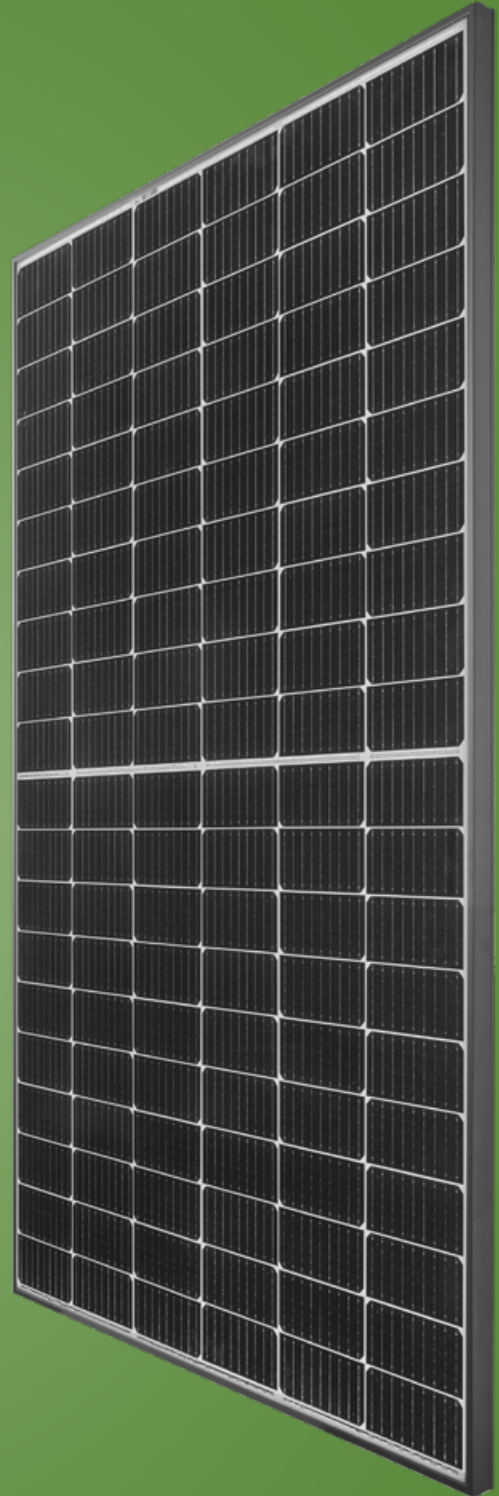


REC TWINPEAK 4 SERIES

PREMIUM SOLAR PANELS WITH SUPERIOR PERFORMANCE

REC TwinPeak 4 Series solar panels feature an innovative design with high panel efficiency and power output, enabling customers to get the most out of the space used for the installation.

Combined with industry-leading product quality and the reliability of a strong and established European brand, REC TwinPeak 4 Series panels are ideal for residential and commercial rooftops worldwide.



**MORE POWER
OUTPUT PER M²**



**FEATURING REC'S PIONEERING
TWIN DESIGN**



**100%
PID FREE**

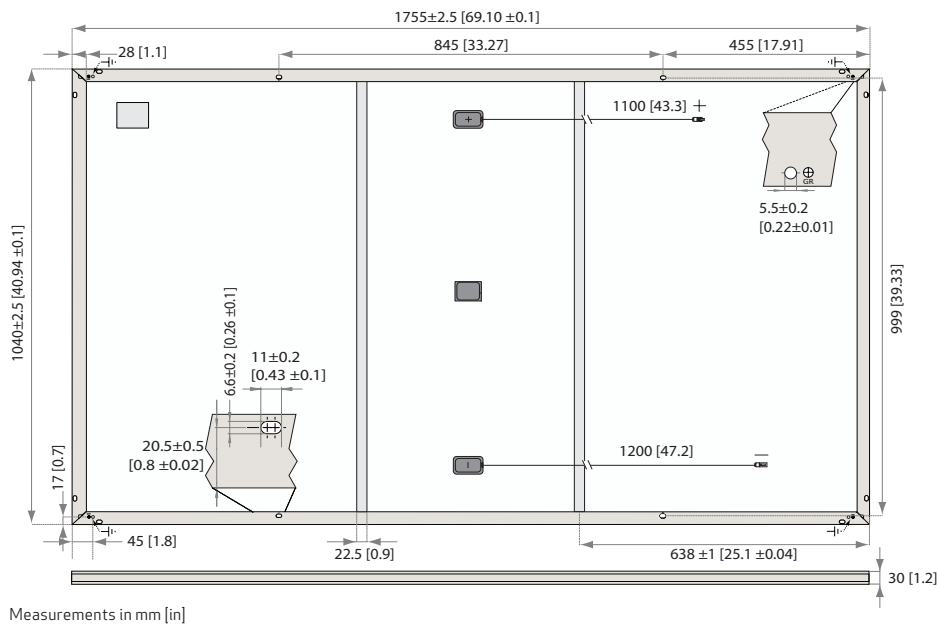


**SUPER-STRONG
FRAME**



ELIGIBLE

REC TWINPEAK 4 SERIES



GENERAL DATA

Cell type:	120 half-cut mono c-Si p-type cells 6 strings of 20 cells in series
Glass:	3.2 mm solar glass with anti-reflection surface treatment
Backsheet:	Highly resistant polymeric construction
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, IP68 rated in accordance with IEC 62790
Cable:	4 mm ² solar cable, 1.1 m + 1.2 m in accordance with EN 50618
Connectors:	Stäubli MC4 PV-KBT4/KST4 (4 mm ²) in accordance with IEC 62852 IP68 only when connected
Origin:	Made in Singapore

MECHANICAL DATA

Dimensions:	1755 x 1040 x 30 mm
Area:	1.83 m ²
Weight:	20.0 kg

ELECTRICAL DATA @ STC

Product code*: RECxxxTP4

Nominal Power - P _{MAX} (Wp)	360	365	370	375
Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5
Nominal Power Voltage - V _{MPP} (V)	33.9	34.3	34.7	35.0
Nominal Power Current - I _{MPP} (A)	10.62	10.65	10.68	10.72
Open Circuit Voltage - V _{OC} (V)	40.6	40.8	41.0	41.2
Short Circuit Current - I _{SC} (A)	11.26	11.32	11.38	11.45
Panel Efficiency (%)	19.7	20.0	20.3	20.5

Values at standard test conditions (STC: air mass AM1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of P_{MAX}, V_{OC} & I_{SC} ±3% within one watt class. *Where xxx indicates the nominal power class (P_{MAX}) at STC above.

ELECTRICAL DATA @ NMOT

Product code*: RECxxxTP4

Nominal Power - P _{MAX} (Wp)	272	276	280	283
Nominal Power Voltage - V _{MPP} (V)	31.7	32.1	32.5	32.7
Nominal Power Current - I _{MPP} (A)	8.58	8.60	8.63	8.66
Open Circuit Voltage - V _{OC} (V)	38.0	38.2	38.3	38.5
Short Circuit Current - I _{SC} (A)	9.09	9.14	9.19	9.25

Nominal module operating temperature (NMOT: air mass AM1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s). *Where xxx indicates the nominal power class (P_{MAX}) at STC above.

CERTIFICATIONS

IEC 61215:2016, IEC 61730:2016, UL 61730
ISO 14001:2004, ISO 9001:2015, OHSAS 18001:2007, IEC 62941



take away
FOR AN EASY WAY
take-e-way WEEE-compliant
recycling scheme

WARRANTY

	Standard	REC ProTrust	
Installed by an REC Certified Solar Professional	No	Yes	Yes
System Size	Any	≤25 kW	25-500 kW
Product Warranty (yrs)	20	25	25
Power Warranty (yrs)	25	25	25
Labor Warranty (yrs)	0	25	10
Power in Year 1	98%	98%	98%
Annual Degradation	0.5%	0.5%	0.5%
Power in Year 25	86%	86%	86%

See warranty documents for details. Some conditions apply.

MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (713 kg/m ²)*
Maximum test load (rear):	-4000 Pa (407 kg/m ²)*
Max series fuse rating:	25 A
Max reverse current:	25 A

* See installation manual for mounting instructions.
Design load = Test load / 1.5 (safety factor)

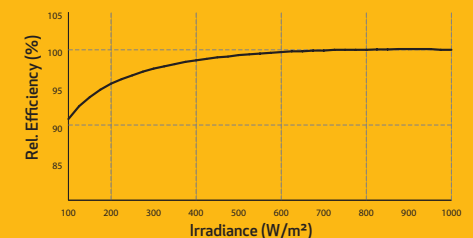
TEMPERATURE RATINGS *

Nominal Module Operating Temperature:	44.6°C (±2°C)
Temperature coefficient of P _{MAX} :	-0.34 %/°C
Temperature coefficient of V _{OC} :	-0.26 %/°C
Temperature coefficient of I _{SC} :	0.04 %/°C

* The temperature coefficients stated are linear values

LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:



Founded in 1996, REC Group is an international pioneering solar energy company dedicated to empowering consumers with clean, affordable solar power. As Solar's Most Trusted, REC is committed to high quality, innovation, and a low carbon footprint in the solar materials and solar panels it manufactures. Headquartered in Norway with operational headquarters in Singapore, REC also has regional hubs in North America, Europe, and Asia-Pacific.

SOLAR'S MOST TRUSTED



REC SOLAR PANELS INSTALLATION MANUAL

Installation instructions for all REC solar panels certified according to IEC 61215 / 61730:

- REC TwinPeak 3 Mono Series
- REC TwinPeak 3 Mono Black Series
- REC TwinPeak 4 Series
- REC TwinPeak 4 Black Series
- REC N-Peak Series
- REC N-Peak Black Series
- REC TwinPeak 3S Mono 72 Series

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INTRODUCTION




Thank you for choosing REC photovoltaic panels for your installation. REC solar panels are ideal for delivering long-lasting and reliable power output. They have been created through intelligent design and are manufactured to the highest quality and environmental standards. With correct installation and maintenance, REC panels will provide decades of clean and renewable energy.

Please read this entire manual carefully. It contains critical information on safety, as well as detailed instructions for the installation, operation and maintenance of the panels. Failure to follow these procedures will invalidate the warranty (www.recgroup.com/warranty). Review all instructions and safety notes in this manual before working on the system. Failure to do so may lead to injury or damage to property.

HOW TO USE THIS MANUAL

This manual describes the procedures for the terrestrial installation of all REC solar panels certified according to IEC 61215 & IEC 61730 standards. This includes all product variants (indicated by the appropriate suffix in the panel name) e.g., a white or black backsheet. The installed panel is considered to be in compliance with IEC 61215 & IEC 61730 only when mounted in the manner specified by this installation manual. Note that any panel without a frame (laminated) is not considered to comply with the requirements of IEC 61215 & IEC 61730 unless mechanically installed with hardware that has been tested and evaluated with the panel under this standard or by a field inspection certifying that the installed panel complies with the requirements of IEC 61215 & IEC 61730.

Except where specifically stated, the information and drawings in this manual refer to all frame, backsheet, and cell types; the illustrations are only a generic representation of the instructions regardless of color or exact design. Throughout the manual, you will see sections which highlight important information or notes:

 DANGER
Indicates potential for damage to personal safety.
 CAUTION
Indicates potential for damage to the array or property.
 NOTE
Indicates important notes to help with the installation.

YOUR RESPONSIBILITY AS AN INSTALLER

Installers are responsible for the safe and effective installation and operation of the system and for adhering to all applicable local standards and regulations. Prior to installation installers must check all current regulations and permits concerning solar installations and ensure all local directives are observed. Furthermore, installers are responsible for the following:

- Only qualified personnel must perform work on photovoltaic systems such as installation, commissioning, maintenance and repairs
- Be sure to follow the safety instructions for all system components
- Ensuring the REC panels are in a suitable condition for use and appropriate for the particular installation and environment
- Using only parts that comply with the specifications set out in this manual
- Ensuring a safe installation of all aspects of the electrical array
- All tools and equipment should be properly maintained and inspected prior to use

As this manual may contain instructions for different product variants, ensure you follow the instructions for the correct product where specified.

SUPPORT

Do not attempt to install REC solar panels if you are unsure of the procedure or suitability. For further support, questions or guidance with your installation, please call your distributor or contact your REC sales office, which can be found at: www.recgroup.com/contacts.

LIABILITY DISCLAIMER

REC SOLAR PTE. LTD. accepts no liability for the usability and functionality of its photovoltaic panels if the instructions in this guide are not observed. Since compliance with this guide and the conditions and methods of installation, operation, use and maintenance of the panels are not checked or monitored by REC SOLAR PTE. LTD., REC SOLAR PTE. LTD. accepts no liability for damage arising from improper application or incorrect installation, operation or maintenance. This does not apply to damages due to a panel fault, in cases of loss of life, bodily injury or damage to health or in the event of a grossly negligent breach of obligations on the part of REC SOLAR PTE. LTD. and/or in the event of an intentional or grossly negligent breach of obligations by a legal representative or vicarious agent. REC reserves the right to make changes or amendments to this manual at any time, without prior notice.

This document may be produced in different languages. If there is any conflict, the English language version shall be definitive.

LIMITED WARRANTY

The REC Limited Warranty is available to download from www.recgroup.com/warranty. Ignoring any of the instructions in this manual may be classed as improper installation or use and invalidate the Warranty Terms and Conditions. If you have any questions about installation and the Warranty validity, please contact REC.

SAFETY MEASURES

Installers are responsible for the safe and effective installation and operation of the system and for adhering to all applicable local and national standards and regulations. All relevant local codes and regulations must be referred to and observed.

DANGER - Electrical shock

Solar panels generate direct current (DC). Once current is flowing, breaking a connection (e.g., disconnecting two panels) can cause an electrical arc. Unlike low voltage AC wiring, DC arcs are not self-extinguishing; they are potentially lethal burn and fire hazards, capable of high temperatures that can destroy contacts and connectors:

- Isolate the system and remove/open the inverter AC fuse/circuit breaker from the grid before carrying out any maintenance or repair work.
- Follow inverter manufacturer's installation, handling and operating instructions.
- High-voltage components need sufficient time to discharge. Wait for the time specified by the manufacturer before commencing work.
- Do not use a panel which is broken or damaged. If the panel front glass is broken or laminate back sheet is damaged, it can expose personnel to hazardous voltages.

SAFETY IN THE WORKING AREA

Installation of REC solar panels may involve working on rooftops or raised platforms. Ensure all local regulations regarding working at heights and fall protection are followed. Before beginning work on an installation, ensure all working surfaces are structurally sound and capable of bearing the weight of employees and required equipment.

Preventing current generation

To prevent the panels automatically generating current (electricity) when exposed to light, shield the system with a non-transparent cover during installation, maintenance or repair work.

Specific hazards of DC electricity

The voltage produced by a single panel, and panels connected in series (voltages added together), or in parallel (currents added together) can be dangerous. Although the fully insulated plug contacts on the panel's output cables provide touch-safe protection, the following points must be observed during handling to avoid the risk of sparking, fire hazards, burns and lethal electric shocks:

- Exercise extreme caution when wiring panels and look out for damaged or dirty cables etc,
- Never insert metallic or other conductive objects into plugs or sockets,
- Ensure that all electrical connections are completely dry before assembly,
- Keep all materials, tools, and working conditions dry and tidy,
- Use appropriate safety equipment e.g., non-slip footwear, insulated gloves and insulated tools,
- Solar panels produce current when exposed to sunlight. Do not connect the system to the inverter during solar exposure.

PANEL HANDLING

In order to avoid damage, all REC solar panels should be handled with care and protected from damage at all times. All warnings and instructions on the packaging should be observed. Follow these guidelines when unpacking, transporting, carrying, installing or storing panels:

- Record the serial numbers prior to installation and note the information in the system documentation,
- Carry the panels using both hands and do not use the junction box or cables as a grip,
- Do not allow the panels to sag or bow under their own weight when being carried,
- Do not subject panels to loads or stresses, e.g., leaning on them or through the placing of weight on them,
- Do not stand or walk on the panels,
- Avoid dropping the panels as any damage caused may be unseen,
- Keep all electrical contacts clean and dry,
- Do not apply force to the backsheet,
- Avoid using sharp or pointed objects if panels require marking,
- Never apply paints, adhesives or detergents to the front or rear of the panel,
- Do not use any solar panel that is damaged or has been tampered with,
- Never attempt to disassemble, modify, or adapt the panels or labels in any way as this will void the warranty.

NOTE

Use clean and protective gloves when handling the panel as this will avoid the transfer of any fingerprints or soiling to the highly-sensitive and anti-reflective glass surface, ensuring improved light transmission and avoiding any contamination.

The pallet packaging is not water- or weatherproof. Prior to installation, and to avoid damage or degradation to the packaging or panel components, pallets and panels must be stored in a controlled environment, ideally internal, where it is protected from the elements, e.g., rain, dust, and direct sunlight. If overnight storage in an uncontrolled environment is unavoidable, the panels and the pallet packaging must be protected from direct exposure to the elements and from contact with the ground, including earth, mud etc.

CHOOSING AN INSTALLATION LOCATION

REC solar panels are designed to provide decades of durable and stable output in installations up to 2000 m above sea level. Ambient operating temperatures must be between -40° and +85°C.

The panels are not suitable for installation in potentially hazardous locations nor should they be installed in the following locations:

- Near sources of flammable gas or vapor e.g., gas containers or spray paint facilities,
- Near open flames,
- Where the panels are exposed to direct contact with salt water/spray,
- Under water or in water features,
- Where exposed to sulfur e.g., near sulfur springs or volcanoes,
- Where exposed to artificially concentrated sunlight,
- Where the panels may be exposed to harmful chemicals.

NOTE

For further information regarding installations on water platforms, e.g., floating pontoons, see Annex 1 at the rear of this manual.

ELECTRICAL INSTALLATION

DANGER - Electrical shock

Safety is paramount when working on the electrical installation. Always follow the electrical requirements to avoid the risk of sparking, fire hazards, burns and lethal electric shocks.

ELECTRICAL REQUIREMENTS

Application Class

REC solar panels are rated for use in electrical Application Class A, Protection Safety Class II; at hazardous levels of voltage (>35V), current(>8A) and power (>240W) where general contact access is anticipated (panels qualified for safety through IEC 61730-1 and -2).

System Requirements

REC solar panels are only for use where they meet the specific technical requirements of the complete system. Ensure other components will not cause mechanical or electrical damage to the panels. Only panels of the same type and power class should be connected.

String configuration

When connecting panels in a string, plan and execute according to the inverter manufacturer's instructions. The number of panels connected to an inverter must not exceed the voltage limits and operating range permitted by the manufacturer, nor under any circumstance exceed the maximum system voltage as stated in the technical specifications for the product at the rear of this manual. The maximum system fuse rating (overcurrent protection rating) and the maximum reverse current for each panel can be found in the technical specifications for the product at the rear of this manual.

The maximum number of panels in a string can be calculated by dividing the maximum system voltage of the panel by its V_{oc} accounting for the lowest ambient temperature at site, e.g.: for a 1000V system, if the lowest ambient temperature is 15°C, the panel has a V_{oc} of 40.8V and a temperature coefficient of V_{oc} of $-0.27\%/^{\circ}\text{C}$, the maximum panels per string is 23 ($\Delta T^{\circ}\text{C} = 25^{\circ} - 15^{\circ} = 10^{\circ}$; $10^{\circ} \times 0.27 = 2.7\%$; $40.8 + 2.7\% = 41.9$; $1000\text{V} / 40.4 = 23.9$, so a total of 23 panels or 974V). Qualified system designers can make exact calculations that account for specific project requirements and site conditions.

String connection

Panels connected in series must have the same ampere rating. The maximum number of panels that can be connected in series or parallel depends upon system design, inverter type and environmental conditions. String configuration must correspond to the specifications of other system components e.g., inverter. Refer to the reverse current rating of the panel indicated in the technical characteristics at the rear of this manual or on the panel datasheet.

Wiring layout

To minimize voltage surges (e.g., indirect lightning strikes), cables of the same string must be bundled together so loops are as small as possible. String configurations must be checked before commissioning. If open circuit voltage (V_{oc}) and short circuit current (I_{sc}) deviate from specification, this may indicate a configuration fault. Correct DC polarity must be observed at all times.

Electrical Ratings

Electrical ratings are within a specific tolerance of measured values at Standard Test Conditions (STC) as given in the technical characteristics for each panel at the rear of this manual. Allow for increased panel output as a result of conditions different to STC by multiplying the I_{sc} and V_{oc} values by a factor of 1.25 (or according to local regulations) when determining component voltage ratings, conductor ampacities, overcurrent device ratings and size of controls connected to the PV output.

MECHANICAL INSTALLATION

FIRE GUIDELINES

The REC solar panels covered by this manual have a Class C (referencing UL 790) fire classification. The REC solar panels in 60-cell format are rated Type 2 fire classification according to IEC 61730-2:2016 (ref. ANSI/UL 1703); The REC solar panels in 72-cell format are rated Type 1 fire classification according to IEC 61730-2:2016 (ref. ANSI/UL 1703). Utilize the following fire safety guidelines when installing REC solar panels:

- Check with all relevant local authorities for fire safety requirements for any building or structure on to which the panels will be installed,
- The system design must ensure that it can be easily accessed in the event of a building fire,
- Check with relevant authorities for applicable regulations concerning setbacks or other placement restrictions that may apply for roof-mounted arrays,
- The use of DC ground fault interrupters is recommended. This may also be required by local and national codes,
- All electrical appliances are a fire risk. The panel must be mounted over a fire retardant roof covering rated for the application and a distance of at least 20 mm (40 mm for REC solar panels in 72-cell format) between the panel and the mounting surface, to allow the free circulation of air beneath the panels at all times.

ORIENTATION

The optimal mounting position of a panel results in the sun's rays falling perpendicular (i.e., at 90°) to the surface. To maximize system output, panels should be installed at the optimum orientation and tilt angle. The specifics of this depend on location and can be calculated by a qualified system designer. All panels in a string should, wherever possible, have the same orientation and tilt to ensure the system does not underperform due to mismatched outputs. Dependent on local conditions, a lower angle of installation will potentially increase the requirement for regular cleaning.

NOTE

The IP rating of the junction box provides a level of protection that allows panels to be mounted in any orientation.

PANEL INSTALLATION

REC solar panels are designed for capturing solar radiation and can be installed where they conform to all local structural regulations. If installing REC solar panels in overhead or vertical constructions, the installer must ensure that all local building codes and regulations specific to such installations are correctly followed. There are different options for securing REC solar panels depending on the design of the array. Mounting hardware is not supplied by REC. Ensure the mounting structure can withstand anticipated wind and snow loads. Follow the mounting hardware manufacturer's instructions and recommendations at all times.

i NOTE

Panels must be installed so that the cells are not shaded as this will drastically reduce electrical output. If partial shading is inevitable at certain times of the day or year, it must be kept to an absolute minimum. Remove any labels or stickers that may be on the front of the panels and ensure no residue is left on the glass.

! CAUTION

There must be a minimum clearance gap between the uppermost part of the installation surface (e.g., rooftop) and the lowest part of the panel (i.e., underside of panel frame) to avoid any damage to the panel and to ensure sufficient airflow for cooling, helping to improve performance.

Minimum clearance gap 60-cell format REC solar panels: 20 mm

Minimum clearance gap 72-cell format REC solar panels: 40 mm

The surface below the panels must be kept clear of any objects that may cause damage to the panel.

SECURING OF PANELS

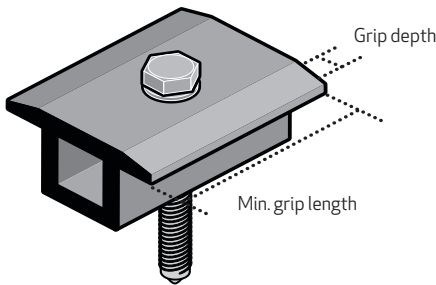
A typical installation of solar panels will be carried out with suitable rails and clamps. Other types of panel support, e.g., plates, must meet the same specifications. Such installations have been found to be in compliance with IEC 61215 & IEC 61730 requirements for the maximum stated test loads which can be found for each individual panel type in the Panel Characteristics section at the end of this manual. Site-specific factors such as high wind or snow levels must be taken into consideration to ensure this limit is not exceeded.

When installing on mounting rails, ensure they run underneath the panel and provide support to the frame. The positioning of the rail must ensure that the minimum clamp grip length (fig. 1) and the central point of the fixation, e.g., the bolt, is fully within the required clamping zone as indicated on the following pages.

REC modules must be secured with a torque as shown in the table below (fig. 1). Clamp installation must be carried out according to the manufacturer's instructions, including specific hardware and torque requirements. Ensure the clamps used are suitable for the planned installation and expected system design loads.

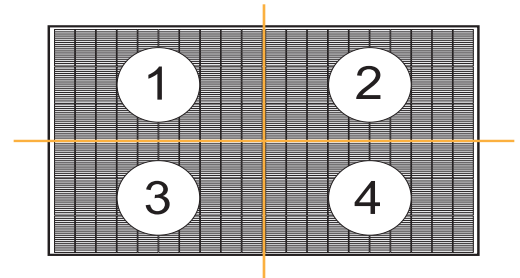
- The grip area must not extend onto the panel glass and/or cause cell shading,
- Avoid the application of excessive pressure to prevent frame deformation,
- The panel must be secured, e.g., clamped, at least once in each of the four marked zones shown below (fig. 2).

Fig. 1: Clamp specifications



Specifications	Length
Grip depth	5 mm - 10 mm
Min. grip length	40 mm
Torque	12 - 25 Nm

Fig. 2: Panel quarter divisions



i NOTE

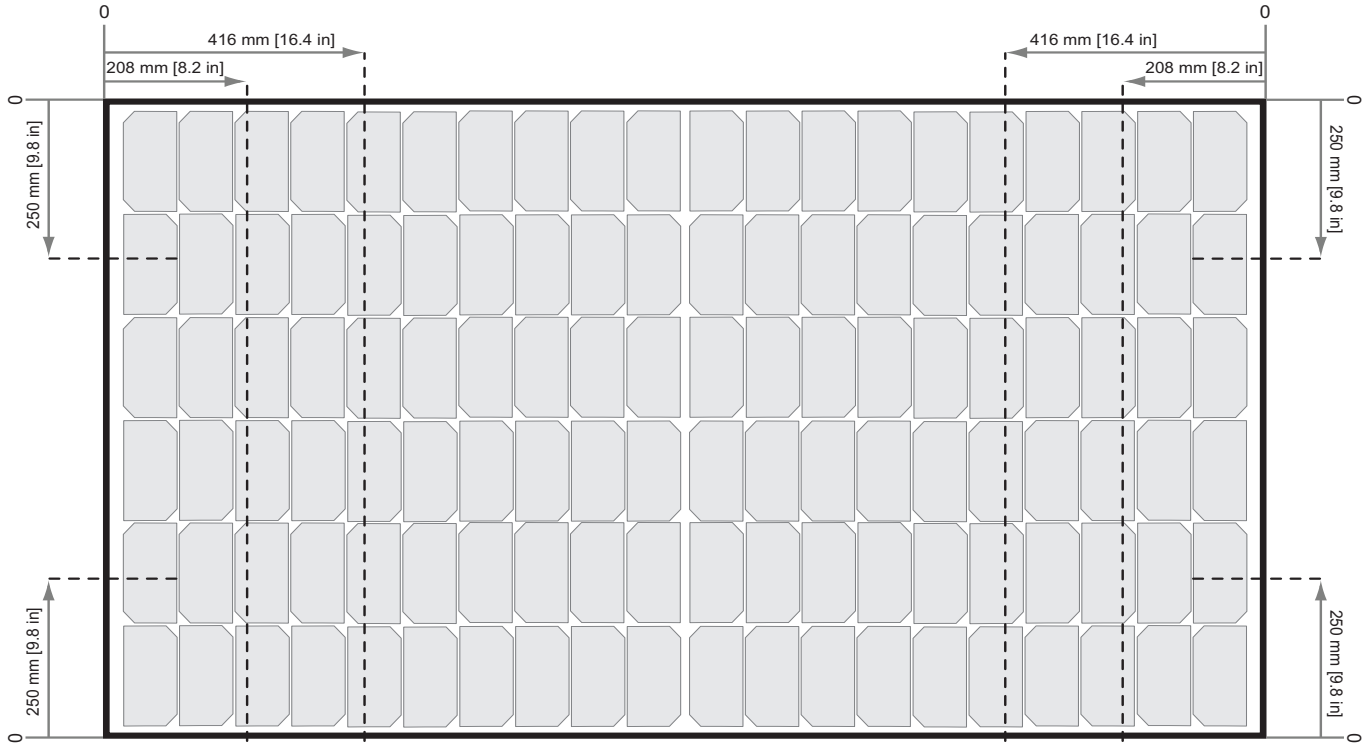
- In areas of snow build-up, panels can be subjected to forces in excess of the stated limit even when snow depth does not appear extreme, potentially causing damage to the panel. If the installation may be affected by this, further panel support is recommended, especially on the lower row of panels.
- In the case of any questions regarding mounting systems, or if the mounting system to be used does not match any of the instructions shown in this installation manual, please contact REC for further support.

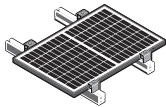

INSTALLATION OF REC TWINPEAK 3 MONO PANELS

MOUNTING REC TWINPEAK 3 MONO PANELS WITH CONTINUOUS RAILS

A continuous rail (or other support structure) spans the complete underside of the panel.

Fig. 3: Clamping of 60-cell REC TwinPeak panels with rails parallel to short side of the panel



Legend	Clearance Gap		20-40 mm	40-60 mm	>60 mm	<20 mm
			Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)
 Rail position Long Side Mounting	Clamping zone	0 - 208 mm	+1600 Pa / -1600 Pa* (+1066 Pa / -1066 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
		208 - 416 mm	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+5400 Pa / -2400 Pa (+3600 Pa / -1600 Pa)	+5400 Pa / -2400 Pa (+3600 Pa / -1600 Pa)	X
 Rail position Short Side Mounting	Clamping zone	0 - 250 mm	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X



Once a module is secured in each of the 4 zones (fig. 2), additional clamps, i.e., ≥ 5 , may be freely located on panel frame without affecting the warranty. Loads marked with a * were not certified as part of IEC 61215/61730 testing; these have been evaluated by REC's internal testing process.

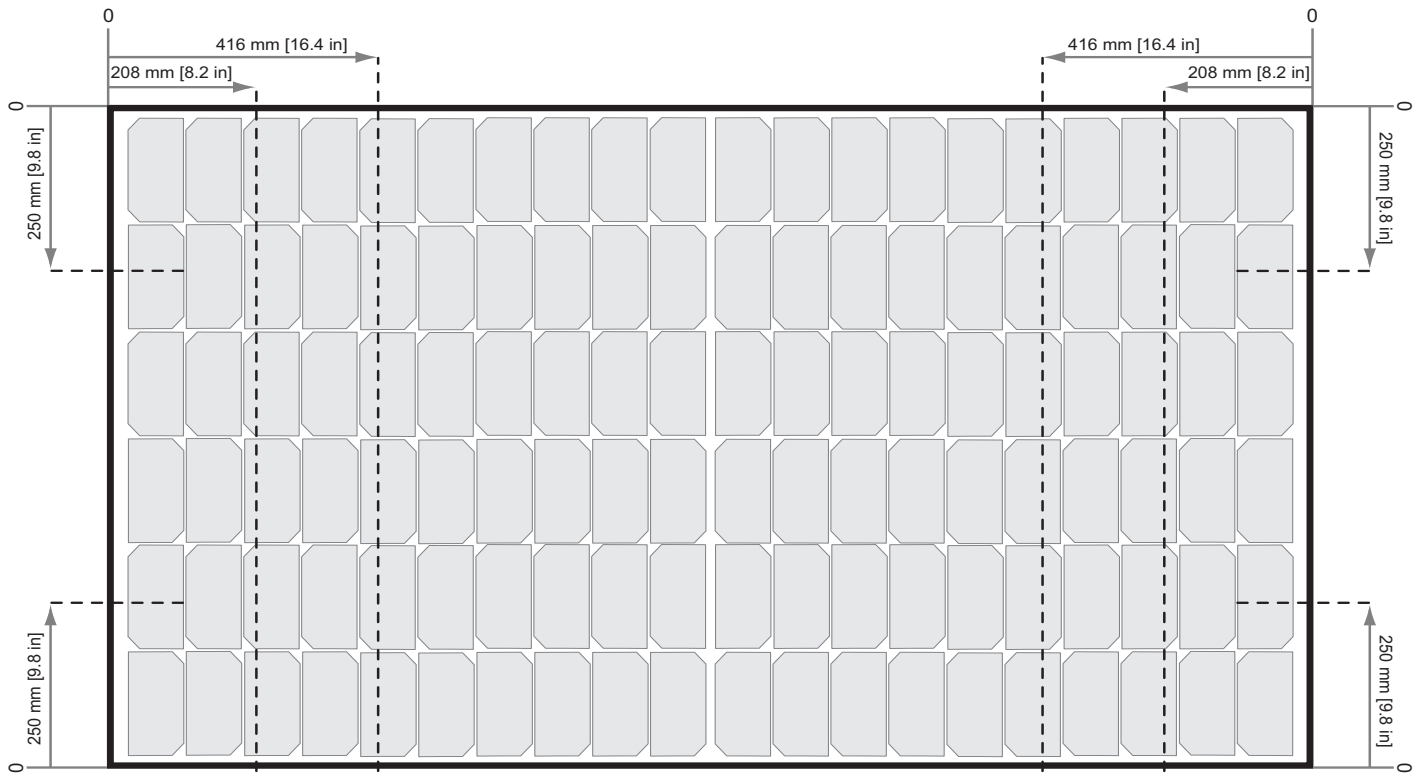
CAUTION

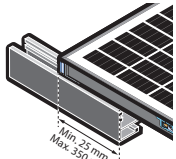

The center point of each clamp and the minimum grip length must be fully located in the same clamping zones to be rated to that load (fig. 3). If the panel is secured in zones with different load values, it is rated to the lowest load value only.

MOUNTING REC TWINPEAK 3 MONO PANELS WITH SHORT RAILS

A short rail (or other short support structure) has a minimum length of 25 mm and does not span the complete underside of a panel.

Fig. 4: Clamping of 60-cell REC TwinPeak panels using short rails



Legend	Clearance Gap		20-40 mm	40-60 mm	>60 mm	<20 mm
			Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)
Rail length under module 25 - 350 mm 	Long Side Mounting	0 - 208 mm	+1600 Pa / -1600 Pa* (+1066 Pa / -1066 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
		208 - 416 mm	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
	Short Side Mounting	0 - 250 mm	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
		Once a module is secured in each of the 4 zones (fig. 2), additional clamps, i.e., ≥5, may be freely located on panel frame without affecting the warranty. Loads marked with a * were not certified as part of IEC 61215/61730 testing; these have been evaluated by REC's internal testing process.				

CAUTION

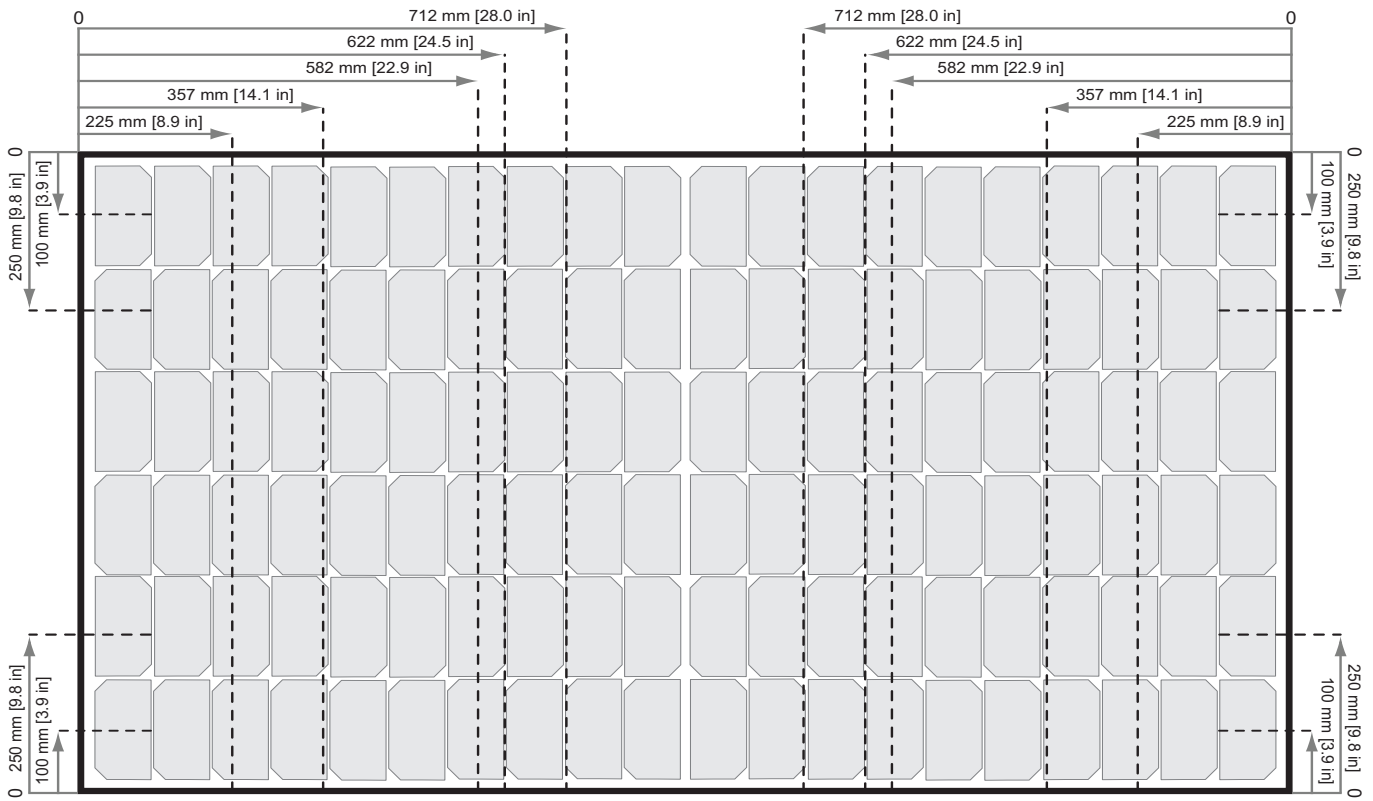
The center point of each clamp and the minimum grip length must be fully located in the same clamping zones to be rated to that load (fig. 4). If the panel is secured in zones with different load values, it is rated to the lowest load value only.


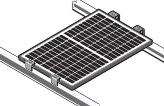

INSTALLATION OF REC TWINPEAK 4 SERIES PANELS

MOUNTING REC TWINPEAK 4 SERIES PANELS WITH CONTINUOUS RAILS PARALLEL TO SHORT SIDE OF THE PANEL

A continuous rail (or other support structure) spans the complete underside of the panel.

Fig. 5: Clamping of REC TwinPeak 4 Series panels with rails parallel to short side of the panel



Legend	Clearance Gap		Clamping zone			
			20-40 mm	40-60 mm	>60 mm	<20 mm
			Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)
 Rail position Long Side Mounting	0 - 225 mm		X	+1200 Pa / -1200 Pa* (+800Pa/-800Pa)	+2400 Pa / -2400 Pa (+1600Pa/-1600Pa)	X
	225 - 357 mm		+1800 Pa / -1800 Pa* (+1200Pa/-1200Pa)	+4200 Pa / -2400 Pa (+2800Pa/-1600Pa)	+5400 Pa / -2400 Pa (+3600Pa/-1600Pa)	X
	357 - 582 mm		+1800 Pa / -1800 Pa* (+1200Pa/-1200Pa)	+6200 Pa / -4000 Pa (+4133Pa/-2666Pa)	+7000 Pa / -4000 Pa (+4666Pa/-2666Pa)	X
	582 - 622 mm		+1200 Pa / -1200 Pa* (+800Pa/-800Pa)	+3000 Pa / -2400 Pa (+2400Pa/-1600Pa)	+5400 Pa / -2400 Pa (+3600Pa/-1600Pa)	X
	622 - 712 mm		+2400 Pa / -2400 Pa (+1600Pa/-1600Pa)	+2400 Pa / -2400 Pa (+1600Pa/-1600Pa)	+2400 Pa / -2400 Pa (+1600Pa/-1600Pa)	X
 Rail position Short Side Mounting	0 - 100 mm		X	+1200 Pa / -1200 Pa* (+800Pa/-800Pa)	+1600 Pa / -1600 Pa* (+1066Pa/-1066Pa)	X
	100 - 250 mm		X	+800 Pa / -800 Pa* (+533Pa/-533Pa)	+2400 Pa / -2400 Pa (+1600Pa/-1600Pa)	X
		Once a module is secured in each of the 4 zones (fig. 2), additional clamps, i.e., >5, may be freely located on panel frame without affecting the warranty. Loads marked with a * were not certified as part of IEC 61215/61730 testing; these have been evaluated by REC's internal testing process.				

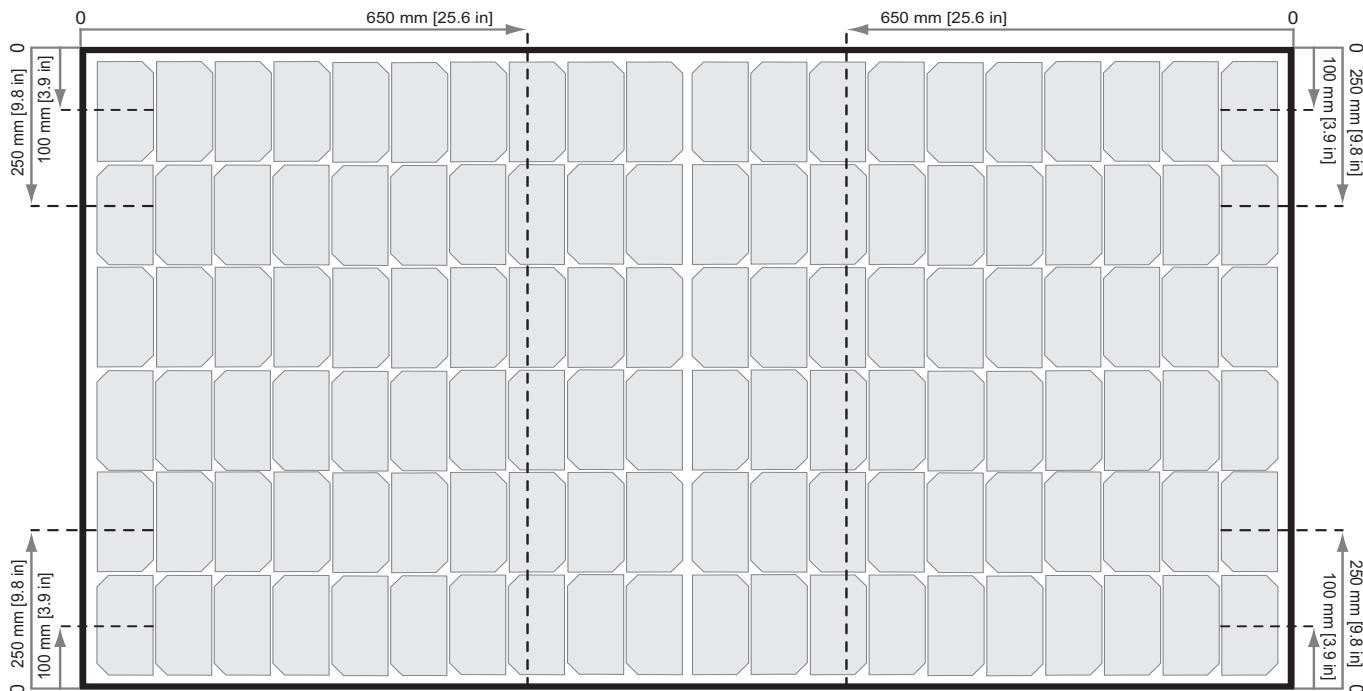
CAUTION

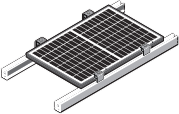
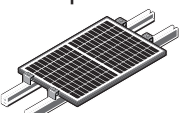

The center point of each clamp and the minimum grip length must be fully located in the same clamping zones to be rated to that load (fig. 5). If the panel is secured in zones with different load values, it is rated to the lowest load value only.

MOUNTING REC TWINPEAK 4 SERIES PANELS WITH CONTINUOUS RAILS PARALLEL TO LONG SIDE OF THE PANEL

A continuous rail (or other support structure) spans the complete underside of the panel.

Fig. 6: Clamping of REC TwinPeak 4 Series panels with rails parallel to long side of the panel



Legend	Clearance Gap		20-40 mm	40-60 mm	>60 mm	<20 mm
			Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)
 Long Side Mounting	Clamping zone	0 - 650 mm	+1200 Pa / -1200 Pa* (+800Pa/-800Pa)	+3000 Pa / -2400 Pa (+2400Pa/-1600Pa)	+5400 Pa / -2400 Pa (+3600Pa/-1600Pa)	X
		 Short Side Mounting	0 - 100 mm	X	+1200 Pa / -1200 Pa* (+800Pa/-800Pa)	+1600 Pa / -1600 Pa* (+1066Pa/-1066Pa)
			100 - 250 mm	X	+800 Pa / -800 Pa* (+533Pa/-533Pa)	+2400 Pa / -2400 Pa (+1600Pa/-1600Pa)
		Once a module is secured in each of the 4 zones (fig. 2), additional clamps, i.e., ≥5, may be freely located on panel frame without affecting the warranty. Loads marked with a * were not certified as part of IEC 61215/61730 testing; these have been evaluated by REC's internal testing process.				

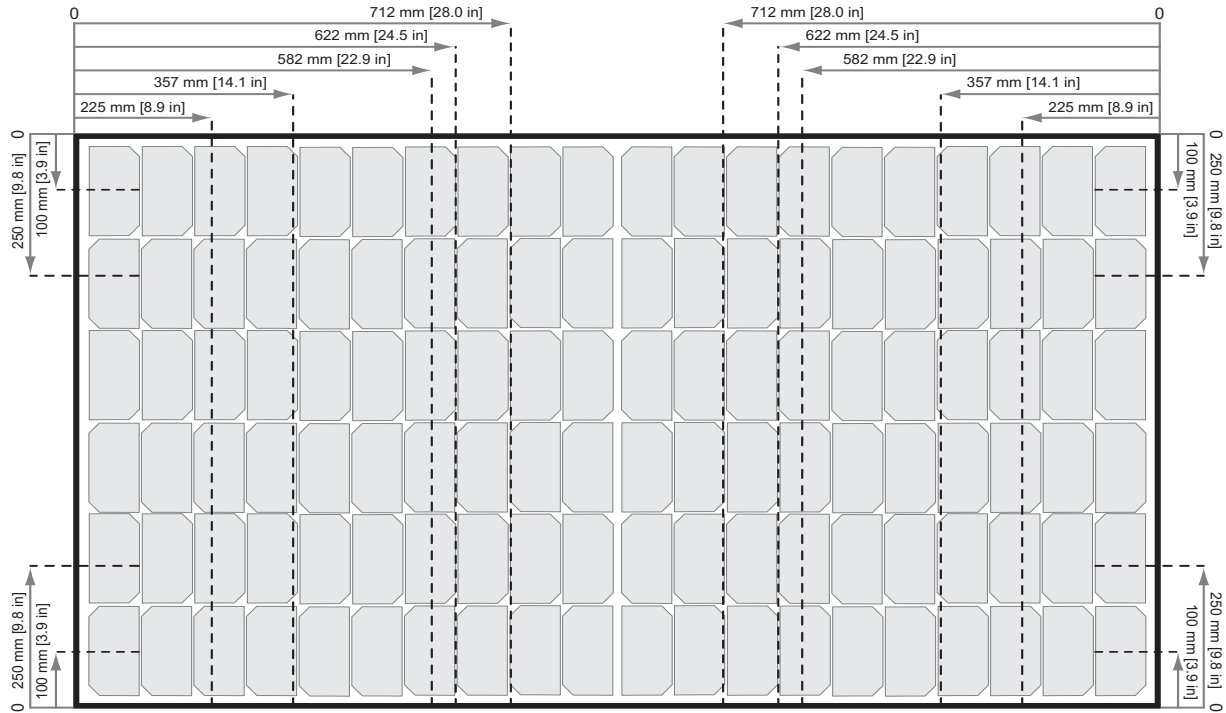
CAUTION

The center point of each clamp and the minimum grip length must be fully located in the same clamping zones to be rated to that load (fig. 6). If the panel is secured in zones with different load values, it is rated to the lowest load value only.

MOUNTING REC TWINPEAK 4 SERIES PANELS WITH SHORT RAILS

A short rail (or other short support structure) has a minimum length of 25 mm and does not span the complete underside of a panel.

Fig. 7: Clamping of REC TwinPeak 4 Series panels using short rails



Legend	Clearance Gap		Clamping zone			
			20-40 mm	40-60 mm	>60 mm	<20 mm
			Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)
Rail length under module 25 - 100 mm 	Long Side Mounting	0 - 225 mm	X	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+1600 Pa / -1600 Pa* (+1066 Pa / -1066 Pa)	X
		225 - 357 mm	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+4100 Pa / -2400 Pa (+2733 Pa / -1600 Pa)	+4500 Pa / -2400 Pa (+3000 Pa / -1600 Pa)	X
		357 - 582 mm	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+3000 Pa / -3000 Pa (+2000 Pa / -2000 Pa)	+4200 Pa / -4000 Pa (+2800 Pa / -2666 Pa)	X
		582 - 622 mm	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+3600 Pa / -2400 Pa (+2400 Pa / -1600 Pa)	X
		622 - 712 mm	+1800 Pa / -1800 Pa* (+1200 Pa / -1200 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
	Short Side Mounting	0 - 100 mm	X	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+1600 Pa / -1600 Pa* (+1066 Pa / -1066 Pa)	X
		100 - 250 mm	X	+800 Pa / -800 Pa* (+533 Pa / -533 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
Rail length under module 100 - 200 mm 	Long Side Mounting	0 - 225 mm	X	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+1600 Pa / -1600 Pa* (+1066 Pa / -1066 Pa)	X
		225 - 357 mm	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+3600 Pa / -2400 Pa (+2400 Pa / -1600 Pa)	+3600 Pa / -2400 Pa (+2400 Pa / -1600 Pa)	X
		357 - 582 mm	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+3000 Pa / -3000 Pa (+2000 Pa / -2000 Pa)	+3000 Pa / -3000 Pa (+2000 Pa / -2000 Pa)	X
		582 - 622 mm	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+3600 Pa / -2400 Pa (+2400 Pa / -1600 Pa)	X
		622 - 712 mm	+1800 Pa / -1800 Pa* (+1200 Pa / -1200 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
	Short Side Mounting	0 - 100 mm	X	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+1600 Pa / -1600 Pa* (+1066 Pa / -1066 Pa)	X
		100 - 250 mm	X	+800 Pa / -800 Pa* (+533 Pa / -533 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
	Once a module is secured in each of the 4 zones (fig. 2), additional clamps, i.e., ≥5, may be freely located on panel frame without affecting the warranty. Loads marked with a * were not certified as part of IEC 61215/61730 testing; these have been evaluated by REC's internal testing process.					

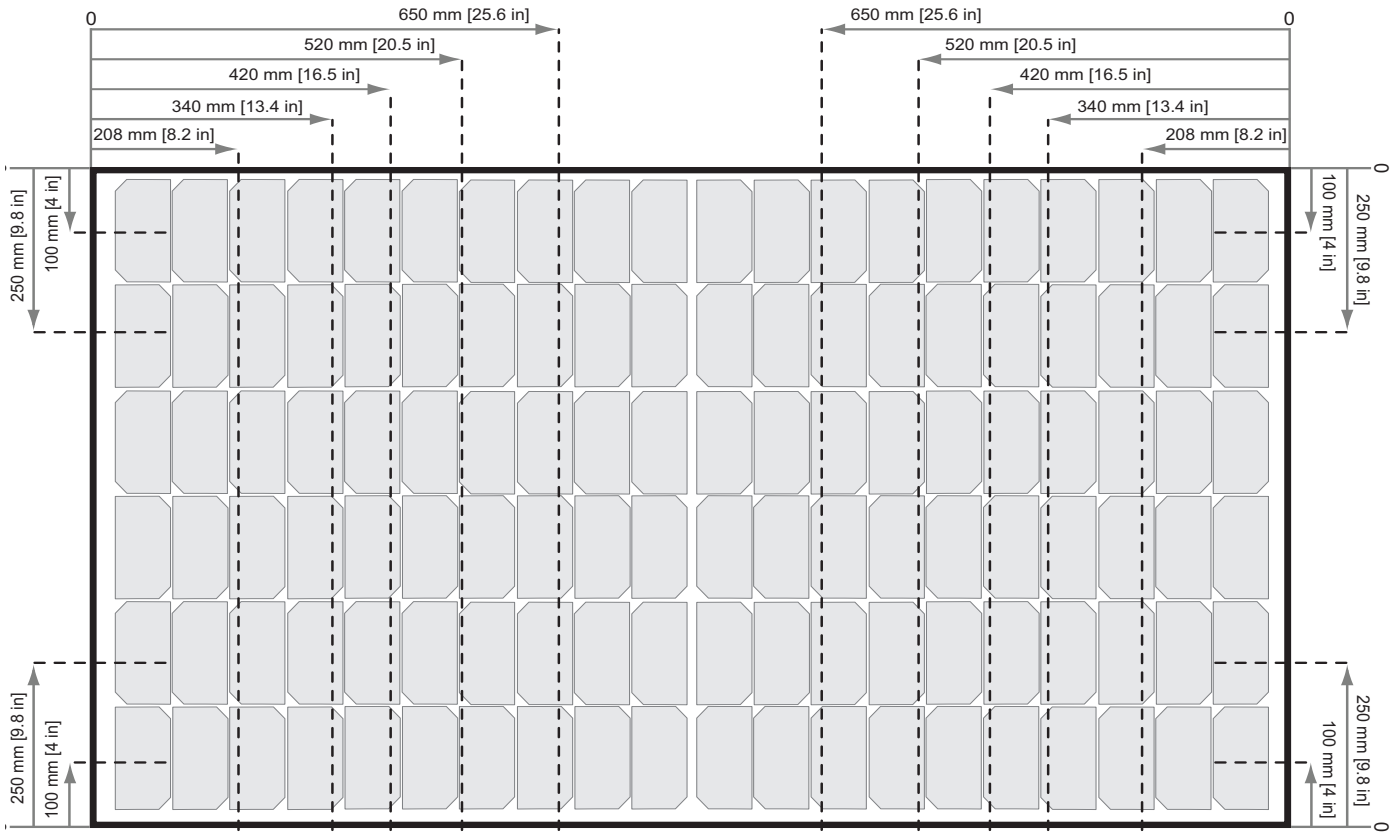
CAUTION
The center point of each clamp and the minimum grip length must be fully located in the same clamping zones to be rated to that load (fig. 7). If the panel is secured in zones with different load values, it is rated to the lowest load value only.


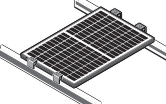

INSTALLATION OF REC N-PEAK PANELS

MOUNTING REC N-PEAK PANELS WITH CONTINUOUS RAILS PARALLEL TO SHORT SIDE OF THE PANEL

A continuous rail (or other support structure) spans the complete underside of the panel.

Fig. 8: Clamping of N-Peak panels on rails parallel to short side of module



Legend	Clearance Gap		20-40 mm	40-60 mm	>60 mm	<20 mm
			Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)
 Long Side Mounting	Long Side Mounting	0 - 208 mm	X	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
		208 - 340 mm	+1800 Pa / -1800 Pa* (+1200 Pa / -1200 Pa)	+4200 Pa / -2400 Pa (+2800 Pa / -1600 Pa)	+5400 Pa / -2400 Pa (+3600 Pa / -1600 Pa)	X
		340 - 420 mm	+1800 Pa / -1800 Pa* (+1200 Pa / -1200 Pa)	+6200 Pa / -4000 Pa (+4133 Pa / -2666 Pa)	+7000 Pa / -4000 Pa (+4666 Pa / -2666 Pa)	X
		420 - 520 mm	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+3000 Pa / -2400 Pa (+2400 Pa / -1600 Pa)	+5400 Pa / -2400 Pa (+3600 Pa / -1600 Pa)	X
		520 - 650 mm	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
 Short Side Mounting	Short Side Mounting	0 - 100 mm	X	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+1600 Pa / -1600 Pa* (+1066 Pa / -1066 Pa)	X
		100 - 250 mm	X	+800 Pa / -800 Pa* (+533 Pa / -533 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
		Once a module is secured in each of the 4 zones (fig. 2), additional clamps, i.e., >5, may be freely located on panel frame without affecting the warranty. Loads marked with a * were not certified as part of IEC 61215/61730 testing; these have been evaluated by REC's internal testing process.				

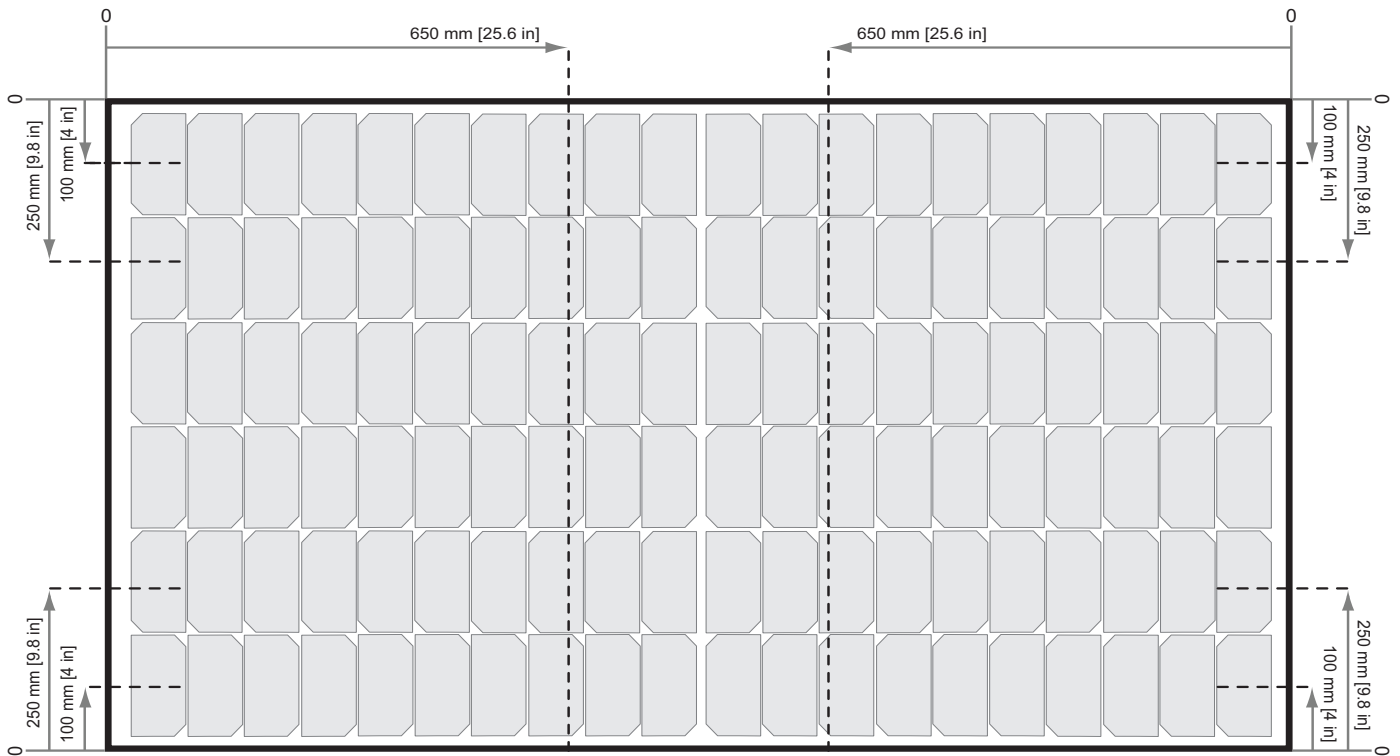
CAUTION

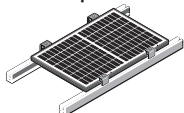
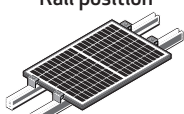

The center point of each clamp and the minimum grip length must be fully located in the same clamping zones to be rated to that load (fig. 8). If the panel is secured in zones with different load values, it is rated to the lowest load value only.

MOUNTING REC N-PEAK PANELS WITH CONTINUOUS RAILS PARALLEL TO LONG SIDE OF THE PANEL

A continuous rail (or other support structure) spans the complete underside of the panel.

Fig. 9: Clamping of N-Peak panels on rails parallel to long side of module



Legend	Clearance Gap		20-40 mm	40-60 mm	>60 mm	<20 mm
			Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)
 Long Side Mounting	0 - 650 mm		+1200 Pa / -1200 Pa* (+800Pa/-800Pa)	+3000 Pa / -2400 Pa (+2400Pa/-1600Pa)	+5400 Pa / -2400 Pa (+3600Pa/-1600Pa)	X
 Short Side Mounting		0 - 100 mm	X	+1200 Pa / -1200 Pa* (+800Pa/-800Pa)	+1600 Pa / -1600 Pa* (+1066Pa/-1066Pa)	X
		100 - 250 mm	X	+800 Pa / -800 Pa* (+533Pa/-533Pa)	+2400 Pa / -2400 Pa (+1600Pa/-1600Pa)	X
	Once a module is secured in each of the 4 zones (fig. 2), additional clamps, i.e., ≥5, may be freely located on panel frame without affecting the warranty. Loads marked with a * were not certified as part of IEC 61215/61730 testing; these have been evaluated by REC's internal testing process.					

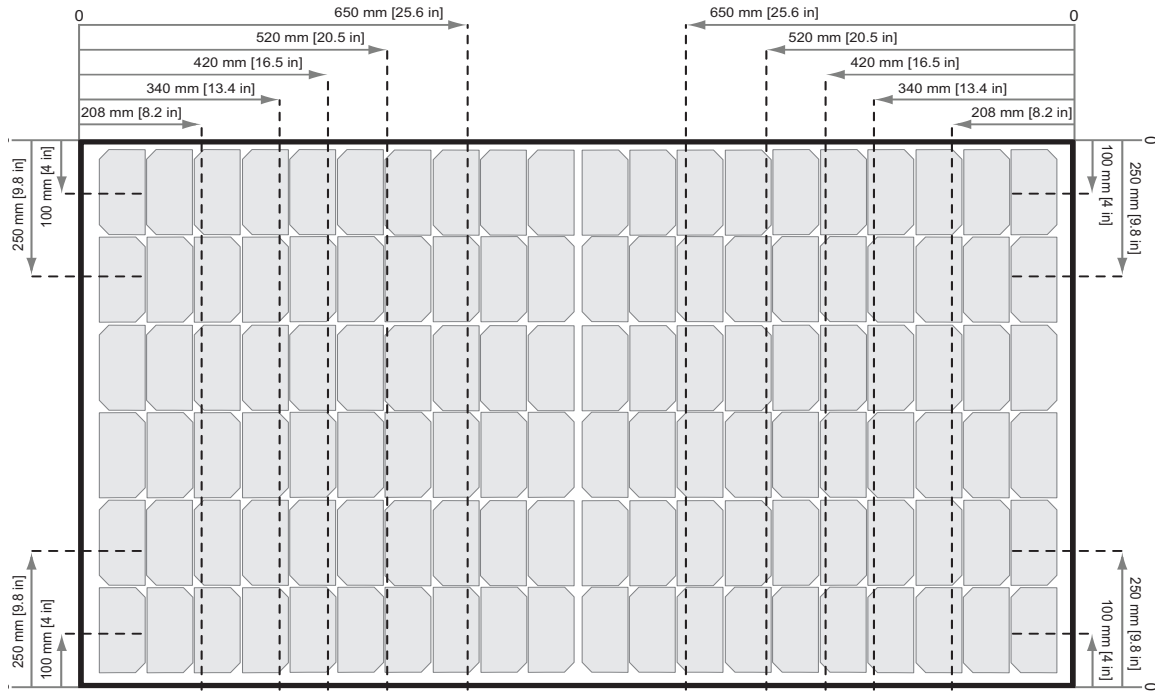
CAUTION

The center point of each clamp and the minimum grip length must be fully located in the same clamping zones to be rated to that load (fig. 9). If the panel is secured in zones with different load values, it is rated to the lowest load value only.

MOUNTING REC N-PEAK PANELS WITH SHORT RAILS

A short rail (or other short support structure) has a minimum length of 25 mm and does not span the complete underside of a panel.

Fig. 10: Clamping of REC N-Peak Series panels using short rails



Legend	Clearance Gap		20-40 mm	40-60 mm	>60 mm	<20 mm
			Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)	Test Load (Design Load)
Rail length under module 25 - 100 mm 	Long Side Mounting	0 - 208 mm	X	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+1600 Pa / -1600 Pa* (+1066 Pa / -1066 Pa)	X
		208 - 340 mm	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+4000 Pa / -2400 Pa (+2666 Pa / -1600 Pa)	+4000 Pa / -2400 Pa (+2666 Pa / -1600 Pa)	X
		340 - 420 mm	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+3000 Pa / -3000 Pa (+2000 Pa / -2000 Pa)	+4200 Pa / -4000 Pa (+2800 Pa / -2666 Pa)	X
		420 - 520 mm	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+3600 Pa / -2400 Pa (+2400 Pa / -1600 Pa)	X
		520 - 650 mm	+1800 Pa / -1800 Pa* (+1200 Pa / -1200 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
	Short Side Mounting	0 - 100 mm	X	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+1600 Pa / -1600 Pa* (+1066 Pa / -1066 Pa)	X
		100 - 250 mm	X	+800 Pa / -800 Pa* (+533 Pa / -533 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
	Rail length under module 100 - 200 mm 	Long Side Mounting	0 - 208 mm	X	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+1600 Pa / -1600 Pa* (+1066 Pa / -1066 Pa)
208 - 340 mm			+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+3600 Pa / -2400 Pa (+2400 Pa / -1600 Pa)	+3600 Pa / -2400 Pa (+2400 Pa / -1600 Pa)	X
340 - 420 mm			+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+3000 Pa / -3000 Pa (+2000 Pa / -2000 Pa)	+3000 Pa / -3000 Pa (+2000 Pa / -2000 Pa)	X
420 - 520 mm			+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+3600 Pa / -2400 Pa (+2400 Pa / -1600 Pa)	X
520 - 650 mm			+1800 Pa / -1800 Pa* (+1200 Pa / -1200 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
Short Side Mounting		0 - 100 mm	X	+1200 Pa / -1200 Pa* (+800 Pa / -800 Pa)	+1600 Pa / -1600 Pa* (+1066 Pa / -1066 Pa)	X
		100 - 250 mm	X	+800 Pa / -800 Pa* (+533 Pa / -533 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	X
		Once a module is secured in each of the 4 zones (fig. 2), additional clamps, i.e., ≥5, may be freely located on panel frame without affecting the warranty. Loads marked with a * were not certified as part of IEC 61215/61730 testing; these have been evaluated by REC's internal testing process.				

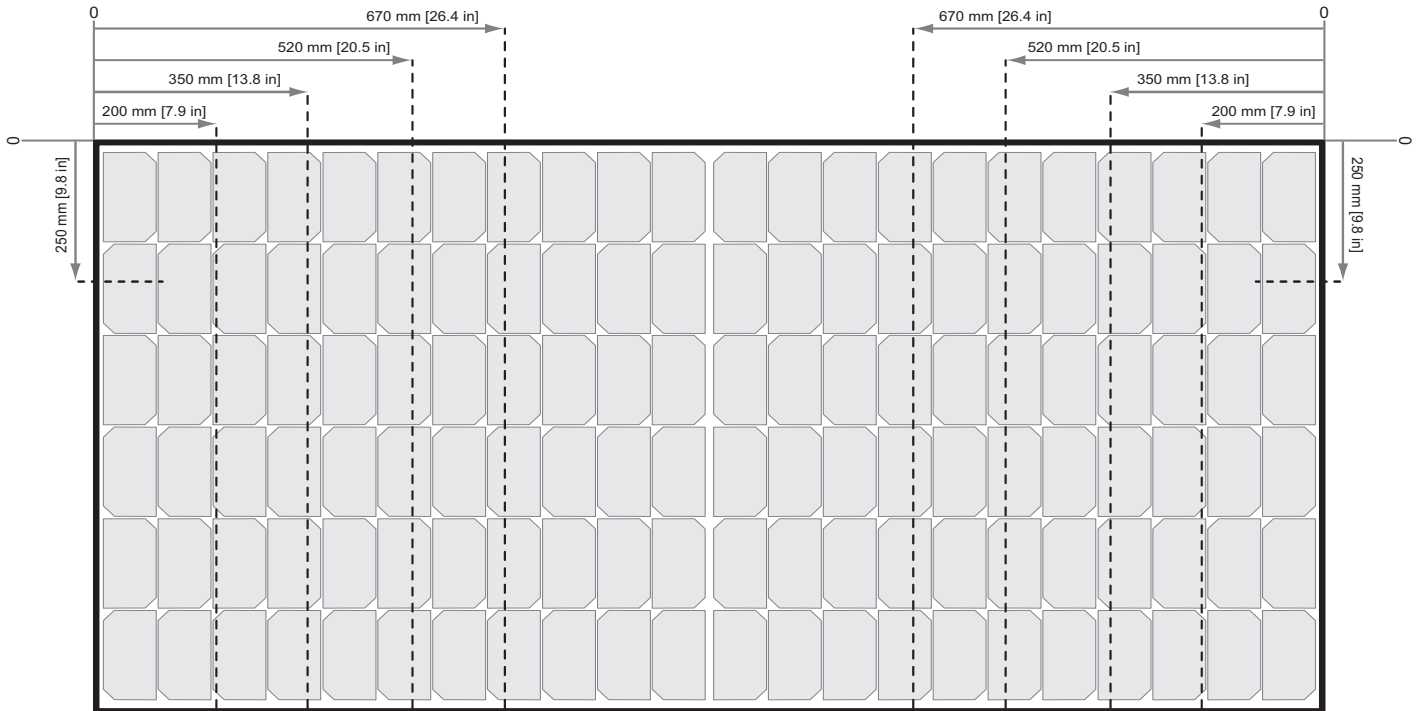
CAUTION
 The center point of each clamp and the minimum grip length must be fully located in the same clamping zones to be rated to that load (fig. 10). If the panel is secured in zones with different load values, it is rated to the lowest load value only.


INSTALLATION OF REC TWINPEAK 3S MONO 72 PANELS

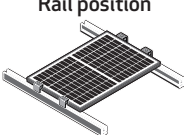
MOUNTING REC TWINPEAK 3S MONO 72 PANELS WITH CONTINUOUS RAILS


A continuous rail (or other support structure) spans the complete underside of the panel.

Fig. 11: Clamping of 72-cell REC TwinPeak panels on continous rails



Legend	Clearance Gap		>40 mm	>85 mm
			Test Load (Design Load)	Test Load (Design Load)
 Rail position Long Side Mounting		0 - 200 mm	+1000 Pa / -1000 Pa* (+667 Pa / -667 Pa)	+1400 Pa / -1400 Pa* (+933 Pa / -933 Pa)
		200 - 350 mm	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)
		350 - 520 mm	+5400 Pa / -2400 Pa (+3600 Pa / -1600 Pa)	+5400 Pa / -2400 Pa (+3600 Pa / -1600 Pa)
		520 - 670 mm	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)	+2400 Pa / -2400 Pa (+1600 Pa / -1600 Pa)

Legend	Clearance Gap		>60 mm	>85 mm
			Test Load (Design Load)	Test Load (Design Load)
 Rail position Short Side Mounting		0 - 250 mm	+1000 Pa / -1000 Pa* (+667 Pa / -667 Pa)	+1400 Pa / -1400 Pa* (+933 Pa / -933 Pa)

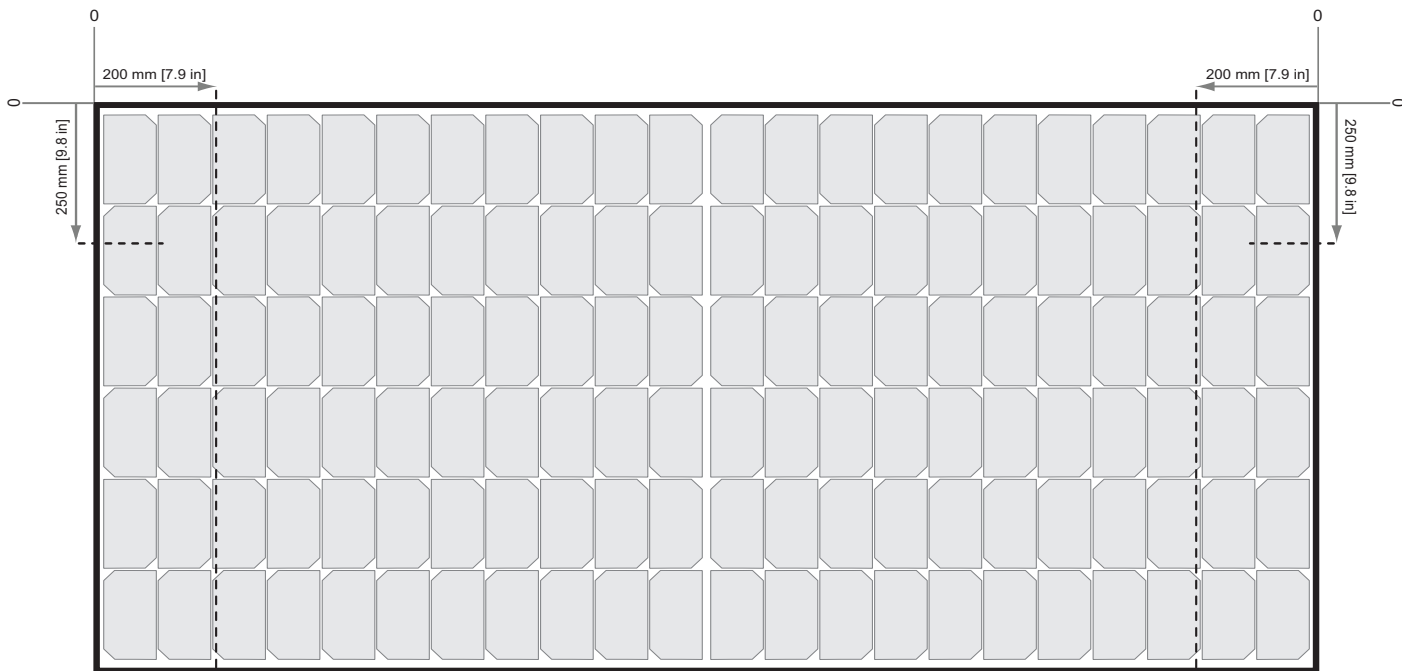
 Once a module is secured in each of the 4 zones, additional clamps, i.e., ≥ 5 , may be freely located on panel frame without affecting the warranty. Loads marked with a * were not certified as part of IEC 61215/61730 testing; these have been evaluated by REC's internal testing process.

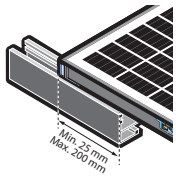

CAUTION
 The center point of each clamp and the minimum grip length must be fully located in the same clamping zones to be rated to that load (fig. 11). If the panel is secured in zones with different load values, it is rated to the lowest load value only.

MOUNTING REC TWINPEAK 3S MONO 72 PANELS WITH SHORT RAILS

A short rail (or other short support structure) has a minimum length of 25 mm and does not span the complete underside of a panel.

Fig. 1.2: Clamping of 72-cell REC TwinPeak panels using short rails



Legend	Clearance Gap		>40 mm	>85 mm	
	Clamping zone		Test Load (Design Load)	Test Load (Design Load)	
Rail length under module 25 - 200 mm 	Long Side Mounting	0 - 200 mm	+1000 Pa / -1000 Pa* (+667Pa/-667Pa)	+1400 Pa / -1400 Pa* (+933Pa/-933Pa)	
			Clearance Gap		>60 mm
	Short Side Mounting	0 - 250 mm	Clamping zone		Test Load (Design Load)
			Clearance Gap		>60 mm
				Test Load (Design Load)	
				+1000 Pa / -1000 Pa* (+667Pa/-667Pa)	+1400 Pa / -1400 Pa* (+933Pa/-933Pa)
		Once a module is secured in each of the 4 zones, additional clamps, i.e., ≥ 5 , may be freely located on panel frame without affecting the warranty. Loads marked with a * were not certified as part of IEC 61215/61730 testing; these have been evaluated by REC's internal testing process.			

CAUTION
 The center point of each clamp and the minimum grip length must be fully located in the same clamping zones to be rated to that load (fig. 1.2). If the panel is secured in zones with different load values, it is rated to the lowest load value only.

MOUNTING METHODS: SLIDE IN SYSTEMS

When installing using slide in systems the mounting system must meet the same specifications including grip lengths, depths and spacing as specified for clamping and the mounting system must be able to withstand the correct load pressures.

When installing solar panels using a slide-in system, the drainage holes found in the underside of the panel frame (see fig. 17) must not be covered. For any questions regarding installation on such systems, please contact REC directly.

MOUNTING METHODS: MOUNTING HOLES

The REC solar panels covered by this manual can be installed utilizing the four mounting holes (11 x 6.6 mm) on the underside of the panel (fig. 13 & 14) in conjunction with a device, e.g., screws, lockbolts or structural blind fasteners, with specifications suitable for the installation (fig. 15).

Installing REC solar panels using the mounting holes has been found to comply with IEC 61215 & IEC 61730 requirements for downward pressure, e.g., snow, of up to 5400 Pa (3600 Pa design load*) and upward pressure, e.g., wind, of up to 2400 Pa (1600 Pa design load*) according to the following instructions (*design loads apply a safety factor of 1.5 to the stated test load, e.g., test load 5400 Pa / 1.5 = 3600 Pa design load).

CAUTION

The product warranty will be voided if additional holes are made in the frame. All fixing and fastening materials must be corrosion resistant.

Fig. 13: Mounting holes: REC 60-cell panels

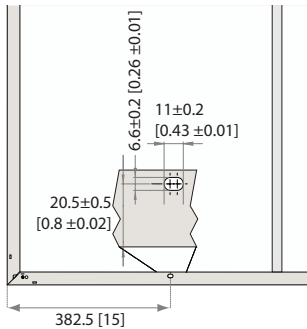


Fig. 14: Mounting holes: REC 72-cell panels

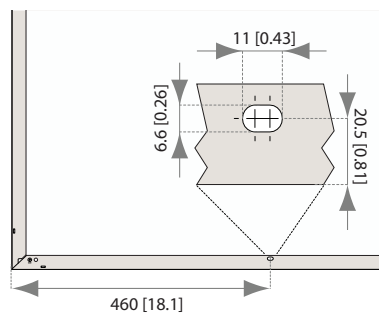


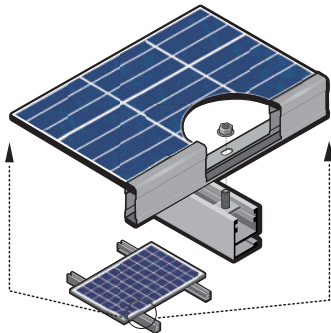
Fig. 15: Device specifications for mounting holes

Part Name	Material
Rail	6105 - T5 aluminum extrusion
Bolt	M6 x 25 drop in T-stud kit
Nut	M6 flanged hex locking nut

When installing using mounting holes, the frame and panel edge of each panel must be supported by two rails of aluminium or galvanized steel suitable for the application and appropriate for the local environment. Observe the following procedures when using mounting holes:

- The mounting construction must be of a corrosion resistant material, e.g., aluminum or galvanized steel, and appropriate for the local environment,
- All four mounting holes in the frame must be used (fig. 16),
- Additional electrical bonding to Ground is required for the support structure,
- REC modules must be secured with a torque between 12 - 25 Nm. Refer to the fixing device manufacturer's installation instructions for preload or torque values.

Fig. 16: Mounting hole installation example



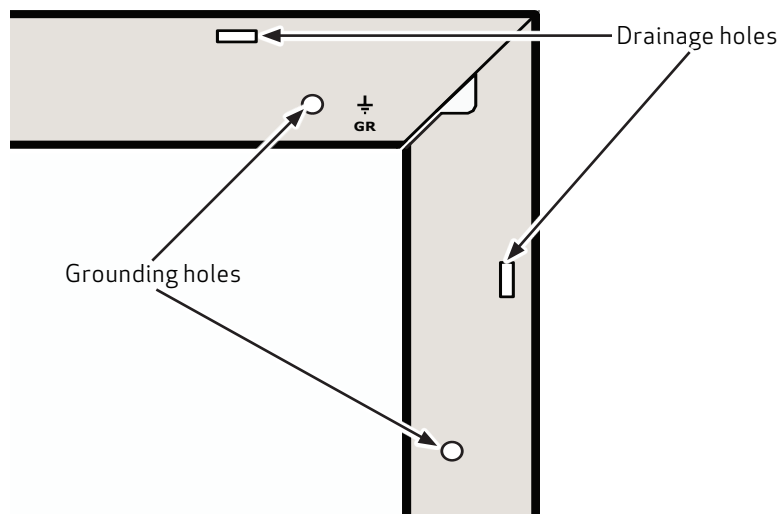
CAUTION

There are four mounting holes on the underside of the long frame side spaced 200 mm from the center (802.5 mm from the corner, 804 mm for TwinPeak 35 Mono 72). These are intended for use with specific tracker systems only, and not for rail-based systems. Unauthorized use of these may void the warranty. Consult first with REC if you need to use these for installation, otherwise only the mounting holes shown in fig. 16 are to be used.

DRAINAGE HOLES

On the long and short sides of the REC frame small drainage holes can be found that allow humidity and water to exit the frame easily and minimize damage (fig. 17). These are spaced 55 mm from the corner on 60-cell format panels and 60 mm on 72-cell format panels. These holes must not be used for mounting the panel, and they must not be covered by any part of the mounting structure. To enable effective drainage and ensure there is no damage to the panel, the drainage holes must remain fully open and enable water egress during and after installation. The shape and dimensions of the drainage holes may vary depending on product and/or frame design.

Fig. 17: Drainage and grounding holes



GROUNDING

Local regulations may require grounding of the panels. Grounding must be done using an electrical connection from the panel frame. REC solar panels have a small round grounding hole positioned near each corner of the panel on both the long side and the short side, as shown in fig. 17 and can be further identified by the grounding symbol stamped in the frame next to it. Check all applicable requirements before beginning installation:

- Suitable grounding clips, lugs or other constructions must be used,
- Attach grounds to the grounding holes in the panel frames,
- Follow the grounding device manufacturer's installation instructions to ensure a safe and conductive connection, including any supplementary hardware, e.g., star washer, and tighten according to recommended torque,
- Where common grounding hardware (nuts, bolts, star washers, split-ring lock washers, flat washers and the like) are used to attach a grounding device, the attachment must be made in conformance with the grounding device manufacturer's instructions.

NOTE

- To avoid galvanic corrosion, galvanized or hot dipped zinc plated fasteners are preferred, however stainless steel fastening materials are equally suitable.
- The support bars across the rear of REC panels are connected to the frame via specially designed grounding clips and do not need to be individually grounded.
- Negative grounding of the panels is not required by REC.

CONNECTIONS AND CONNECTORS

The connector type(s) used on REC panels are indicated in the product specifications at the rear of this manual. The connector IP rating is only valid when correctly connected. All connectors and cables must be secure and tight as well as electrically and mechanically sound. UV-resistant cables and connectors approved for outdoor use must be used. Conductor gauge must be chosen to ensure DC power losses (voltage drop) are kept to a minimum (<1%).

Observe all local regulations when selecting cables.

- For string connections, use minimum 4 mm² copper wires insulated for a maximum operating temperature of 90°C,
- Avoid exposing cables to direct sunlight and permanent tension.

In order to ensure a safe connection between panels and BOS equipment, the following instructions must be followed to protect the connections from the elements.

⚠ DANGER - Electrical shock

Safety is paramount when working with electrical connectors.

- Ensure that any installation work is not carried out on live or load-carrying parts.
- Connections must not be disconnected under load and the system must be isolated from the grid before carrying out any maintenance or repair work.

CONNECTORS

To ensure connector compatibility and reduce the potential for damage to the panels and the wider installation, the connectors used on REC panels are detailed in the Panel Characteristics at the rear of this manual. REC only permits the mating of factory-installed connectors to connectors of the same manufacturer, type, and system rating as shown in the table below (fig. 18):

Fig. 18: Connector mating matrix

Connector 1	+	Connector 2		Permitted?
REC Factory-Installed	+	Stäubli MC4 Evo-2	✓	On 1500V Systems
REC Factory-Installed	+	Stäubli MC4	✓	On 1000V Systems only
REC Factory-Installed	+	REC Factory-Installed	✓	
REC Factory-Installed	+	Any other connector	✗	

i NOTE

Some countries and/or regions have specific regulations regarding the mating of connectors. Installers are responsible for ensuring the compliancy of the system with such local regulations.

CUTTING THE CABLES

The cutting of cables is only permitted in order to replace a factory-installed connector with another brand of connector to ensure 'like-for-like' mating when connected to a non-REC external device. All other changes are prohibited and will invalidate the REC warranty.

- The connector replacement procedure must be carried out correctly and according to the replacement connector manufacturer's instructions.
- The selected replacement connector must also fulfil all relevant technical specifications and be certified according to applicable standards (e.g., IEC 62852 or UL 6703) to ensure they are fit for purpose and safety.
- Use of any chemicals or lubricants on the connectors or contacts may only be carried out in line with the connector manufacturer's instructions.

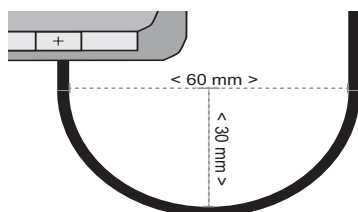
The REC warranty does not extend to cover any fault traceable to the replaced connectors. Any other modification to the panel is prohibited, including the opening of the junction box, unless explicitly authorized by REC. Doing so will invalidate the warranty.

CABLE MANAGEMENT

To ensure a long life span of the cables and reduce the potential for damage to the cables, follow the instructions below:

- To prevent stress on the junction box casing, ensure the cable exits the junction box in a straight line before any bend in the cable and ensure cables are free from any external load,
- The cables must have a minimum bending radius of 30 mm to avoid damage to the insulation (fig. 19),
- Ensure cables do not hang loose where they may be damaged through friction or stress, e.g., caused by mechanical abrasion or grazing animals,
- Protect connectors from falling or dropping water by locating them directly beneath a panel,
- Cables must be firmly secured to the structure, without over-tightening, as this can deform the cable insulation using UV-resistant cables,
- When securing the connector, place it so that it has with sufficient air circulation all around. This allows the connector to dry effectively and avoids the risk of damage or degradation of the connection,
- Secure the cable either side of the connectors to ensure no stress is exerted on the connector casing or cable entry,
- To enable correct cooling and drying of the connectors, do not add extra protection to the connector, e.g., heat shrink, grease or tape.

Fig. 19: Minimum cable bend radius



More detailed information is given in the *Guide to Best Practice - Connections and Connectors* which can be found via the REC online Download Center (www.recgroup.com/downloads)

PANEL MAINTENANCE

CLEANING INSTRUCTIONS

REC solar panels have been designed for easy maintenance. However cleaning solar panels can assist in optimizing electricity output. The need for cleaning will vary dependent on location, rainfall, pollution levels and the angle of installation – the lower the angle of installation, the more cleaning will be required. 'Normal' rainfall will naturally clean the panels if installed at a sufficient angle to ensure water runs off the surface. To optimize electrical output it is recommended to clean the panels when dirt can clearly be seen on the glass surface.

CAUTION

- Panel cleaning must always be carried out when the panels are cool, e.g., early morning, to avoid breakage through thermal shock.
- Use of high pressure hoses or cleaners is not permitted as these may damage the panels, laminate or cells.

NOTE

- Avoid putting pressure on the on the panel surface when cleaning or drying, e.g., leaning, standing or resting buckets on it.
- Use only deionized water free from grit and physical contaminants, at ambient temperature and use a sponge, microfiber cloth or a soft brush to wipe away the dirt (rainwater, tap water or diluted alcohol may also be used as a secondary solution).
- For further cleaning a mild, biological and biodegradable washing-up liquid may be used.
- If stains require more effort to be removed, Isopropyl alcohol of a concentration less than 10% may be used. Acidic or alkaline detergent may not be used.

Using a soft rubber squeegee, wipe the panel surface from the top downwards to remove any residual water from the panel glass. Take care not to scratch the surface or introduce foreign elements that may cause damage to the panel. Always rinse the panel with plenty of water. Panels can be left to dry in the air or wiped dry with a clean and soft cloth or chamois.

For more information on cleaning REC solar panels, consult the *REC Cleaning Information Sheet* which is available to download from the online REC Download Center www.recgroup.com/downloads. If in doubt at any time when cleaning the panels, stop and obtain professional advice.

SYSTEM INSPECTION

The system should be inspected regularly to ensure that:

- Fasteners are secure, tight and free from corrosion,
- Electrical connections are secure, tight, clean and free of corrosion,
- The mechanical integrity of the cables is intact,
- Bonding points to ground are tight, secure and free from corrosion (which could break the continuity between the panels and ground).

RECYCLING

REC makes every effort to ensure panel packaging is kept to a minimum. The paper and cardboard packaging can be recycled and the protective wrapping and panel separating blocks are also recyclable in many areas. Recycle packaging and panels according to local guidelines and regulations.

DISPOSAL OF OLD ELECTRICAL AND ELECTRONIC EQUIPMENT

Panels should be recycled at the end of their useful life according to local guidelines and regulations. By ensuring REC solar panels are disposed of correctly, you will help prevent potential negative impact on the environment and human health. The majority of the panel components can be recycled.

For installations in the European Union, REC solar panels are subject to WEEE regulations. The symbol in fig. 20 as found on the label on the rear of the panel indicates that this product must not be treated as household waste and must be disposed of at an appropriate collection point for the recycling of electrical and electronic equipment. The recycling of the different components and materials will help to conserve natural resources.

Fig. 20: WEEE symbol

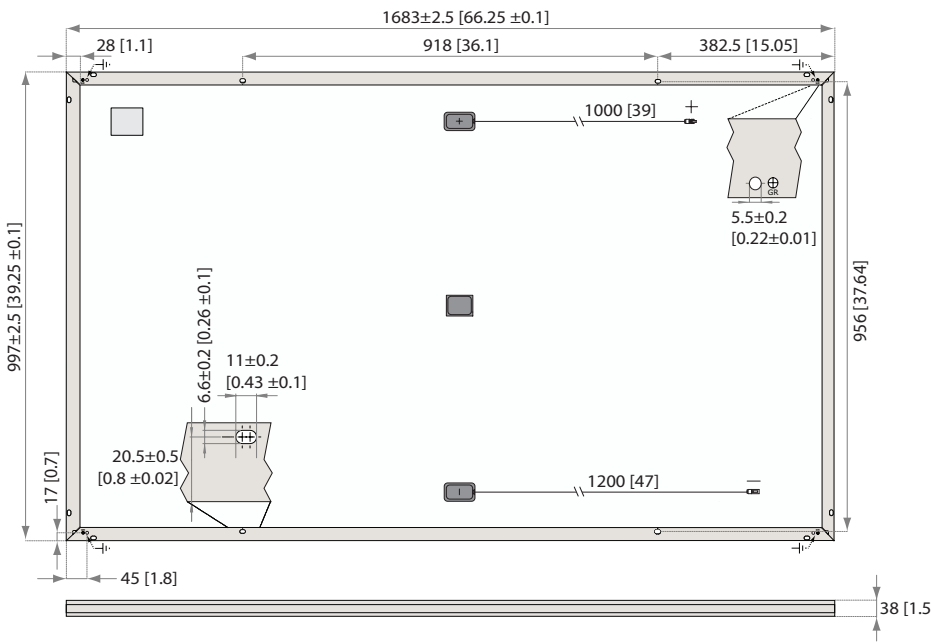


The European WEEE (Waste Electrical and Electronic Equipment) Directive regulates the correct recycling of electronic and electrical waste in all member states of the European Union (EU). For end-customers it is a free of charge disposal system, financed by the manufacturers and importers, where panels can be brought to a local recycling depot, or in the case of larger numbers, be picked up from site, as is the case with other electrical equipment, e.g., refrigerators or televisions. The extensive process steps for proper disposal are strictly regulated and place no further obligations on the owner of the panels. For more information about the recycling of this product, please contact your local recycling authority or recycling center.

PANEL CHARACTERISTICS

TECHNICAL PROPERTIES: REC TWINPEAK 3 MONO SERIES

Fig. 21: Panel dimensions: REC TwinPeak 3 Mono Series



Measurements in mm [in]

ELECTRICAL DATA @ STC

Product code*: RECxxxTP3M

	320	325	330	335	340
Power Output - P_{MAX} (Wp)	320	325	330	335	340
Watt Class Sorting - (W)	-0/+5	-0/+5	-0/+5	-0/+5	-0/+5
Nominal Power Voltage - V_{MPP} (V)	33.8	34.1	34.3	34.6	34.8
Nominal Power Current - I_{MPP} (A)	9.47	9.54	9.62	9.69	9.77
Open Circuit Voltage - V_{OC} (V)	40.7	40.9	41.0	41.1	41.2
Short Circuit Current - I_{SC} (A)	10.32	10.36	10.39	10.42	10.45
Panel Efficiency (%)	19.1	19.4	19.7	20.0	20.3

Values at standard test conditions (STC: air mass AM1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of P_{MAX} , V_{OC} & I_{SC} ±3% within one watt class. At a low irradiance of 200 W/m² at least 95% of the STC module efficiency will be achieved.

*Where xxx indicates the nominal power class (P_{MAX}) at STC indicated above.

ELECTRICAL DATA @ NMOT

Product code*: RECxxxTP3M

	241	244	248	252	256
Power Output - P_{MAX} (Wp)	241	244	248	252	256
Nominal Power Voltage - V_{MPP} (V)	31.5	31.7	31.9	32.2	32.3
Nominal Power Current - I_{MPP} (A)	7.65	7.71	7.77	7.83	7.91
Open Circuit Voltage - V_{OC} (V)	38.0	38.1	38.2	38.2	38.2
Short Circuit Current - I_{SC} (A)	8.34	8.37	8.39	8.42	8.44

Nominal module operating temperature (NMOT: air mass AM1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s).

*Where xxx indicates the nominal power class (P_{MAX}) at STC indicated above.

CERTIFICATIONS



IEC 61215, IEC 61730, UL 61730,
ISO 9001: 2015, ISO 14001: 2004, OHSAS 18001: 2007

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WARRANTY

	Standard	RECProTrust	
Installed by an REC Certified Solar Professional:	No	Yes	Yes
System Size	Any	≤25 kW	25-500 kW
Product Warranty (yrs)	20	25	25
Power Warranty (yrs)	25	25	25
Labor Warranty (yrs)	0	25	10
Power in Year 1	97.5%	97.5%	97.5%
Annual Degradation	0.7%	0.7%	0.7%
Power in Year 25	80.7%	80.7%	80.7%

See warranty documents for details. Some conditions apply.

20.3% EFFICIENCY

20 YEAR PRODUCT WARRANTY

25 YEAR LINEAR POWER OUTPUT WARRANTY

GENERAL DATA

Cell type:	120 half-cut mono-Si p-type PERC cells 6 strings of 20 cells in series
Glass:	3.2 mm solar glass with anti-reflection surface treatment
Backsheet:	Highly resistant polyester polyolefin construction
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, IP67 rated in accordance with IEC 62790
Cable:	4 mm ² solar cable, 1.0 m + 1.2 m in accordance with EN 50618
Connectors:	Stäubli MC4 PV-KBT4/PV-KST4 (4 mm ²) in accordance with IEC 62852, IP68 only when connected
Origin:	Made in Singapore

MAXIMUM RATINGS

Operational temperature:	-40...+85°C
Maximum system voltage:	1000 V
Maximum test load (front):	+5400 Pa (550 kg/m ²)*
Maximum test load (rear):	-2400 Pa (244 kg/m ²)*
Max series fuse rating:	25 A
Max reverse current:	25 A

*See installation manual for mounting instructions.
Design load = Test load / 1.5 (safety factor)

TEMPERATURE RATINGS*

Nominal Module Operating Temperature:	44.6°C (±2°C)
Temperature coefficient of P_{MAX} :	-0.34 %/°C
Temperature coefficient of V_{OC} :	-0.26 %/°C
Temperature coefficient of I_{SC} :	0.04 %/°C

*The temperature coefficients stated are linear values

MECHANICAL DATA

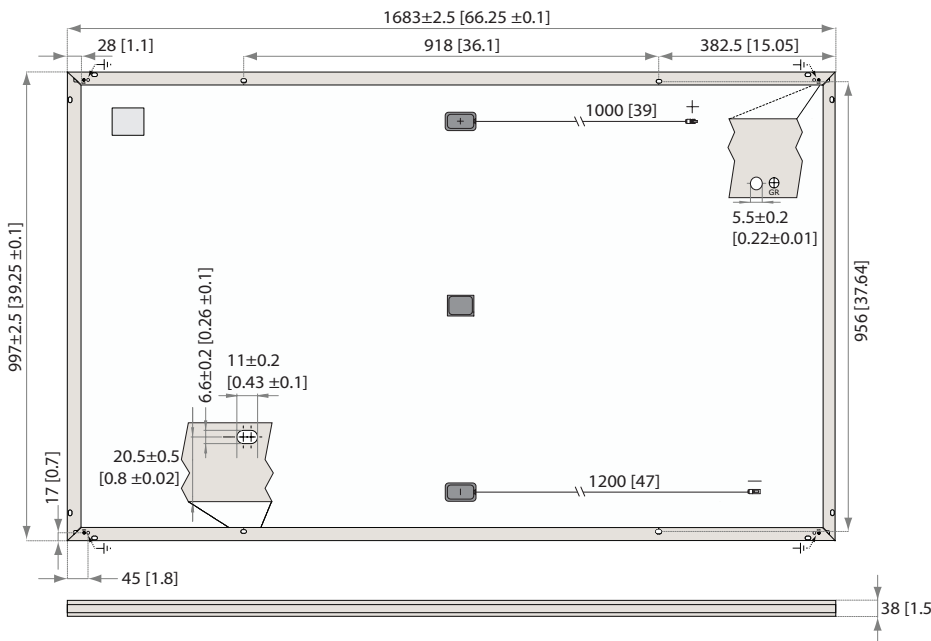
Dimensions:	1683 x 997 x 38 mm
Area:	1.68 m ²
Weight:	18.9 kg

Specifications subject to change without notice.

Ref: PM-DS-07-16 Rev- C 02.21

TECHNICAL PROPERTIES: REC TWINPEAK 3 MONO BLACK SERIES

Fig. 22: Panel dimensions: REC TwinPeak 3 Mono Black Series



Measurements in mm [in]

ELECTRICAL DATA @ STC	Product code*: RECxxxTP3M Black				
Power Output - P _{MAX} (Wp)	315	320	325	330	335
Watt Class Sorting - (W)	-0/+5	-0/+5	-0/+5	-0/+5	-0/+5
Nominal Power Voltage - V _{MPP} (V)	33.6	33.8	34.1	34.3	34.6
Nominal Power Current - I _{MPP} (A)	9.38	9.47	9.54	9.62	9.69
Open Circuit Voltage - V _{OC} (V)	40.4	40.7	40.9	41.0	41.1
Short Circuit Current - I _{SC} (A)	10.29	10.32	10.36	10.39	10.42
Panel Efficiency (%)	18.8	19.1	19.4	19.7	20.0

Values at standard test conditions (STC: air mass AM1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of P_{MAX}, V_{OC} & I_{SC} ±3% within one watt class. At a low irradiance of 200 W/m² at least 95% of the STC module efficiency will be achieved.
*Where xxx indicates the nominal power class (P_{MAX}) at STC indicated above.

ELECTRICAL DATA @ NMOT	Product code*: RECxxxTP3M Black				
Power Output - P _{MAX} (Wp)	237	241	244	248	252
Nominal Power Voltage - V _{MPP} (V)	31.3	31.5	31.7	31.9	32.2
Nominal Power Current - I _{MPP} (A)	7.58	7.65	7.71	7.77	7.83
Open Circuit Voltage - V _{OC} (V)	37.6	38.0	38.1	38.2	38.2
Short Circuit Current - I _{SC} (A)	8.31	8.34	8.37	8.39	8.42

Nominal module operating temperature (NMOT: air mass AM1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s).
*Where xxx indicates the nominal power class (P_{MAX}) at STC indicated above.

CERTIFICATIONS

IEC 61215, IEC 61730, UL 61730, ISO 9001: 2015, ISO 14001: 2004, OHSAS 18001: 2007

WARRANTY

	Standard	RECProTrust	
Installed by an REC Certified Solar Professional:	No	Yes	Yes
System Size	Any	≤25 kW	25-500 kW
Product Warranty (yrs)	20	25	25
Power Warranty (yrs)	25	25	25
Labor Warranty (yrs)	0	25	10
Power in Year 1	97.5%	97.5%	97.5%
Annual Degradation	0.7%	0.7%	0.7%
Power in Year 25	80.7%	80.7%	80.7%

See warranty documents for details. Some conditions apply.

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20.0% EFFICIENCY
20 YEAR PRODUCT WARRANTY
25 YEAR LINEAR POWER OUTPUT WARRANTY

GENERAL DATA

Cell type:	120 half-cut mono-Si p-type PERC cells 6 strings of 20 cells in series
Glass:	3.2 mm solar glass with anti-reflection surface treatment
Backsheet:	Highly resistant polyester polyolefin construction (black)
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, IP67 rated in accordance with IEC 62790
Cable:	4 mm ² solar cable, 1.0 m + 1.2 m in accordance with EN 50618
Connectors:	Stäubli MC4 PV-KBT4/PV-KST4 (4 mm ²) in accordance with IEC 62852, IP68 only when connected
Origin:	Made in Singapore

MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
Maximum system voltage:	1000 V
Maximum test load (front):	+5400 Pa (550 kg/m ²)*
Maximum test load (rear):	-2400 Pa (244 kg/m ²)*
Max series fuse rating:	25 A
Max reverse current:	25 A

* See installation manual for mounting instructions.
Design load = Test load / 1.5 (safety factor)

TEMPERATURE RATINGS*

Nominal Module Operating Temperature:	44.6°C (±2°C)
Temperature coefficient of P _{MAX} :	-0.37 %/°C
Temperature coefficient of V _{OC} :	-0.28 %/°C
Temperature coefficient of I _{SC} :	0.04 %/°C

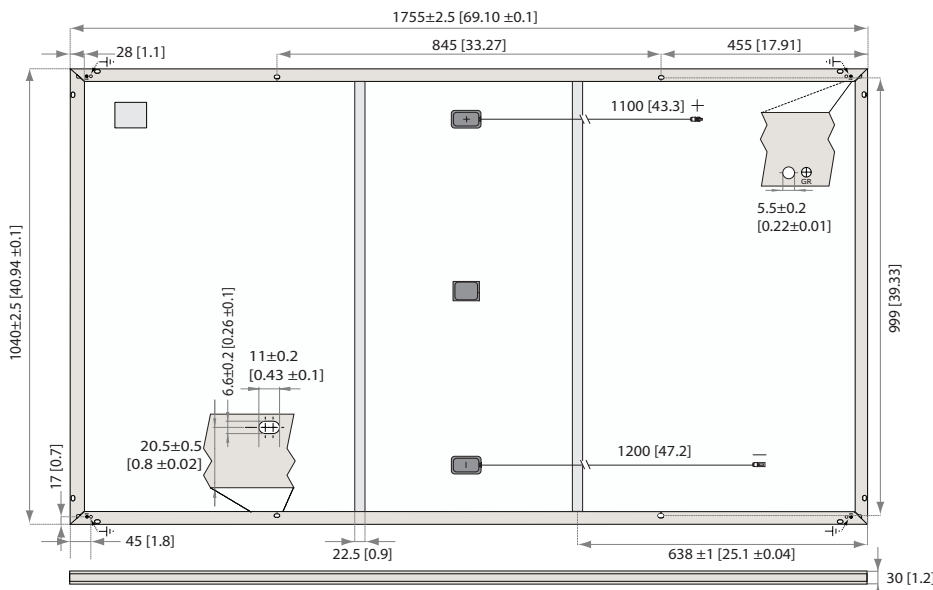
*The temperature coefficients stated are linear values

MECHANICAL DATA

Dimensions:	1683 x 997 x 38 mm
Area:	1.68 m ²
Weight:	18.9 kg

TECHNICAL PROPERTIES: REC TWINPEAK 4 SERIES

Fig. 23: Panel dimensions: REC TwinPeak 4 Series



Measurements in mm [in]

GENERAL DATA

Cell type:	120 half-cut mono c-Si p-type cells 6 strings of 20 cells in series
Glass:	3.2 mm solar glass with anti-reflection surface treatment
Backsheet:	Highly resistant polymeric construction
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, IP68 rated in accordance with IEC 62790
Cable:	4 mm ² solar cable, 1.1 m + 1.2 m in accordance with EN 50618
Connectors:	Stäubli MC4 PV-KBT4/KST4 (4 mm ²) in accordance with IEC 62852 IP68 only when connected
Origin:	Made in Singapore

MECHANICAL DATA

Dimensions:	1755 x 1040 x 30 mm
Area:	1.83 m ²
Weight:	20.0 kg

ELECTRICAL DATA @ STC Product code*: RECxxxTP4

Nominal Power - P _{MAX} (Wp)	360	365	370	375
Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5
Nominal Power Voltage - V _{MPP} (V)	33.9	34.3	34.7	35.0
Nominal Power Current - I _{MPP} (A)	10.62	10.65	10.68	10.72
Open Circuit Voltage - V _{OC} (V)	40.6	40.8	41.0	41.2
Short Circuit Current - I _{SC} (A)	11.26	11.32	11.38	11.45
Panel Efficiency (%)	19.7	20.0	20.3	20.5

Values at standard test conditions (STC: air mass AM1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of P_{MAX}, V_{OC} & I_{SC} ±3% within one watt class. *Where xxx indicates the nominal power class (P_{MAX}) at STC above.

MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (713 kg/m ²)*
Maximum test load (rear):	-4000 Pa (407 kg/m ²)*
Max series fuse rating:	25 A
Max reverse current:	25 A

* See installation manual for mounting instructions.
Design load = Test load / 1.5 (safety factor)

ELECTRICAL DATA @ NMOT Product code*: RECxxxTP4

Nominal Power - P _{MAX} (Wp)	272	276	280	283
Nominal Power Voltage - V _{MPP} (V)	31.7	32.1	32.5	32.7
Nominal Power Current - I _{MPP} (A)	8.58	8.60	8.63	8.66
Open Circuit Voltage - V _{OC} (V)	38.0	38.2	38.3	38.5
Short Circuit Current - I _{SC} (A)	9.09	9.14	9.19	9.25

Nominal module operating temperature (NMOT: air mass AM1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s).
*Where xxx indicates the nominal power class (P_{MAX}) at STC above.

TEMPERATURE RATINGS *

Nominal Module Operating Temperature:	44.6°C (±2°C)
Temperature coefficient of P _{MAX} :	-0.34 %/°C
Temperature coefficient of V _{OC} :	-0.26 %/°C
Temperature coefficient of I _{SC} :	0.04 %/°C

* The temperature coefficients stated are linear values

CERTIFICATIONS

IEC 61215:2016, IEC 61730:2016, UL 61730
ISO 14001:2004, ISO 9001:2015, OHSAS 18001:2007, IEC 62941



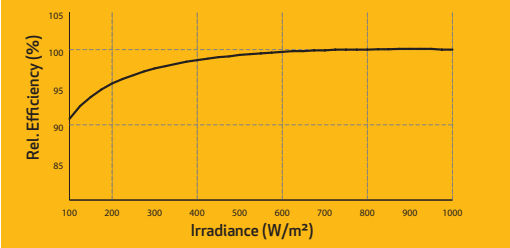
WARRANTY

	Standard	REC ProTrust	
Installed by an REC Certified Solar Professional	No	Yes	Yes
System Size	Any	≤25 kW	25-500 kW
Product Warranty (yrs)	20	25	25
Power Warranty (yrs)	25	25	25
Labor Warranty (yrs)	0	25	10
Power in Year 1	98%	98%	98%
Annual Degradation	0.5%	0.5%	0.5%
Power in Year 25	86%	86%	86%

See warranty documents for details. Some conditions apply.

LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:

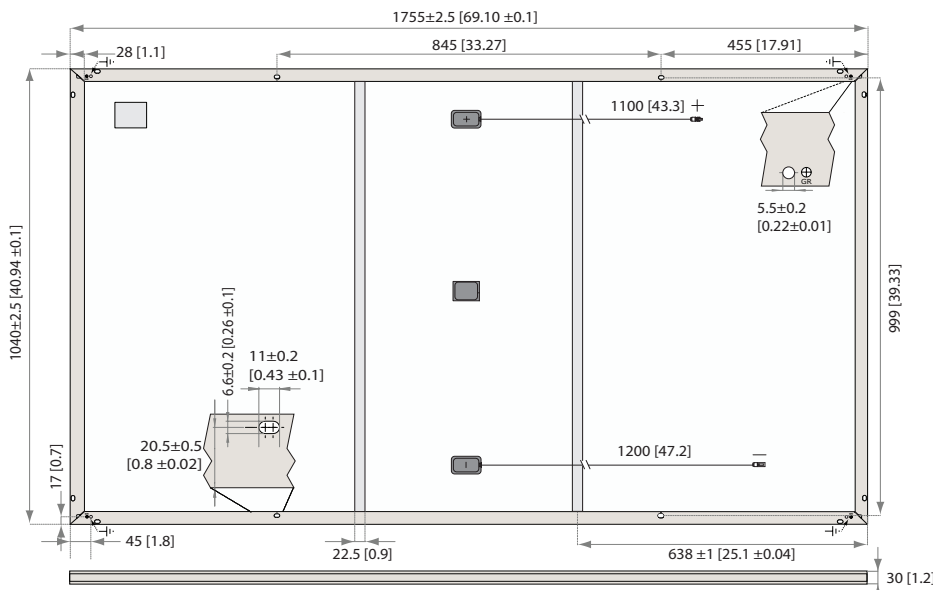


Specifications subject to change without notice.

Ref: PV-DS-07-28 Rev- A- 05.21

TECHNICAL PROPERTIES: REC TWINPEAK 4 BLACK SERIES

Fig. 24: Panel dimensions: REC TwinPeak 4 Black Series



Measurements in mm [in]

GENERAL DATA

Cell type:	120 half-cut mono c-Si p-type cells 6 strings of 20 cells in series
Glass:	3.2 mm solar glass with anti-reflection surface treatment
Backsheet:	Highly resistant polymeric construction (black)
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, IP68 rated in accordance with IEC 62790
Cable:	4 mm ² solar cable, 1.1 m + 1.2 m in accordance with EN 50618
Connectors:	Stäubli MC4 PV-KBT4/KST4 (4 mm ²) in accordance with IEC 62852 IP68 only when connected
Origin:	Made in Singapore

MECHANICAL DATA

Dimensions:	1755 x 1040 x 30 mm
Area:	1.83 m ²
Weight:	20.0 kg

ELECTRICAL DATA @ STC Product code*: RECxxxTP4 Black

Nominal Power - P _{MAX} (Wp)	355	360	365	370
Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5
Nominal Power Voltage - V _{MPP} (V)	33.5	33.9	34.3	34.7
Nominal Power Current - I _{MPP} (A)	10.60	10.62	10.65	10.68
Open Circuit Voltage - V _{OC} (V)	40.5	40.6	40.8	41.0
Short Circuit Current - I _{SC} (A)	11.19	11.26	11.32	11.38
Panel Efficiency (%)	19.4	19.7	20.0	20.3

Values at standard test conditions (STC: air mass AM1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of P_{MAX}, V_{OC} & I_{SC} ±3% within one watt class. *Where xxx indicates the nominal power class (P_{MAX}) at STC above.

MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (713 kg/m ²)*
Maximum test load (rear):	-4000 Pa (407 kg/m ²)*
Max series fuse rating:	25 A
Max reverse current:	25 A

* See installation manual for mounting instructions.
Design load = Test load / 1.5 (safety factor)

ELECTRICAL DATA @ NMOT Product code*: RECxxxTP4 Black

Nominal Power - P _{MAX} (Wp)	269	272	276	280
Nominal Power Voltage - V _{MPP} (V)	31.4	31.7	32.1	32.5
Nominal Power Current - I _{MPP} (A)	8.56	8.58	8.60	8.63
Open Circuit Voltage - V _{OC} (V)	37.9	38.0	38.2	38.4
Short Circuit Current - I _{SC} (A)	9.04	9.10	9.15	9.19

Nominal module operating temperature (NMOT: air mass AM1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s).
*Where xxx indicates the nominal power class (P_{MAX}) at STC above.

TEMPERATURE RATINGS *

Nominal Module Operating Temperature:	44.6°C (±2°C)
Temperature coefficient of P _{MAX} :	-0.34 %/°C
Temperature coefficient of V _{OC} :	-0.26 %/°C
Temperature coefficient of I _{SC} :	0.04 %/°C

* The temperature coefficients stated are linear values

CERTIFICATIONS

IEC 61215:2016, IEC 61730:2016, UL 61730
ISO 14001:2004, ISO 9001:2015, OHSAS 18001:2007, IEC 62941



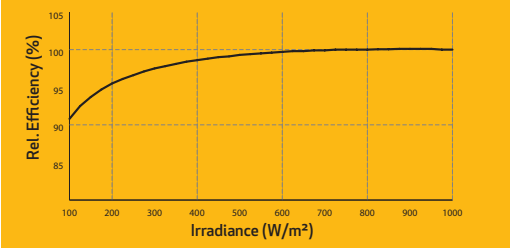
WARRANTY

	Standard	REC ProTrust	
Installed by an REC Certified Solar Professional	No	Yes	Yes
System Size	Any	≤25 kW	25-500 kW
Product Warranty (yrs)	20	25	25
Power Warranty (yrs)	25	25	25
Labor Warranty (yrs)	0	25	10
Power in Year 1	98%	98%	98%
Annual Degradation	0.5%	0.5%	0.5%
Power in Year 25	86%	86%	86%

See warranty documents for details. Some conditions apply.

LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:

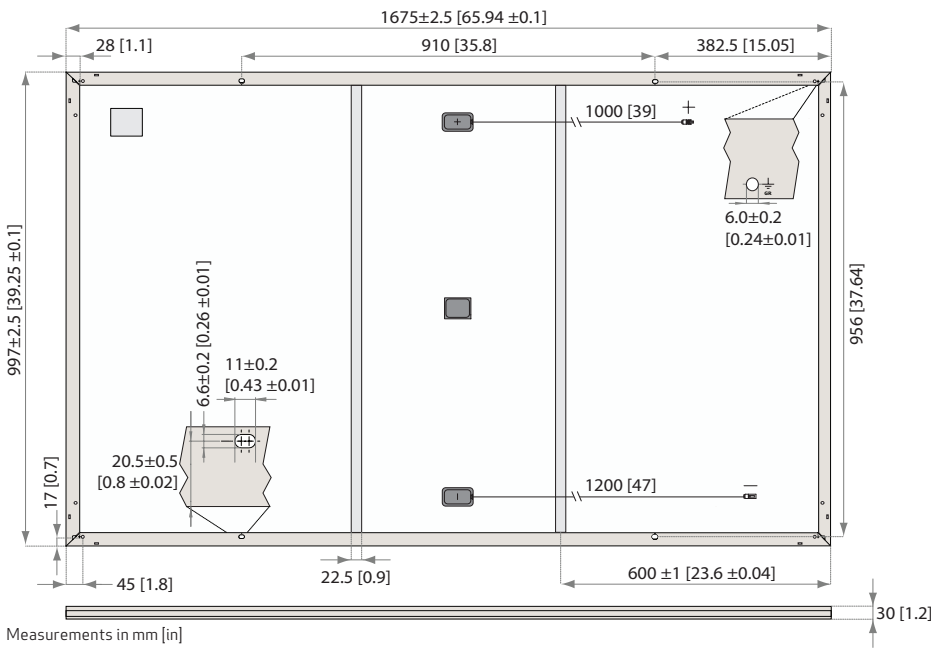


Specifications subject to change without notice.

Ref: PM-DS-07-29 Rev. A 05.21

TECHNICAL PROPERTIES: REC N-PEAK SERIES

Fig. 25: Panel dimensions: REC N-Peak Series



GENERAL DATA

Cell type:	120 half-cut mono c-Si-n-type cells 6 strings of 20 cells in series
Glass:	3.2 mm solar glass with anti-reflection surface treatment
Backsheet:	Highly resistant polymeric construction
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, IP67 rated in accordance with IEC 62790
Cable:	4 mm ² solar cable, 1.0 m + 1.2 m in accordance with EN 50618
Connectors:	Stäubli MC4 PV-KBT4/KST4 (4 mm ²) in accordance with IEC 62852 IP68 only when connected
Origin:	Made in Singapore

MECHANICAL DATA

Dimensions:	1675 x 997 x 30 mm
Area:	1.67 m ²
Weight:	18 kg

ELECTRICAL DATA @ STC

Product code*: RECxxxNP

	305	310	315	320	325	330
Nominal Power - P _{MAX} (Wp)	305	310	315	320	325	330
Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5	0/+5	0/+5
Nominal Power Voltage - V _{MPP} (V)	33.3	33.6	33.9	34.2	34.4	34.6
Nominal Power Current - I _{MPP} (A)	9.17	9.24	9.31	9.37	9.46	9.55
Open Circuit Voltage - V _{OC} (V)	39.3	39.7	40.0	40.3	40.7	41.0
Short Circuit Current - I _{SC} (A)	10.06	10.12	10.17	10.22	10.28	10.33
Panel Efficiency (%)	18.3	18.6	18.9	19.2	19.5	19.8

Values at standard test conditions (STC: air mass AM1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of P_{MAX}, V_{OC} & I_{SC} ±3% within one watt class. *Where xxx indicates the nominal power class (P_{MAX}) at STC above.

ELECTRICAL DATA @ NMOT

Product code*: RECxxxNP

	231	234	238	242	246	250
Nominal Power - P _{MAX} (Wp)	231	234	238	242	246	250
Nominal Power Voltage - V _{MPP} (V)	31.1	31.4	31.7	32.0	32.2	32.4
Nominal Power Current - I _{MPP} (A)	7.41	7.46	7.52	7.57	7.64	7.71
Open Circuit Voltage - V _{OC} (V)	36.7	37.1	37.4	37.7	38.0	38.3
Short Circuit Current - I _{SC} (A)	8.13	8.17	8.21	8.25	8.30	8.34

Nominal module operating temperature (NMOT: air mass AM1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s).

*Where xxx indicates the nominal power class (P_{MAX}) at STC above.

CERTIFICATIONS



IEC 61215, IEC 61730; UL 61730, MCS 005,
IEC 62804, IEC 61701, IEC 62716, IEC 62782
ISO 9001: 2015, ISO 14001: 2004, OHSAS 18001: 2007

take e-way take-e-way WEEE-compliant recycling scheme

WARRANTY

	Standard	REC ProTrust	
Installed by an REC Certified Solar Professional	No	Yes	Yes
System Size	Any	≤25 kW 25-500 kW	
Product Warranty (yrs)	20	25	25
Power Warranty (yrs)	25	25	25
Labor Warranty (yrs)	0	25	10
Power in Year 1	98%	98%	98%
Annual Degradation	0.5%	0.5%	0.5%
Power in Year 25	86%	86%	86%

See warranty documents for details. Some conditions apply.

MAXIMUM RATINGS

Operational temperature:	-40...+85°C
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (713 kg/m ²)*
Maximum test load (rear):	-4000 Pa (407 kg/m ²)*
Max series fuse rating:	25 A
Max reverse current:	25 A

* See installation manual for mounting instructions.
Design load = Test load / 1.5 (safety factor)

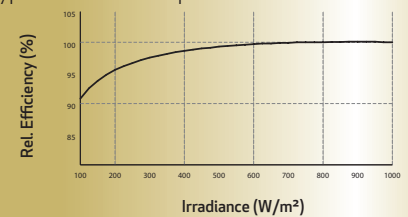
TEMPERATURE RATINGS *

Nominal Module Operating Temperature:	44°C (±2°C)
Temperature coefficient of P _{MAX} :	-0.35 %/°C
Temperature coefficient of V _{OC} :	-0.27 %/°C
Temperature coefficient of I _{SC} :	0.04 %/°C

* The temperature coefficients stated are linear values

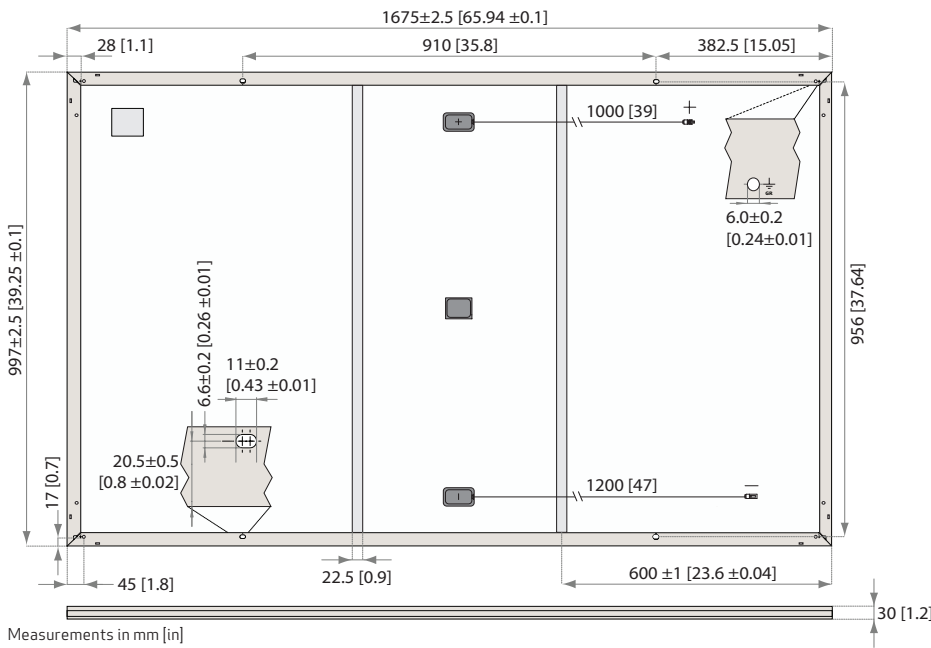
LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:



TECHNICAL PROPERTIES: REC N-PEAK BLACK SERIES

Fig. 26: Panel dimensions: REC N-Peak Black Series



GENERAL DATA

Cell type:	120 half-cut mono c-Si n-type cells 6 strings of 20 cells in series
Glass:	3.2 mm solar glass with anti-reflection surface treatment
Backsheet:	Highly reflective and resistant polymeric construction (black)
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, IP67 rated in accordance with IEC 62790
Cable:	4 mm ² solar cable, 1.0 m + 1.2 m in accordance with EN 50618
Connectors:	Stäubli MC4 PV-KBT4/KST4 (4 mm ²) in accordance with IEC 62852 IP68 only when connected
Origin:	Made in Singapore

MECHANICAL DATA

Dimensions:	1675 x 997 x 30 mm
Area:	1.67 m ²
Weight:	18 kg

ELECTRICAL DATA @ STC Product code*: RECxxxNP Black

Nominal Power - P _{MAX} (Wp)	305	310	315	320	325
Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5	0/+5
Nominal Power Voltage - V _{MPP} (V)	33.3	33.6	33.9	34.2	34.4
Nominal Power Current - I _{MPP} (A)	9.17	9.24	9.31	9.37	9.46
Open Circuit Voltage - V _{OC} (V)	39.3	39.7	40.0	40.3	40.7
Short Circuit Current - I _{SC} (A)	10.06	10.12	10.17	10.22	10.28
Panel Efficiency (%)	18.3	18.6	18.9	19.2	19.5

Values at standard test conditions (STC: air mass AM1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of P_{MAX}, V_{OC} & I_{SC} ±3% within one watt class. *Where xxx indicates the nominal power class (P_{MAX}) at STC above.

MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
Maximum system voltage:	1000 V
Maximum test load (front):	+ 7000 Pa (713 kg/m ²)*
Maximum test load (rear):	- 4000 Pa (407 kg/m ²)*
Max series fuse rating:	25 A
Max reverse current:	25 A

* See installation manual for mounting instructions.
Design load = Test load / 1.5 (safety factor)

ELECTRICAL DATA @ NMOT Product code*: RECxxxNP Black

Nominal Power - P _{MAX} (Wp)	231	234	238	242	246
Nominal Power Voltage - V _{MPP} (V)	31.1	31.4	31.7	32.0	32.2
Nominal Power Current - I _{MPP} (A)	7.41	7.46	7.52	7.57	7.64
Open Circuit Voltage - V _{OC} (V)	36.7	37.1	37.4	37.7	38.0
Short Circuit Current - I _{SC} (A)	8.13	8.17	8.21	8.25	8.30

Nominal module operating temperature (NMOT: air mass AM1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s). *Where xxx indicates the nominal power class (P_{MAX}) at STC above.

TEMPERATURE RATINGS *

Nominal Module Operating Temperature:	44°C (±2°C)
Temperature coefficient of P _{MAX} :	-0.35 %/°C
Temperature coefficient of V _{OC} :	-0.27 %/°C
Temperature coefficient of I _{SC} :	0.04 %/°C

* The temperature coefficients stated are linear values

CERTIFICATIONS

IEC 61215, IEC 61730; UL 61730, MCS 005, IEC 62804, IEC 61701, IEC 62716, IEC 62782
ISO 9001: 2015, ISO 14001: 2004, OHSAS 18001: 2007

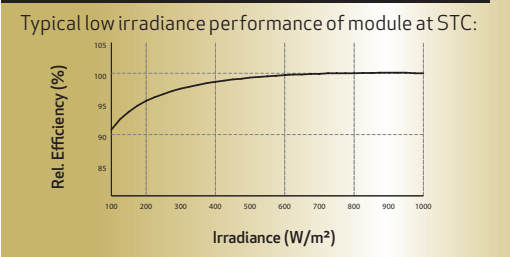
takeaway take-e-way WEEE-compliant recycling scheme

WARRANTY

	Standard	REC ProTrust	
Installed by an REC Certified Solar Professional	No	Yes	Yes
System Size	Any	≤25 kW 25-500 kW	
Product Warranty (yrs)	20	25	25
Power Warranty (yrs)	25	25	25
Labor Warranty (yrs)	0	25	10
Power in Year 1	98%	98%	98%
Annual Degradation	0.5%	0.5%	0.5%
Power in Year 25	86%	86%	86%

See warranty documents for details. Some conditions apply.

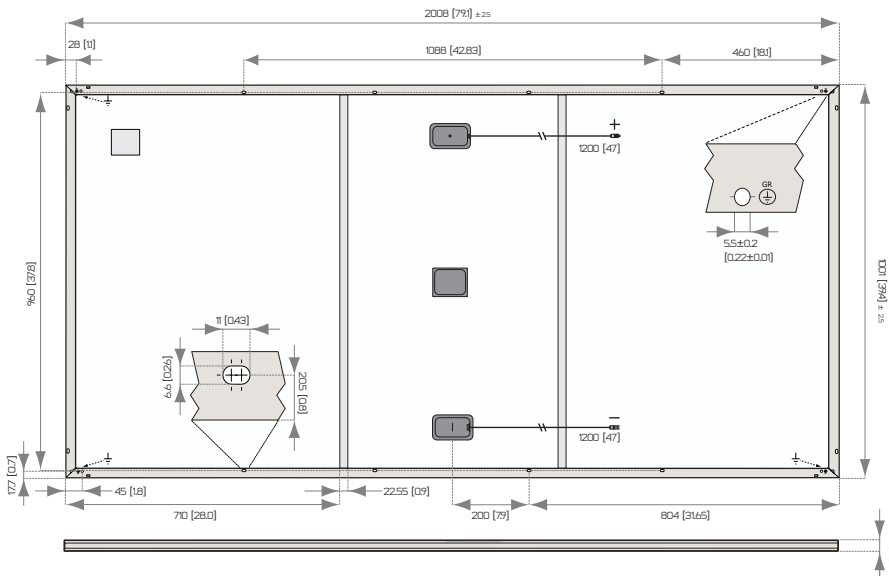
LOW LIGHT BEHAVIOUR



Specifications subject to change without notice. Ref: PM-DS-11-03-Rev- G 02.21

TECHNICAL PROPERTIES: REC TWINPEAK 3S MONO 72 SERIES

Fig. 27: Panel dimensions: REC TwinPeak 3S Mono 72 Series



Measurements in mm [in]

20.1% EFFICIENCY
20 YEAR PRODUCT WARRANTY
25 YEAR LINEAR POWER OUTPUT WARRANTY

GENERAL DATA

Cell type: 144 half-cut monocrystalline PERC cells
 6 strings of 24 cells in series
Glass: 3.2 mm solar glass with anti-reflection surface treatment
Backsheet: Highly resistant polymeric construction
Frame: Anodized aluminum
Support bars: Anodized aluminum
Junction box: 3-part, 3 bypass diodes, IP67 rated in accordance with IEC 62790
Cable: 4 mm² solar cable, 1.2 m + 1.2 m in accordance with EN 50618
Connectors: Stäubli MC4-Evo 2 PV-KBT4-EVO-2 / PV-KST4-EVO-2 (4 mm²) in accordance with IEC 62852, IP68 only when connected
 Tonglin TL-Cable01S-F (4 mm²) in accordance with IEC 62852, IP68 only when connected
Origin: Made in Singapore

ELECTRICAL DATA @ STC

Product code*: RECxxxTP3SM 72

	380	385	390	395	400	405
Power Output - P _{MAX} (Wp)	380	385	390	395	400	405
Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5	0/+5	0/+5
Nominal Power Voltage - V _{MPP} (V)	40.4	40.7	40.9	41.1	41.4	41.7
Nominal Power Current - I _{MPP} (A)	9.41	9.47	9.54	9.60	9.67	9.72
Open Circuit Voltage - V _{OC} (V)	46.9	47.2	47.6	47.9	48.2	48.6
Short Circuit Current - I _{SC} (A)	10.30	10.33	10.35	10.38	10.42	10.44
Panel Efficiency (%)	18.9	19.2	19.4	19.7	19.9	20.1

Values at standard test conditions (STC: air mass AM1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of P_{MAX}, V_{OC} & I_{SC} ±3% within one watt class. At low irradiance of 200 W/m² at least 95% of the STC module efficiency will be achieved.
 *Where xxx indicates the nominal power class (P_{MAX}) at STC indicated above, and can be followed by the suffix XV for 1500 V rated modules.

ELECTRICAL DATA @ NMOT

Product code*: RECxxxTP3SM 72

	283	287	291	294	298	302
Power Output - P _{MAX} (Wp)	283	287	291	294	298	302
Nominal Power Voltage - V _{MPP} (V)	37.6	37.9	38.1	38.3	38.5	38.8
Nominal Power Current - I _{MPP} (A)	7.53	7.58	7.63	7.68	7.73	7.78
Open Circuit Voltage - V _{OC} (V)	43.7	44.0	44.3	44.6	44.9	45.3
Short Circuit Current - I _{SC} (A)	8.24	8.26	8.28	8.31	8.34	8.35

Nominal module operating temperature (NMOT: air mass AM1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s).
 *Where xxx indicates the nominal power class (P_{MAX}) at STC indicated above, and can be followed by the suffix XV for 1500 V rated modules.

CERTIFICATIONS

IEC 61215:2016, IEC 61730:2016, UL 61730	
IEC 62804	PID
IEC 61701	Salt Mist
IEC 62716	Ammonia Resistance
IEC 62782	Dynamic Mechanical Load
IEC 61215-2:2016	Hailstone (35mm)
ISO 14001:2004, ISO 9001:2015, OHSAS 18001:2007, IEC 62941	



WARRANTY

20 year product warranty
 25 year linear power output warranty
 Max. performance degradation of 0.5% p.a. from 97.5% in year 1
 See warranty conditions for further details.

MAXIMUM RATINGS

Operational temperature: -40 ... +85°C
 Maximum system voltage: 1000 V / 1500 V
 Maximum test load (front): +5400 Pa (550 kg/m²)*
 Maximum test load (rear): -2400 Pa (244 kg/m²)*
 Max series fuse rating: 25 A
 Max reverse current: 25 A

* See installation manual for mounting instructions.
 Design load = Test load / 1.5 (safety factor)

TEMPERATURE RATINGS*

Nominal Module Operating Temperature: 44.6°C (±2°C)
 Temperature coefficient of P_{MAX}: -0.34 %/°C
 Temperature coefficient of V_{OC}: -0.26 %/°C
 Temperature coefficient of I_{SC}: 0.04 %/°C
 *The temperature coefficients stated are linear values

MECHANICAL DATA

Dimensions: 2008 x 1001 x 30 mm
 Area: 2.01 m²
 Weight: 22.3 kg

ANNEX 1: INSTALLATIONS ON WATER PLATFORMS

The REC solar panels covered by this manual may be installed on water platform-type mounting systems (note that the certification testing of solar panels does not include testing on these types of systems). When installing REC solar panels on fixed position (e.g., anchored) water platforms, for example, floating pontoons, follow the instructions below specific to such applications. Failure to do so will invalidate the warranty.

i NOTE

For all installations on water platforms, first advise REC before the start of installation in case of any site specific instructions or constraints.

INSTALLATION ENVIRONMENT

i) Installation site

- REC solar panels may only be installed on closed bodies of fresh water where water salinity does not exceed 25 mS/cm at 25°C (15 PSU). This specifically excludes mounting on sea and ocean applications.
- The maximum permitted wave height must not exceed 1 m from the crest to the trough of the wave.

ii) Floating platforms

- When using a floating platform, follow the manufacturer's instructions regarding installation, maintenance, inspection and cleaning at all times.

iii) Minimum installation height

- The minimum installation height of REC solar panels on floating platform systems is 15 cm and is defined as the height between the water surface and the lowest edge/part of the panel during normal operation. This will help to shield the panel from direct water spray.

INSTALLATION INSTRUCTIONS

i) System installation

- All cables used for the installation must have sufficient length and slack to prevent damage due to water level changes and wave motions.

i NOTE

Negative system grounding is required for REC solar panels installed on a floating platform.

ii) Mounting panels

- Installation of REC solar panels must be in accordance with the aforementioned standard mounting instructions.
- The junction box should be oriented as far as possible from the water surface according to system design and the junction box, cables and connectors must be protected from direct water splash.
- The installation must allow for sufficient spacing between individual panels, in order to avoid all contact as caused by the natural movement and flexing of the floating structure.

iii) Panel protection

- In areas with high avian activity, additional bird repelling devices may be installed as long as they do not adversely affect system performance, e.g., shading or to the local environment etc.
- If using lightning protection equipment on the floating installation, all relevant local regulations must be respected.

MAINTENANCE

- Regularly inspect the installation to ensure all panels are securely mounted.

i NOTE

For installations with high avian activity, system cleaning may be required at more frequent intervals to reduce shading of panels caused by bird defecation.

SAFETY

- Immediately disconnect the system if the installation or the floating platform exhibits deviation from standard operating conditions.
- In the event of the floating platform being submerged, disconnect the DC connection at the inverter immediately. Do not attempt to salvage panels when sunlight is present.

ANNEX 2: INSTALLATIONS USING MODULE LEVEL POWER ELECTRONICS

This section is applicable to all REC products referred to in this installation manual.

Module Level Power Electronics (MLPE) is the name given to the range of panel-level components that can be installed in PV system circuits installed on or in buildings to reduce shock hazard for emergency responders. MLPE devices can be supplied pre-installed by panel manufacturers or as a 'retro-fit' system made by third-party manufacturers.



MLPE devices may be used on REC solar panels where desirable or mandatory (note that the certification testing of solar panels does not include testing with MLPE devices). When installing an MLPE device on an REC solar panel, follow the instructions provided by the device manufacturer and the instructions specific for REC solar panels given below. Failure to follow the manufacturer and the REC instructions may invalidate the warranty.

INSTALLATION

i) Installation

- MLPE devices are suitable for use wherever solar panels are suitable for installation. Observe any limitations set by the MLPE manufacturer. (e.g., minimum mounting gap between MLPE and rooftop).
- When attaching an MLPE device to a solar panel, it must be secured to the panel frame. Follow MLPE manufacturer instructions to ensure optimum mounting of MLPE device and prevent any slippage during operation.
- MLPE devices may also be attached to the mounting construction. In such cases, refer to the instructions provided by the manufacturer.
- Wherever possible, the installation of the MLPE device should not cover the product label on the rear of the panel.
- MLPE devices may only be installed on REC solar panels in the areas shown in the diagram below (fig. 28 & 29):

Fig. 28: REC 60-cell panels MLPE device installation zones

-  Installation of MLPE device in the green zone is permitted.
-  Installation of MLPE device in the red zone is not permitted.

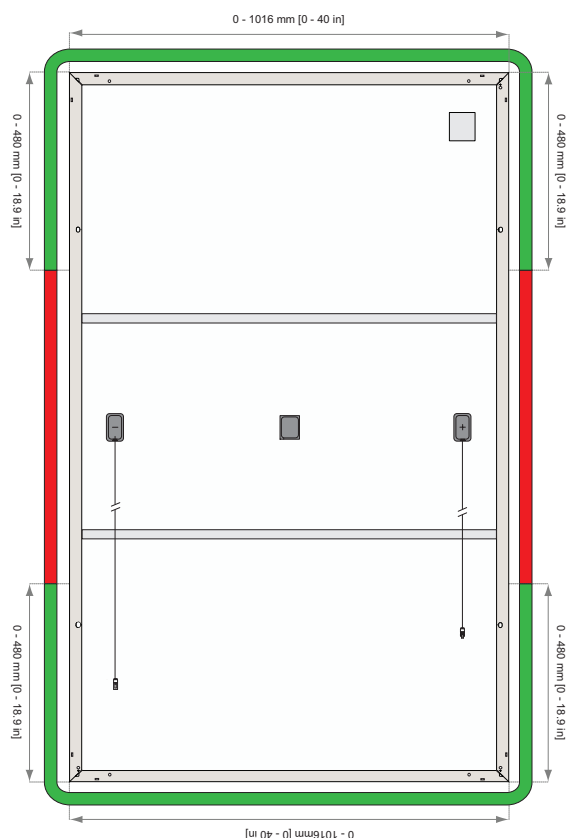
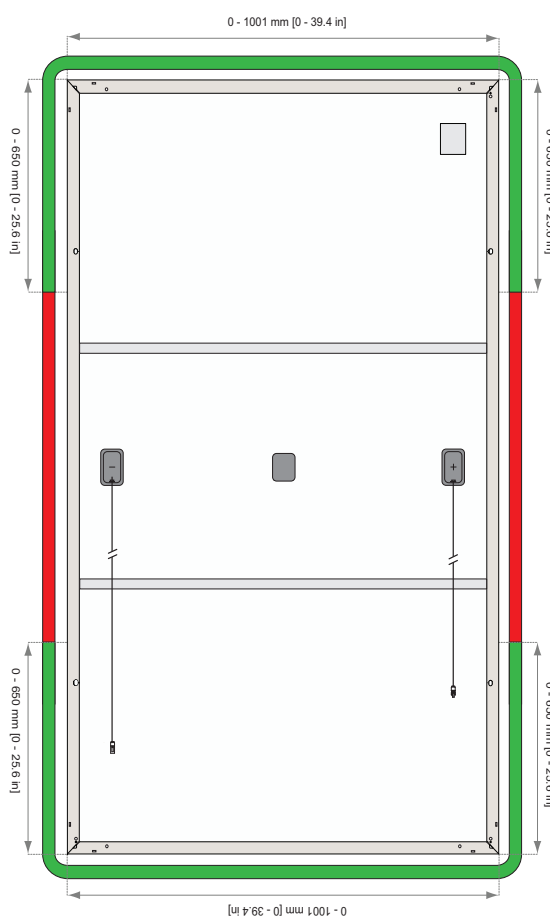


Fig. 29: REC 72-cell panels MLPE device installation zones



CAUTION

- To avoid damage to the panel and to allow for thermal expansion, there must be a minimum gap of 0.1 in (2.5 mm) between the MLPE device and the panel backsheet.
- The mounting holes in the panel frame must not be used for the installation of MLPE devices.
- The drilling of extra holes in the frame is not permitted and will invalidate the panel warranty.

CONNECTION


- First ensure the installation of the MLPE device is secure and safe.
- Following the device manufacturer's instructions to connect the cables from the MLPE device to the solar panel correctly (usually positive to positive [+ to +] and negative to negative [- to -]).
- Connection to the next panel in the array should be done from the 'free' cables.

SAFETY

- Immediately disconnect the device if there is a problem during installation.

EC Declaration of Conformity



<i>Issuer's name and address:</i>	REC SOLAR PTE. LTD. 20 Tuas South Avenue 14 SINGAPORE 637312 SINGAPORE					
<i>Product:</i>	Crystalline silicon terrestrial photovoltaic modules					
<i>Type designation:</i>	RECxxxTP2* RECxxxTP2S 72* RECxxxTP3* RECxxxTP3S 72* RECxxxNP* RECxxxAA* RECxxxAA 72*	REC TwinPeak 2* Series; REC TwinPeak 2S 72* Series; REC TwinPeak 3* Series; REC TwinPeak 3S 72* Series; REC N-Peak* Series; REC Alpha* Series; REC Alpha 72* Series;				
<p>* indicates type/name can include any of the suffixes: BLK, BLK2, Black, XV, Mono (M in product code), e.g., RECxxxTP2SM 72 XV; REC TwinPeak 2S Mono 72 XV.</p>						
<p>The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:</p> <p style="text-align: center;">2014/35/EU</p> <p>"Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits".</p> <p>The technical documentation and full compliance with the standards listed below proves the conformity of the product with the requirements of the above-mentioned EC Directive and its conformity with the safety requirements of the EC Low-Voltage Directive 2014/35/EU.:</p> <p style="text-align: center;"> DIN EN 61215 (VDE 0126-31-1):2017-05; EN 61215-1:2016 DIN EN 61215 -1-1 (VDE 0126-31-1-1):2018-06; EN 61215-1-1:2016 DIN EN 61215-2 (VDE 0126-31-2/A1):2019-02; EN 61215-2:2017+AC:2017+AC:2018 DIN EN IEC 61730-1 (VDE 0126-30-1):2018-10; EN IEC 61730-1:2018+AC:2018 DIN EN IEC 61730-2 (VDE 0126-30-1):2018-10; EN IEC 61730-1:2018+AC:2018 IEC 61215-1:2016 IEC 61215-1-1:2016 IEC 61215-2:2016 IEC 61215-2:2016 IEC 61730-1:2016 </p> <p><i>Remark:</i> The VDE Testing and Certification Institute, Merianstr. 28, 63069 Offenbach (Germany), has tested and certified the product(s) according to these standards.</p> <table style="width: 100%;"> <tr> <td style="width: 50%;"><i>Certificate No.</i></td> <td>40046983</td> </tr> <tr> <td><i>File Reference</i></td> <td>5017538-3972-0001 / 275052</td> </tr> </table> <p>This declaration is issued under the sole responsibility of the manufacturer and loses its validity if the product is misused or modified without proper authorization from REC.</p> <div style="text-align: right; margin-top: 20px;">  Wee Kay Hwa – Chief Operating Officer Singapore, September 01, 2020 </div>			<i>Certificate No.</i>	40046983	<i>File Reference</i>	5017538-3972-0001 / 275052
<i>Certificate No.</i>	40046983					
<i>File Reference</i>	5017538-3972-0001 / 275052					

DOCUMENT HISTORY

Date	Revision	Reason
09.2017	A	First release of combined installation manual for all REC 60-cell solar panels
11.2017	B	Textual updates
06.2018	C	Addition of REC TwinPeak 2 Mono, updates to panel storage instructions, text updates to clamp positions
01.2019	D	Update to warranty conditions
08.2019	E	Updated Datasheets
01.2020	F	Updated Datasheets
06.2020	G	Updated Installation Manual Layout, removed REC Peak Energy Series, inclusion of REC N-Peak Series
09.2020	H	Addition of REC TwinPeak 3 Mono Series and REC TwinPeak 3 Mono Black Series, minimum required torque for clamping
12.2020	I	Addition of 72-cell REC panels
03.2021	J	Updated Datasheets
06.2021	K	Addition of REC TwinPeak 4 Series and removal of REC TwinPeak 2 Series and REC TwinPeak 2S Mono 72 Series



REC SOLAR PTE. LTD.
20 TUAS SOUTH AVENUE 14
SINGAPORE 637312
Tel: +65 6495 9228
Mail: post@recgroup.com

www.recgroup.com

SOLAR'S MOST TRUSTED



REC TWINPEAK PANELS

WARRANTY CONDITIONS

GARANTIEBEDINGUNGEN

CERTIFICADO DE GARANTÍA

CERTIFICAT DE GARANTIE

CERTIFICATO DI GARANZIA

CERTYFIKAT GWARANCJI

太陽電池モジュール

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Limited Warranty Certificate for REC TwinPeak solar panels¹ (Limited Warranty) (valid as of October 1, 2018)

This Limited Warranty covers all the above named REC solar panels (as defined above¹) delivered to REC customers on or after October 1, 2018², and is valid in all member states of the European Union, the European Economic Area, countries belonging to the Eastern European Group³ and further countries as listed below⁴.

REC SOLAR PTE. LTD. (hereafter the 'Warrantor' or 'REC') issues the following voluntary warranty to the end-user who purchased the Product in one of the states mentioned above and put the Product into use for the first time (the 'Original End-User'). In addition to the rights under this Limited Warranty, the Original End-User may be entitled to statutory warranty rights under applicable national laws which shall not be affected or limited in any way by this Limited Warranty.

I. Product Warranty

Subject to the terms and conditions of this Limited Warranty, for a period of 20 years⁵ from the date of purchase by the Original End-User (not exceeding a maximum period of 20.5 years⁶ from the date of production as identified on the Product), REC warrants that the Products:

- Are free from defects in material and workmanship if installed and used in accordance with the installation instructions available to download from www.recgroup.com; and
- Will remain safe and operational if cable and connector plugs are installed professionally and are not permanently positioned in water; provided however, that damage to the cable caused by abrasion on a rough surface due to insufficient fixing or to unprotected running of the cable over sharp edges is excluded. Damage caused by animals is also excluded; and
- Will not experience freezing up of the aluminum frames if installed correctly.

The outer appearance of the Product, including scratches, stains, rust, mould, discoloration and other signs of normal wear and tear, which occurred after delivery or installation, do not constitute defects, provided the functionality of the Product is not affected. Glass breakage constitutes a defect only if not caused by any external influence.

If a defect (or serial defect⁷) occurs during the Warranty Period affecting the functionality of the Product, REC will, at its sole option:

- Repair the defective Product; or
- Replace the Product with an equivalent product; or
- Refund the current market price of an equivalent product at the time of the claim.

II. Performance Warranty

Subject to the terms and conditions of this Limited Warranty, REC warrants that the actual power output (performance) of the Product will reach at least 97.5% of the nameplate power output specified on the Product during the first year (calculated from the date of production as identified on the Product). From the second year, the actual power output will decline annually by no more than 0.7% for a period of 24 years, so that by the end of the 25th year, an actual output of at least 80.7% of the nameplate power output specified on the Product will be achieved.

In the case of the REC TwinPeak 4 and REC TwinPeak 5 panels, REC warrants that the actual power output (performance) of the Product will reach at least 98 % of the nameplate power output specified on the Product during the first year (calculated from the date of production as identified on the Product). From the second year, the actual power output will decline annually by no more than 0.5 % for a period of 24 years, so that by the end of the 25th year, an actual output of at least 86 % of the nameplate power output specified on the Product will be achieved.

This Performance Warranty covers only reduced performance due to natural degradation of the glass, the solar cell, the embedding foil, the junction box and interconnections under normal use.

If the Product does not reach the warranted power output levels set out above when measured by the Warrantor or by an accredited independent measuring institute⁸ agreed to prior to testing by the Warrantor, under standard test conditions (IEC 61215) and taking into account a ± 3 % tolerance range, then REC will, at its sole option:

- Repair the Product; or
- Replace the Product with an equivalent product or to supply additional panels as necessary to achieve the warranted percentage of specified power output; or
- Refund the current market price of an equivalent product at the time of the claim.

¹ Including product variants with one or more of the suffixes: Black, BLK, BLK2, Mono, Q2, and excluding panels showing Q3, as part of the product name.

² This warranty is also valid for products delivered to REC customers before October 1, 2018, which were held in stock by the customer, and were commissioned after October 1, 2018, on installations of less than 500 kW size only. In such cases, proof of system commissioning must accompany the claim submission.

³ As defined by the regional groups of Member States to the United Nations General Assembly (www.un.int).

⁴ This Limited Warranty also includes the countries of Andorra, Israel, Liechtenstein, Monaco, San Marino, Switzerland, Turkey, the U.K., and the Vatican City...

⁵ This may be extended for additional 5 years subject to the prevailing conditions of the REC Solar Certified Professional Program. For more information on products, installation types & installers qualified for that extension see: www.recgroup.com/rcsp.

⁶ 25.5 years in the case of prevailing footnote⁵

⁷ Serial defects can only be confirmed by REC as a serial defect event in accordance with REC standards of serial defects.

⁸ Examples: Fraunhofer ISE, TÜV Rheinland, UL or equivalent as discussed and agreed by REC prior to testing.

III. Warranty Conditions, Limitations and Exclusions

1. This Limited Warranty is not transferable by the Original End-User, except to a subsequent owner of the solar power facility at which the Product was originally installed and remains installed, provided that this solar power facility has not been altered in any way or moved from the structure or property at which it was originally installed.
2. Notification of a warranty claim hereunder must be given without undue delay after detection of the defect and prior to the expiration of the applicable Warranty Period and in accordance with the procedure as set out in section IV below.
3. **Please note that this Limited Warranty does not cover, nor will the Warrantor reimburse, any on-site labor or other costs incurred in connection with the de-installation or removal of defective Products, transport or the re-installation of replaced or repaired Products or any components.⁹**
4. The Warrantor may use remanufactured or refurbished parts or products when repairing or replacing any Products under this Limited Warranty. Any exchanged or replaced parts or Products will become the property of REC. The Warranty Periods set out in sections I. and II. above will not be extended in any way in the event of a replacement or repair of a Product.
5. This Limited Warranty requires that the Product is installed according to the latest safety, installation and operation instructions provided by REC and does not apply to damage, malfunction, power output or service failures which have been caused by: (a) repair, modifications or removal of the Product by someone other than a qualified service technician; (b) any improper attachment, installation or application of the Product or (c) abuse, misuse, accident, negligent acts, power failures or surges, lightning, fire, flood, accidental breakage, actions of third parties and other events or accidents outside REC's reasonable control and/or not arising under normal operating conditions.
6. This Limited Warranty is provided voluntarily and free of charge and does not constitute an independent guarantee. Therefore, if any defect materially affects the functionality of the Product or results in a power output below the warranted levels, the Original End-User's remedies are limited exclusively to the remedies set out under sections I. and II. in the warranty cases specified herein. REC assumes no warranties, express or implied, other than the warranties made herein and specifically disclaims all other warranties, merchantability or fitness for a particular purpose. REC excludes all liabilities for any special, incidental, consequential or punitive damages from the use or loss of use of the Products to perform as warranted; including but not limited to damages for loss of power, lost profits or savings nor expenses arising from third-party claims. This does not apply to the extent the Warrantor is liable under applicable mandatory product liability laws or in cases of intent or gross negligence on the part of the Warrantor.
7. This Limited Warranty shall be governed by and construed in accordance with the laws of Germany irrespective of its choice of law principles. The United Nations Convention on Contracts for the International Sale of Goods (1980) shall not apply to or govern this Limited Warranty or any aspect of any dispute arising there from. REC hereby irrevocably submits to the jurisdiction of the courts of Germany for the determination of any disputes arising under this Limited Warranty.

IV. Warranty Claim Procedure

Claims under this Limited Warranty must be made by notifying the authorized distributor or seller where the Product was first purchased. A claim may be registered at:

www.recgroup.com/claims

Contact details for REC global distribution partners can be found at:

www.recgroup.com/distributors

Once a claim has been submitted, it will be handled by the REC Regional Office, details of which can be found at:

www.recgroup.com/contact

For a warranty claim to be processed, proof of the original purchase of the Product and any subsequent sales including transfer of this Warranty need to accompany the claim. The claim must include a description of the alleged defect(s) as well as the Product's serial number(s). Prior to returning any Products or components to REC, an RMA (Return Merchandise Authorization) number is required, which may be obtained by contacting REC via the aforesaid address.

This warranty is valid for Products delivered to REC customers on or after October 1, 2018.

This warranty is given by: REC Solar Pte. Ltd., 20 Tuas South Avenue 14, Singapore 637312, Tel: +65 64959228



⁹ Further warranty extensions may be given through REC Certified Solar Professional installers according to the conditions of the REC ProTrust Warranty package. See www.recgroup.com/protrust for further details.

Garantiebedingungen für REC TwinPeak Solarmodule¹ (gültig ab 1. Oktober 2018)

Diese Herstellergarantie gilt für alle oben angegebene REC-Solarmodule mit einem Lieferdatum zum REC-Kunde ab 1. Oktober 2018² in allen Mitgliedsstaaten der Europäischen Union (EU), des Europäischen Wirtschaftsraums (EWR) sowie in der Schweiz, Länder der Regionalgruppe Osteuropa (EEG)³ und weitere Länder wie unten angegeben⁴.

REC SOLAR PTE. LTD. (nachstehend der „Garantiegeber“ oder „REC“) gewährt dem Endnutzer, der das Produkt in einem der oben genannten Staaten erworben und erstmals in Gebrauch genommen hat (der „ursprüngliche Endnutzer“) folgende freiwillige Herstellergarantie. Darüber stehen dem ursprünglichen Endnutzer möglicherweise gesetzliche Gewährleistungsansprüche aufgrund nationalen Rechts gegen REC oder Dritte zu, die durch diese Garantie nicht beeinträchtigt oder beschränkt werden.

I. Produktgarantie

Nach Maßgabe der Bestimmungen der vorliegenden Garantie garantiert REC, für einen Zeitraum von 20 Jahren⁵ ab Datum des Erwerbs durch den ursprünglichen Endnutzer, (höchstens aber von 20,5 Jahren⁶ ab auf dem Produkt angegebenen Produktionsdatum (die „Garantiezeit“)) dass die Produkte

- frei von Material- und Verarbeitungsfehlern sind, wenn sie gemäß den Installationsanweisungen installiert und verwendet wurden, die von www.recgroup.com heruntergeladen werden können; und
- sicher und betriebsbereit bleiben, wenn Kabel und Stecker sachgemäß installiert wurden und nicht auf Dauer mit Wasser in Berührung kommen; allerdings sind Schäden am Kabel von der Garantie ausgeschlossen, die wegen nicht ausreichender Befestigung oder ungeschützter Führung des Kabels über scharfe Kanten durch Abrieb auf einer rauhen Oberfläche verursacht wurden. Ausgeschlossen sind auch von Tieren verursachte Schäden; und
- der Aluminiumrahmen, der bei ordnungsgemäßer Installation in Kombination mit Frost ohne Schaden bleibt.

Die äußere Erscheinung des Produkts, darunter Kratzer, Flecken, Rost, Schimmel, Verfärbung oder andere Anzeichen normalen Verschleißes stellen keine Mängel im Rahmen dieser Garantie dar, solange die Funktionsfähigkeit des Produkts dadurch nicht beeinträchtigt wird. Glasbruch gilt nur dann als Mangel, wenn er nicht durch externe Faktoren verursacht wurde.

Tritt während der Garantiezeit ein Mangel (oder Serienfehler⁷) auf, der die Funktionsfähigkeit des Produkts beeinträchtigt, kann REC nach eigener Wahl

- das mangelhafte Produkt reparieren; oder
- das Produkt durch ein gleichwertiges Produkt ersetzen; oder
- den zum Zeitpunkt der Anspruchsstellung aktuellen Marktpreis eines gleichwertigen Produkts erstatten.

II. Leistungsgarantie

Nach Maßgabe der nachfolgenden Bestimmungen garantiert REC, dass die tatsächliche Ausgangsleistung des Produkts während des ersten Jahres (ab dem auf dem Produkt angegebenen Herstellungsdatum) mindestens 97,5 % der auf dem Typenschild des Produkts aufgeführten Nennleistung erreicht. Ab dem zweiten Jahr geht die tatsächliche Ausgangsleistung über einen Zeitraum von 24 Jahren um jährlich nicht mehr als 0,7 % zurück, so dass am Ende des 25. Jahres eine tatsächliche Ausgangsleistung von mindestens 80,7 % der auf dem Typenschild des Produkts aufgeführten Ausgangsleistung erreicht wird.

Im Falle des REC TwinPeak 4 und REC TwinPeak 5 Module, garantiert REC, dass die tatsächliche Ausgangsleistung des Produkts während des ersten Jahres (ab dem auf dem Produkt angegebenen Herstellungsdatum) mindestens 98 % der auf dem Typenschild des Produkts aufgeführten Nennleistung erreicht. Ab dem zweiten Jahr geht die tatsächliche Ausgangsleistung über einen Zeitraum von 24 Jahren um jährlich nicht mehr als 0,5 % zurück, so dass am Ende des 25. Jahres eine tatsächliche Ausgangsleistung von mindestens 86 % der auf dem Typenschild des Produkts aufgeführten Ausgangsleistung erreicht wird.

Ansprüche aufgrund dieser Leistungsgarantie oder durch eine vor den Messungen vom Garantiegeber unabhängiges akkreditiertes Testlabor⁸ nicht die oben genannten garantierten Ausgangsleistungswerte unter Standardtestbedingungen (IEC 61215) sowie bei Berücksichtigung eines Toleranzbereichs von $\pm 3\%$, kann REC nach eigener Wahl

- das Produkt reparieren; oder
- das Produkt durch ein gleichwertiges Produkt ersetzen oder zusätzliche, für die Erreichung des garantierten Prozentsatzes der Ausgangsleistung der Solaranlage erforderliche Produkte liefern; oder
- den zum Zeitpunkt des Anspruchs aktuellen Marktpreis eines gleichwertigen Produkts erstatten.

¹ Inklusive Produktvarianten mit Black, BLK, BLK2, Mono, Q2 als Teil des Namens; Module mit Q3 als Teil des Namens sind ausgeschlossen.

² Diese Garantie gilt auch für Lieferungen vor dem 1. Oktober 2018 an den REC-Kunden, die bei dem Kunden auf Lager gehalten wurden, und die nach dem 1. Oktober 2018 kommissioniert wurden, sofern die Installation 500 kW nicht überschreitet. In diesen Fällen ist der Unterlagen unter Punkt IV ein Nachweis der Kommissionierung hinzuzufügen.

³ Wie in den regionalen Gruppen der Mitgliedsstaaten zur Generalversammlung der Vereinten Nationen definiert (www.un.int).

⁴ Diese Garantie gilt auch für die folgende Länder: Andorra, Israel, Liechtenstein, Monaco, San Marino, die Schweiz, Vereinigte Königreich, die Türkei und die Vatikanstadt. Diese Garantie kann um weitere 5 Jahre zu den gegebenen Bedingungen des REC Certified Solar Professional Programms erweitert werden. Weitere Informationen zu Produkten, Installationstypen und qualifizierten Installateuren für diese Erweiterung finden Sie unter: www.recgroup.com/rcsp.

⁵ 25,5 Jahre, sollte die Fußnote ⁵ anwendbar sein.

⁶ Ein Serienfehler kann nur durch die REC-interne Testverfahren und -kriterien bestätigt werden.

⁸ Beispiele: Fraunhofer ISE, TÜV Rheinland, UL oder vergleichbare Prüflabore, welche vorab mit REC abzustimmen sind.

III. Garantiebedingungen, Beschränkungen und Ausschlüsse

1. Diese Herstellergarantie kann vom ursprünglichen Endnutzer ausschließlich an nachfolgende Eigentümer derselben Solaranlage übertragen werden, in die das Produkt ursprünglich eingebaut war und eingebaut bleibt, vorausgesetzt diese Solaranlage wurde nicht verändert oder aus der Anlage oder dem Anwesen entfernt, in die/das sie ursprünglich eingebaut war.
2. Ein Anspruch aus dieser Garantie muss unverzüglich nach der Entdeckung des Mangels und vor Ablauf der geltenden Garantiefrist gemäß dem im nachstehenden Abschnitt IV beschriebenen Verfahren geltend gemacht werden.
3. **Diese Herstellergarantie deckt keine Kosten für Arbeiten im Zusammenhang mit dem Ausbau defekter Produkte, mit dem Transport oder dem Wiedereinbau von ausgetauschten oder reparierten Produkten oder Komponenten. Eine Erstattung solcher Kosten durch den Garantiegeber ist ausgeschlossen.⁹**
4. Der Garantiegeber kann bei der Reparatur oder dem Austausch von Produkten im Rahmen dieser eingeschränkten Herstellergarantie überarbeitete oder überholte Teile oder Produkte verwenden. Ausgetauschte oder ersetzte Teile oder Produkte gehen in das Eigentum von REC über. Die oben in Abschnitt I. und II. genannten ursprünglichen Garantiezeiten verlängern sich bei Austausch oder Reparatur eines Produkts nicht.
5. Ansprüche aufgrund dieser Herstellergarantie setzen voraus, dass das Produkt gemäß den jeweils aktuellen Sicherheits-, Installations- und Betriebsanweisungen von REC installiert wurde; die Garantie gilt nicht bei Schäden, Fehlfunktionen, zu geringer Ausgangsleistung oder Betriebsausfällen, die durch folgende Umstände verursacht wurden: (a) Reparatur, Veränderungen am oder Ausbau des Produkts durch andere als qualifizierte Servicetechniker; (b) unsachgemäße Installation, Befestigung oder Verwendung des Produkts, oder (c) Missbrauch, unsachgemäßer Gebrauch, Unfälle, Fahrlässigkeit, Stromausfälle oder Stromstöße, Blitzschlag, Feuer, Überschwemmung, Unfallschäden, Handlungen Dritter oder sonstige Ereignisse, die außerhalb der Kontrolle des Garantiegebers liegen und/oder unter normalen Betriebsbedingungen nicht auftreten.
6. Diese Herstellergarantie wird freiwillig und unentgeltlich erteilt und stellt keine unabhängige Garantie dar. Wenn ein Mangel daher die Funktionsfähigkeit des Produkts in erheblicher Weise beeinträchtigt oder zu einer Ausgangsleistung unterhalb der garantierten Werte führt, sind die Ansprüche des ursprünglichen Endnutzers ausschließlich auf die in Abschnitt I. und II. genannten Abhilfemaßnahmen unter den dort genannten Bedingungen beschränkt. REC übernimmt mit Ausnahme der hier ausdrücklich genannten keine weiteren Garantien und schließt insbesondere jede andere Gewährleistung oder Garantie für eine bestimmte Beschaffenheit oder für die Eignung für eine bestimmte Verwendung aus. Schadensersatzansprüche wegen Mängeln sind ausgeschlossen, es sei denn, diese beruhen auf Vorsatz bzw. grober Fahrlässigkeit von REC oder es handelt sich um Personenschäden. Die Haftung für Folgeschäden oder mittelbare Schäden, insbesondere für entgangenen Gewinn aufgrund eines Leistungsverlusts der Produkte oder für unterbliebene Einsparungen oder Kosten, die aus Ansprüchen Dritter entstanden sind, ist ausgeschlossen. Bei Vorsatz, Ansprüchen nach dem Produkthaftungsgesetz sowie bei Personenschäden haftet REC nach den gesetzlichen Vorschriften.
7. Diese Herstellergarantie unterliegt ausschließlich deutschem materiellem Recht (unter Ausschluss des Kollisionsrechts). Das Übereinkommen der Vereinten Nationen über den internationalen Warenkauf (1980) ist ausgeschlossen. Vorbehaltlich eines abweichenden ausschließlichen Gerichtsstandes akzeptiert REC für alle Rechtsstreitigkeiten aus oder im Zusammenhang mit dieser eingeschränkten Herstellergarantie als Gerichtsstand München/Deutschland.

IV. Verfahren bei Garantieansprüchen

Ansprüche aus dieser Herstellergarantie sind durch Benachrichtigung des Vertragshändlers oder Verkäufers geltend zu machen, bei dem das Produkt erstmals erworben wurde. Ein Anspruch kann auch unter folgender Internet-Adresse geltend gemacht werden:

www.recgroup.com/claims

Kontaktinformation zu REC Distributionspartnern weltweit sind unter folgendem Link zu finden:

www.recgroup.com/distributors

Nach offizielle Anmeldung der Reklamation, wird diese von der regionalen REC Niederlassung bearbeitet und die Kontaktdaten finden sie unter:

www.recgroup.com/contact

Damit ein Garantieanspruch bearbeitet werden kann, müssen der Originalkaufbeleg des Produkts und Nachweise aller Weiterverkäufe einschließlich der Weitergabe dieser Garantie eingereicht werden. Der Anspruch muss eine Beschreibung der behaupteten Mängel sowie die Seriennummer(n) des Produkts enthalten. Vor der Rückgabe von Produkten oder Komponenten an REC muss eine Warenrücksendegenehmigungsnummer (RMA - Return Merchandise Authorization) angefordert werden, die unter obiger Adresse bei REC erhältlich ist.

Diese Garantie gilt für Produkte, die seit dem 1. Oktober 2018 geliefert worden sind.

Diese Garantie ist ausgegeben von: REC Solar Pte. Ltd., 20 Tuas South Avenue 14, Singapur 637312, Tel.: +65 64959228



Diese deutsche Version der Garantie ist lediglich eine Übersetzung der englischen Originalversion. Rechtlich verbindlich ist daher nur die englische Version.

⁹ Weitere Garantieverlängerungen können durch REC Certified Solar Professional Installateure gemäß den Bedingungen des REC ProTrust-Garantiepakets gewährt werden. Siehe www.recgroup.com/protrust für weitere Einzelheiten.

Certificado de garantía limitada para los módulos REC TwinPeak¹

(válida a partir del 1 de octubre de 2018)

Esta garantía es válida para todos los productos REC (según lo definido anteriormente) entregados a partir del 1 de octubre de 2018² en todos los Estados miembro de la Unión Europea, en el Espacio Económico Europeo, los estados del Grupo regional de Europa Occidental³ y los estados indicados a continuación⁴.

REC SOLAR PTE. LTD. (en lo sucesivo, el «garante» o «REC») concede la siguiente garantía voluntaria al usuario final que adquiera el producto en un estado mencionado anteriormente y que utilice el producto por primera vez (en lo sucesivo, el «usuario final original»). Además de los derechos que concede la presente garantía limitada, el usuario final original puede tener otros derechos de garantía en virtud de la legislación nacional vigente que no se verán afectados ni limitados de ningún modo por esta garantía.

I. Garantía del producto

REC garantiza durante un periodo de 20 años⁵ a partir de la fecha de compra por parte del usuario final original (siempre y cuando no se sobrepase un periodo máximo de 20,5 años⁶ desde la fecha de fabricación indicada en el producto) (el «periodo de garantía»), según las condiciones de la presente garantía limitada, que los productos:

- No presentarán defectos materiales ni de fabricación si se instalan y utilizan de acuerdo con las instrucciones de instalación que pueden descargarse de la web www.recgroup.com; y
- Serán seguros y permanecerán en funcionamiento si el cable y los conectores se han instalado de un modo profesional y no están permanentemente en contacto con agua; siempre y cuando se excluyan los daños en el cable provocados por la abrasión en una superficie rugosa debido a una fijación insuficiente o al desplazamiento sin protección del cable sobre bordes afilados. También quedan excluidos los daños provocados por animales; y
- Los marcos de aluminio no se deformarán por efectos de congelación del agua en el interior si se han instalado correctamente siguiendo las instrucciones de nuestro Manual de Instalación.

La apariencia externa del producto, incluidos arañazos, manchas, óxido, moho, decoloración u otros signos de desgaste normal que aparezcan tras la entrega o instalación, no constituye un defecto siempre y cuando no afecte a la funcionalidad del producto. La rotura del cristal constituye un defecto sólo si no ha sido provocada por un factor externo.

Si durante el periodo de garantía aparece un defecto (o defecto de serie⁷) que afecte a la funcionalidad del producto, REC podrá, según su criterio:

- Reparar el producto defectuoso; o
- Sustituir el producto por un producto equivalente; o
- Reembolsar el precio de mercado vigente de un producto equivalente en el momento en que se produzca la reclamación.

II. Garantía de la potencia nominal

REC garantiza, según lo dispuesto en la presente garantía, que la potencia nominal real del producto llegará como mínimo al 97,5% de la potencia nominal especificada en la placa del producto durante el primer año (calculado a partir de la fecha de fabricación indicada en el producto). A partir del segundo año, la reducción anual de la potencia nominal real no superará el 0,7% durante un periodo de 24 años, de modo que al finalizar el 25º año, la potencia nominal real alcanzará como mínimo el 80,7% de la potencia nominal especificada en la placa del producto.

En el caso de los paneles REC TwinPeak 4 y REC TwinPeak 5, REC garantiza, que la potencia nominal real del producto llegará como mínimo al 98 % de la potencia nominal especificada en la placa del producto durante el primer año (calculado a partir de la fecha de fabricación indicada en el producto). A partir del segundo año, la reducción anual de la potencia nominal real no superará el 0,5 % durante un periodo de 24 años, de modo que al finalizar el 25º año, la potencia nominal real alcanzará como mínimo el 86 % de la potencia nominal especificada en la placa del producto.

Esta garantía de potencia nominal sólo cubre la reducción del rendimiento debida a una degradación natural del cristal, de la célula solar, de la lámina incrustada, de la caja de conexiones y de las interconexiones producida en caso de uso normal.

Si el producto no alcanza los niveles de potencia nominal garantizados señalados anteriormente durante una medición efectuada por el garante o por un instituto de medición reputable and independiente⁸ autorizado por el garante con anterioridad a la realización de la prueba, en las condiciones estándar de ensayo (IEC 61215) y teniendo en cuenta una tolerancia del ± 3 %, REC podrá, según su criterio:

- Reparar el producto; o
- Sustituir el producto por un producto equivalente o suministrar los módulos adicionales necesarios para llegar al porcentaje garantizado de la potencia nominal especificada; o
- Reembolsar el precio de mercado vigente de un producto equivalente en el momento en que se produzca la reclamación.

¹ Incluidas las variantes de producto con uno o más de los siguientes sufijos: Black, BLK, BLK2, Mono, Q2 y excluyendo paneles que marcan Q3 como parte del nombre del producto.

² Esta garantía también es válida para productos enviados a clientes de REC antes del 1 de octubre de 2018, los cuales fueron almacenados por el cliente y fueron instalados posterior al 1 de octubre de 2018 en instalaciones menores de 500 kW. En estos casos, habrá que justificar la ejecución de dicha instalación en el plazo mencionado junto a la reclamación.

³ Según la definición de los grupos regionales de los Estados miembros a la Asamblea General de Naciones Unidas (www.un.int).

⁴ Esta garantía limitada también es válida en Andorra, Israel, Liechtenstein, Mónaco, Reino Unido, San Marino, Suiza, Turquía y Ciudad del Vaticano

⁵ Puede ampliarse a 5 años más en función de las condiciones que prevalecen en el Programa REC Certified Solar Professionals. Para obtener más información sobre los productos, tipos de instalación e instaladores cualificados para realizar dicha ampliación, consulte: www.recgroup.com/rcsp

⁶ 25,5 años en caso de condiciones predominantes⁵

⁷ Los defectos de serie sólo pueden ser confirmados por REC para ser considerados como un defecto de serie, y deben de estar de acuerdo con los estándares de REC relativos a este tipo de defectos en la producción.

⁸ Ejemplos: Fraunhofer ISE, TÜV Rheinland, UL o laboratorio equivalente según sea acordado por REC antes de la prueba.

III. Condiciones, limitaciones y exclusiones de la Garantía

1. El usuario final original no puede transferir la presente garantía, excepto si se trata del subsiguiente propietario de la misma instalación de energía solar fotovoltaica en la cual se instaló originalmente y sigue instalado el producto, siempre y cuando dicha instalación de energía solar no se haya modificado de ningún modo ni trasladado del edificio o propiedad en la cual haya sido instalada inicialmente.
2. En virtud del presente documento, cualquier reclamación de garantía deberá notificarse sin demora tras la detección del defecto y con anterioridad al vencimiento del periodo de garantía aplicable, de conformidad con el procedimiento de tramitación de la garantía estipulado en el apartado IV que aparece más abajo.
3. **La presente garantía no cubre, y el garante no reembolsará, ningún tipo de trabajo in situ ni ningún otro coste en el que se haya incurrido en relación con el desmontaje o la retirada de productos defectuosos, con el transporte o con la reinstalación de los productos reparados o sustituidos o de cualquiera de sus componentes.**⁹
4. El garante podrá, según su criterio, utilizar piezas o productos remanufacturados o reacondicionados a la hora de reparar o sustituir el producto al que se aplica la presente garantía limitada. Todas las piezas o productos cambiados o sustituidos pasarán a ser propiedad de REC. Los periodos de garantía establecidos de acuerdo con lo dispuesto en los apartados I y II anteriores no se ampliarán en modo alguno en caso de reparación o sustitución de un producto.
5. La presente garantía requiere que el producto sea instalado siguiendo las últimas instrucciones de seguridad, instalación y funcionamiento suministradas por REC y no se aplicará a los daños, averías, fallos de potencia nominal o fallos de funcionamiento que hayan sido provocados por: (a) la reparación, modificación o retirada del producto por parte de personas ajenas a un servicio técnico certificado; (b) la mala sujeción, instalación o aplicación del producto o (c) el maltrato, mal uso, accidentes, negligencias, cortes del suministro eléctrico o subidas de tensión, rayos, incendios, inundaciones, rotura accidental, acciones de terceros y otros actos o accidentes fuera del control razonable de REC y/o que no se deriven de las condiciones normales de uso.
6. La presente garantía se ofrece de un modo voluntario y sin coste alguno y no constituye una promesa de garantía independiente. Por lo tanto, si cualquier defecto afecta materialmente a la funcionalidad del producto o produce una potencia nominal inferior a los niveles garantizados, las soluciones para el usuario final original quedan exclusivamente limitadas a las soluciones indicadas en los apartados I y II en los casos de garantía especificados en dichos apartados. REC no asume ninguna garantía, explícita o implícita, distinta a las garantías expuestas en el presente documento y renuncia expresamente a cualquier otra garantía, comercialización o adecuación a un fin concreto. REC excluye toda responsabilidad por daños, especiales, directos o indirectos, derivados de la capacidad o incapacidad del producto de funcionar según lo garantizado, incluyendo, entre otros, daños por pérdidas de potencia, beneficios o ahorros que no se hayan materializado o gastos derivados de reclamaciones de terceras partes. Este punto no se aplica en los casos en los que el garante está obligado en virtud de la legislación obligatoria de responsabilidad de producto ni en los casos de negligencia grave o intencionada por parte del garante.
7. La presente garantía se regulará e interpretará de acuerdo con la legislación de Alemania, con independencia de los principios legales seleccionados. La Convención de las Naciones Unidas sobre los Contratos de Compraventa Internacional de Mercaderías (1980) no será de aplicación ni regulará la presente garantía limitada ni ninguna controversia o litigio derivada de la misma. REC se somete irrevocablemente por la presente a la jurisdicción de los tribunales alemanos para la resolución de cualquier conflicto relacionado con esta garantía limitada.

IV. Procedimiento de reclamación de la garantía

Las reclamaciones derivadas de la presente garantía deben efectuarse mediante una notificación al distribuidor o comercio autorizado en el que se haya adquirido originalmente el producto. La reclamación debe registrarse en:

www.recgroup.com/claims

Los datos de contacto de los Distribuidores de REC a nivel global puede encontrarlos en:

www.recgroup.com/distributors

Una vez que se haya presentado una reclamación, ésta será tratada por la oficina regional de REC, cuyos datos de contacto se pueden encontrar en:

www.recgroup.com/contact

Para que una reclamación de garantía pueda ser tramitada, es imprescindible adjuntar a la reclamación un comprobante de la compra original del producto y de cualquier venta subsiguiente, incluida la transferencia de esta garantía. La reclamación debe incluir una descripción del (de los) defecto(s) por el que (los que) se reclama y el (los) número(s) de serie del producto. Antes de devolver cualquier producto o componente a REC, es necesario haber obtenido un número de autorización de devolución de mercancía o RMA (Return Merchandise Authorization). Dicho número puede obtenerse poniéndose en contacto con REC en la dirección indicada anteriormente.

La presente garantía es válida para los productos entregados a partir del 1 de octubre de 2018.

Esta garantía es otorgada por: REC Solar Pte. Ltd., 20 Tuas South Avenue 14, Singapur 637312, Tel: +65 64959228



Esta versión en castellano es una traducción de la versión original en inglés. En el caso que hubiere diferencias entre la versión traducida y la versión inglesa, la versión inglesa prevalecerá sobre la versión traducida.

⁹ Extensión de garantía a través de los instaladores REC Certified Solar Professional acorde a los términos del paquete REC ProTrust Warranty. Para más información visite www.recgroup.com/protrust.

Certificat de Garantie pour Modules REC TwinPeak¹ (À compter du 1er octobre 2018)

La Garantie est valable pour l'ensemble des Produits tels que définis ci-dessus livrés à compter du 1er octobre 2018² dans tous les états membres de l'Union Européenne (UE) et de l'Espace Économique Européen (EEE), ainsi que les pays appartenant au group régional des Etats d'Europe de l'Est (EEG)³ et autres pays définis en bas⁴.

REC SOLAR PTE. LTD. (ci-après désigné le « Garant » ou « REC ») émet la présente garantie libre destinée à l'utilisateur final ayant acquis le Produit dans un des pays mentionnés ci-dessus et ayant mis le Produit en service pour la première fois (l'« Utilisateur Final d'Origine »). Outre les droits conférés au titre de la présente Garantie, l'Utilisateur Final d'Origine peut faire valoir ses droits de garantie légale obligatoire en vertu de la législation nationale en vigueur, lesquels droits n'étant en aucune circonstance affectés ou limités par la présente Garantie.

I. Garantie relative au Produit

Sous réserve des conditions générales de la présente Garantie et pendant une durée de vingt (20) ans⁵ (la « Période de Garantie ») à compter de la date d'achat par l'Utilisateur Final d'Origine (cette durée ne pouvant excéder vingt ans et demi (20,5)⁶ à compter de la date de fabrication indiquée sur le « Produit »), REC garantit que les Produits :

- Sont exempts de tout défaut matériel ou de fabrication si le Produit a été installé et utilisé en accord avec les instructions de montage à télécharger sur le site www.recgroup.com; et
- Demeureront sûrs et opérationnels si les câbles et connecteurs sont installés de manière professionnelle et ne sont pas dans l'eau en permanence. Sont toutefois exclus les dommages causés au câble par l'abrasion sur une surface rugueuse du fait que le câble soit mal fixé ou que son circuit ne soit pas protégé des bords tranchants. Sont également exclus les dommages causés par les animaux; et
- Ne verront pas leurs cadres en aluminium geler s'ils ont été correctement installés.

L'aspect extérieur du Produit, notamment les rayures, les tâches, la rouille, les moisissures, la décoloration, et tout autre signe d'usure normale qui surviendrait après la livraison ou l'installation, ne constitue pas un défaut pourvu que la fonctionnalité du Produit n'en soit pas affectée. Le bris de verre constitue un défaut uniquement lorsqu'il n'est pas causé par un événement extérieur.

Si un défaut (ou défaut de série⁷) affectant la fonctionnalité du Produit survient pendant la Période de Garantie, REC pourra, à son entière discrétion:

- réparer le Produit défectueux; ou
- remplacer le Produit par un produit équivalent; ou
- effectuer un remboursement sur la base du prix du marché d'un produit équivalent au moment de la réclamation.

II. Garantie relative à la Production d'énergie

Conformément aux conditions générales de la présente Garantie, REC garantit que la puissance nominale réelle du Produit atteindra au moins 97,5 % de la puissance nominale indiquée sur la plaque signalétique du Produit pendant la première année (calculée à compter de la date de fabrication indiquée sur le Produit). À partir de la seconde année, la puissance nominale réelle garantie diminuera chaque année de 0,7 % uniquement sur une période de 24 ans, de sorte qu'au terme de la 25^{ème} année, la puissance réelle garantie corresponde au minimum à 80,7 % de la puissance nominale indiquée sur la plaque signalétique du Produit.

Dans le cas des panneaux REC TwinPeak 4 et REC TwinPeak 5, REC garantit que la puissance nominale réelle du Produit atteindra au moins 98 % de la puissance nominale indiquée sur la plaque signalétique du Produit pendant la première année (calculée à compter de la date de fabrication indiquée sur le Produit). À partir de la seconde année, la puissance nominale réelle garantie diminuera chaque année de 0,5 % uniquement sur une période de 24 ans, de sorte qu'au terme de la 25^{ème} année, la puissance réelle garantie corresponde au minimum à 86 % de la puissance nominale indiquée sur la plaque signalétique du Produit.

La présente Garantie relative à la Production d'énergie couvre uniquement les baisses de performances dues à la dégradation naturelle du verre, des cellules solaires, du film de revêtement, du boîtier de raccordement et des branchements dans le cadre d'un usage normal.

Si, au cours d'une mesure effectuée par le Garant ou par un institut de mesure reconnu et indépendant⁸ déterminé préalablement à l'essai réalisé par le Garant, le Produit ne fournit pas les niveaux de puissance nominale garantis spécifiés ci-dessus dans les conditions de test standardisées (IEC 61215) et en appliquant une marge de tolérance de ± 3 %, REC pourra à sa seule discrétion

- réparer le Produit; ou
- remplacer le Produit par un produit équivalent ou fournir des modules supplémentaires afin d'atteindre le pourcentage garanti de puissance nominale spécifiée; ou
- effectuer un remboursement sur la base du prix du marché d'un produit équivalent au moment de la réclamation.

¹ Y compris les variantes de produit avec un ou plusieurs suffixes : Black, BLK, BLK2, Mono, Q2, et à l'exclusion des panneaux affichant Q3, dans le nom du produit.

² Cette garantie est valable pour les produits livrés aux clients REC avant le 1er octobre 2018, qui étaient détenus en stock par le client et qui ont été mis en service après le 1er octobre 2018, sur des installations d'une puissance inférieure à 500kW. Dans tels cas, la preuve de la mise en service du système doit accompagner la soumission de la demande.

³ Selon la définition des groupes régionaux de l'Assemblée Générale des Nations Unies (www.un.int).

⁴ Cette Garantie est aussi valable en Andorre, l'Israël, le Liechtenstein, Monaco, le Royaume-Uni, Saint Marin, La Suisse, la Turquie et le Vatican.

⁵ Cette durée peut être prolongée de cinq ans selon les conditions du programme REC Certified Solar Professional. Pour plus d'informations sur les produits, les types d'installations et les installateurs ayant droit à cette extension, rendez-vous sur : www.recgroup.com/rcsp.

⁶ 25,5 ans si la note⁹ s'applique.

⁷ Un défaut de série ne peut être confirmé que par REC selon les standards internes.

⁸ Exemple: Fraunhofer ISE, TÜV Rheinland, UL ou équivalent, déterminé préalablement à l'essai réalisé par le Garant.

III. Conditions, limitations et exclusions de la Garantie

1. La présente Garantie ne peut être transférée par l'Utilisateur Final d'Origine, sauf à un propriétaire ultérieur de l'installation photovoltaïque dans laquelle le Produit a été mis en place à l'origine, et dans laquelle il est encore en place, à condition que ladite installation photovoltaïque n'ait subi aucune modification ou n'ait pas été retirée de la structure ou propriété pour laquelle elle était prévue à l'origine.
2. Toute demande en garantie au titre des présentes doit être notifiée dans les meilleurs délais après la détection du défaut et avant l'expiration de la Période de Garantie applicable, en accord avec les procédures déterminées à la section IV ci-après.
3. **Veillez noter que la présente Garantie ne couvre, et que le Garant ne rembourse, aucun coût afférent à la main d'œuvre sur site, ni aucun autre coût engagé pour la désinstallation ou la dépose des Produits défectueux, le transport ou la réinstallation de tout Produit ou composant remplacé ou réparé.⁹**
4. Le Garant se réserve le droit d'utiliser des pièces ou produits re-manufacturés ou remis à neuf en vue de la réparation ou du remplacement des Produits au titre de la présente Garantie. Tout Produit ou pièce échangé ou remplacé devient la propriété de REC. Les Périodes de Garantie définies aux sections I. et II. ci-dessus ne peuvent en aucun cas être prorogées dans l'hypothèse du remplacement ou de la réparation d'un Produit.
5. La présente Garantie exige que le Produit soit installé conformément aux instructions les plus récentes fournies par REC en matière de sécurité, d'installation et d'exploitation, et ne s'applique pas en cas de dommage, dysfonctionnement, défaillance de la puissance nominale ou défaillance technique causés par : (a) toute réparation, modification ou dépose du Produit effectuée par une personne autre qu'un technicien agréé ; (b) un raccord, une installation ou une utilisation erroné du Produit ou (c) un usage abusif ou à mauvais escient, un accident, la négligence, des pannes de courant ou surtensions, la foudre, un incendie, une inondation, un bris accidentel, les actions de tiers et tout autre événement ou accident échappant au contrôle raisonnable de REC et/ou ne survenant pas dans des conditions normales de fonctionnement.
6. La présente Garantie est concédée librement et gratuitement et ne constitue pas une garantie indépendante. Par conséquent, lorsqu'un vice affecte matériellement la fonctionnalité du Produit ou résulte en une puissance nominale en-deçà des niveaux garantis, les recours de l'Utilisateur Final d'Origine se limiteront exclusivement aux recours déterminés aux sections I. et II. dans les cas qui y sont spécifiés. REC n'assume aucune garantie, expresse ou implicite, autre que les garanties indiquées dans le cadre des présentes, et décline spécifiquement toute autre garantie de qualité marchande du produit ou d'adéquation à un besoin particulier. REC décline toute responsabilité pour tout dommage particulier, fortuit, consécutif ou punitif résultant de l'utilisation ou de la perte de jouissance des Produits, incluant notamment les dommages causés par la perte de puissance, le manque à gagner, la réduction d'économies ou les frais liés aux réclamations de tiers. Cette disposition ne s'applique pas dans la mesure où le Garant est responsable en vertu de la législation en matière de responsabilité ou en cas de faute intentionnelle ou de négligence grave de la part du Garant.
7. La présente Garantie sera régie et interprétée en accord avec le droit allemand, quels que soient les principes de droit choisis. La Convention des Nations-Unies sur les Contrats de Vente Internationale de Marchandises (1980) ne s'appliquera pas à ou ne régira en aucune circonstance la présente Garantie ou tout litige qui surviendrait en rapport avec ladite Garantie. REC élit irrévocablement la juridiction des tribunaux allemands pour résoudre tout litige qui surviendrait en rapport avec la présente Garantie.

IV. Procédure de mise en œuvre de la garantie

Toute demande en vertu de la présente Garantie se fera en notifiant le distributeur ou le vendeur autorisé chez qui le Produit a été acheté à l'origine. Une demande peut être déposée à l'adresse :

www.recgroup.com/claims

Les détails de contact pour les partenaires globaux de REC, se retrouvent sur:

www.recgroup.com/distributors

Dès qu'une demande en vertu de la Garantie a été soumise selon le procédure en-dessus, elle sera traitée par l'équipe régionale de REC; leurs coordonnées se trouvent sur:

www.recgroup.com/contact

Le justificatif de l'achat original du Produit et de toute vente ultérieure, incluant le transfert de la présente Garantie, doit accompagner la Demande de mise en œuvre de la garantie pour que celle-ci soit traitée. La demande doit inclure une description du/des défauts présumés ainsi que le(s) numéro(s) de série du Produit. Avant de renvoyer un Produit ou un composant à REC, un numéro de RMA (Autorisation de retour de marchandise) est nécessaire. Ce numéro peut être obtenu en contactant REC à l'adresse susvisée.

La présente garantie est valable pour les Produits livrés à compter du 1er octobre 2018.

Cette garantie est offerte par: REC Solar Pte. Ltd., 20 Tuas South Avenue 14, Singapour 637312, Tel: +65 64959228



Ce document a été traduit en français à partir d'un document en anglais. S'il y a des discordances entre la version en français et la version en anglais, la version en anglais prévaudra.

⁹ Des extensions de garantie supplémentaires peuvent être accordées dans le cadre du Programme REC Certified Solar Profesional en accord avec les conditions du REC ProTrust Warranty. Pour plus d'informations, rendez-vous sur « www.recgroup.com/protrust ».

Certificato di garanzia sui moduli REC TwinPeak ¹ (valida dal 1° ottobre 2018)

La presente Garanzia copre tutti i pannelli solari sopra indicati (e come definito in nota ¹) consegnati a partire dal 1° ottobre 2018² in tutti gli Stati membri dell'Unione europea, dello Spazio economico europeo e nei paesi appartenenti al gruppo dell'Est Europa³ così come nei paesi elencati in calce⁴.

REC SOLAR PTE. LTD. (qui di seguito denominata "Garante" o "REC") rilascia la presente garanzia volontaria all'utilizzatore finale che ha acquistato il Prodotto in uno dei Paesi elencati nel capoverso precedente e che ha messo in uso il Prodotto per la prima volta ("Utilizzatore finale originale"). Oltre ai diritti concessi ai sensi della presente Garanzia, l'Utilizzatore finale originale potrà avvalersi dei diritti legali di garanzia in virtù delle leggi nazionali applicabili, i quali non potranno essere influenzati o limitati in qualsivoglia modo dalla presente Garanzia.

I. Garanzia sul prodotto

In conformità ai termini e alle condizioni della presente Garanzia, REC garantisce per un periodo di 20 anni⁵, con decorrenza dalla data di acquisto dell'Utilizzatore finale originale, (il "Periodo di garanzia") (periodo che comunque non può essere superiore a un periodo massimo di 20,5 anni⁶ dalla data di fabbricazione, come riportato sul prodotto), che i Prodotti:

- sono privi di qualsivoglia difetto di materiali o manodopera a condizione che il Prodotto venga installato e usato conformemente alle istruzioni d'installazione disponibili su www.recgroup.com; o
- rimarranno sicuri e operativi, a condizione che il cavo e i connettori vengano installati da tecnici specializzati e non entrino costantemente a contatto con l'acqua. I danni provocati da abrasioni da contatto con superfici ruvide, dovuti a un errato fissaggio o a una posa non adeguata dei cavi su spigoli vivi, sono da intendersi esclusi dalla garanzia, così come i danni causati dagli animali; o
- una corretta installazione eviterà il congelamento del telaio in alluminio.
- L'aspetto esteriore del Prodotto, inclusi graffi, macchie, ruggine, muffe, scolorimento e altri segni di normale deterioramento successivi alla consegna o all'installazione, non costituiscono difetti, a condizione che la funzionalità del Prodotto non ne sia pregiudicata. La rottura del vetro costituisce un difetto solo qualora non derivi da fattori esterni.

In caso di difetto riscontrato (o difetti sistematici⁷) durante il Periodo di garanzia, suscettibile di pregiudicare la funzionalità del prodotto, REC si riserverà il diritto, a propria esclusiva discrezione, di:

- riparare il Prodotto difettoso; o
- sostituire il Prodotto con un articolo equivalente; o
- rimborsare il prezzo corrente di mercato di un prodotto equivalente al momento della richiesta di risarcimento.

II. Garanzia di output nominale

In conformità ai termini e alle condizioni della presente Garanzia, REC garantisce che per il primo anno (calcolato a far tempo dalla data di fabbricazione riportata sul Prodotto), l'effettivo output nominale del Prodotto raggiungerà almeno il 97,5% del valore specificato sulla targhetta del Prodotto. A partire dal secondo anno, l'effettivo output nominale registrerà una diminuzione annuale non superiore allo 0,7% per un periodo di 24 anni. In questo modo, allo scadere del 25 anno, l'output nominale effettivo corrisponderà almeno all'80,7% del valore specificato sulla targhetta del Prodotto.

Nel caso dei pannelli REC TwinPeak 4 e REC TwinPeak 5, REC garantisce che per il primo anno (calcolato a far tempo dalla data di fabbricazione riportata sul Prodotto), l'effettivo output nominale del Prodotto raggiungerà almeno il 98 % del valore specificato sulla targhetta del Prodotto. A partire dal secondo anno, l'effettivo output nominale registrerà una diminuzione annuale non superiore allo 0,5 % per un periodo di 24 anni. In questo modo, allo scadere del 25 anno, l'output nominale effettivo corrisponderà almeno all'86 % del valore specificato sulla targhetta del Prodotto.

Detta Garanzia di output nominale copre esclusivamente il calo delle prestazioni dovuto a un degrado naturale del vetro, della cella fotovoltaica, della lamina, della scatola di connessione e dei collegamenti in condizioni di normale utilizzo.

Qualora il Prodotto non raggiunga i livelli garantiti di output nominale sopra indicati, una volta effettuata la misurazione da parte del Garante o di un organismo accreditato indipendente di misurazione⁸ Garante stesso e sulla base di condizioni di test standard (IEC 61215) con una tolleranza pari a ± 3 %, REC avrà la facoltà, a sua esclusiva discrezione, di:

- riparare il Prodotto; o
- sostituire il Prodotto con un articolo equivalente o fornire moduli aggiuntivi, ove necessario, per compensare la perdita di potenza; o
- rimborsare il prezzo corrente di mercato di un prodotto equivalente al momento della richiesta di risarcimento.

¹ Includere le varianti di prodotto con il suffisso Black, BLK, BLK2, Mono, Q2, and esclusi i moduli che riportano la sigla "Q3" nel nome del prodotto.

² Questa garanzia è valida anche per i prodotti consegnati ai clienti REC prima del 1° ottobre 2018, tenuti in magazzino dai clienti e commissionati dopo il 1° ottobre 2018 per l'installazione di dimensioni inferiori a 500 kW. In tali casi, la prova della messa in servizio del sistema deve accompagnare la presentazione del reclamo.

³ Come definito dai Gruppi Regionali degli Stati Membri all'Assemblea Generale delle Nazioni Unite (www.un.int).

⁴ Questa Garanzia copre anche i paesi di Andorra, Israele, Liechtenstein, Principato di Monaco, il Regno Unito, Repubblica di San Marino, Svizzera, Turchia e Città del Vaticano.

⁵ Questo periodo potrebbe essere esteso per altri 5 anni in funzione delle condizioni prevalenti del programma REC Certified Solar Professional. Per ulteriori informazioni sui prodotti, tipi di impianto e installatori potenzialmente interessati da tale estensione, consultare: www.recgroup.com/rcsp

⁶ 25,5 anni in caso di nota a piè di pagina prevalente⁵.

⁷ Difetti sistematici possono essere confermati solo da REC qualora un episodio di difetto sistematico sia in accordo con gli standard sistematici di REC.

⁸ Esempio: Parametri ISE, TÜV o equivalenti, come discusso ed accordato da REC prima della fase di TEST del prodotto.

III. Condizioni, limitazioni ed esclusioni di garanzia

1. La presente Garanzia non può essere ceduta dall'Utilizzatore finale originale se non all'eventuale successivo proprietario dell'impianto solare presso il quale il Prodotto è stato originariamente installato e resta installato, a condizione che l'impianto solare in questione non sia stato modificato in alcun modo o trasferito dalla struttura o dalla proprietà in cui era stato originariamente installato.
2. L'eventuale richiesta di risarcimento ai sensi della presente Garanzia deve essere comunicata tempestivamente non appena rilevato il difetto e prima della scadenza del Periodo di garanzia applicabile, nonché conformemente alla procedura descritta alla successiva sezione IV.
3. **La presente Garanzia non copre alcun costo per la manodopera in loco o altre spese associate alla disinstallazione o alla rimozione del Prodotto difettoso, al trasporto o alla reinstallazione del Prodotto sostituito o riparato e di qualsiasi suo componente. Pertanto il Garante non sarà tenuto al rimborso dei suddetti costi.⁹**
4. Il Garante potrà utilizzare componenti o prodotti, di produzione o rimessi a nuovo per la riparazione o la sostituzione di qualsivoglia Prodotto ai sensi della presente Garanzia. Gli eventuali componenti o Prodotti sostituiti diverranno di proprietà di REC. La durata dei Periodi di garanzia di cui alla sezione I. e II. non sarà in alcun modo estesa, nemmeno in caso di sostituzione o riparazione del Prodotto.
5. La presente Garanzia stabilisce che il Prodotto venga installato in conformità alle più recenti norme di sicurezza, installazione e utilizzo fornite da REC e non si intenderà applicabile a danni, anomalie di funzionamento, diminuzione di potenza erogata o disservizi causati da: (a) riparazione, modifica o rimozione del Prodotto da parte di persone che non siano tecnici di assistenza qualificati; (b) collegamento, installazione o applicazione impropria del Prodotto; oppure (c) abuso, utilizzo improprio, incidenti, negligenza, interruzioni o picchi di tensione, fulmini, incendi, alluvioni, rottura accidentale, atti di terze parti e altri eventi o incidenti che esulino dal ragionevole controllo di REC e/o che non insorgano nelle normali condizioni di esercizio.
6. Detta Garanzia, volontaria e gratuita, non costituisce una promessa di garanzia indipendente. Pertanto, se un difetto pregiudica sostanzialmente la funzionalità del Prodotto o genera un output nominale inferiore ai livelli garantiti, i rimedi dell'Utilizzatore finale si limiteranno esclusivamente a quanto indicato nelle sezioni I. e II. nei casi specificati. REC non assume alcuna garanzia, espressa o implicita, diversa da quelle definite e rifiuta espressamente di offrire qualsiasi altra forma di garanzia, comprese quelle relative alla commerciabilità o idoneità per un fine specifico. REC esclude qualsivoglia responsabilità relativamente a danni punitivi, consequenziali, incidentali o speciali derivanti dall'uso o dal mancato utilizzo del Prodotto secondo quanto garantito, ivi inclusi, senza limitazione alcuna, i danni derivanti da perdita di potenza, mancato profitto, perdite di risparmi o spese derivanti da ricorsi di terzi. Ciò non sarà da intendersi applicabile nella misura in cui il Garante è soggetto alle leggi vigenti in materia di responsabilità obbligatoria sul prodotto o nei casi di intenzionalità o colpa grave da parte del Garante.
7. La presente Garanzia sarà regolata e formulata conformemente alle leggi tedesche, a prescindere dai principi giuridici applicabili. La Convenzione delle Nazioni Unite sui contratti di vendita internazionale di merci (1980) non sarà da intendersi applicabile e non disciplinerà la presente Garanzia o qualsivoglia controversia da essa derivante. La risoluzione di ogni controversia con REC derivante dall'applicazione o interpretazione della presente Garanzia sarà irrevocabilmente soggetta alla giurisdizione dei tribunali tedeschi.

IV. Procedura per richieste di risarcimento in garanzia

Le richieste di risarcimento ai sensi della presente Garanzia dovranno essere trasmesse al distributore autorizzato o al venditore presso il quale il prodotto è stato originariamente acquistato. La richiesta di risarcimento potrà essere inoltrata su:

www.recgroup.com/claims

I contatti dei Distributori globali REC sono disponibili al seguente indirizzo web:

www.recgroup.com/distributors

Una volta che il claim è stato trasmesso, verrà preso in carico dall'Ufficio REC di competenza, tutti i dettagli sono disponibili al seguente indirizzo web:

www.recgroup.com/contact

Per l'elaborazione delle Richieste di risarcimento in garanzia è necessario che esse siano corredate dalla prova dell'acquisto originale del Prodotto e delle eventuali vendite successive, compresa la cessione della presente Garanzia. La richiesta di risarcimento dovrà includere una descrizione del presunto difetto, nonché il numero di serie del Prodotto. Prima di rispedire qualsiasi Prodotto o componente a REC, è necessario un codice RMA (autorizzazione alla restituzione della merce) ottenibile contattando REC stessa all'indirizzo summenzionato.

La presente Garanzia è valida per i prodotti consegnato a partire dal 1° ottobre 2018.

Questa garanzia è data da: REC Solar Pte. Ltd., 20 Tuas South Avenue 14, Singapore 637312, Tel: +65 64959228



Questa versione italiana è una traduzione dell'originale inglese. Se ci fosse qualsiasi differenza fra la versione tradotta e la versione inglese, la versione inglese sostituisce la versione tradotta.

⁹ Ulteriori estensioni di garanzia possono essere fornite tramite gli Installatori Certificati REC Solar Professional in base alle condizioni del pacchetto di garanzia REC ProTrust. Vedi www.recgroup.com/protrust per ulteriori dettagli.

Beperkte-garantiecertificaat voor zonnepanelen uit de REC TwinPeak-Serie¹ (Beperkte garantie) (geldig per 1 oktober 2018)

Deze beperkte garantie heeft betrekking op alle bovengenoemde REC-zonnepanelen (zoals hierboven gedefinieerd¹) die op of na 1 oktober 2018² aan klanten van REC zijn geleverd en is geldig in alle lidstaten van de Europese Unie, de Europese Economische Zone, landen die behoren tot de Oost-Europese Groep³ en verdere landen zoals hieronder vermeld⁴.

REC SOLAR PTE. LTD. (hierna de 'garantiegever' of 'REC') geeft de volgende vrijwillige garantie af aan de eindgebruiker die het product in een van de bovengenoemde staten heeft gekocht en het product voor het eerst in gebruik heeft genomen (de 'oorspronkelijke eindgebruiker'). Naast de rechten op grond van deze beperkte garantie kan de oorspronkelijke eindgebruiker overeenkomstig toepasselijke nationale wetgeving recht hebben op wettelijke garantierechten, die op geen enkele wijze aangetast of beperkt worden door deze beperkte garantie.

I. Productgarantie

Met inachtneming van de voorwaarden van deze beperkte garantie garandeert REC gedurende een periode van 20 jaar⁵ vanaf de datum van aankoop door de oorspronkelijke eindgebruiker (maximaal 20,5 jaar⁶ vanaf de productiedatum zoals vermeld op het product) dat de producten:

- Vrij zijn van materiaal- en fabricagefouten als ze geïnstalleerd en gebruikt zijn in overeenstemming met de installatievoorschriften, die gedownload kunnen worden op www.recgroup.com; en
- Veilig en operationeel blijven als kabel- en verbindingstekkers professioneel worden aangebracht en niet permanent in water zijn geplaatst, echter op voorwaarde dat schade aan de kabel door wrijving over een ruw oppervlak wegens onvoldoende bevestiging of onbeschermde geleiding van de kabel over scherpe randen is uitgesloten. Schade door dieren is eveneens uitgesloten; en
- Geen last zullen hebben van bevriezing van de aluminium frames als ze correct zijn geïnstalleerd.

Het uiterlijk van het product, waaronder krassen, vlekken, roest, schimmel, verkleuring en andere tekenen van normale slijtage die zich na levering of installatie hebben voorgedaan, vormt geen gebrek, mits de functionaliteit van het product niet wordt aangetast. Glasbreuk vormt alleen een gebrek als deze niet is veroorzaakt door een invloed van buitenaf.

Als tijdens de garantieperiode een gebrek (of seriefout⁷) optreedt dat de functionaliteit van het product aantast, zal REC naar eigen keuze:

- Het gebrekkige product repareren; of
- Het product vervangen door een gelijkwaardig product; of
- De huidige marktprijs van een gelijkwaardig product op het moment van de claim vergoeden.

II. Prestatiegarantie

Met inachtneming van de voorwaarden van deze beperkte garantie garandeert REC dat het werkelijke vermogen (prestatie) van het product gedurende het eerste jaar (gerekend vanaf de productiedatum zoals vermeld op het product) ten minste 97,5% van het op het product vermelde nominale vermogen zal bedragen. Vanaf het tweede jaar zal het werkelijke vermogen jaarlijks met niet meer dan 0,7% dalen gedurende een periode van 24 jaar, zodat tegen het einde van het 25ste jaar een werkelijk vermogen van ten minste 80,7% van het op het product vermelde nominale vermogen wordt bereikt.

In het geval van de REC TwinPeak 4- en REC TwinPeak 5-serie, garandeert REC dat het werkelijke vermogen van het Product ten minste 98% van het nominaal vermogen gespecificeerd op het Product gedurende het eerste jaar (berekend vanaf de datum van productie zoals geïdentificeerd op het Product. Vanaf het tweede jaar zal het werkelijke vermogen gedurende een periode van 24 jaar jaarlijks met niet meer dan 0,5% afnemen, zodat aan het einde van het 25e jaar een feitelijk vermogen van ten minste 86% van het op het product vermelde nominale vermogen wordt bereikt.

Deze prestatiegarantie dekt alleen verminderde prestaties als gevolg van natuurlijke achteruitgang van het glas, de zonnecel, de inbeddingsfolie, de aansluitdoos en verbindingen bij normaal gebruik.

Als het product onder standaardtestomstandigheden (IEC 61215) en rekening houdend met een tolerantie van $\pm 3\%$ de hierboven beschreven gegarandeerde vermogensniveaus niet bereikt bij meting door de garantiegever of een erkend onafhankelijk meetinstituut⁸ dat voorafgaand aan de test door de garantiegever is aanvaard, zal REC naar eigen keuze:

- Het product repareren; of
- Het product vervangen door een gelijkwaardig product of de nodige extra panelen leveren om het gegarandeerde percentage van het opgegeven vermogen te bereiken; of
- De huidige marktprijs van een gelijkwaardig product op het moment van de claim vergoeden.

¹ Inclusief productvarianten met één of meer van de achtervoegsels: Black, 72, Q2 en exclusief panelen met Q3 als onderdeel van de productnaam.
² Deze garantie geldt ook voor producten die vóór 1 oktober 2018 aan REC-klanten zijn geleverd, door de klant in voorraad zijn gehouden en na 1 oktober 2018 in bedrijf zijn gesteld, uitsluitend voor installaties met een omvang van minder dan 500 kW. In dergelijke gevallen moet het bewijs van ingebruikname van het systeem bij de claim worden gevoegd.
³ Zoals gedefinieerd door de regionale groepen van lidstaten in de Algemene Vergadering van de Verenigde Naties (www.un.int).
⁴ Onder deze beperkte garantie vallen ook de landen Andorra, Israël, Liechtenstein, Monaco, San Marino, Turkije, Vaticaanstad, Verenigd Koninkrijk en Zwitserland.
⁵ Met inachtneming van de geldende voorwaarden van het REC Certified Solar Professional-programma kan deze periode met 5 jaar worden verlengd. Zie www.recgroup.com/rec-certified-solar-professional-program-installers voor meer informatie over de producten, installatievormen en installateurs die voor deze verlenging in aanmerking komen.
⁶ 25,5 jaar als voetnoot⁵ geldt.
⁷ Seriefouten kunnen alleen door REC worden bevestigd na een seriële foutmelding volgens de REC-normen voor seriefouten.
⁸ Voorbeelden: Fraunhofer ISE, TÜV Rheinland, UL of gelijkwaardig zoals voorafgaand aan de test besproken en aanvaard door REC.

III. Garantievoorwaarden, beperkingen en uitsluitingen

1. Deze beperkte garantie is niet overdraagbaar door de oorspronkelijke eindgebruiker, behalve aan een volgende eigenaar van het zonne-energiesysteem waarop het product oorspronkelijk was geïnstalleerd en geïnstalleerd blijft, mits dit zonne-energiesysteem op geen enkele wijze is gewijzigd of verplaatst is van de constructie of het gebouw waarop het oorspronkelijk was geïnstalleerd.
2. Een garantieclaim op grond hiervan moet na constatering van het gebrek en vóór afloop van de toepasselijke garantieperiode zonder onnodige vertraging worden gemeld volgens de procedure zoals uiteengezet in artikel IV hieronder.
3. **Deze beperkte garantie biedt geen dekking, en de garantiegever betaalt evenmin een vergoeding, voor arbeid op locatie of andere gemaakte kosten in verband met de de-installatie of verwijdering van gebrekkige producten, het transport of de herinstallatie van vervangen of gerepareerde producten of onderdelen.¹**
4. De garantiegever mag bij reparatie of vervanging van producten onder deze beperkte garantie gebruikmaken van gereviseerde of gerenoveerde onderdelen of producten. Geruilde of vervangen onderdelen of producten worden eigendom van REC. De in artikel I. en II. hierboven genoemde garantieperioden worden op geen enkele wijze verlengd in geval van vervanging of reparatie van een product.
5. Deze beperkte garantie vereist dat het product volgens de meest recente veiligheids-, installatie- en bedieningsvoorschriften van REC wordt geïnstalleerd en is niet van toepassing op schade, storingen, stroom- of dienstonderbrekingen die zijn veroorzaakt door: (a) reparatie, wijziging of verwijdering van het product door iemand anders dan een gekwalificeerde servicemonteur; (b) onjuiste bevestiging, installatie of toepassing van het product of (c) misbruik, verkeerd gebruik, ongeval, nalatigheden, stroomonderbrekingen of spanningspieken, blikseminslag, brand, overstroming, onvoorziene breuk, handelingen van derden en andere gebeurtenissen of ongevallen buiten de redelijke controle van REC en/of niet voortvloeiend uit normale bedrijfsomstandigheden.
6. Deze beperkte garantie wordt vrijwillig en kosteloos verstrekt en vormt geen onafhankelijke garantie. Als een gebrek de functionaliteit van het product wezenlijk aantast of tot een lager vermogen dan de gegarandeerde niveaus leidt, zijn de rechtsmiddelen van de oorspronkelijke eindgebruiker daarom uitsluitend beperkt tot de in artikel I. en II. genoemde rechtsmiddelen in de hierin omschreven garantiegevallen. REC aanvaardt geen andere, uitdrukkelijke of stilzwijgende, garanties dan de garanties die hierin worden gegeven en wijst alle andere garanties, verhandelbaarheid of geschiktheid voor een bepaald doel uitdrukkelijk af. REC sluit alle aansprakelijkheid voor bijzondere, incidentele, gevolg- of punitieve schade door het gebruik of verlies van gebruik van de producten uit wanneer deze niet presteren zoals gegarandeerd, met inbegrip van maar niet beperkt tot schade wegens vermogensverlies, gedeelde winst of besparingen of kosten als gevolg van vorderingen van derden. Dit geldt niet voor zover de garantiegever op grond van toepasselijke dwingende productaansprakelijkheidswetgeving aansprakelijk is of in gevallen van opzet of grove nalatigheid van de garantiegever.
7. Deze beperkte garantie wordt beheerst door en geïnterpreteerd volgens het Duitse recht, ongeacht de principes van rechtskeuze. Het Verdrag van de Verenigde Naties inzake internationale koopovereenkomsten betreffende roerende zaken (1980) is niet van toepassing op deze beperkte garantie of op aspecten van geschillen die daaruit voortvloeien. REC onderwerpt zich hierbij onherroepelijk aan de bevoegdheid van de Duitse rechtbanken ter beslechting van geschillen die voortvloeien uit deze beperkte garantie.

IV. Procedure voor garantieclaims

Claims onder deze beperkte garantie moeten worden ingediend door kennisgeving aan de erkende distributeur of verkoper waar het product voor het eerst is gekocht. Een claim kan worden ingediend op:

www.recgroup.com/claims

Contactgegevens voor wereldwijde distributiepartners van REC zijn te vinden op:

www.recgroup.com/distributors

Zodra een claim is ingediend, wordt deze behandeld door het regionale kantoor van REC, waarvan de gegevens te vinden zijn op:

www.recgroup.com/contact

Voor de behandeling van een garantieclaim moet het bewijs van de oorspronkelijke aankoop van het product en eventuele latere verkoop, met overdracht van deze garantie, bij de claim worden gevoegd. De claim moet een beschrijving van het (de) vermeende gebrek(en) en het (de) serienummer(s) van het product bevatten. Voordat producten of onderdelen aan REC worden geretourneerd, is een RMA-nummer (Return Merchandise Authorization) nodig, dat kan worden verkregen door contact met REC op te nemen via het eerder genoemde adres.

Deze garantie is geldig voor producten die op of na 1 oktober 2018 aan klanten van REC zijn geleverd.

Deze garantie wordt gegeven door: REC Solar Pte. Ltd., 20 Tuas South Avenue 14, Singapore 637312, Tel: +65 64959228



Deze nederlandse versie van de garantie is een vertaling van het oorspronkelijke Engels. Juridisch bindend dus alleen de Engelse versie.

¹ Verdere garantieverlengingen kunnen via REC Certified Solar Professional-installateurs worden verleend volgens de voorwaarden van het REC ProTrust-garantiepakket. Zie www.recgroup.com/protrust voor meer informatie

Certyfikat gwarancji ograniczonej dotyczący paneli słonecznych REC TwinPeak¹ (obowiązuje począwszy od 1 października 2018 r.)

Niniejsza Gwarancja ograniczona obejmuje wszystkie wymienione powyżej panele słoneczne REC (zgodnie z powyższą definicją), dostarczone klientom REC począwszy od dnia 1 października 2018 r.² i obowiązuje we wszystkich państwach członkowskich Unii Europejskiej, a także krajach Europejskiego Obszaru Gospodarczego, należących do grupy europejskich państw wschodnich³ i innych krajów wymienionych poniżej⁴.

REC SOLARPTE. LTD. (dalej „Gwarant” lub „REC”) wydaje następującą dobrowolną gwarancję użytkownikowi końcowemu, który zakupił Produkt w jednym z wyżej wymienionych krajów i jest osobą, która po raz pierwszy oddała Produkt do użytkowania („Pierwotny Użytkownik końcowy”). Oprócz praw wynikających z niniejszej Gwarancji ograniczonej, Pierwotnemu Użytkownikowi końcowemu mogą przysługiwać inne ustawowe prawa gwarancyjne zgodnie z obowiązującymi przepisami krajowymi, których niniejsza Gwarancja ograniczona w żaden sposób nie modyfikuje ani nie ogranicza.

I. Gwarancja na produkt

Z zastrzeżeniem warunków niniejszej Gwarancji ograniczonej, przez okres 20 lat⁵ od daty zakupu przez Pierwotnego Użytkownika końcowego (nieprzekraczający jednak maksymalnego okresu wynoszącego 20,5 roku⁶ od wskazanej na Produkcie daty produkcji), firma REC gwarantuje, że Produkty:

- Są wolne od wad materiałowych i wykonawczych pod warunkiem, że zostały zainstalowane i są używane zgodnie z instrukcjami instalacji, które mogą zostać pobrane pod adresem www.recgroup.com; i
- pozostaną bezpieczne i sprawne pod warunkiem, że kable i wtyczki zostaną zainstalowane w sposób profesjonalny i nie będą umieszczone na stałe w wodzie. Z zastrzeżeniem jednak, że wykluczone jest uszkodzenie kabla spowodowane ścieraniem na chropowatej powierzchni z powodu niedostatecznego zamocowania lub niezabezpieczonego przebiegu kabla przez ostre krawędzie. Wykluczone są również uszkodzenia spowodowane przez zwierzęta; i
- nie wystąpią problemy z zamarzaniem aluminiowych ramek, jeśli są one prawidłowo zainstalowane.

Zewnętrzny wygląd Produktu, w tym zadrapania, plamy, rdza, pleśń, przebarwienia i inne oznaki normalnego zużycia po dostawie lub instalacji, nie stanowią wad, o ile nie mają one wpływu na funkcjonalność Produktu. Pęknięcie szkła stanowi wadę tylko wtedy, gdy nie jest spowodowane czynnikami zewnętrznymi.

Jeżeli w Okresie Gwarancyjnym wystąpi wada (lub wady seryjne⁷) wpływająca(-e) na funkcjonalność Produktu, firma REC może, według własnego uznania:

- Naprawić wadliwy Produkt; lub
- wymienić Produkt na równoważny produkt; lub
- dokonać zwrotu aktualnej ceny rynkowej równoważnego produktu w momencie wniesienia roszczenia.

II. Gwarancja dotycząca mocy wyjściowej

Z zastrzeżeniem warunków niniejszej Gwarancji ograniczonej, firma REC gwarantuje, że rzeczywista moc wyjściowa Produktu będzie wynosić co najmniej 97,5% wyjściowej mocy znamionowej określonej na Produkcie w ciągu pierwszego roku (liczonego od daty produkcji określonej na Produkcie). Począwszy od drugiego roku rzeczywista moc wyjściowa będzie zmniejszać się co roku o nie więcej niż 0,7% przez okres 24 lat, co oznacza, że na koniec 25-ego roku rzeczywista moc wyjściowa będzie wynosić co najmniej 80,7% mocy wyjściowej określonej na umieszczonej na Produkcie tabliczce danych znamionowych.

W przypadku panelu REC TwinPeak 4 i REC TwinPeak 5, firma REC gwarantuje, że rzeczywista moc wyjściowa Produktu będzie wynosić co najmniej 98 % wyjściowej mocy znamionowej określonej na Produkcie w ciągu pierwszego roku (liczonego od daty produkcji określonej na Produkcie). Począwszy od drugiego roku rzeczywista moc wyjściowa będzie zmniejszać się co roku o nie więcej niż 0,5 % przez okres 24 lat, co oznacza, że na koniec 25-ego roku rzeczywista moc wyjściowa będzie wynosić co najmniej 86 % mocy wyjściowej określonej na umieszczonej na Produkcie tabliczce danych znamionowych.

Niniejsza Gwarancja dotycząca mocy wyjściowej obejmuje tylko wydajność zmniejszoną ze względu na naturalną degradację szkła, ogniwa słonecznego, folii mocującej, skrzynki połączeniowej oraz połączeń pod warunkiem przestrzegania normalnych warunków użytkowania.

Jeśli Produkt nie osiąga określonych powyżej gwarantowanych poziomów mocy, w przypadku przeprowadzenia ich pomiarów przez Gwaranta lub przez akredytowany niezależny instytut pomiarowy⁸ zatwierdzony wcześniej przez Gwaranta do przeprowadzania testów, w standardowych warunkach testowych (IEC 61215) i biorąc pod uwagę zakres tolerancji wynoszący $\pm 3\%$, wówczas firma REC może według własnego uznania:

- Naprawić wadliwy Produkt; lub
- wymienić Produkt na równoważny produkt lub dostarczyć dodatkowe panele w zakresie, w jakim jest to konieczne, aby uzyskać gwarantowaną wartość procentową określonej mocy wyjściowej; lub
- dokonać zwrotu aktualnej ceny rynkowej równoważnego produktu w momencie wniesienia roszczenia.

¹ Obowiązuje ona również w odniesieniu do opcji produktów z jednym lub kilkoma następującymi przyrostkami: Black, BLK, BLK2, Mono, Q2, z wyłączeniem paneli, których nazwa produktu zawiera oznaczenie Q3.

² Niniejsza Gwarancja obowiązuje również dla produktów dostarczonych do klientów firmy REC przed 1 października 2018 r., które były przechowywane przez klienta i zostały oddane do użytku po 1 października 2018 r., jednak tylko w instalacjach o mocy poniżej 500 kW. W takich przypadkach do zgłoszenia roszczenia należy dołączyć dowód oddania systemu do eksploatacji.

³ Zgodnie z definicją regionalnej grupy państw członkowskich Zgromadzenia Ogólnego Organizacji Narodów Zjednoczonych (www.un.int).

⁴ Niniejsza Gwarancja obowiązuje także w następujących krajach: Andora, Izrael, Liechtenstein, Monako, San Marino, Szwajcaria, Turcja, Watykan i Zjednoczone Królestwo.

⁵ Okres ten może być wydłużony o dodatkowe 5 lat z zastrzeżeniem obowiązujących warunków Programu REC Certified Solar Professional. Więcej informacji na temat produktów, rodzajów instalacji i instalatorów objętych wydłużeniem okresu gwarancji można znaleźć na stronie: www.recgroup.com/rcsp

⁶ 25,5 roku w przypadku, w którym zastosowanie ma przypis⁵.

⁷ Uszkodzenia seryjne mogą być potwierdzone przez firmę REC tylko jako specyficzne zdarzenie dotyczące uszkodzenia seryjnego zgodnie ze standardami REC dotyczącymi uszkodzeń seryjnych.

⁸ Przykłady: Fraunhofer ISE, TÜV Rheinland, UL lub równoważne, po wcześniejszym omówieniu i uzgodnieniu z firmą REC przed przeprowadzeniem testów.

III. Warunki, ograniczenia i wyłączenia gwarancji

1. Niniejsza Gwarancja ograniczona nie może być przeniesiona przez Pierwotnego Użytkownika końcowego, z wyjątkiem nowego właściciela elektrowni słonecznej, w której Produkt był pierwotnie zainstalowany i pozostaje zainstalowany, pod warunkiem, że dana elektrownia słoneczna nie została w żaden sposób zmodyfikowana lub przeniesiona z konstrukcji lub z terenu nieruchomości, gdzie była zainstalowana pierwotnie.
2. Powiadomienie o roszczeniu gwarancyjnym wnoszonym na podstawie niniejszej Umowy musi zostać przekazane bez zbędnej zwłoki po wykryciu wady i przed upływem obowiązującego Okresu Gwarancji oraz zgodnie z procedurą opisaną w poniższym punkcie IV.
3. **Należy pamiętać, że niniejsza Gwarancja ograniczona nie obejmuje ani nie zobowiązuje Gwaranta do zwrotu jakichkolwiek kosztów wykonawstwa w miejscu instalacji, ani też żadnych innych kosztów poniesionych w związku z demontażem lub usunięciem wadliwych Produktów, a także kosztów transportu bądź ponownej instalacji wymienionych lub naprawionych Produktów, bądź ich dowolnych części.⁹**
4. Gwarant może korzystać z regenerowanych lub odnowionych części bądź produktów podczas przeprowadzania naprawy lub wymiany jakichkolwiek Produktów w ramach niniejszej Gwarancji ograniczonej. Wszelkie wymienione lub zastąpione części lub Produkty stają się własnością firmy REC. Okresy gwarancyjne określone w sekcjach I. i II. powyżej nie zostają w żaden sposób przedłużone w przypadku wymiany lub naprawy Produktu.
5. Niniejsza Gwarancja ograniczona wymaga, aby Produkt został zainstalowany zgodnie z najnowszymi instrukcjami dotyczącymi bezpieczeństwa, instalacji i obsługi, przekazanymi przez firmę REC i nie obejmuje uszkodzeń, wadliwego działania, mocy wyjściowej lub błędów serwisowych, które zostały spowodowane przez: (a) Przeprowadzenie naprawy, modyfikacji lub demontażu Produktu przez osobę inną niż wykwalifikowany technik serwisowy; (b) wykorzystanie jakichkolwiek niewłaściwych akcesoriów, instalacji lub zastosowań Produktu lub (c) nadużycie, niewłaściwe użytkowanie, wypadek, zaniedbanie, awarię zasilania lub przepięcie, uderzenie pioruna, pożar, powódź, przypadkowe złamanie, działania osób trzecich oraz inne zdarzenia lub wypadki pozostające poza zakresem kontroli firmy REC i/lub w jakichkolwiek innych warunkach niż normalne warunki użytkowania.
6. Niniejsza Gwarancja ograniczona jest udzielana dobrowolnie, nieodpłatnie i nie stanowi gwarancji niezależnej. W związku z powyższym, jeśli jakakolwiek wada istotnie wpływa na funkcjonalność Produktu lub powoduje, że moc wyjściowa jest niższa od gwarantowanych poziomów, środki zaradcze Pierwotnego Użytkownika końcowego są ograniczone wyłącznie do środków zaradczych określonych w punktach I. i II., w określonych w niniejszym dokumencie przypadkach dotyczących obowiązywania gwarancji. Firma REC nie udziela żadnych gwarancji, wyraźnych ani domniemanych, innych niż gwarancje zawarte w niniejszym dokumencie, a w szczególności jakichkolwiek innych gwarancji dotyczących wartości handlowej lub przydatności do określonego celu. Firma REC nie ponosi żadnej odpowiedzialności za jakiegokolwiek szkody szczególne, przypadkowe, wtórne lub karne, wynikające z użytkowania lub utraty możliwości użytkowania Produktów w sposób określony w gwarancji, w tym, ale nie wyłącznie, szkody dotyczące utraty mocy, utracone zyski lub oszczędności oraz wydatki wynikające z roszczeń osób trzecich. Powyższe postanowienie nie ma zastosowania w zakresie, w jakim Gwarant musi ponosić odpowiedzialność zgodnie z obowiązującymi przepisami dotyczącymi odpowiedzialności za produkt lub w przypadku działania umyślnego bądź rażącego zaniedbania ze strony Gwaranta.
7. Prawem właściwym dla wykładni niniejszej Gwarancji ograniczonej jest prawo niemieckie, z wyłączeniem jakichkolwiek norm prawa kolizyjnego. Konwencja Narodów Zjednoczonych o umowach międzynarodowej sprzedaży towarów (1980) nie ma zastosowania do niniejszej Gwarancji ograniczonej ani nie obowiązuje w odniesieniu do żadnych aspektów jakiegokolwiek sporu z nią związanego. Firma REC niniejszym nieodwołalnie poddaje się jurysdykcji sądów niemieckich w zakresie rozstrzygnięcia wszelkich sporów wynikających z niniejszej Gwarancji ograniczonej.

IV. Procedura zgłaszania roszczeń gwarancyjnych

Roszczenia z tytułu Gwarancji ograniczonej należy zgłaszać, powiadamiając autoryzowanego dystrybutora lub sprzedawcę, od którego Produkt został zakupiony po raz pierwszy. Roszczenie może zostać zarejestrowane pod adresem:

www.recgroup.com/claims

Dane kontaktowe partnerów dystrybucyjnych firmy REC na terenie całego świata są dostępne pod adresem:

www.recgroup.com/distributors

Zgłoszone roszczenia są obsługiwane przez Biura Regionalne firmy REC, których szczegółowe dane kontaktowe są dostępne pod adresem:

www.recgroup.com/contact

Aby roszczenie gwarancyjne mogło zostać obsłużone, do wniosku należy dołączyć dowód pierwszego zakupu Produktu oraz jakiegokolwiek dalszej sprzedaży, wraz z przeniesieniem niniejszej Gwarancji. Zgłoszenie roszczenia musi zawierać opis domniemanej wady (wad), a także numer(y) seryjny(-e) Produktu. Przed przeprowadzeniem zwrotu jakichkolwiek Produktów lub komponentów do firmy REC, wymagane jest uzyskanie numeru RMA (Return Merchandise Authorization), który można uzyskać kontaktując się z firmą REC na wyżej wymieniony adres.

Niniejsza gwarancja obowiązuje w odniesieniu do produktów dostarczonych klientom firmy REC w dniu 1 października 2018 r. lub później.

Niniejsza gwarancja jest udzielana przez: REC Solar Pte. Ltd., 20 Tuas South Avenue 14, Singapur 637312, Tel: +65 64959228



Ten dokument został przetłumaczony z oryginalnej wersji angielskiej. W przypadku rozbieżności między wersjami, wersja w języku angielskim będzie obowiązywać.

⁹ Zgodnie z warunkami pakietu gwarancyjnego REC Pro Trust, dalsze rozszerzenie gwarancji może być udzielone przez instalatorów posiadających certyfikat REC Solar Professional. Więcej informacji na stronie www.recgroup.com/protrust.

Limited Warranty Certificate for REC TwinPeak solar panels¹ (Limited Warranty) (valid as of October 1, 2018)

This Limited Warranty covers all the above named REC solar panels (as defined above¹) delivered to REC customers on or after October 1, 2018², and is valid in countries belonging to the Asia and Pacific, and African (including the Middle East) regional groups of the United Nations³ and further countries as listed below⁴.

REC SOLAR PTE. LTD. (hereafter the 'Warrantor' or 'REC') issues the following voluntary warranty to the end-user who purchased the Product in one of the countries mentioned above and put the Product into use for the first time (the 'Original End-User'). In addition to the rights under this Limited Warranty, the Original End-User may be entitled to statutory warranty rights under applicable national laws which shall not be affected or limited in any way by this Limited Warranty.

I. Product Warranty

Subject to the terms and conditions of this Limited Warranty, for a period of 20 years⁵ from the date of purchase by the Original End-User (not exceeding a maximum period of 20.5 years⁶ from the date of production as identified on the Product), REC warrants that the Products:

- Are free from defects in material and workmanship if installed and used in accordance with the installation instructions available to download from www.recgroup.com; and
- Will remain safe and operational if cable and connector plugs are installed professionally and are not permanently positioned in water; provided however, that damage to the cable caused by abrasion on a rough surface due to insufficient fixing or to unprotected running of the cable over sharp edges is excluded. Damage caused by animals is also excluded; and
- Will not experience freezing up of the aluminum frames if installed correctly.

The outer appearance of the Product, including scratches, stains, rust, mould, discoloration and other signs of normal wear and tear, which occurred after delivery or installation, do not constitute defects, provided the functionality of the Product is not affected. Glass breakage constitutes a defect only if not caused by any external influence.

If a defect (or serial defect⁷) occurs during the Warranty Period affecting the functionality of the Product, REC will, at its sole option:

- Repair the defective Product; or
- Replace the Product with an equivalent product; or
- Refund the current market price of an equivalent product at the time of the claim.

II. Performance Warranty

Subject to the terms and conditions of this Limited Warranty, REC warrants that the actual power output (performance) of the Product will reach at least 97.5 % of the nameplate power output specified on the Product during the first year (calculated from the date of production as identified on the Product). From the second year, the actual power output will decline annually by no more than 0.7 % for a period of 24 years, so that by the end of the 25th year, an actual output of at least 80.7 % of the nameplate power output specified on the Product will be achieved.

In the case of the REC TwinPeak 4 and REC TwinPeak 5 panels, REC warrants that the actual power output (performance) of the Product will reach at least 98 % of the nameplate power output specified on the Product during the first year (calculated from the date of production as identified on the Product). From the second year, the actual power output will decline annually by no more than 0.5 % for a period of 24 years, so that by the end of the 25th year, an actual output of at least 86 % of the nameplate power output specified on the Product will be achieved.

This Performance Warranty covers only reduced performance due to natural degradation of the glass, the solar cell, the embedding foil, the junction box and interconnections under normal use.

If the Product does not reach the warranted power output levels set out above when measured by the Warrantor or by an accredited independent measuring institute⁸ agreed to prior to testing by the Warrantor, under standard test conditions (IEC 61215) and taking into account a $\pm 3\%$ tolerance range, then REC will, at its sole option:

- Repair the Product; or
- Replace the Product with an equivalent product or to supply additional panels as necessary to achieve the warranted percentage of specified power output; or
- Refund the current market price of an equivalent product at the time of the claim.

¹ Including product variants with one or more of the suffixes: Black, BLK, BLK2, Mono, Q2, and excluding panels showing Q3, as part of the product name.

² This warranty is also valid for products delivered to REC customers before October 1, 2018, which were held in stock by the customer, and were commissioned after October 1, 2018, on installations of less than 500 kW size only. In such cases, proof of system commissioning must accompany the claim submission.

³ As defined by the regional groups of Member States to the United Nations General Assembly (www.un.int).

⁴ This Limited Warranty also includes the countries of Australia, Kiribati, New Zealand and Taiwan, but excludes Cyprus.

⁵ This may be extended for additional 5 years subject to the prevailing conditions of the REC Certified Solar Professional Program. For more information on products, installation types & installers qualified for that extension see: www.recgroup.com/rcsp.

⁶ 25.5 years in the case of prevailing footnote ⁵.

⁷ Serial defects can only be confirmed by REC as a serial defect event in accordance with REC standards of serial defects.

⁸ Examples: Fraunhofer ISE, TÜV Rheinland, UL or equivalent as discussed and agreed by REC prior to testing.

III. Warranty Conditions, Limitations and Exclusions

1. This Limited Warranty is not transferable by the Original End-User, except to a subsequent owner of the solar power facility at which the Product was originally installed and remains installed, provided that this solar power facility has not been altered in any way or moved from the structure or property at which it was originally installed.
2. Notification of a warranty claim hereunder must be given without undue delay after detection of the defect and prior to the expiration of the applicable Warranty Period and in accordance with the procedure as set out in section IV below.
3. **Please note that this Limited Warranty does not cover, nor will the Warrantor reimburse, any on-site labor or other costs incurred in connection with the de-installation or removal of defective Products, transport or the re-installation of replaced or repaired Products or any components.⁹**
4. The Warrantor may use remanufactured or refurbished parts or products when repairing or replacing any Products under this Limited Warranty. Any exchanged or replaced parts or Products will become the property of REC. The Warranty Periods set out in sections I. and II. above will not be extended in any way in the event of a replacement or repair of a Product.
5. This Limited Warranty requires that the Product is installed according to the latest safety, installation and operation instructions provided by REC and does not apply to damage, malfunction, power output or service failures which have been caused by: (a) repair, modifications or removal of the Product by someone other than a qualified service technician; (b) any improper attachment, installation or application of the Product or (c) abuse, misuse, accident, negligent acts, power failures or surges, lightning, fire, flood, accidental breakage, actions of third parties and other events or accidents outside REC's reasonable control and/or not arising under normal operating conditions.
6. This Limited Warranty is provided voluntarily and free of charge and does not constitute an independent guarantee. Therefore, if any defect materially affects the functionality of the Product or results in a power output below the warranted levels, the Original End-User's remedies are limited exclusively to the remedies set out under sections I. and II. in the warranty cases specified herein. REC assumes no warranties, express or implied, other than the warranties made herein and specifically disclaims all other warranties, merchantability or fitness for a particular purpose. REC excludes all liabilities for any special, incidental, consequential or punitive damages from the use or loss of use of the Products to perform as warranted; including but not limited to damages for loss of power, lost profits or savings nor expenses arising from third-party claims. This does not apply to the extent the Warrantor is liable under applicable mandatory product liability laws or in cases of intent or gross negligence on the part of the Warrantor.
7. This Limited Warranty shall be governed by and construed in accordance with the laws of Singapore irrespective of its choice of law principles. The United Nations Convention on Contracts for the International Sale of Goods (1980) shall not apply to or govern this Limited Warranty or any aspect of any dispute arising there from. REC hereby irrevocably submits to the jurisdiction of the courts of Germany for the determination of any disputes arising under this Limited Warranty.
8. For Products and Original End-Users located in Australia who are 'consumers' within the meaning of the Australian consumer Law only, the benefits to the consumers given by this warranty are in addition to other rights and remedies of consumers under a law in relation to the goods and services to which the warranty relates and our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

IV. Warranty Claim Procedure

Claims under this Limited Warranty must be made by notifying the authorized distributor or seller where the Product was first purchased. A claim may be registered at:

www.recgroup.com/claims

Contact details for REC global distribution partners can be found at:

www.recgroup.com/distributors

Once a claim has been submitted, it will be handled by the REC Regional Office, details of which can be found at:

www.recgroup.com/contact

For a warranty claim to be processed, proof of the original purchase of the Product and any subsequent sales including transfer of this Warranty need to accompany the claim. The claim must include a description of the alleged defect(s) as well as the Product's serial number(s). Prior to returning any Products or components to REC, an RMA (Return Merchandise Authorization) number is required, which may be obtained by contacting REC via the aforesaid address. The consumer will bear the expense of claiming the warranty.

This warranty is valid for Products delivered to REC customers on or after January 1, 2019.

This warranty is given by: REC Solar Pte. Ltd., 20 Tuas South Avenue 14, Singapore 637312, Tel: +65 64959228



⁹ Further warranty extensions may be given through REC Certified Solar Professional installers according to the conditions of the REC ProTrust Warranty package. See www.recgroup.com/protrust for further details.

REC TwinPeak 太陽電池モジュール 限定保証書

(2018年10月1日より有効)

本限定保証は、2018年10月1日以降¹に上記製品名(上記で定義¹)をお客様に納入されたすべての太陽光モジュールを対象とし、国際連合の定義するアフリカとアジア太平洋に属する国と地域² および 以下に記載する国と地域³ で有効とする。

REC SOLAR PTE. LTD. (以降「保証人」または「REC」) は上記に記載された国のいずれかで製品を購入し最初に製品を使用したエンド ユーザー (「オリジナル エンド ユーザー」) に以下の保証を発行するものとする。本限定保証下での権利の他に、オリジナル エンド ユーザーには、この限定保証によって拘束されていない該当する国内法令下の法定保証権を得る権利が与えられるものとする。

I. 製品保証

本限定保証の条件にしたがい、オリジナルエンドユーザーによる購入日から20年⁴間(ただし製品上に記載された製造日から最大20.5年⁵間を超えない) (「保証期間」)、RECは製品に関して以下を保証するものとする。

- ・ www.recgroup.comからダウンロードし取得したインストールマニュアル(設置説明書)に従い設置および使用した場合材質上および製造上の欠陥がないこと。
- ・ ケーブルおよびコネクタプラグが専門技術を有する施工士により正しく接続され、かつそれらケーブルおよびコネクタプラグが水中に配置されていない場合で、保安規則に則った安全運転が保たれていること。ただし、不適当なケーブルの固定処置に起因するケーブル被覆表面の摩滅、また正しい保護手段を取っていない鋭角配線に起因するケーブル被覆表面の摩滅によるケーブルへの損傷は保証対象とならない。また害獣による損傷も保証除外項目とする。
- ・ 正しく設置され、アルミニウムフレームの凍結なきこと。

製品引渡後または設置後のスクラッチ傷、汚れ、錆、型傷、カビ、変色等の通常使用上起こり得る摩耗や損傷の兆候を含む製品の外観不良については、それが製品の機能性に何ら影響を及ぼすものでない限り、欠陥とは見なされない。ガラスの破損は、それが外的な要因に因らない場合に限り、欠陥と見なす。

保証期間内に製品の機能性に何らかの影響を与えるような欠陥(もしくは特定のロットで発生の可能性のある不良⁶)が発生した場合、RECは独自判断の下、以下のいずれかの方法で保証するものとする。

- ・ 欠陥製品の修理・修繕
- ・ 同等製品との交換
- ・ 保証申立て時における同等製品の市場価格に基づいた返金

II. 出力保証

本限定保証の条件にしたがい、REC は最初の1年間(製品に記載された製造日から起算)、製品の実際の出力が製品のネームプレート(銘板)に記載の出力値の97.5% 以上に達することを保証するものとする。実出力は毎年最大0.7%の低減率に従い、2 年目以降24 年間低下するものとする。したがって25年経過時には製品のネームプレート (銘板) に記載の出力値の80.7%となる。

REC TwinPeak 4、REC TwinPeak 5パネルの場合、REC は最初の1年間(製品に記載された製造日から起算)、製品の実際の出力が製品のネームプレート(銘板)に記載の出力値の98% 以上に達することを保証するものとする。実出力は毎年最大0.5%の低減率に従い、2 年目以降24 年間低下するものとする。したがって25年経過時には製品のネームプレート (銘板) に記載の出力値の86%となる。

本出力保証は、通常使用でのガラス、太陽電池セル、包埋フォイル、ジャンクション ボックス、接続配線(インターコネクション)の自然劣化に起因した性能低下のみを対象とするものである。

保証人または保証人による試験実施に同意した信頼性の高い独立系の測定機関⁷が、標準試験条件 (IEC61215) に従い、±3%の許容範囲を考慮して測定を実施した結果、製品が上記の保証出力レベルに達しなかった場合、REC は独自判断の下、以下を行うものとする。

- ・ 製品の修理・修繕
- ・ 出力保証値(保証のパーセンテージ)を実現するために必要となる、同等の製品との交換または追加モジュールの提供。
- ・ 保証申立て時における同等製品の市場価格に基づいた返金

¹ この保証は、2018年10月1日以前にお客様に納入し在庫され、2018年10月1日以降に施工された500 kW 未満にも適用されます。このような場合、システムの試運転の証明を添付する必要があります。

² 国際連合(www.un.int)の加盟国の地域グループによる定義。

³ 本限定保証には、オーストラリア、キリバス、ニュージーランドおよび台湾が含まれます。ただしキプロスは含まれません。

⁴ RECソーラープロフェッショナルプログラム⁷の一般的な条件に従って、さらに5年間の延長保証をすることができます。この延長に適した製品、設置の種類、および設置者に関する詳細につきましては、www.recgroup.com/rcspを参照してください。

⁵ 一般的な条件の場合における 25.5 年に関する脚注³。

⁶ 特定のロットで発生する可能性がある不良とは、RECの基準に基づきRECが判断。

⁷ 例: Fraunhofer ISE、TUV Rheinland、ULなど。もしくは、事前にRECと協議し合意した同等の測定機関。

III. 保証条件、制限、除外

1. オリジナル エンド ユーザーは本限定保証を譲渡してはならない。ただし、太陽光施設がいかなる方法によっても変更されず、また製品が最初に設置された建造物または土地から移動されていない場合に限り、その太陽光施設の後続の所有者への譲渡は認めるものとする。
2. 本件に基づく保証権利の通知は、欠陥検出後および該当する保証の有効期限日前に、以下のセクションIV に述べる手順に従って不当な遅延なく提供されるものとする。
3. **本限定保証は、欠陥製品の取り外し、交換品または修理品もしくは修繕された部材の再設置等に係る現場労務費やその他の費用を補償するものではなく、またそれらの費用に関する責任および賠償は本限定保証の限りではない。⁸**
4. 本限定保証の下、製品の修理・修繕または交換を行う場合、新品と同様の状態に再生するリマニュファクチャリング、再整備を施し新品に準じる状態に仕上げるリファビッシュによる部材または製品を使用できるものとする。交換した部品や製品はREC の所有物とする。上記セクション I. と II. に述べられている保証期間は、製品のいかなる交換または修理においても延長しないものとする。
5. 本限定保証は、REC が提供する最新の安全、設置および操作に関する指示書（取扱説明書）にしたがい製品が設置されていることを前提とする。以下による損害、故障、出力やサービスの不具合には適用されないものとする。(a) 正規の専門技術を有するサービス担当技術者以外による製品の修理・修繕、改良、または撤去。(b) 製品の不適切な接続、設置、および使用。(c) 不正利用、誤用、事故、過失行為、停電あるいは電圧の急激な変化、稲妻、火災、洪水、偶発的な破損、第三者による行為および REC が適切に制御し得ない、および/または、正常動作条件下以外で発生した出来事または偶発事故。
6. 本限定保証は、任意に無料で提供され、独立の保証を提供するものではない。したがって、欠陥が実質的に製品機能に影響するか、その欠陥が原因で出力が保証レベルを下回った場合、オリジナルエンドユーザーの救済措置は、セクション I. および II. の保証内容に独占的に制限されるものとする。REC はここで述べられる保証以外の保証はしないものとする。特に特定目的に対するその他の保証、市場性・商品性あるいは適合性の全てに関わる保証を放棄するものとする。REC は、使用に起因する特殊な損害、事故による損害、間接的損害、懲罰的損害賠償、あるいは保証された製品性能の損失（電力損失、利益損失、貯蓄損失、あるいは第三者からの経費要求を含むがこれらに限定するものではない）に対するあらゆる負担・法的責任を除外するものとする。保証人に適用され保証人が義務を負う製造物責任法の下で、あるいは保証人側の故意または重大な過失の場合において保証人が責任を負う範囲にこれは適用しないものとする。
7. 法原則のその選択に関係なくこの限定保証はシンガポールの法によって管理され、解釈されるものとする。国際物品売買契約に関する国際連合条約（1980）は、本限定保証に対し、あるいはそこから発生するいかなる争議にも適用されずまた準拠しない。

IV. 保証申立て手続き

製品を最初に購入した公認代理店か販売店に通知することにより、本限定保証下での申立てを行うものとする。

申立ての登録は、

www.recgroup.com/claims

にて受付を行う。

RECの全世界の販売パートナーのお問い合わせ先は下記でご確認ください：

www.recgroup.com/distributors

クレームが提出された後は、RECの各国支店での対応となります。下記でご確認ください：

www.recgroup.com/contact

保証申立ての処理には、製品の最初の取得購入を証明できるものおよび本保証の譲渡を含むその後の販売の証拠が必要で、その申立てには、申立てた欠陥の説明と製品のシリアル番号を含める必要があります。REC への製品あるいは部材の返却に先立ち、RMA（商品返品確認）番号が必要となります。この番号については、前述のアドレス経由でREC にお問い合わせください。

本保証は、お客様に2018年10月1日以降に納入された製品に対し有効です。

この保証は、以下によって提供されます。: REC Solar Pte. Ltd., 20 Tuas South Avenue 14, Singapore 637312

Tel: +65 64959228

この日本語版は、英語の原文を翻訳したものです。翻訳版と英語版の間に相違がある場合、英語版が法的拘束力を持ちます。

⁸ REC ProTrust保証パッケージの条件に応じて、RECソーラープロフェッショナル認定事業者を介して、さらなる延長保証をおこなうことができます。詳細につきましては、www.recgroup.com/protrustを参照してください。

Limited Warranty Certificate for REC TwinPeak solar panels¹ (Limited Warranty) (valid as of October 1, 2018)

This Limited Warranty covers all the above named REC solar panels (as defined above¹) delivered to REC customers on or after October 1, 2018², and is valid in all member states of the Organization of American States (OAS) only.

REC SOLAR PTE. LTD. (hereafter the 'Warrantor' or 'REC') issues the following voluntary warranty to the end-user who purchased the Product in one of the states mentioned above and put the Product into use for the first time (the 'Original End-User'). In addition to the rights under this Limited Warranty, the Original End-User may be entitled to statutory warranty rights under applicable national laws which shall not be affected or limited in any way by this Limited Warranty.

I. Product Warranty

Subject to the terms and conditions of this Limited Warranty, for a period of 20 years³ from the date of purchase by the Original End-User (not exceeding a maximum period of 20.5 years⁴ from the date of production as identified on the Product), REC warrants that the Products:

- Are free from defects in material and workmanship if installed and used in accordance with the installation instructions available to download from www.recgroup.com; and
- Will remain safe and operational if cable and connector plugs are installed professionally and are not permanently positioned in water; provided however, that damage to the cable caused by abrasion on a rough surface due to insufficient fixing or to unprotected running of the cable over sharp edges is excluded. Damage caused by animals is also excluded; and
- Will not experience freezing up of the aluminum frames if installed correctly.

The outer appearance of the Product, including scratches, stains, rust, mould, discoloration and other signs of normal wear and tear, which occurred after delivery or installation, do not constitute defects, provided the functionality of the Product is not affected. Glass breakage constitutes a defect only if not caused by any external influence.

If a defect (or serial defect⁵) occurs during the Warranty Period affecting the functionality of the Product, REC will, at its sole option:

- Repair the defective Product; or
- Replace the Product with an equivalent product; or
- Refund the current market price of an equivalent product at the time of the claim.

II. Performance Warranty

Subject to the terms and conditions of this Limited Warranty, REC warrants that the actual power output (performance) of the Product will reach at least 97.5% of the nameplate power output specified on the Product during the first year (calculated from the date of production as identified on the Product). From the second year, the actual power output will decline annually by no more than 0.7% for a period of 24 years, so that by the end of the 25th year, an actual output of at least 80.7% of the nameplate power output specified on the Product will be achieved.

In the case of the REC TwinPeak 4 and REC TwinPeak 5 panels, REC warrants that the actual power output (performance) of the Product will reach at least 98 % of the nameplate power output specified on the Product during the first year (calculated from the date of production as identified on the Product). From the second year, the actual power output will decline annually by no more than 0.5% for a period of 24 years, so that by the end of the 25th year, an actual output of at least 86 % of the nameplate power output specified on the Product will be achieved.

This Performance Warranty covers only reduced performance due to natural degradation of the glass, the solar cell, the embedding foil, the junction box and interconnections under normal use.

If the Product does not reach the warranted power output levels set out above when measured by the Warrantor or by an accredited independent measuring institute⁶ agreed to prior to testing by the Warrantor, under standard test conditions (IEC 61215) and taking into account a $\pm 3\%$ tolerance range, then REC will, at its sole option:

- Repair the Product; or
- Replace the Product with an equivalent product or to supply additional panels as necessary to achieve the warranted percentage of specified power output; or
- Refund the current market price of an equivalent product at the time of the claim.

¹ Including product variants with one or more of the suffixes: Black BLK, BLK2, Mono, Q2, and excluding panels showing Q3, as part of the product name.

² This warranty is also valid for products delivered to REC customers before October 1, 2018, which were held in stock by the customer, and were commissioned after October 1, 2018, on installations of less than 500 kW size only. In such cases, proof of system commissioning must accompany the claim submission.

³ This may be extended for additional 5 years subject to the prevailing conditions of the REC Certified Solar Professional Program. For more information on products, installation types & installers qualified for that extension see: www.recgroup.com/rcsp.

⁴ 25.5 years in the case of prevailing footnote ³.

⁵ Serial defects can only be confirmed by REC as a serial defect event in accordance with REC standards of serial defects.

⁶ Examples: Fraunhofer ISE, TÜV Rheinland, UL or equivalent as discussed and agreed by REC prior to testing.

III. Warranty Conditions, Limitations and Exclusions

1. This Limited Warranty is not transferable by the Original End-User, except to a subsequent owner of the solar power facility at which the Product was originally installed and remains installed, provided that this solar power facility has not been altered in any way or moved from the structure or property at which it was originally installed.
2. Notification of a warranty claim hereunder must be given without undue delay after detection of the defect and prior to the expiration of the applicable Warranty Period and in accordance with the procedure as set out in section IV below.
3. **Please note that this Limited Warranty does not cover, nor will the Warrantor reimburse, any on-site labor or other costs incurred in connection with the de-installation or removal of defective Products, transport or the re-installation of replaced or repaired Products or any components.⁷**
4. The Warrantor may use remanufactured or refurbished parts or products when repairing or replacing any Products under this Limited Warranty. Any exchanged or replaced parts or Products will become the property of REC. The Warranty Periods set out in sections I. and II. above will not be extended in any way in the event of a replacement or repair of a Product.
5. This Limited Warranty requires that the Product is installed according to the latest safety, installation and operation instructions provided by REC and does not apply to damage, malfunction, power output or service failures which have been caused by: (a) repair, modifications or removal of the Product by someone other than a qualified service technician; (b) any improper attachment, installation or application of the Product or (c) abuse, misuse, accident, negligent acts, power failures or surges, lightning, fire, flood, accidental breakage, actions of third parties and other events or accidents outside REC's reasonable control and/or not arising under normal operating conditions.
6. This Limited Warranty is provided voluntarily and free of charge and does not constitute an independent guarantee. Therefore, if any defect materially affects the functionality of the Product or results in a power output below the warranted levels, the Original End-User's remedies are limited exclusively to the remedies set out under sections I. and II. in the warranty cases specified herein. **REC ASSUMES NO WARRANTIES, EXPRESS OR IMPLIED, OTHER THAN THE WARRANTIES MADE HEREIN AND SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. REC EXCLUDES ALL LIABILITIES FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES FROM THE USE OR LOSS OF USE OF THE PRODUCTS TO PERFORM AS WARRANTED; INCLUDING BUT NOT LIMITED TO DAMAGES FOR LOSS OF POWER, LOST PROFITS OR SAVINGS NOR EXPENSES ARISING FROM THIRD-PARTY CLAIMS.** This does not apply to the extent the Warrantor is liable under applicable mandatory product liability laws or in cases of intent or gross negligence on the part of the Warrantor.
7. This Limited Warranty shall be governed by and construed in accordance with the laws of the State of California without giving effect to its conflict of laws provision. The United Nations Convention on Contracts for the International Sale of Goods (1980) shall not apply to or govern this Limited Warranty or any aspect of any dispute arising there from.

IV. Warranty Claim Procedure

Claims under this Limited Warranty must be made by notifying the authorized distributor or seller where the Product was first purchased. A claim may be registered at:

www.recgroup.com/claims

Contact details for REC global distribution partners can be found at:

www.recgroup.com/distributors

Once a claim has been submitted, it will be handled by the REC Regional Office, details of which can be found at:

www.recgroup.com/contact

For a warranty claim to be processed, proof of the original purchase of the Product and any subsequent sales including transfer of this Warranty need to accompany the claim. The claim must include a description of the alleged defect(s) as well as the Product's serial number(s). Prior to returning any Products or components to REC, an RMA (Return Merchandise Authorization) number is required, which may be obtained by contacting REC via the aforesaid address.

This warranty is valid for Products delivered to REC customers on or after October 1, 2018.

This warranty is given by: REC Solar Pte. Ltd., 20 Tuas South Avenue 14, Singapore 637312, Tel: +65 64959228

⁷ Further warranty extensions may be given through REC Certified Solar Professional installers according to the conditions of the REC ProTrust Warranty package. See www.recgroup.com/protrust for further details.

Certificado de garantía para los módulos de la serie REC TwinPeak¹

(válida a partir del 1 de octubre de 2018)

Esta garantía es válida para todos los productos REC (según lo definido anteriormente¹) entregados a partir del 1 de octubre de 2018² en todos los Estados miembro de la Organización de los Estados Americanos (OES).

REC SOLAR PTE. LTD. (en lo sucesivo, el «garante» o «REC») concede la siguiente garantía voluntaria al usuario final que adquiera el producto en un Estado miembro de la OES y que utilice el producto por primera vez (en lo sucesivo, el «usuario final original»). Además de los derechos que concede la presente garantía limitada, el usuario final original puede tener otros derechos de garantía en virtud de la legislación nacional vigente que no se verán afectados ni limitados de ningún modo por esta garantía limitada.

I. Garantía del producto

REC garantiza, según las condiciones de la presente garantía limitada, durante un periodo de 20 años³ a partir de la fecha de compra por parte del usuario final original (siempre y cuando no se sobrepase un periodo máximo de 20,5 años⁴ desde la fecha de fabricación indicada en el producto) (el «periodo de garantía») que los productos:

- No presentarán defectos materiales ni de fabricación si se instalan y utilizan de acuerdo con las instrucciones de instalación que pueden descargarse de la web www.recgroup.com; y
- Serán seguros y permanecerán en funcionamiento si el cable y los conectores se han instalado de un modo profesional y no están permanentemente en contacto con agua; siempre y cuando se excluyan los daños en el cable provocados por la abrasión en una superficie rugosa debido a una fijación insuficiente o al desplazamiento sin protección del cable sobre bordes afilados. También quedan excluidos los daños provocados por animales; y
- Los marcos de aluminio no se deformarán por efectos de congelación del agua en el interior si se han instalado correctamente siguiendo las instrucciones de nuestro Manual de Instalación.

La apariencia externa del producto, incluidos arañazos, manchas, óxido, moho, decoloración u otros signos de desgaste normal que aparezcan tras la entrega o instalación, no constituye un defecto siempre y cuando no afecte a la funcionalidad del producto. La rotura del cristal constituye un defecto sólo si no ha sido provocada por un factor externo.

Si durante el periodo de garantía aparece un defecto (o defecto de serie⁵) que afecte a la funcionalidad del producto, REC podrá, según su criterio:

- Reparar el producto defectuoso; o
- Sustituir el producto por un producto equivalente; o
- Reembolsar el precio de mercado vigente de un producto equivalente en el momento en que se produzca la reclamación.

II. Garantía de la potencia nominal

REC garantiza, según lo dispuesto en la presente garantía, que la potencia nominal real del producto llegará como mínimo al 97,5% de la potencia nominal especificada en la placa del producto durante el primer año (calculado a partir de la fecha de fabricación indicada en el producto). A partir del segundo año, la reducción anual de la potencia nominal real no superará el 0,7% durante un periodo de 24 años, de modo que al finalizar el 25º año, la potencia nominal real alcanzará como mínimo el 80,7% de la potencia nominal especificada en la placa del producto.

En el caso de los paneles REC TwinPeak 4 y REC TwinPeak 5, REC garantiza, que la potencia nominal real del producto llegará como mínimo al 98 % de la potencia nominal especificada en la placa del producto durante el primer año (calculado a partir de la fecha de fabricación indicada en el producto). A partir del segundo año, la reducción anual de la potencia nominal real no superará el 0,5 % durante un periodo de 24 años, de modo que al finalizar el 25º año, la potencia nominal real alcanzará como mínimo el 86 % de la potencia nominal especificada en la placa del producto.

Esta garantía de potencia nominal sólo cubre la reducción del rendimiento debida a una degradación natural del cristal, de la célula solar, de la lámina incrustada, de la caja de conexiones y de las interconexiones producida en caso de uso normal.

Si el producto no alcanza los niveles de potencia nominal garantizados señalados anteriormente durante una medición efectuada por el garante o por un instituto de medición acreditado e independiente⁶ autorizado por el garante con anterioridad a la realización de la prueba, en las condiciones estándar de ensayo (IEC 61215) y teniendo en cuenta una tolerancia del $\pm 3\%$, REC podrá, según su criterio:

- Reparar el producto; o
- Sustituir el producto por un producto equivalente o suministrar los módulos adicionales necesarios para llegar al porcentaje garantizado de la potencia nominal especificada; o
- Reembolsar el precio de mercado vigente de un producto equivalente en el momento en que se produzca la reclamación.

¹ Incluidas las variantes de producto con uno o más de los siguientes sufijos: Black, BLK, BLK2, Mono, Q2 y excluyendo paneles que marcan Q3 como parte del nombre del producto.

² Esta garantía también es válida para productos enviados a clientes de REC antes del 1 de octubre de 2018, los cuales fueron almacenados por el cliente y fueron instalados posterior al 1 de octubre de 2018 en instalaciones menores de 500 kW. En estos casos, habrá que justificar la ejecución de dicha instalación en el plazo mencionado junto a la reclamación.

³ Puede ampliarse a 5 años más en función de las condiciones que prevalecen en el Programa REC Certified Solar Professional. Para obtener más información sobre los productos, tipos de instalación e instaladores cualificados para realizar dicha ampliación, consulte: www.recgroup.com/rcsp.

⁴ 25,5 años en caso de condiciones predominantes⁵.

⁵ Los defectos de serie sólo pueden ser confirmados por REC para ser considerados como un defecto de serie, y deben de estar de acuerdo con los estándares de REC relativos a este tipo de defectos en la producción.

⁶ Ejemplos: Fraunhofer ISE, TÜV Rheinland, UL o laboratorio equivalente según sea acordado por REC antes de la prueba.

III. Condiciones, limitaciones y exclusiones de la Garantía

1. El usuario final original no puede transferir la presente garantía, excepto si se trata del subsiguiente propietario de la misma instalación de energía solar fotovoltaica en la cual se instaló originalmente y sigue instalado el producto, siempre y cuando dicha instalación de energía solar no se haya modificado de ningún modo ni trasladado del edificio o propiedad en la cual haya sido instalada inicialmente.
2. En virtud del presente documento, cualquier reclamación de garantía deberá notificarse sin demora tras la detección del defecto y con anterioridad al vencimiento del periodo de garantía aplicable, de conformidad con el procedimiento de tramitación de la garantía estipulado en el apartado IV que aparece más abajo.
3. **La presente garantía no cubre, y el garante no reembolsará, ningún tipo de trabajo in situ ni ningún otro coste en el que se haya incurrido en relación con el desmontaje o la retirada de productos defectuosos, con el transporte o con la reinstalación de los productos reparados o sustituidos o de cualquiera de sus componentes.**
4. El garante podrá, según su criterio, utilizar piezas o productos remanufacturados o reacondicionados a la hora de reparar o sustituir el producto al que se aplica la presente garantía limitada. Todas las piezas o productos cambiados o sustituidos pasarán a ser propiedad de REC. Los periodos de garantía establecidos de acuerdo con lo dispuesto en los apartados I y II anteriores no se ampliarán en modo alguno en caso de reparación o sustitución de un producto.
5. La presente garantía requiere que el producto sea instalado siguiendo las últimas instrucciones de seguridad, instalación y funcionamiento suministradas por REC y no se aplicará a los daños, averías, fallos de potencia nominal o fallos de funcionamiento que hayan sido provocados por: (a) la reparación, modificación o retirada del producto por parte de personas ajenas a un servicio técnico certificado; (b) la mala sujeción, instalación o aplicación del producto o (c) el maltrato, mal uso, accidentes, negligencias, cortes del suministro eléctrico o subidas de tensión, rayos, incendios, inundaciones, rotura accidental, acciones de terceros y otros actos o accidentes fuera del control razonable de REC y/o que no se deriven de las condiciones normales de uso.
6. La presente garantía se ofrece de un modo voluntario y sin coste alguno y no constituye una garantía independiente. Por lo tanto, si cualquier defecto afecta materialmente a la funcionalidad del producto o produce una potencia nominal inferior a los niveles garantizados, las soluciones para el usuario final original quedan exclusivamente limitadas a las soluciones indicadas en los apartados I y II en los casos de garantía especificados en dichos apartados. **REC NO ASUMENINGUNA GARANTÍA, EXPLÍCITA O IMPLÍCITA, DISTINTA A LAS GARANTÍAS EXPUESTAS EN EL PRESENTE DOCUMENTO Y RENUNCIA EXPRESAMENTE A CUALQUIER OTRA GARANTÍA, COMERCIALIZACIÓN O ADECUACIÓN A UN FIN CONCRETO. REC EXCLUYE TODA RESPONSABILIDAD POR DAÑOS, ESPECIALES, DIRECTOS O INDIRECTOS, DERIVADOS DE LA CAPACIDAD O INCAPACIDAD DEL PRODUCTO DE FUNCIONAR SEGÚN LO GARANTIZADO, INCLUYENDO, ENTRE OTROS, DAÑOS POR PÉRDIDAS DE POTENCIA, BENEFICIOS O AHORROS QUE NO SE HAYAN MATERIALIZADO O GASTOS DERIVADOS DE RECLAMACIONES DE TERCERAS PARTES.** Este punto no se aplica en los casos en los que el garante está obligado en virtud de la legislación obligatoria de responsabilidad de producto ni en los casos de negligencia grave o intencionada por parte del garante.
7. Esta garantía deberá ser gobernada e interpretada de acuerdo con las leyes del Estado de California sin dar efecto a sus conflictos con las disposiciones de la ley. La Convención de las Naciones Unidas sobre los Contratos de Compraventa de Mercancías Internacionales (1980) no será de aplicación ni regulará la presente garantía limitada ni ninguna controversia o litigio derivado de la misma.

IV. Procedimiento de reclamación de la garantía

Las reclamaciones derivadas de la presente garantía deben efectuarse mediante una notificación al distribuidor o comercio autorizado en el que se haya adquirido originalmente el producto. La reclamación debe registrarse en:

www.recgroup.com/claims

Los datos de contacto de los Distribuidores de REC a nivel global puede encontrarlos en:

www.recgroup.com/distributors

Una vez que se haya presentado una reclamación, ésta será tratada por la oficina regional de REC, cuyos datos de contacto se pueden encontrar en:

www.recgroup.com/contact

Para que una reclamación de garantía pueda ser tramitada, es imprescindible adjuntar a la reclamación un comprobante de la compra original del producto y de cualquier venta subsiguiente, incluida la transferencia de esta garantía. La reclamación debe incluir una descripción del (de los) defecto(s) por el que (los que) se reclama y el (los) número(s) de serie del producto. Antes de devolver cualquier producto o componente a REC, es necesario haber obtenido un número de autorización de devolución de mercancía o RMA (Return Merchandise Authorization). Dicho número puede obtenerse poniéndose en contacto con REC en la dirección indicada anteriormente.

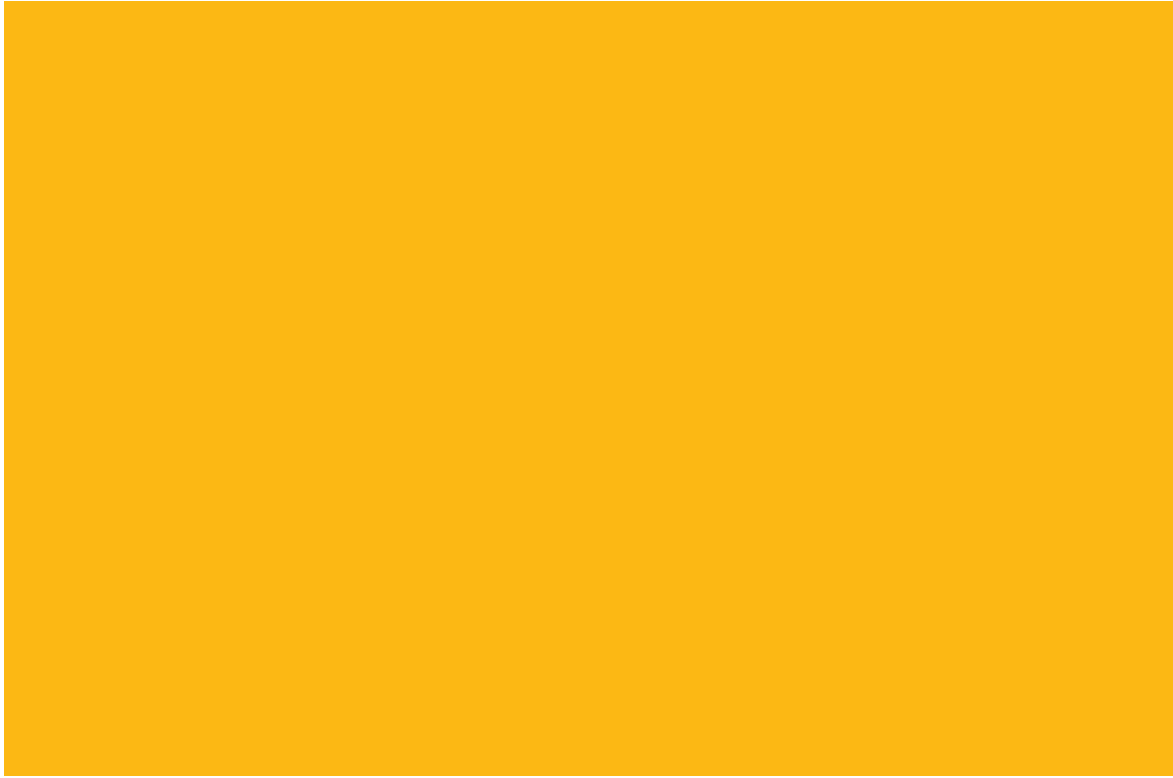
La presente garantía es válida para los productos entregados a partir del 1 de octubre de 2018.

Esta garantía es otorgada por: REC Solar Pte. Ltd., 20 Tuas South Avenue 14, Singapur 637312, Tel: +65 64959228



Esta versión en castellano es una traducción de la versión original en inglés. En el caso que hubiere diferencias entre la versión traducida y la versión inglesa, la versión inglesa prevalecería sobre la versión traducida.

⁷ Extensión de garantía a través de los instaladores REC Certified Solar Professional acorde a los términos del paquete REC ProTrust Warranty. Para más información visite www.recgroup.com/protrust.



REC SOLAR PTE. LTD.
20 TUAS SOUTH AVENUE 14
SINGAPORE 637312
Tel: +65 6495 9228
Mail: post@recgroup.com

www.recgroup.com

DOCUMENT HISTORY

Date	Rev Number	Reason
12.2018	A	First release
07.2019	A.2	Addition of footnotes regarding +5 years for REC Solar Professionals
01.2020	A.3	Footnote 8 regarding ProTrust warranty, change Power Output Warranty to Performance Warranty Update to APAC warranty §8 regarding Australia
06.2020	B	Addition of REC TwinPeak 3 Mono modules and incl. Black suffix
07.2021	C	Addition of REC Twin-Peak 4 Series - extra paragraph
11.2021	D	Addition of UK in footnotes, addition of Dutch language
10.2022	5	Addition of TwinPeak 5 and “This warranty is given by: ...”

REC Solar Pte. Ltd

Level 20, 31 Queen Street
Melbourne VIC 3000
Phone +61 3 9020 2056
www.recgroup.com



Singapore, August 23, 2023

Authorized Importer Declaration

To Whom It May Concern,

As an importer of REC PV modules into Australia, the below company hereby agrees to take on warranty liabilities as detailed in the CEC importer's declaration for REC modules in accordance to the *mandatory ACCC statement;

- Company Name: Metal Manufactures Pty Ltd
- Australian Business Number (ABN): 13 003 762 641
- Registered Address: 19 – 21 Loyalty Road, North Rocks, NSW, 2151
- Registered Website: www.mmem.com.au
- Registered Contact Person:
 - (First and Last name) Samuel Page
 - (Contact Number) 0439 749 753
 - (Contact Email) sam.page@mmem.com.au

The applicant authorizes REC to upload details of solar panels imported into the Formbay portal.

These will be registered under the applicant's account, and when validated with the Solar Panel Validation Initiative, will produce a certificate specifying the applicant as the responsible supplier. REC will have a (non-admin) login to the applicant's Formbay portal account.

Date: 23/8/23

By: SAPage
Name: Samuel Page
Title: GM Commercial

*ACCC statement: "Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure"



CEC Product Listing – Importer Declaration (PV Modules)

Module Brand	REC Solar Pte Ltd					
Model numbers	<table border="1"><tr><td>1.</td><td colspan="2">This importer Declaration applies to all future PV Module applications submitted for the CEC List of Approved PV Modules. Model numbers for each application will be provided on a separate company letterhead signed by senior management.</td></tr></table>			1.	This importer Declaration applies to all future PV Module applications submitted for the CEC List of Approved PV Modules. Model numbers for each application will be provided on a separate company letterhead signed by senior management.	
1.	This importer Declaration applies to all future PV Module applications submitted for the CEC List of Approved PV Modules. Model numbers for each application will be provided on a separate company letterhead signed by senior management.					
Importer Company Name	Metal Manufactures Pty Ltd					
Importer Trading Name (if different)						
ABN:	13 003 762 641					
Trading Address	19 – 21 Loyalty Road, North Rocks, NSW, 2151					
Website	www.mmem.com.au					
Email (For Warranty Claims/Tech Support)	Sam.page@mmem.com.au					
Phone (For Warranty Claims/Tech Support)	+61 2 8839 9088					
Contact Person	Samuel Page					
Contact Person Email	sam.page@mmem.com.au					
Contact Person Phone Number	+61 2 8839 9088	M	+61 439 749 753			

Declaration

As an importer of PV Modules for the Australian market, I will (Please Tick):

- Abide by the Terms and Conditions for listing a PV module on the Clean Energy Council (CEC) approved product list <https://www.cleanenergycouncil.org.au/industry/products/terms-and-conditions/module-terms-and-conditions>
- Ensure my products are compliant with all relevant requirements as specified by Australian standards, regulations and legislation
- Expect that my product could be the subject of a testing program and will sell stock modules for testing
- Understand that non-conformances with certification could lead to removal from the CEC approved product list
- Include full disclosure of country of manufacture in my customer documentation
- Keep records of the serial numbers of all modules supplied by me to the Australian market and make this information available as required by CEC and the Clean Energy Regulator.
- Maintain a public website which provides access to customer documentation (datasheet, install manual and warranty) as provided to CEC by the manufacturer

Name Samuel Page

Signature



Date 23/08/2023

Please return this signed document to CEC products@cleanenergycouncil.org.au

Metal Manufactures Pty Ltd
19 – 21 Loyalty Road
North Rocks NSW 2151
Phone +61 2 8839 9088
www.mmem.com.au



ELECTRICAL
MERCHANDISING

Series	Models	MM Electrical
Alpha	REC410AA Pure-R	X
	REC420AA Pure-R	X
	REC430AA Pure-R	X
TwinPeak	REC375TP4	X
	REC405TP5	X
	REC410TP5	X
TwinPeak Black	REC395TP5 Black	X
	REC400TP5 Black	X
	REC405TP5 Black	X