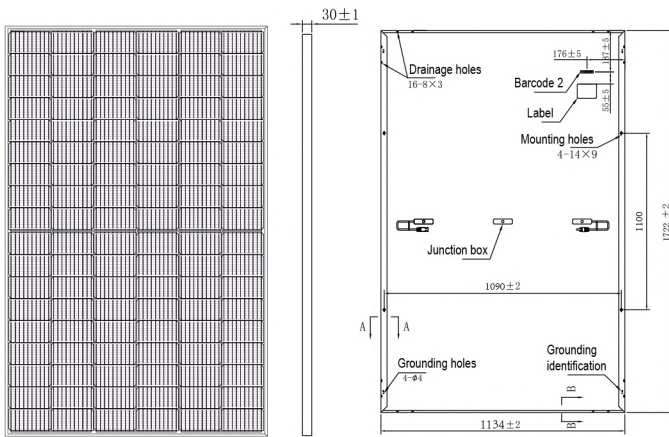
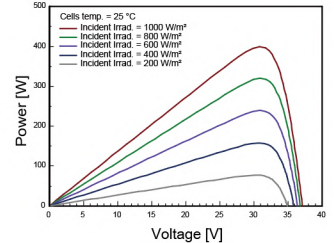
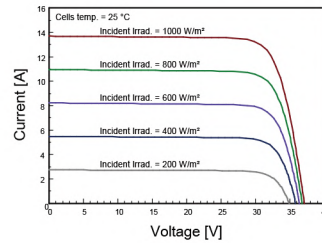


## RS41-395~410MX-E3

MONO-FACIAL MODULE



Drawing Only for Reference



| Electrical Characteristics STC | RS41-395MX-E3 | RS41-400MX-E3 | RS41-405MX-E3 | RS41-410MX-E3 |
|--------------------------------|---------------|---------------|---------------|---------------|
| Maximum Power (Pmax)           | 395W          | 400W          | 405W          | 410W          |
| Power Tolerance                | 0~+5W         | 0~+5W         | 0~+5W         | 0~+5W         |
| Module Efficiency              | 20.15%        | 20.41%        | 20.66%        | 20.92%        |
| Maximum Power Current (Imp)    | 12.70A        | 12.78A        | 12.86A        | 12.93A        |
| Maximum Power Voltage (Vmp)    | 31.10V        | 31.30V        | 31.50V        | 31.70V        |
| Short Circuit Current (Isc)    | 13.53A        | 13.63A        | 13.73A        | 13.82A        |
| Open Circuit Voltage (Voc)     | 37.30V        | 37.50V        | 37.70V        | 37.90V        |

Values at Standard Test Conditions STC(AM1.5, Irradiance 1000W/m, Cell Temperature 25°C)

| Electrical Characteristics NMOT | RS41-395MX-E3 | RS41-400MX-E3 | RS41-405MX-E3 | RS41-410MX-E3 |
|---------------------------------|---------------|---------------|---------------|---------------|
| Maximum Power (Pmax)            | 295.2W        | 298.9W        | 302.6W        | 306.4W        |
| Maximum Power Current (Imp)     | 10.21A        | 10.26A        | 10.33A        | 10.40A        |
| Maximum Power Voltage (Vmp)     | 28.92V        | 29.11V        | 29.30V        | 29.48V        |
| Short Circuit Current (Isc)     | 10.92A        | 11.00A        | 11.08A        | 11.15A        |
| Open Circuit Voltage (Voc)      | 34.82V        | 35.01V        | 35.20V        | 35.38V        |

NMOT(Nominal module operating temperature) , Irradiance of 800W/m, AM1.5, Ambient Temperature 20 °C, wind Speed 1m/s.

### Mechanical Characteristics

|                            |  |
|----------------------------|--|
| Cell Type                  | MonoP-Type,182x182(±1)mm,108(6x18)Half-Cut cells |
| Glass                      | 3.2mm,High Transmission,Low Iron,Tempered Glass  |
| Frame                      | Anodized Aluminum Alloy                          |
| Junction Box               | IP68 Rated, With Bypass Diodes                   |
| Dimension                  | 1722×1134×30mm                                   |
| Output Cable               | 4 mm2 (EU),300 mm,length can be customized       |
| Weight                     | 22kg   |
| Installation Hole Location | See Drawing Above                                |

### Packing Information

|                       |        |
|-----------------------|--------|
| Container             | 40' HQ |
| Pallets per Container | 26     |
| Pieces per Container  | 936    |

### Characteristics

|   |           |
|---|-----------|
| Temperature Coefficient of Voc            | -0.27%/°C |
| Temperature Coefficient of Isc            | +0.04%/°C |
| Temperature Coefficient of Pmax           | -0.35%/°C |
| Nominal Operating Cell Temperature (NOCT) | 45°C±2°C  |

Remark:Electrical data in this catalog do not refer to a single module and they are not part of the offer.They only serve for comparison among different module types.

### Maximum Ratings

|                            |             |
|----------------------------|-------------|
| Operating Temperature      | -40°C~+85°C |
| Maximum System Voltage     | 1500VDC     |
| Maximum Series Fuse Rating | 25A         |



## TECHNICAL SPECIFICATIONS

### PHYSICAL CHARACTERISTICS

|              | 10K PACK    | 15K PACK  |
|--------------|-------------|-----------|
| Height (mm)  | 971         | 1205 (±3) |
| Width (mm)   | 654         | 654 (±2)  |
| Depth (mm)   | 227         | 227 (±2)  |
| Weight (kg)  | 96          | 141       |
| Installation | Floor-stand |           |

### ELECTRICAL CHARACTERISTICS

|                                     |             |         |
|-------------------------------------|-------------|---------|
| Battery type                        | Lithium LFP |         |
| Nominal capacity (kWh)              | 10          | 15      |
| Usable capacity (kWh)               | 9           | 13.5    |
| Nominal voltage (V)                 | 273         | 390     |
| Voltage range (usable) (V)          | 235.5-294   | 336-420 |
| Charge voltage (V)                  | 294         | 420     |
| Discharge voltage (V)               | 235.2       | 360     |
| Charge/discharge current (nominal)  | 20/20       | 20/20   |
| (A) Charge/discharge current (max.) | 40/40       | 40/40   |
| (A) Depth of discharge (DoD) (%)    | 90          | 90      |

### OPERATING CONDITIONS

|  |                    |
|--|--------------------|
| Operating temperature (°C)               | -10 to 50          |
| Operating temperature (recommended) (°C) | 15 to 30           |
| Storage temperature (°C)                 | -30 to 60          |
| Humidity conditions (%)                  | 5 to 95            |
| Altitude (m)                             | Max. 2,000         |
| Cooling strategy                         | Natural convection |

### RELIABILITY AND CERTIFICATION

|                                    |  |
|------------------------------------|--|
| Certification                      | Cell: UL1642<br>Battery Pack: CE & IEC62619 & UL1973 |
| Hazardous materials classification | Class 9  |
| Transportation                     | UN38.3   |
| Ingress protection rating          | IP 54  |
| System configuration               | 1 to 4 parallel                                      |

### WARRANTY

|                         |                           |
|-------------------------|---------------------------|
| Product and performance | 10-year standard warranty |
|-------------------------|---------------------------|

## HV PARALLEL BOX

### TECHNICAL SPECIFICATIONS

The Soluna HV Parallel Box connects multiple Soluna HV 10K & 15K Pack batteries for a combined energy output of up to 60 kWh (nominal) per inverter, providing even greater energy independence and blackout protection 24/7.



#### PHYSICAL CHARACTERISTICS

|             |       |
|-------------|-------|
| Height (mm) | 86.2  |
| Width (mm)  | 332.4 |
| Depth (mm)  | 232.4 |
| Weight (kg) | 3.5   |

#### ELECTRICAL CONNECTING PORT

|  |     |
|--|-----|
| Working voltage (VDC)                        | 530 |
| Input current (max.) (A) (x 4)               | 50  |
| Output current (max.) (A)                    | 175 |
| Input wiring (max.) (mm <sup>2</sup> ) (x 4) | 10  |
| Output wiring (max.) (mm <sup>2</sup> )      | 35  |

#### COMMUNICATION CONNECTING PORT

|                                    |           |
|------------------------------------|-----------|
| Communication connection port type | RJ45 (8P) |
| Input communication port (qty)     | 4         |
| Output communication port (qty)    | 2         |

#### REGULAR PARAMETERS

|                                   |           |
|-----------------------------------|-----------|
| Operating temperature range (° C) | -20 to 50 |
| Storage stability range (° C)     | -20 to 60 |
| Relative humidity (%)             | 0 to 95   |
| Ingress protection rating         | IP54      |
| Installation                      | Indoors   |

#### MISCELLANEOUS

|          |                 |
|----------|-----------------|
| Warranty | 3-year warranty |
|----------|-----------------|



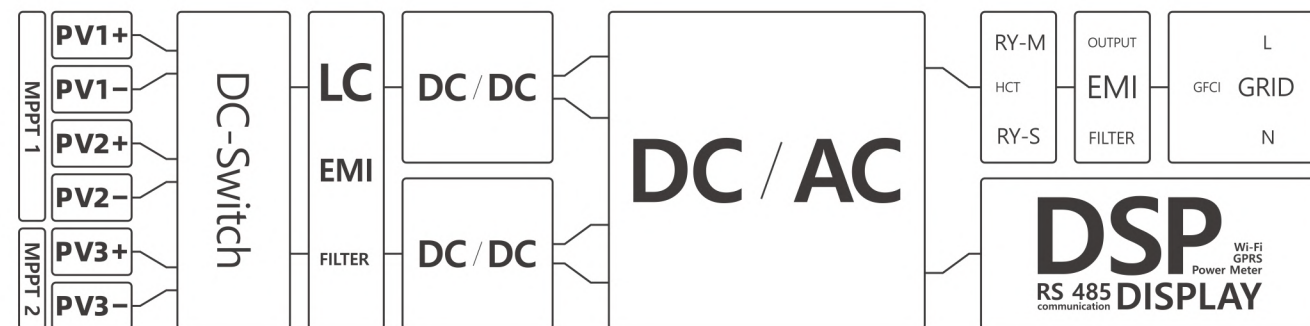


EVERYTHING +  
HEAVY CALIBER

**HPS**  
SINGLE PHASE  
7-10.5K



-   
**Peak Efficiency**  
**98.0%**
-   
**Max. DC Overload**  
**50%**
-   
**Aluminum Alloy**  
**Die Casting**
-   
**MES + FCT + CRM**  
**Infrastructure**
-   
**Easy to**  
**Install and Service**



| MODEL                              | HPS-7000                       | HPS-8000 | HPS-9000 | HPS-10000 | HPS-10500                |
|------------------------------------|--------------------------------|----------|----------|-----------|--------------------------|
| <b>INPUT / DC</b>                  |                                |          |          |           |                          |
| Max. PV Power / Wp                 | 10500                          | 12000    | 13500    | 15000     | 15000                    |
| Max. Output Power per MPPT / W     | 6000/5000                      |          |          |           |                          |
| Max. Input Voltage / V             | 600                            |          |          |           |                          |
| MPP Voltage Range / V              | 80-550                         |          |          |           |                          |
| Start Up Voltage / V               | 70                             |          |          |           |                          |
| Nominal DC-Input Voltage / V       | 360                            |          |          |           |                          |
| Max. Input Current / A             | 26/13                          |          |          | 16/16/16  |                          |
| Max. DC Short Circuit Current / A  | 40/20                          |          |          | 20/20/20  |                          |
| No. of Independent MPPT Inputs     | 2                              |          |          | 3         |                          |
| No. of PV Strings per MPPT         | 2/1                            |          |          | 1/1/1     |                          |
| <b>OUTPUT / AC</b>                 |                                |          |          |           |                          |
| Rated Power / W                    | 7000                           | 8000     | 9000     | 10000     | 10500@230V<br>10100@220V |
| Max. Apparent AC Power / VA        | 7700                           | 8800     | 9900     | 10000     | 10500@230V<br>10100@220V |
| Rated Grid Voltage / Vac           | 220/230/240                    |          |          |           |                          |
| Grid Connection                    | L-N-PE                         |          |          |           |                          |
| Rated Power Frequency / Hz         | 50/60                          |          |          |           |                          |
| Max. Output Current / A            | 35                             | 40       | 45       | 45.5      | 46                       |
| Power Factor                       | 0.8ind to 0.8cap               |          |          |           |                          |
| THDi @ Rated Power                 | <3%                            |          |          |           |                          |
| <b>EFFICIENCY</b>                  |                                |          |          |           |                          |
| Max. Efficiency                    | 98.0%                          |          |          |           |                          |
| Euro. Efficiency                   | 97.6%                          |          |          |           |                          |
| MPPT Efficiency                    | >99.9%                         |          |          |           |                          |
| <b>PROTECTION FUNCTION</b>         |                                |          |          |           |                          |
| Anti-Islanding Protection          | Integrated                     |          |          |           |                          |
| Input Reverse Polarity Protection  | Integrated                     |          |          |           |                          |
| Insulation Resistance Detection    | Integrated                     |          |          |           |                          |
| Residual Current Monitoring        | Integrated                     |          |          |           |                          |
| Output Over Current Protection     | Integrated                     |          |          |           |                          |
| Output Short Circuit Protection    | Integrated                     |          |          |           |                          |
| Over Voltage Protection            | II (DC), III (AC)              |          |          |           |                          |
| Surge Protection                   | DC: Optional / AC: Type II     |          |          |           |                          |
| <b>GENERAL DATA</b>                |                                |          |          |           |                          |
| Dimensions (W*H*D) / mm            | 425*351*160                    |          |          |           |                          |
| Weight / kg                        | 14                             |          |          |           |                          |
| Noise Emission (Typical) / dB(A)   | <25                            |          |          |           |                          |
| User Interface                     | LCD&LED or LED                 |          |          |           |                          |
| DC Connection Type                 | MC4 (D4, SUNCLIX, H4 optional) |          |          |           |                          |
| AC Connection Type                 | Plug-in Connector              |          |          |           |                          |
| Communication                      | RS485/WiFi/GPRS (optional)     |          |          |           |                          |
| Cooling Method                     | Natural Cooling                |          |          |           |                          |
| Operating Ambient Temperature / ºC | -25 ~ +60                      |          |          |           |                          |
| Relative Humidity                  | 0% to 100%                     |          |          |           |                          |
| Max. Operating Altitude / m        | 3000 (>3000 Derating)          |          |          |           |                          |
| Protection Class (IEC 60529)       | IP65                           |          |          |           |                          |
| Climatic Category (IEC 60721-3-4)  | 4K4H                           |          |          |           |                          |
| Topology                           | Transformerless                |          |          |           |                          |
| Night Consumption / W              | <1                             |          |          |           |                          |

FEATURES

BLOCK DIAGRAM





**STORAGE +**  
SUSTAINABLE FREEDOM

**HHS**

SINGLE PHASE HYBRID  
**3-6K**



**PV Peak Efficiency**  
**97.9%**



**Max. DC Overload**  
**60%**



**Aluminum Alloy**  
**Die Casting**



**MES + FCT + CRM**  
**Infrastructure**



**Easy to**  
**Install and Service**



**Energy**  
**Management**

| MODEL  | HHS-3000                   | HHS-3680 | HHS-5000 | HHS-6000 |
|--|----------------------------|----------|----------|----------|
| <b>INPUT / DC</b>                                  |                            |          |          |          |
| Max. PV Power / Wp                                 | 4950                       | 5520     | 7500     | 9600     |
| Max. Input Voltage / V                             | 600                        |          |          |          |
| MPP Voltage Range / V                              | 80-520                     |          |          |          |
| Min. Input Voltage / V                             | 70                         |          |          |          |
| Nominal DC-Input Voltage / V                       | 360                        |          |          |          |
| Max. Input Current / A                             | 13/13                      |          |          |          |
| Max. DC Short Circuit Current / A                  | 20/20                      |          |          |          |
| No. of Independent MPPT Inputs                     | 2                          |          |          |          |
| No. of PV Strings per MPPT                         | 1                          |          |          |          |
| <b>BATTERY INPUT</b>                               |                            |          |          |          |
| Battery Type                                       | Li-Ion                     |          |          |          |
| Battery Voltage Range / V                          | 80-480                     |          |          |          |
| Start Up Voltage / V                               | 70                         |          |          |          |
| Max. Charging/Discharging Current / A              | 25/25                      |          |          |          |
| Charging Strategy for Li-Ion Battery               | Auto-adaption to BMS       |          |          |          |
| <b>AC OUTPUT / INPUT</b>                           |                            |          |          |          |
| Rated Power to grid / W                            | 3000                       | 3680     | 5000     | 6000     |
| Max. Apparent AC Power to grid / VA                | 3300                       | 3680     | 5500     | 6600     |
| Max. Apparent AC Power from grid / VA              | 6600                       | 7360     | 8500     | 10000    |
| Rated Grid Voltage / Vac                           | 220/230/240                |          |          |          |
| Grid Connection                                    | L-N-PE                     |          |          |          |
| Rated Power Frequency / Hz                         | 50/60                      |          |          |          |
| Max. Output Current to grid / A                    | 15                         | 16       | 23       | 27.3     |
| Max. AC Current from grid / A                      | 30                         | 32       | 36       | 40       |
| Power Factor                                       | 0.8ind to 0.8cap           |          |          |          |
| THDi @ Rated Power                                 | <3%                        |          |          |          |
| <b>AC OUTPUT (BACK-UP)</b>                         |                            |          |          |          |
| Rated Power / W                                    | 3300                       | 3680     | 5000     | 6000     |
| Peak Apparent Output Power @60° / VA               | 3960                       | 4416     | 6000     | 7200     |
| Rated Power Frequency / Hz                         | 50/60                      |          |          |          |
| Max. Output Current / A                            | 15                         | 16       | 23       | 27.3     |
| Automatic Switch Time / ms                         | <10                        |          |          |          |
| Nominal Output Voltage / V                         | 230                        |          |          |          |
| Nominal Output Frequency / Hz                      | 50/60                      |          |          |          |
| THDv @ Linear Load                                 | <3%                        |          |          |          |
| <b>EFFICIENCY</b>                                  |                            |          |          |          |
| PV Max. Efficiency                                 | 97.9%                      |          |          |          |
| PV Euro. Efficiency                                | 97.4%                      |          |          |          |
| PV Max. MPPT Efficiency                            | 99.9%                      |          |          |          |
| Max. Charging Efficiency @ PV->Battery             | 98.0%                      |          |          |          |
| Max. Charge/Discharge Efficiency @ Battery <->Load | 97.0%                      |          |          |          |
| <b>PROTECTION FUNCTION</b>                         |                            |          |          |          |
| Anti-Islanding Protection                          | Integrated                 |          |          |          |
| PV Input Reverse Polarity Protection               | Integrated                 |          |          |          |
| Insulation Resistance Detection                    | Integrated                 |          |          |          |
| Residual Current Monitoring                        | Integrated                 |          |          |          |
| Output Over Current Protection                     | Integrated                 |          |          |          |
| Output Short Circuit Protection                    | Integrated                 |          |          |          |
| Over Voltage Protection                            | II (DC), III (AC)          |          |          |          |
| Surge Protection                                   | DC: Optional / AC: Type II |          |          |          |
| Battery Reverse Polarity Protection                | Integrated                 |          |          |          |
| <b>GENERAL DATA</b>                                |                            |          |          |          |
| Dimensions (W*H*D) / mm                            | 425*351*160                |          |          |          |
| Weight / kg  | 13.8                       |          |          |          |
| Noise Emission (Typical) / dB(A)                   | <25                        |          |          |          |
| User Interface                                     | LED&LCD                    |          |          |          |
| DC Connection Type                                 | MC4                        |          |          |          |
| Battery Connection Type                            | SUNCLIX                    |          |          |          |
| AC Connection Type                                 | Plug-in Connector          |          |          |          |
| Communication with Cloud                           | WiFi/4G (optional)         |          |          |          |
| Communication with BMS                             | CAN/RS485                  |          |          |          |
| Communication with Power Meter                     | RS485                      |          |          |          |
| Cooling Method                                     | Natural Cooling            |          |          |          |
| Operating Ambient Temperature / A                  | -25 ~ +60                  |          |          |          |
| Relative Humidity                                  | 0% to 100%                 |          |          |          |
| Max. Operating Altitude / m                        | 3000 (>3000 Derating)      |          |          |          |
| Protection Class (IEC 60529)                       | IP65                       |          |          |          |
| Climatic Category (IEC 60721-3-4)                  | 4K4H                       |          |          |          |
| Topology   | Transformerless            |          |          |          |
| Night Consumption / W                              | <5                         |          |          |          |

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FEATURES