

15429 Saddlewood - Power Generation Features

Generac 48 kw Natural Gas - The Generac 48kW home and commercial standby generator (usually model XG04845ANAX) is designed to provide whole-property backup. It runs on natural gas using a liquid-cooled 4.5L engine.

Inverters

The Three (3) **Sol-Ark 15K-2P** is an advanced, pre-wired all-in-one hybrid solar inverter capable of grid-tied, off-grid, and whole-home battery backup. Widely praised for its ruggedness and 15 kW continuous AC output, it features a 200A grid pass-through and works with various 48V battery brands

Batteries HomeGrid Stack'd Series

HomeGrid produces stackable Lithium Iron Phosphate (LiFePO₄) battery systems, typically featuring 4.8 kWh modules. A system of **12 HomeGrid batteries** generally refers to a configuration of 12 modules. Since their [Stack'd Series](#) is designed to accommodate 2 to 8 modules per stack, 12 batteries would typically form two stacked towers (e.g., two 6-module stacks), yielding around 57.6 kWh of total nominal storage capacity. Here are the key specs and operational details for a 12-module HomeGrid setup:

- **Capacity:** A typical 12-battery configuration yields approximately 57.6 kWh of nominal capacity. This is substantial enough to cover the daily needs of a standard U.S. home (around 30 kWh) and provide multi-day backup during grid outages.
- **Chemistry:** They use LFP chemistry, which provides superior thermal stability, enhanced safety, and a longer cycle life than traditional lithium-ion.
- **Design:** The system features a modular, "Lego-style" design with no internal wiring between modules. Installers can stack them to build customized capacities in under 30 minutes.
- **Scalability:** While 12 batteries create a powerful residential system, up to 15 full stacks can be wired in parallel for large-scale or commercial applications.
- **Compatibility:** They integrate natively with popular solar inverters like Sol-Ark and Solis using standard CAN communication protocols.
- **Warranty:** Systems are typically backed by a 10-year manufacturer warranty.

If batteries go below 20%, generator comes on to run whole House, but it only runs an hour, because in that hour, the batteries are charged 100%, then generator shuts off and batteries run house until sun comes up

Solar Panels

The [REC Alpha Pure-R solar panel](#) features an industry-leading maximum power P_{MAX} temperature coefficient of **-0.26%/°C** (with recent official datasheets showing it optimized as low as **-0.24%/°C**). Because it uses advanced Heterojunction Cell Technology (HJT), it loses significantly less power in extreme heat than standard solar modules.

Electricity Average Annual Costs

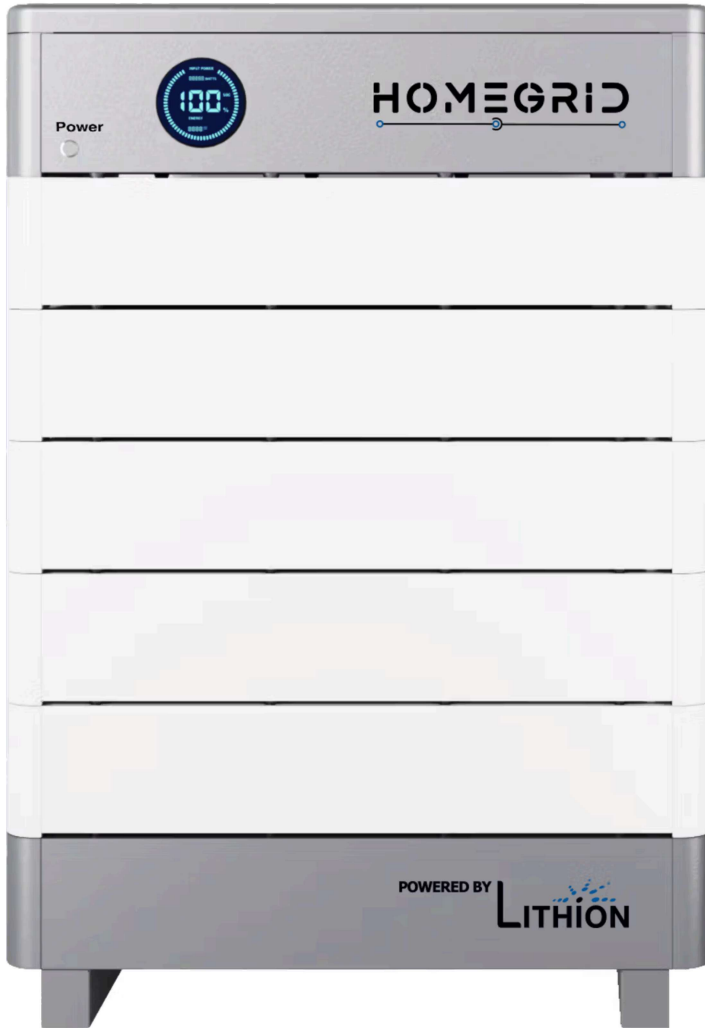
Sell back to the grid from March through August

Without solar, average annual costs are \$5,000

With Solar less than \$1,000 per year with pool running full time.

Input Data (PV)	
Max. Usable PV Power	19,500W
Rated MPPT Operating Voltage Range	175 - 425V
MPPT Voltage Range	150 - 500V
Startup Voltage	125V
Max. DC Input Voltage ¹	500V
Max. Operating Input Current per MPPT	26A
Max. Short Circuit Current per MPPT	44A
No. of MPP Trackers	3
No. of PV Strings per MPPT	2
Max. AC Coupled Input	19,200W
Max. Allowed PV Power	23,400W
Output Data (AC)	
Nominal AC Voltage	120/240V, 120/208V, 220V
Grid Frequency	50 / 60Hz
Real Power, max continuous	15,000W
Max. Output Current	62.5A
Real Power, Max Continuous (Batteries Only, no PV)	12,000W (50A @ 240V)
Peak Power with Batteries Only (30 minutes, Off-Grid)	13,000W @240V
Peak Apparent Power (10s, Off-Grid)	24,000VA @ 240V
Peak Apparent Power (100ms, Off-Grid)	30,000VA @ 240V
Max Output Fault Current (5s)	94A with PV, 75A (batteries only)
Max Output Fault Current (100ms)	120A
Max. Grid Passthrough Current	200A
Power Factor Output Range	+/- 0.9 adjustable
Backup Transfer Time	5ms
CEC Efficiency	96.5%
Max Efficiency	97.5%
Design (DC to AC)	Transformerless DC
Stackable	Up to 12 in parallel
Battery Input Data (DC)	
Battery Technologies	Lithium
Nominal DC Voltage	48V
Operating Voltage Range	43 - 63V
Capacity	50 — 9900Ah
Max. Battery Charge / Discharge Current	275A
Battery Disconnecting Means	200A/single pole x 2
Charging Controller	3-Stage with Equalization
Grid to Battery Charging Efficiency	96.0%
External Battery Temperature Sensor (BTS)	Included
Automatic Generator Start (AGS)	2 Wire Start - Integrated
BMS Communication	CANBus & RS485 MODBUS
General Data	
Dimensions (H x W x D)	807 x 494 x 306 mm (31.8 x 19.4 x 12 in)
Weight	61.2 Kg / 135 lb.
Enclosure	IP65 / NEMA 3R
Ambient Temperature	-25~55°C, > 45°C Derating
Operating Altitude ²	2000 m (6561 ft)
Noise	< 30 dB @ 25°C (77°F)
Idle Consumption - No Load	90W
Communication and Monitoring	Wi-Fi & LAN Hardware Included
Standard Warranty	10 Years
Protection and Certifications	
Certifications and Listings	UL 1741 SB, UL 1741 SA11, UL 1741 CRD-PCS, IEEE 1547.1-2020, UL 1699B, UL 1998, FCC Part 15 Class B, CSIP, Ca Rule 21, HECO Rule 14H (SRD 2.0), CSA C22.2 107.1-16
PV DC Disconnect Switch — NEC 240.15	Integrated
Ground Fault Detection — NEC 690.5	Integrated
PV Rapid Shutdown Control — NEC 690.12	Integrated
PV Arc Fault Detection — NEC 690.11	Integrated
PV Input Lightning Protection	Integrated
PV String Input Reverse Polarity Protection	Integrated
AC Output Breaker - 200A	Integrated
Surge Protection	DC Type II / AC Type II

¹ See Installation Manual for more details on sizing array strings. The highest input voltage is based on the open-circuit voltage of the array at the minimum design temperature.² Derating occurs above 2000m (6561 ft).



STACK'D SERIES

With the highest output and capacity range available, the Stack'd Series battery is the right solution for residential and small commercial storage projects. From small off-grid cabins, to peak rate TOU (time-of-use) offset, family homes in suburbia, and small commercial projects, the HomeGrid Stack'd Series battery is the proven best choice.

Output: up to 14.4 kW
continuous

Surge: up to 24 kW (10 sec)

Capacity: up to 38.4 kWh per
Stack (576 kWh total)

Install: <30 minutes

Specifications →

ACCESSORIES



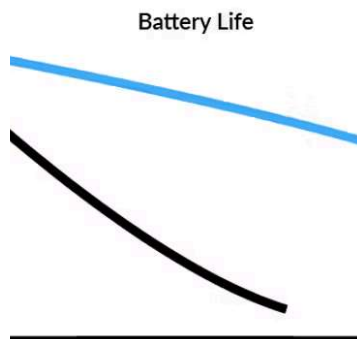
Heated Modules

For colder climates, HomeGrid offers the option of heated battery modules in the Stack'd Series system. These heated modules will automatically keep the batteries within operating temperatures to make sure that capacity is maintained, and the batteries' function is optimized, even in the coldest of conditions.

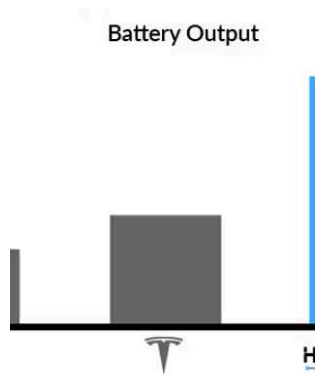
Solark 15k Busbar Pair

When installing a single Stack'd Series battery with a Sol-Ark 15K, HomeGrid highly recommend using this busbar pair. This is because the Stack'd Series battery is the only battery on the market that outputs enough power from a single unit for the Sol-Ark 15K. This busbar pair can be placed on the 15K battery landings to easily connect the battery cables (single + and single -) and maximize the system output.

FEATURES



Chemistry: Many manufacturers choose to use status quo equipment. By using LFP (lithium iron phosphate) we've picked the right chemistry for the job. LFP is safer and lasts longer than other battery chemistries in a stationary storage market.



Specifications: With one unit having nearly 15 kW of continuous power and a 24 kW surge, this system can handle the needs of an entire home or business... air conditioning and water pumps included. We can pair up to 15 Stacks in parallel for an unprecedented amount of power and capacity.



Modularity: Each white battery module is 4.8 kWh and each Stack can support 2-8 modules. This Lego-like form factor means a <30 min installation, and it's the easiest battery to upgrade in the future. No wiring between modules, and no conduit/wiring needed when it comes time to upgrade.

SOLAR'S MOST TRUSTED



REC ALPHA[®] PURE-R

DATASHEET



LEAD-FREE
ROHS COMPLIANT

COMPACT PANEL SIZE

9 A MODULE CURRENT
COMPATIBLE WITH MLPE

400 - 430W
HETEROJUNCTION
TECHNOLOGY

22.3% MAX EFFICIENCY
>92% POWER IN YEAR 25
-0.24%/°C TEMPERATURE
COEFFICIENT OF P_{MAX}



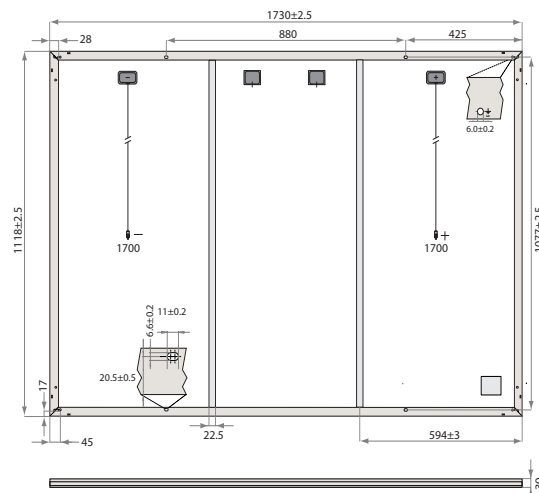
ELIGIBLE

REC ALPHA® PURE-R

DATASHEET

GENERAL DATA

Cell Type	80 half-cut bifacial REC heterojunction cells, with lead-free, gapless technology
Glass	0.13 in solar glass with anti-reflective surface treatment in accordance with EN12150
Backsheet	Highly resistant polymer (Black)
Frame	Anodized aluminum (Black)
Junction Box	4-part, 4 bypass diodes, lead-free IP68 rated, in accordance with IEC 62790:2020
Connectors	Stäubli MC4 PV-KBT4/KST4 (12 AWG) in accordance with IEC 62852:2014, IP68 only when connected
Cable	12 AWG solar cable, 55.1 in (1.40 m) + 55.1 in (1.40 m) in accordance with EN50618:2014
Dimensions	68.1 x 44.0 x 1.2 in (20.8 ft²) / 1730 x 1118 x 30 mm (1.93 m²)
Weight	47.4 lb / 21.5 kg
Origin	Made in Singapore



Measurements in [inches] and mm

Specifications subject to change without notice.

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)	8.80	8.84	8.88	8.91
Power Density (W/ft²)	19.2	19.7	20.2	20.7
Panel Efficiency (%)	20.7	21.2	21.8	22.3

Power Output - P_{MAX} (W_p)	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	7.14	7.17	7.20

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. 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 COEFFICIENT*

P_{MAX} -0.24%/°C	V_{OC} -0.24%/°C	I_{SC} 0.04%/°C	*The temperature coefficients stated are linear values
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MODULE RATINGS

Module Operating Temperature [T98]§	176°F (80°C)
Min Environmental Temperature	-40°F (-40°C)
Nominal Module Operating Temperature	44 ± 2°C
Max Hail Rating	35 mm @ 27.2 m/s
System Voltage	1000 V
Max Series Fuse Rating	25 A
Max Reverse Current	25 A

§ 98th percentile operating temperature

MAXIMUM TEST LOAD*

Front (4-Point)*	+7000 Pa (146 lbs/ft²)
Rear (4-Point)*	-4000 Pa (84 lbs/ft²)
Front (6-Point)**	+8000 Pa (167 lbs/ft²)
Rear (6-Point)**	-6000 Pa (125 lbs/ft²)

Design load = Test load / 1.5 (safety factor)

*IEC61730/UL61730 certified. Refer to installation manual.

**Internal testing. Refer to installation manual.

CERTIFICATIONS

ISO 14001; ISO9001; IEC45001; IEC62941
IEC 61215:2021; IEC 61730:2023; UL 61730
ISO 11925-2 Ignitability (EN 13501-1 Class E)
IEC 62716 Ammonia Resistance
IEC 61701 Salt Mist (SM6)
IEC 61215:2016 Hailstone (35mm)
UL 61730 Fire Type 2
IEC 62321 Lead-free acc. to RoHS EU 863/2015



WARRANTY

	Standard	REC ProTrust
Installed by an REC Certified 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%

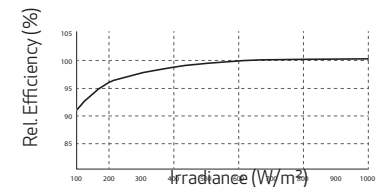
REC ProTrust Warranty applies only for i) REC panels installed by an REC Certified Solar Professional, and ii) panels have been registered by the installer with REC. Subject to System Size and further conditions. See www.recgroup.com for details.

DELIVERY INFORMATION

Panels per Pallet	33
Panels per 40 ft GP/high cube container	858 (26 Pallets)
Panels per 53 ft truck	792 (24 Pallets)

LOW LIGHT BEHAVIOR

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.

REC Solar PTE. LTD.
20 Tuas South Ave. 14
Singapore 637312
post@recgroup.com
www.recgroup.com