The residential PV market is changing rapidly. Your bottom line matters more than ever—so we’ve designed a superior residential solution to help you decrease costs at every stage of your business operations. The Sunny Boy 3.0-US/3.8-US/5.0-US/6.0-US/7.0-US/7.7-US join the SMA lineup of field-proven solar technology backed by the world’s #1 service team, along with a wealth of improvements. Simple design, improved stocking and ordering, value-driven sales support and streamlined installation are just some of the ways that SMA helps your business operate more efficiently. And, Sunny Boy’s superior integration with the innovative Power+ Solution means installers have even more flexibility in addressing their toughest challenges.
### Technical data

#### Input (DC)
- **Max. DC voltage**: 600 V
- **MPPT operating voltage range**: 100 - 550 V
- **Min. DC voltage / start voltage**: 100 V / 125 V
- **Max. operating input current per MPPT**: 10 A
- **Max. short circuit current per MPPT**: 18 A
- **Number of MPPT tracker / string per MPPT tracker**: Sunny Boy 3.0-US: 2/1, 3.8-US: 3/1, 5.0-US: 3/1

#### Output (AC)
- **AC grid frequency**: 60 Hz / 50 Hz
- **Max. output current**: Sunny Boy 3.0-US: 14.5 A, 3.8-US: 12.5 A, 5.0-US: 16.0 A
- **Power factor (cos ϕ)**: 1
- **Output phases / line connections**: Sunny Boy 3.0-US: 1 / 2, 3.8-US: 1 / 2
- **Harmonics**: < 4 %

#### Efficiency
- **Max. efficiency**: Sunny Boy 3.0-US: 97.2 %, 3.8-US: 97.6 %, 5.0-US: 97.2 %
- **CEC efficiency**: 96 %

#### Protection devices
- **DC disconnect device**: ●
- **DC reverse polarity protection**: ●
- **Ground fault monitoring / Grid monitoring**: ●
- **AC short circuit protection**: ●
- **All-pole sensitive residual current monitoring unit (RCMU)**: ●
- **Arc fault circuit interrupter (AFCI)**: ●
- **Protection class / overvoltage category**: 1 / IV

#### General data
- **Dimensions (W / H / D) in mm (in)**: 535 x 730 x 198 (21.1 x 28.5 x 7.8)
- **Packaging dimensions (W / H / D) in mm (in)**: 600 x 800 x 300 (23.6 x 31.5 x 11.8)
- **Weight / packaging weight**: 26 kg / 30 kg (57 lb / 66 lb)
- **Operating temperature range**: - 25°C ... +60°C
- **Noise emission (typical)**: 39 dB(A)
- **Internal power consumption at night**: < 5 W
- **Topology**: Transformerless
- **Cooling concept**: Convection

#### Features
- **Ethernet ports**: 2
- **Secure Power Supply**: ●
- **Display (2 x 16 characters)**: ●
- **WLAN**: ●
- **Sensor module / External WLAN antenna**: ○ / ○
- **Warranty: 10 / 15 / 20 years**: ● / ○ / ○
- **UL 1741, UL 1998, IEE1547, FCC Part 15 (Class A & B), CAN/CSA V22.2 107.1-1
- **Standard features**: ○ Optional features
- **Certificates and approvals**: Data at nominal conditions
- **NOTE**: US inverters ship with gray lids.
- *** Not functional with Power+ Solution

#### Accessories

![Sensor module](MD.SEN-US-40.png)
![External WLAN antenna](EXTANT-US-40.png)
![SMA Rooftop Communication Kit](ROOFCOMMKIT-P1-US.png)

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**Efficiency curve:**

- **V_m (V)**
- **P_m (W)**
- **P_{in} (W)**
- **P_{Loss} (W)**
- **P_{Eff} (W)**
- **P_{Out} (W)**
- **P_{Loss} (W)**
- **P_{Total} (W)**
- **P_{Eff} (W)**
- **P_{Out} (W)**
- **P_{Loss} (W)**
- **P_{Total} (W)**
- **P_{Eff} (W)**
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- **P_{Eff} (W)**
- **P_{Out} (W)**
- **P_{Loss} (W)**
- **P_{Total} (W)**
POWER+ SOLUTION

The SMA Power+ Solution combines legendary SMA inverter performance and intelligent DC module-level electronics in one cost-effective, comprehensive package. This means that you can achieve maximum solar power production for your customers while also realizing significant installation savings.

Unlike conventional microinverter and DC optimizer systems, Power+ is faster to install, provides more flexibility, boasts logistical advantages, and reduces service risk.

Visit www.SMA-America.com for more information.
Speed the completion of customer proposals and maximize the efficiency of your design team with the Sunny Boy-US series, which provides a new level of flexibility in system design by offering:

» Hundreds of stringing configurations and multiple independent MPPTs
» SMA’s proprietary OptiTrac™ Global Peak shade mitigation technology
» Diverse application options including on- and off-grid compatibility

SMA wants to enable your sales team by arming them with an abundance of feature/benefit support. Show your customers the value of the Sunny Boy-US series by utilizing:

» Secure Power Supply, now with 2,000 W of opportunity power in the event of a grid outage, as an increased value-add or upsell opportunity
» SMA’s 35 year history and status as the #1 global inverter manufacturer instills homeowners with peace of mind and the long-term security they demand from a PV investment
» An economical solution for shade mitigation and the challenges of complex roofs

Ensure that your back office business operations run smoothly and succinctly while mitigating potential errors. The Sunny Boy-US series can help achieve cost savings in these areas by providing:

» An integrated DC disconnect that simplifies equipment stocking and allows for a single inverter part number
» All communications integrated into the inverter, eliminating the need to order additional equipment

Expedite your operations in the field by taking advantage of the new Sunny Boy’s installer-friendly feature set including:

» Direct access via smartphone and utilization of SMA’s Installation Assistant, which minimizes time/labor spent in the field and speeds the path to commissioning
» Improved communication—no need to install additional equipment
» Integrated DC disconnect that simplifies onsite logistics and eliminates the need to install a separate disconnect unit, speeding overall installation time

SMA understands the factors that contribute to lifetime PV ownership cost, that’s why the Sunny Boy-US series was designed for maximum reliability and backstopped by an unmatched service offering. Benefit from:

» The new Sunny Boy’s two-part enclosure concept that separates the connection unit from the power unit, which allows for simple, expedited servicing
» The #1 service team in the PV industry, as recognized by IMS research, with experience servicing an installed base of more than 55 GW