

**ReneSola**

**[e] enphase<sup>®</sup>**  
ENERGY

**DELTA**

**NEUTON  
POWER**

**SMA**

**S-5!<sup>®</sup>**  
The Right Way!

# SOLAR POWER PRODUCT CATALOGUE 2015



**YHI**

[WWW.YHIPOWER.CO.NZ](http://WWW.YHIPOWER.CO.NZ)





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Average Power Output **250w**  
Module Efficiency **15.7%**

- ✓ Lower production cost
- ✓ Higher power output
- ✓ Less defect ratio
- ✓ Better appearance



**High Module Conversion Efficiencies**



Conforms with IEC 61215:2005,  
IEC 61730: 2004, UL 1703 PV Standards



**Easy Installation and Handling for Various Applications**



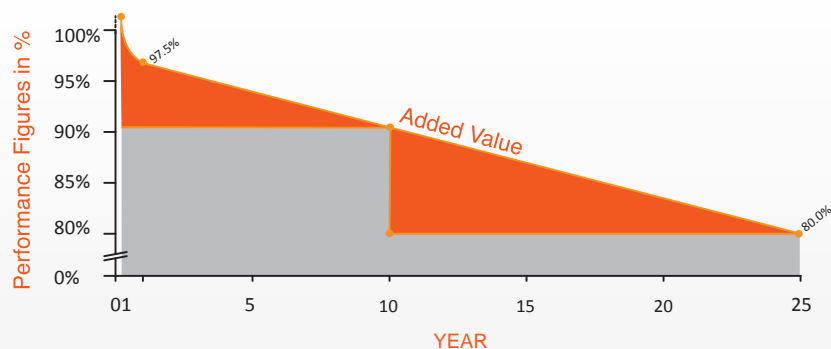
ISO9001, OHSAS18001, ISO14001 Certified



**Mechanical Load Capability of up to 5400 Pa**



Application Call A, Safety Class II, Fire Rating C

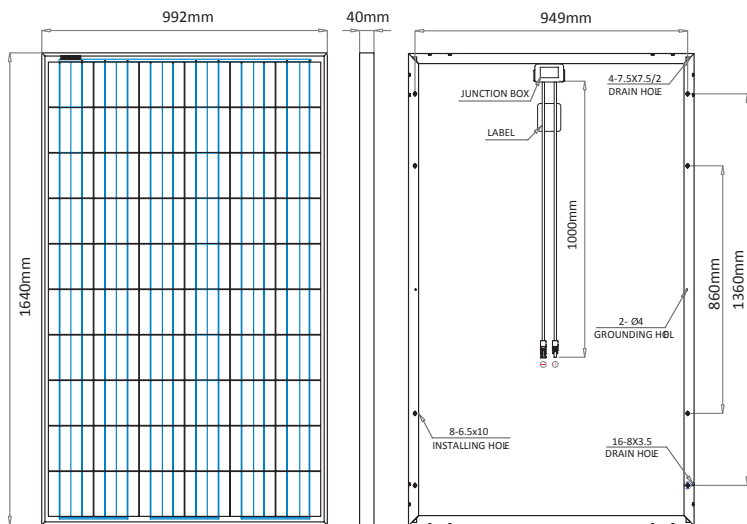


**10-year**  
material & workmanship

**25-year**  
linear power output

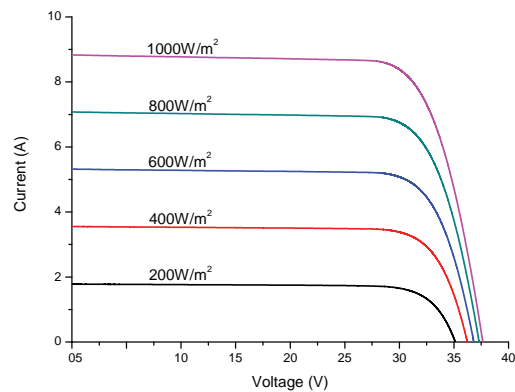


## Dimensions



Drawing Only for Reference

## I-V Curves



## Varied Irradiation Efficiencies

Irradiance	200W/m²	400W/m²	600W/m²	800W/m²	1000W/m²
Efficiency	15.8%	16.2%	16.2%	16.1%	16.0%

## Electrical Characteristics NOCT

## SPVR250II

Maximum Power (Pmax)	185 W
Maximum Power Current (Imp)	6.57A
Maximum Power Voltage (Vmp)	28.2V
Short Circuit Current (Isc)	7.12A
Open Circuit Voltage (Voc)	35.0V

Values at normal operating cell temperature, Irradiance of 800W/m², Spectrum AM 1.5, Ambient temperature 20°C, Wind speed 1 m/s

## Electrical Characteristics STC

Maximum Power (Pmax)	250 W
Power Tolerance	0~+5W
Module Efficiency	15.4%
Maximum Power Current (Imp)	8.31A
Maximum Power Voltage (Vmp)	30.1V
Short Circuit Current (Isc)	8.83A
Open Circuit Voltage (Voc)	37.4V

Values at standard test conditions STC (Air Mass AM1.5, Irradiance 1000W/m², Cell temperature 25°C

## Maximum Ratings

Operating temperature	-40°C ~ +85°C
Maximum system voltage	1000VDC (EU) / 600VDC (US)
Maximum series fuse rating	20A (EU) / 20A (US)

## Characteristics

Temperature Coefficient of Voc	-0.30%/°C
Temperature Coefficient of Isc	0.4%/°C
Temperature Coefficient of Pmax	-0.40%/°C
Normal Operating Cell Temperature (NOCT)	45°C ± 2°C

## Mechanical Characteristics

Cell Type	Virtus II (Polycrystalline) 156X156mm, 60 (6x10) pcs in series
Glass	High transmission, Low iron, Tempered glass
Frame	Anodized aluminium alloy
Junction Box	IP65/IP67 rated, with bypass diodes
Dimension	*1640 x 992 x 40 mm
Output Cable	4mm² (EU)/12 AWG (US), 1000mm
Weight	18.5 Kg

Installation Hole Location: See drawing above



# Neuton Power Monocrystalline Module 15, 30, 55 Watt

YHI Part Code #NPV15  
#NPV30  
#NPV55



Electrical Characteristics	NPV15	NPV30	NPV55
Maximum Power at STC (Pmax)	15Wp	30Wp	55Wp
Maximum Power Voltage (Vmp)	18V	17.75V	21V
Maximum Power Current (Imp)	0.83A	1.69A	2.62A
Short Circuit Current (Isc)	0.996A	1.83A	2.81A
Open Circuit Voltage (Voc)	21.98V	21.83V	24.8V
Maximum system voltage		1000VDC	
Power Tolerance		-1% ~ +3%	

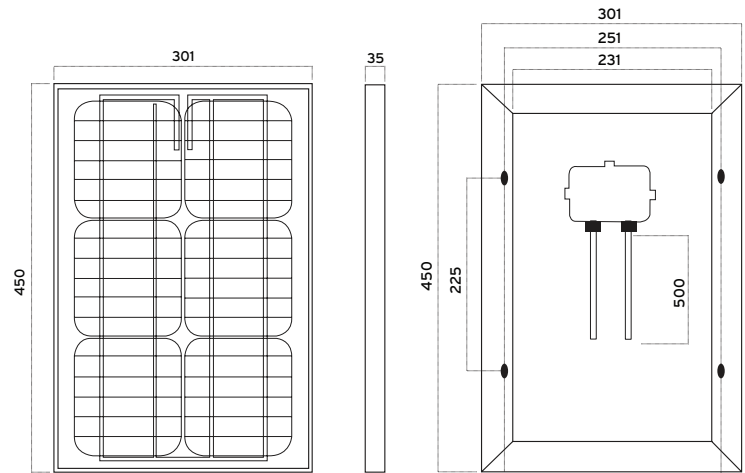
## Characteristics

Temperature Coefficient of Voc	-0.35%/°C
Temperature Coefficient of Isc	0.055%/°C
Temperature Coefficient of Pmax	-0.44%/°C
Normal Operating Cell Temperature (NOCT)	45 ± 2 °C

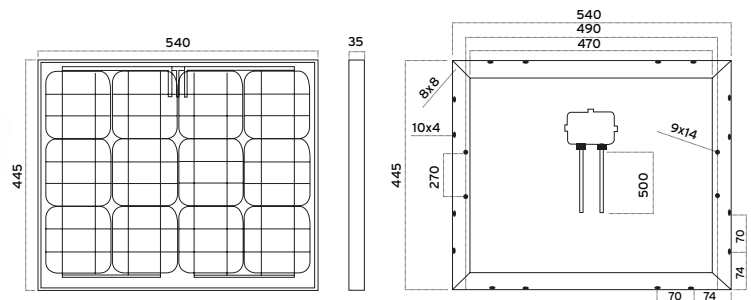
Mechanical Characteristics	NPV15	NPV30	NPV55
Cell Type	5" Monocrystalline (1/6 pcs)	5" Monocrystalline (1/3 pcs)	5" Monocrystalline (1/2 pcs)
No of Cells	36 (2x18)	36 (4x9)	36 (4x9)
Dimensions (mm)	450 x 301 x 35	445 x 540 x 35	690 x 540 x 35
Weight (Kg)	2	3.3	4.8
Front Glass	3.2mm, High Transmission, Low Iron, Tempered Glass		
Frame	Anodized Aluminium Alloy (Silvery White)		
Junction Box	IP65 Rated		

## Dimensions (mm)

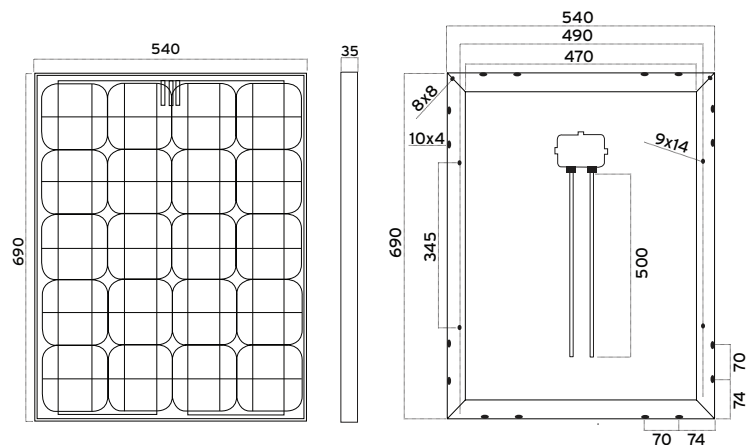
### NPV15



### NPV30



### NPV55



## Packing Information

Packing Design: Cartons, 2 pcs/ carton

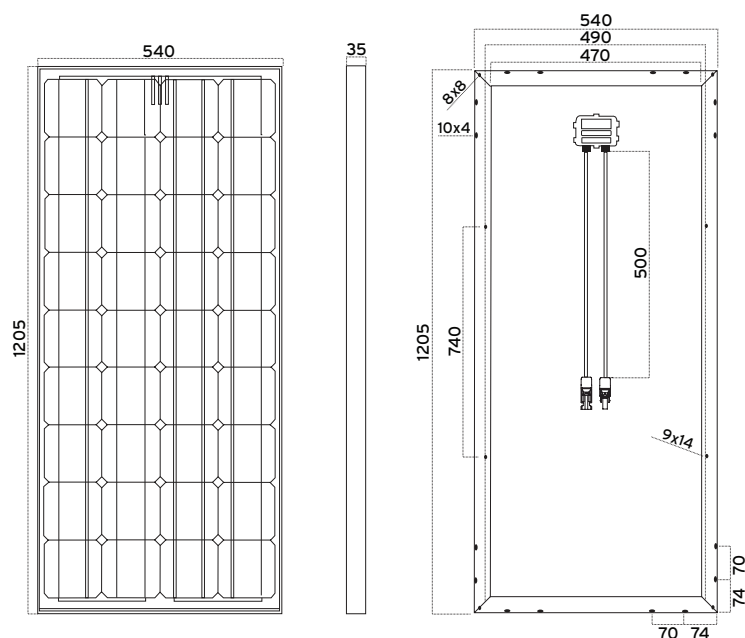
**YHI Part Code** #NPV95  
#NPV190



Characteristics		
Temperature Coefficient of Voc	-0.35%/°C	
Temperature Coefficient of Isc	0.055%/°C	
Temperature Coefficient of Pmax	-0.44%/°C	-0.45%/°C

Mechanical Characteristics	NPV95	NPV190
Cell Type	5" Monocrystalline	Monocrystalline
No of Cells	36 (4x9)	36
Dimensions (mm)	1205 x 540 x 35	1580 x 808 x 45
Weight (Kg)	8	15.5
Frame	Anodized Aluminium Alloy (Silvery White)	
Junction Box	IP65 Rated	

## NPV95



Technical drawing of the 'L' table, showing top and side views with dimensions in centimeters.

**Top View Dimensions:**

- Overall width:  $808 + 1$
- Overall depth:  $550 + 1$
- Table top width:  $758 + 1$
- Table top depth:  $140 + 0.5$
- Table top thickness:  $45 + 1$
- Table top height:  $60$

**Side View Dimensions:**

- Table top width:  $404$
- Table top depth:  $900$
- Table top height:  $60$
- Table top thickness:  $45 + 1$
- Table top height:  $60$

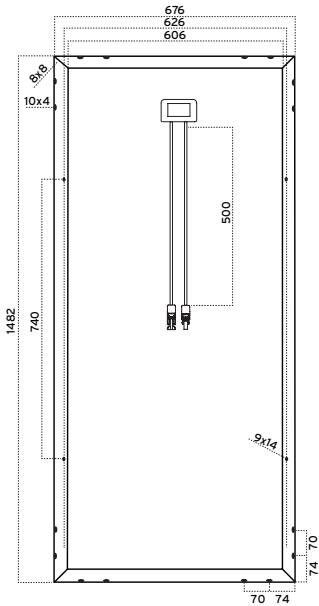
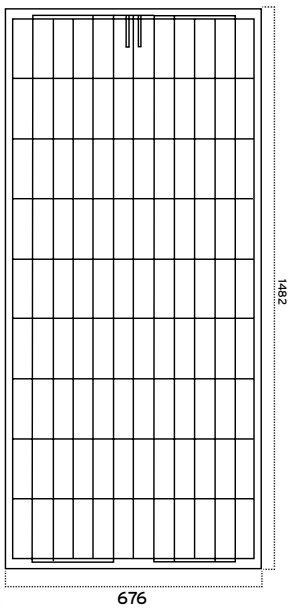
Neuton Power Polycrystalline Module  
140 Watt

YHI Part Code #NPV140



Dimensions (mm)

NPV140



Electrical Characteristics	NPV140
Maximum Power at STC (Pmax)	140 W
Maximum Power Voltage (Vmp)	17.6V
Maximum Power Current (Imp)	7.95A
Short Circuit Current (Isc)	8.41A
Maximum system voltage	1000V DC
Open Circuit Voltage (Voc)	22.58V
Power Tolerance	-1% ~ +3%

Mechanical Characteristics	
Cell Type	6" Polycrystalline
No of Cells	36 (4x9)
Dimensions (mm)	1482 x 676 x 35
Weight (Kg)	12
Front Glass	3.2mm, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy (Silvery White)
Junction Box	IP65 Rated

Characteristics	
Temperature Coefficient of Voc	-0.35%/°C
Temperature Coefficient of Isc	0.055%/°C
Temperature Coefficient of Pmax	-0.44%/°C
Normal Operating Cell Temperature (NOCT)	45 ±2°C

Packing Information	
Packing Design:	Cartons, 2 pcs/ carton



# Enphase M215 Micro Inverter

YHI Part Code #M215-60-230-S22



The Enphase Energy Microinverter System improves energy harvest, increases reliability, and dramatically simplifies design, installation, and management of solar power systems.

The Enphase System includes the microinverter, the Envoy Communications Gateway, and Enlighten, Enphase's monitoring and analysis software.

## Productive

- Maximum energy production
- Resilient to dust, debris and shading
- Performance monitoring

## Reliable

- System availability greater than 99.8%
- No single point system failure

## Smart

- Quick and simple design, installation and management
- 24/7 monitoring and analysis

## Safe

- Low-voltage DC
- Reduced fire risk

## Features

Compatibility	Compatible with 60-cell PV modules
Communication	Power line
Monitoring	Enlighten Manager & MyEnlighten monitoring options
Transformer design	High frequency transformers, galvanically isolated
Compliance	AS4777, C10/11, CEI_0-21, EN50438, EN62109-1, EN62109-2, ERDF-NOI-RES_13E_V5, G59/2, G83/1-1, G83/2, VDE-0126-1-1, VDE AR-N 4105

## Warranty

10 Years

## Input Data (DC)

Recommended input power (STC)	190 - 270 W
Maximum input DC voltage	45 V
Peak power tracking voltage	22V - 36V
Operating range	16V - 36V
Min/Max start voltage	22V / 45V
Max. DC short circuit current	15A
Max. input current	10.5A

## Output Data (AC)

Peak output power	225W
Rated (continuous) output power	215W
Nominal output current	0.94
Nominal voltage	230V
Nominal frequency	50.0Hz
Power factor	>0.95
Maximum units per 20 A branch circuit	17 (Ph + N), 51 (3Ph + N)
Maximum units per cable section	17 (Ph + N), 27 (3Ph + N)

## Efficiency

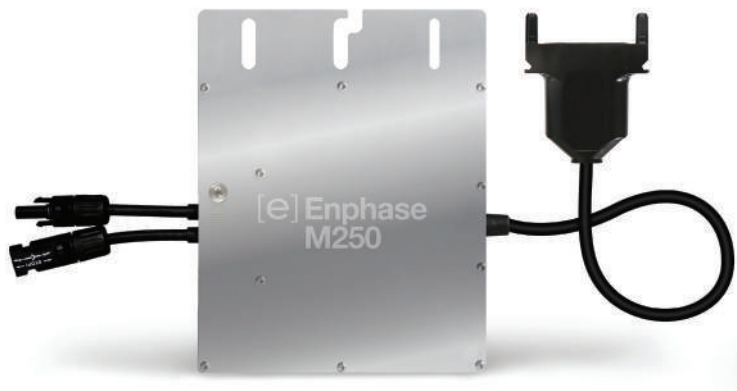
EN 50530 (EU) efficiency	95.4%
Static MPPT efficiency (weighted, reference EN50530)	99.6%
Dynamic MPPT efficiency (fast irradiation changes, reference EN50530)	99.3%
Night time power consumption	50mW

## Mechanical Data

Ambient temperature range	-40°C to +65°C
Operating temperature range (Internal)	-40°C to + 85°C
Dimensions (W x H x D)	172 x 164 x 25 mm
Weight	1.6 kg
Cooling	Natural convection - No fans
Enclosure environmental rating	Outdoor - IP67

# Enphase M250 Micro Inverter

YHI Part Code #M250-60-230-S22



The Enphase Energy Microinverter System improves energy harvest, increases reliability, and dramatically simplifies design, installation, and management of solar power systems.

The Enphase System includes the microinverter, the Envoy Communications Gateway, and Enlighten, Enphase's monitoring and analysis software.

## Productive

- Optimised for higher-power modules
- Maximises energy production
- Minimises impact of shading, dust and debris

## Reliable

- 4th - generation product
- More than one million hours of testing
- System availability greater than 99.8%

## Smart

- Quick and simple design, installation and management
- 24/7 monitoring and analysis

## Safe

- Extra low - voltage DC reduces fire risk
- No single point of system failure
- Easy installation with Engage Cable

## Features

Compatibility	Compatible with 60-cell PV modules
Communication	Power line
Monitoring	Enlighten Manager & MyEnlighten monitoring options
Transformer design	High frequency transformers, galvanically isolated
Compliance	AS4777, C10/11, CEI_0-21, EN50438, EN62109-1, EN62109-2, ERDF-NOI-RES_13E_V5, G59/2, G83/2, VDE-0126-1-1 + A1, VDE AR-N 4105

## Warranty

10 Years

## Input Data (DC)

Recommended input power (STC)	210 - 310W
Maximum input DC voltage	48V
Peak power tracking voltage	27V - 39V
Operating range	16V - 48V
Min/Max start voltage	22V / 48V
Max. DC short circuit current	15A
Max. input current	10A

## Output Data (AC)

Peak output power	258W
Rated (continuous) output power	250W
Nominal output current	1.09A
Nominal voltage	230V
Nominal frequency	50.0 Hz
Power factor	>0.95
Maximum units per 20 A branch circuit	14 (Ph + N), 42 (3Ph + N)
Maximum units per cable section	14 (Ph + N), 24 (3Ph + N)

## Efficiency

EN 50530 (EU) efficiency	95.7%
Static MPPT efficiency (weighted, reference EN50530)	99.6%
Dynamic MPPT efficiency (fast irradiation changes, reference EN50530)	99.3%
Night time power consumption	0.055 W

## Mechanical Data

External operating temperature range (ambient)	-40°C to +65°C
Internal operating temperature range	-40°C to +85°C
Enclosure environmental rating	Outdoor - IP67
Connector type	MC4
Dimensions (W x H x D)	179 x 217 x 28 mm (with Bracket)
Weight	1.66 kg
Cooling	Natural convection - No fans

# Enphase Envoy Communications Gateway

**YHI Part Code #ENV-230-AU M**



The Enphase Envoy Communications Gateway provides network access to the solar array enabling comprehensive monitoring and management of an Enphase system.

Solar professionals and system owners can easily check the status of their Enphase System using the Envoy's LCD display or get more detailed performance data via Enlighten Software, included with the purchase of Envoy.

## Smart

- Includes web-based monitoring and control
- Integrates with smart energy devices
- Automatically upgrades and sends performance data

## Simple

- Plug and play installation
- Flexible network configuration
- No additional AC wiring required

## Scalable

- Residential or commercial, ready out of the box
- Supports up to 600 micro inverters

Interface	ENV-230-AU M
Power line communications	Enphase proprietary
Local area network (LAN)	10/100 auto-sensing, auto-negotiating
USB	USB 2.0 interface, auto-sensing, auto-negotiation, 802.3

Capacity	
Number of devices polled	Monitors up to 600 Enphase Micro Inverters

## LAN Connection Options

Cable assembly, Ethernet, RJ45, Orange, 3m	Included with all models
Power line communication bridge pair	Order EPLC-02 (EU), EPLC-03 (UK) or EPLC-04 (AU) separately
Wireless N USB adapter (802.11b/g/n)	Order WF-01 separately

## Power Requirements

AC Supply	230 vaC, 50Hz
Power Consumption	2.5 watts typical, 7 watts maximum

## Mechanical Data

Dimensions (W x H x D)	222.5 x 112 x 43.2 mm (8.8" x 4.4" x 1.7")
Weight	340g (12 oz)
Ambient temperature range	-40°C - +65°C (-40° - 149°F)
Cooling	Natural convection - no fans
Enclosure environment rating	Indoor NEMA 1
Metering accuracy	Qualified at +/- 5% or better

## Features

Standard warranty term	2 Years
API available	System-level production data
Compliance	EN 60950-1, EN 55022 Class B, EN 55024, EN 50065-1, EN 50065-2-2, EN 61000-3-2, EN 61000-3-3

## System Accessories For Enphase Envoy Systems



### Enphase Wireless Adapter YHI PART CODE# WF-01

The Enphase Wireless Adapter (Wi-Fi USB stick), allows the Envoy to transmit Enphase® Microinverter System™ data through the on-site wireless network to the Enlighten® Monitoring platform. Using the wireless adapter simplifies Envoy installation and reduces system commissioning time.

### Enphase Power Line Carrier Ethernet Bridge YHI PART CODE# EPLC-04

The Enphase Power Line Communications bridge is for use with the Envoy Gateway when it needs to be located away from the broadband router.



## Enphase Enlighten Manager For Solar Professionals

Comes with Enphase Envoy



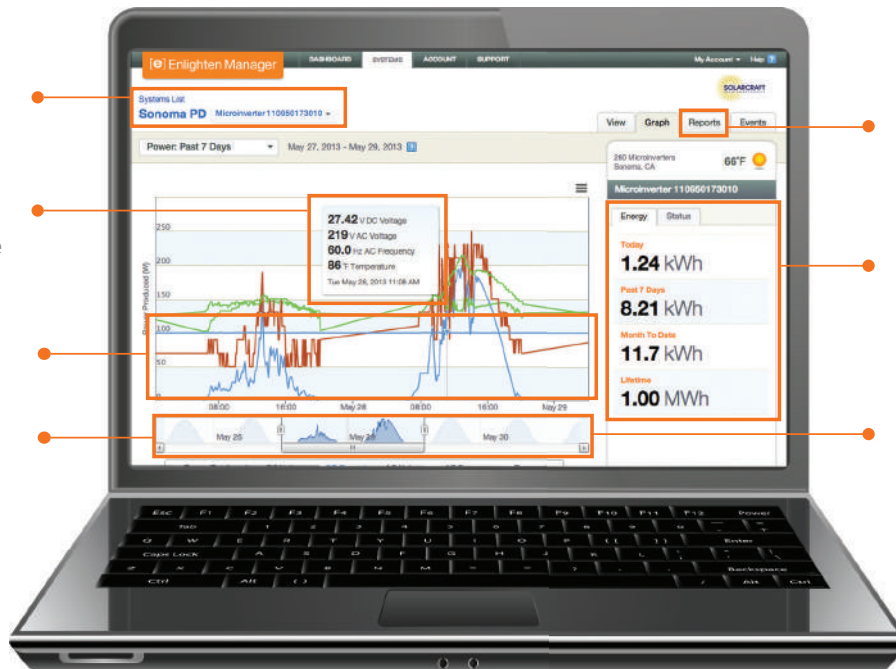
Designed for the Solar Professional, Enlighten Manager streamlines the operations and maintenance processes and enables efficient management of multiple Enphase systems.

View detailed performance data from a fleet of PV installations down to the individual module.

Remotely diagnose and resolve issues impacting system performance and easily determine whether an unplanned truck roll is necessary.

Streamline operations and easily monitor activations in process.

Access performance data for PV module warranty claims.



Access performance reports 24/7 with secure, backed-up online data storage.

Compare actual system performance data against modelled performance data.

Receive automatic e-mails of events affecting system performance. Or view maintenance issues on graphs or maps.

## Enphase MyEnlighten For System Owners

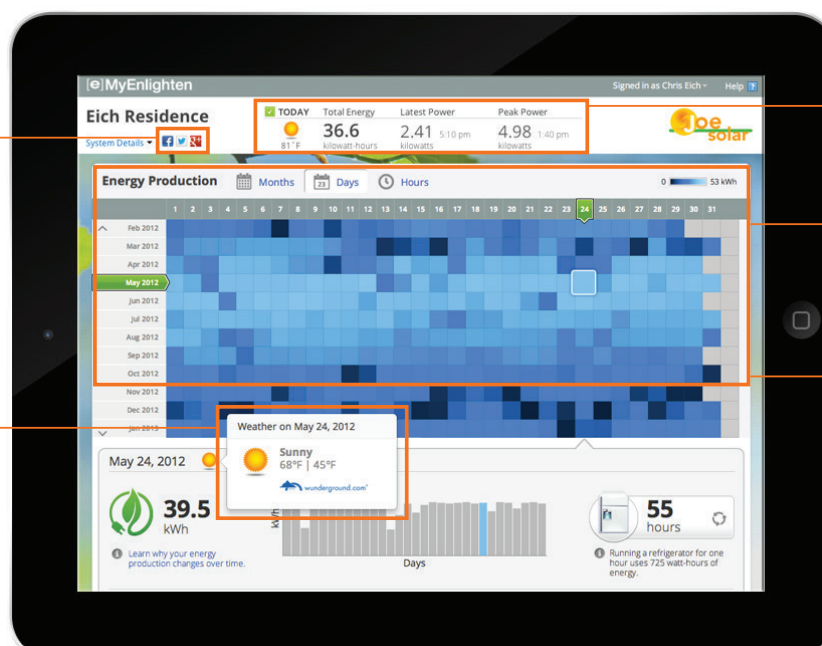
Comes with Enphase Envoy



MyEnlighten connects system owners to their solar experience through an engaging interface that displays energy production, system health and environmental benefits.

One - click sharing with integrated social media buttons. Accessible from any device with an internet connection.

View historical weather data to understand variations in performance.



Easily verify system health and performance at-a-glance.

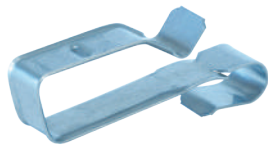
System status indicator tells you when the system is not performing as expected and what can be done to restore performance.

Easily compare current performance against a previous day, week or month.

# Enphase Cabling & Connectors

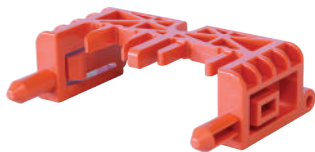
For use with Enphase M215 & M250

## Enphase Cable Clip



YHI Part Code	Description
ET-CLIP-100	Enphase Cable Clip (100 pieces per bag)

## Enphase Cable Disconnect Tool



YHI Part Code	Description
ET-DISC-05	Enphase Cable Disconnect Tool (5 pieces per bag)

## Enphase Sealing Cap



YHI Part Code	Description
ET-SEAL-10	Enphase Sealing Cap (10 pieces per bag)

## Enphase Engage Coupler



YHI Part Code	Description
ET-SPLK-05	Enphase Engage Coupler (5 pieces per bag)

## Enphase Branch Terminator



YHI Part Code	Description
ET-TERM-10	Enphase Branch Terminator (10 pieces per bag)

## Enphase Install Kit

YHI Part Code: ET-INSTL

YHI Part Code	Description	Quantity per kit
ET-TERM-10	Enphase Branch Terminator	4
ET-DISC-05	Enphase Cable Disconnect Tool	1
ET-SEAL-10	Enphase Sealing Cap	5

## Enphase Legrand Phase Coupler



YHI Part Code	Description
LPC-01	Enphase Legrand Phase Coupler

## Enphase Trunk Cable Single Phase



YHI Part Code	Description
ET10-230-SINGLEPLUG	Enphase 230VAC Trunk Cable Single Phase Connector Portrait
ET17-230-SINGLEPLUG	Enphase 230VAC Trunk Cable Single Phase Connector Landscape

## Enphase Trunk Cable Three Phase



YHI Part Code	Description
ET10-400-SINGLEPLUG	Enphase 400VAC Trunk Cable Three Phase Connector Portrait
ET17-400-SINGLEPLUG	Enphase 400VAC Trunk Cable Three Phase Connector Landscape





**Maximum power production; Resilient to dust, debris, and shading**



**Simplified PV system design & installation; Performance monitoring for each PV module**



**MPPT efficiency greater than 99.5%; No single point of system failure**



**Low input voltage DC, improved safety, and reduced risk of electrocution**

### Input (DC)

Recommended PV-generator power (WP)	250
Max. DC voltage (V)	60
MPPT DC voltage range (V)	22 - 55
Max. DC current (A)	14
Max. Units per branch circuit	15

### Output (AC)

Rated maximum continuous output power (W)	225
AC Max. cont. output current (A)	1.0
Nominal AC voltage / range (V)	240/211 ~ 264
AC power frequency / range (Hz)	60 / 59.3 ~ 60.5
Power factor (cos)	> 0.99 (full load)

### Efficiency

Peak efficiency	96.3%
CEC efficiency	95.0%
MPPT efficiency	>99.5%

### Protection

Over / Under voltage protection	Yes
Over/ Under frequency protection	Yes
Anti- Islanding protection	Yes
Over current protection	Yes
Reverse DC polarity protection	Yes
Overload protection	Yes

### General Data

Degree of protection	NEMA 6
Power consumption at night (W)	< 0.17
Operation ambient temperature	-40°C ~ +65°C
Relative humidity	0 ~ 95%
Display	LED indicator
Communication	PLC (Power Line Communication)
Dimensions (W x H x D)	9.06 x 5.44 x 1.38 inch / 230 x 138 x 35 mm
Weight	4.4lbs / 2.0kg ( including cables & connectors)
Warranty	25 years limited warranty

### Certification

UL1741  
CSA C22.2 No. 107.1  
FCC Part15 Class B  
AS4777.2  
AS4777.3  
AS/NZS 3100



**Product Features**

- Aesthetically pleasing with a durable design and airtight sealing. Easy-to-use energy saving touch screen LCD display provides real time system performance monitoring.
- Embedded with state of the art technology and the latest software. Power Line Carrier (PLC) mode provides inverter communication. Smart internal memory card integration (Available in 256 MB or 1GB) stores performance data for up to 20 years. Local monitoring via Ethernet connection allows accurate web page monitoring of the inverters operating status.
- Supports various external hardware such as a USB keyboard
- Remote intelligent monitoring allows users to login and monitor system performance anytime from anywhere
- Small size, light weight, and use minimal power

**Technical Specifications**

**RENEECU**

Nominal voltage	208V - 240V
Nominal frequency	50/60 Hz
Number of monitored devices	1 - 100
Protection class	IP20 / Indoor
Ambient temperature	-20°C - +55°C
Communication	PLC/ 10M/ 100M Ethernet
Power consumption	< 5W
Dimensions (D x W x H)	37 x 148x 113 mm / 1.46 x 5.83 x 4.45 Inch
Weight	342g / 0.75 lbs
Standard Warranty	1 Year

**Renesola Micro Inverter Cable Kit**

**YHI Part Code: RENECABLEKITNZ**



**Kit Includes**

- 5 metres cable
- Sealing cap
- Female plug

# Delta Solivia 3.0 & 5.0 Single Phase Solar Inverter

**YHI Part Code** #SOLINV3.0KW  
#SOLINV5.0KW



Delta offers a complete product range of solar inverters, accessories and services to our partners and installers and the best photovoltaic systems to maximise profit.

SOLIVIA stands for "SOLar inverters for Versatile and Intelligent Applications". SOLIVIA solar inverters are multifaceted and can be used in every system size as well as being compatible with all commercially available solar modules and system components.

SOLIVIA solar inverters are not only the heart of your system, but also the intelligent control equipment of your power generation in conjunction with the Delta monitoring system.

Input (DC)	SOLIVIA 3.0	SOLIVIA 5.0
Max. recommended PV power	3650 W	6000 W
Nominal power	3300 W	5500 W
Voltage range	125 ... 540 V	125 ... 540 V
MPP range	150 ... 450 V	150 ... 450 V
Full power MPP range	150 ... 450 V	150 ... 450 V
Nominal current	11.8 A	17.2 A
Max. current	22.0 A	32.0 A
Standby power	<0.2 W	<0.2 W
MPP Tracker	1	1

Output (AC)	SOLIVIA 3.0	SOLIVIA 5.0
Max. power	3170 W	5240 W
Nominal power	3000 W	5000 W
Voltage range	210 ... 264 V	210 ... 264 V
Nominal current	13.0 A	22.0 A
Max. current	14.3 A	27.2 A
Nominal frequency	50 Hz	50 Hz
Frequency range	48.0 ... 52.0 Hz	48.0 ... 52.0 Hz
Power factors	>0.99 @ nominal power	>0.99 @ nominal power
Total harmonic distortion (THD)	< 5% @ nominal power	< 5% @ nominal power

Mechanical Design	SOLIVIA 3.0	SOLIVIA 5.0
Dimensions (L x W x H)	410 x 410 x 180 mm	510 x 410 x 180 mm
Weight	21.5kg	32.0 Kg
Cooling	Free convection	
AC Connector	Wieland RST25i3S	
DC Connector	4 pairs of Multi- contact MC4	
Communication	2 Harting RJ45/ RS485	
Display	3 LED's, LCD	



## Efficiency & Temperature

The brand new SOLIVIA inverters for the Australian and New Zealand market have a maximum efficiency of 96%. They do not have fans, are dust tight (IP65), and operate over a wide range of temperatures.



## Versatile Applications

The SOLIVIA string inverters can be used with all common photovoltaic module types, even with back-contact and thin-film modules that require positive or negative DC grounding. With the optional grounding kit from Delta, the SOLIVIA inverters are a perfect fit for these applications.



## Easy Installation

SOLIVIA inverters offer exciting and innovative features that make installation easier. Not only are the inverters lightweight and compact, they also come with built-in handles and a convenient mounting plate that allows for simple one-person installation.



## Aluminium Housing

The aluminium housing of the SOLIVIA solar inverters ensure long lasting protection against moisture and corrosion. The dust-proof, completely shockproof housing protects the electronics of the solar inverter from water spray from all directions. This means that it can be installed in protected outdoor areas, damp basements and areas with a high level of dust.

General Specification	SOLIVIA 3.0	SOLIVIA 5.0
Model Name	SOLIVIA 3.0 AP G3	SOLIVIA 5.0 AP G3
Max. efficiency	96.0%	95.6%
Efficiency EU	94.8%	94.6%
Operating temperature	-25°C - +70°C	-25°C - +60°C
Storage temperature	-25° - +80°C	-25° - +80°C
Humidity	0 - 98%	0 - 98%

Standards		
Protection degree	IP65	
Safety class	1	
Configurable trip parameters	Yes	
Insulation monitoring	Yes	
Anti-islanding protection	AS 4777.2; AS 4777.3; IEC 60255.5	

Certification		
EMC	AS 4777.1 ; AS 4777.2 ; AS 4777.3 ; EN 61000-6-2 ; IEC / EN 61000-6-3	
Safety	AS/NZS 60950 ; AS/NZS 3100 ; AS 4777.2 ; AS 4777.3	

Warranty		
10 Years		



The SOLIVIA Gateway and SOLIVIA monitor web portal, allow continuous monitoring of your PV system from anywhere that you have internet access. The SOLIVIA monitoring system is compatible with SOLIVIA EU, NA and AP string inverters.

The SOLIVIA gateway is the interface between your SOLIVIA inverter and the SOLIVIA monitor web portal. It transmits all relevant data from your SOLIVIA inverter (for example the supplied AC energy of the day, the actual AC power, some error bytes etc.) to the SOLIVIA monitor web portal. It is not only useful for monitoring purposes but offers as well an interface for the connection with a ripple control receiver.



### Simple & Secure Data Reporting

Real-time performance data is gathered from the inverters, sent over the internet, and presented on your computer or web-enabled device with easy-to-read graphs and reports.



### System Alerts

Downtime is minimised with automated alerts providing immediate notification of current or potential problems, which increase the return from your solar investment.



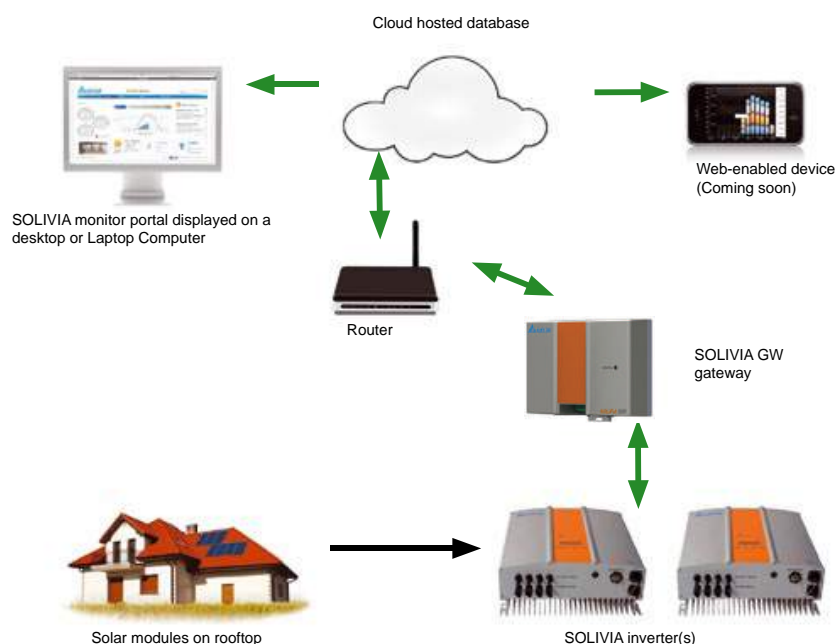
### Powerful Data Features

Reports of real-time and historical data are available and can be downloaded to your computer. Also featured are weather conditions, site photos and environmental savings information.



### Turn-key Monitoring System

The SOLIVIA Monitor system includes the gateway, database and web application to allow a complete monitoring solution of one of many solar PV systems.



# Delta RPI Home Series Single Phase Solar Inverter

**YHI Part Code** #DELTAINV3.OKWDT  
#DELTAINV5.OKWDT



## Product Features

- Transformerless design
- Dual MPP Trackers
- Fanless design, enhancing product life
- Wide voltage range
- Peak efficiency of 97.5%
- Optional wifi/ ethernet
- LCD display
- Aluminium die-cast enclosure
- IP65 protection level
- Easy installation
- Wall mountable

## High Efficiency Performance

Dual MPP Trackers give more flexibility to the PV system, with multiple strings facing different angles helps ensure it performs at maximum yields with the highest efficiency up to 97.5%

## High Quality Protection Design

RPI-Home series is designed with IP65 protection levels and fast connector features enhances the performance under outdoor conditions.

Input (DC)	RPI H3A	RPI H5A
Max. input voltage	600V	600V
Operating voltage range	100~550V	100~550V
MPP voltage range	160~500V	220~500V
Start voltage	100V	100V
Rated voltage	350V	350V
Max. input current	Each MPPT: 10A - Total 20A	Each MPPT: 12A - Total 24A
MPP tracker	2	2
Connection type	2 pairs MC4	2 pairs MC4

Output (AC)		
Max. output power	3000VA	5000VA
Max. output current	13.9A	23.2A
Rated voltage	230V	230V
Operating voltage range	-20% / +22%	-20% / +22%
Operating frequency range	50/60 Hz ± 5 Hz	50/60 Hz ± 5 Hz
Power factor (adjustable)	0.8 ind ~ 0.8 cap	0.8 ind ~ 0.8 cap
THD	<3%	<3%
Night time consumption*	<1W	<1W

\* Night time consumption includes backlight & communication

Efficiency	
Peak efficiency	97.50%
Euro efficiency	96.80%

Information	
DC Switch	YES
Communication port	RS485/ Wifi optional
Display	LCD 16 characters x2

Mechanical Design	
Dimensions (W x H x D)	475 x 415 x 155 mm
Weight	21 Kg
Cooling	Natural cooling
Operating temperature range	-25°C ~ 60°C
Protection level	IP65
Operating elevation	< 2000m

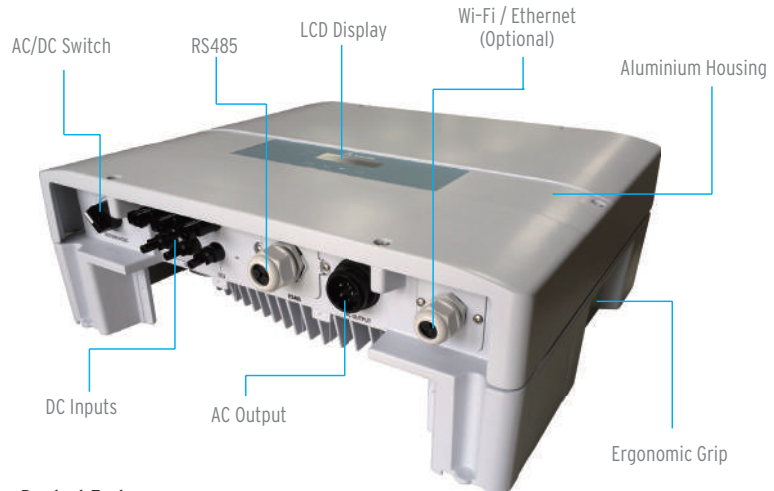
Certification	
VDE-AR-N 4105	
AS4777	
AS3100	
IEC 62109 -1/ -2	
EN 61000 -6 - 2	
EN 61000 -6 -3	

Warranty	
10 Years	



## Delta RPI Commercial Series Three Phase Solar Inverter

**YHI Part Code** #DELTAINV6A  
#DELTAINV8A  
#DELTAINV10A



### Product Features

- Transformerless design
- Dual MPP Trackers
- High efficiency up to 98%
- Wide working voltage range
- Built-in AC/DC switch
- DC relay protection
- Ultra light weight design
- IP65 Protection
- Wi-Fi/ Ethernet (optional)

### Compact size & Fan-less Design

The ultra light weight design gives more flexibility and convenience, the entire installation process can be easily done by one person using the mounting plate supplied. Fast connection design is applied on both AC and DC connectors with a less complicated installation process which will result in faster installation time. The compact case design & high output density of the inverters minimise the required installation surface and reduces AC wiring, thereby further reducing installation costs.

### AC / DC Switch Protection

In order to ensure the safety during installation, the inverter is equipped with an AC/DC switch which is designed to manually cut off both AC & DC power sources from the internal circuit at the same time. When the power is turned off, the AC AUX power inside will detect movement, and internal DSP will execute an AC protection mechanism program, and cut off the AC relay & DC relay at the same time. Thus, the inverter will be completely shut down which will prevent any possibility of installers getting an electric shock.

Input (DC)	RPI M6A	RPI M8A	RPI M10A
Max. input voltage	1000V	1000V	1000V
Operating voltage range	200~1000V	200~1000V	200~1000V
MPP voltage range	315~800V	415~800V	415~800V
Start voltage	>250V	>250V	>250V
Rated voltage	600V	600V	600V
Max. input current	Each MPPT: 10A Total: 20A	Each MPPT: 10A Total: 20A	Each MPPT: 15A/10A Total: 20A
MPP tracker	2	2	2
Connection type	2 Pairs of MC4	2 Pairs of MC4	2 Pairs of MC4

Output (AC)			
Max. output power	6300VA	8400VA	10500VA
Max. output current	9.7A	13A	16A
Rated voltage		3Ph 230/400V Y or Δ	
Operating voltage range		± 20%	
Operating frequency range		50/60Hz ± 5Hz	
Power factor		0.8 ind ~ 0.8 cap	
THD		< 3%	
Night time consumption		< 2W	

Efficiency			
Peak efficiency		98.30%	
Euro efficiency	97.60%	97.90%	98.00%

Information			
DC Switch		YES	
Communication port		RS485/ Wifi optional	
Display		20 x 4 LCD	

### Mechanical Design

Dimensions (W x H x D)	510 x 445 x 177 mm
Weight	25 Kg
Operating temperature range	-25°C ~ 60°C
Protection level	IP65
Operating elevation	< 2000m

### Certification

VDE-AR-N 4105  
VDE 0126 - 1-1  
MEA/ PEA  
AS4777  
IEC 62109 -2  
EN 61000 -6 -2  
EN 61000 -6 -3

### Warranty

10 Years

## Delta RPI Commercial Series Three Phase Solar Inverter

YHI Part Code #DELTAINV15KWTL  
#DELTAINV20KWTL  
#DELTAINV30KWTL



### Product Features

- Transformerless design
- Dual MPPT Trackers
- Peak efficiency 98.2%
- Ergonomic handle design
- 5" graphic LCD display
- 6 languages option display
- Built-in Energy-logger & Data-logger
- IP65 protection level
- Durable & light weight design
- Built-in DC switch

### Your Best Renewable Solution

Delta RPI is a commercial series of transformerless PV inverter that converts the sunlight energy generated by solar panels into grid-compatible current. Delta's cutting-edge industrial technology presents industry-leading efficiency as high as 98.2%.

### High Quality Enclosure

Convection cooled aluminium housing is designed with 2 separate compartments for electronic components and air cooling purposes, in order to emit the heat more efficiently. IP65 rated and corrosion resistant enclosure ensure protection of the inverter in both indoor and outdoor environments. DC input adopts the MC4 fast connection allowing easy plug-in during installation.

### Flexibility In Rooftop / Ground Applications

Delta RPI Commercial 3 phase PV inverter are designed for string inverter applications, with compact size and high level IP65 protection. It is flexible in rooftop solar installation without being limited by obstacles on the rooftop, and also in larger scale solar power installations. More flexibility is given to site planning, construction & maintenance due to RPI- Commercial PV inverter's compact size and light weight. With IP65 protection level, it can be simply placed behind the solar panel on the system rack without taking up any extra space.

### Easy Installation & Swappable Feature

Installation of the RPI-Commercial series is easy and safe with fast plug connection design. This helps to speed up the installation and save on installation costs. The unit has vertical die-casting cooling heat sink and additional cooling fan module below enhance air circulation, bringing down the unit temperature to maintain system performance. The cooling fan module within the inverter is designed to allow the user to simply unscrew and withdraw the cooling fan module to replace a single fan if necessary.

### Smart Communication Logger

5" LCD shows all the relevant system information and settings in graphics display. Easy to use push button interface to access all important data stored inside the built-in data logger. Logger will automatically save the electricity information generated by the solar system in several periods of time. Power generation is recorded every 5 minutes and will be saved for one day. Power generation recorded every 15 minutes will be saved for one month. Daily total power generation info will be saved in the system for one year. Monthly total power generation info will be saved in the system for 10 years.

### High Efficiency Performance

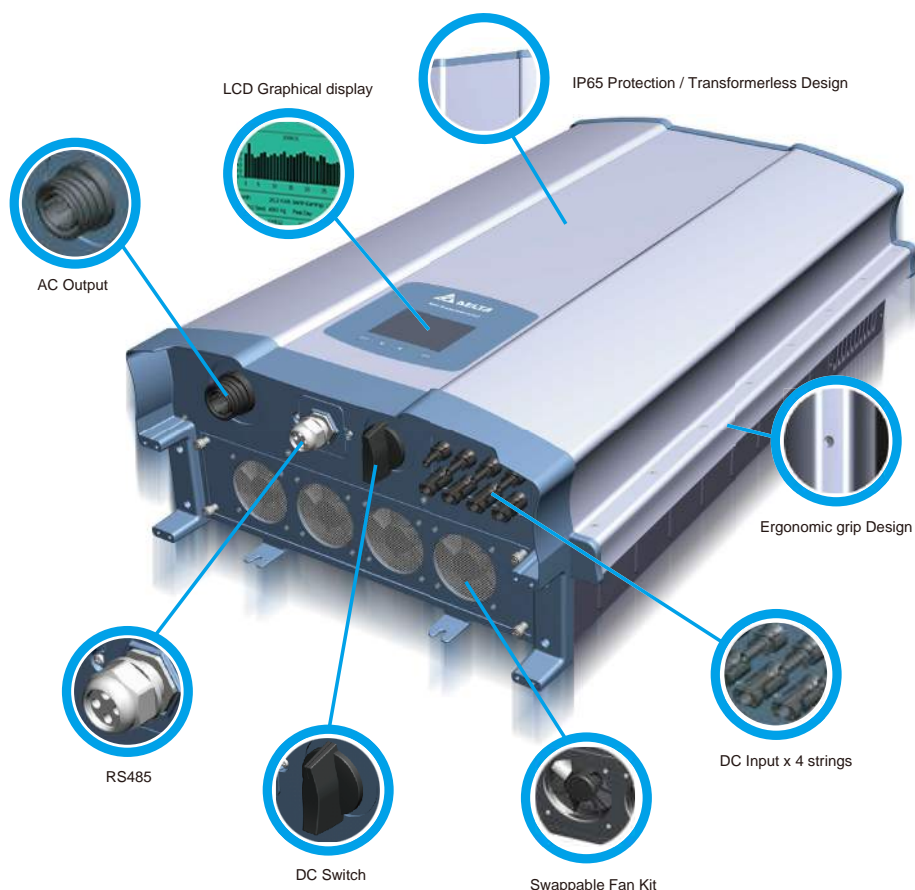
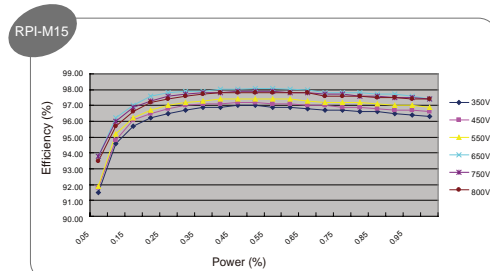
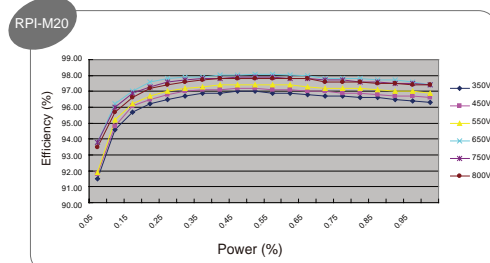
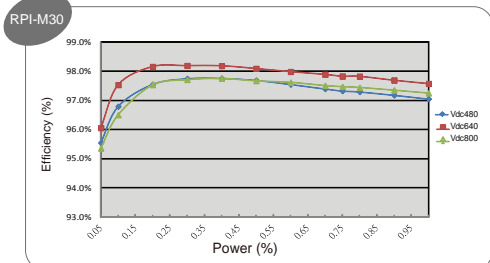
Transformerless topology design gives high peak efficiency up to 98.2% delivering more usable energy. Two sets of MPPT optimise power from multiple arrays oriented in different directions. This optimised energy harvesting can provide the user the maximum pay-back solar system.

### Multiple Max Power Point Trackers

Two sets of MPPTs optimise power harvesting from multiple arrays oriented in different directions. The inverter will track the optimal power point for each of the two arrays independently. Both inputs can be combined and used with a single array as well.

### Ultra Wide MPPT Range

Wide MPPT operating range from 200V up to 1000V makes module configuration more flexible. Even in cold environments, wide MPPT range makes it easy to configure PV arrays and stay within range.



Input (DC)	RPI-M15A	RPI-M20A	RPI-M30
Max. input voltage	1000V	1000V	1000V
Operating voltage range	200~1000V	200~1000V	200~1000V
MPP voltage range	355 ~ 820V	470 ~ 820V	480 ~ 800V
Start voltage	>250V	>250V	>250V
Rated voltage	635V	635V	650V
Max. input current	Each MPPT: 22A - Total 44A	Each MPPT: 22A - Total 44A	Each MPPT: 34A - Total 68A
MPP tracker	2	2	2
Connection type	4 pairs MC4	4 pairs MC4	6 pairs MC4

Output (AC)			
Max. output power	15750VA	21000VA	31500VA
Max. output current	24A	32A	46A
Rated voltage	3Ph 230/400V Y or Δ	3Ph 230/400V Y or Δ	3Ph 230/400V Y or Δ
Operating voltage range	± 20%	± 20%	± 20%
Operating frequency range	50/60Hz ± 5Hz	50/60Hz ± 5Hz	50/60Hz ± 5Hz
Power factor (adjustable)	0.8 ind ~ 0.8 cap	0.8 ind ~ 0.8 cap	0.8 ind ~ 0.8 cap
THD	<3%	<3%	<3%
Night time consumption*	<2W	<2W	<2W

\* Night time consumption includes backlight & communication

#### Warranty

10 Years

Efficiency	RPI-M15A	RPI-M20A	RPI-M30
Peak efficiency	98.30%	98.30%	98.20%
Euro efficiency	97.70%	97.70%	97.60%

Information			
DC Switch		YES	
Communication port		RS485	
Display		5" LCD	

Mechanical Design			
Dimensions (H x W x D)	625 x 612 x 278mm		612 x 960 x 278mm
Weight	43 Kg	43 Kg	72 Kg
Cooling		Natural cooling	
Operating temperature range		-20°C ~ 60°C	
Protection level		IP65	
Operating elevation		< 2000m	

Certification			
VDE-AR-N 4105			
VDE 0216-1-1			
BDEW			
MEA/ PEA			
AS4777 & AS3100			
NB/T 32004: 2013			
IEC 62109 -1/ -2			
EN 61000 -6 -2			
EN 61000 -6 -3			

# SMA Sunny Island 6.0H & 8.0H For Off Grid Applications

**YHI Part Code #SI60H11  
#SI80H11**



More durable than its predecessors: The new Sunny Island impresses with its high protection class and wide temperature range. Moisture, dust and temperature fluctuations won't impair its operation, even after 20 years. Thanks to OptiCool, there's no need to compromise when it comes to overload capacity and economic viability. And there's more: OptiPower, the intelligent load and energy management system, ensures operation even in critical situations. OptiUse makes installation, commissioning and daily use easier than ever with automatic rotary field detection, an optimised quick configuration guide and intuitive operation. And the intelligent OptiBat battery management system automatically controls the most important charging and discharging procedures, which extends the service life of sensitive energy storage. Sunny Island is a truly comprehensive package for a worry-free, reliable and self-sufficient electricity supply.

## Easy to use

- OptiUse: Fast installation and commissioning, simplified operation
- OptiBat: State of charge calculation keeps you informed at all times
- Requires use of Sunny Remote Control - Partcode: SMASRC-20

## Robust

- IP 54: Optimal protection from dust and humidity
- OptiCool: Greater temperature
- OptiPower: Secure operation in any situation

## Flexible

- For systems from 3 to 300kW
- Precise design
- Supports Multiclustert Technology

Features/ Function	6.0H	8.0H
Operation and display / multifunction relay	External via SRC-20 / 2	
Three-phase systems / parallel connection	● / ●	● / ●
Integrated bypass / multiclustert operation	– / ●	– / ●
State of charge calculation / full charge / equalization charge	● / ● / ●	● / ● / ●
Integrated soft start / generator support	● / ●	● / ●
Battery temperature sensor / data cables	● / ●	● / ●

## Accessories

Battery cable / battery fuse	○ / ○	○ / ○
Interface SI-COMSMA (RS485) / SI-SYSCAN (Multiclustert)	○ / ○	○ / ○
Extended generator start "GenMan"	○	○
Load-shedding contactor / battery current measurement	○ / ○	○ / ○

## Sunny Remote Control

YHI Part Code #SMASRC-20

AC output (loads/ stand-alone grid)	Sunny Island 6.0H	Sunny Island 8.0H
Rated grid voltage / AC voltage range	230 V / 202 V ... 253 V	230 V / 202 V ... 253 V
Rated frequency / frequency range (adjustable)	50 Hz / 45 Hz ... 65 Hz	50 Hz / 45 Hz ... 65 Hz
Rated power (for Unom / fnom / 25°C / cos $\phi$ = 1)	4600 W	6 000 W
AC power at 25°C for 30 min / 5 min / 3 sec	6000 W / 6800 W / 11000 W	8000 W / 9100 W / 11000 W
AC power at 45°C	3700 W	5430 W
Rated current / maximum output current (peak)	20 A / 120 A	26 A / 120 A
THD output voltage / power factor with rated power	< 4 % / -1 ... +1	< 4 % / -1 ... +1

## AC Input (PV array, grid or MC box)

Rated input voltage / AC input voltage range	230 V / 172.5 V ... 264.5 V	230 V / 172.5 V ... 264.5 V
Rated input frequency / allowable input frequency range	50 Hz / 40 Hz ... 70 Hz	50 Hz / 40 Hz ... 70 Hz
Maximum AC input current	50 A	50 A
Maximum AC input power	11 500 W	11 500 W

## Battery DC Input

Rated input voltage / DC voltage range	48 V / 41 V ... 63 V	48 V / 41 V ... 63 V
Maximum battery charging current	110 A	140 A
Rated DC charging current / DC discharging current	90 A / 103 A	115 A / 136 A
Battery type / battery capacity (range)	FLA, VRLA / 100 Ah ... 10000 Ah	FLA, VRLA / 100 Ah ... 10000 Ah

Charge control IUoU charge procedure with automatic full charge and equalization charge.

## Efficiency / Self consumption

Maximum efficiency	95 %
Self-consumption without load / standby	< 26 W / < 4 W

## Protective Devices

AC short-circuit / AC overload	● / ●	● / ●
DC reverse polarity protection/ DC fuse	- / -	- / -
Overttemperature / battery deep discharge	● / ●	● / ●
Overvoltage category as per IEC 60664-1	III	III

## General Data

Dimensions (width x height x depth)	467 mm x 612 mm x 242 mm
Weight	63 kg
Operating temperature range	-25°C ... +60°C
Protection class according to IEC 62103	I
Climatic category according to IEC 60721	3K6
Degree of protection according to IEC 60529	IP54

## Warranty

5 Years

- Standard features ○ Optional features – Not available
- Data at nominal conditions

# SMA Sunny Boy Single Phase Solar Inverter

**YHI Part Code** #SB3000TL21  
#SB5000TL21



More communicative, easier to use and more efficient than ever: this Sunny Boy is setting new standards in inverter technology. A modern graphic display, readout of daily values even after sunset, simplified installation concept and wireless communication via Bluetooth® : The new Sunny Boys fulfils every wish. With the new OptiTrac Global Peak shade management and an optimal efficiency of 97% the inverters ensure optimum solar yield. As transformerless, multi-string devices, the Sunny Boy 5000TL provide maximum flexibility for plant design, and are the first choice for demanding generator designs.

## High Yields

- Maximum efficiency of 97%
- Multi- String technology
- Transformerless, with H5 topology
- Shade management with OptiTrac Global Peak

## Safe

- Integrated ESS DC switch-disconnector

## Simple

- Easily accessible connection area
- Capable connection without tools
- DC plug systems SUNCLIX

## Communicative

- Bluetooth Technology
- Multilingual graphic display
- Multi- function relay

Features	3000TL	5000TL
DC connection: SUNCLIX	•	•
AC Connection: screw terminal/ plug connector / spring-type terminal	- / - / •	- / - / •
Display: text line / graphic	- / •	- / •
Interfaces: RS485 / Bluetooth	○ / •	○ / •
Warranty: 5 / 10 / 15 / 20 / 25 years	• / ○ / ○ / ○ / ○	• / ○ / ○ / ○ / ○

• Standard features ○ Optional features – Not available  
Data at nominal conditions

Input (DC)	3000TL	5000TL
Max. DC power	3200W	5300W
Max. DC voltage	550V	550V
MPP voltage range	188V - 440V	175V - 440V
DC nominal voltage	400V	400V
Min. DC voltage/ start voltage	125V / 150V	125V / 150V
Max. input current per string	17A / 17A	2 x 15A / 15A
Number of MPP trackers/ strings per MPP tracker	1 / 2	2 / A:2, B: 2

Output (AC)		
AC nominal power (@230V, 50Hz)	3000W	4600W
Max. apparent AC power	3000VA	5000VA
Nominal AC voltage; range	220, 230, 240V; 180 - 280V	220, 230, 240V; 180 - 280V
AC grid frequency; range	50, 60Hz; ± 5Hz	
Max. output current	16A	22A
Power factor	1	1
Phase conductors / connection phases	1 / 1	

Efficiency		
Maximum efficiency / European-eta	97.0% / 96.3%	97.0% / 96.5%

Protective Devices		
DC reverse-polarity protection	•	•
ESS switch-disconnector	•	•
AC short circuit protection	•	•
Ground fault monitoring	•	•
Grid monitoring (SMA grid guard)	•	•
Galvanically isolated/ all-pole sensitive fault current monitoring unit	- / •	- / •
Protection class/ overvoltage category	I / III	I / III

General Data		
Dimensions (width x height x depth)	4770 x 445 x 180 mm	
Weight	22kg	25kg
Operating temperature range	- 25°C ... + 60°C	
Noise emission (typical)	< 25 dB (A)	< 29 dB (A)
Internal consumption (night)	< 0.5 W	
Topology	Transformerless	
Cooling concept	Convection	OptiCool
Electronics protection rating / connection area (according to IEC60529)	IP65 / IP54	
Climatic category (according to IEC60721-3-4)	4K4H	

Certificates & Permits	
CE , VDE 0126-1-1, DK 5940, RD 1663, G83/ 1-1, PPC, AS4777, EN 50438*, C10/C11, PPDS	
*Does not apply to all national deviations of EN 50438	



# SMA Sunny Mini Central Single Phase Solar Inverter

**YHI Part Code** #SMC8000TL  
#SMC10000TL10



Simple realization of medium and large-scale PV plants from 27 kWp up to the megawatt range: the Sunny Mini Central inverters in the power classes from nine to eleven kW allow almost limitless possibilities and are easy to combine.

The combination of high efficiency and low specific price ensures a short amortization time. The decentralised plant design also helps keep maintenance costs low.

## Economical

- Maximum efficiency of 98%
- The best MPP tracking
- Transformerless, with H5 topology
- OptiCool active temperature management

## Reliable

- Pluggable SMA Power Balancer for three-phase grid connection
- Integrated ESS DC switch disconnector
- Monitored string fuses
- 5 year SMA warranty

## Simple

- SUNCLIX DC plug-in system

Features	8000TL	10000TL
DC connection: SUNCLIX	●	●
AC Connection: screw terminal/ spring-type terminal	● / –	● / –
Display: text line / graphic	● / –	● / –
Interfaces: RS485 / Bluetooth	○ / ○	○ / ○
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○

## Certificates & Permits

**8000TL:**  
CE , VDE 0126-1-1, DK 5940\*, RD 1663, PPC, AS4777, EN 50438\*\*, C10/C11, PPDS

**10000TL:**  
CE , VDE 0126-1-1, DK 5940\*, RD 1663, PPC, AS4777, EN 50438\*\*, C10/C11, PPDS, IEEE 929

\* Only applies to IT variants \*\*Does not apply to all national deviations of EN 50438

Input (DC)	8000TL	10000TL
Max. DC power	8250W	10350W
Max. DC voltage	700V	700V
MPP voltage range	333V - 500V	333V - 500V
DC nominal voltage	350V	350V
Min. DC voltage/ start voltage	330V / 400V	333V / 400V
Max. input current per string	25A / 25A	31A / 31A
Number of MPP trackers/ strings per MPP tracker	1 / 4	1/5

Output (AC)	8000TL	10000TL
AC nominal power (@230V, 50Hz)	8000W	10000W
Max. apparent AC power	8000VA	10000VA
Nominal AC voltage; range	220, 230, 240V ; 180V - 260V (262V*)	
AC grid frequency; range	50, 60 Hz; ± 4.5Hz	
Max. output current	35A	44A
Power factor	1	1
Phase conductors / connection phases / Power balancing	1 / 1 / ●	1 / 1 / ●

Efficiency	8000TL	10000TL
Maximum efficiency / European-eta	98.0% / 97.7%	98.0% / 97.5%

Protection Devices	8000TL	10000TL
DC reverse-polarity protection	● / –	● / ○ (Fuses)
ESS switch-disconnector	●	●
AC short circuit protection	●	●
Ground fault monitoring	●	●
Grid monitoring (SMA grid guard)	●	●
Galvanically isolated/ all-pole sensitive fault current monitoring unit	- / ●	- / ●
DC overvoltage protector (type II), can be integrated	–	–
String failure detection	–	–
Protection class/ overvoltage category	I / III	I / III

General Data	8000TL	10000TL
Dimensions (width x height x depth)	468 x 613 x 242 mm	
Weight	33kg	35kg
Operating temperature range	- 25°C ... + 60°C	
Noise emission (typical)	≤ 40 dB (A)	≤ 45 dB (A)
Internal consumption (night)	0.25 W	
Topology	Transformerless	
Cooling concept	OptiCool	
Electronics protection rating / connection area (according to IEC60529)	IP65 / IP65	
Climatic category (according to IEC60721-3-4)	4K4H	

● Standard features ○ Optional features – Not available  
Data at nominal conditions

# SMA Sunny Tripower Three Phase Solar Inverter

**YHI Part Code** #STP10000TL10  
#STP17000TL10  
#STP20000TL10



Full of pioneering technology: high flexible plant design with the three-phase Sunny Tripower inverter. Thanks to Optiflex technology, two MPP inputs and a broad input voltage range, it is suited to almost any module configuration.

It fulfils all requirements such as those for reactive power provision and grid support, and it is thus a reliable participant in grid management. The Optiprotect safety concept, with its self-learning string failure detection, electronic string fuse and integrable DC surge arrester type II, ensures maximum availability

## Economical

- Maximum efficiency of 98.2%
- SMA Optitrac Global Peak MPP tracking for best MPP tracking efficiency
- Bluetooth communication

## Reliable

- Triple protection with Optiprotect: electric string fuses, self-learning string failure detection, DC surge arrester which can be integrated (type II)
- 5 year SMA warranty

## Flexible

- DC input voltage up to 1000 V
- Integrated grid management functions
- Tailor made plant design with Optiflex

## Simple

- Three-phase grid feed-in
- Cable connection without tools
- SUNCLIX DC plug-in system
- Easily accessible connection area

Features/ Function	10000TL 17000TL	20000TL
DC coupling	SUNCLIX	
AC coupling	Spring clamp terminal	
Display	Graphic	Chart
Interface: RS485/ Bluetooth/ multi- function relay/ Speedwire/ Web connect	○ / ● / ● / ○ / ○	○ / ● / ○ / ○ / ○
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○

Certificates and approvals (more available on request) : CE, VDE0126-1-1, RD661/2007, PPC, AS4777, EN50438, C10/11, PPDS, IEC61727, ENEL-Guida, UTEC15-712-1, G59/2, VDE-AR-N4105, BDEW 2008, RD1699

Input (DC)	10000TL	17000TL	20000TL
Max. DC power	10200W	17410W	20450W
Max. input voltage	1000V	1000V	1000V
MPP voltage range/ rated input voltage	320V - 800V / 600V	400V - 800V / 600V	580V - 800V / 580V
Min. input voltage/ initial input voltage	150V / 188V	150V / 188V	570V / 620V
Max. input current input A/ input B	22A / 11A	33A / 11A	36A
Max. input current per string input A <sup>2</sup> / input B <sup>2</sup>	33A / 12.5A	40A / 12.5A	36A
Number of independent MPP inputs/ strings per MPP input	2 / A:4, B:1	2 / A:5, B:1	1 / 6

Output (AC)	10000TL	17000TL	20000TL
Rated power (@230V, 50Hz)	10000W	17000W	20000W
Max. apparent AC power	10000VA	17000VA	20000VA
Nominal AC voltage	3 / N / PE; 220 / 380V, 3 / N / PE; 230 / 400V, 3 / N / PE; 240 / 415V		3 / N / PE; 230V / 400V
Nominal AC voltage range	160V - 280V		
AC power frequency / range	50Hz, 60Hz / -6Hz ... +5Hz		
Rated power frequency/ rated grid voltage	50Hz / 230V		
Max. output current	16A	24.6A	29A
Power factor at rated power	1	1	1
Adjustable displacement power factor	0.8 overexcited ... 0.8 underexcited		
Feed-in phases / connection phases	3 / 3	3 / 3	3 / 3

Efficiency	10000TL	17000TL	20000TL
Maximum efficiency / European weighted efficiency	98.1% / 97.7%	98.2% / 97.8%	98.5% / 98.2%

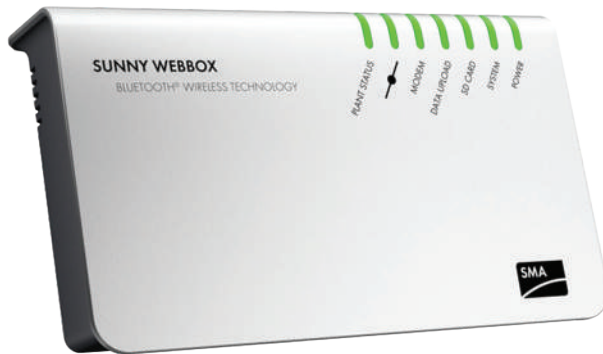
Protective Devices	10000TL	17000TL	20000TL
DC disconnect device	●	●	○
Ground fault monitoring/ grid monitoring	● / ●	● / ●	● / ●
DC surge arrester type II	○	○	—
DC reserve polarity protection/ AC short-circuit current protection/ galvanically isolated	● / ● / —	● / ● / —	● / ● / —
All-pole sensitive residual-current monitoring unit	●	●	●
Protection class (according to IEC62103)/ overvoltage category (according to IEC60664-1)	I / III	I / III	I / III

General Data	10000TL	17000TL	20000TL
Dimensions (width x height x depth)	665 x 690 x 265 mm	665x680x265 mm	
Weight	59 kg	45 kg	
Operating temperature range	-25°C ... +60°C / -13°C ... +140°F		
Noise emission (typical)	51dB (A)		
Self consumption (night)	1W		
Topology / Cooling concept	Transformerless / OptiCool		
Degree of protection/ Connection area degree of protection (according to IEC60529)	IP65 / IP54		IP65
Climatic category (according to IEC60721-3-4)	4K4H		
Max. permissible value for relative humidity (non-condensing)	100%		

● Standard features ○ Optional features – Not available  
Data at nominal conditions

# SMA Sunny Webbox with Bluetooth Remote Monitoring & Maintenance

YHI Part Code #SMASUNNYWEBBOXBT



The Sunny WebBox is the ideal monitoring solution for medium-sized PV plants. It receives and stores current measured values and transmits data via Bluetooth or RS485. This means you can stay updated on the status of your plant around the clock. In the event of a problem, you can react quickly and secure your yields. Parameters can be changed and a variety of measured values can be depicted, analysed and downloaded via a web browser. All data from the connected devices is stored and automatically transmitted to Sunny Portal, if desired. The Sunny WebBox allows central access to your plant data on the Internet via Sunny Portal.

Communication	
Inverter communication	Bluetooth
PC communication	10 / 100 Mbit Ethernet
Data interface	RPC
Connections	
Inverter	–
Ethernet	10 / 100 Mbit, RJ45
Max number of SMA devices	
RS485 / Ethernet	– / –
Bluetooth (unobstructed)	50
Max communication range	
RS485 / Ethernet	– / –
Bluetooth (unobstructed)	Up to 100m** Can be extended with an SMA bluetooth repeater
Power Supply	
Power supply	External plug-in power supply
Input voltage	100V - 240V AC, 50 / 60Hz
Power Consumption	Typ. 4 W / max. 12W
Environmental conditions in operation	
Ambient temperature	– 20°C ... + 65°C
Relative humidity	5% ... 95%, non-condensing

Memory	
Internal	12.5 mb in a ring memory configuration
External	SD card 1Gb / 2Gb (optional)
General Data	
Dimensions (W x H x D)	255 x 130 x 57 mm
Weight	750g
Mounting location	Indoors
Installation options	DIN rail installation, wall mounting, tabletop device
Status display	LED's
Features	
Operation	Integrated Web Server (internet browser)
Accessories	
Sunny sensor box	Connection via SMA power injector with bluetooth
SMA bluetooth repeater for extending the max communication range	Optional Feature
SD card 1 GB / 2 GB	Optional Feature
Plug-in power supply with adapters	Yes
Warranty	
5 Years	
** Up to 50m with SMA Bluetooth Piggy-Back.	
● Standard features ○ Optional features – Not available	
Data at nominal conditions	

# SMA Sunny Beam with Bluetooth

## Remote Monitoring & Maintenance

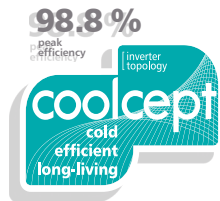
YHI Part Code #SMASUNNYBBTOOTH



Informative, compact, and easy to operate: Sunny Beam with Bluetooth doesn't just look good, it's an innovative monitoring solution. The key data is visible on its large graphic display: daily profile, current output, as well as daily total energy yield. The performance of up to 12 inverters, the monthly overview, the energy yield in euros, and the CO<sub>2</sub> savings can all be accessed with one hand. Data for a minimum of 90 days is stored in the device and can be transmitted to a PC via a USB cable - without an additional program. And in the event of errors, the Sunny Beam can also be set up to emit an acoustic signal.

Communication	
Inverter communication	Bluetooth
PC communication	USB 2.0
Max number of SMA devices	12
Max communication range	
Bluetooth (unobstructed)	up to 100m
Power supply	
Power supply	Integrated solar cell, USB cable
Number of batteries	2
Type of battery	ENEKEEP (Mignon AA), NiMH (1.2 Vdc)
Environmental conditions in operation	
Ambient temperature	0° C ... + 40° C
Protection Rating (as per EN 60529)	IP20
General data	
Dimensions (W x H x D)	127 x 75 x 195 mm (as desktop device)
Weight	Approx. 350g (with batteries)
Mounting location	Indoors
Status display	LCD

Features	
Display	LCD
Operation	Rotary push button
Information displayed	
General Information	Time, date
System data	Current output, daily yield, total yield, specific annual yield, CO <sub>2</sub> savings, remuneration.
Accessories	
USB cable	●
USB plug-in power supply	○
Replacement batteries	○
SMA Bluetooth repeater	○
Warranty	
5 Years	
● Standard features ○ Optional features – Not available Data at nominal conditions	



The new "Coolcept" inverter topology, with an innovative circuit design that achieves the highest efficiency, has now been integrated into these StecaGrid inverters. The "Coolcept" inverter topology is based on a single-stage transformerless switching concept that uses proven standard components to implement symmetric step-down converters with downstream pole-reversing circuits.

### Highest efficiency with longer service life

The high efficiency results in a peak efficiency of 98.8 % and a European efficiency of up to 98.3%, which results in less lost power that must be dissipated into the environment. This improves your yields.

The efficiencies of these inverters are only slightly dependent on the module input voltage. This allows the number and type of modules to be freely selected without resulting in a yield loss.

In addition to this, a new and unique cooling concept inside the inverter ensures an even distribution of the dissipated heat and a long service life for the device.

### Product design and visualisation

For the first time, the very high efficiency allows the use of a design housing made of plastic. This offers many advantages, for example in the installation. The overall surface temperature of the StecaGrid remains very low. The inverters have protection class II.

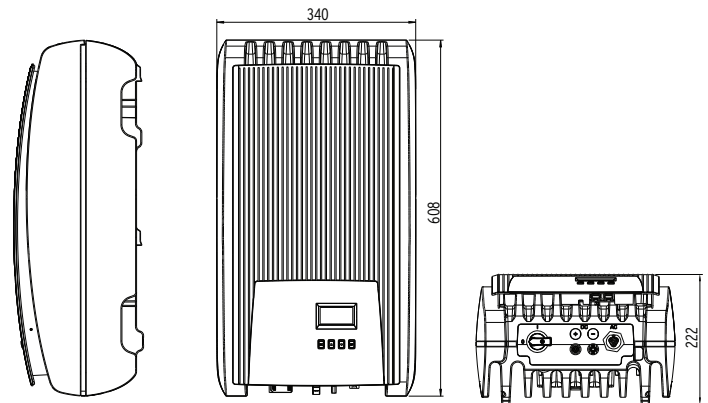
The StecaGrid has a graphical LCD display for visualising the energy yield values, current performance and operating parameters of the system. Its innovative menu allows individual selection of the various measurements.

The guided, pre-programmed menu allows easy final commissioning of the device.

### Installation

The lightweights weigh only 9 kg and can be easily and safely mounted on a wall. The supplied wall bracket and practical recessed grips for right and left handed installers, make mounting of the device simple and convenient. The device does not need to be opened for installation. All connections and the DC circuit breaker are externally accessible.

### Dimensions (mm)



### Product Features

- Highest efficiency
- Simple installation
- Integrated data logger
- Firmware update possible
- Low housing temperature at full load
- Functionally perfect, environmentally-friendly plastic housing
- Lowest possible own consumption
- Integrated DC circuit breaker
- Protective insulation according to protection class II
- Very long service life
- Droop Mode for integration in hybrid systems (further information: Catalogue Steca PV Off Grid / Single-phase and three-phase AC hybrid systems)
- Fixed voltage mode for other energy sources
- Service menu for parameter adjustment
- 7-year warranty after registration

### Displays

- Multifunction graphical LCD display with backlighting
- Animated representation of yield

### Operation

- Simple menu-driven operation
- Multilingual menu navigation

### Options

- System monitoring with Solar-Log™ and WEB'log
- Can be connected to the StecaGrid Vision display unit or a large-format display

### Warranty

2 Year factory warranty



DC Input Side (PV-generator)		StecaGrid 3600
Maximum start voltage		845 V
Maximum input voltage		845 V
Minimum input voltage		350 V
Minimum input voltage for rated output		365 V
MPP voltage		350 V ... 700 V
Maximum input current		10 A
Maximum input power at maximum active power		3,690 W
Maximum recommended PV power		4,500 Wp
AC Output Side (Grid connection)		
Grid voltage		185 V ... 276 V (depending on regional settings)
Rated grid voltage		230 V
Maximum output current		16 A
Maximum active power (cos phi = 1)		3,600 W <sup>1)</sup>
Maximum active power (cos phi = 0.95)		3,530 W
Maximum apparent power (cos phi = 0.95)		3,680 VA
Rated power		3,600 W <sup>2)</sup>
Rated frequency		50 Hz and 60 Hz
Frequency		45 Hz ... 65 Hz (depending on regional settings)
Night-time power loss		< 0.9 W
Feeding phases		Single-phase
Distortion factor (cos phi = 1)		< 2 %
Power factor cos phi		0.95 capacitive ... 0.95 inductive

Characterisation Of The Operating Performance	
Maximum efficiency	98.6 %
European efficiency	98.1 %
Californian efficiency	98.2 %
MPP efficiency	> 99.7 % (static), > 99 % (dynamic)
Own consumption	< 8 W
Power derating at full power	From 45 °C (T <sub>amb</sub> )
Standby power	6 W

Safety	
Isolation principle	No galvanic isolation, transformerless
Grid monitoring	Yes, integrated
Residual current monitoring	Yes, integrated <sup>4)</sup>

Operating Conditions	
Area of application	Indoor rooms with or without air conditioning
Ambient temperature	-15 °C ... +60 °C
Storage temperature	-30 °C ... +80 °C
Relative humidity	0 % ... 95 %, non-condensating
Noise emission	< 39 dBA

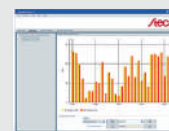
Fitting & Construction	
Degree of protection	IP 21 (casing: IP 51; display: IP 21)
Overvoltage category	III (AC), II (DC)
DC Input side connection	MultiContact MC4 (1 pair)
AC output side connection	Wieland RST25i3 plug, mating connector included
Dimensions (X x Y x Z)	340 x 608 x 222 mm
Weight	9 kg
Communication interface	RS485; 2 x RJ45 sockets; connectable to StecaGrid Vision, Meteocontrol WEB'log or Solar-Log™
Integrated DC circuit breaker	Yes, compliant with VDE 0100-712
Cooling principle	Temperature-controlled fan, variable speed
Test certificate: CE Mark - Certificate of compliance as per DIN VDE 0126-1-1, CE mark, VDE AR N 4105, DK 5940, G83, UTE C 15-712-1, AS4777, CEI 0-21	

## System Monitoring Accessories for all Steca On Grid Inverters



**StecaGrid Vision Display Unit**  
**YHI PART CODE# STECAGRIDVISION**

The StecaGrid Vision display unit offers high monitoring and control capabilities, with different data displays. The StecaGrid Vision offers connectivity for up to 20 inverters, whereas one inverter can be connected to the optional display unit. The Steca's communication buses offer connections for all the inverters, between themselves or to the StecaGrid Vision unit. The unit is durable, robust and guarantees a reliable operation.



**StecaGrid**  
**User Visualisation software**

**Meteocontrol WEB'log & Meteocontrol WEB'log Comfort Data logger**  
**YHI PART CODE# STECAGRID**

Steca's Meteocontrol WEB'log Comfort Units are generally used for applications that involve photovoltaic system remote monitoring operations. These systems sport free web portal processes in multiple languages, measurement data evaluation, and report generator capabilities. They showcase target/actual energy yield comparison, and online value display functions.



# Steca StecaGrid Three Phase Solar Inverter

YHI Part Code #STECAGRID8000  
#STECAGRID10000PLUS



## Always symmetrical

The advantage of three-phase feeding is that the produced solar capacity is always symmetrically distributed on all three power conductors to the public power grid. This is the case across the whole output range offered by these inverters. When designing a system, the laborious avoidance of an asymmetry of more than 4.6 kW through the appropriate selection of separate inverters is thus dispensed with. Symmetrical feeding is greatly in the interests of energy supply companies. Lengthy discussions with such companies are therefore a thing of the past.

## Long service life

While the voltage passes through zero on the grid-feeding phase, single-phase inverters must temporarily accommodate all energy supplied by the solar modules within the device. This is usually realised by electrolytic capacitors. These components influence the service life of an electronic device, due to the possibility of drying out.

With three-phase inverters, energy is fed into the grid on at least two phases at all times. Thus, the necessity of intermediate storage of energy in the device is greatly reduced, which is of benefit to the system operator with regard to a longer service life.

## Flexible connection

Due to the wide input voltage range of 350V to 845V, and a maximum input current of 27A / 32A, all commonly available crystalline solar modules can be connected to the inverters in various configurations. Beyond this, the system is also approved for use with CdTe and CIS / CIGS thin-film modules ([www.stecasolar.com/matrix](http://www.stecasolar.com/matrix)). Four plug/socket pairs are available for flexible, mechanical DC connection.

## Easy handling

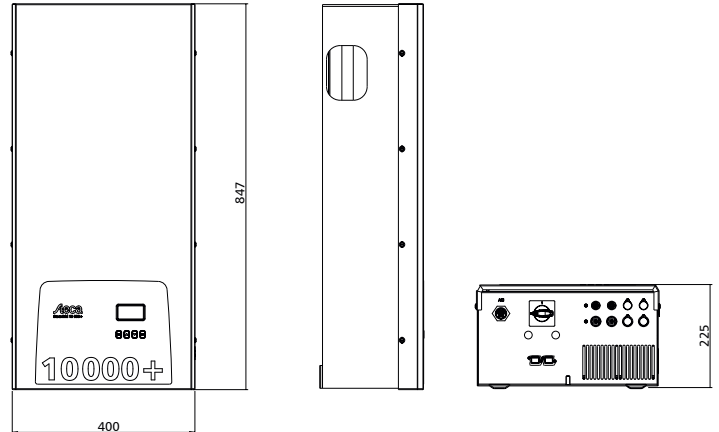
The StecaGrid 8000+ 3ph and StecaGrid 10000+ 3ph have a graphical LCD display for visualising the energy yield values, current performance and operating parameters of the system. Its innovative menu allows individual selection of the various measurements. The guided, pre-programmed menu allows easy final commissioning of the device.

Despite their high output, the inverters are wall-mounted devices. Thanks to the high degree of protection, these inverters can be installed indoors or outdoors. Due to the integrated DC circuit breaker, installation work is made easier, and the installation time is reduced. It is not necessary to open the inverter during installation.

## Flexible system design

The combination of the StecaGrid 8000+ 3ph and the StecaGrid 10000+ 3ph allows optimum design for almost any power class. A diverse range of combinations are possible but they all share the same goal: the effective use of solar irradiation.

## Dimensions (mm)



StecaGrid 10000+ 3ph, StecaGrid 8000 3ph similar

## Product Features

- High efficiency
- Wide input voltage range
- Three-phase, symmetrical grid feeding
- Integrated data logger
- Firmware update possible
- Integrated DC circuit breaker
- Robust metal casing
- Suitable for outdoor installation
- Wall-mounting with steel wall bracket for very easy installation

## Displays

- Multifunction graphical LCD display with backlighting
- Animated representation of yield

## Operation

- Simple menu-driven operation
- Multilingual menu navigation

## Options

- System monitoring with Solar-Log™ and WEB'log
- Can be connected to the StecaGrid Vision display unit or a large-format display

## Warranty

2 Year factory warranty

DC Input Side (PV-generator)	StecaGrid 8000	StecaGrid 10000+
Maximum input voltage	845 V	
Minimum input voltage for feeding	350 V	
MPP voltage for rated output	350 V ... 700 V	
Maximum input current	27 A	32 A
Maximum input power at maximum active output power	9,250 W	10,8000 W
Maximum recommended PV power	10,500 Wp	12,500 Wp

AC Output Side (Grid connection)		
Grid voltage	320 V ... 480 V (depending on regional settings)	
Rated grid voltage	400 V	
Maximum output current	15A	16 A
Maximum active power (cos phi = 1)	8,800 W <sup>1) 3)</sup>	10,300 W <sup>2) 3) 5)</sup>
Maximum active power (cos phi = 0.95)	8,800 W <sup>1) 3)</sup>	9,800 W <sup>3)</sup>
Maximum active power (cos phi = 0.9)	8,800 W <sup>1) 3)</sup>	9,300 W <sup>3)</sup>
Maximum apparent power (cos phi = 0.95)	9,260 VA <sup>4)</sup>	10,300 VA <sup>4)</sup>
Maximum apparent power (cos phi = 0.9)	9,780 VA <sup>4)</sup>	10,300 VA <sup>4)</sup>
Rated power	8,000 W <sup>3)</sup>	9,900 W <sup>3)</sup>
Rated frequency	50 Hz	
Frequency	47.5 Hz ... 52 Hz (depending on regional settings)	
Night-time power loss	< 1.6 W	< 2.5 W
Feeding phases	Three phase	
Distortion factor (cos phi = 1)	< 3% (Max power)	
Power factor cos phi	1	0.9 capacitive ... 0.9 inductive

Characterisation Of The Operating Performance		
Maximum efficiency	96.3%	
European efficiency	95.2%	95.4%
MPP efficiency	> 99 %	
Power derating at full power	From 50 °C (T <sub>amb</sub> )	

Safety	
Isolation principle	No galvanic isolation, transformerless
Grid monitoring	Yes, integrated
Residual current monitoring	Yes, integrated <sup>6)</sup>

Operating Conditions	
Area of application	Indoor rooms with or without air conditioning, outdoors with protection
Ambient temperature	-20 °C ... +60 °C
Storage temperature	-30 °C ... +80 °C
Relative humidity	0 % ... 95 %, non-condensating
Noise emission (typical)	< 60 dBA

Fitting & Construction	
Degree of protection	IP54
Overvoltage category	III (AC), II (DC)
DC input side connection	MultiContact MC4 (4 pairs), rated current 22 A per input
AC output side connection	Wieland RST25i3 plug, mating connector included
Dimensions (X x Y x Z)	400 x 847 x 225 mm
Weight	42 kg
Communication interface	RS485; 2 x RJ45 sockets; connectable to StecaGrid Vision, Meteocontrol WEB'log or Solar-Log™
Integrated DC circuit breaker	Yes, compliant with DIN VDE 0100-712
Cooling principle	Temperature-controlled fan, variable speed
Test certificate: Certificate of compliance as per DIN VDE 0126-1-1, CE mark, VDE AR N 4105, G59, G83, AS4777, UTE C 15-712-1	

# Splash Monitoring Inverter Monitoring System

YHI Part Code #SPLSBNZ3YR



Monitoring systems have been proven to result in increased savings and improved system performance. The additional cost of the monitoring can be saved in a very short time, in some cases within a month. The installation of a monitoring system is so beneficial that it is often a mandatory requirement to qualify for a renewable energy grant. SPLASH monitoring provides all the advantages of a standard monitoring system and much more.

## Product Features

- Cost-effective and installs in minutes
- Highly educational
- Live data every 10 seconds
- Graph historical data
- SMS & Email alerts for failures or performance tips
- 70+ animations to choose from

## Animations Bring System To Life

Each system has its own animated web page. This web page shows a schematic animation of the system with instantaneous data that is refreshed every 10 seconds.

Choose an animation from the extensive online library, or have SPLASH custom make one for you. The animation is ideally suited for lobby displays for promotion or educational purposes. Events in the animation are triggered by actual activation site i.e solar radiation dictates the amount of cloud cover, and a pump or electric element is shown operating only if it is actually running on site. The cumulative energy ticker at the bottom of the animation shows the amount of energy produced in multiple, easily understandable units, such as kW-h, average homes, mileage of an average car etc

## Graphing/ Reporting Historical Data

Each system has its own easy to use graphing and reporting tools. These are accessed from the animation; simply select a date range and the data you wish to graph.

Detailed reports can be downloaded and exported as CSV (Excel) files using the reports button on the dashboard.

## System Information

Customers can upload 4 photographs and descriptions into the information section of each system they own. These are generally used to show the overall site, collectors, inverter, batteries, hot water cylinder, or controls with descriptions of each.

## Mobile View

Access real time system data 24/7 on your mobile device with Mobile View and highly-customisable Lite Views. These views are ideally suited for system commissioning and checking the current operation of the system.

## Security

SPLASH monitoring offers a high level of security accepted by corporate and government clients. Take total control over access to your data: make it public, or maintain your own list of permitted users. Our cloud-based storage offers the best combination of speed and security, so you won't have to worry about the safety or accessibility of your data.

With our SPLASH monitoring Stream Box, you won't need to open up a dangerous hole in your firewall, nor give support staff access to your local pc via screen sharing or remote control software.

## Stay Informed

Automated email/SMS alerts immediately notify nominated persons based on flexible and powerful user-configured settings. Compare live data with predetermined values or with other sensor values to handle any scenario. Customise the alert message to include the alarm conditions, the reasons why the alert was triggered, and how to rectify the situation and optimise system performance.

## Compatible with all Delta, SMA and Steca solar inverters

Part Number SPLSBNZ3YR includes unit and 3 Years monitoring

# Neuton Power Charge Controllers



YHI Part Code	SLC12/24-10	SLC12/24-20
Nominal system voltage	12/24V DC Auto Work	
Maximum battery voltage	32V	
Rated charge current	10A	20A
Charge circuit voltage drop	≤ 0.26V	
Discharge circuit voltage drop	≤ 0.15V	
Self consumption	≤ 6mA	
NTTV (night time threshold voltage)	12V System: 5V 24V System: 10V	
DTTV (daytime threshold voltage)	12V System: 6V 24V System: 12V	
Temperature compensation coefficient (TEMPCO)	-30mV/°C / 12V (25°C ref)	
Working temperature	-35°C to +55°C	
Storage temperature	-35°C to +80°C	
Humidity	10% - 90% NC	
Case protection	IP30	
Overall dimension (L x W x H)	150 x 82 x 50 mm	
Terminal	6mm <sup>2</sup>	
Net Weight	0.35kg	



YHI Part Code	ENS12/24-20D	ENS12/24-30D	ENS12/24-40D	ENS12/24-50D	ENS12/24-60D
Nominal voltage	12/24, Automatic Recognition				
Nominal battery current	20A	30A	40A	50A	60A
Max PV input power	300W@12V 600W@24V	450W@12V 900W@24V	600W@12V 1200W@24V	750W@12V 1500W@24V	900W@12V 1800W@24V
Max solar input voltage VOC	< 30V / 48V				
Min solar input voltage VMP	> 16V / 32V				
Power conversion efficiency	Max 90%				
Standby power consumption	< 15mA	< 15mA	< 20mA	< 20mA	< 20mA
Length ≤1m charge loop drop	< 0.25V				
Length ≤1m discharge loop drop	< 0.05V				
Temperature compensation	-3 mv/cell *K				
Dimensions (L x W x H)	172 x 126 x 73 mm				
Weights	0.35kg	0.36kg	0.38kg	0.4kg	0.4kg
Ambient temperature range	-40 to +50°C				
Case protection	IP22				
Float charge	13.8V / 27.6V				
Constant voltage charge	14.6V (14~15V settable) 29.2V (28~30V Settable)				
Low disconnect voltage	11V (10.4~11.4V settable) 22V (20.8~22.8V Settable)				
Low reconnect voltage	12.8V (12.2~13.2V Settable) 25.6V (24.4~26.4V Settable)				
Grounding	Positive Grounding				
Battery Type	GEL,AGM, Solar Battery, Wet Battery				



# Neuton Power Mounting Systems

## Pitched Roof Racking System



Neuton Power Pitched Roof designs have great flexibility for both commercial and residential roof solar systems. Suitable for installing framed and frameless modules flush to a pitched roof.

Special extruded Aluminium rail, pre-assembled clamps and varied roof hooks or brackets with tilt-in modules ensure easy and quick installation, saving on labour time and cost. The customised rail lengths do not require on-site cutting or welding - maximising the appearance, structural strength and anti-corrosive performance.

### Easy Installation

The tilt-in module can be put into the extruded rail from any section and can be pre-assembled with the clamp and roof hook, minimising time and cost of installation.

### Flexibility & Adjustable

These systems accommodate most commercially available framed or frameless solar panels and diverse roof types.

### Safety & Reliability

The racking systems can stand up to the extreme weather and comply with AS/NZS 1170 load standards

### Technical Information

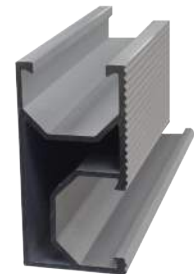
Install site	Pitched Roof
Tilt angle	Flush with roof up to 60°
Building height	Up to 20 metres
Max wind speed	Up to 60 metres/ second
Snow load	Up to 1.4 kN/m²
Material	High class aluminium alloy, stainless steel
Anti-Corrosive	Anodized
Product expectancy	More than 20 years
Warranty	10 Years

### Components

#### Neuton Power Rail

Product Features:

- Material: Al6005-T5
- Patent extruded aluminium section
- High class anodized aluminium



YHI Part Code	Description
GSDR2560	Rail with a standard length of 2560mm Designed to mount three modules ( width 808~826mm)
GSDR3405	Rail with a standard length of 3405mm Designed to mount four modules (width 808~826mm)
GSDR4200	Rail with standard length of 4200mm Designed to mount four modules (width 990~996mm)

#### Neuton Power Rail Splice Kit

Product Features:

- Material: Al6005-T5 & A2-70 bolt
- Connects two rail units

YHI Part Code	Description
GSDRSP	Standard rail splice kit





# Neutron Power Mounting Systems

## Pitched Roof Racking System

### Neutron Power Framed Module Clamps

Product Features:

- Material: A16005-T5 & A2-70 stainless steel bolts
- Pre-assembly compatible with most framed modules
- Includes Inter Clamp & End Clamp

YHI Part Code	Description
---------------	-------------

GSEC30	End Clamp Kit 30mm
GSEC35	End Clamp Kit 35mm
GSEC40	End Clamp Kit 40mm
GSEC46	End Clamp Kit 46mm
GSEC50	End Clamp Kit 50mm
GSEC57	End Clamp Kit 57mm



YHI Part Code	Description
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GSIC30	Inter Clamp Kit 30mm
GSIC35	Inter Clamp Kit 35mm
GSIC40	Inter Clamp Kit 40mm
GSIC46	Inter Clamp Kit 46mm
GSIC50	Inter Clamp Kit 50mm
GSIC57	Inter Clamp Kit 57mm



YHI Part Code	Description
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GSMD25	GS tilt-in set for tile hook
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### Neutron Power Corrugated Tin Roof Hook

Product Features:

- Material: A16005 - T5 & A2-70 bolt
- Extruded aluminium section
- Pre-assembly with the tilt-in module
- Wood screw types: M6, M10, M12

YHI Part Code	Description
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GSIK05	Aluminium Tin Interface Kit - Fixes rails to tin roof - Fixation by wood screw
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YHI Part Code	Description
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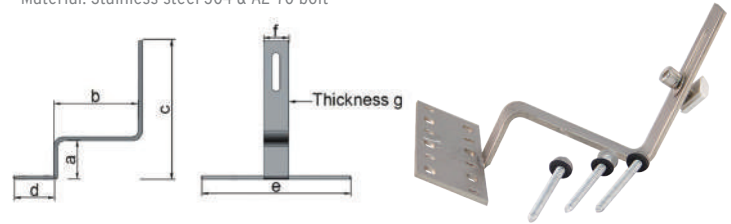
GSIKH04	Hanger Bolt Hook - Suitable for Neutron Power rail - M10x200 hanger bolt kit with L feet kit
---------	--



### Neutron Power Roof Tile Hook

Product Features:

- Material: Stainless steel 304 & A2-70 bolt



YHI Part Code	Description
---------------	-------------

GSIK01	Stainless steel hook fixes rails to tile roof
--------	---

#### Dimensions of GSIK01

	A	B	C	D	E	F	G
mm	46	101	166	50	180	30	5



YHI Part Code	Description
---------------	-------------

BRKTADJTILE	Solar adjustable tile bracket
-------------	-------------------------------

### Framed Module Project Example



Example	Rail	Hanger Bolt	Inter Clamp	End Clamp	Rail Connect
2kW Tin roof package	4	16	14	4	2
3kW Tin roof package	6	20	20	8	4
3.6kW Tin roof package	9	32	32	8	8
5kW Tin roof package	10	34	36	8	8

# Neuton Power Mounting Systems Tilt Racking System



Neuton Power Adjustable Tilt Solar Racking System is applicable to install the usual framed module to tilt a certain angle with the roof. The solar system can be a fixed angle or adjustable such as 10~15 deg, 15~30 deg and 30~60 deg for your requirement. The special extruded aluminium rail, the tilt-in module, the clamp kit and the round leg can be pre-assembled and make the installation easy and quick to save your labour costs and time. The customised length can eliminate the need to weld and cut on site to keep the high anticorrosive performance, the structures strength and the appearance.

## Easy installation

The tilt-in module can be put into the extruded rail from any section and can be pre-assembled with the clamp and roof hook, minimising time and cost of installation.

## Durability

With all structural components comprised of high class stainless steel and anodized aluminium alloy, it is designed for twenty years service life and backed by a ten year warranty.

## Safety & reliability

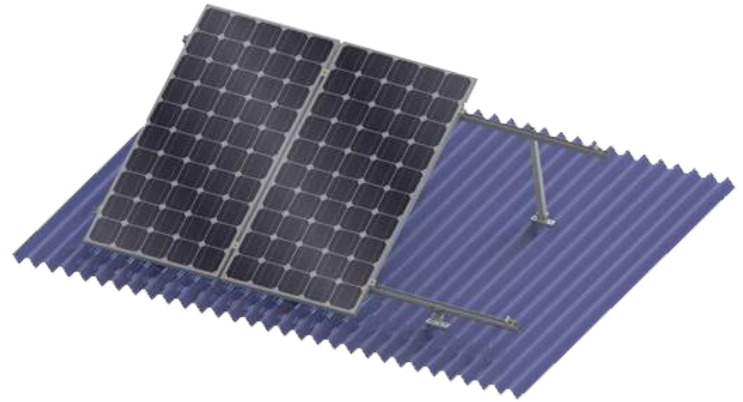
The racking systems comply with AS/NZS 1170 safety standards and other international structure load standards. Main support components have been tested to guarantee structure and load carrying capacity

## Flexibility

Providing broad installation flexibility. These systems can accommodate most commercially available framed solar panels and diverse roof types. They can also scale easily from small to large, multi-megawatt installations.

## Technical information

Install site	Low profile roof or flat roof
Tilt angle	10 ~ 60°
Building height	Up to 20 metres
Max wind speed	Up to 60 metres/ second
Snow load	Up to 1.4 KN/m <sup>2</sup>
Standards	AS/NZS 1170 and other international standards
Material	High class aluminium alloy, stainless steel
Anti-Corrosive	Anodized aluminium & stainless steel
Product expectancy	More than 20 years
Warranty	10 Years



## Tilt Interface Bracket



YHI Part Code	Description
BRKTTILTINT	Solar tilt interface bracket kit

## Adjustable Front Leg

Product Features:

- Material: Al6005 - T5 & A2 - 70 bolt

YHI Part Code	Description
GSADFL	Adjustable front leg



## Adjustable Rear Leg

Product Features:

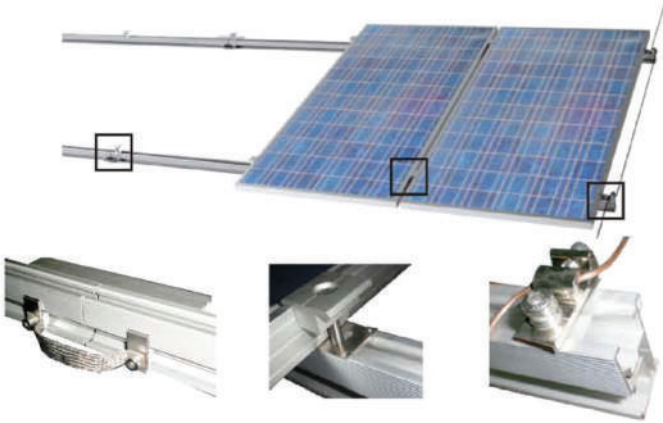
- Material: Al6005 - T5 & A2 - 70 bolt

YHI Part Code	Description
GSADRL1015	Adjustable rear leg 10 - 15°
GSADRL1530	Adjustable rear leg 15 - 30°
GSADRL3060	Adjustable rear leg 30 - 60°



# Neutron Power Mounting Systems

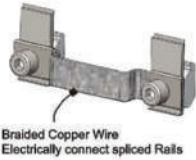
## Grounding Components



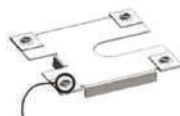
Bonding Jumper

Grounding Clip

Grounding Lug



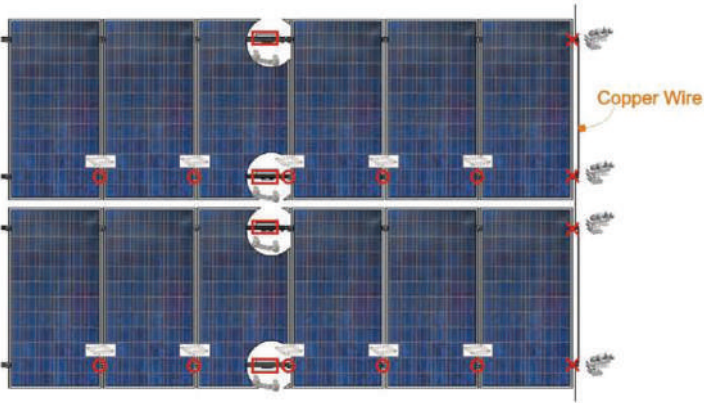
Braided Copper Wire  
Electrically connect spliced Rails



Ribs will penetrate module and rail andonlization and create grounding path through rail



Ribs



○ Grounding Clip

× Grounding Lug

□ Bonding Jumper

Neutron Power grounding products can be used to bond solar modules to the aluminium rails and the aluminium rails to the ground, so the entire solar system is grounded and safe. Grounding products include the stainless steel grounding clip and aluminium grounding lug, which are all designed to comply with the requirement of AS5033, UL467 for bonding or grounding systems.

### Grounding clip

- Product Features:
- Material: SUS304
  - Works with Inter Clamp to install on Neutron Power rail.

YHI Part Code	Description
GSGGC	Grounding Clip



### Grounding lug

- Product Features:
- Connect system to equipment ground conductor

YHI Part Code	Description
GSGGL	Grounding Lug



### Bonding jumper

- Product Features:
- Material: Braided copper wire & stainless steel clip & A2-70 bolt
  - Electrically connects spliced rails
  - Excellent electricity conductivity



YHI Part Code	Description
GSGBJ	Bonding Jumper

# Neuton Power Mounting Systems

## Ground Mount Assembly Kit

YHI Part Code #GROUNDMTASSY  
(For 20 Panels)



Neuton Power Pile Ground Mounting System is an application for large commercial and utility scale PV systems on non-sandy ground. It is suitable for framed or frameless module installations.

In our Pile Ground Mounting System, C Post can be piled into the ground 1~2 metres by a Pile Machine, then you can mount the pre-assembly Al-Beam structure, the B-Rail and the clamp easily.

Our mission is to simplify your installation and ensure the structure safety. Neuton Power, your best choice.

### Easy Installation

Parts have been pre-assembled in the factory to save on installation time

### Flexibility & Adjustable

Smart design reduces the difficulty of installations in most conditions

### Safety & Reliability

The structure has been checked and tested rigorously against extreme weather conditions

### Technical Information

Install site	Open field
Application module	Framed or Frameless
Module orientation	Portrait
Max wind speed	Up to 60 metres/ second
Snow load	Up to 1.4 KN/m <sup>2</sup>
Rail material	Anodized Aluminium
Post material	Hot-dip galvanised steel
Soil condition	Non-Sandy
	Post height deviation: 10 mm
	Post angle deviation: 2
Adjustability	Post verticality deviation: 2
	Pile driving depth: 1000 ~ 2000 mm
Warranty	10 Years on materials and structure



### Components



GSGM3405GROUND



GSBRSP



GSPGOP2950



GSPGBA



GSEC40



GSIC40



GSPGTC



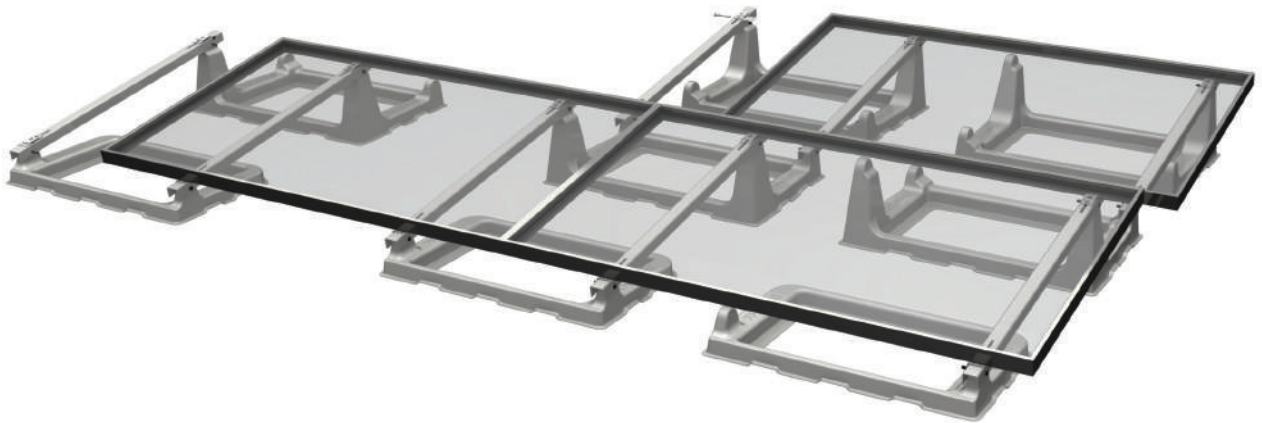
GSBRSC60

YHI Part Code	Description	Amount
GSGM3405GROUND	Ground mount rail 3405 mm	12
GSBRSC60	Ground mount clamp	32
GSBRSP	Ground mount rail splice kit	8
GSEC40	End clamp kit 40 mm	8
GSIC40	Inter clamp 40 mm	36
GSPGBA	Ground mount support beam	4
GSPGOP2950	Ground mount support open post 2950 mm	4
GSPGTC	Ground mount support beam top cap	4

We can customise kits for any quantity of panels



# Dynoraxx PV Mounting System



DynoRaxx Evolution FR delivers a tool-less ballasted racking system for mounting PV solar panels on flat roofs and surfaces. The proprietary design of the DynoRaxx ballasted-racking system has been created to simplify and speed installation without compromising quality or performance. With DynoRaxx Evolution FR, buying commercial solar panel racking has never been more cost-effective.

YHI Partcode	Description
DR2LBASKET	Dynoraxx two leg basket
DR4LBASKET	Dynoraxx four leg basket
DRRAIL	Dynoraxx rail with Dynoslide and pins
DRBOND	Dynoraxx Dynobond 8"
DRBOND38	Dynoraxx Dynobond 38"

## Innovative Design

- Fibreglass
- Proprietary racking enables fast installation in less than half the time of other systems
- No tools needed for assembly – one-step pivot clamp secures panels to racking
- Versatility to accommodate all framed PV solar panels on the market
- Eliminates need to penetrate roof with fasteners on most installations
- Smaller footprint than competitive systems saves roof space and adds flexibility
- 10° tilt available
- Elevated system – does not impede water drainage
- Non-corrosive
- No thermal expansion

## Rugged Construction

- Baskets - Fibreglass
- Rails - Fibreglass
- Clamps - 304 stainless steel

## Easy Installation

- Initial measurement and chalk line needed for placement of first row
- Precision components require no field measuring
- Assembles without tools
- Saves time and labour to install more modules per hour
- Ballast weight to be supplied by customer

## High Performance

- PE Certified
- ASCE 7-05 compliant
- IBC 2006 compliant
- Wind tunnel tested

## Warranty

DynoRaxx Evolution carries a 10-year limited material and workmanship warranty

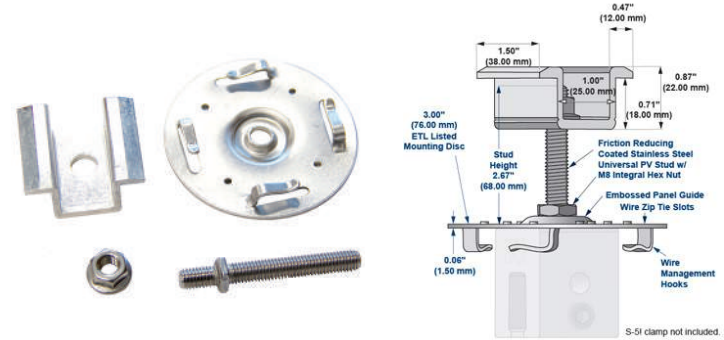
# S5 Mounting Brackets

## PV Panel Mounting Brackets



S-5!® clamps attach to the panel seam by the tightening of two "bullet-nosed" stainless steel setscrews against the seam material. (This is usually done with an industrial grade screw gun). The setscrews compress the seam material against the opposite wall of the clamp. They will "dimple" the seam material, but will not penetrate it. Threaded holes in the clamp (and stainless hardware provided) enable the easy attachment of various ancillary items to the clamps.

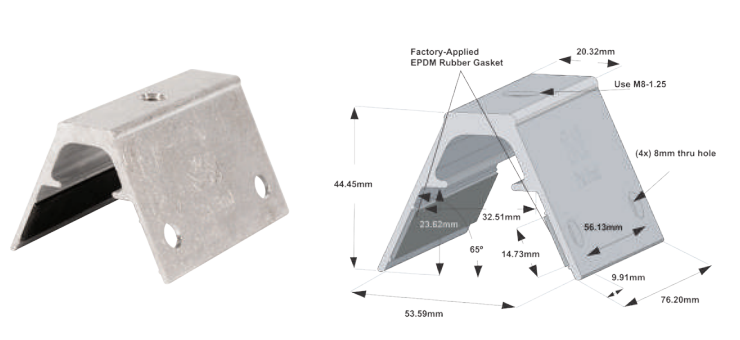
### S-5 PV Kit



YHI Part Code	Description
---------------	-------------

S-5PVKIT	S-5PVkit solar mounting bracket mid clamp
----------	---

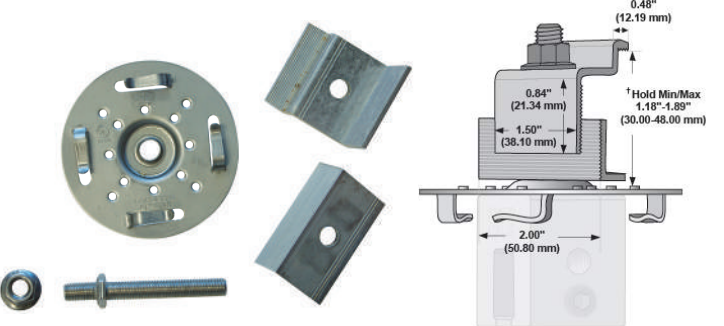
### S-5 Trap Bracket



YHI Part Code	Description
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S5TRAPBRKTKSRW	S-5 Trap Bracket KSRW
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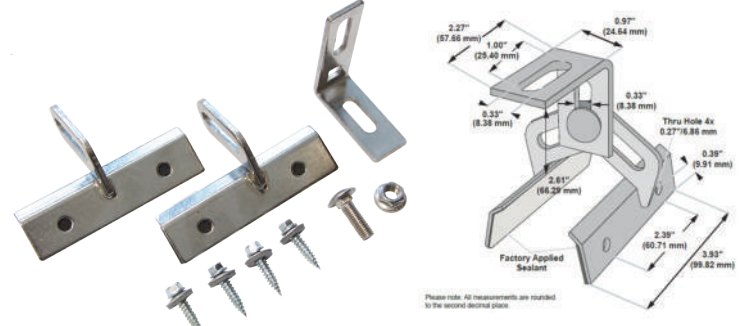
### S-5 PV Edge Grab



YHI Part Code	Description
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S-5-PV EDGE GRAB KIT	S-5-PV Edge Grab Kit
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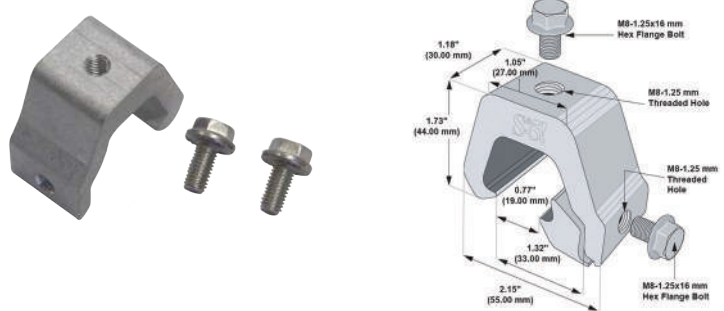
### S-5-Protea Bracket



YHI Part Code	Description
---------------	-------------

S-5-PROTEA BRACKET	S-5 Protea Bracket Stainless Steel Bracket
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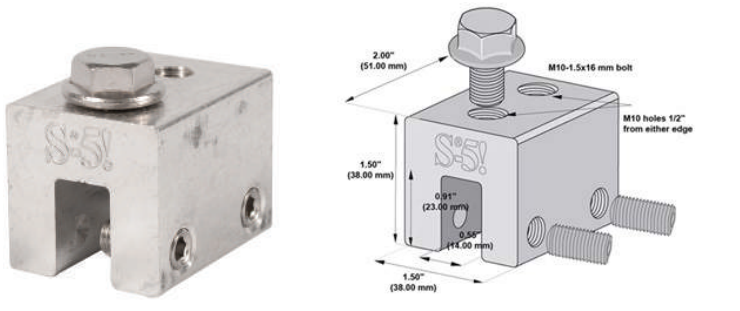
### S-5-K Grip Mini



YHI Part Code	Description
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S-5-K GRIP MINI	S-5-K Grip Mini Aluminium Utility Clamp
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### S-5-S Clamp



YHI Part Code	Description
---------------	-------------

S-5-S CLAMP	S-5-S Aluminium Utility Clamp
-------------	-------------------------------

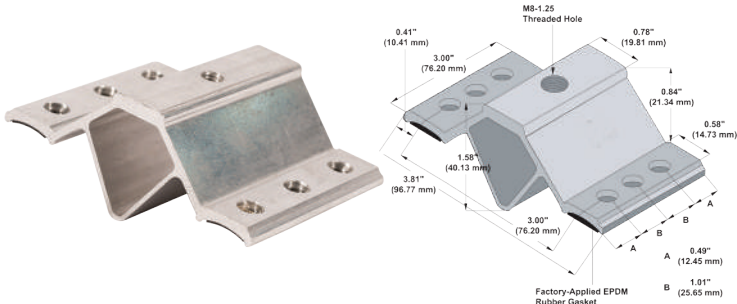


# S5 Mounting Brackets

## PV Panel Mounting Brackets

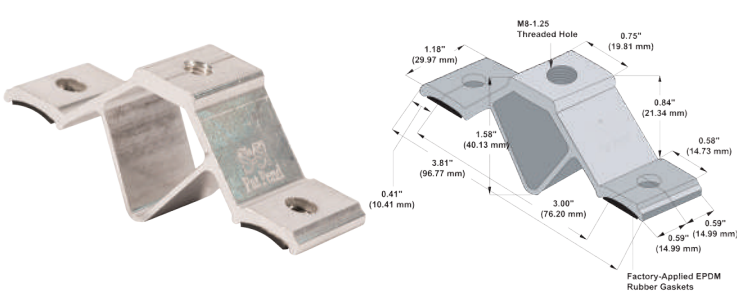


S-5-Top Fix Corru Bracket



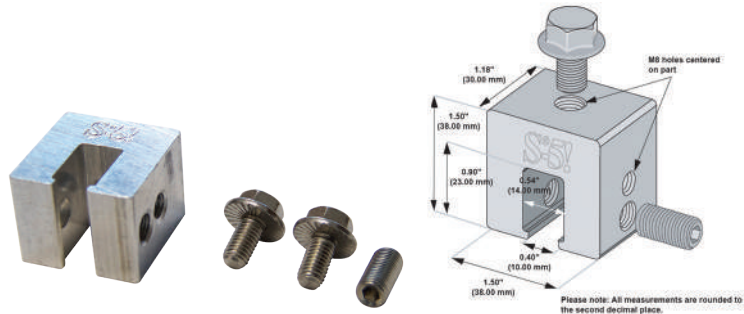
YHI Part Code	Description
S5TOPFIXCORBRKTAU	S-5 Top Fix Corru Bracket AU

S-5-Top Fix Corru Mini Bracket



YHI Part Code	Description
S5TOPFIXCORBRKTAUMINI	S-5 Top Fix Corru Bracket AU Mini

S-5-U Clamp Mini



YHI Part Code	Description
S-5-U MINI	S-5-U Mini Aluminium Utility Clamp

# Cabling & Connectors

## PV Accessories

### 4 mm Cable



YHI Part Code	Description
CABLE4MMSING	4mm Single core solar cable
CABLE4MMTWIN	4mm Twin core solar cable
CABLE4MMEARTH	4mm Earth Cable

Key	
	Earth
	Phase
	Neutral
	Phase
	Phase

### 6 mm Cable



YHI Part Code	Description
CABLE6MMSINGLE	6mm Single core solar cable
CABLE6MMTWIN	6mm Twin core solar cable
CABLE6MMEARTH	6mm Earth Cable

### 3 Core Flex Cable



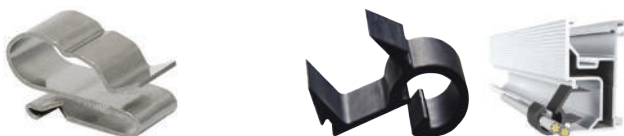
YHI Part Code	Description
CABLE2.5MM3CF	2.5mm 3 Core flex cable
CABLE4MM3CF	4mm 3 Core flex cable

### 4 Core Flex Cable



YHI Part Code	Description
CABLE6MM4CF	6mm 4 Core flex cable

### Cable clips



YHI Part Code	Description
GSSSCC05	S/S Cable clip for two cables
GSAPC01	Plastic cable clip

### DC4 Connectors



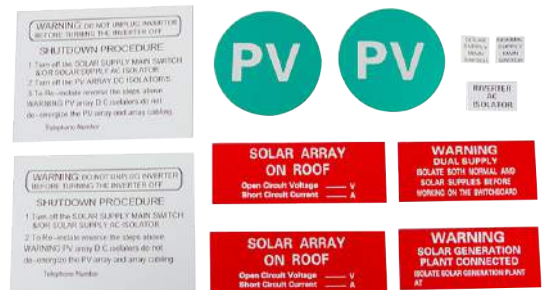
YHI Part Code	Description
DC4SET	DC4 Connector Set
DC4BRANCHSET	DC4 Branch Connector Set

### Solar Glands



YHI Part Code	Description
SPA53111210	M16 Solar Gland with Locknut
SPA53111216	M16 Solar Gland with Locknut
SPA53111236	M25 Solar Gland with Locknut

### Label Kit



YHI Part Code	Description
SPVLABEL	SPV label kit

### Solar Tool Kit



YHI Part Code	Description
TOOLKIT	Solar Toolkit in custom case

## AC / DC Circuit Breakers

### Electrical Components



YHI Part Code	Description
SPA86289	6KA MCB 16A AC Circuit Breaker
SPA86290	6KA MCB 20A AC Circuit Breaker
SPA86291	6KA MCB 25A AC Circuit Breaker
SPA86292	6KA MCB 32A AC Circuit Breaker



YHI Part Code	Description
MCBLOCK	Locking Device for Noark MCB

### Power Enclosures



YHI Part Code	Description
SPA88068	500V MCB 16A Non-Polarised DC K Type MCB's for PV Systems*



YHI Part Code	Description
SPAN4D	IP 65 4 Pole PV Power Enclosure
SPAN8D	IP 65 8 Pole PV Power Enclosure

### Lightning Surge Protector



YHI Part Code	Description
SPA88076	1000V MCB 16A Non-Polarised DC K Type MCB's for PV Systems*
SPA88139	1000V MCB 32A Non-Polarised DC K Type MCB's for PV Systems*
SPA88140	1000V MCB 40A Non-Polarised DC K Type MCB's for PV Systems*
SPA88142	1000V MCB 63A Non-Polarised DC K Type MCB's for PV Systems*
SPA88141	1000V MCB 50A Non-Polarised DC K Type MCB's for PV Systems*



The SPD150i is designed to protect single and three phase power systems against damage from surges and spikes caused by lightning and other electrical sources. The unit is intended for point of entry or main board protection and is connected in parallel with the power system via HRC fuses.

YHI Part Code	Description
SPD150I	1 Phase, 150kw, 1 Mode, DIN, Surge Diverter

# Solar Packages

## On Grid Systems

### Renosola 2kw On Grid System

YHI Part Code: SOLSYS2KW

#### Description

Contains eight Renosola Virtus II 250W panels, eight Renosola Micro inverters and mounting hardware for a tin roof.

### Renosola 3kw On Grid System

YHI Part Code: SOLSYS3KW

#### Description

Contains twelve Renosola Virtus II 250W panels, twelve Renosola Micro inverters and mounting hardware for a tin roof.

### SMA 5kw On Grid System

YHI Part Code: SOLSYS5KW

#### Description

Contains twenty Renosola Virtus II 250W panels, one SMA Sunny Boy 5000TL21 solar inverter and mounting hardware for a tin roof.

### SMA 10kw On Grid System

YHI Part Code: SOLSYS10KW

#### Description

Contains forty Renosola Virtus II 250W panels, one SMA Sunny Mini Central 10000TL10 solar inverter and mounting hardware for a tin roof.

### Enphase 1.5KW on Grid System

YHI Part Code: SOLSYSENP1.5KW

#### Description

Contains six Renosola Virtus II 250W panels, six Enphase M215 Micro inverters and mounting hardware for a tin roof.

### Enphase 2KW on Grid System

YHI Part Code: SOLSYSENP2KW

#### Description

Contains eight Renosola Virtus II 250W panels, eight Enphase M215 Micro inverters and mounting hardware for a tin roof.

### Enphase 3KW on Grid System

YHI Part Code: SOLSYSENP3KW

#### Description

Contains twelve Renosola Virtus II 250W panels, twelve Enphase M215 Micro inverters and mounting hardware for a tin roof.

### Enphase 4kw On Grid System

YHI Part Code: SOLSYSENP4KW

#### Description

Contains sixteen Renosola Virtus II 250W panels, sixteen Enphase M215 Micro inverters and mounting hardware for a tin roof.

### Delta Solivia 3kw Single MPPT On Grid System

YHI Part Code: SOLSYDELTA3KW

#### Description

Contains twelve Renosola Virtus II 250W panels, one Delta SOLIVIA 3kw solar inverter and mounting hardware for a tin roof.

### Delta Solivia 5kw Single MPPT On Grid System

YHI Part Code: SOLSYDELTA5KW

#### Description

Contains twenty Renosola Virtus II 250W panels, one Delta SOLIVIA 5kw solar inverter and mounting hardware for a tin roof.

### Delta RPI Dual MPPT 3kw On Grid System

YHI Part Code: SOLSYDELTAADUAL3KW

#### Description

Contains twelve Renosola Virtus II 250W panels, one Delta RPI 3kw solar inverter and mounting hardware for a tin roof.

### Delta RPI Dual MPPT 5kw On Grid System

YHI Part Code: SOLSYDELTAADUAL5KW

#### Description

Contains twenty Renosola Virtus II 250W panels, one Delta RPI 5kw solar inverter and mounting hardware for a tin roof.

### Delta RPI 15kw Three Phase On Grid System

YHI Part Code: SOLSYDELTA15KW

#### Description

Contains sixty Renosola Virtus II 250W panels, one Delta RPI 15kw solar inverter and mounting hardware for a tin roof.

## Renesola Small Storage Systems



### RB - Renesola Beacon Light



#### Applications

- Indoor / Outdoor Lighting
- Camping
- Fishing
- Off Grid Application
- Emergency power

#### Features

- Maintenance free with long cycle life
- Long life Lithium Ion battery
- Environmentally friendly
- Three levels of lamp brightness
- Intelligent battery management system

Product Code	Description	Output Power	Output Voltage	PV Power	Battery Type
RBHG-3	Renesola Beacon Light	LED: 3.6W	5V DC 550mA	0.7W	Lithium ion
RBHG-5	Renesola Beacon Light	LED: 3.6W	5V DC 550mA	2.5W	Lithium ion

### RBL - Renesola Lamp



#### Applications

- Indoor / Outdoor Lighting
- Camping
- Fishing
- Off Grid Application
- Emergency power/ Mobile phone charger

#### Features

- Maintenance free with long cycle life
- Long life Lithium Ion battery
- Environmentally friendly
- Three levels of lamp brightness
- Intelligent battery management system
- Remote control

Product Code	Description	Output Power	Output Voltage	PV Power	Battery Type
RBL-1A	Renesola Lamp	Master LED:2W Slave LED:1W Remote Control LED: 0.2W	5V DC 550mA	3W	Lithium ion
RBL-2A	Renesola Lamp	Master LED:2W Slave LED:1W Remote Control LED: 0.2W	5V DC 550mA	2.4W	Lithium ion

# Renesola Small Storage Systems

## RMLB - Renesola Charging & Lighting System



Solar Charging System  
RMLB-06 pictured

### Applications

- Indoor / Outdoor Lighting
- Camping
- Fishing
- Off Grid Application
- Emergency power / Mobile phone charger

### Features

- Maintenance free with long cycle life
- Long life Lithium Ion battery
- Environmentally friendly
- Multiple charging methods - PV or Grid input
- Intelligent battery management system
- USB Charging

Product Code	Description	Output Power	Output Voltage	PV Power	Battery Type
RMLB-06	Renesola Charging & Lighting System	LED: 2W	5V DC 550mA	10W	Lithium ion
RMLB-08	Renesola Charging & Lighting System	LED: 2W	5V DC 550mA	15W	Lithium ion
RMLB-12	Renesola Charging & Lighting System	LED: 2W	5V DC 550mA	15W	Lithium ion

## RML - Renesola Charging & Lighting System



Solar Charging System  
RML-03 pictured



Solar Charging System  
RML-10 pictured

### Applications

- Indoor / Outdoor Lighting
- Camping
- Fishing
- Off Grid Application
- Emergency power / Mobile phone charger

### Features

- Maintenance free with long cycle life
- Long life Lithium Ion battery
- Environmentally friendly
- Multiple charging methods - PV or Grid input
- Intelligent battery management system
- USB Charging

Product Code	Description	Output Power	Output Voltage	PV Power	Battery Type
RML-03	Renesola Charging & Lighting System	Master LED:5W Slave LED:1.2W	12V output:12V 3A USB Output:5V 0.5A	10W	Lithium ion
RML-10	Renesola Charging & Lighting System	Master LED:5W Slave LED:1.2W	12V output:12V 10A USB Output:5V/1A, 5V 0.5A	30W	Lithium ion

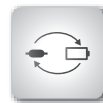




All-in-one kit solution



Multiple charging options - PV or Grid input is available



PV and LiFePO4 battery combination - long life cycle,  
Environmentally-friendly and safe



LED/LCD Display - easy to operate

Renesola RF series is a solution which stores solar energy to lithium-ion batteries and releases it when you're ready to use it. All parts (battery, off-grid inverter, BMS and solar charger) are integrated into the kit. Built-in handles and casters make the product portable and easy to move.

PV Input	RFP-2000
Input Voltage Range	60V DC ~ 90V DC
Max Input Current	60A DC
Max Efficiency	98%
Recommended PV Power	2500W
Grid Input	
Input Voltage Range	165 ~ 275V (AC) / 85V ~ 135V (AC)
Input Frequency Range	45Hz ~ 65Hz
Short Circuit Protection	Circuit Breaker
System Output	
Output Voltage/ Frequency	220V/110V (AC) 50Hz/60Hz
Output Power	2000W
Power Factor	>0.8 (>30% Load)
THD	<5%
Grid Switch to Battery	< 20ms
Output Efficiency	> 84.5%
Overload Protection	110% output overload alarm; 4 minutes at 125% overload; 1 minute at 150% overload

Battery	RFP-2000
Battery Type	LiFePO4 Ion Battery
Battery Voltage Range	48V ~ 57V
Battery Capacity	50Ah
Equalization Current	1A
Voltage Acquisition Precision	2mV
Protection	Over charge, Over discharge, Over current, Over temperature protection
General	
Working Temperature	0 ~ 40 °C
Working Humidity	10% ~ 90% (no condensation)
IP Grade	IP20
Dimension (D x H x W)	636 x 550 x 300 mm
Weight	Approx 65kg
Warranty	2 years for system

## Crown RE Batteries Renewable Cells



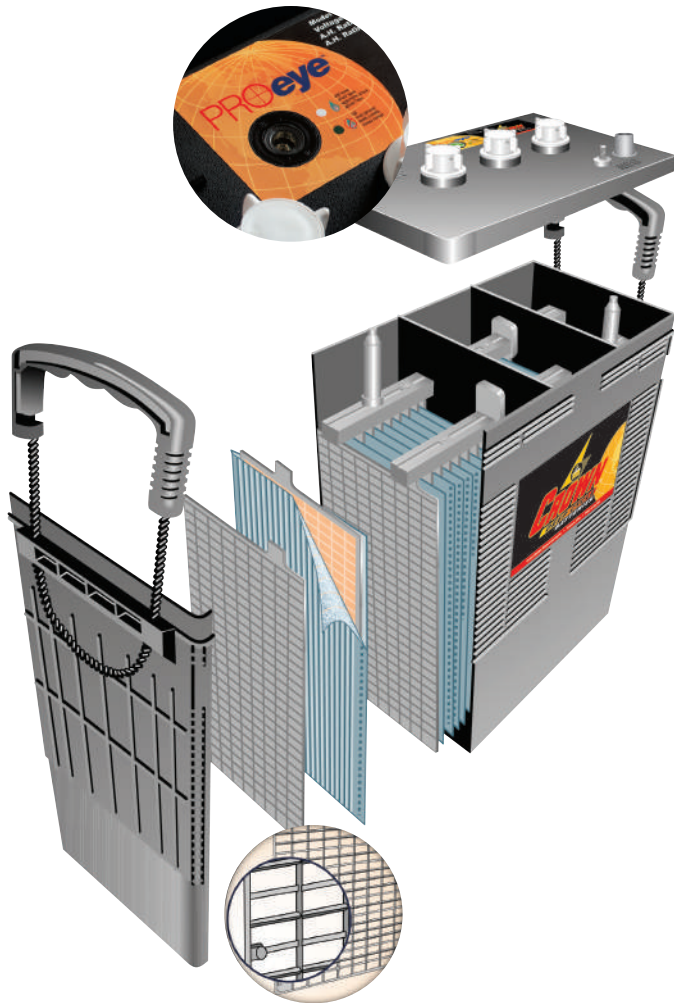
Crown Batteries are the Heavy Weight - and that's important. Because "heavy" means energy dense plates that use more active lead materials. Heavier plates that use more active lead materials are directly related to stronger battery performance and longevity. So, other things being equal, batteries with more active lead material will last the longest. And Crown leads the industry in terms of lead content per ampere-hour of rated capacity

- Premium Crown batteries with more lead & thicker plates, delivering superior performance
- Robust metal case with corrosion resistant coating
- Universal fitment removable lid for ease of maintenance
- Comfort grip handles
- Complete with water miser caps

Product Code	Voltage (V)	20H Rate (Ah)	100H Rate (Ah)	Length (mm)	Width (mm)	Height (mm)	Weight (Kg)
CRE2V15X125	2	1155	1601	148	161	824	70.0
CRE2V17X125	2	1320	1830	167	161	810	76.0
CRE2V19X125	2	1485	2059	186	161	810	85.0
CRE2V21X125	2	1650	2288	205	161	810	96.0
CRE2V23X125	2	1815	2516	223	161	810	105.0
CRE2V25X125	2	1980	2745	243	161	850	112.0
CRE4V17X55	4	581	805	336	159	640	81.0
CRE4V9X125	4	660	915	180	159	824	45.0
CRE4V17X65	4	686	952	336	159	640	85.0
CRE4V15X85	4	785	1089	320	159	640	102.0
CRE4V17X85	4	898	1244	336	159	640	112.0
CRE4V19X85	4	1010	1400	374	159	640	124.0
CRE4V21X85	4	1122	1556	320	161	640	132.0
CRE4V23X85	4	1234	1711	320	224	640	145.0
CRE4V25X85	4	1346	1867	320	243	640	156.0
CRE6V7X65	6	257	357	212	159	522	80.0
CRE6V5X125	6	330	458	155	159	824	90.0
CRE6V7X85	6	337	467	212	159	640	80.0
CRE6V9X65	6	343	476	269	159	522	80.0
CRE6V9X85	6	449	622	269	159	640	92.0
CRE6V13X65	6	515	714	383	159	522	97.0
CRE6V11X85	6	561	778	326	159	640	112.0
CRE6V13X85	6	673	933	383	159	640	122.0

# Crown Heavy Duty Deep Cycle Batteries

## 6, 8 and 12 volt



Nobody builds them like Crown. Nobody. Because no one else invests in the heaviest, thickest plates in the industry. Ours are over 10% thicker than our competitors. Combine that with our proprietary PROeye™ and our low-maintenance container - features that make battery maintenance predictable and efficient - and you've got a battery that's going to last longer and perform like no other.

### PROeye

No mess, no guess system for inspecting electrolyte levels that signals when watering is required.

### X - TEND Container Design

X-Tend provides more electrolyte above the battery plates so batteries can perform longer between watering intervals, lowering preventive maintenance costs and improving overall ROI on your Crown Battery purchase.

### Heavy- Duty Construction

Crown deep cycle batteries are the heavyweight of the industry. More weight means more lead, which translates into a battery that will work and last longer. Heat-sealed case and cover design.

### Rigid Connectors

Heavy-duty TTP, COS and Post connectors deliver maximum electrical efficiency and durability.

### Posi-Wrap Envelope Separators

Posi-Wrap Separators reduce maintenance and prevent failure due to a short-circuit and plate shredding, ensuring reliability and durability.

### Z<sup>3</sup> Plate Construction

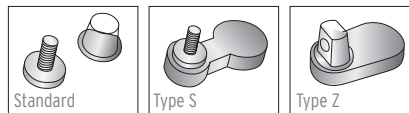
Crown's Z3 design combines three integrated features for superior performance and durability.

- Our signature "Diamond Z" grid architecture
- An inset lug position
- Our revolutionary "LifePlus™" active paste material

### Warranty

12 Month Warranty

### Terminals



Product Code	Voltage (V)	Electrical Capacity Ratings		Physical Specifications			Terminal Type
		Ampere Hour Capacity		Length (mm)	Width (mm)	Height (mm)	
		20hr Rate	5hr rate				
CR205	6	205	170	260	179	278	Standard
CR220	6	220	180	260	179	278	Std/Type S
CR260	6	260	215	260	179	295	Standard
CR275	6	275	228	298	183	286	Standard
CR350	6	350	290	183	310	359	Standard
CR430	6	430	340	314	183	410	Standard
CR165	8	165	146	262	181	283	Standard
CR24DC95	12	95	75	273	171	235	Standard
CR27DC115	12	115	90	334	171	238	Standard
CR31DC130	12	130	105	334	175	238	Standard
CRGC155	12	155	125	328	179	267	Std/Type S

## C & D Batteries OPZV Gel Series



Product Code	Voltage (V)	10H Rate Capacity (Ah)	Length (mm)	Width (mm)	Height (mm)	Weight (kg)	Terminal Type
CD2200TGEL	2	200	103	206	354	19.0	M10
CD2250TGEL	2	250	124	206	354	23.0	M10
CD2300TGEL	2	300	145	206	354	28.0	M10
CD2350TGEL	2	350	124	206	471	31.0	M10
CD2420TGEL	2	420	145	206	471	36.0	M10
CD2490TGEL	2	490	166	206	471	41.0	M10
CD2600TGEL	2	600	145	206	643	49.0	M10
CD2800TGEL	2	800	210	191	664	65.0	M10
CD21000TGEL	2	1000	210	233	646	80.0	M10
CD21200TGEL	2	1200	210	275	665	93.0	M10
CD21500TGEL	2	1500	210	275	796	115.0	M10
CD22000TGEL	2	2000	214	399	771	155.0	M10
CD22500TGEL	2	2500	214	487	769	200.0	M10
CD23000TGEL	2	3000	214	576	771	235.0	M10

## Vision Batteries FM & CL Series



Product Code	Voltage (V)	10H Rate Capacity (Ah)	Length (mm)	Width (mm)	Height (mm)	Total Height (mm)	Weight (kg)
3FM225	6	225	320	176	225	247	30.5
3FM225SX	6	225	260	180	247	247	30.5
6FM33	12	33	195	130	155	168	10.2
6FM40	12	40	197	165	170	170	13.5
6FM55	12	55	229	138	208	220	19.0
6FM60	12	60	258	166	206	215	24.0
6FM65	12	65	350	167	179	179	23.4
6FM75	12	75	258	166	206	215	24.0
6FM80	12	80	350	167	179	179	24.0
6FM100	12	100	330	171	215	222	32.0
6FM120	12	120	410	176	227	227	38.0
6FM150	12	150	485	172	240	240	55.5
6FM200	12	200	522	238	218	223	65.0
6FM230	12	230	520	269	203	208	72.6



Product Code	Voltage (V)	10H Rate Capacity (Ah)	Length (mm)	Width (mm)	Height (mm)	Total Height (mm)	Weight (kg)
CL200	2	200	173	111	330	364	15.0
CL300	2	300	171	151	330	364	21.0
CL400	2	400	210	176	330	367	28.0
CL500	2	500	241	175	330	365	33.0
CL600	2	600	302	175	330	367	42.0
CL800	2	800	410	175	330	367	57.0
CL1000	2	1000	475	175	330	367	66.5
CL1500	2	1500	400	350	345	382	100.0
CL2000	2	2000	490	350	345	382	132.0
CL3000	2	3000	710	350	345	382	204.0





**YHI**

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