

## DATASHEET

# LIMITLESS 12K

HYBRID INVERTER - RESIDENTIAL NORTH AMERICA

12K-2P-LL

## Compact and Affordable Power, for Every Home.

Built for budget-conscious projects, the **Limitless 12K Hybrid Inverter** delivers resilient backup power and advanced energy management in one compact, powerful platform. Capable of delivering **12kW to the grid** or **10kW of continuous backup power** from batteries, it easily supports loads such as mini-split A/C systems, well pumps, kitchen appliances, furnace blowers, and lighting.

Designed for flexibility and maximum solar utilization, the Limitless 12K supports both **DC and AC solar coupling**, making it ideal for new installations and retrofit applications alike. With **100A grid passthrough**, plus integrated **Smart Load** control, and generator support through the multifunction **GEN port**, the Limitless 12K provides a reliable foundation for energy independence and dependable home backup power.

**Energy Management**  
Multi-Season Time-of-Use  
Zero Meter  
Self-Consumption

**Backup Resilience**  
5ms Transfer Time  
Auto Generator Start  
Smart AC Load Control

**U.S. Company - Non-FEOC**  
Manufacturing & Inventory  
Firmware and Data Hosting  
7-Days-a-Week Support

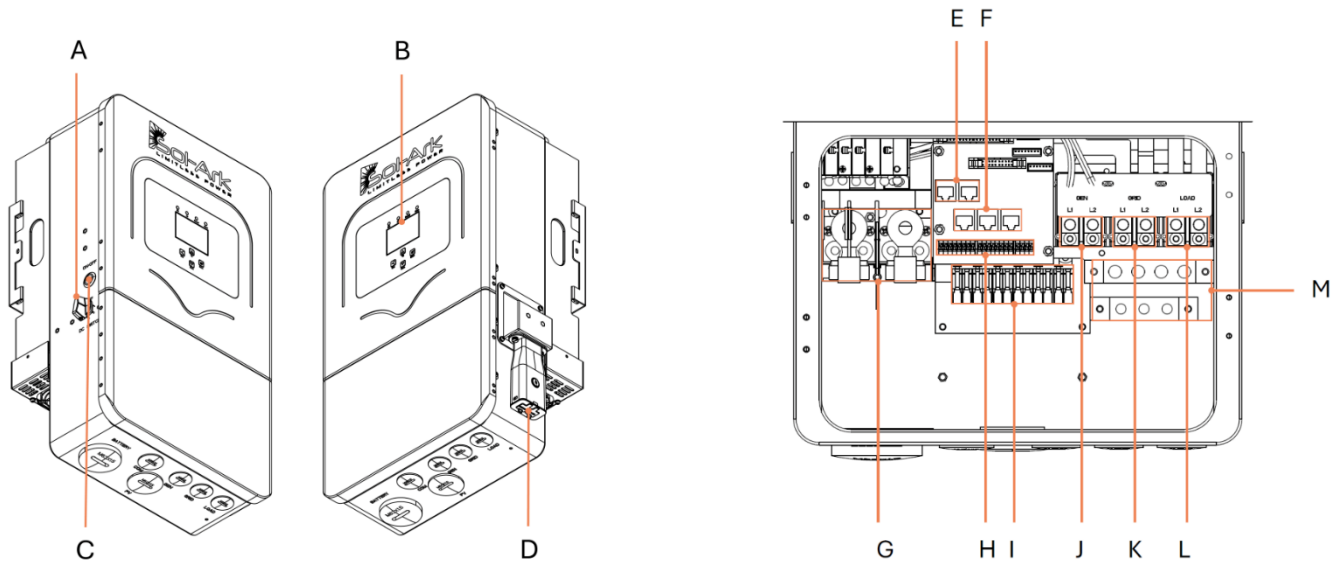
**Grid Interaction**  
NEM - Grid Sell  
Peak Shaving  
VPP Ready

**New Installs or Retrofits**  
AC and DC Solar Coupling  
All-in-One PCS platform – No MID

**Battery Choice**  
Multiple UL 9540 Certifications

### MySolArk V2 Monitoring App

Monitoring & Performance Insights  
VPP Enrollment & Participation



| Component | Description                         | Component | Description                               |
|-----------|-------------------------------------|-----------|-------------------------------------------|
| A         | PV DC Disconnect                    | H         | Input pinouts for sensors and accessories |
| B         | LCD Touch Screen                    | I         | 3 MPPT inputs                             |
| C         | ON / OFF Button                     | J         | (60A) GEN terminal                        |
| D         | Wi-Fi / Bluetooth / Ethernet Dongle | K         | (100A) LOAD terminal                      |
| E         | BMS RJ45 ports (RS485 / CAN)        | L         | (100A) GRID terminal                      |
| F         | Parallel RJ45 ports                 | M         | Ground / Neutral Busbars                  |
| G         | Battery terminal                    |           |                                           |

# DATASHEET

# LIMITLESS 12K

Model: 12K-2P-LL

| Specification                            | Unit                                                                                      | Rating                                   | Specification                            | Unit | Rating                                                          |
|------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------|------|-----------------------------------------------------------------|
| <b>PV (DC)</b>                           |                                                                                           |                                          | <b>Battery (DC)</b>                      |      |                                                                 |
| Max. STC Rated PV Power                  | W                                                                                         | 19,200                                   | Compatible Technology                    |      | Lead-acid <sup>3</sup> or Lithium                               |
| Max. Usable Combined MPPT PV Power       | W                                                                                         | 12,000                                   | Nominal DC Voltage                       | V    | 48                                                              |
| Rated MPPT Operating Voltage Range       | V                                                                                         | 150 – 425                                | Operating Voltage Range                  | V    | 43 – 59                                                         |
| Startup Voltage                          | V                                                                                         | 125                                      | Number of Inputs <sup>4</sup>            |      | 1                                                               |
| Max. Input Voltage <sup>1</sup>          | V                                                                                         | 500                                      | Terminal Current Rating                  | A    | 300                                                             |
| Max. Operating PV Input Current          | A                                                                                         | 32 (per MPPT)                            | Max. Charge / Discharge Current          | A    | 220 / 220                                                       |
| Max. Input Short Circuit Current         | A                                                                                         | 60 (per MPPT)                            | BMS Communication                        |      | CANbus / RS485 / MODBUS RTU                                     |
| Number of MPPT / Strings per MPPT        |                                                                                           | 3/2                                      | Charge Controller Type                   |      | 3-Stage with Equalization <sup>3</sup> / CC/CV - BMS Controlled |
| <b>Grid (AC)</b>                         |                                                                                           |                                          | <b>Backup – Off-Grid (AC)</b>            |      |                                                                 |
| Nominal Voltage (L-N/L-L)                | V                                                                                         | 120/240, 120/208                         | Rated Voltage (L-N, L-L)                 | V    | 120/240 120/208                                                 |
| Nominal Frequency                        | Hz                                                                                        | 50 / 60                                  | Rated Frequency                          | Hz   | 50 / 60                                                         |
| Nominal Voltage Range                    | V                                                                                         | 185 – 275                                | Max. Continuous Power                    | W    | 10,000 8,660                                                    |
| Nominal Frequency Range                  | Hz                                                                                        | 55 – 65                                  | Peak Surge Power (10s)                   | W    | 24,000 20,800                                                   |
| Max. Passthrough Current (Grid to Load)  | A                                                                                         | 100                                      | Backup Transfer Time                     | ms   | 5                                                               |
| Max. Input Short Circuit Current (100ms) | A                                                                                         | 100                                      | Max. Load Imbalance Ratio                | %    | 50                                                              |
| Nominal Real Power (240V)                | W                                                                                         | 12,000                                   | THDv                                     | %    | 1.6                                                             |
| Max. Output Current, Batteries + PV      | A                                                                                         | 50                                       |                                          |      |                                                                 |
| THDi                                     | %                                                                                         | 2.5                                      |                                          |      |                                                                 |
| Power Factor Adjustment Range            | +/-                                                                                       | 0.9                                      |                                          |      |                                                                 |
| <b>Efficiency</b>                        |                                                                                           |                                          | <b>GEN Port (AC)<sup>2</sup></b>         |      |                                                                 |
| Max                                      | %                                                                                         | 97.6                                     | Max. AC Coupled PV Power (240V)          | W    | 14,000 12,410                                                   |
| Grid to Battery - Charge                 | %                                                                                         | 92.7                                     | Max. Generator Power <sup>2</sup> (240V) | W    | 14,000 12,410                                                   |
|                                          |                                                                                           |                                          | Max. Current                             | A    | 60                                                              |
| <b>Mechanical and Environment</b>        |                                                                                           |                                          | <b>Protection - Integrated</b>           |      |                                                                 |
| Dimensions, H x W x D                    | mm (in)                                                                                   | 653 x 421.4 x 249.5 (25.7 x 16.59 x 9.8) | PV DC Disconnect Switch — NEC 240.15     |      | PV Arc Fault Detection — NEC 690.11                             |
| Weight                                   | kg (lbs.)                                                                                 | 29.5 (65)                                | Ground Fault Detection — NEC 690.5       |      | PV Input Lightning Protection                                   |
|                                          |                                                                                           |                                          | PV Rapid Shutdown — NEC 690.12           |      | PV String Input Reverse Polarity Protection                     |
| Ambient Temperature / De-rated           | °C (°F)                                                                                   | -40 to 60 (-40 to 140) / +45 (+113))     |                                          |      | Surge Protection - DC Type II / AC Type III                     |
| Operating Altitude                       | m (ft)                                                                                    | > 3,000 (9843)                           | <b>General</b>                           |      |                                                                 |
| Idle Consumption - No Load               | W                                                                                         | 96                                       | Warranty Years                           |      | 10                                                              |
| Noise (@ 25°C / 77°F)                    | dB                                                                                        | < 30                                     | Parallel Units                           |      | 12                                                              |
| Humidity non-condensing                  | %                                                                                         | 0 - 100                                  | Automatic Generator Start (AGS)          |      | 2-Wire Start - Integrated                                       |
| Mounting (hanging bracket included)      |                                                                                           | Wall                                     | Communication                            |      | WIFI / Bluetooth / LAN                                          |
| Enclosure Rating                         |                                                                                           | IP65 / NEMA 3R                           | Monitoring Platform                      |      | MySolArk Mobile and Web Apps                                    |
| Cooling                                  |                                                                                           | Intelligent Fan                          | <b>Options</b>                           |      |                                                                 |
| Display                                  |                                                                                           | LCD                                      | Optional Accessories                     |      | 4G Dongle, Wireless CT                                          |
| <b>Compliance and Certification</b>      |                                                                                           |                                          |                                          |      |                                                                 |
| Safety Certification                     | UL1741 3rd SB, UL1741 CRD-PCS <sup>5</sup> , UL1699B PVDC AFCI, UL1998, CSA C22.2 No. 107 |                                          |                                          |      |                                                                 |
| Interconnection Compliance               | IEEE1547- 2018 and interoperability using IEEE2030.5, Hawaiian Electric SRD V2.0          |                                          |                                          |      |                                                                 |
| EMC                                      | FCC Part 15 Class B                                                                       |                                          |                                          |      |                                                                 |
| Listings                                 | CEC, SGIP                                                                                 |                                          |                                          |      |                                                                 |

<sup>1</sup>The highest input voltage is based on the open-circuit voltage of the array at the minimum design temperature (See Installation Manual for more details).

<sup>2</sup> Bidirectional AC port for AC fuel generator input, AC coupled PV input or AC load (EV Charger, etc.)

<sup>3</sup> Lead-acid charge settings limited to: Capacity AH, Absorption V, Float V, (Equalization: V + Time).

<sup>4</sup> Utilization of only a single battery input will derate inverter and charger output.

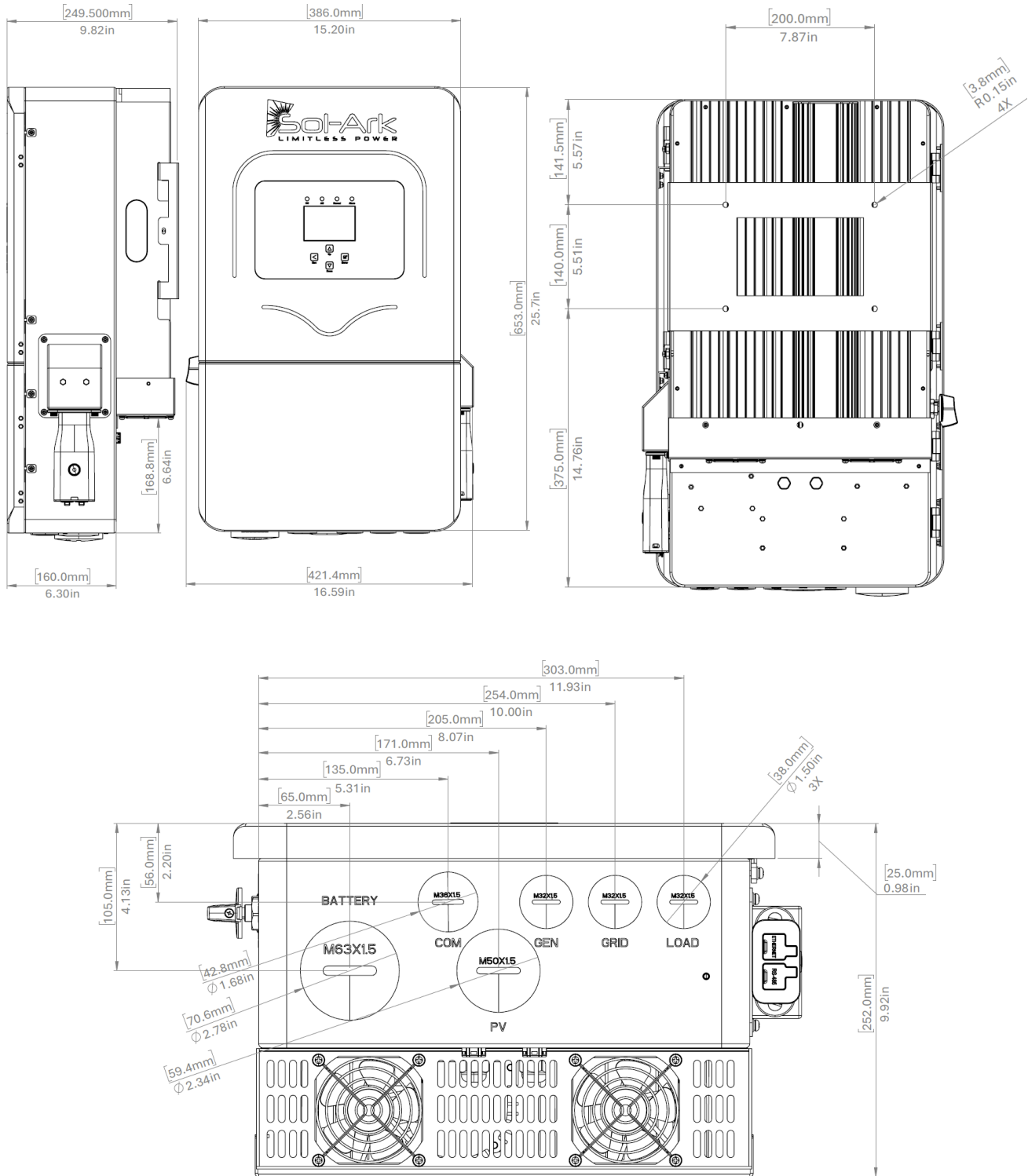
<sup>5</sup> UL1741-CRD-PCS Open Loop Response Time (OLRT): Less than 10 seconds, per CA Rule 21.

# DATASHEET

## LIMITLESS 12K

HYBRID INVERTER - RESIDENTIAL NORTH AMERICA

12K-2P-LL



© 2026 Sol-Ark LLC. All rights reserved. Sol-Ark, the Sol-Ark logo, and all related marks are trademarks of Sol-Ark LLC in the United States and other countries. Specifications subject to change without notice. Always refer to the latest version of this document on the Sol-Ark [Knowledge Hub](#).