

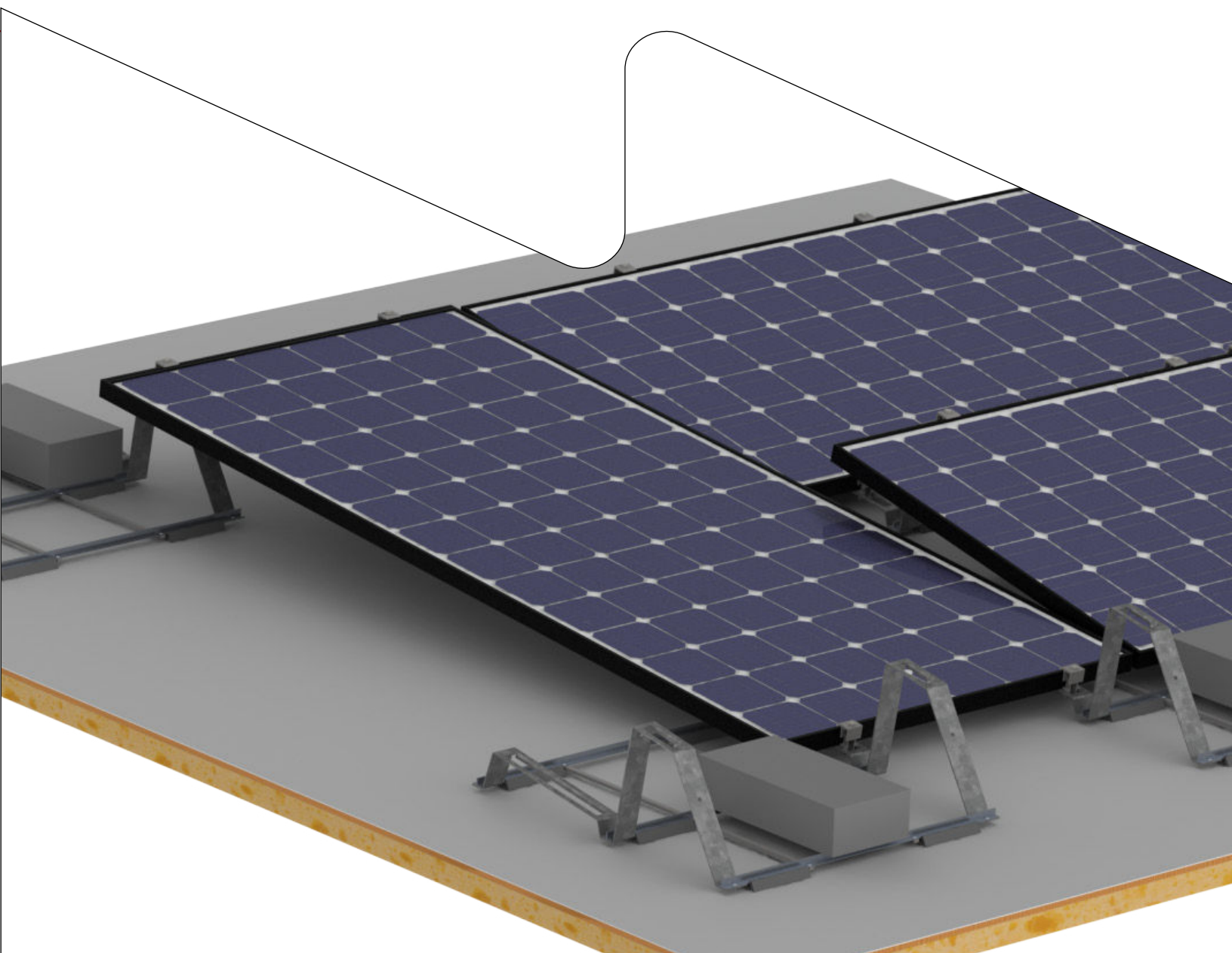


Connecting Strength

The South Face System



ASSEMBLY INSTRUCTIONS





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Quality tested - several certifications

K2 Systems stands for secure connections, highest quality and precision. Our customers and business partners have known that for a long time. Independent institutes have tested, confirmed and certified our capabilities and components.

Please find our quality and product certificates under:

<https://k2-systems.com/en-us/company/quality-management/>

Engineering strength is at our core



With sophisticated product innovations and a deep customer focus, K2 Systems is the engineering leader for all your mounting system needs. We are a market leader with more than 29 GW installed worldwide.

We offer proven product solutions and innovative designs. Wind tunnel testing along with advanced structural and electrical validation to facilitate permitting, design and installation. Our designs result in cost competitive racking systems with dedicated support that will position you to win more projects.

We partner with our customers and suppliers for the long-term. High quality materials and cutting edge designs provide a durable, yet functional system. Our product line is comprised of a few, coordinated components that lower the cost of materials, and simplify installation, saving you time and money. All backed by German engineering, a long track record of quality and a company that is here to stay.

Thank you for choosing K2 Systems for your Solar PV Project.

General Safety Information



Please note that our general mounting instructions must be followed at all times and can be viewed online at <https://k2-systems.com/en-us/resource-center-2/>

- / The equipment may only be installed and operated by qualified and adequately trained installers.
- / Prior to installation, ensure that the product complies with on-site static loading requirements.
For roof-mounted systems, the roof load-bearing capacity must always be checked.
- / National and local building regulations and environmental requirements must be adhered to.
- / Compliance with health and safety regulations, accident prevention guidelines and applicable standards are required.
 - /Protective equipment such as safety helmet, boots and gloves must be worn.
 - /Roofing works must be in accordance with roofing regulations utilizing fall protection safeguards when eaves height exceeds 3 m.
 - /At least two people must be present for the duration of the installation work in order to provide rapid assistance in the event of an emergency.
- / K2 mounting systems are continuously developed and improved and the installation process may thereby change at any time. Prior to installation consult our website at:
<https://k2-systems.com/en-us/resource-center-2/> for up-to-date instructions.
We can send you the latest version on request.
- / The assembly instructions of the module manufacturer must be adhered to.
- / A thermal break is required at no more than 65 ft both directions, North/South and East/West. A minimum separation of 2.5" is required between separate arrays.
- / Equipotential bonding/grounding/earthing between individual parts is to be performed according to country specific standards, as well as national laws and regulations.
- / At least one copy of the assembly instructions should be available on site throughout the duration of the installation.
- / Failure to adhere to our general safety and assembly instructions and not using all system components, K2 is not liable for any resulting defects or damages. We do not accept liability for any damage resulting in the use of competitors parts. Warranty is excluded in such cases.
- / If all safety instructions are adhered to and the system is correctly installed, there is a product warranty entitlement of 25 years! We strongly recommend reviewing our terms of guarantee, which can be viewed at <https://k2-systems.com/en-us/resource-center-2/>. We will also send this information on request.
- / Dismantling of the system is performed in reverse order to the assembly.
- / K2 stainless steel components are available in different corrosion resistance classes. Each structure or component must be carefully checked for possible corrosion exposure.
- / Any component showing signs of damage that compromise safety shall be replaced immediately.

The following guidelines apply



The South Face System can be installed as standard under the following conditions. Even if the system is capable of meeting higher demands through the integration of safety standards, please get in touch with your contact at K2 Systems if the specified values are exceeded.



Roof requirements

- / The structural integrity of the roof must be reviewed on site and approved by a licensed structural engineer.
- / Maximum roof height: 150 ft
- / Roof slope: 0° to 7°
- / Minimum clearance to roof edge: 19.7"
- / Friction coefficient of the roof must be determined on site or K2 CoF testing conducted by third party.



Structural requirements

- / Wind speed: 90-200 mph

Bonding and Grounding



The South Face System has obtained a UL 2703 system listing from Underwriter's Laboratories (UL).

A sample bonding path diagram is shown in Figure 1, below. Specific installations may vary based on site conditions and AHJ requirements.

Each electrical connection has been evaluated to a maximum fuse rating of 30A. When installed per these installation instructions, all connections meet the requirements of NEC 690.43.

Installation should be periodically reinspected for loose components or fasteners and any corrosion.

This racking system may be used to ground and/or mount a PV module complying with UL 61730 only when the specific module has been evaluated for grounding and/or mounting in compliance with the included instructions.

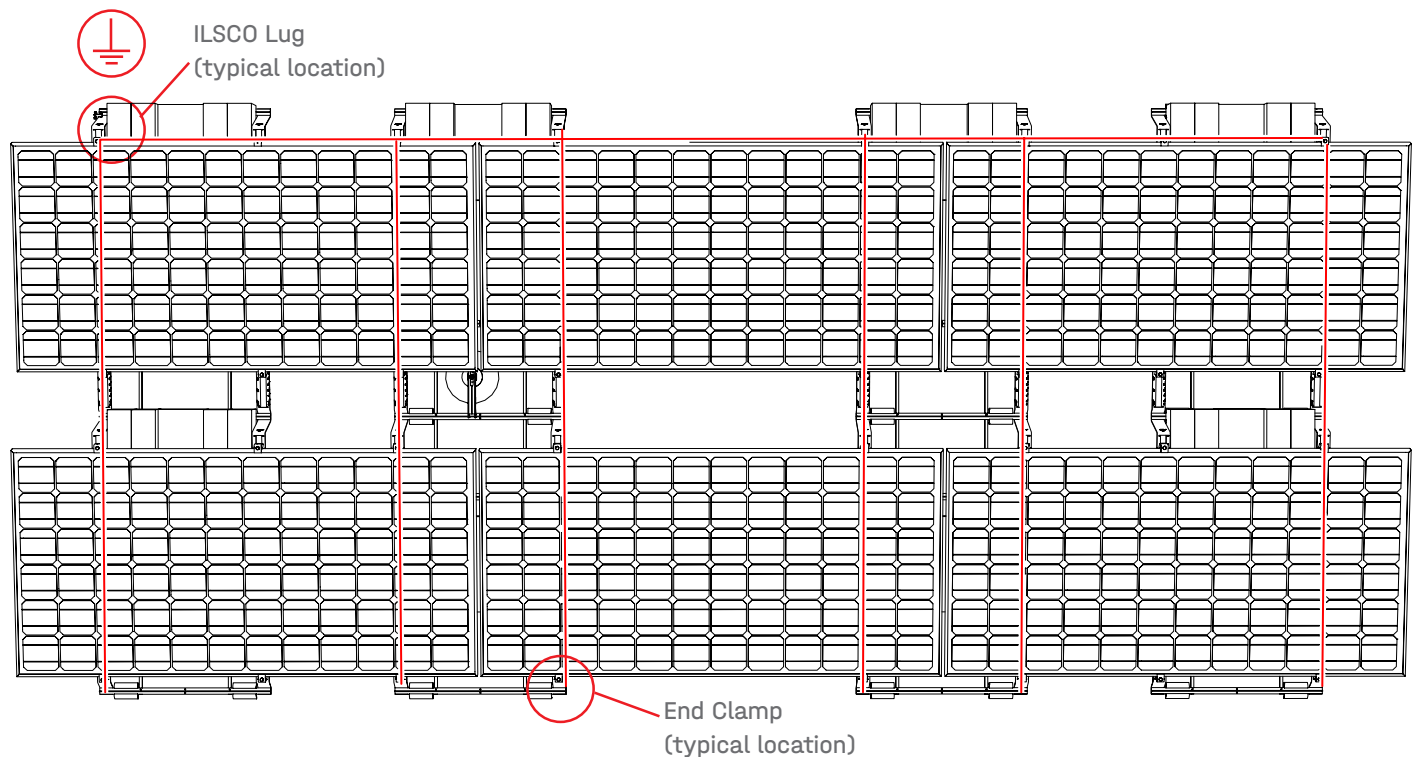


Figure 1: Bonding connections shown in red. For certain jurisdictions, bonding and grounding connections are identified at typical locations.



Fire Rating

The South Face System has undergone fire performance testing in accordance with UL 2703, Fire Performance. A System Class A fire rating is achieved when using The South Face System with use of perimeter guard on east and west edge, and under following conditions:

/Roof slope less than 2/12" rise per linear foot

/Used in combination with a UL 61730 Listed module with a fire performance rating of Type 1, or Type 2. Consult the module manufacturer for specific fire performance rating information.

/South Face may be mounted using any stand-off height to maintain the Class A fire rating. Always consult the module manufacturer's installation instructions to ensure your installation is in compliance with their UL 61730 Listing.

All documentation can be found on UL's Online Database.

Mechanical Rating

The South Face system has been successfully evaluated for Mechanical Loading according to the requirements of UL 2703, Section 21.

/System tested with module size 23.4 ft² with minimum design load of 10 PSF down, 5 PSF up, and 5 PSF lateral

/Actual system structural capacities are defined by a certified K2 Base report

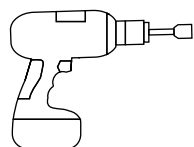
Approved Modules

To view our list of compatible modules, please click this link or scan the QR code: <https://k2-systems.com/wp-content/uploads/2023/10/Approved-Modules-EN-US.pdf>



To comply with UL 3741 PV Hazard Control Systems, the South Face System is only approved for use with Type 1 and Type 2 fire rated modules.

Tools Overview



13mm



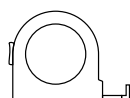
6 - 35 Nm
(4.5 - 22.2 lb-ft)



11mm



≥ 3.0 m



Torque Overview

/ End Clamps: 12 ft-lb

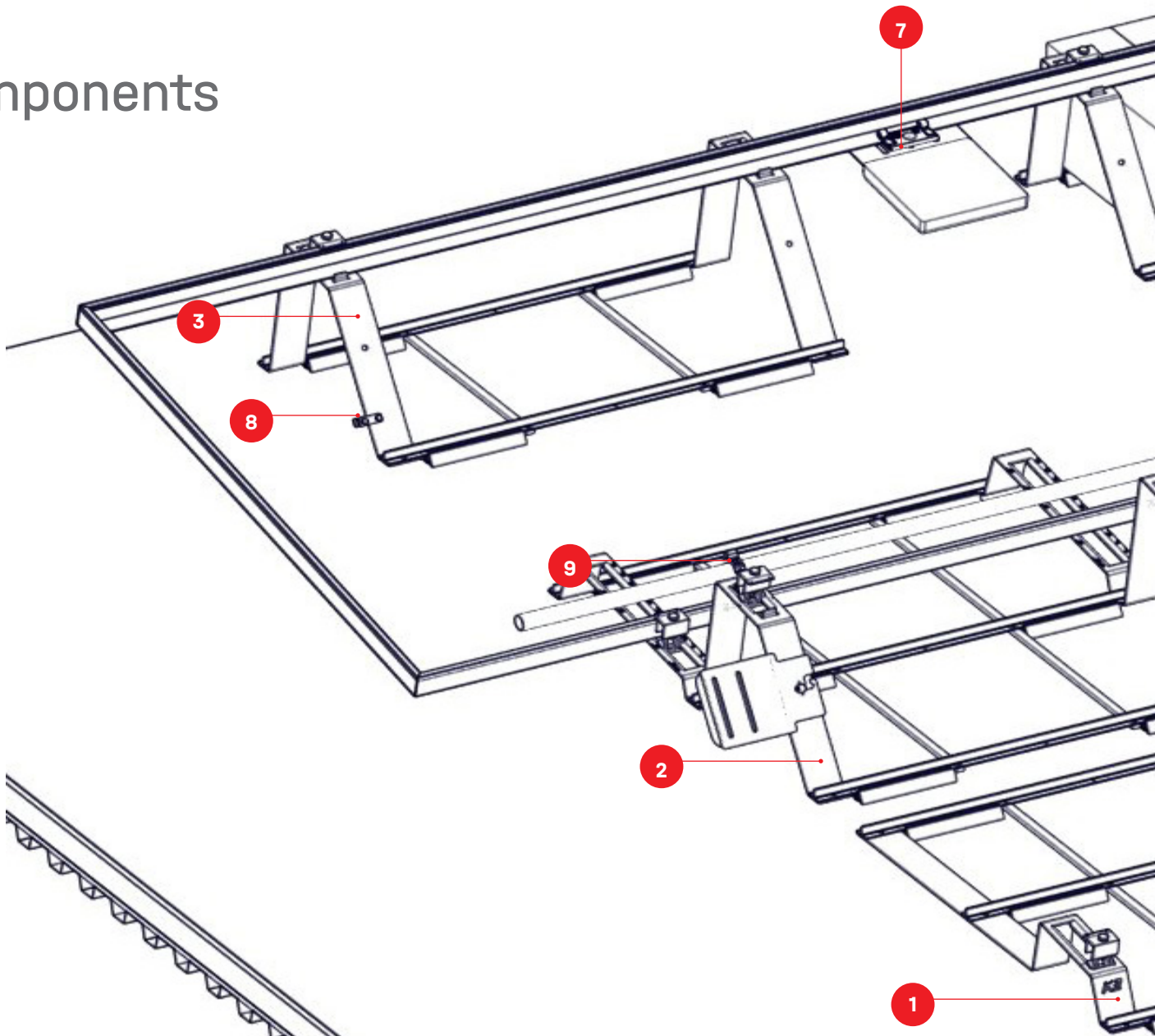
/ Microinverter Set: 12 ft-lb

/ MLPE Module Frame Mount: 15 ft-lb

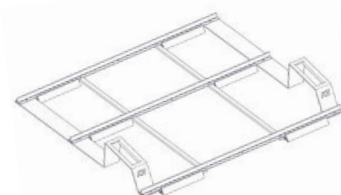
/ ILSCO Lug: 35 in-lbs

Tools and materials for the installation of third party items such as roof attachment products, roof covering and sealing products or items used for bonding and grounding are not listed here.
Please refer to the instructions of those third party products.

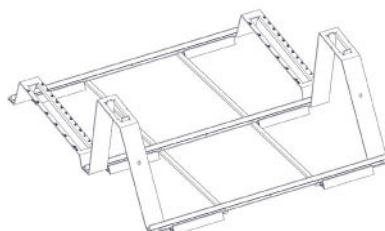
Components



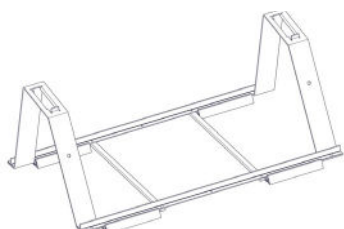
1 4000158
South Face Valley



2 4000192
South Face Ridge



3 4000159
South Face Summit

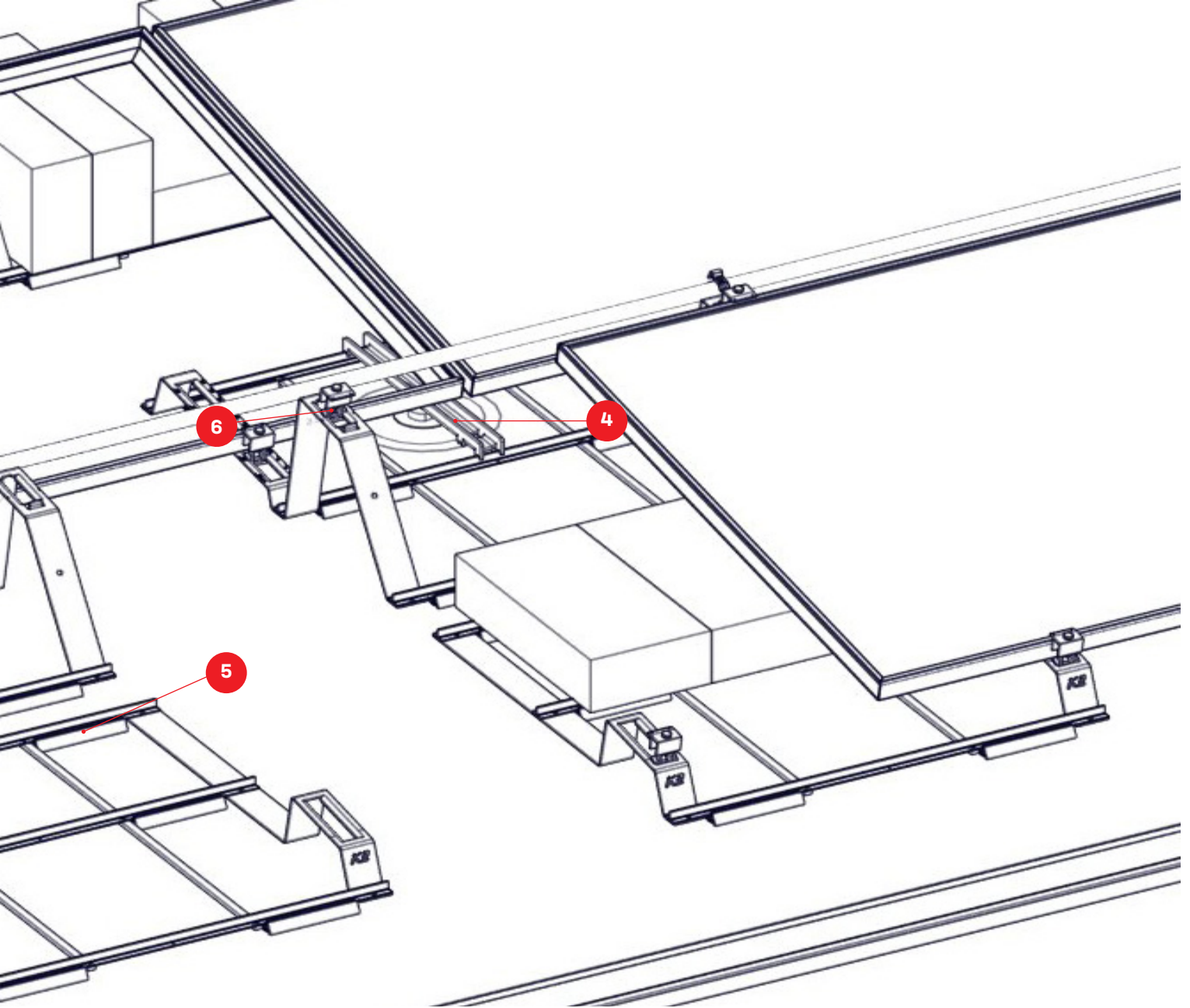


4 4000197/4000233
K2 End Clamp Set



5 4000193
South Face Mat/Spacer Pad





6

4000194

South Face Anchor Bracket

Compatible with most 3rd party anchors



7

4000083

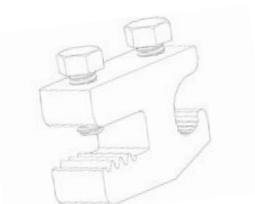
MLPE Module Frame Mount Kit



8

4000960

ILSCO Lug SGB-4



9

4000278

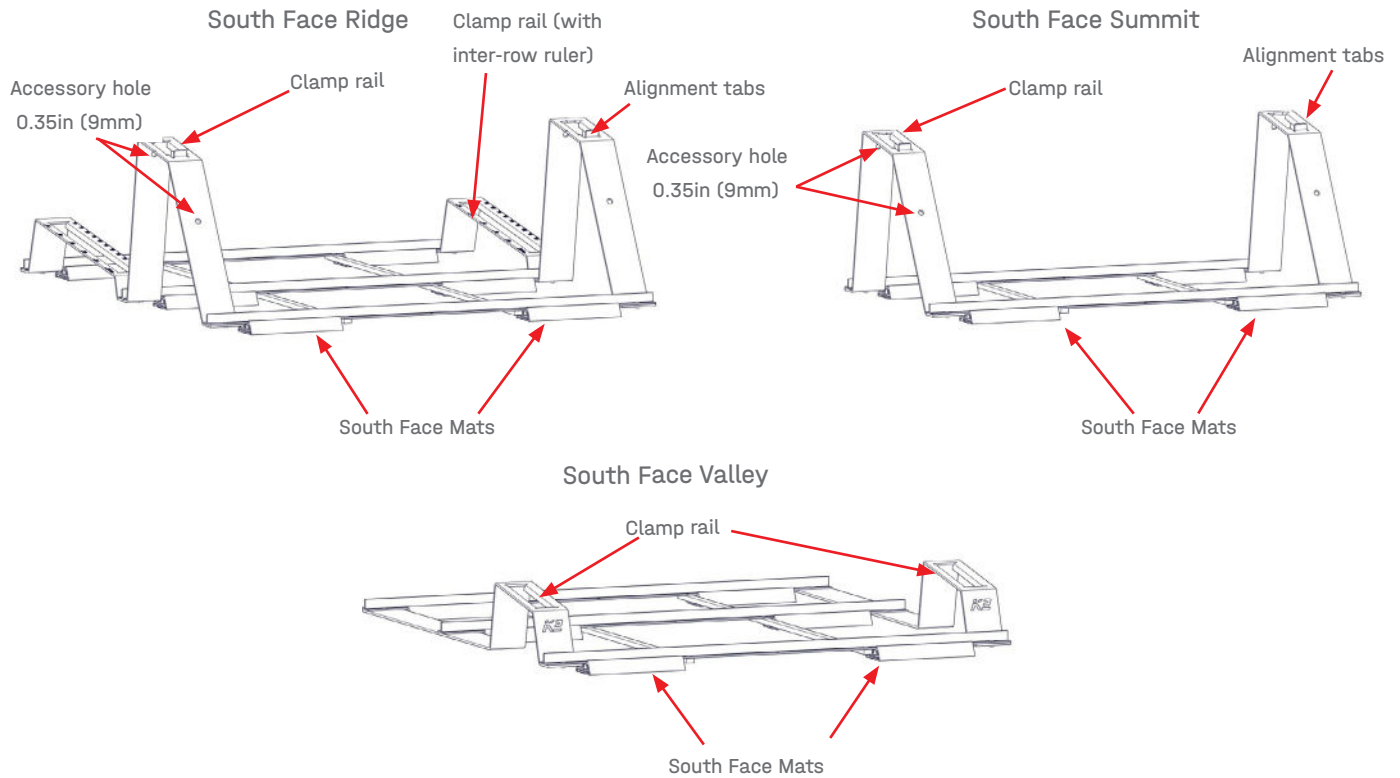
SF, K2 Conduit Clamp, Kit



Assembly

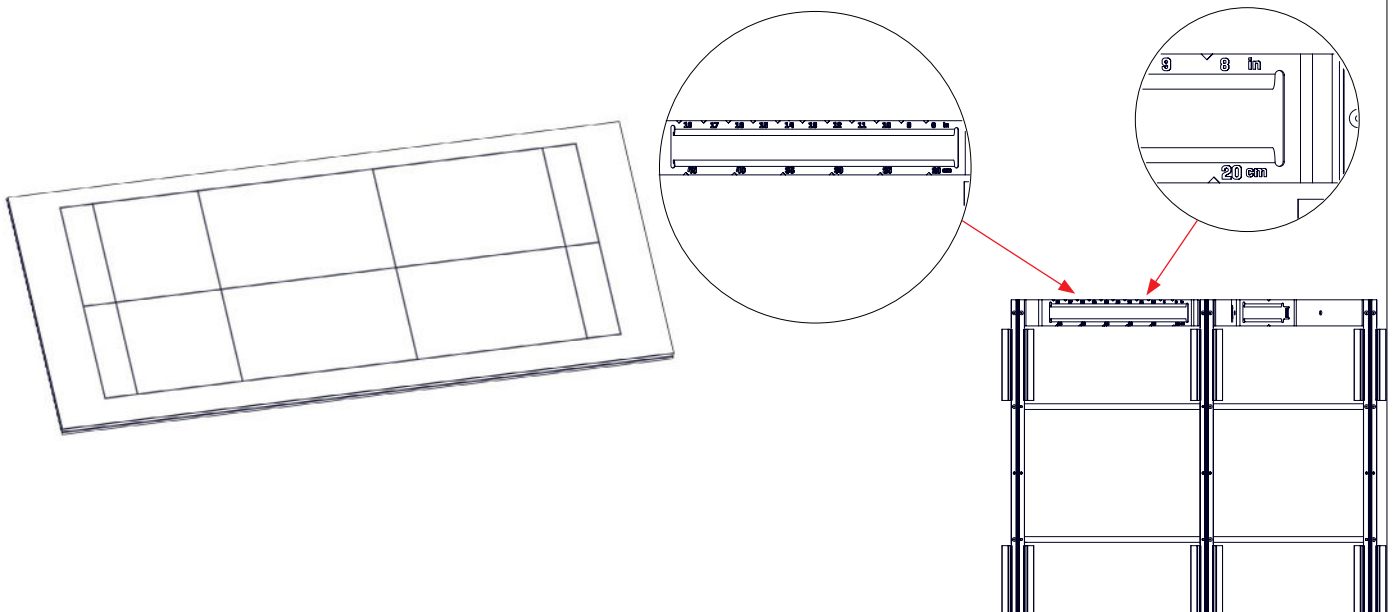


Chassis diagrams.



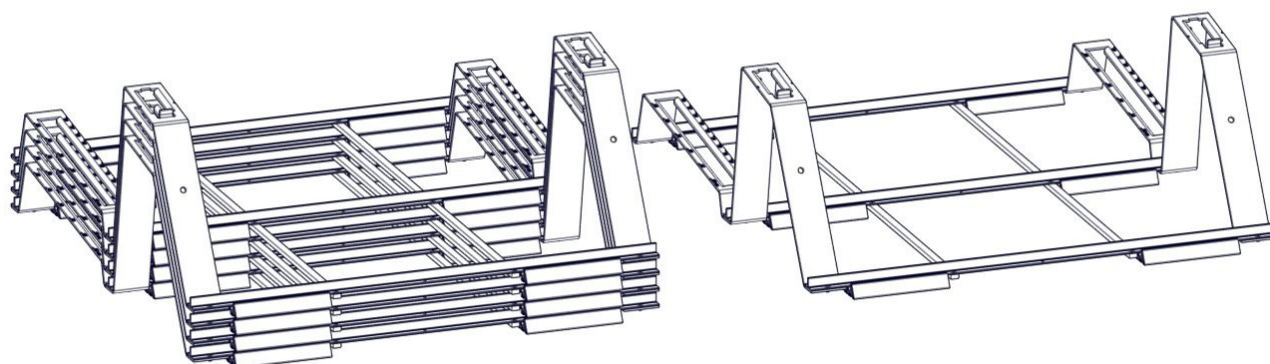
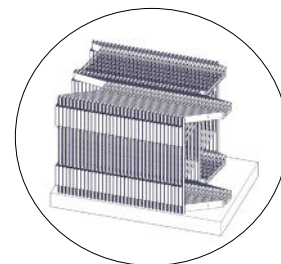
1

Mark array layout with the help of our online tool K2 Base. Mark north-south lines based on module orientation and dimensions. Mark east-west lines based on chassis layout and inter row spacing.



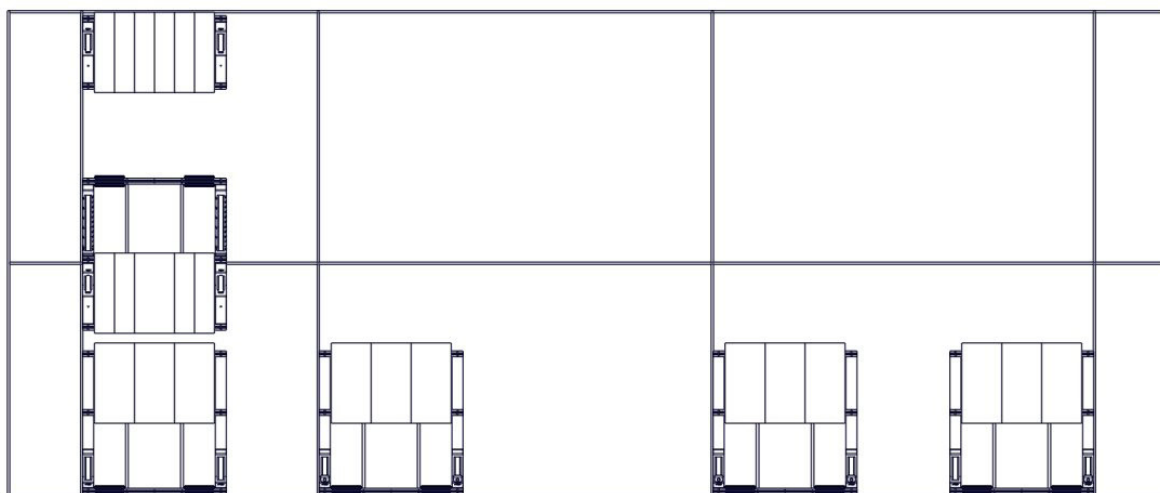
2 **!**

Chassis are stackable and may come shipped on their side. The spacer mats come fully assembled on the chassis and can be removed or added on to for leveling.

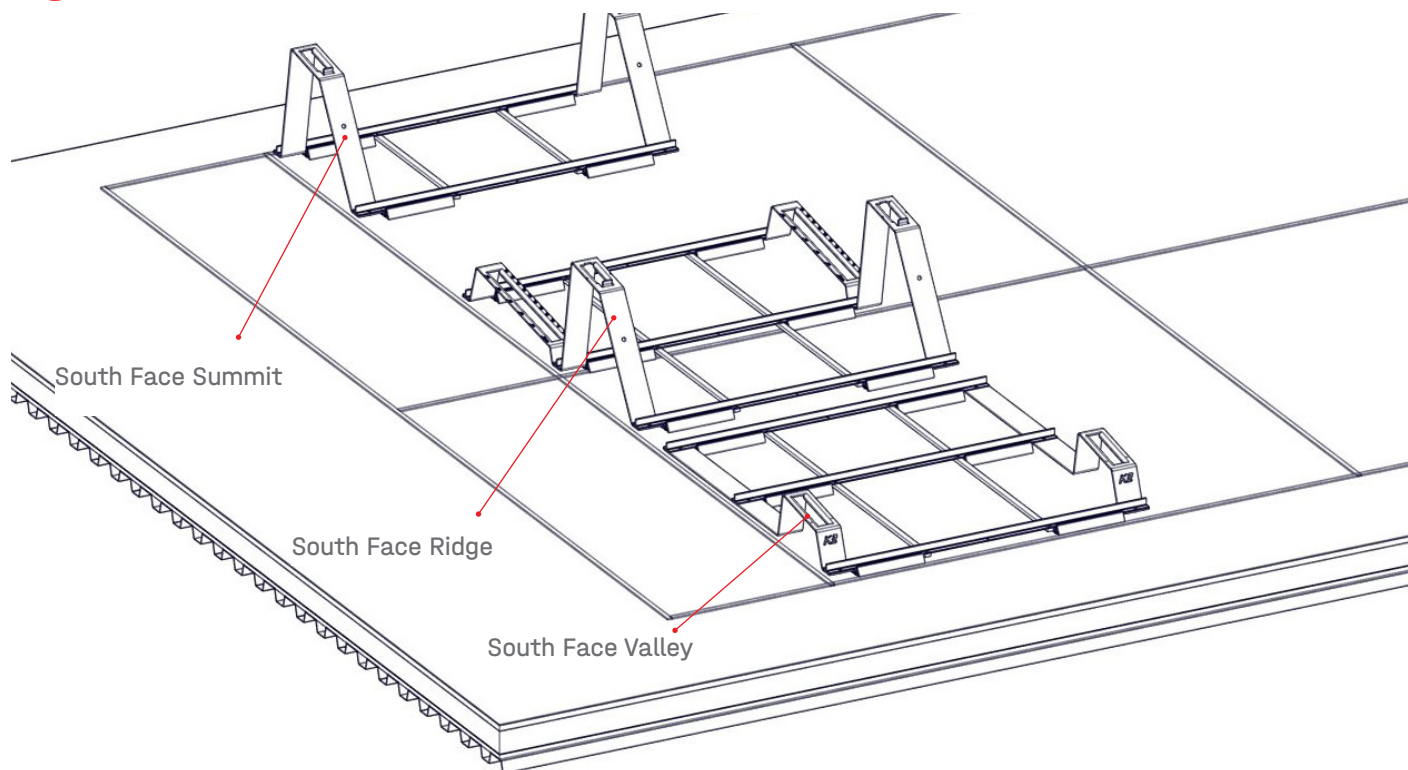


3 **!**

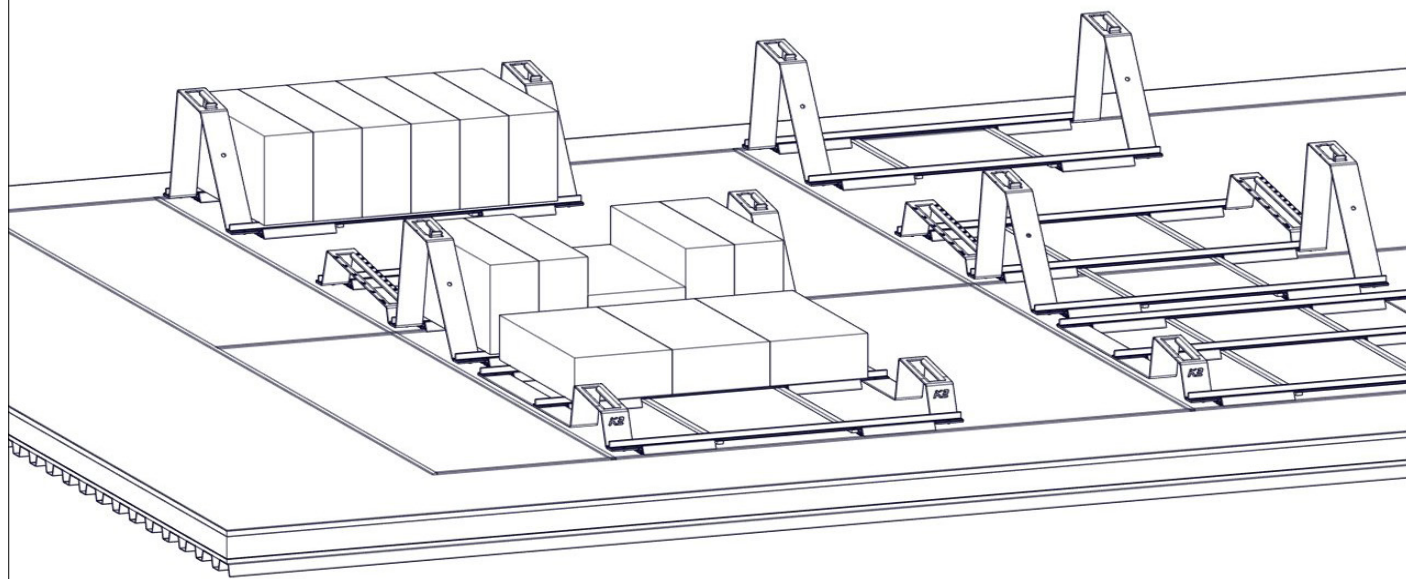
Layout out chassis on the chalk lines made according to the K2 Base layout plan. We recommend starting in the south west corner of the array and setting chassis row by row starting with the south. Setting blocks as you go will ensure the chassis stay on your marks.



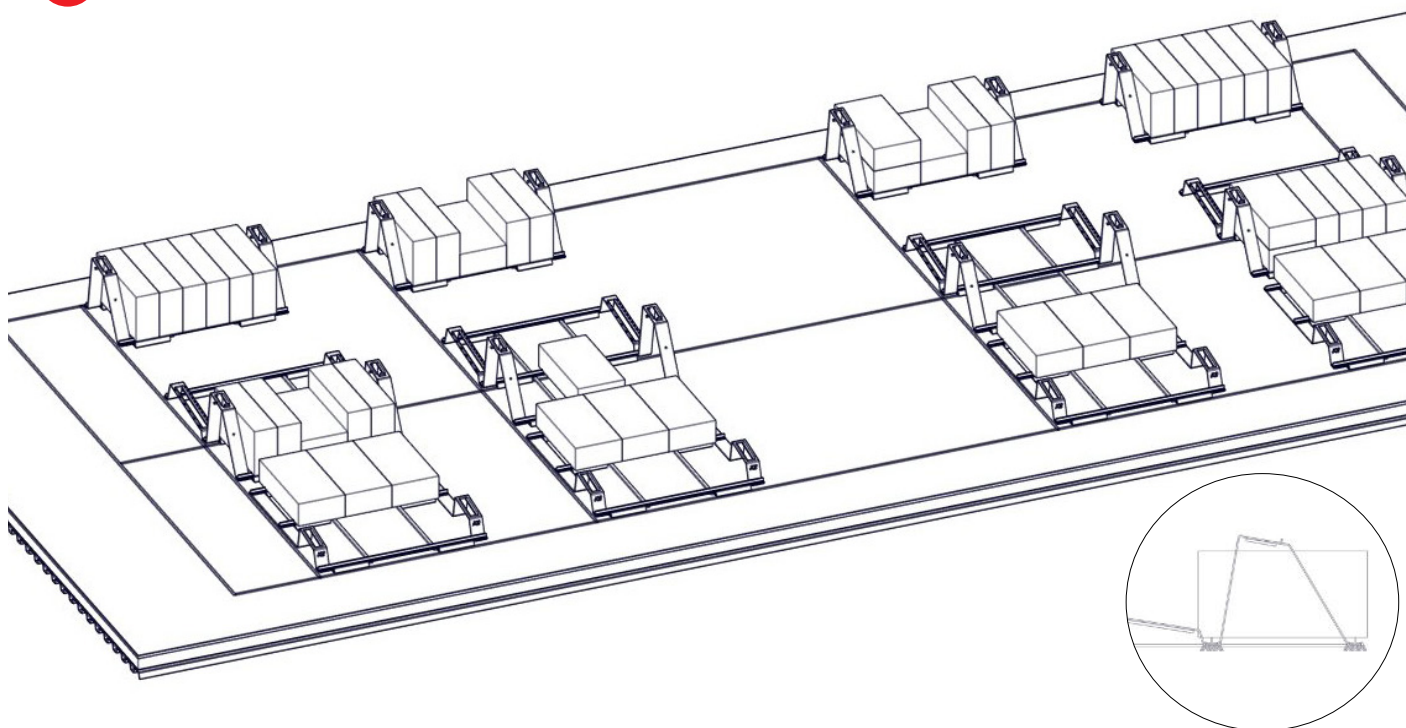
3a ! This image shows how chassis mats should line up on chalk lines for each type of chassis.



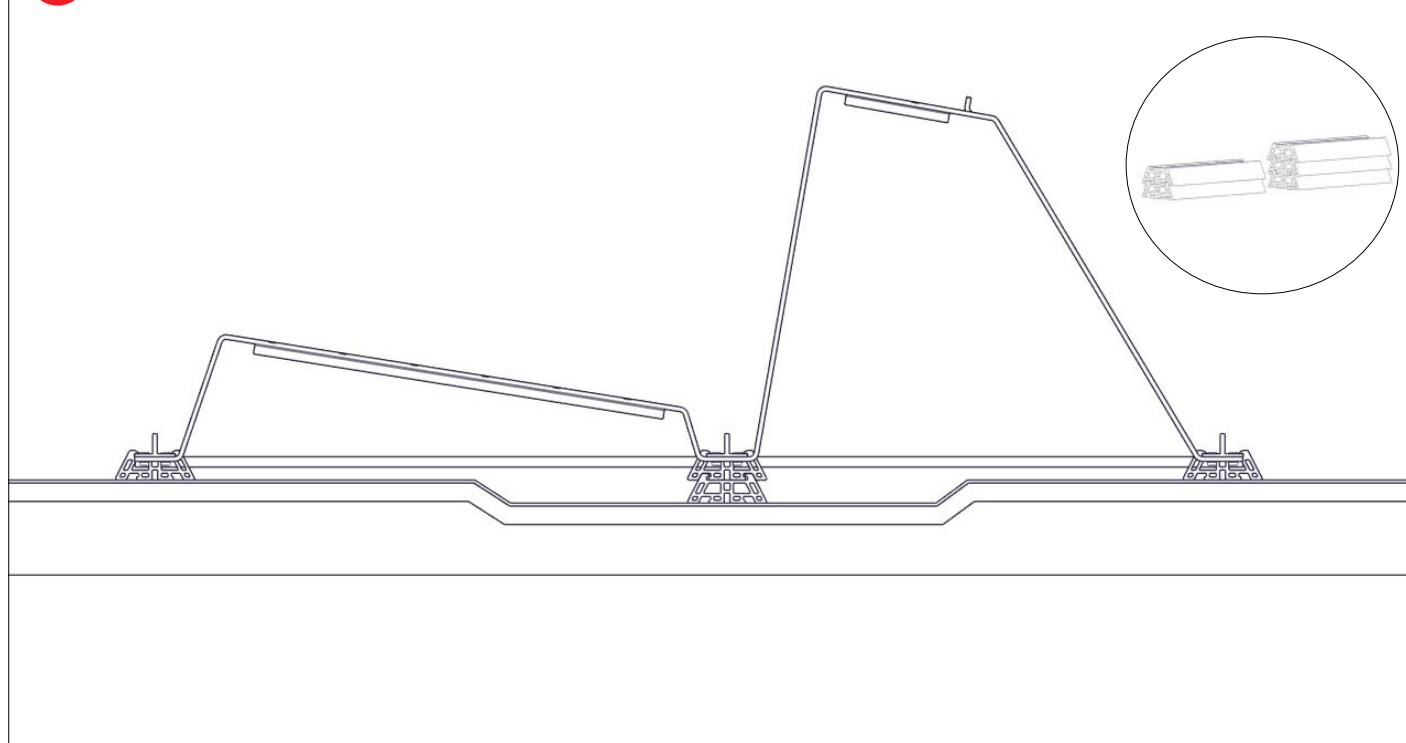
3b ! Follow Base design for ballast block layout.



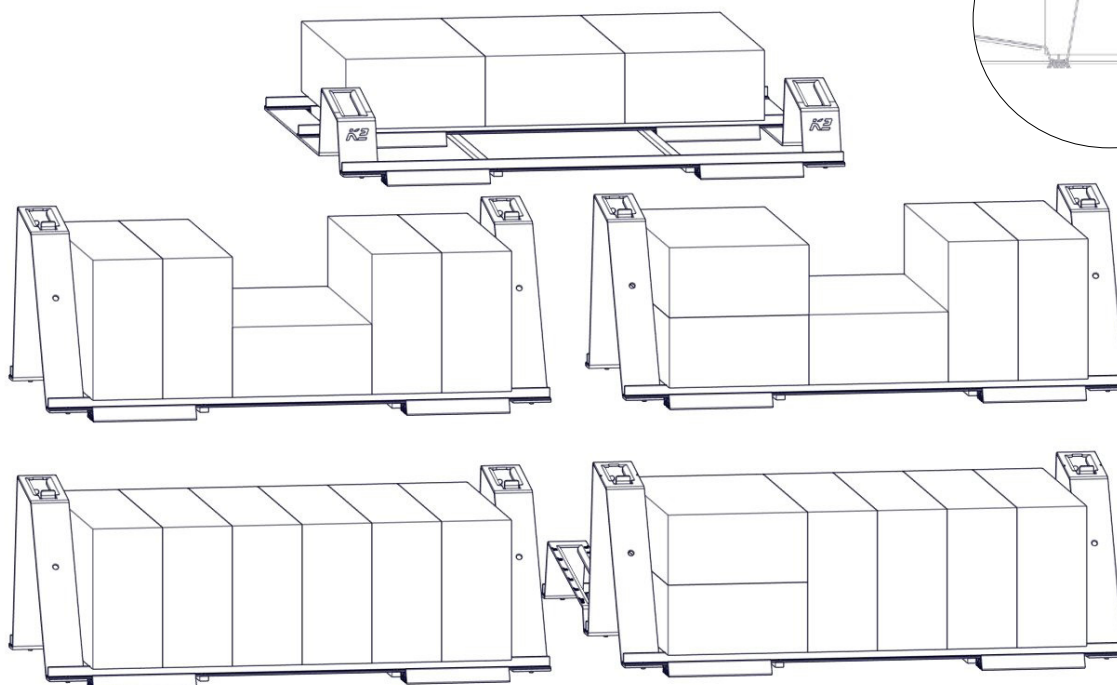
3c ! Example array of chassis and ballast block layout.



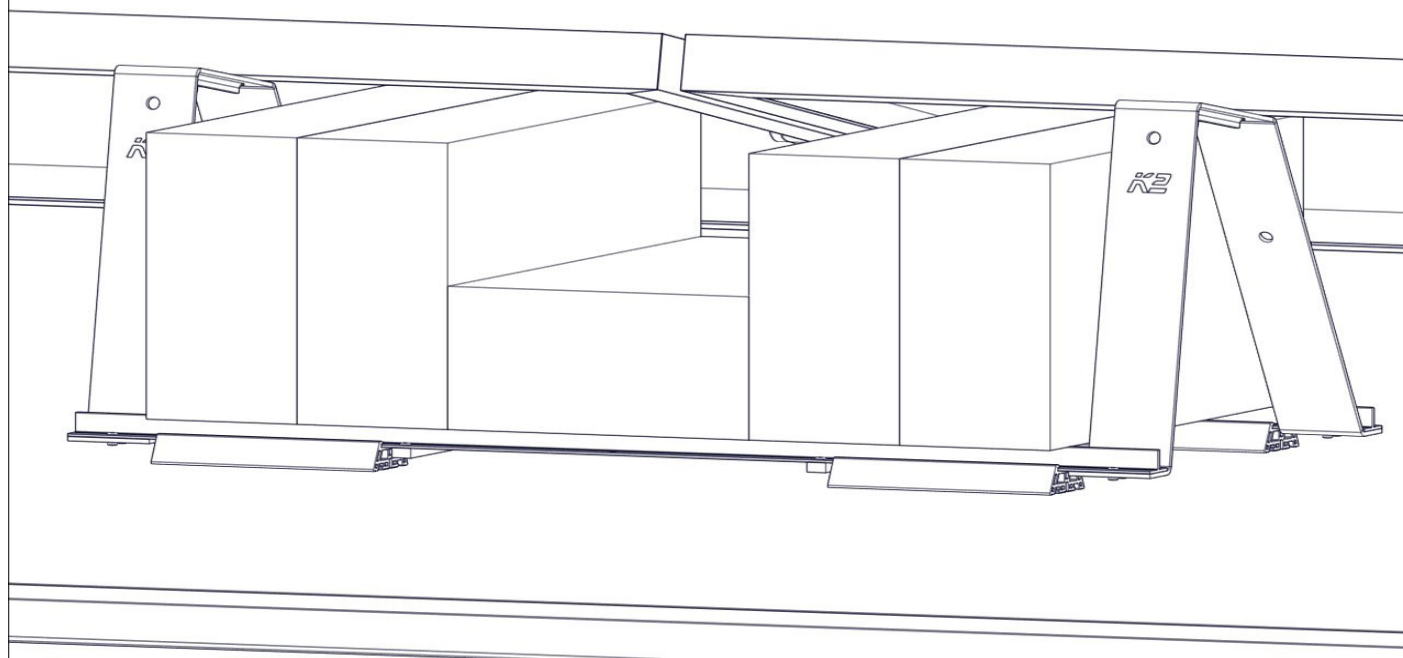
4 ! South Face mats are stackable up to a maximum of 3 for leveling.



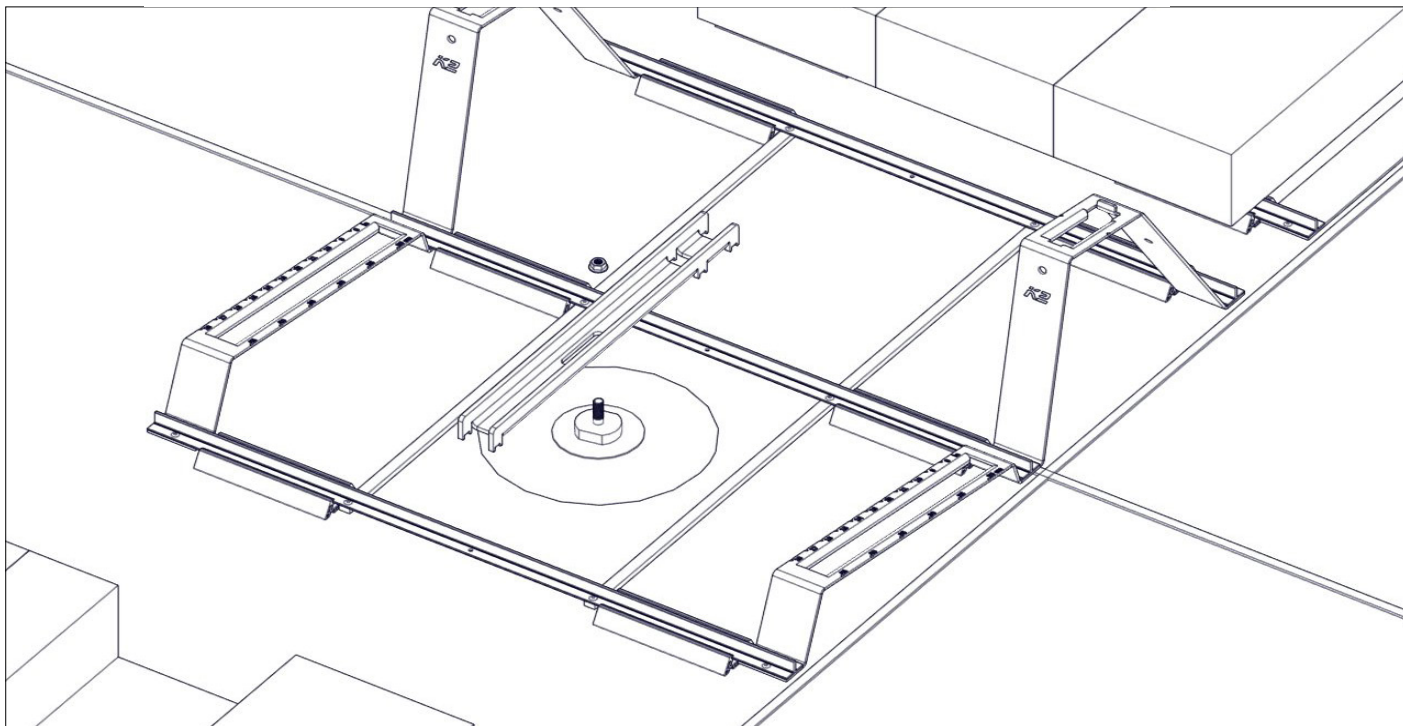
5 ! These are the various ballast block stacking options.



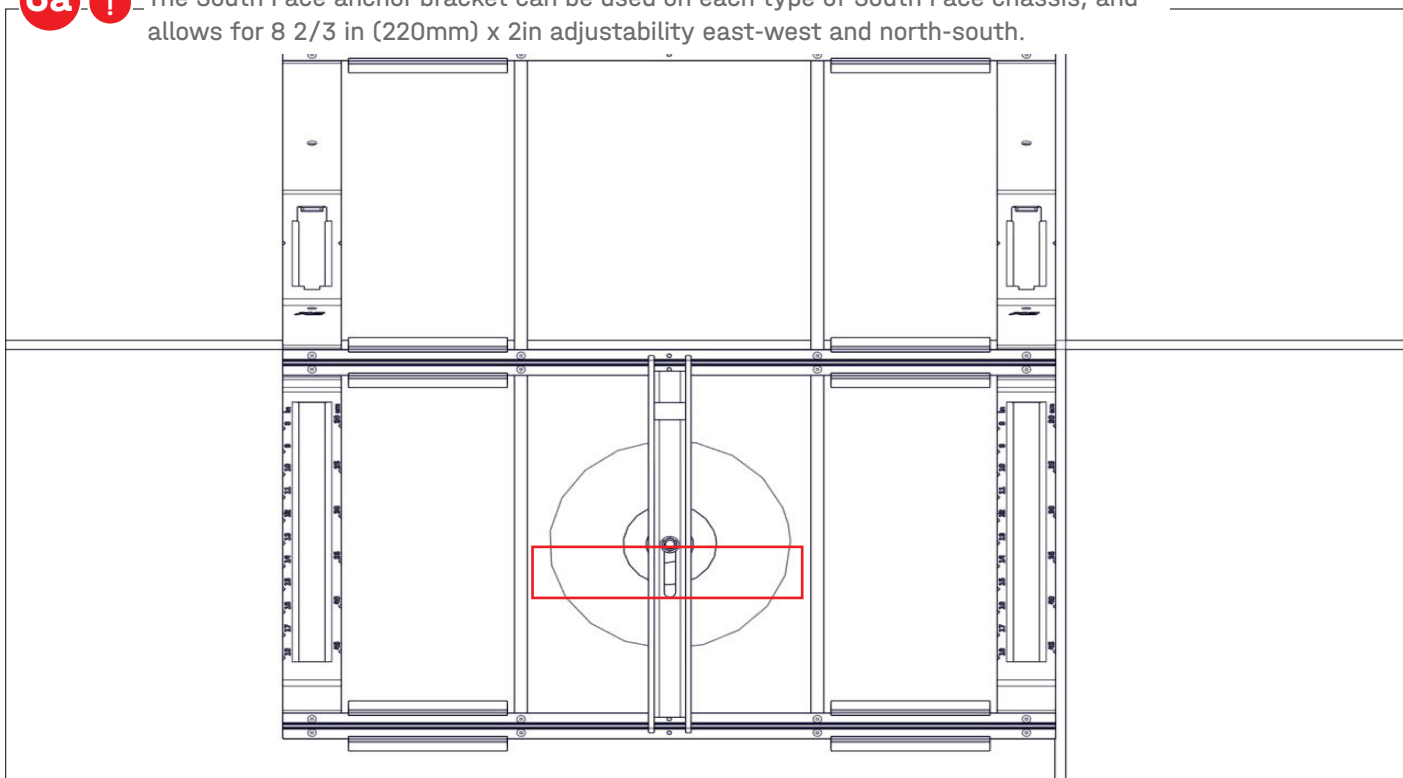
5a ! Where modules meet in the middle of a chassis, stack the middle block flat to avoid interference.



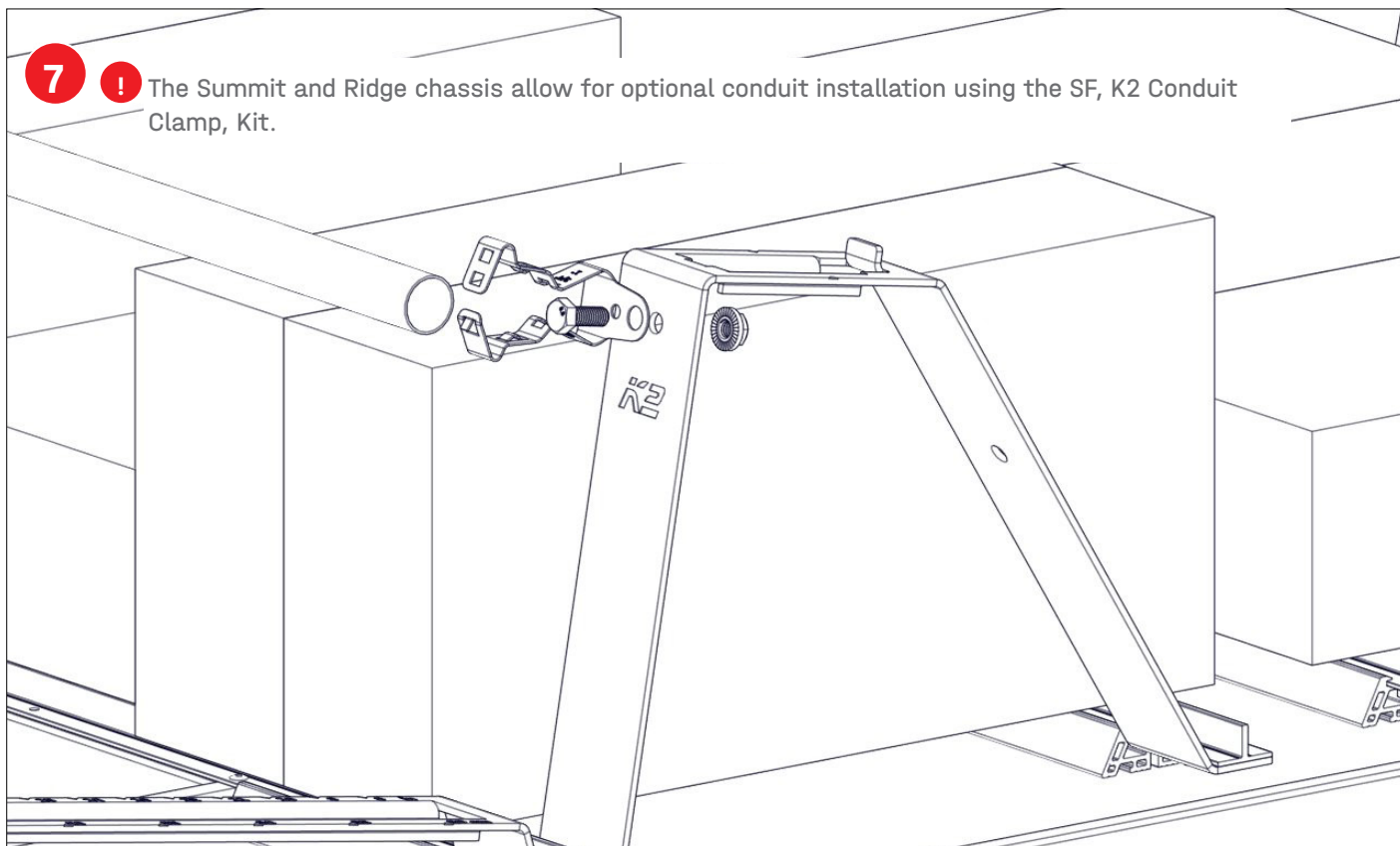
- 6** **!** OPTIONAL: Where required install 3rd party mechanical attachment. Use South Face anchor bracket to attach chassis to mechanical attachment.



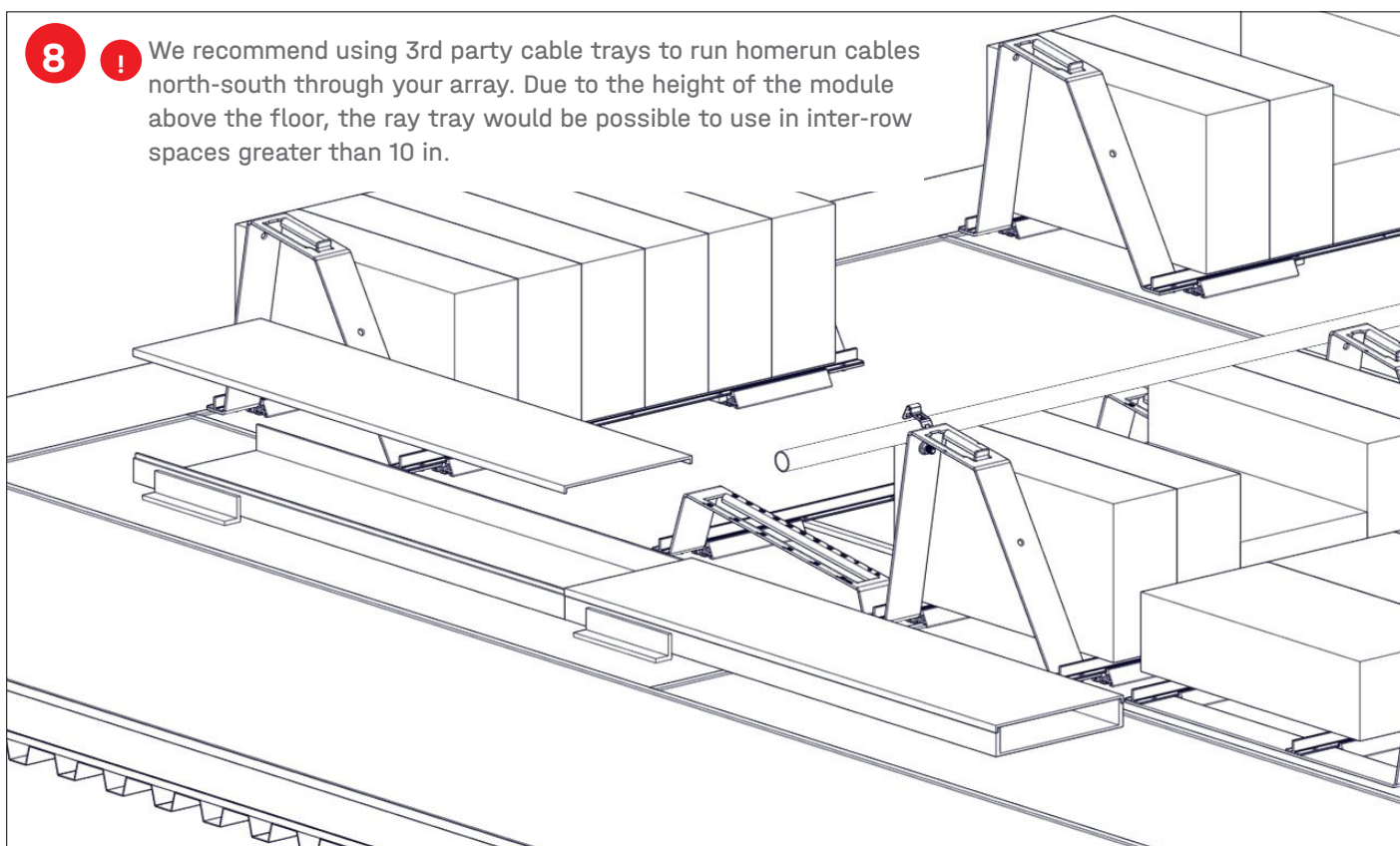
- 6a** **!** The South Face anchor bracket can be used on each type of South Face chassis, and allows for 8 2/3 in (220mm) x 2in adjustability east-west and north-south.



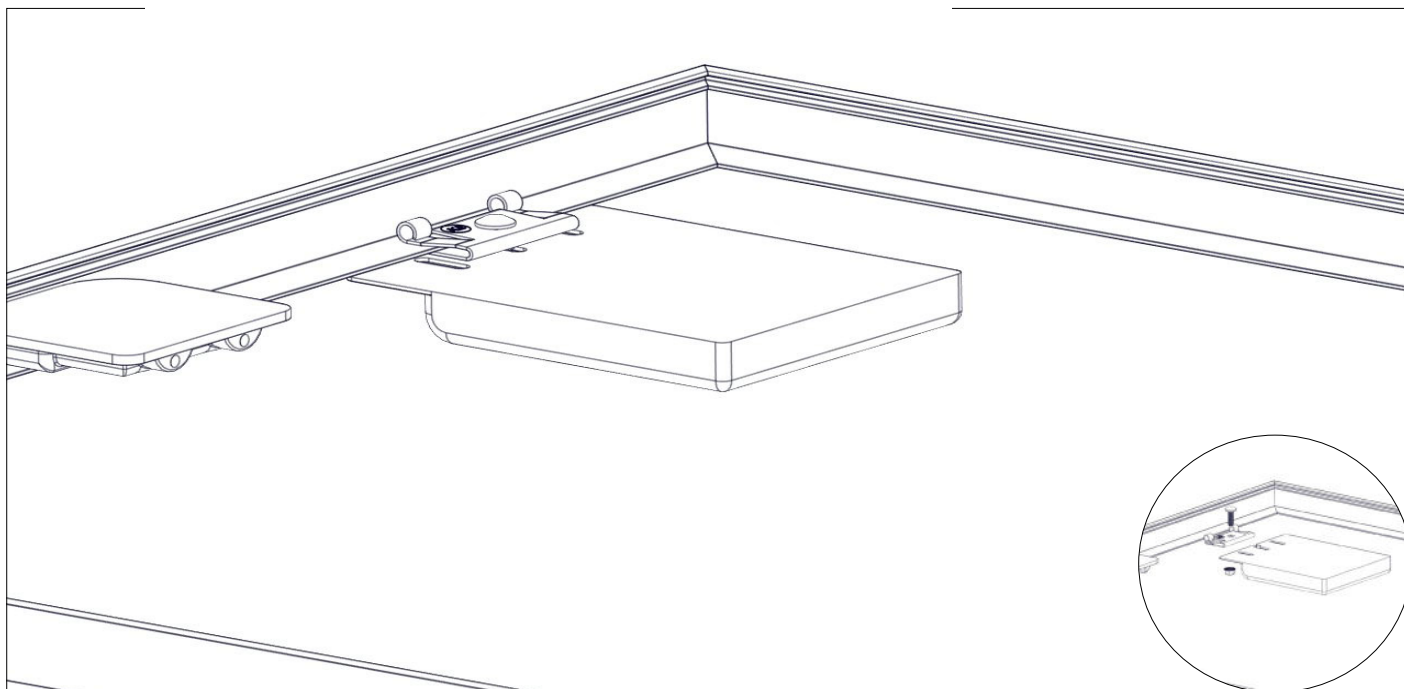
- 7** ! The Summit and Ridge chassis allow for optional conduit installation using the SF, K2 Conduit Clamp, Kit.



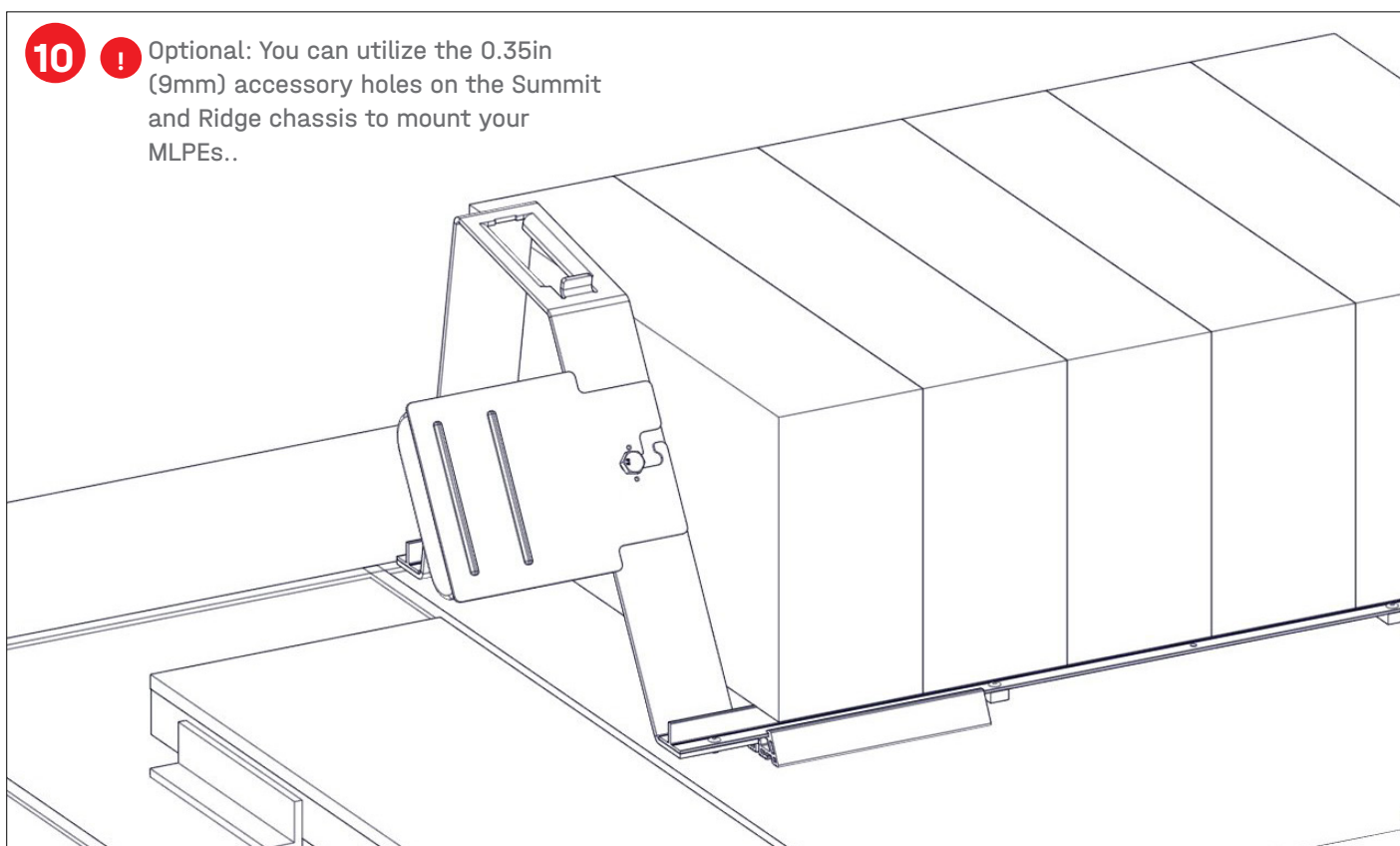
- 8** ! We recommend using 3rd party cable trays to run homerun cables north-south through your array. Due to the height of the module above the floor, the ray tray would be possible to use in inter-row spaces greater than 10 in.




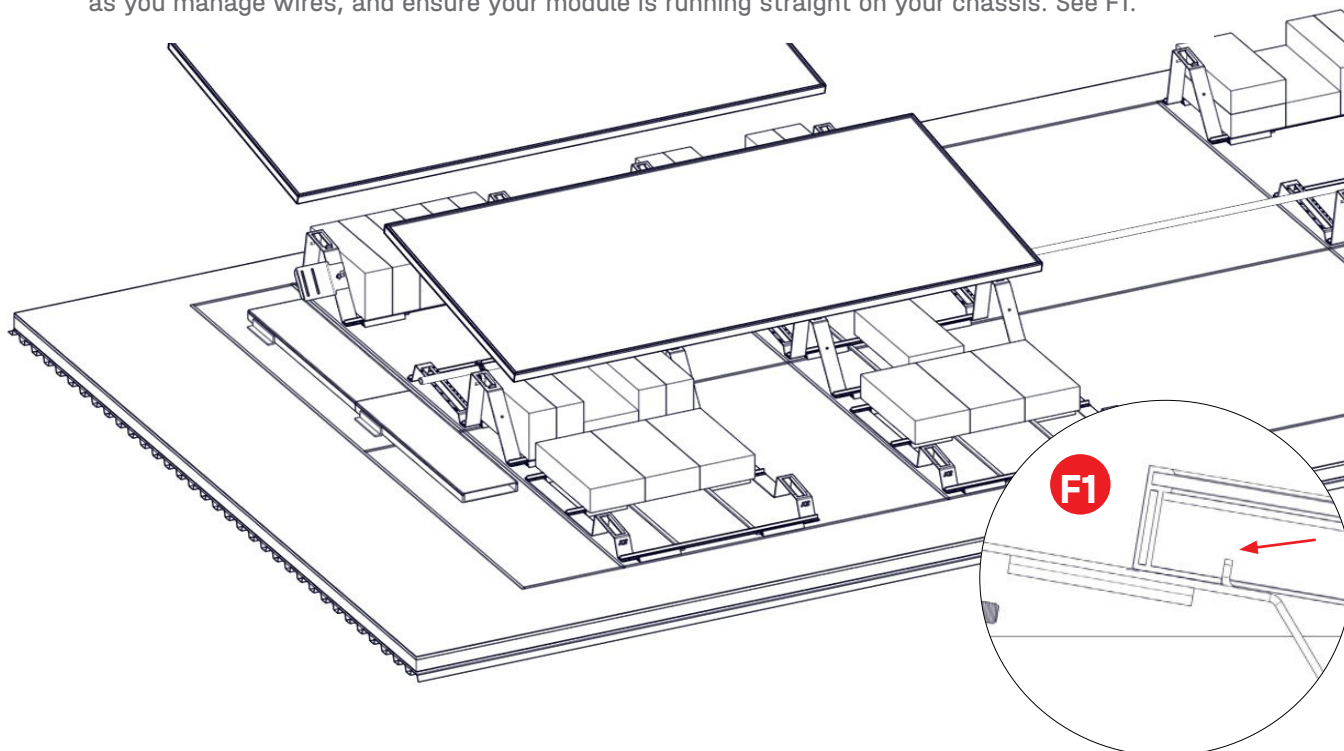
- 9** **!** Optional: MLPE module frame mount can be used to attach your preferred MLPE's to the module frame.




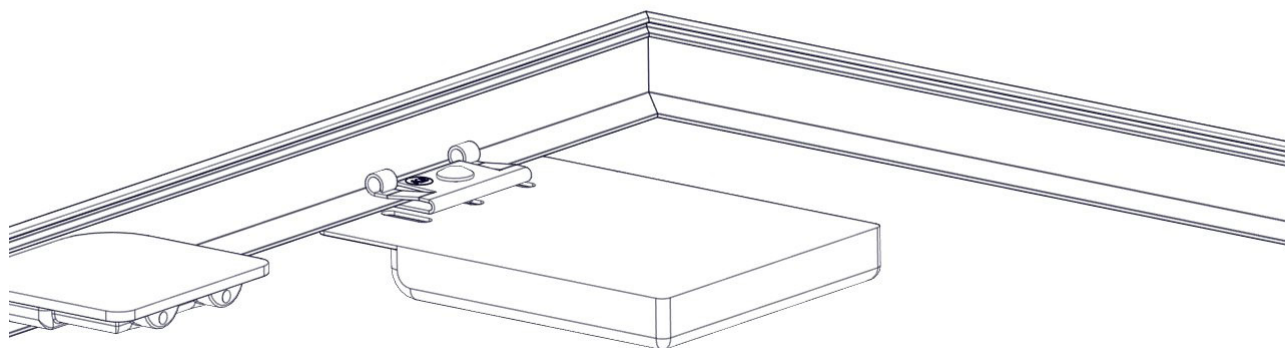
- 10** **!** Optional: You can utilize the 0.35in (9mm) accessory holes on the Summit and Ridge chassis to mount your MLPEs..



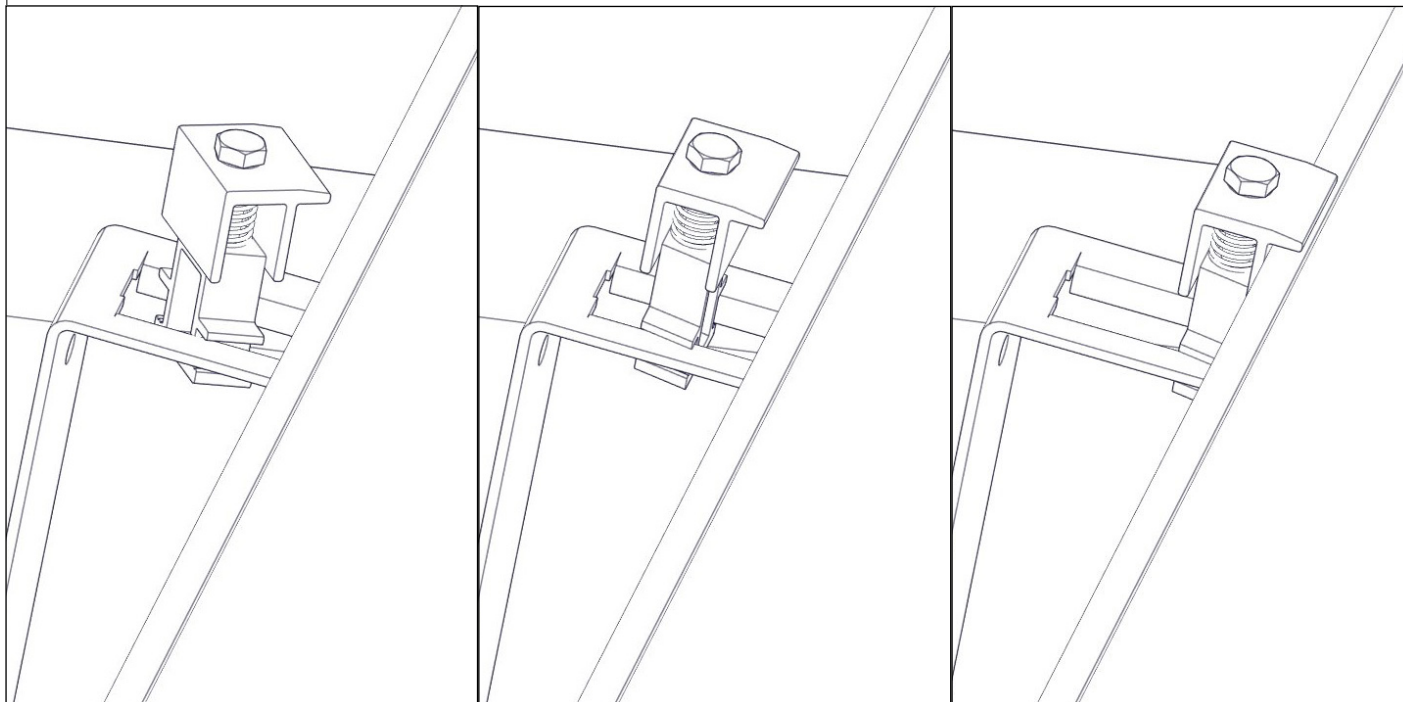
- 11**  Place your modules on top of chassis. Utilizing the alignment tabs to hold your module in place as you manage wires, and ensure your module is running straight on your chassis. See F1.



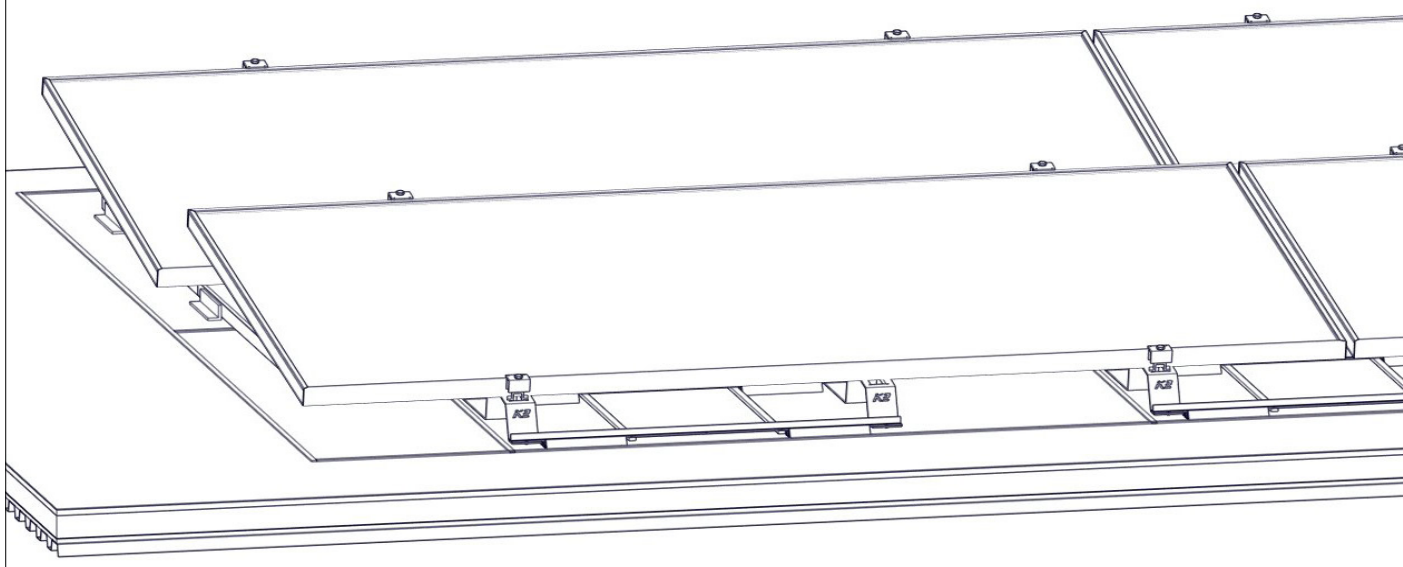
- 11a**  Set your first module row on chassis using alignment tab on top to align modules from east to west. Space modules east/west with desired module gap. If layout was done properly accounting for east/west module gaps, and with correct inter-row spacing the low side of the module will fall roughly on the mark corresponding to the intended inter-row spacing.

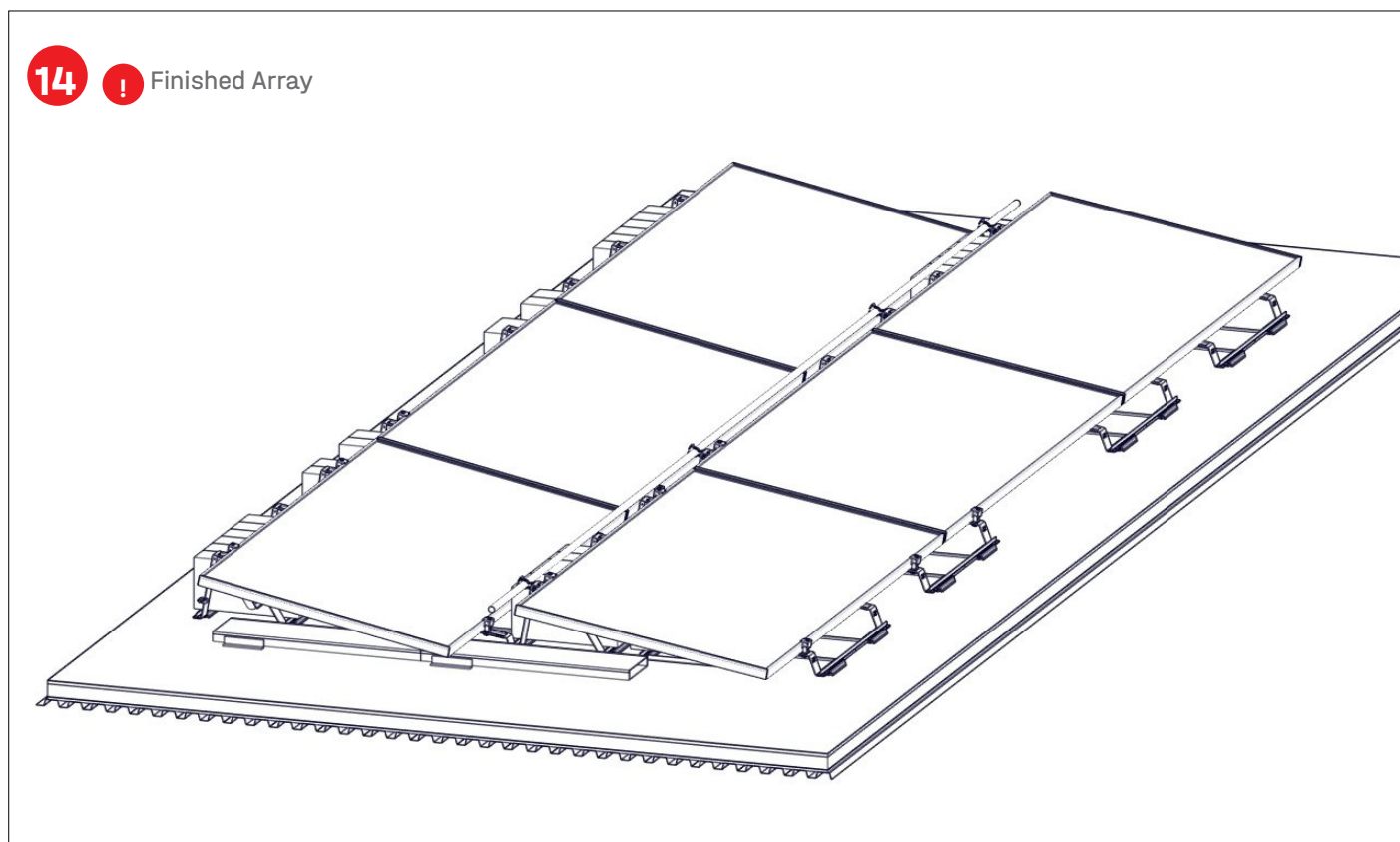
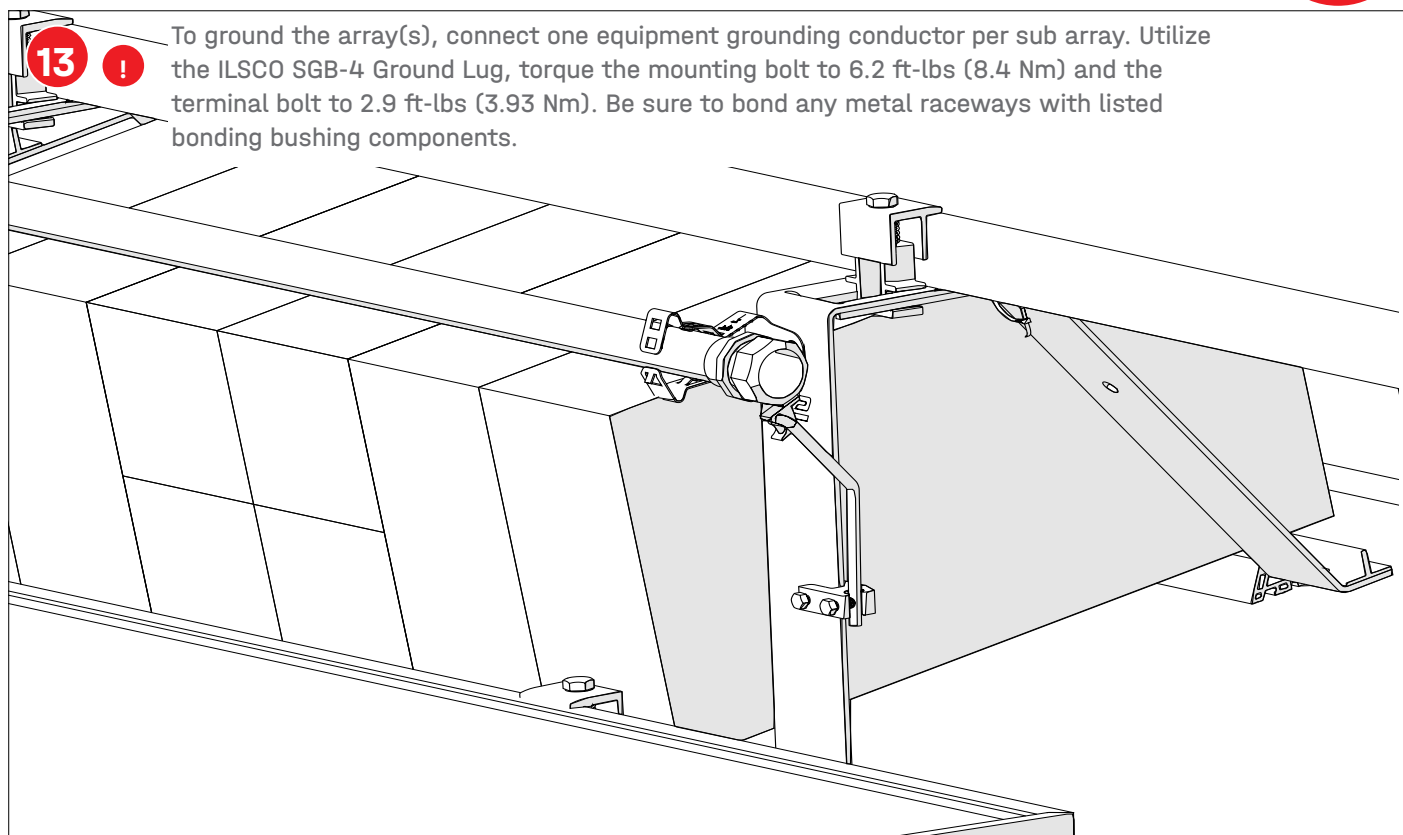


- 12** ! Insert clamps into rail and make a quarter turn clock wise to lock end clamp into chassis channel. Push end clamp flush to module frame, and torque to 12 ft-lbs. Clamps will self-align to module. Removal is opposite of installation, for re-installation repeat same procedure.



- 12a** ! Repeat process for subsequent module rows.





Notes



Notes

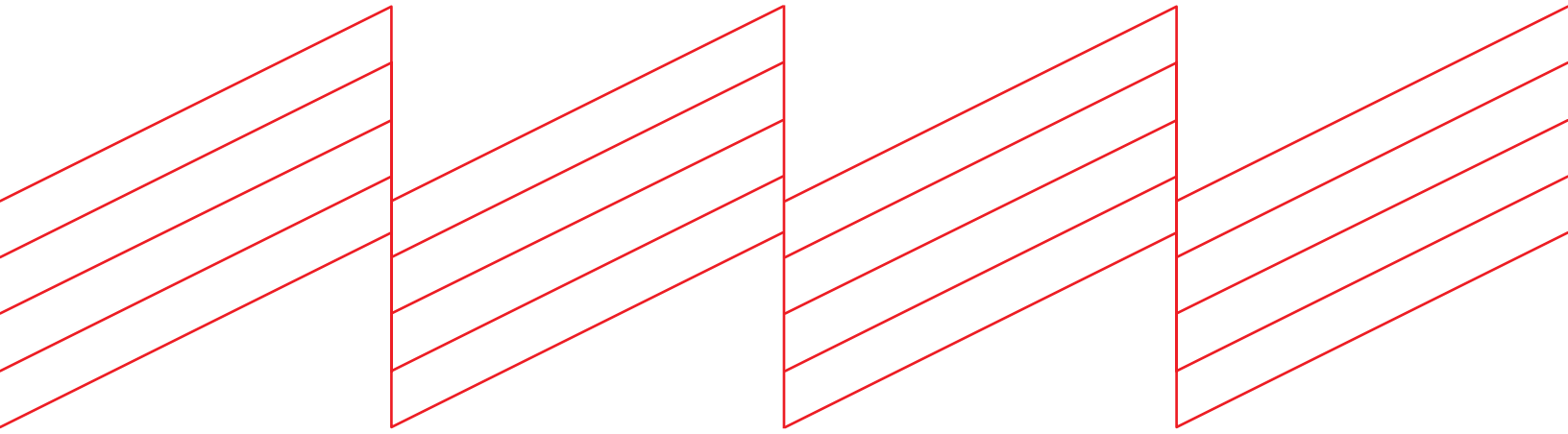


Notes





Connecting Strength



K2 Systems, LLC

4665 North Ave. Suite I • Oceanside, CA 92056 •
USA +1.760.301.5300 • infous@k2-systems.com
www.k2-systems.com

The South Face System Assembly V2 | 1123 • Subject to change
Product illustrations are exemplary and may differ from the original.