SOLAR'S MOST TRUSTED

REC

REC ALPHA PURE-R SERIES

PRODUCT SPECIFICATIONS

COMPACT PANEL SIZE

9 A PANEL CURRENT
COMPATIBLE WITH MLPE

430 WP

223 W/M²

PRODUCT
REC 25 YEAR PROTRUST WARRANTY
LABOR
PERFORMANCE

ELIGIBLE

LEAD FREE

ROHS COMPLIANT

EXPERIENCE

α

PERFORMANCE

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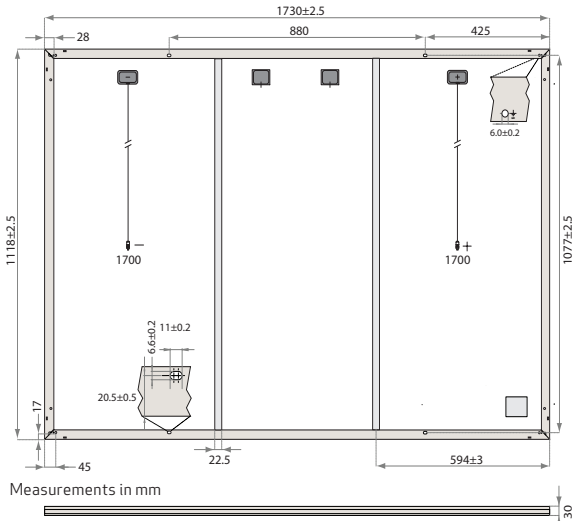
GENERAL DATA

Cell type:	80 half-cut REC heterojunction cells with lead-free, gapless technology
Glass:	3.2 mm solar glass with anti-reflective surface treatment in accordance with EN 12150
Backsheet:	Highly resistant polymer (black)
Frame:	Anodized aluminum (black)
Junction box:	4-part, 4 bypass diodes, lead-free IP68 rated, in accordance with IEC 62790
Connectors:	Stäubli MC4 PV-KBT4/KST4 (4 mm²) in accordance with IEC 62852, IP68 only when connected
Cable:	4 mm² solar cable, 1.7 + 1.7 m in accordance with EN 50618
Dimensions:	1730 x 1118 x 30 mm (1.93 m²)
Weight:	21.5 kg
Origin:	Made in Singapore



Measurements in mm

ELECTRICAL DATA — Product Code*: RECxxxAA Pure-R

STC				
Power Output - P_{MAX} (Wp)	400	410	420	430
Watt Class Sorting - (W)	0/+10	0/+10	0/+10	0/+10
Nominal Power Voltage - V_{MPP} (V)	48.8	49.4	50.0	50.5
Nominal Power Current - I_{MPP} (A)	8.20	8.30	8.40	8.52
Open Circuit Voltage - V_{OC} (V)	58.9	59.2	59.4	59.7
Short Circuit Current - I_{SC} (A)	8.80	8.84	8.88	8.91
Power Density (W/m²)	207	212	218	223
Panel Efficiency (%)	20.7	21.2	21.8	22.3
NMOT				
Power Output - P_{MAX} (Wp)	305	312	320	327
Nominal Power Voltage - V_{MPP} (V)	46.0	46.6	47.1	47.6
Nominal Power Current - I_{MPP} (A)	6.64	6.70	6.80	6.88
Open Circuit Voltage - V_{OC} (V)	55.5	55.8	56.0	56.3
Short Circuit Current - I_{SC} (A)	7.11	7.16	7.20	7.24

Values at standard test conditions (STC: air mass AM 1.5, 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. Nominal module operating temperature (NMOT: air mass AM 1.5, 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	
IEC 62804	PID
IEC 61701	Salt Mist
IEC 62716	Ammonia Resistance
ISO 11925-2	Ignitability (EN 13501-1 Class E)
IEC 62782	Dynamic Mechanical Load
IEC 61215-2:2016	Hailstone (35mm)
IEC 62321	Lead-free acc. to RoHS EU 863/2015
IEC 61730-2:2016	Fire Class C (as per UL790)

ISO 14001, ISO 9001, IEC 45001, IEC 62941

Intertek Lead-Free take-e-way for an easy way take-e-way WEEE-compliant recycling scheme

TEMPERATURE RATINGS*

Nominal Module Operating Temperature:	44°C (±2°C)
Temperature coefficient of P_{MAX}:	-0.24 %/°C
Temperature coefficient of V_{OC}:	-0.24 %/°C
Temperature coefficient of I_{SC}:	0.04 %/°C

*The temperature coefficients stated are linear values

MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
System voltage:	1000 V
Test load (front):	+7000 Pa (713 kg/m²)*
Test load (rear):	-4000 Pa (407 kg/m²)*
Series fuse rating:	25 A
Reverse current:	25 A

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

WARRANTY

	Standard	REC ProTrust	
Installed by an REC Certified Solar Professional	No	Yes	Yes
System Size	All	≤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	0.25%	0.25%	0.25%
Power in Year 25	92%	92%	92%

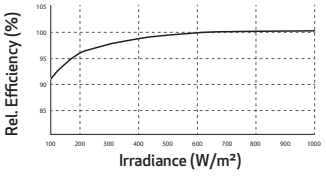
The REC ProTrust Warranty is only available on panels purchased through an REC Certified Solar Professional installer. Warranty conditions apply. See www.recgroup.com for more details.

DELIVERY INFORMATION

Panels per pallet:	33
Panels per 40 ft GP/high cube container:	858 (26 pallets)
Panels per 13.6 m truck:	924 (28 pallets)

LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:



Available from:

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.

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REC ALPHA® PURE-R SERIES

ALPHA EXPLAINED

COMPACT PANEL SIZE

9 A MODULE CURRENT
COMPATIBLE WITH MLPE

430 WP

223 W/M²

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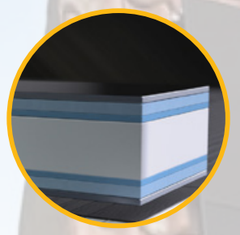
GROUND-BREAKING TECHNOLOGY FOR MAXIMIZING POWER DENSITY

MORE POWER MAKES THE MOST OF ROOFTOP SPACE

The REC Alpha Pure-R Series build on the successes of previous REC Alpha products in uniting leading cell technology to create a revolutionary, powerful and reliable solar panel that hits the sweet spot in terms of power, weight and size:

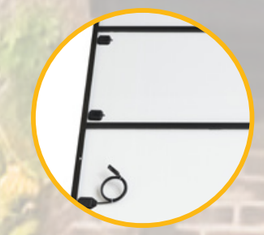


Heterojunction cells
- Combines the best of modern cell technology
- Highly efficient cells for high performance
- Larger cells capture more light for more energy generation

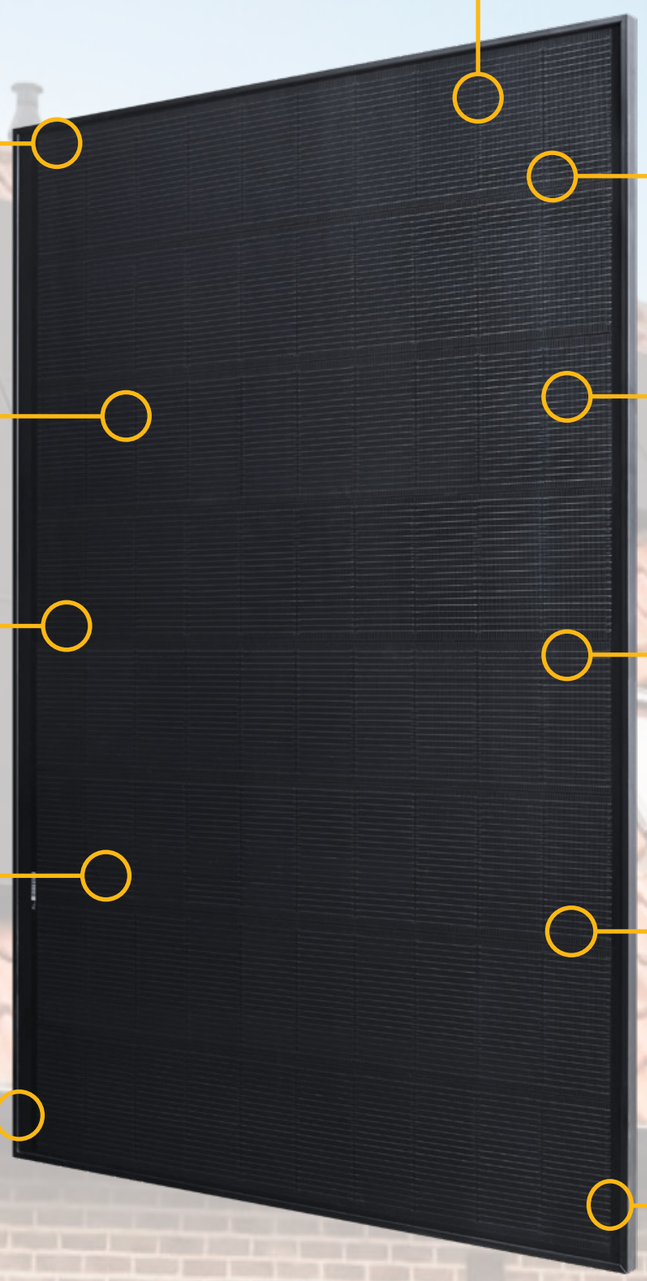
N-type technology = more power
- No initial power loss (no LID)
- You get the power you pay for

Advanced gapless cell connections
- Eliminates soldering for better build quality
- Reduces cell stress for long-term durability
- Increases power and keeps panel compact

Higher light transmission
- Special anti-reflective glass increases light transmission for higher power



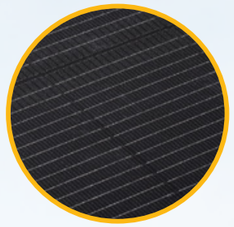
Guaranteed better durability
- Withstands up to 7000 Pa
- Better protection against harsh weather



Improved looks
- Gapless cells for great aesthetics
- Full black appearance for an elegant look

High power density of 223 W/m²
- Generates more clean energy from available rooftop space
- Less than 2 m², but still offers high power

Higher efficiency at the hottest times
- Leading temperature coefficient for more production when the sun shines strongest
- Better performance in hot conditions



Low current through 4-section layout
- Cell layout in 4 sections keeps panel current around 9 A
- Ensures easy compatibility with modern optimizers and microinverters
- Improves output under shaded conditions

Environmentally-friendly
- Lead-free (RoHS compliant)
- Manufacturing with minimal carbon footprint

Exceptional quality
- Made in REC's state of the art, energy efficient facility in Singapore
- Highly automated production for improved efficiency and reliability
- Consistently one of the lowest warranty claims rate in solar

MAXIMIZE SYSTEM POWER
FOR MAXIMUM SAVINGS

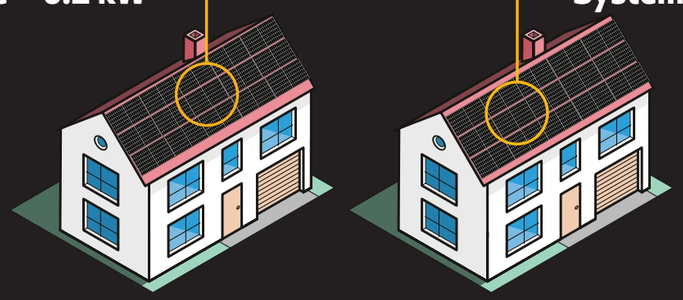
Optimum use of space is key to a good solar installation. The dimensions of the REC Alpha Pure-R enable you to pack in as much power as possible and generate more energy.

15 x 415 Wp conventional panels
(> 1.87 m^2 panel area):

System size = 6.2 kW

15 x 430 Wp REC Alpha Pure-R
(1.93 m^2 panel area):

System size = 6.5 kW

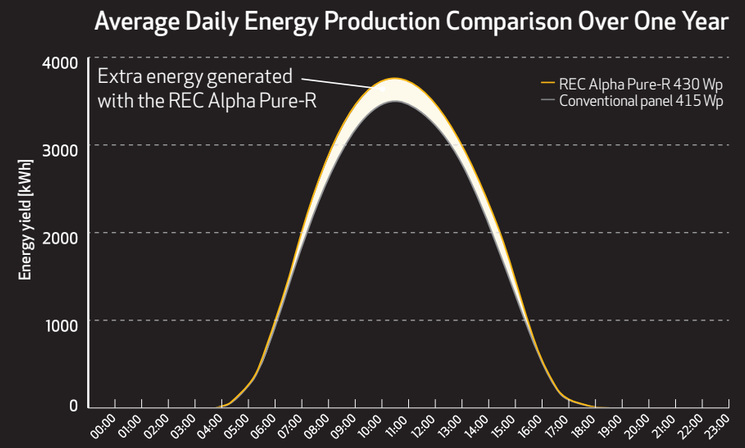


Based on an available roof area of 30 m^2.

The comparison is clear: in a regular residential installation, the REC Alpha Pure-R offers more power than conventional panels for more energy and more savings.

GREATER ANNUAL YIELDS
FROM DAWN TO DUSK

The REC Alpha Pure-R packs in more energy than ever before. With no LID, a leading temperature coefficient and its high power density, it is ideal for increasing energy yields and making the most of available rooftop space.



Calculations based on simulation results for full calendar year, based on an 1.2 kWp system in Palm Springs, CA, USA. Peak REC Alpha Pure-R energy yield difference at midday: +6%, with an overall greater annual yield of 7.6%. Performance may vary dependent on location.

MORE POWER

WITH THE REC ALPHA PURE-R!

LEADING THE WAY TO
A MORE SUSTAINABLE FUTURE

Lead and other toxins can be found in almost all solar panels today. That means all the panels produced in 2021 alone will potentially add around 11,000 tons of lead to the environment in the future! Using advanced manufacturing techniques, the REC Alpha Pure-R has removed the lead from all components so that it is compliant with Restriction of Hazardous Substances regulations (RoHS) across the world. This sets the pace in sustainability for solar and shows that a clean energy future without lead and toxins is possible.

Plant the seed for a sustainable future

Cuts risks to humans and animals

No toxic leakage of lead after recycling

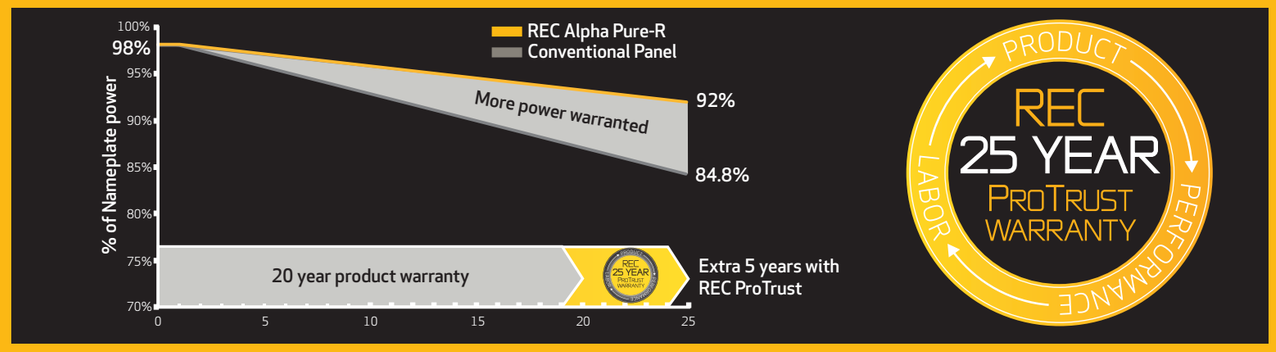
Certified lead-free RoHS-compliant

Our commitment to a lead-free and toxin-safe future

Do even more than just producing clean energy

MORE WARRANTED POWER
AFTER 25 YEARS

REC's consistently low claims rate justifies an outstanding warranty which reflects this leadership and supports our premium product quality.



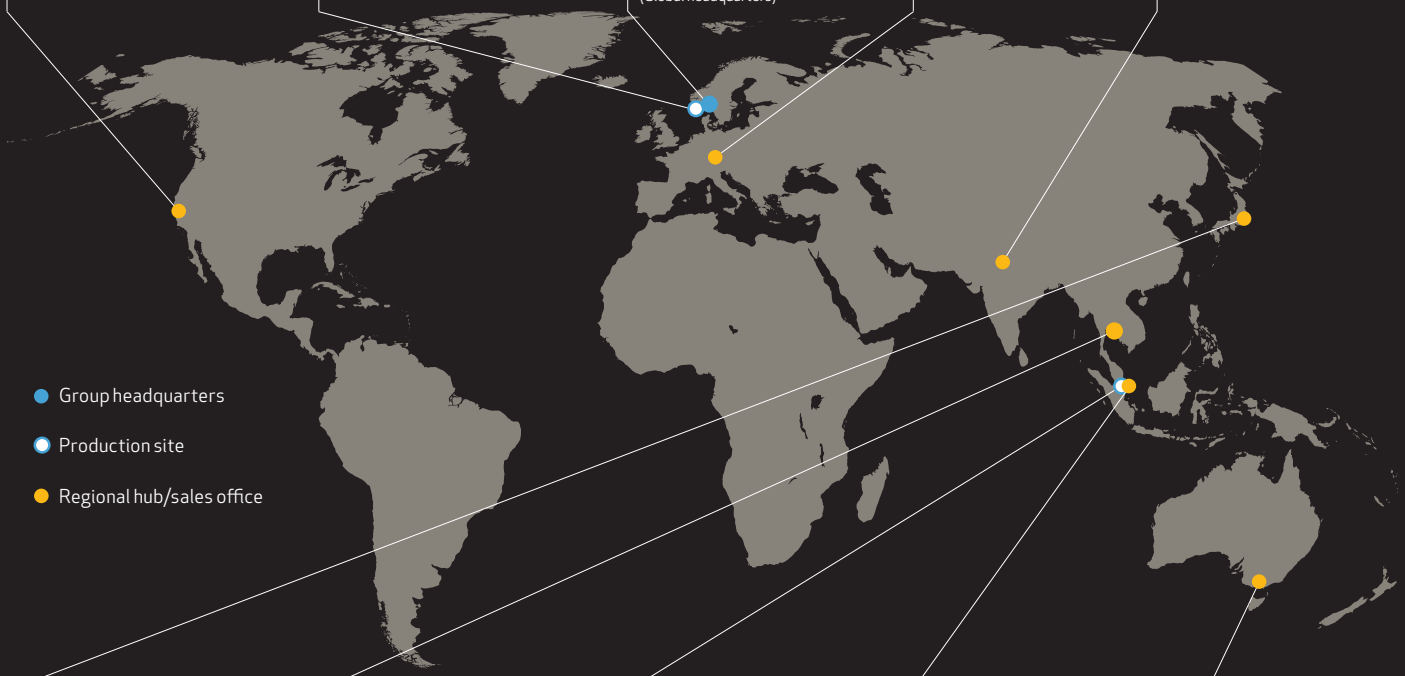
Exclusive to REC Certified Solar Professionals, the REC ProTrust Warranty offers enhanced product and labor coverage*, ensuring peace of mind and a lifetime of high power generation:

- 25 years performance warranty
- 25 years product warranty
- Up to 25 year labor warranty*

*Conditions apply. See www.recgroup.com/protrust for more details

REC - SOLAR'S MOST TRUSTED

REC Group is an international pioneering solar energy company dedicated to empowering consumers with clean, affordable solar power through high-quality solar panels with a leading power density. As Solar's Most Trusted, REC is known for its patented innovations and multiple award-winning products with reliable long-term performance. The cornerstone for REC's strong reliability is advanced and highly efficient manufacturing using Industry 4.0 practices. Founded in 1996 in Norway, REC has always been committed to a low carbon footprint in its solar materials and panels. REC is headquartered in Norway with operational headquarters in Singapore and regional hubs in North America, Europe, and Asia-Pacific.



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