

REC 410 AA PURE REC



Brand: REC Solar

Product Code: REC 410 AA PURE

Availability: 2 - 3 Days

Weight: 21.50kg

Dimensions: 1,755.00mm x 1,040.00mm x 30.00mm

Price: \$341.06

Ex Tax: \$341.06

Short Description

Detailed review of the super high efficiency REC Solar 410W solar panel. Get the full specs, warranties and expert analysis on performance before you install.

Description

The REC Alpha Pure Series 410W All Black solar panel has a seamless, stylish appearance with thin wires that are barely visible and a uniformly black-coloured surface. The glass is 3.2mm solar glass with anti-reflective surface treatment, and the backsheet is a highly resistant black polymer.



- **Power Rating:** 410W
- **Cell Type:** Monocrystalline
- **Panel Dimensions:** 1730 X 1118 X 30mm
- **Solar Panel Aesthetics:** Black Cell, Black Frame, Black Backsheet
- **Snow Load:** 7000 Pa
- **Wind Load:** 4000 Pa
- **Linear Warranty Term:** 25 years
- **Product Warranty Term:** 25 years
- **Made in Singapore**
- **Approximate cost per watt \$3.05**

[Learn More about REC solar](#) 

Product Performance

Power Rating 410W

has a power max output of 410 watts. In independent third-party testing, all models test at or above their reported electrical output.

Efficiency 22.2%

REC 410 AA PURE's efficiency rating is an amazing 22.2%. This ranks REC among the HIGHEST in average solar panel efficiency. This is possible largely due to their Alpha series Twin Design, minimization of resistance loss. The twin Design also allows each half panel to continue generating electricity at full capacity even while the other half is shaded.

Power Tolerance 0 / +5 watts

Power tolerance refers to the amount of electricity produced either above or below its rated power capacity at Standard Test Conditions (STC). The smaller the power tolerance deviation or range, the more accurate the rated power capacity is.

REC Solar Alpha series solar modules have a power tolerance of -0/+5%.

That means REC panels will, at the very minimum, operate at their rated capacity, However, these panels exceed by as much as 5% of their rated capacity. For example, an REC panel rated at 410 W will be able to operate anywhere from 410 W to 430 W (or 5% higher than 410) under STC.

Temperature Coefficient P_{Max}: -0.26

Solar panels perform best at 77°F (25°C). Here in Texas, obviously, we see temperatures that far exceed 77°F for long portions of the year. A solar panel's temperature coefficient is a measurement indicating how well a specific model of solar panel will perform outside of ideal operating conditions.

Knowing a panel's temperature coefficient and the temperature of the panel will allow you to predict your panel's performance during the dog days of summer.

Temperature coefficients are calculated in Celsius.

With each degree above 25° C /77° F, a given solar panel's electric output will be diminished by its temperature coefficient.

Using the above methodology, the REC 410 AA PURE panel has a temperature coefficient of $-0.26\%/^{\circ}\text{C}$. Hence, when this panel's temperature increases by one degree, from 25°C to 26°C (77°F to 79°F), expect a 0.26% reduction in potential electric output

When it's July in Texas and temperatures have climbed to $95^{\circ}\text{F}/35^{\circ}\text{C}$, expect electric output to decrease by 2.6%. When the hottest hours of the summer drives the mercury into the triple digits, say $113^{\circ}\text{F}/45^{\circ}\text{C}$, the REC 410 AA PURE will decrease approximately 5.2%.

REC 410 AA PURE

| | |
|--|------------------------------------|
| Product Name and Model Number | REC 410AA PURE 410W |
| Manufacturer Name and Rating | REC |
| Rated Power Output | 410 watt |
| Efficiency Percentage | 22.2% |
| Power Tolerance | +5.0% |
| Temperature Coefficient | -0.26% |
| Resiliency Specs | Snow load 7000Pa, Wind load 4000Pa |
| Output Warranty Term Length | 25 year |
| Output Warranty Decline Rate | -0.25% |
| Materials Warranty Term Length | 25 years |
| Cell Color(s) | Black |
| Frame | Black Anodized Aluminum Alloy |
| Backsheet Color(s) | Black |
| Cell Type (e.g. monocrystalline) | Monocrystalline heterojunctive |
| Panel Dimensions | 1730 X 1118 X 30mm |
| Weight | 47.4 lbs/ 21.5 kg |
| Number of Cells | 80 half cut , bifacial cells |
| Connector Type | Staubli MC4, |
| Manufacturer Location | Singapore |
| Certifications Received (UL, IEC, ISO) | IEC, UL, ISO, PVEL |
| Average Cost per Watt | 1.00 |
| Marketplace Average Pricing | .90 - 1.50 |

Solar Panel Aesthetics

- Black Cell
- Black Frame
- Black Backsheet

SOLAR'S MOST TRUSTED



REC ALPHA PURE-R SERIES

PRODUCT SPECIFICATIONS

COMPACT PANEL SIZE

9 A MODULE CURRENT
COMPATIBLE WITH MLPE

430 WP
20.7 $\frac{W}{FT^2}$
22.3% EFFICIENCY




LEAD-FREE
ROHS COMPLIANT

EXPERIENCE

PERFORMANCE

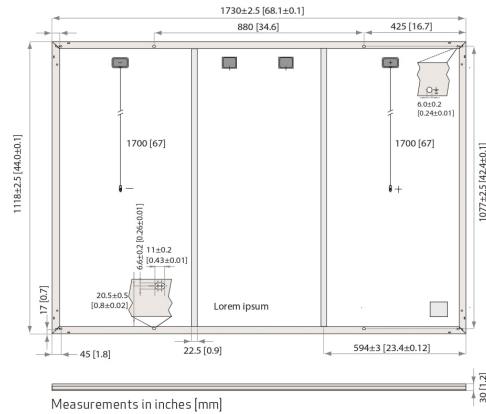
REC ALPHA PURE-R SERIES

PRODUCT SPECIFICATIONS



GENERAL DATA

| | |
|---------------|--|
| Cell type: | 80 half-cut REC bifacial, heterojunction cells with lead-free, gapless technology |
| Glass: | 0.13 in (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 mm ²) in accordance with IEC 62852, IP68 only when connected |
| Cable: | 12 AWG (4 mm ²) PV wire, 67 + 67 in (1.7 + 1.7 m) in accordance with EN 50618 |
| Dimensions: | 68.1 x 44.0 x 1.2 in (20.77 ft ³) / 1730 x 1118 x 30 mm (1.93 m ³) |
| Weight: | 47.4 lbs (21.5 kg) |
| Origin: | Made in Singapore |



ELECTRICAL DATA

Product Code*: RECxxxAA PURE-R

| | | | | |
|--|-------|-------|-------|-------|
| 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) | 8.73 | 8.81 | 8.89 | 8.97 |
| Power Density (W/ft ²) | 207 | 212 | 218 | 223 |
| Panel Efficiency (%) | 20.7 | 21.2 | 21.8 | 22.3 |
| 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 | 6.78 | 6.88 |
| Open Circuit Voltage - V _{OC} (V) | 55.5 | 55.8 | 56.0 | 56.3 |
| Short Circuit Current - I _{SC} (A) | 7.05 | 7.12 | 7.18 | 7.24 |

Values at standard test conditions (STC: air mass AM1.5, irradiance 10.75 W/sq ft (1000 W/m²), temperature 77°F (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 AM1.5, irradiance 800 W/m², temperature 68°F (20°C), windspeed 3.3 ft/s (1 m/s). * Where xxx indicates the nominal power class (P_{MAX}) at STC above.

MAXIMUM RATINGS

| | |
|--------------------------|--|
| Operational temperature: | -40 ... +85°C |
| System voltage: | 1000 V |
| Test load (front): | + 7000 Pa (146 lbs/ft ²)* |
| Test load (rear): | - 4000 Pa (83.5 lbs/ft ²)* |
| 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 |
| System Size | All | ≤25 kW 25-500 kW |
| Product Warranty (yrs) | 20 | 25 |
| Power Warranty (yrs) | 25 | 25 |
| Labor Warranty (yrs) | 0 | 10 |
| Power in Year 1 | 98% | 98% |
| Annual Degradation | 0.25% | 0.25% |
| Power in Year 25 | 92% | 92% |

See warranty documents for details. Conditions apply

CERTIFICATIONS

| | |
|---|------------------------------------|
| IEC 61215:2016, IEC 61730:2016, UL 61730 | |
| IEC 62804 | PID |
| IEC 61701 | Salt Mist |
| IEC 62716 | Ammonia Resistance |
| UL 61730 | Fire Type Class 2 |
| IEC 62782 | Dynamic Mechanical Load |
| IEC 61215-2:2016 | Hailstone (35mm) |
| IEC 62321 | Lead-free acc. to RoHS EU 863/2015 |
| ISO 14001, ISO 9001, IEC 45001, IEC 62941 | |



TEMPERATURE RATINGS*

| | |
|---|-------------|
| Nominal Module Operating Temperature: | 44°C (±2°C) |
| Temperature coefficient of P _{MAX} : | -0.26 %/°C |
| Temperature coefficient of V _{OC} : | -0.24 %/°C |
| Temperature coefficient of I _{SC} : | 0.04 %/°C |

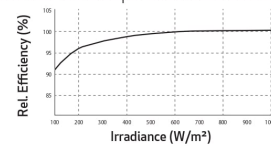
*The temperature coefficients stated are linear values

DELIVERY INFORMATION

| | |
|--|------------------|
| Panels per pallet: | 33 |
| Panels per 40 ft GP/high cube container: | 858 (26 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.



www.recgroup.com

Specifications subject to change without notice.

Ref: PM-D5-12-06-Rev-B 08.22

Warranty Specifications

Warranty Specifications

Every REC solar panel comes complete with a 25-year, product warranty against panel defects. Additionally, REC panels have a 25-year performance warranty ensuring your panels will perform exactly as described for 25 years. REC "best in industry" warranties a minimum of 92% of stated power for 25 years. All REC panels must be installed by a certified REC tech. The installation comes with a 25-year labor warranty in the event a panel needs attention from a technician.

Specification

| Solar Panel Configuration | |
|---------------------------|--|
| Cell Type | Monocrystalline |
| Panel Aesthetics | Black Cell, Black Frame, Black Backsheet |
| Panel Dimensions | 1730 X 1118 X 30mm |
| Power Rating | 410W |
| Snow load | 7000 Pa |
| Wind Load | 4000 Pa |
| Solar Panel Warranty | |
| Linear Production | 25 Years |
| Warranty Term | |
| Product Warranty Term | 25 Years |
| PV Product Performance | |
| Efficiency | 22.2% |
| Max Power Output | 400W |
| Power Tolerance | 0 / +5 Watts |
| Temperature Coefficient | PMax: -0.26 |
| Others | |
| Average Cost / Watt | \$3.05 |
| Where it's Made | Made in Singapore |