

Q.PEAK DUO BLK ML-G10+ SERIES



385-410 Wp | 132 Cells
20.9% Maximum Module Efficiency

MODEL Q.PEAK DUO BLK ML-G10+



6 busbar
cell technology



12 busbar
cell technology



Breaking the 20% efficiency barrier

Q.ANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9%.



A reliable investment

Inclusive 25-year product warranty and 25-year linear performance warranty¹.



Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology² and Hot-Spot Protect.



Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).



Innovative all-weather technology

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



The most thorough testing programme in the industry

Qcells is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

¹ See data sheet on rear for further information.

² APT test conditions according to IEC/TS 62804-1:2015, method A (~1500 V, 96 h)

The ideal solution for:



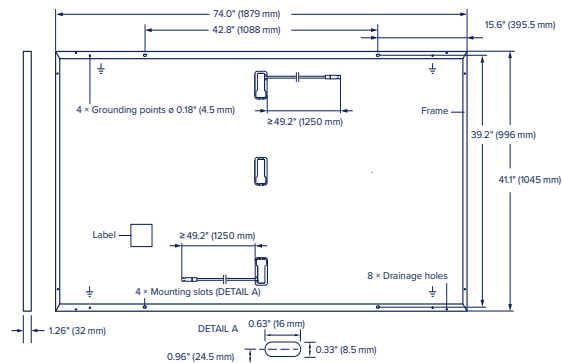
Rooftop arrays on
residential buildings



Q.PEAK DUO BLK ML-G10+ SERIES

Mechanical Specification

Format	74.0 in × 41.1 in × 1.26 in (including frame) (1879 mm × 1045 mm × 32 mm)
Weight	48.5 lbs (22.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 22 monocrystalline Q.ANTUM solar half cells
Junction box	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 49.2 in (1250 mm), (-) ≥ 49.2 in (1250 mm)
Connector	Stäubli MC4; IP68



Electrical Characteristics

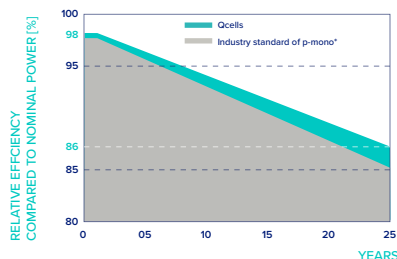
POWER CLASS			385	390	395	400	405	410
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W/-0 W)								
Minimum	Power at MPP ¹	P _{MPP} [W]	385	390	395	400	405	410
	Short Circuit Current ¹	I _{SC} [A]	11.04	11.07	11.10	11.14	11.17	11.20
	Open Circuit Voltage ¹	V _{OC} [V]	45.19	45.23	45.27	45.30	45.34	45.37
	Current at MPP	I _{MPP} [A]	10.59	10.65	10.71	10.77	10.83	10.89
	Voltage at MPP	V _{MPP} [V]	36.36	36.62	36.88	37.13	37.39	37.64
	Efficiency ¹	η [%]	≥ 19.6	≥ 19.9	≥ 20.1	≥ 20.4	≥ 20.6	≥ 20.9

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT²

Minimum	Power at MPP	P _{MPP} [W]	288.8	292.6	296.3	300.1	303.8	307.6
	Short Circuit Current	I _{SC} [A]	8.90	8.92	8.95	8.97	9.00	9.03
	Open Circuit Voltage	V _{OC} [V]	42.62	42.65	42.69	42.72	42.76	42.79
	Current at MPP	I _{MPP} [A]	8.35	8.41	8.46	8.51	8.57	8.62
	Voltage at MPP	V _{MPP} [V]	34.59	34.81	35.03	35.25	35.46	35.68

¹Measurement tolerances P_{MPP} ± 3%; I_{SC}; V_{OC} ± 5% at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • ²800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

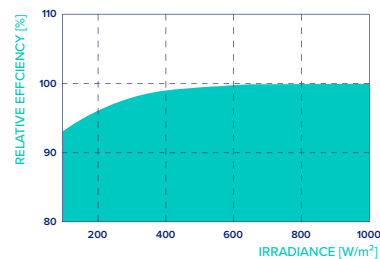


At least 98% of nominal power during first year. Thereafter max. 0.5% degradation per year. At least 93.5% of nominal power up to 10 years. At least 86% of nominal power up to 25 years.

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/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{SC}	α	[%/K]	+0.04	Temperature Coefficient of V _{OC}	β	[%/K]	-0.27
Temperature Coefficient of P _{MPP}	γ	[%/K]	-0.34	Nominal Module Operating Temperature	NMOT	[°F]	109 ± 5.4 (43 ± 3 °C)

Properties for System Design

Maximum System Voltage	V _{sys} [V]	1000 (IEC)/1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI/UL 61730	TYPE 2
Max. Design Load, Push/Pull ³	[lbs/ft ²]	75 (3600 Pa)/55 (2660 Pa)	Permitted Module Temperature on Continuous Duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Max. Test Load, Push/Pull ³	[lbs/ft ²]	113 (5400 Pa)/84 (4000 Pa)		

³ See Installation Manual

Qualifications and Certificates

UL 61730, CE-compliant,
Quality Controlled PV - TÜV Rheinland,
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.

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qcells



IQ7 and IQ7+ Microinverters

The high-powered, smart grid-ready **IQ7** and **IQ7+ Microinverters** dramatically simplify the installation process while achieving the highest system efficiency.

Part of the Enphase Energy System, the IQ7 and IQ7+ Microinverters integrates with the IQ Gateway, IQ Battery, and the Enphase Installer App monitoring and analysis software.

IQ Series Microinverters extend the reliability standards set forth by previous generations and undergo over a million hours of power-on testing, enabling Enphase to provide an industry-leading warranty of up to 25-years.



Easy to Install

- Lightweight and simple
- Faster installation with improved, lighter two-wire cabling
- Built-in rapid shutdown compliant (NEC 2014 , 2017, & 2020)

Productive and Reliable

- Optimized for high powered 60-cell/120 half-cell and 72-cell/144 half-cell PV modules
- More than a million hours of testing
- Class II double-insulated enclosure
- UL listed

Smart Grid-Ready

- Complies with advanced grid support, voltage and frequency ride-through requirements
- Remotely updates to respond to changing grid requirements
- Configurable for varying grid profiles
- Meets CA Rule 21 (UL 1741-SA) and IEEE 1547:2018 (UL 1741-SB, 3rd Ed.)



IQ7 and IQ7+ Microinverters

INPUT DATA (DC)	IQ7-60-2-US		IQ7PLUS-72-2-US	
Commonly used module pairings¹	235W - 350W		235W - 440W	
Module compatibility	60-cell/120 half-cell PV modules only		60-cell/120-half-cell and 72-cell/144-half-cell PV modules	
Maximum input DC voltage	48V		60V	
Peak power tracking voltage	27V - 37V		27V - 45V	
Operating range	16V - 48V		16V - 60V	
Min/Max start voltage	22V/48V		22V/60V	
Max. input DC short-circuit current	25A		25A	
Max. module Isc	20A		20A	
Overvoltage class DC port	II		II	
DC port backfeed current	0A		0A	
PV array configuration	1 x 1 ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit			
OUTPUT DATA (AC)	IQ7 Microinverter		IQ7+ Microinverter	
Peak output power	250VA		295VA	
Maximum continuous output power	240VA		290VA	
Nominal (L-L) voltage/range²	240V/ 211-264V	208V/ 183-229V	240V/ 211-264V	208V/ 183-229V
Maximum continuous output current	1.0A (240V)	1.15A (208V)	1.21A (240V)	1.39A (208V)
Nominal frequency	60 Hz		60 Hz	
Extended frequency range	49 - 68 Hz		49 - 68 Hz	
AC short circuit fault current over 3 cycles	5.8 Arms		5.8 Arms	
Maximum units per 20A (L-L) branch circuit³	16 (240VAC)	13 (208VAC)	13 (240VAC)	11 (208VAC)
Overvoltage class AC port	III		III	
AC port backfeed current	18 mA		18 mA	
Power factor setting	1.0		1.0	
Power factor (adjustable)	0.85 leading ... 0.85 lagging		0.85 leading ... 0.85 lagging	
EFFICIENCY	@240V	@208V	@240V	@208V
Peak efficiency	97.6 %	97.6 %	97.5 %	97.3 %
CEC weighted efficiency	97.0 %	97.0 %	97.0 %	97.0 %
MECHANICAL DATA				
Ambient temperature range	-40°C to +65°C			
Relative humidity range	4% to 100% (condensing)			
Connector type	MC4 (or Amphenol H4 UTX with additional Q-DCC-5 adapter)			
Dimensions (HxWxD)	212 mm x 175 mm x 30.2 mm (without bracket)			
Weight	1.08 kg (2.38 lbs)			
Cooling	Natural convection - No fans			
Approved for wet locations	Yes			
Pollution degree	PD3			
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure			
Environmental category/UV exposure rating	NEMA Type 6/outdoor			
FEATURES				
Communication	Power Line Communication (PLC)			
Monitoring	Enphase Installer App and monitoring options Compatible with IQ Gateway			
Disconnecting means	The AC and DC connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690 and C22.1-2018 Rule 64-220.			
Compliance	CA Rule 21 (UL 1741-SA), IEEE 1547:2018 (UL 1741-SB, 3 rd Ed.) HEI Rule 14H SRD 2.0 UL 62109-1, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01 This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020, section 690.12 and C22.1-2015 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according manufacturer's instructions.			

1. Pairing PV modules with wattage above the limit may result in additional clipping losses. See the compatibility calculator at <https://link.enphase.com/module-compatibility>.

2. Nominal voltage range can be extended beyond nominal if required by the utility.

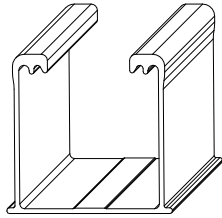
3. Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

To learn more about Enphase offerings, visit enphase.com

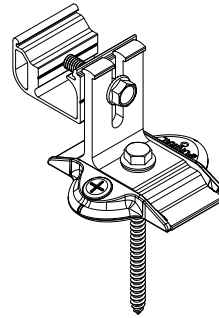
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IQ7-IQ7Plus-DS-0097-01-EN-US-12-23-2022

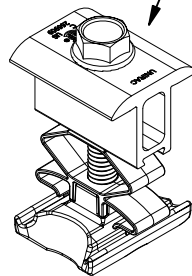
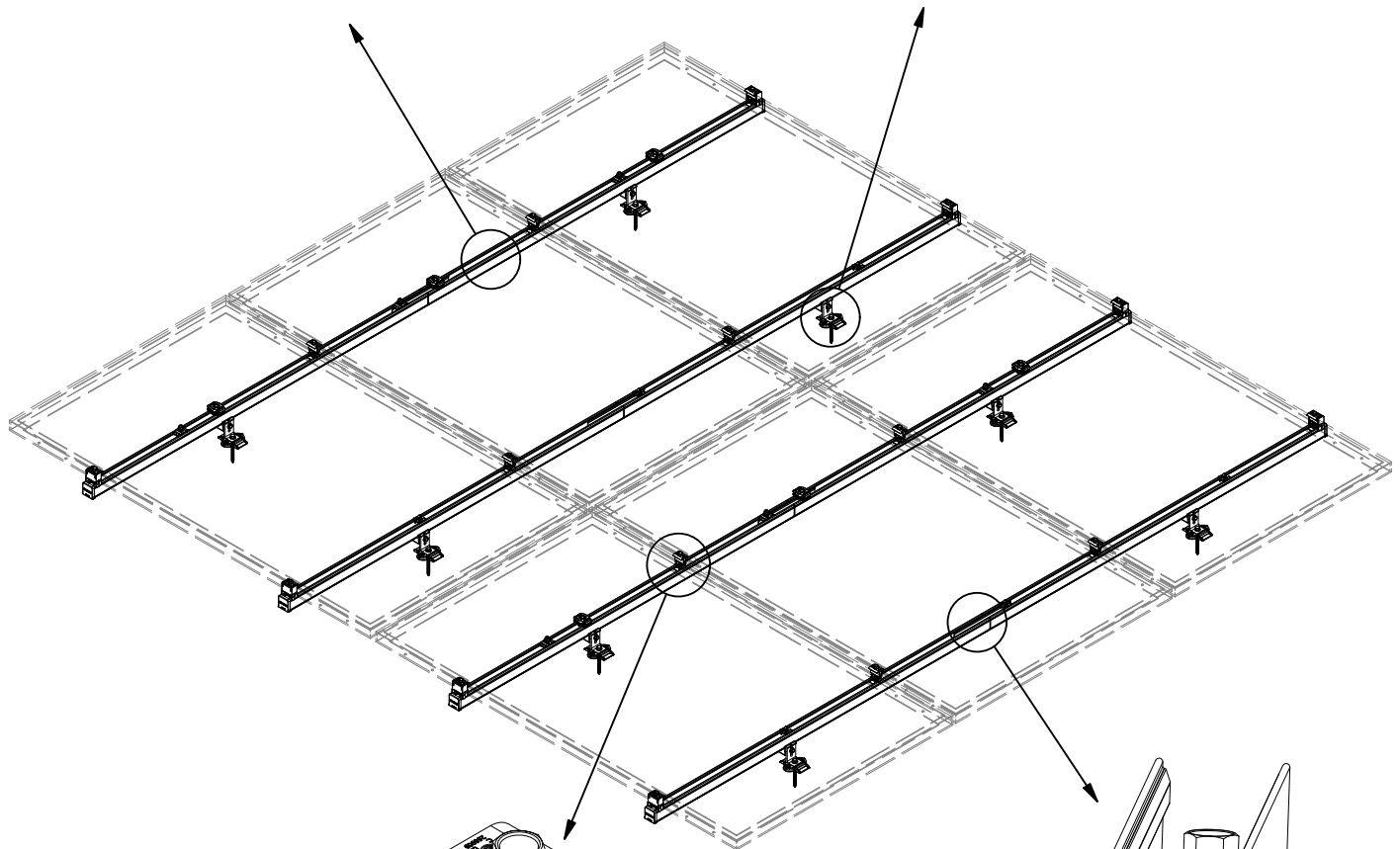




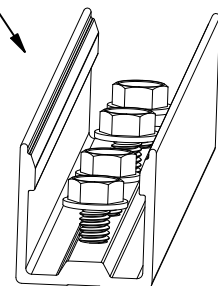
RAIL
SEE PAGE NH-P01



STRONGHOLD ATTACHMENT KIT
SEE PAGE NH-A04



COMBO CLAMP
SEE PAGE NH-A03



RAIL SPLICE
SEE PAGE NH-P02



1411 BROADWAY BLVD. NE
ALBUQUERQUE, NM 87102 USA
PHONE: 505.242.6411
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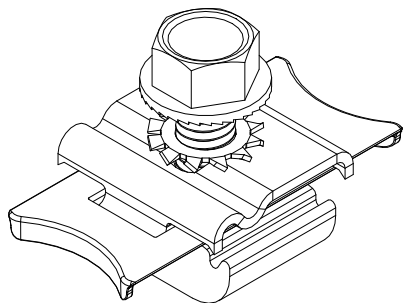
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DESCRIPTION:	MODULE ASSEMBLY
REVISION DATE:	9/30/2021

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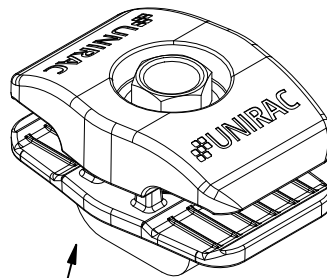
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NH-A01

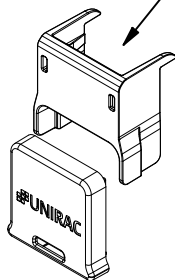
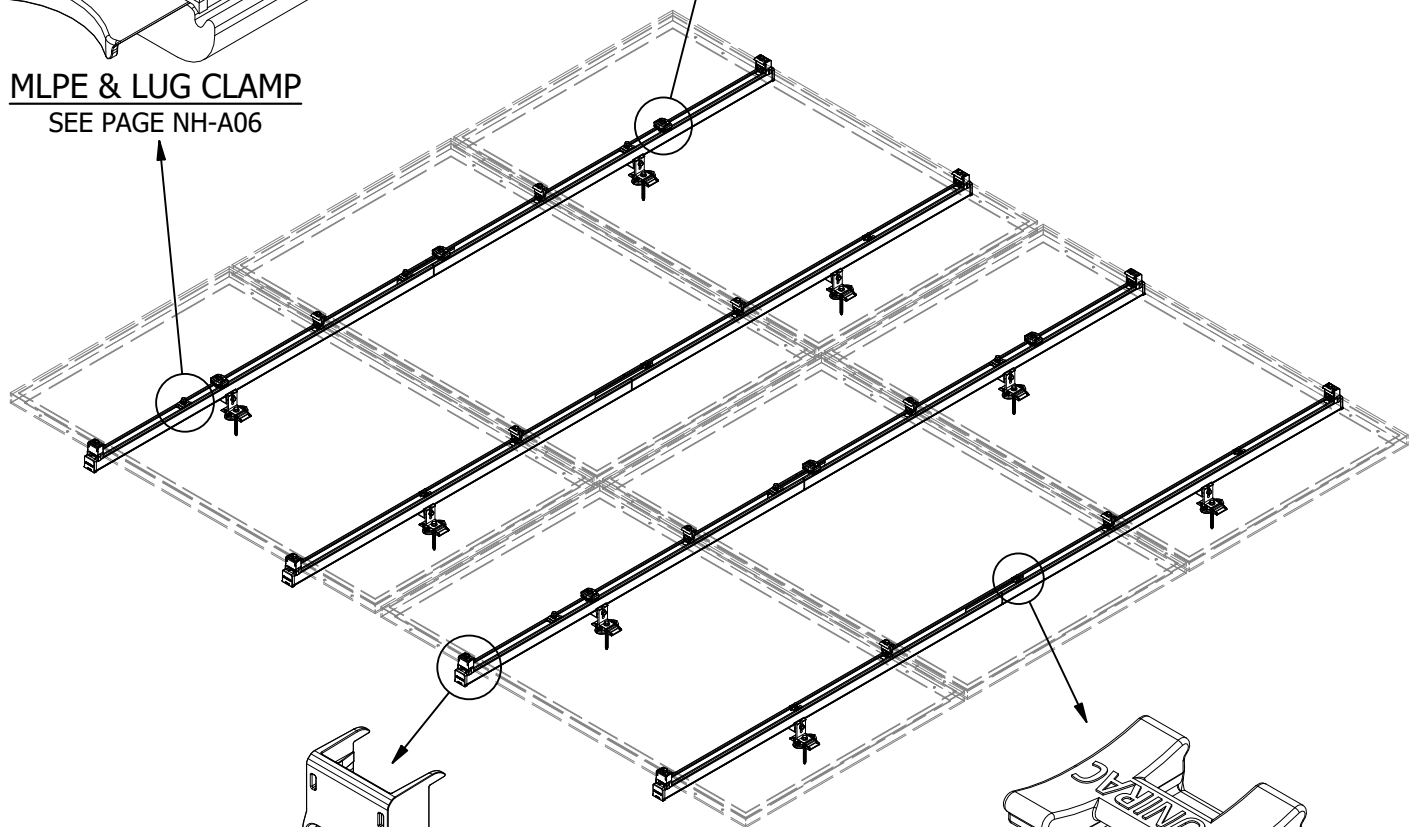
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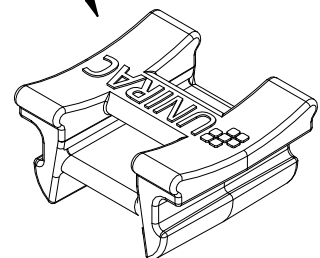
MLPE & LUG CLAMP
SEE PAGE NH-A06



NS WIRE MGMT CLIP
SEE PAGE NH-A07



RAIL & CLAMP CAP KIT
SEE PAGE NH-A09



WIRE MGMT CLIP
SEE PAGE NH-A08



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PRODUCT LINE:	NXT HORIZON
DRAWING TYPE:	PART & ASSEMBLY
DESCRIPTION:	MODULE ASSEMBLY
REVISION DATE:	9/30/2021

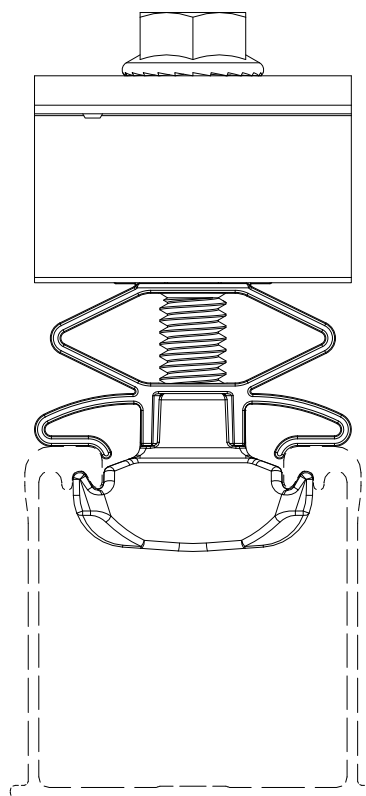
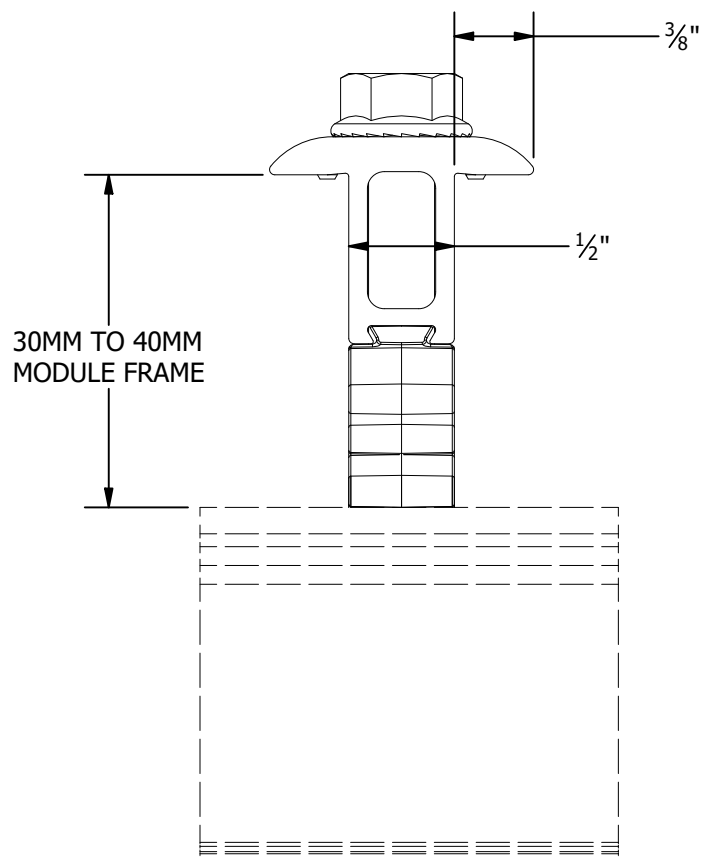
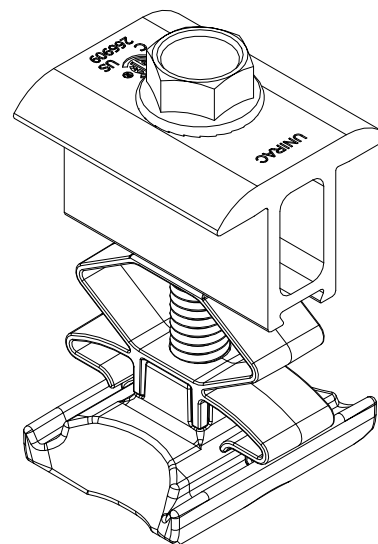
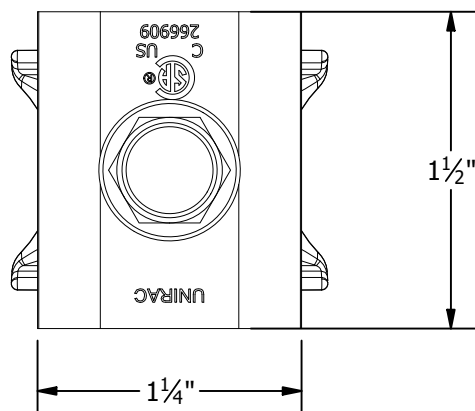
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NH-A02

SHEET

PART # TABLE	
P/N	DESCRIPTION
CCLAMPM1	NXT HORIZON COMBO CLAMP - MILL
CCLAMPD1	NXT HORIZON COMBO CLAMP - DARK



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PRODUCT LINE:	NXT HORIZON
DRAWING TYPE:	PART & ASSEMBLY
DESCRIPTION:	COMBO CLAMP
REVISION DATE:	9/30/2021

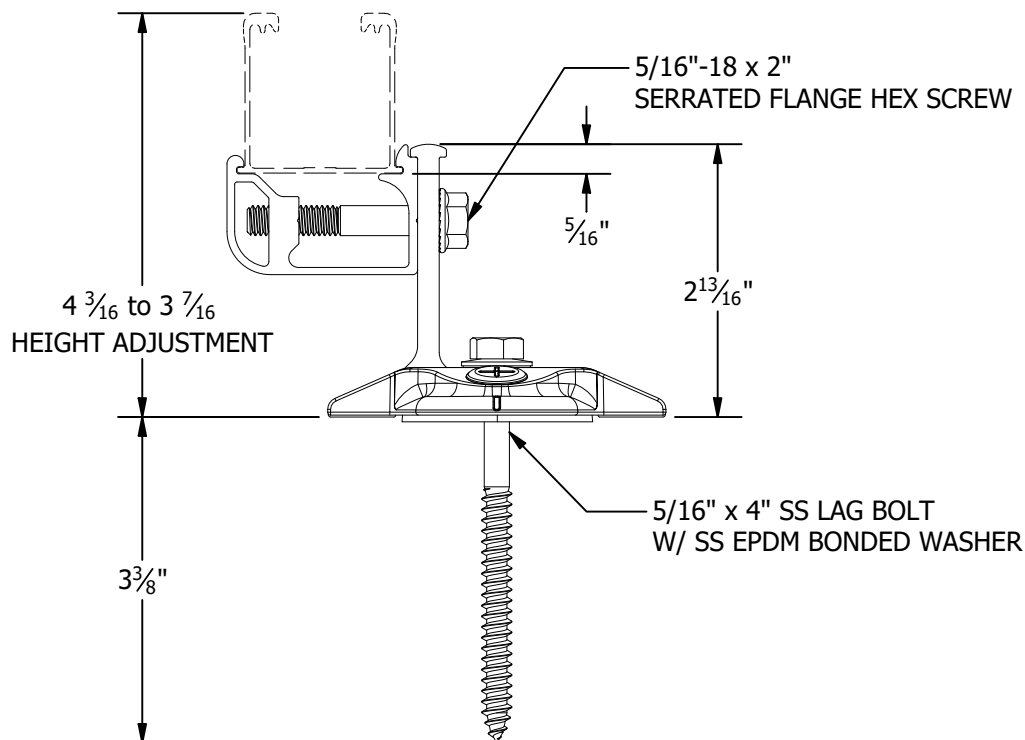
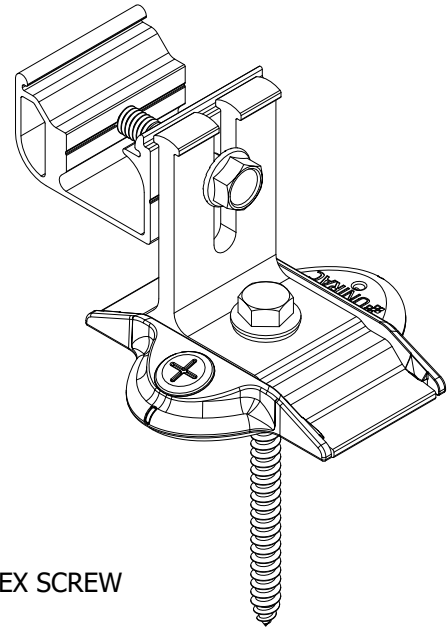
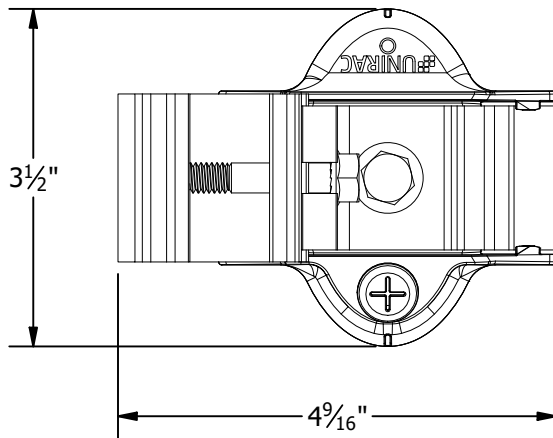
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NH-A03

SHEET

PART # TABLE	
P/N	DESCRIPTION
SHCPKTM1	STRONGHOLD ATT KIT COMP MILL
SHCPKTD1	STRONGHOLD ATT KIT COMP DRK
SHCPKTM1-NS	STRONGHOLD ATT COMP MILL (NS)
SHCPKTD1-NS	STRONGHOLD ATT COMP DRK (NS)



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PRODUCT LINE: NXT HORIZON

DRAWING TYPE: PARTS ASSEMBLY

DESCRIPTION: STRONGHOLD
ATTACHMENT

REVISION DATE: 9/22/2021

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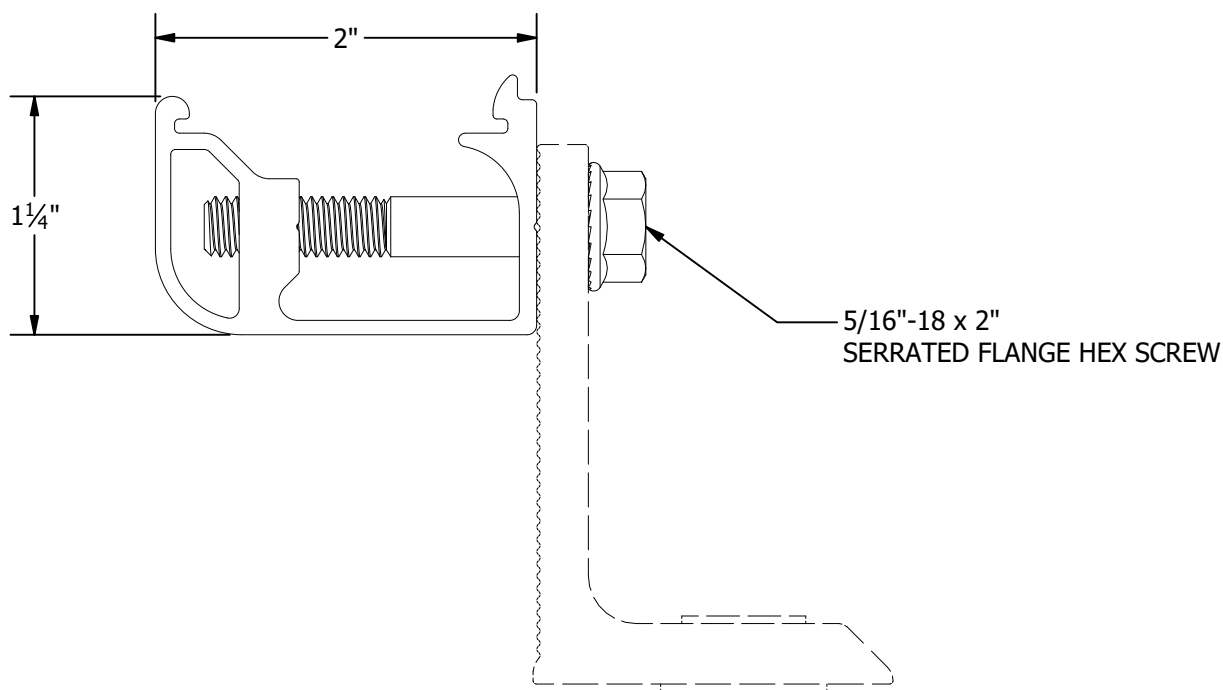
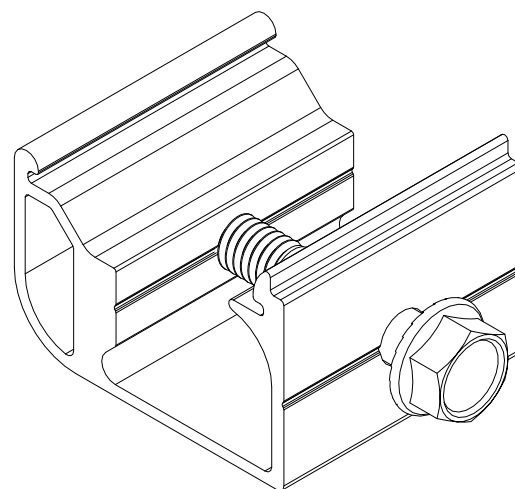
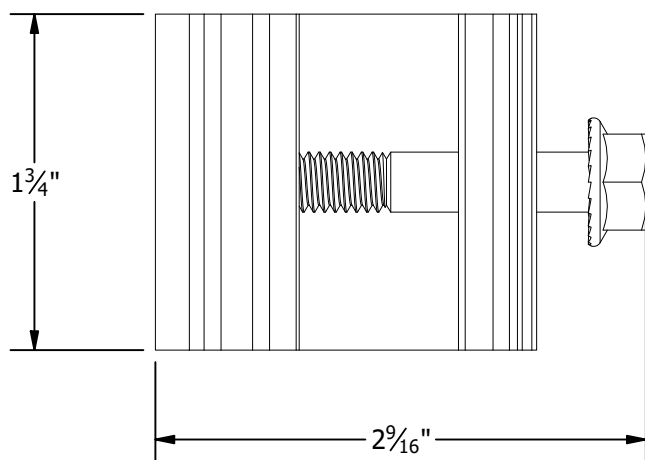
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SHEET

PART # TABLE	
P/N	DESCRIPTION
SHCLMPM1	STRONGHOLD RAIL CLAMP MILL
SHCLMPD1	STRONGHOLD RAIL CLAMP DRK



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PRODUCT LINE:	NXT HORIZON
DRAWING TYPE:	PARTS ASSEMBLY
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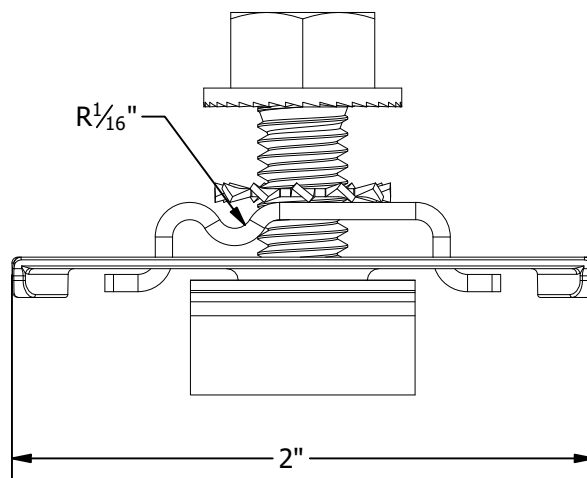
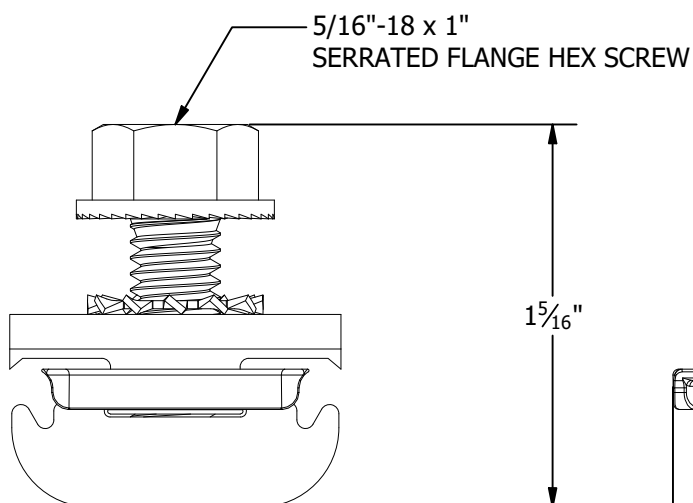
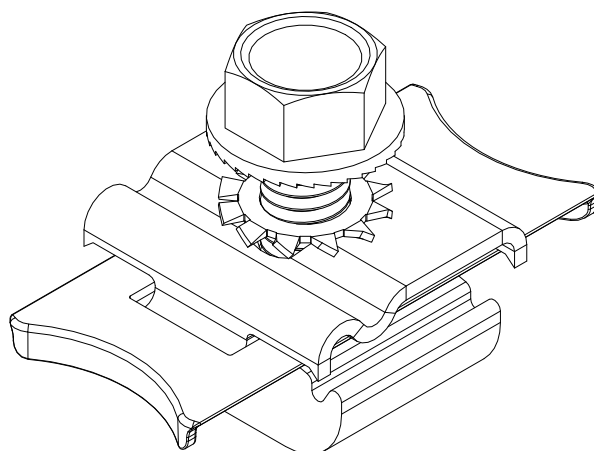
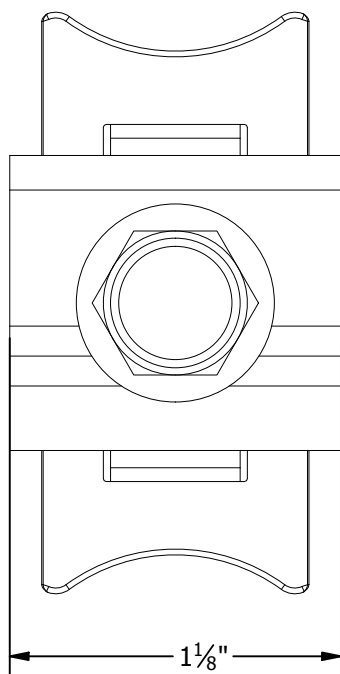
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PART # TABLE	
P/N	DESCRIPTION
LUGMLPE1	NXT HORIZON MLPE & LUG CLAMP



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PRODUCT LINE:	NXT HORIZON
DRAWING TYPE:	PARTS ASSEMBLY
DESCRIPTION:	MLPE & LUG CLAMP
REVISION DATE:	9/22/2021

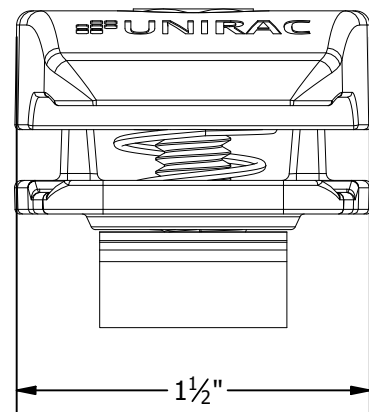
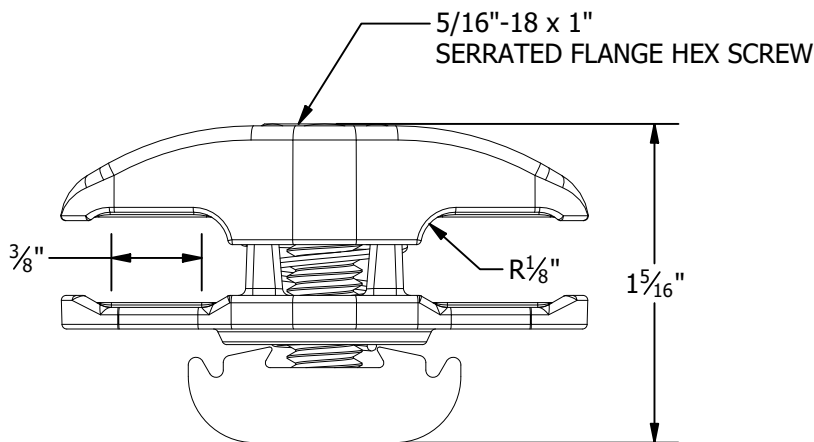
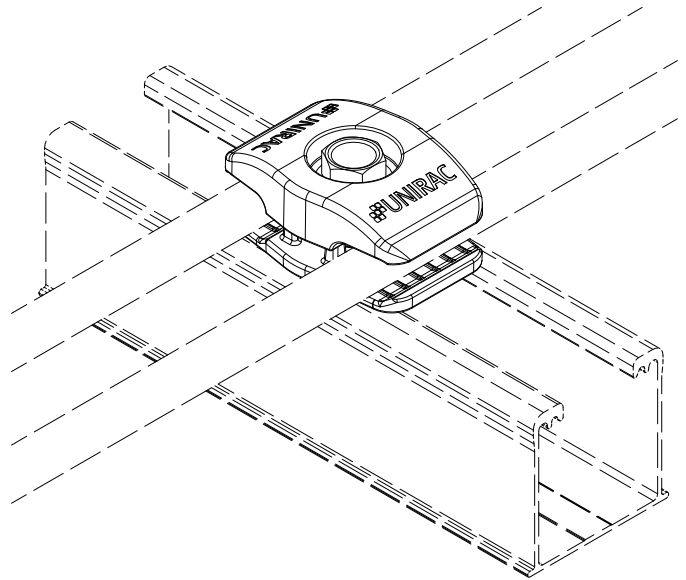
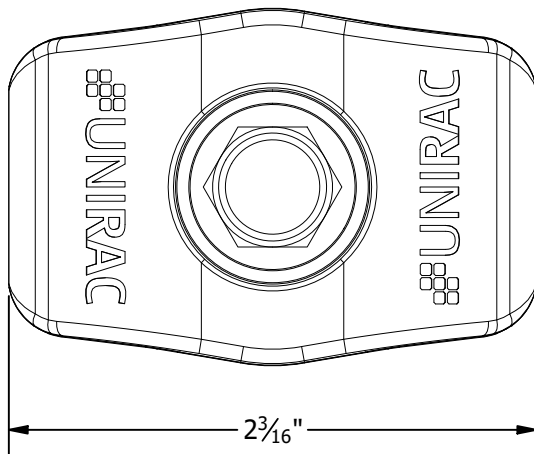
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PART # TABLE	
P/N	DESCRIPTION
WRMCNSD1	NXT HORIZON NS WIRE MGMT CLIP



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PRODUCT LINE:	NXT HORIZON
DRAWING TYPE:	PARTS ASSEMBLY
DESCRIPTION:	NS WIRE MGMT CLIP
REVISION DATE:	9/22/2021

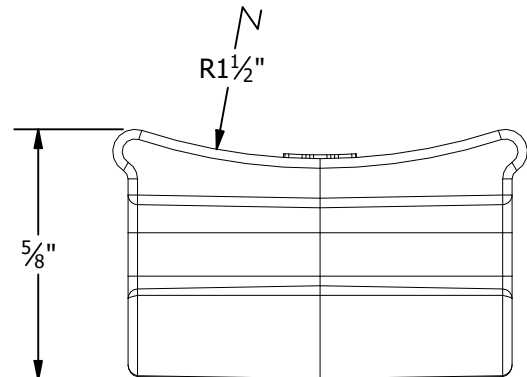
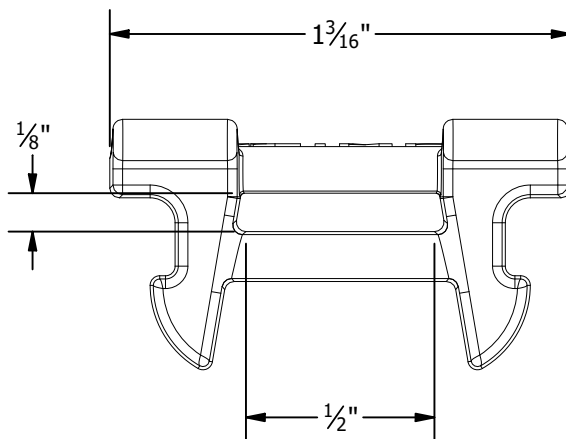
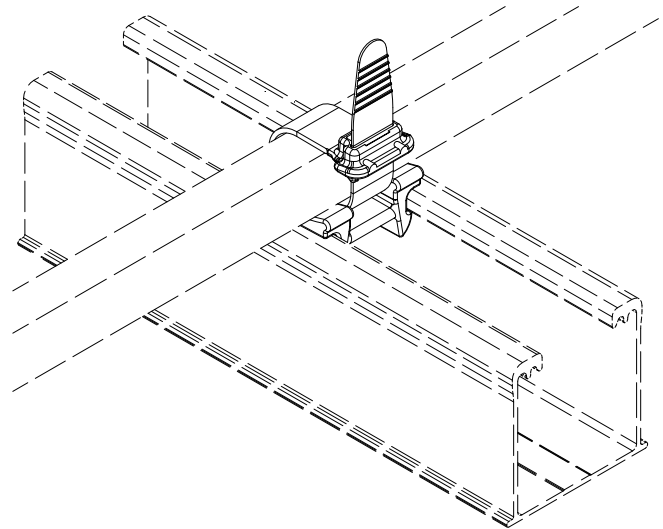
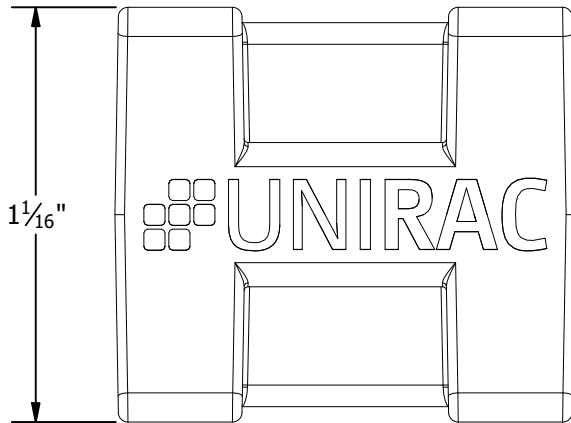
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NH-A07

SHEET

PART # TABLE	
P/N	DESCRIPTION
WRMCLPD1	NXT HORIZON WIRE MGMT CLIP



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PRODUCT LINE:	NXT HORIZON
DRAWING TYPE:	PARTS
DESCRIPTION:	WIRE MGMT CLIP
REVISION DATE:	10/27/2021

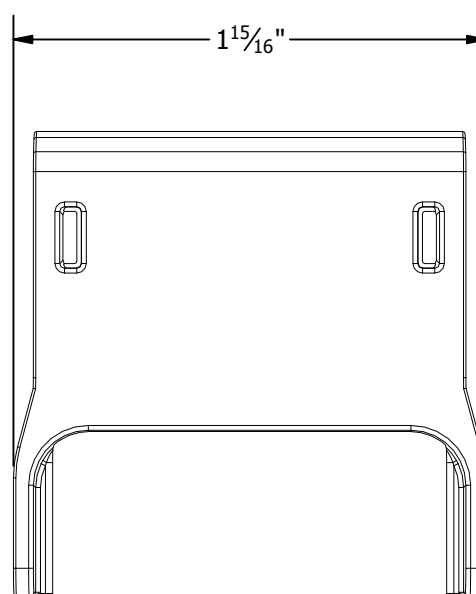
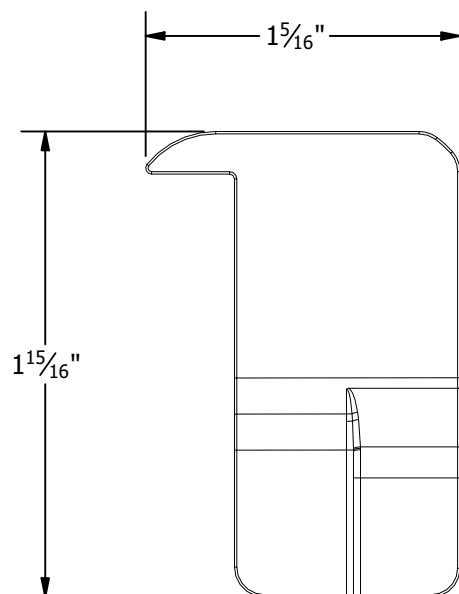
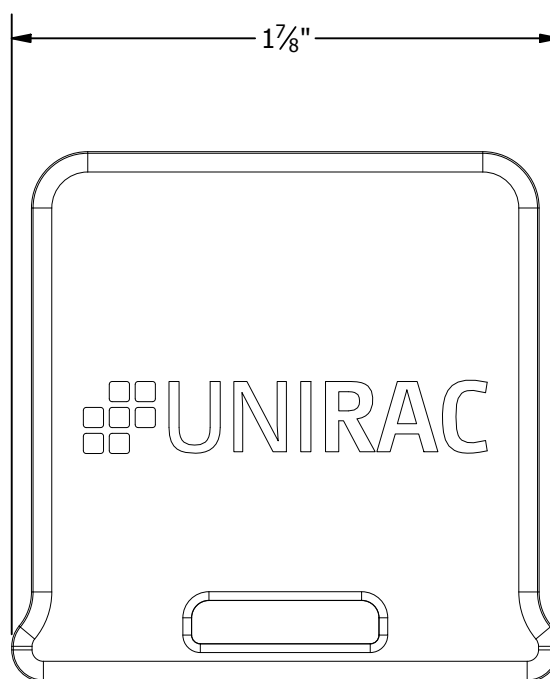
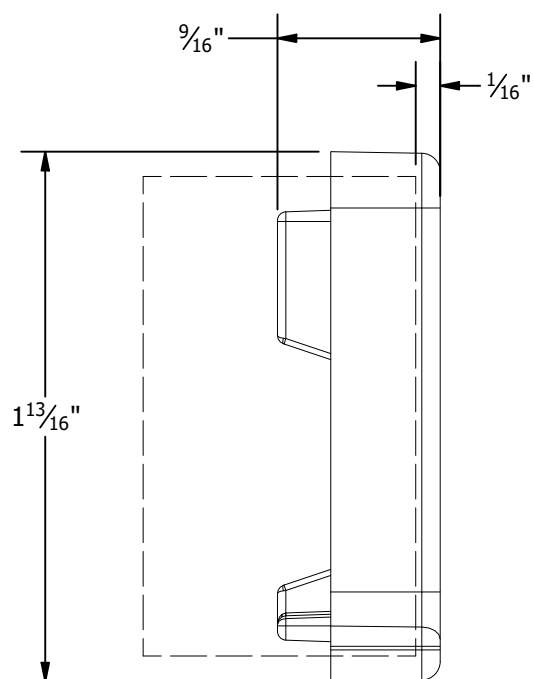
DRAWING NOT TO SCALE
ALL DIMENSIONS ARE
NOMINAL

PRODUCT PROTECTED BY
ONE OR MORE US PATENTS
LEGAL NOTICE

NH-A08

SHEET

PART # TABLE	
P/N	DESCRIPTION
ENDCAPD1	NXT HORIZON RL & CLMP CAP KIT



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

PRODUCT LINE:	NXT HORIZON
DRAWING TYPE:	PARTS
DESCRIPTION:	RAIL & CLAMP CAP
REVISION DATE:	9/15/2021

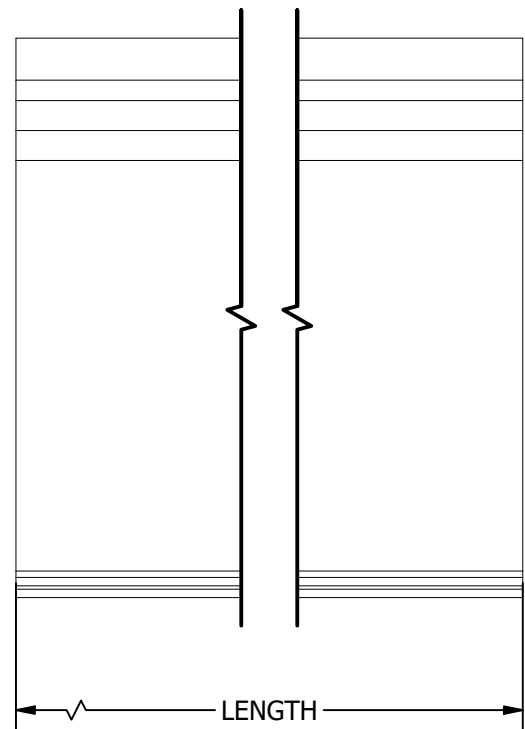
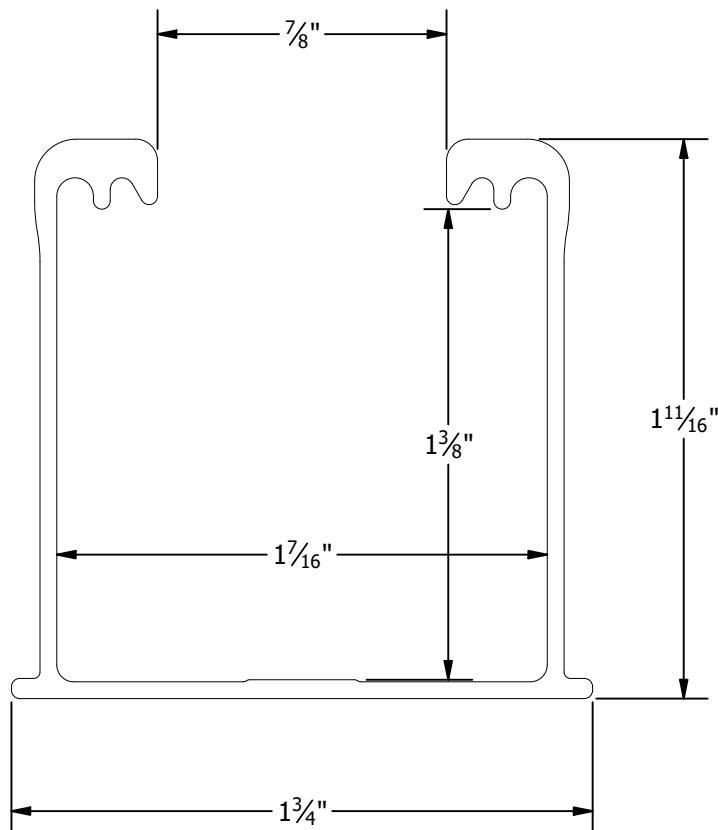
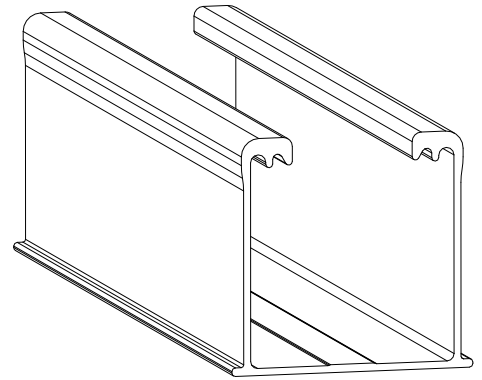
DRAWING NOT TO SCALE
ALL DIMENSIONS ARE
NOMINAL

PRODUCT PROTECTED BY
ONE OR MORE US PATENTS
LEGAL NOTICE

NH-A09

SHEET

PART # TABLE		
P/N	DESCRIPTION	LENGTH
084RLM1	NXT HORIZON RAIL 84" MILL	84"
084RLD1	NXT HORIZON RAIL 84" DARK	84"
168RLM1	NXT HORIZON RAIL 168" MILL	168"
168RLD1	NXT HORIZON RAIL 168" DARK	168"
208RLM1	NXT HORIZON RAIL 208" MILL	208"
208RLD1	NXT HORIZON RAIL 208" DARK	208"
246RLM1	NXT HORIZON RAIL 246" MILL	246"
246RLD1	NXT HORIZON RAIL 246" DARK	246"



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

PRODUCT LINE: NXT HORIZON

DRAWING TYPE: PART DETAIL

DESCRIPTION: RAIL

REVISION DATE: 9/13/2021

DRAWING NOT TO SCALE
ALL DIMENSIONS ARE
NOMINAL

PRODUCT PROTECTED BY
ONE OR MORE US PATENTS

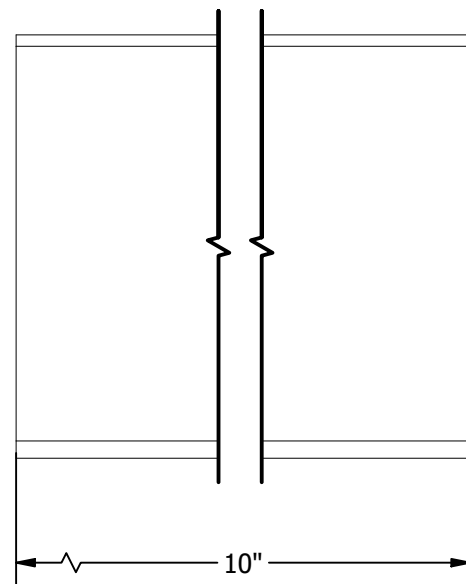
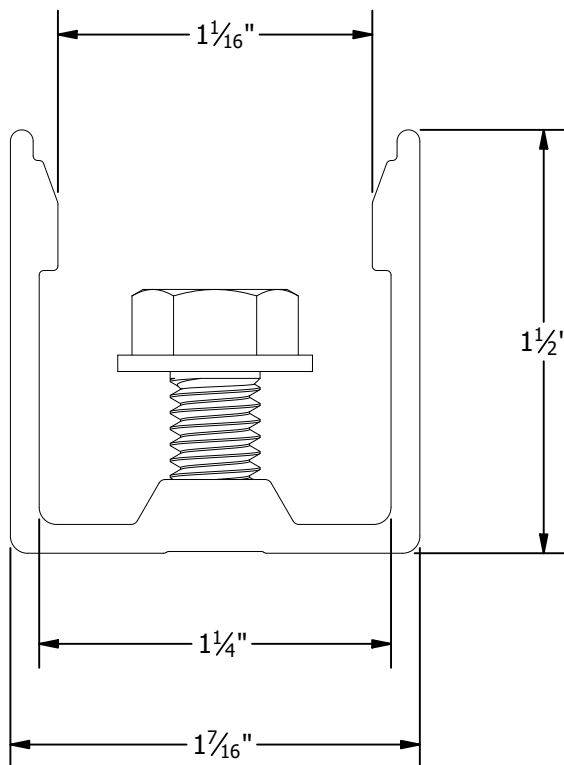
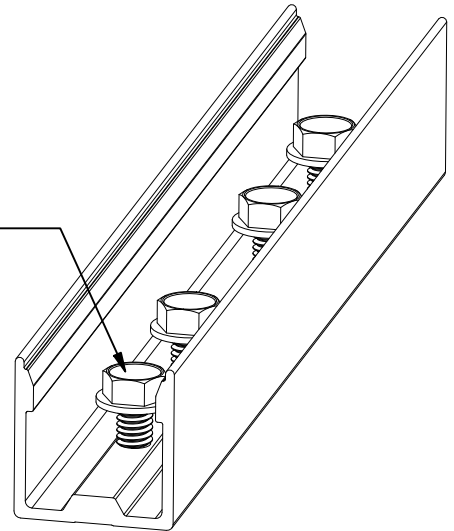
LEGAL NOTICE

NH-P01

SHEET

PART # TABLE		
P/N	DESCRIPTION	LENGTH
RLSPLCM1	NXT HORIZON RAIL SPLICE	10"

4X - 5/16"-18 x 5/8"
HEX FLANGE SCREW - TYPE F



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

PRODUCT LINE: NXT HORIZON

DRAWING TYPE: PART DETAIL

DESCRIPTION: RAIL SPLICE

REVISION DATE: 9/22/2021

DRAWING NOT TO SCALE
ALL DIMENSIONS ARE
NOMINAL

PRODUCT PROTECTED BY
ONE OR MORE US PATENTS

LEGAL NOTICE

NH-P02

SHEET

IQ Combiner 4/4C

The **IQ Combiner 4/4C** with IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure. It streamlines IQ Microinverters and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series busbar assembly.

Smart

- Includes IQ Gateway for communication and control
- Includes Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), included only with IQ Combiner 4C
- Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- Supports Wi-Fi, Ethernet, or cellular connectivity
- Optional AC receptacle available for PLC bridge
- Provides production metering and consumption monitoring

Simple

- Mounts on single stud with centered brackets
- Supports bottom, back and side conduit entry
- Allows up to four 2-pole branch circuits for 240VAC plug-in breakers (not included)
- 80A total PV or storage branch circuits

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year limited warranty
- Two years labor reimbursement program coverage included for both the IQ Combiner SKU's
- UL listed
- X2-IQ-AM1-240-4 and X2-IQ-AM1-240-4C comply with IEEE 1547:2018 (UL 1741-SB, 3rd Ed.)



X-IQ-AM1-240-4C

X2-IQ-AM1-240-4C (IEEE 1547:2018)

X-IQ-AM1-240-4

X2-IQ-AM1-240-4 (IEEE 1547:2018)



IQ Combiner 4/4C

MODEL NUMBER

IQ Combiner 4 X-IQ-AM1-240-4 X2-IQ-AM1-240-4 (IEEE 1547:2018)	IQ Combiner 4 with IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 ± 0.5%) and consumption monitoring (± 2.5%). Includes a silver solar shield to match the IQ Battery and IQ System Controller 2 and to deflect heat.
IQ Combiner 4C X-IQ-AM1-240-4C X2-IQ-AM1-240-4C (IEEE 1547:2018)	IQ Combiner 4C with IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 ± 0.5%) and consumption monitoring (± 2.5%). Includes Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), a plug-and-play industrial-grade cell modem for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.) Includes a silver solar shield to match the IQ Battery and IQ System Controller and to deflect heat.

ACCESSORIES AND REPLACEMENT PARTS (not included, order separately)

Supported microinverters	IQ6, IQ7, and IQ8. (Do not mix IQ6/7 Microinverters with IQ8)
Communications Kit COMMS-CELLMODEM-M1-06 CELLMODEM-M1-06-SP-05 CELLMODEM-M1-06-AT-05	- Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan - 4G based LTE-M1 cellular modem with 5-year Sprint data plan - 4G based LTE-M1 cellular modem with 5-year AT&T data plan
Circuit Breakers BRK-10A-2-240V BRK-15A-2-240V BRK-20A-2P-240V BRK-15A-2P-240V-B BRK-20A-2P-240V-B	Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers. Circuit breaker, 2 pole, 10A, Eaton BR210 Circuit breaker, 2 pole, 15A, Eaton BR215 Circuit breaker, 2 pole, 20A, Eaton BR220 Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down kit support Circuit breaker, 2 pole, 20A, Eaton BR220B with hold down kit support
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 4/4C
XA-PLUG-120-3	Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPLC-01)
X-IQ-NA-HD-125A	Hold-down kit for Eaton circuit breaker with screws
Consumption monitoring CT (CT-200-SPLIT/CT-200-CLAMP)	A pair of 200A split core current transformers

ELECTRICAL SPECIFICATIONS

Rating	Continuous duty
System voltage	120/240VAC, 60 Hz
Eaton BR series busbar rating	125A
Max. continuous current rating	65A
Max. continuous current rating (input from PV/storage)	64A
Max. fuse/circuit rating (output)	90A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)
Max. total branch circuit breaker rating (input)	80A of distributed generation/95A with IQ Gateway breaker included
IQ Gateway breaker	10A or 15A rating GE/Siemens/Eaton included
Production metering CT	200A solid core pre-installed and wired to IQ Gateway

MECHANICAL DATA

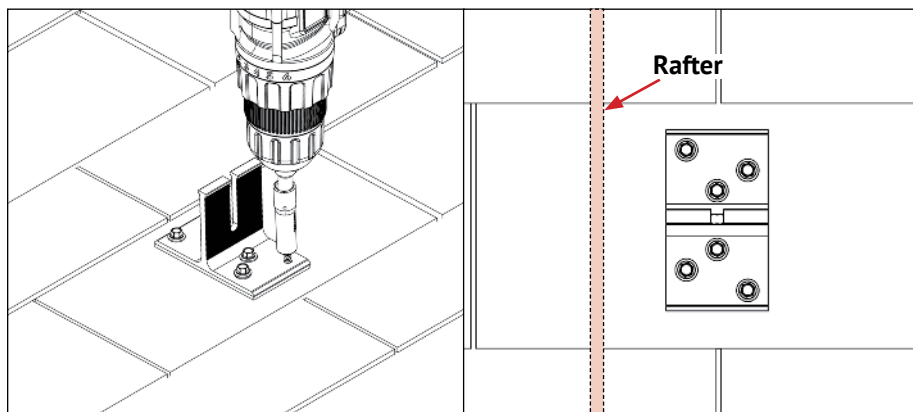
Dimensions (WxHxD)	37.5 cm x 49.5 cm x 16.8 cm (14.75 in x 19.5 in x 6.63 in). Height is 53.5 cm (21.06 in) with mounting brackets.
Weight	7.5 kg (16.5 lbs)
Ambient temperature range	-40°C to +46°C (-40°F to 115°F)
Cooling	Natural convection, plus heat shield
Enclosure environmental rating	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes	• 20A to 50A breaker inputs: 14 to 4 AWG copper conductors • 60A breaker branch input: 4 to 1/0 AWG copper conductors • Main lug combined output: 10 to 2/0 AWG copper conductors • Neutral and ground: 14 to 1/0 copper conductors • Always follow local code requirements for conductor sizing.
Altitude	Up to 3,000 meters (9,842 feet)

INTERNET CONNECTION OPTIONS

Integrated Wi-Fi	IEEE 802.11b/g/n
Cellular	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that an Mobile Connect cellular modem is required for all Enphase Energy System installations.
Ethernet	Optional, IEEE 802.3, Cat5E (or Cat6) UTP Ethernet cable (not included)

COMPLIANCE

Compliance, IQ Combiner	CA Rule 21 (UL 1741-SA) IEEE 1547:2018 - UL 1741-SB, 3 rd Ed. (X2-IQ-AM1-240-4 and X2-IQ-AM1-240-4C) CAN/CSA C22.2 No. 107.1, Title 47 CFR, Part 15, Class B, ICES 003 Production metering: ANSI C12.20 accuracy class 0.5 (PV production) Consumption metering: accuracy class 2.5
Compliance, IQ Gateway	UL 60601-1/CANCSA 22.2 No. 61010-1


INSTALLING STRONGHOLD ATTACHMENT WITH BUTYL BASE TO DECK:

When installing the attachment to the decking instead of the rafter (direct-to-deck), install 4 additional screws on the remaining screw holes on the attachment

Note:

- Additional deck screws are **NOT** included in the KIT. Must be purchased separately.
- Maintain stock of additional deck screws from Unirac Kits in case of direct-to-deck installation.

CAUTION

1. Allowable attachment spans may change for direct-to-deck applications.
2. Unirac recommended spans are only valid with Unirac supplied screws.

Maximum Allowable Rail Spans for Rooftop Solar Panels Parallel to the Roof Surface (inches)

Ground Snow Load (psf)	Wind Exposure Category	Roof Tilt Angle (deg)	Panel Exposure	Basic Wind Speed (mph)																																							
				90			95			100			105			110			115			120			130			140			150			160			170			180			
				Roof Wind Zone																																							
				1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3				
0	B	0-7	Interior	33	33	32	33	33	29	33	33	26	33	33	23	33	30	21	33	27	19	33	25	17	29	21	14	24	17	12	21	15	10	18	13	9	16	11	8	14	10	7	
			Exposed	33	30	21	33	26	18	33	23	16	30	21	15	27	19	13	24	17	12	22	16	11	18	13	9	16	11	8	13	10	7	12	8	6	10	7	5	9	6	X	
		7-20	Interior	33	33	28	33	31	25	33	27	22	33	24	20	33	22	18	31	20	16	29	18	15	24	15	13	20	13	11	17	11	9	15	10	8	13	9	7	12	8	6	
			Exposed	33	22	18	31	20	16	27	17	14	24	16	13	22	14	12	20	13	11	18	12	10	15	10	8	13	8	7	11	7	6	10	6	5	9	5	X	8	5	X	
		20-27	Interior	34	34	33	34	34	28	34	33	24	34	30	21	34	27	18	34	24	16	34	22	15	33	19	13	28	16	11	24	14	9	21	12	8	18	10	7	16	9	6	
			Exposed	34	27	18	34	24	16	34	21	14	34	19	13	30	17	12	27	16	11	25	14	10	21	12	8	18	10	7	15	9	6	13	8	5	12	7	4	10	6	4	
	C	27-45	Interior	34	34	34	34	34	34	34	34	31	34	34	27	34	34	24	34	31	21	31	28	19	26	23	15	22	20	13	19	17	11	17	15	9	15	13	8	13	12	7	
			Exposed	34	34	24	33	30	21	30	27	18	27	24	16	24	22	14	22	20	13	20	18	11	17	15	9	14	13	8	12	11	7	11	10	6	9	8	5	8	7	4	
		0-7	Interior	33	32	22	33	28	20	33	25	18	32	23	16	29	20	14	26	19	13	24	17	12	20	14	10	17	12	8	14	10	7	13	9	6	11	8	5	10	7	5	
			Exposed	29	20	14	25	18	13	23	16	11	20	15	10	18	13	9	17	12	8	15	11	8	13	9	6	11	8	5	9	7	X	8	6	X	7	5	X	6	X	X	
		7-20	Interior	33	24	19	33	21	17	29	19	15	26	17	14	24	15	12	22	14	11	20	13	10	16	11	9	14	9	7	12	8	6	10	7	5	9	6	5	8	5	X	
			Exposed	24	15	12	21	13	11	19	12	10	17	11	9	15	10	8	14	9	7	13	8	7	11	7	6	9	6	5	8	5	X	7	X	X	6	X	X	5	X	X	
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		27-45	Interior	34	34	26	34	32	22	32	29	20	29	26	17	26	23	15	24	21	14	22	19	12	18	16	10	15	14	8	13	12	7	12	10	6	10	9	5	8	8	5	7
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		B	0-7	Interior	33	27	18	33	24	16	29	21	15	26	19	13	24	17	12	22	15	11	20	14	10	16	12	8	14	10	7	12	9	6	10	7	5	9	7	X	8	6	X
				Exposed	24	17	12	21	15	10	19	13	9	17	12	8	15	11	8	14	10	7	13	9	6	11	8	5	9	6	X	8	6	X	7	5	X	6	X	5	X		
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	20-27		Interior	34	24	16	34	21	14	34	19	13	30	17	11	27	15	10	25	14	9	22	13	9	19	11	7	16	9	6	14	8	5	12	7	5	10	6	4	9	5	X	
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	C	20-27	Interior	31	31	31	31	31	28	31	31	24	31	30	21	31	27	18	31	24	16	31	22	15	31	19	13	28	16	11	24	14	9	21	12	8	18	10	7	16	9	6	
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	7-20		Interior	24	24	19	24	21	17	24	19	15	24	17	14	24	15	12	22	14	11	20	13	10	16	11	9	14	9	7													
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	20-27		Interior	31	29	20	31	26	17	31	23	15	31	21	14	31	19	12	30	17	11	27	15	10	23	13	9	19	11	7	16	9	6	14	8	5	13	7	5	11	6	4	
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	B	27-45	Interior	33	33	2																																					