



# CRA ARCHITECTS

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## ADDENDUM #1

### NFC – SOLAR ARRAY INSTALLATION

CRA Project Number: 24032

October 24, 2024

**Date:** November 17, 2024

**Project No:** BID-NFC-06-2024

#### ADDENDUM NO. 01

N.F.C. Solar Array Installation

This Addendum Number One (1) consists of seven (7) type written pages, substitution request and Drawings a part of the Construction Documents and modifies and / or supplements the original Construction Documents dated October 08, 2024, titled “N.F.C. Solar Array Installation” and consists of the following documents and drawings:

#### General:

The following changes, additions, or deletions shall be made to the following documents as indicated; and all other conditions shall remain the same:

#### SPECIFICATIONS

**SECTION 011000 – SUMMARY OF WORK, 1.02,A (pg 98)**

**SECTION 011000 – SUMMARY OF WORK, 1.02,D**

**SECTION 011000 – SOLAR ENERGY ELECTRICAL POWER GENERATION EQUIPMENT OF WORK, Part 1, 1.01 WORK INCLUDED: A**

**SECTION 011000 – SOLAR ENERGY ELECTRICAL POWER GENERATION EQUIPMENT OF WORK, Part 1, 1.06 WARRANTY: A 1, 2**

**SECTION 011000 – SOLAR ENERGY ELECTRICAL POWER GENERATION EQUIPMENT OF WORK,**

**PART 2 – PRODUCTS, 2.01 BASIC REQUIREMENTS:**

**SECTION 011000 – SOLAR ENERGY ELECTRICAL POWER GENERATION EQUIPMENT OF WORK,**

**PART 2 – PRODUCTS, 2.02 SOLAR PANELS:**

#### ARCHITECTURE

**NFC BUILDING 6 RevB, PV2 - ENLARGED ELEVATIONS**

Edit Design Specifications

**NFC BUILDING 8 RevB, PV2 - ENLARGED ELEVATIONS**

Edit Design Specifications

**NFC BUILDING 13 RevB, PV2 - ENLARGED ELEVATIONS**

Edit Design Specifications

**NFC BUILDING 34 RevB, PV2 - ENLARGED ELEVATIONS**

Edit Design Specifications

**A601 – DETAILS**

Revised column wrap size to 8” radius.

**SECTION 011000 - SUMMARY OF WORK**

**PART 1 - GENERAL**

1.01 RELATED DOCUMENTS: Drawings and other Division-1 Specification Sections, apply to this Section.

1.02 PROJECT DESCRIPTION

A. The Project shall consist of the Construction of approximately 400 kW DC Solar Array including approximately 730 Tier One Solar photovoltaic modules and 8 of 480V, 3-phase grid tied inverters. The approximately 400kW of Solar photovoltaic modules are to be divided into appropriately sized arrays and installed on separate roofs of 4 separate buildings on the main campus of North Florida College. The Basis of design is included in the specifications and drawing, and alternate solar modules and inverters will be allowed. Solar modules and inverters may be approved by written communication with CRA in advance of BID submission. Evaluation of the BIDs will include installation of the Maximum reasonable direct current power and the Maximum reasonable Alternating Current power from base design.

**SECTION 011000 – SUMMARY OF WORK, 1.02,D**

D. Applicable Codes: All work shall be completed in accordance with the following codes where applicable:

Florida Building Code, Building (FBC,B) 8th (2023) Edition.

Florida Building Code, Existing Building (FBC,EB) 8th (2023) Edition.

Florida Building Code, Mechanical (FBC,M) 8th (2023) Edition.

Florida Building Code, Fuel Gas (FBC,FG) 8th (2023) Edition.

Florida Building Code, Plumbing (FBC,P) 8th (2023) Edition.

Florida Building Code, Accessibility 8th (2023) Edition.

Florida Fire Prevention Code (FFPC) 8th (2023) Edition.

NFPA 101 – Life Safety Code 2021 Edition.

National Electric Code (NEC) **2020 Edition**

**SECTION 011000 – SOLAR ENERGY ELECTRICAL POWER GENERATION EQUIPMENT OF WORK,  
Part 1, 1.01 WORK INCLUDED:**

**A** Furnish all labor, materials, equipment and incidentals necessary to build North Florida College a new 400 kW photovoltaic (PV) solar energy system spread over 4 roof tops. All Electrical work shall be in accordance with Division 16 and shall meet or exceed standards for a municipal 480-volt, 3- phase, grid-connected, solar array. The PV solar array shall contain all of the components required and described and as required to provide a complete and operating grid- connected system. **Two** of four buildings power is supplied from a single transformer, a single meter and a main distribution panel.

**SECTION 011000 – SOLAR ENERGY ELECTRICAL POWER GENERATION EQUIPMENT OF WORK,  
Part 1, 1.06 WARRANTY: A 1, 2**

**1.06 WARRANTY:**

A. In addition to the Contractor’s standard one (1) year warranty, the equipment manufacturers shall provide the following warranties:

**1. Solar Modules: Manufacturer’s 10-year warranty on materials and workmanship and a 25-year linear performance warranty.**

**2. Solar Inverters: Manufacturer’s standard at least 5-year warranty plus prepaid 5-year extended warranty for a total of 10 years of factory coverage.**

**PART 2 – PRODUCTS, 2.01 BASIC REQUIREMENTS:**

**A. 480V, 3-Phase, 4-Wire System**

**B. The Solar Energy Electrical Power Generation Equipment shall be non-islanding.**

**C. Comprised of sufficient PV modules to produce having an STC rating of 402 kW.**

**PART 2 – PRODUCTS, 2.02 SOLAR PANELS:**

**A. The Solar Panels shall utilize superior monocrystalline, N-Type cells and shall be designed and manufactured by a Tier 1 manufacturer in an ISO 9001 factory. Utilizing all-back contact solar cells, the Solar Panels shall deliver a total panel conversion efficiency of greater than 20%. The Solar Panels shall have a reduced voltage temperature coefficient and a low-light performance attributes that shall provide optimal energy delivery per peak power watt. Solar Panels (modules) shall have the following minimum physical and electrical characteristics:**

- 1. 66-172 solar cells per module**
- 2. Module size similar to: 79.7" x 40.3" x 1.57"**
- 3. Peak Power: (+/-5%) (Pmax) of at least 425W (STC)**
- 4. Rated Voltage minimum: (Vmpp) 40.V**
- 5. Rated Current (Impp) minimum: 10 A**
- 6. Open Circuit Voltage (Voc) max: 60.V**
- 7. Short Circuit Current (Isc) max: 20.A**
- 8. Maximum System Voltage (UL): 1500V**
- 9. Warrantied Output after 25 years: 80%**
- 10. Front Face Load Rating: At least 6000 Pascals Front load and 4000 Pascal back**
- 11. Rear Face Load Rating: At least 6000 Pascals Front load and 4000 Pascal back**

**ARCHITECTURE**

**NFC BUILDING 6 RevB, PV2 - ENLARGED ELEVATIONS**

RISK CATEGORY: III

CONSTRUCTION: COMMERCIAL

ZONING: COMMERCIAL

SNOW LOAD (ASCE 7-22): 5 PSF

EXPOSURE CATEGORY: C

WIND SPEED (ASCE 7-22): 120 MPH

### **NFC BUILDING 8 RevB, PV2 - ENLARGED ELEVATIONS**

RISK CATEGORY: III

CONSTRUCTION: COMMERCIAL

ZONING: COMMERCIAL

SNOW LOAD (ASCE 7-22): 5 PSF

EXPOSURE CATEGORY: C

WIND SPEED (ASCE 7-22): 120 MPH

### **NFC BUILDING 13 RevB, PV2 - ENLARGED ELEVATIONS**

RISK CATEGORY: III

CONSTRUCTION: COMMERCIAL

ZONING: COMMERCIAL

SNOW LOAD (ASCE 7-22): 5 PSF

EXPOSURE CATEGORY: C

WIND SPEED (ASCE 7-22): 120 MPH

Delete "8x STRINGS OF 17 MODULES WITH 17 RAPID SHUTDOWN DEVICES EACH"

### **NFC BUILDING 34 RevB, PV2 - ENLARGED ELEVATIONS**

RISK CATEGORY: III

CONSTRUCTION: COMMERCIAL

ZONING: COMMERCIAL

SNOW LOAD (ASCE 7-22): 5 PSF

EXPOSURE CATEGORY: C

WIND SPEED (ASCE 7-22): 120 MPH

Answers to questions

1. For each building, what is the spacing of standing seam clips?, **Building 8 standing seam spacing is 18 inches. The winning bidder will be required to evaluate the roof for appropriate engineering stamping.**
2. For each building, what is the # of screws per standing seam clip? **The winning bidder will be required to evaluate the roof for appropriate engineering stamping..**

3. For each building, what is the screw size and length? The winning bidder will be required to evaluate the roof for appropriate engineering stamping.
4. For each building, what is the decking material and thickness? The winning bidder will be required to evaluate the roof for appropriate engineering stamping.
5. For each building, what is the standing seam roof make & model? The winning bidder will be required to evaluate the roof for appropriate engineering stamping.
6. Bldg 6 design has a DC:AC ratio of 1.5. Will the inverter sizing be increased to reduce this ratio and increase solar electricity production? “ Building 6 inverter specifications has been increased to 62kW or similar to decrease DC:AC ratio closer to 1.2.
7. What is the total DC system sizing to be used for the basis of the bid? 402
8. The JA solar panel specified in the bid documents doesn't meet the strength requirements of At least 6000 Pascals Front load and 4000 Pascal back. What pressures are required? Are these pressures ultimate or design values? Design
9. The JA solar panel specified in the bid documents doesn't meet the warranty requirement of 85% at 25-years. What warranty requirements should be used? 80% at 25 years.
10. The JA solar panel specified in the bid documents doesn't meet the Tyco SolarLok requirement and is not industry standard. What connector is required? MC4 connectors are preferred.
11. The SMA Core 1 inverter specified in the bid documents doesn't meet the temperature range or peak efficiency requirements. What values should be used? 96.5% efficiency, temperature range of -25c to +60C
12. If placing the inverters on the roof within 1-ft of the solar arrays had met UL3741 requirements, then solar panel level rapid shutdown would not have been required. The SMA Core 1 inverter specified in the bid documents isn't UL3741 certified for use with any sloped roof racking, including the IronRidge racking used in the preliminary design. Therefore, placing the solar panels on the roof has the disadvantage of additional roof loading and more difficult service without the advantage of eliminating rapid shutdowns. Should we bid on the basis of the inverters being located at ground level? Core one inverters can be mounted level on the roof using standard inverter mounting practices and can be located within 1 foot of the array. The inverters should require no servicing. Bid without the assumption of rapid shutdown. Bidders may apply to the Architect for alternate approval for inverters that meet the production requirements.
13. Duke generally requires for the solar disconnect to be co-located with the first means of disconnect for the building with solar. Since Bldg 8's first means of disconnect is located 500-ft away on the other side of Bldg 6, should we bid on the basis of a 500-ft jack-and-bore from Bldg 8 to its first means of disconnect? Yes, and if Duke will approve the disconnect being located at other locations then the panes will be adjusted. We recommend a written request to Duke for AC disconnects to be mounted on the building with the associated solar.

14. The construction document bid form says, "To start construction on or about November 15, 2024", which is not possible. **Construction should occur in the month of February of 2025.**
15. The construction document bid form says, "Vendor represents and warrants that all of the iron, steel, aluminum, cement, and other manufactured goods used in the project will be produced in the United States in accordance with the Buy American Act". Very few solar panels and inverters that are listed under Buy America Act and they are significantly more expensive. **This is no longer a specification requirement.**
16. The construction document bid form says, "Vendor covenants and agrees that all laborers and mechanics employed by Vendor and its sub-contractors on this project will be paid in compliance with the Davis-Bacon Act." I want to verify whether Davis- Bacon Act pay will be required for this project. **Davis-Bacon will not be required for this project.**
17. Rapid Shutdown Clarification- All of the plans list" INVERTER IS LOCATED WITHIN ONE FEET OF THE ARRAY FOR UL3741." However the plan set for building 13 also says "8x STRINGS OF 17 MODULES WITH 17 RAPID SHUTDOWN DEVICES EACH" **Rapid Shutdown is not required if you meet UL3741.**
18. Building 13: Can we change the point of interconnection to a line side tap at the service disconnect? Currently plans show point of interconnection as backfed breaker in main panel. **Yes a line side tap is allowed where indicated such as building 13.**
19. Building 8: Currently plans show interconnection with a backfed breaker in main panel.. There is no main panel/main breaker. Instead the service wires come in and are polaris lugged off to 3 different main panels. To avoid working around this questionable setup we would recommend changing the point of interconnection to a tap box for a line side tap on the Northeast corner of the building. **The point of interconnection for building 8 can be a tap box for a line side tap on the Northeast corner of the building.**
20. System Monitoring. Is there wifi available in the proximity of the inverters for the system monitoring? Is there a router in the vicinity of the inverters for a hardwired internet connection? **The preferred monitor connection is hardwired to a network connection in each building if approved by the Colleges security team. If your submitted monitoring solution is not allowed on the college's network a 3rd party cellular card with an external mounted antenna is required with at least a 2 year data plan.**
21. Fencing, is temporary fencing required around each building as we work? **Only where required for public safety and may be warring tape or plastic fence.**

END OF ADDENDUM #1



# CLEMONS RUTHERFORD

ARCHITECTS

PLANNERS ♦ CONSTRUCTION MANAGERS ♦ INTERIOR DESIGNERS

REQUEST FOR CLARIFICATION No. 2 Date: 10/23/2024

<p><b>Project:</b> <u>NFC SOLAR ARRAY INSTALLATION</u> <u>BID-NFC-06-2024</u></p> <p><b>Attn:</b> <u>Joshua Bacho</u></p> <p><b>Phone:</b> <u>(850) 385-6153</u></p> <p><b>Fax:</b> _____</p> <p><b>E-mail:</b> <u>jbacho@craarchitects.com</u></p>	<p><b>REASON FOR REQUEST</b></p> <p>_____ Insufficient Information</p> <p>_____ Conflict in Plans</p> <p><u>X</u> Alternate proposal</p> <p>_____ Other</p>	<p><b>ACTION REQUESTED</b></p> <p>_____ Clarify</p> <p>_____ Direction</p> <p><u>X</u> Approval</p> <p>_____ Other</p>
<p><b>Response Required No Later Than:</b> _____</p>		

REFER TO: Drawing No: \_\_\_\_\_ Note No: \_\_\_\_\_ Spec Section: \_\_\_\_\_

**INFORMATION NEEDED:**

I am requesting your approval to substitute Q-Cells Q.Peak Duo XL-G11S solar modules, SMA Tripower X inverters, and Unirac NXT Umount and SolarMount rails. I am attaching the data sheets to this form.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**RECOMMENDATION:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Submitted By: Barry M Jacobson Signature: \_\_\_\_\_ Date: 10/22/2024

Solar Impact, Inc. 4509 NW 23rd Ave, Ste 20, Gainesville, FL 32606 352-281-5946

COMPANY NAME ADDRESS PHONE NUMBER

**RESPONSE:**

We accept the suggested replacement panels, racking and inverters. That said with the decreased inverter size there will be some need for increased load centers so please take that extra cost into account.

\_\_\_\_\_

\_\_\_\_\_

Signature:  Date: 10/24/2024



# Q.PEAK DUO XL-G11S SERIES



580-595 Wp | 156 Cells  
21.3% Maximum Module Efficiency

MODEL Q.PEAK DUO XL-G11S.3/BFG



## Bifacial energy yield gain of up to 21%

Bifacial Q.ANTUM solar cells make efficient use of light shining on the module rear-side for radically improved LCOE.



## Low electricity generation costs

Q.ANTUM DUO technology with optimized module layout to boost module power and improve LCOE.



## A reliable investment

Double glass module design enables extended lifetime with 12-year product warranty and improved 30-year performance warranty<sup>1</sup>.



## Enduring high performance

Long-term yield security with Anti LID and Anti PID Technology<sup>2</sup>, Hot-Spot Protect.



## Frame for versatile mounting options

High-tech aluminum alloy frame protects from damage, enables use of a wide range of mounting structures and is certified regarding IEC for high snow (5400 Pa) and wind loads (2400 Pa).



## Innovative all-weather technology

Optimal yields, whatever the weather with excellent low-light and temperature behavior.

<sup>1</sup> See data sheet on rear for further information.

<sup>2</sup> APT test conditions according to IEC/TS 62804-1:2015 method B (-1500 V, 168 h) including post treatment according to IEC 61215-1-1 Ed. 2.0 (CD)

### The ideal solution for:



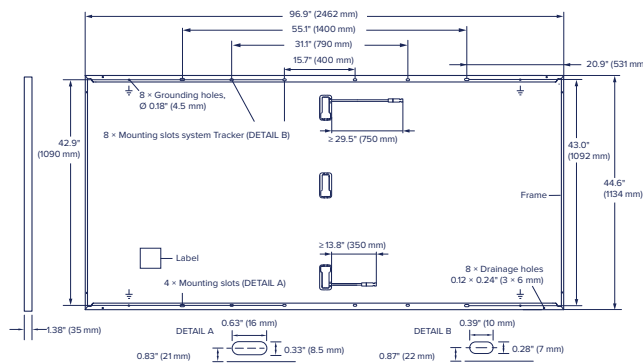
Ground-mounted solar power plants



# Q.PEAK DUO XL-G11S SERIES

## Mechanical Specification

Format	96.9 in × 44.6 in × 1.38 in (including frame) (2462 mm × 1134 mm × 35 mm)
Weight	76.9 lbs (34.9 kg)
Front Cover	0.08 in (2.0 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	0.08 in (2.0 mm) semi-tempered glass
Frame	Anodised aluminium
Cell	6 × 26 monocrystalline Q.ANTUM solar half cells
Junction box	2.09-3.98 × 1.26-2.36 × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm <sup>2</sup> Solar cable; (+) ≥ 29.5 in (750 mm), (-) ≥ 13.8 in (350 mm)
Connector	Stäubli MC4-Evo2



## Electrical Characteristics

POWER CLASS			580	585	590	595				
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC <sup>1</sup> (POWER TOLERANCE +5 W/-0 W)										
Minimum	Power at MPP <sup>1</sup>	P <sub>MPP</sub> [W]	580	629.0	585	634.4	590	639.9	595	645.4
	Short Circuit Current <sup>1</sup>	I <sub>SC</sub> [A]	13.69	14.96	13.72	14.99	13.74	15.01	13.77	15.04
	Open Circuit Voltage <sup>1</sup>	V <sub>OC</sub> [V]	53.55	53.71	53.57	53.74	53.60	53.76	53.63	53.79
	Current at MPP	I <sub>MPP</sub> [A]	13.03	14.20	13.07	14.25	13.12	14.30	13.17	14.36
	Voltage at MPP	V <sub>MPP</sub> [V]	44.53	44.30	44.75	44.52	44.96	44.74	45.18	44.95
	Efficiency <sup>1</sup>	η [%]	≥ 20.8		≥ 21.0		≥ 21.1		≥ 21.3	

Bifaciality of P<sub>MPP</sub> and I<sub>SC</sub> 70% ± 5% • Bifaciality given for rear side irradiation on top of STC (front side) • According to IEC 60904-1-2

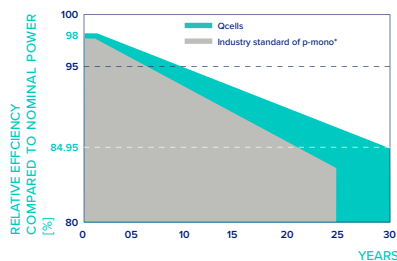
<sup>1</sup> Measurement tolerances P<sub>MPP</sub> ± 3%; I<sub>SC</sub>, V<sub>OC</sub> ± 5% at STC: 1000 W/m<sup>2</sup>; \*at BSTC: 1000 W/m<sup>2</sup> + φ × 135 W/m<sup>2</sup>, φ = 70% ± 5%, 25 ± 2 °C, AM 1.5 according to IEC 60904-3

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT<sup>2</sup>

Minimum	Power at MPP	P <sub>MPP</sub> [W]	436.7	440.5	444.2	448.0
	Short Circuit Current	I <sub>SC</sub> [A]	11.03	11.05	11.07	11.09
	Open Circuit Voltage	V <sub>OC</sub> [V]	50.64	50.67	50.69	50.72
	Current at MPP	I <sub>MPP</sub> [A]	10.25	10.30	10.34	10.38
	Voltage at MPP	V <sub>MPP</sub> [V]	42.60	42.79	42.97	43.15

<sup>1</sup> Measurement tolerances P<sub>MPP</sub> ± 3%; I<sub>SC</sub>; V<sub>OC</sub> ± 5% at STC: 1000 W/m<sup>2</sup>, 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • <sup>2</sup> 800 W/m<sup>2</sup>, NMOT, spectrum AM 1.5

## Qcells PERFORMANCE WARRANTY

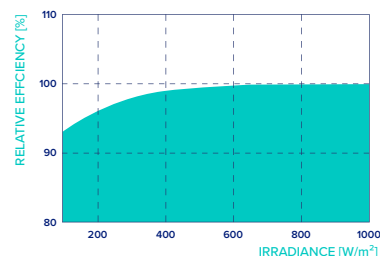


At least 98% of nominal power during first year. Thereafter max. 0.45% degradation per year. At least 93.95% of nominal power up to 10 years. At least 84.95% of nominal power up to 30 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

\*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

## PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m<sup>2</sup>).

## TEMPERATURE COEFFICIENTS

Temperature Coefficient of I <sub>SC</sub>	α [%/K]	+0.04	Temperature Coefficient of V <sub>OC</sub>	β [%/K]	-0.27
Temperature Coefficient of P <sub>MPP</sub>	γ [%/K]	-0.34	Nominal Module Operating Temperature	NMOT [°F]	108 ± 5.4 (42 ± 3 °C)

## Properties for System Design

Maximum System Voltage	V <sub>sys</sub> [V]	1500	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	25	Fire Rating based on ANSI/UL 61730	TYPE 29 <sup>4</sup>
Max. Design Load, Push/Pull <sup>3</sup>	[lbs/ft <sup>2</sup> ] / [Pa]	75 (3600 Pa)/33 (1600 Pa)	Permitted Module Temperature on Continuous Duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Max. Test Load, Push/Pull <sup>3</sup>	[lbs/ft <sup>2</sup> ] / [Pa]	113 (5400 Pa)/50 (2400 Pa)		

<sup>3</sup> See Installation Manual

<sup>4</sup> New Type is similar to Type 3 but with metallic frame

## Qualifications and Certificates

UL 61730, CE-compliant,  
IEC 61215:2016,  
IEC 61730:2016,  
U.S. Patent No. 9,893,215  
(solar cells)



Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.

Hanwha Q CELLS America Inc. 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL hqc-inquiry@qcells.com | WEB www.qcells.com

qcells

# SUNNY TRIPOWER X 20-US / 25-US / 30-US

powered by ennexOS



STP 20-US-50 / STP 25-US-50 / STP 30-US-50



**SMA**  
ShadeFix



**SMA**  
Smart Connected

#### Integrated system manager

- Monitoring and control for up to 5 inverters (max. 150 kVA)
- Remote access with Sunny Portal powered by ennexOS
- SMA Dynamic Power Control

#### Enhanced safety

- Integrated SunSpec PLC signal for module-level shutdown
- Advanced DC AFCI arc-fault protection
- Optional DC type 2 and type 1+2 surge protection

#### Maximum yields

- Three MPP trackers for flexible array design
- SMA ShadeFix string level optimization
- Intelligent string performance monitoring and I-V curve diagnostics

#### Smart monitoring, control, service

- SMA Smart Connected proactive monitoring and service solution
- SMA ennexOS cross-sector energy management platform
- Centerpiece of the proven SMA Energy System Business

## SUNNY TRIPOWER X 20-US / 25-US / 30-US

Integrated intelligence for future-proof system design

Sunny Tripower X is the new innovative inverter solution for commercial PV systems. Providing three MPP trackers with SMA ShadeFix string optimization technology for optimal PV array design flexibility and maximum energy yields. SMA's proven integrated rapid shutdown support and reliable DC AFCI arc-fault protection ensure enhanced system safety. And now with the new integrated System Manager, powered by SMA's ennexOS cross-sector energy management platform, Sunny Tripower X becomes the centerpiece of the SMA Energy System Business for comprehensive commercial energy systems now and in the future.

Technical Data*	Sunny Tripower X 20-US	Sunny Tripower X 25-US	Sunny Tripower X 30-US
<b>Input (DC)</b>			
Maximum PV array power	30000 Wp	37500 Wp	45000 Wp
Maximum input voltage	1000 V		
MPP voltage range	345 V to 800 V	430 V to 800 V	515 V to 800 V
Minimum input voltage / initial input voltage	150 V / 188 V		
Maximum operating input current / short-circuit current per MPP tracker	24 A / 37.5 A		
Number of independent MPP trackers / string inputs per MPP tracker	3 / 2		
<b>Output (AC)</b>			
Nominal output power	20000 W	25000 W	30000 W
Maximum apparent power	20000 VA	25000 VA	30000 VA
Nominal AC voltage	480 V / 277 V		
AC voltage range	244 V to 305 V		
Rated grid frequency / range	60 Hz / 50 Hz to 66 Hz		
Maximum output current	24 A	30 A	36 A
Power factor at rated power / adjustable displacement	1 / 0.0 overexcited to 0.0 underexcited		
Output phasess / line connection	3 / 3-(N)-PE		
Harmonics (THD)	< 3 %		
<b>Efficiency</b>			
CEC efficiency	98 %	98.5 %	98.5 %
<b>Protection and safety features</b>			
Load rated DC disconnect	●		
Ground fault monitoring / grid monitoring	● / ●		
DC reverse polarity protection / AC short-circuit protection	● / ●		
All-pole sensitive residual-current monitoring unit	●		
Protection class / overvoltage category	I / III		
DC AFCI arc-fault protection	●		
SunSpec PLC signal for rapid shutdown	●		
DC surge protection type 2 / DC surge arrester type 1+2	○ / ○		
DC terminal cover for conduit connection	○		
<b>General data</b>			
Dimensions (W/H/D)	728 mm / 762 mm / 266 mm (28.7 in / 30 in / 10.5 in)		
Device Weight	35 kg / 77 lbs		
Operating temperature range	-25°C to +60°C (-13°F to +140°F)		
Noise emission (typical)	59 db(A)		
Topology / cooling concept	Transformerless / OptiCool (forced convection, variable speed fans)		
Enclosure protection rating	Type 4 (as per UL 50E)		
Maximum permissible value for relative humidity (non-condensing)	100 %		
<b>Features / functions / accessories</b>			
Mounting type	Vertical rack / wall mount to 15° from horizontal		
DC connection / AC connection	Amphenol H4 Plus / spring-cage terminal		
LED indicators (status / fault / communication)	●		
Network interfaces: Ethernet / WLAN / RS485	● (2 ports) / ● / ○		
Data protocols: SMA Modbus / SunSpec Modbus / Speedwire	● / ● / ●		
Multi-function relay / Extension module slot / Digital inputs	● / ● / ● (6 inputs)		
SMA ShadeFix string level optimization	●		
Intelligent string performance monitoring / I-V curve diagnostics	● / ●		
Integrated Plant Control / Q on Demand 24/7	● / ●		
SMA Smart Connected (proactive monitoring and service support)	●		
Warranty: 10 / 15 / 20 years	● / ○ / ○		
<b>Certificates and approvals (pending)</b>			
Certificates and approvals	UL 62109-1, UL 1699B Ed. 1, CAN/CSA 22.2 No. 62109-1:16 / 62109-2:16, PV Rapid Shutdown System Equipment in accordance with UL1741:2021		
FCC compliance	FCC Part 15 Class A & B		
Grid interconnection standards	UL 1741 SB, IEEE 1547:2018, compliance to SRDs: CA Rule 21, HECO Rule 14H, ISO-NE		
<b>Integrated system manager</b>			
Maximum number of supported inverters / energy meters	5 / 1		
Maximum system power PV inverters (nominal AC power)	150 kVA		
Centralized commissioning of all devices in the system	●		
Remote parameterization of SMA devices	● (via Sunny Portal powered by ennexOS)		
SMA Dynamic Power Control (e.g. zero export / Volt-VAR)	○		
Type designation	STP 20-US-50	STP 25-US-50	STP 30-US-50

● Standard features ○ Optional – Not available Data in nominal conditions Last revision: 09/2022 \*Preliminary technical data, subject to change

## Accessories



SMA Data Manager M  
EDMM-US-10



DC terminal cover  
DC-TERM-COVER



SMA RS485 Module  
MD.485-US-40



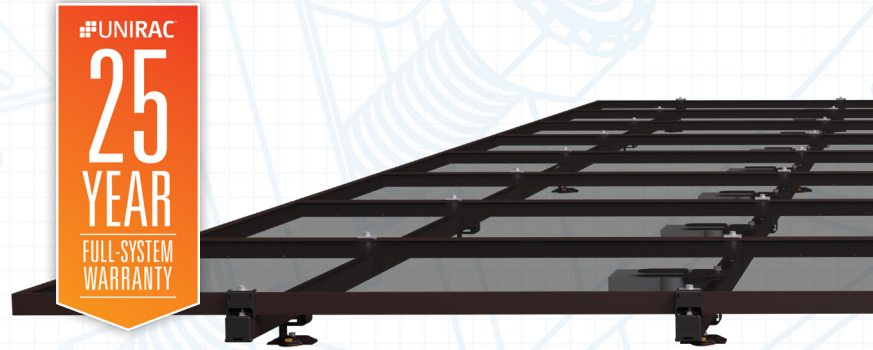
SMA Sensor Module  
MD.SEN-US-40



DC Surge Protection Kits  
T2: DC\_SPD\_KIT6-10  
T1+2: DC\_SPD\_KIT7\_T1T2

## DESIGN & INTEGRATION

- Seamless, integrated wire management system elevates the install via the new open channel rail.
- State-of-the-art internal splice is interference free and offers true structural integrity that can even be installed in a cantilever!

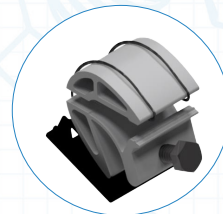


## VERSATILITY & AESTHETICS

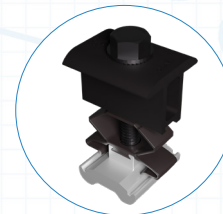
- Unparalleled versatility supporting a vast array of roof attachments. Whether it's flashing or no flashing, the NXT UMount™ system has got you covered!
- Refined finishing touches are visually sleek and functionally superior.

## EFFICIENCY & EASE OF INSTALLATION

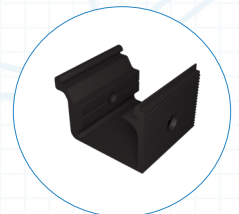
- Universal module clamps and combo lug / MLPE mounts result in fewer SKUs and maximum component value.
- Open-slot STRONGHOLD attachments deliver quick, reliable, waterproof installations via Flashloc or pre-applied butyl sealants.
- With our click-in rail & clamps, you'll spend significantly less time on the roof, making installations quicker and hassle-free.



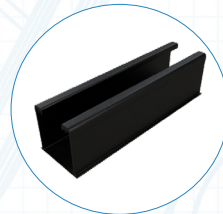
NXT UMount™  
HIDDEN END CLAMP



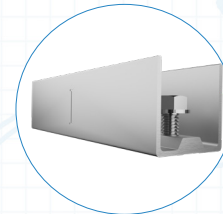
NXT UMount™  
COMBO CLAMP  
Available in Dark  
and Mill



STRONGHOLD™  
RAIL CLAMP  
Available in Dark  
and Mill



NXT UMount™ RAIL  
Available in  
Dark and Mill



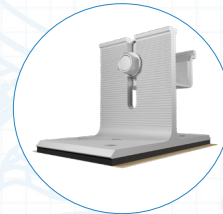
NXT UMount™ RAIL SPLICE



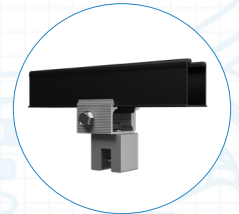
NXT UMount™  
MLPE & LUG CLAMP



STRONGHOLD™  
ATTACHMENT KIT  
Available in Dark  
and Mill



STRONGHOLD™ BUTYL  
ATTACHMENT KIT  
Available in Dark  
and Mill



NXT UMount™  
METAL ROOF RAIL CLAMP

## WHY NXT UMount ?

Introducing NXT UMount™, a revolutionary product by Unirac that stands as the ultimate testament to over two decades of engineering experience. Its thoughtful design, backed by rigorous engineering, world-class support, and a reliable supply chain, encapsulates the best of DESIGN, SIMPLICITY, and VALUE.

This innovative solar racking solution brings unparalleled versatility to solar installations, effectively representing the NXT level of solar mounting systems.

# SOLARMOUNT



## FEATURING SOLARMOUNT

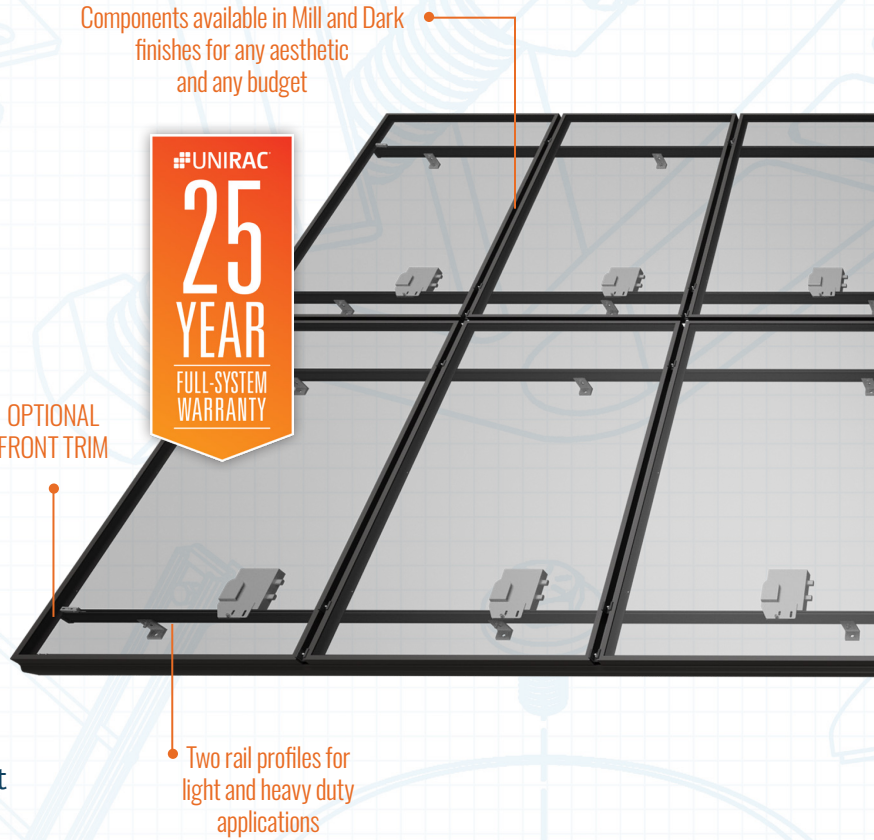
- Designed for Unirac's Solarmount rail systems and certified to UL2703A for low-slope AND steep-slope roofs
- One-step butyl application for easy install and reliable waterproofing

## DIFFERENT CLAMPS FOR DIFFERENT NEEDS

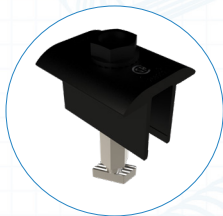
- Universal AF mid clamps and end clamps adjust to module heights from 30-46mm in a great looking, easy to install fastener
- Pro-series clamps feature hidden fasteners for fantastic aesthetics
- Standard clamps feature tight row spacing and various clamps to accommodate module frames up to 51mm in height

## OPTIONS FOR ANY APPLICATION

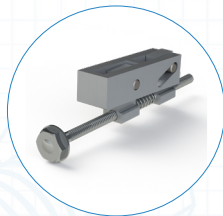
- Solarmount Standard and Solarmount Light rails profiles for installations across the country, including Puerto Rico
- Huge selection of attachments for any roof form comp shingle to tile
- Adjustable tilt legs certified to UL2703 to dial in your system just right



UNIVERSAL END CLAMP



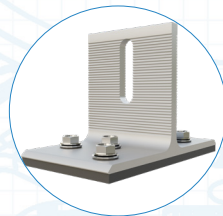
UNIVERSAL MID CLAMP



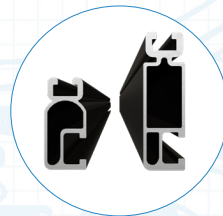
CONCEALED SM  
END CLAMP



SM PRO SERIES  
MID CLAMP



SOLARMOUNT  
BUTYL



SOLARMOUNT PROFILE  
AND LIGHT PROFILE

## WHY SOLARMOUNT?

SOLARMOUNT is the professionals' choice for residential PV mounting applications. Every aspect of the system is designed for an easier, faster installation experience. SOLARMOUNT is a complete solution with universal clamps, tons of attachment options, full system UL 2703 certification, and 25-year warranty. Sleek rails for both light and heavy duty applications, with optional trim, make for a reliable, cost-effective, great looking racking solution.