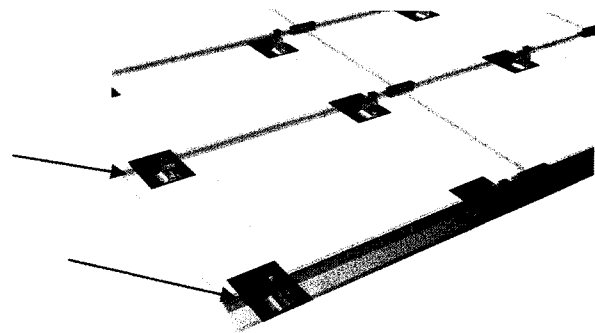
Coupling Bonds Module to Module:

The coupling features two integrated bond clips. On module rows, the coupling bonds each module to the neighboring module.

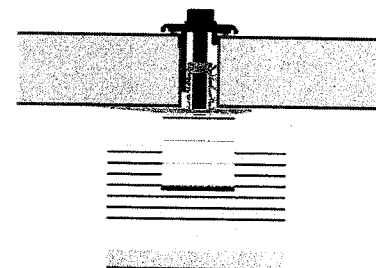


Bond Row to Row:

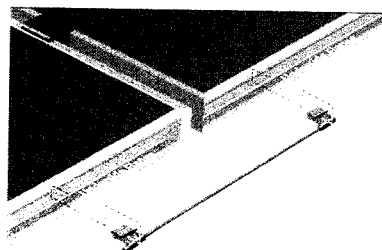
Additional bonding must be added to bond the skirt row to the first row of modules, and to bond each row of modules together. This can be accomplished by adding a bond clip to the uphill side of each clamp. Alternately, and approved bonding jumper may be used. This is required between the skirt and the first row of modules, and between every row of modules. Either side of the array is acceptable.



Option 1: Bonding Clip
(Enlarged for clarity)



Option 2: Bonding Jumper



OFFICE DATE RECEIVED: _____

VIII. PRIOR APPROVALS CHECKLIST (office use only)	LOCAL APPROVAL		COUNTY APPROVAL		REGIONAL APPROVAL		STATE APPROVAL		COMMENTS
	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	Prelimin. Initial	Final Date	
☒ Zoning Officer	NC	9/21/16							2A-16-00622
☐ Planning Board									
☐ Zoning Board									
☐ Sewer Authority									
☐ Water Authority									
☐ Police Department									
☐ Health Department									
☐ Soil Conservation									
☐ N.J. Department of Community Affairs									
☐ N.J. Department of Transportation									
☐ N.J. Department of Environmental Protection									
☐ Utility Dig No.									
☐									
☐									

IX. SUBCODES AND SPECIAL REGULATIONS APPLICABLE (office use only—optional)

Name of Code & Edition	Name of Code & Edition
Building _____	Energy _____
Electrical _____	Barrier Free _____
Plumbing _____	Flood Hazard _____
Fire Protection _____	As Built Elevation Cert. _____
Mechanical _____	Other _____

X. CERTIFICATES ISSUED (office use only)

	DATE ISSUED	DATE EXPIRED	DATE REISSUED	DATE EXPIRED
☐ Temporary Certificate of Occupancy	No. _____	_____	_____	_____
☐ Temporary Certificate of Compliance	No. _____	_____	_____	_____
☐ Continued Certificate of Occupancy	No. _____	_____	_____	_____
☐ Certificate of Compliance	No. _____	_____	_____	_____
☐ Certificate of Occupancy	No. _____	_____	_____	_____
☐ Certificate of Approval	No. _____	_____	_____	_____
☐ Lead Abatement Clearance Certificate	No. _____	_____	_____	_____

5/13/16 Emailed R.F.P.

