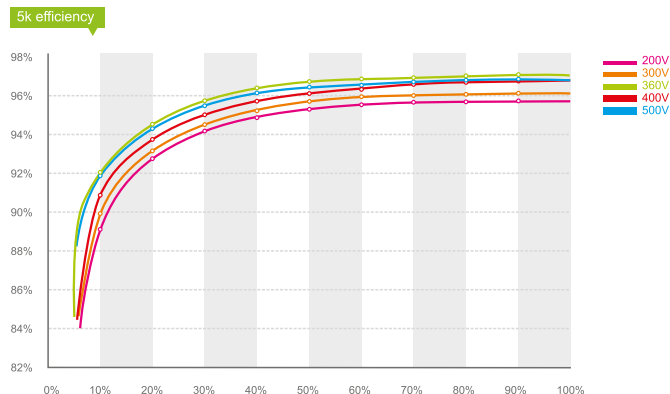




## Leading - edge Technology

- ▶ Maximum efficiency of 97% and wide input voltage range
- ▶ Internal DC switch
- ▶ Transformerless GT topology
- ▶ Compact design
- ▶ Multi MPP controller
- ▶ MTL - String
- ▶ Bluetooth / RF technology / ZigBee
- ▶ Sound control
- ▶ Easy installation



### Input Data

Max. DC power	2300W
Max. DC voltage	500V
PV voltage range MPPT	120V - 450V
Full load MPP-Voltage range	195V - 450V
Initial / shut-down voltage	100V / 70V
Max. number of parallel strings	1
Number of MPP trackers	1
Max. input current	12A

### Output (AC)

Nominal AC output power	2000W
Max. AC power	2200W
Max. output current	11A
Nominal AC voltage	220V / 230V / 240V
Operational AC voltage range	180V - 280V
AC grid frequency range	50Hz, 60Hz / ± 5Hz
Phase shift	1
THDI	<3%
AC connection	Single phase

### Efficiency

Max. efficiency	97%
Euro-eta	96.5%
MPPT efficiency	99.5%

### Protection Devices

DC reverse polarity protection	yes
AC short-circuit protection	yes
Ground fault monitoring	yes
Grid monitoring	yes
Integrated all-pole sensitive leakage current monitoring unit	yes

### General Data

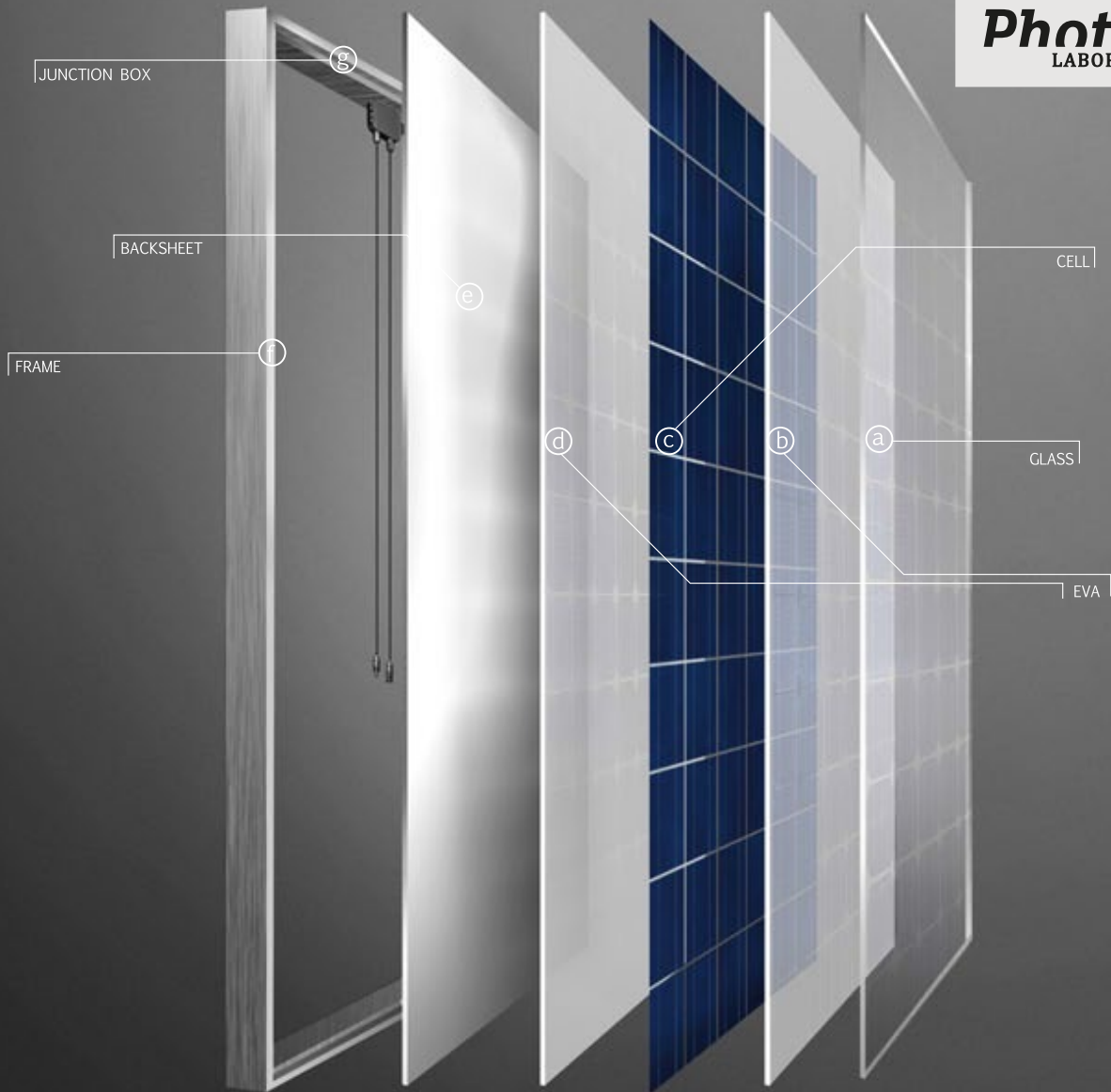
Dimensions (W / H / D) in mm	360/329/132
Weight	11.7KG
Operating temperature range	-25 °C ... +60 °C
Noise emission (typical)	≤25 dB(A)
Consumption: operating (standby)/ night	< 5W / < 0.5 W
Topology	transformerless
Cooling concept	No fan
Installation: Indoors / Outdoors (IP65 )	yes / yes
Altitude	Up to 2000m without power derating
Humidity	0 ~ 95%, no condensation

### Features

DC connection: (H4 / MC4)	yes / opt
AC connection: Terminals	yes
LCD display	yes
RS485/RS232/Bluetooth/RF/ZigBee	yes / yes / opt / opt / opt
Warranty: 5 years / 10 years	yes / opt

# PRODUCT ADVANTAGES

**DuraFlex™**  
**Bankable**  
**Photon**  
 LABORATORY



## WHAT.....

### ⓐ GLASS

- High light transmission giving more electricity.
- Anti-Reflection glass optional
- Excellent mechanical loading performance (5400Pascal)
- SPF-U1 certified

### ⓐ BACKSHEET

- TEDLAR based encapsulation and protection
- Excellent adhesion and ultraviolet stability
- TUV / UL certified
- White / Black / Transparent optional

### ⓐ JUNCTION BOX

- Reliably-pass diodes assuring good product protection
- Locking connect or working compatible worldwide
- Excellent heat emission performance
- IP65 or IP67 protection
- Fire test passed
- TUV /UL certified

### ⓑⓓ EVA

- High light transmission assuring better power performance
- High GEL and peeling strength guarantying strong encapsulation
- Good Ultraviolet aging resistance
- TUV / UL certified

### ⓕ FRAME

- Anodized / Electrophoretic aluminum means durable protection from environment
- Unique designed profile ensuring strong mechanical loading performance
- Silver / Black color available

### ⓐ CELL

- Excellent efficiency and long term reliability
- Good performance under high temperature and low irradiance conditions
- 100% In-line Electroluminescence (EL) tested
- Positive tolerance for each panel
- TUV certified

## WHY.....

### ⓐ Anti-reflective coating glass

- Nanometer technology
- Increase light transmission by up to 2% in normal irradiance
- Energy output increased up to 4% in the module efficiency
- Perfect coating uniformity
- Coating life time over 25 years
- Easy cleaning

### ⓐ Full black series products

- 3M / FUJIFILM powered product
- Good aging resistance guarantying strong durability
- Excellent Yellowness resistance
- Various selection for different application

### ⓑⓓ Long-lasting performance

- excellent durability and aging resistance performance for 25 years
- high encapsulation performance
- Yellowness resistance

### ⓐ Junction Box

- Excellent PPE material from Japan
- Top Poly amide 66 material
- Excellent industry design

### ⓕ Extraordinary performance

- Salt mist and Ammonia corrosion resistant
- Regular and DURAFLEX optional
- Unique design to achieve 8000pa loading
- Easy installation and wide adaptation to current mounting system

### ⓐ High quality cell

- Guarantee a better performance in weak light.
- 3-busbar cell technology reduces the series resistance and helps to boost the power output in the module
- Good PID performance

# SERAPHIM MODULE

## 250W

6PB SERIES

230W~250W

High Performance  
Solar Modules

**DuraFlex**™



### Electrical Characteristics

	SRP-235-6PB	SRP-240-6PB	SRP-245-6PB	SRP-250-6PB	Unit
Rated Power at STC (Pmp)	235	240	245	250	W
Power Tolerance	(0,+4.99)	(0,+4.99)	(0,+4.99)	(0,+4.99)	W
Power Maximum at STC	239.99	244.99	249.99	254.99	W
Cell Efficiency ( $\eta_c$ )	16.6~16.9	17.0~17.3	17.3~17.6	17.7~18.0	%
Minimum Module Efficiency ( $\eta_m$ )	14.4~14.7	14.7~15.0	15.0~15.4	15.4~15.7	%
Maximum Power Voltage (Vmp)	36.7	36.9	37.0	37.1	V
Maximum Power Current (Imp)	8.48	8.60	8.76	8.92	A
Open Circuit Voltage (Voc)	29.6	29.8	29.9	29.9	V
Short Circuit Current (Isc)	7.94	8.05	8.21	8.35	A
Maximum System Voltage	1000 (TUV), 600 (UL)				V
Maximum Series Fuse Rating	15				A

STC: Irradiance 1000 W/m<sup>2</sup>, module temperature 25°C, AM = 1.5;  
Power measurement tolerance: +/-3%

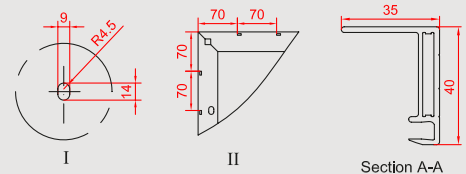
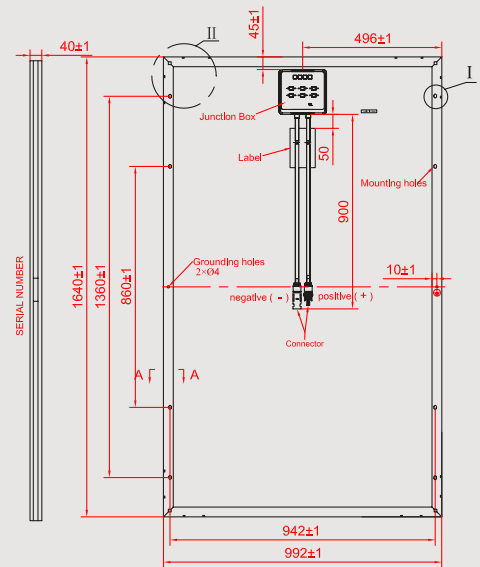
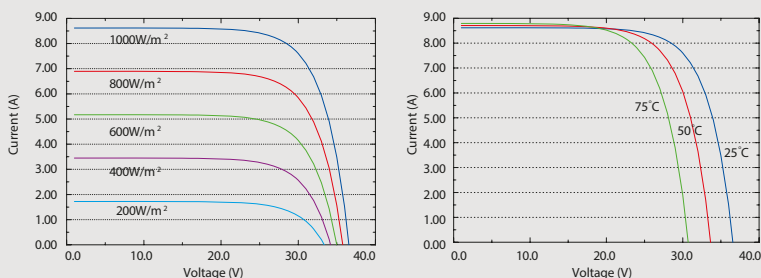
### Temperature Characteristics

Pmax Temperature Coefficient	-0.47% / °C
Voc Temperature Coefficient	-0.32% / °C
Isc Temperature Coefficient	+0.04% / °C
Operating Temperature	-40 ~ +85°C
Nominal Operating Cell Temperature (NOCT)	45±2°C

### Packing Configuration

Container	20'GP	40'GP	40'HC
Pieces per pallet	26	26	N.A
Pallets per container	12	28	N.A
Pieces per container	312	728	N.A

### Current - Voltage & Power - Voltage Curve (SRP-240-6PB)



\*All Dimensions in mm

\*The above drawing is a graphical representation of the product.  
For engineering quality drawings please contact SERAPHIM.

### Mechanical Specifications

External Dimensions	1640 x 992 x 40 mm
Weight	19.0 kg
Solar Cells	Polycrystalline 156 x 156 mm (60pcs)
Front glass	3.2mm tempered glass, low iron
Frame	Anodized / Electrophoretic aluminum alloy
Junction Box	IP65 / IP67
Output Cables	4.0mm <sup>2</sup> , symmetrical lengths 900 mm
Connector	MC4 compatible
Maximum Snow Load	550 kg/m <sup>2</sup>
Maximum Wind Load	200 km/h
Hailstone Impact Test	80 km/h for 25 mm ice ball

## WARRANTY

- ✓ Positive tolerance guarantee for each panel
- ✓ 10 years guarantee on product material
- ✓ 12 years guarantee on 90% minimum output
- ✓ 25 years guarantee on 80% minimum output
- ✓ Product liability insurance with CHUBB Group
- ✓ Product performance (E&O) insurance CHUBB Group

**10 years**  
guarantee on  
product material

**12 years**  
**90%**  
12 years guarantee on  
90% minimum output

**25 years**  
**80%**  
25 years guarantee on  
80% minimum output



**Photon**  
LABORATORY

## BEFORE & AFTER SERVICE

Before & After Service: Service is a continuation of sales progress. Seraphim is a professional provider of solar energy solutions, making progress in R&D, production, sales & after sales and striving to provide qualified products as well as professional service from enquiry to after sales:

- ✓ Regular sampling test by Photon Testing Laboratory to proven product performance and reliability
- ✓ Skilled engineers for technology consultation
- ✓ Tailored solution proposal design and project conduction
- ✓ Advanced ERP system allows customers to view the whole production procedure
- ✓ Local office for most efficiency support and online service system for customers