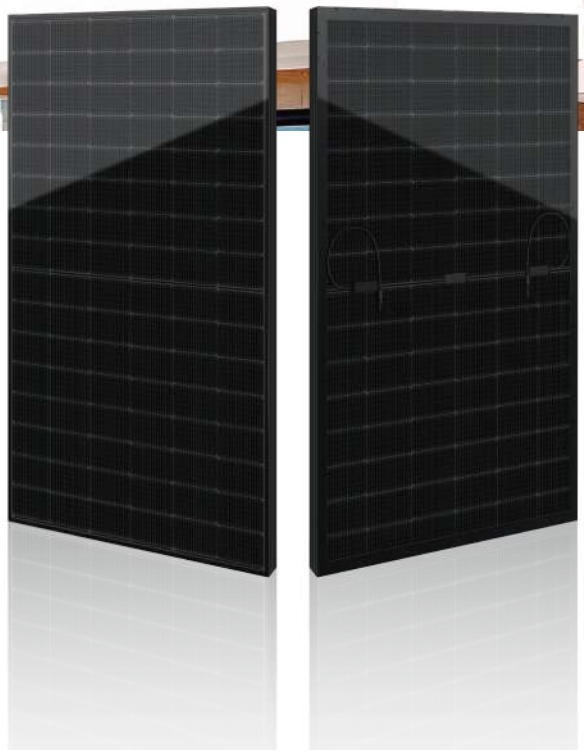
SERAPHIM®

SHIFTING · THE FUTURE
www.seraphim-energy.com

Sable 435-460w

High efficiency bifacial modules



N-type	182*210mm

N-TYPE MODULE ADVANTAGE

- Multi-Busbar technology
- Superior load capacity
- High module efficiency
- Excellent low-light performance
- Lower annual attenuation Longer warranty
- Low BOS and LCOE
- Reduce hot spot effect
- Higher bifaciality

INSURANCE

PICC

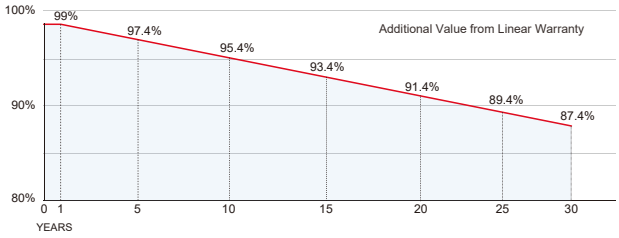
QUALITY SYSTEM

ISO9001 / ISO14001 / ISO45001

PRODUCT CERTIFICATION

TÜV · CE · PV CYCLE · CLEAN ENERGY COUNCIL MEMBER · CQC · C SP US

WARRANTY



- 25 YEARS Guarantee on product material and workmanship
- 30 YEARS Linear power output warranty

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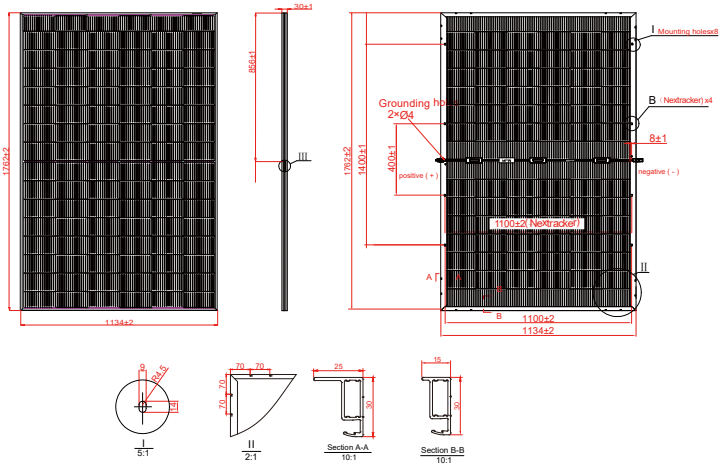
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Mechanical Specifications

External Dimension	1762 x 1134 x 30 mm(69.37 x 44.65 x 1.18inch)
Weight	24.9 kg(54.9 lbs)
Solar Cells	N-type 182 x 105mm (96pcs)
Front / Back Glass	2.0mm AR coating semi-tempered glass, low iron
Frame	Black anodized aluminium alloy
Junction Box	IP68, 3 diodes
Output Cables	4.0mm², 250mm(+)/350mm(-) or Customized Length

Technical drawing



Packing Configuration

Container	20'GP	40'HQ(USA)
Pieces per Pallet	36	36
Pallets per Container	6	26
Pieces per Container	216	936

Electrical Characteristics

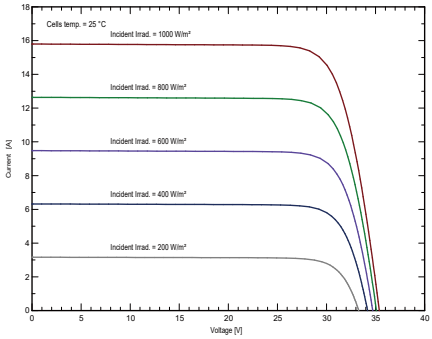
Module Type	SRP-435-BTE-BG		SRP-440-BTE-BG		SRP-445-BTE-BG		SRP-450-BTE-BG		SRP-455-BTE-BG		SRP-460-BTE-BG	
	Front STC	Front BNPI	Front STC	Front BNPI	Front STC	Front BNPI	Front STC	Front BNPI	Front STC	Front BNPI	Front STC	Front BNPI
Maximum Power -P_{mp}(W)	435	482	440	488	445	493	450	499	455	504	460	510
Open Circuit Voltage -V_{oc}(V)	35.18	35.26	35.38	35.46	35.58	35.66	35.78	35.86	35.98	36.06	36.18	36.26
Short Circuit Current -I_{sc}(A)	15.75	17.45	15.80	17.51	15.85	17.56	15.90	17.62	15.95	17.67	16.00	17.73
Maximum Power Voltage -V_{mp}(V)	29.21	29.29	29.41	29.49	29.61	29.69	29.81	29.89	30.01	30.09	30.21	30.29
Maximum Power Current -I_{mp}(A)	14.90	16.46	14.97	16.53	15.03	16.61	15.10	16.68	15.17	16.75	15.23	16.83
Module Efficiency STC-η_m(%)	21.77		22.02		22.27		22.52		22.77		23.02	
Power Tolerance (W)	(0,+4.99)											

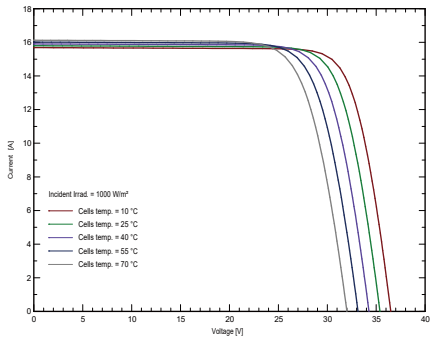
STC: Irradiance 1000 W/m² module temperature 25°C AM=1.5 Power measurement tolerance: +/-3%;Voltage measurement tolerance: +/-3%;Current measurement tolerance: +/-4%
BNPI: front 1000 W/m² rear 135 W/m² Power measurement tolerance: +/-3%;Voltage measurement tolerance: +/-3%;Current measurement tolerance: +/-4%

Rear Side Power Gain(SRP-450-BTE-BG)

Power Gain	10%	15%	20%	25%	30%
Maximum Power -P_{mp} (W)	495	518	540	563	585
Open Circuit Voltage -V_{oc} (V)	35.78	35.78	35.78	35.78	35.78
Short Circuit Current -I_{sc} (A)	17.49	18.29	19.08	19.88	20.67
Maximum Power Voltage -V_{mp} (V)	29.81	29.81	29.81	29.81	29.81
Maximum Power Current -I_{mp} (A)	16.61	17.37	18.12	18.88	19.63

I-V Curve





Temperature Ratings

Pmax Temperature Coefficient	-0.29 %/°C
Voc Temperature Coefficient	-0.25 %/°C
Isc Temperature Coefficient	+0.046 %/°C

Application Conditions

Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	30 A
Operating Temperature	-40~+85 °C
Nominal Operating Cell Temperature	45±2 °C
Bifaciality	80%±5%
Mechanical Load	Front side 5400 Pa / Back side 2400 Pa
Fire Performance	Type 29

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