

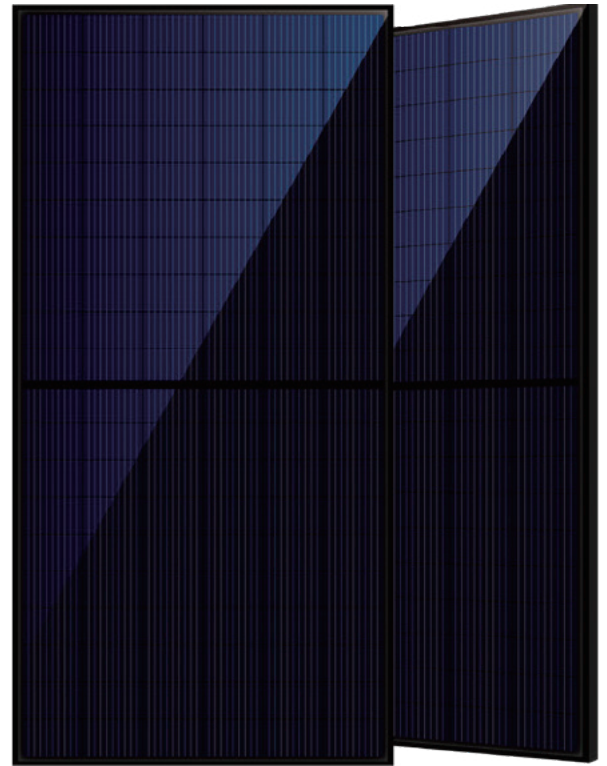
BLACK PEARL Series

182mm monofacial full black half cut cell technology

435-450W

20.8% MODULE EFFICIENCY **0~+5w** POSITIVE POWER TOLERANCE

TYPE: HGT-S120|M10Hb-XXX



450w

Max. Power Output



HIGH CUSTOMER VALUE

- Lower LCOE (Levelized Cost Of Energy), reduced BOS (Balance Of System) cost, shorter payback time
- Lower guaranteed first year and annual degradation
- Designed for compatibility with existing mainstream system components



HIGH RELIABILITY

- Minimized micro-cracks with innovation non-destructive cutting technology ensured PID resistance through cell process and module material control.
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



HIGH ENERGY YIELD

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions



HIGH POWER UP TO 450W

- Large area cells based on 182mm silicon wafers and half-cut cell technology
- Up to 20.8% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection

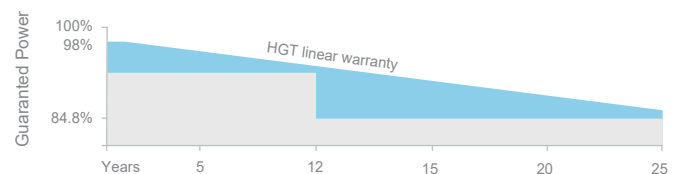
Materials and workmanship warranty **12** Years

2.00%
First Year Power Degradation

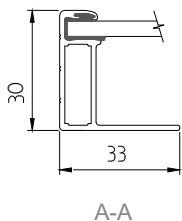
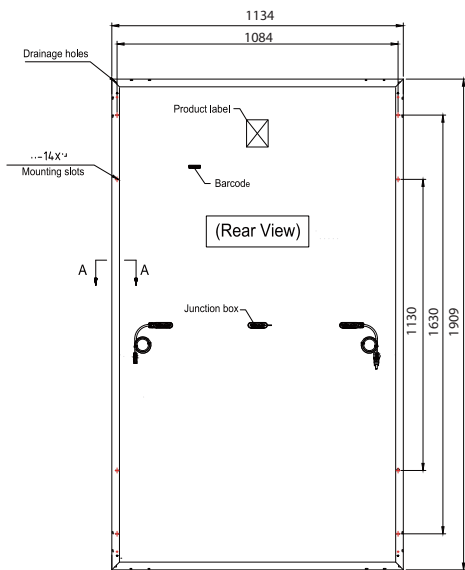
Linear power warranty **25** Years

0.55%
Annual Degradation

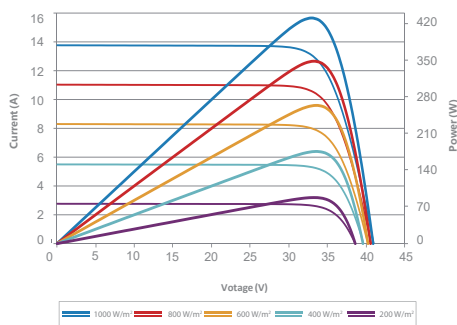
PERFORMANCE WARRANTY



DIMENSIONS OF PV MODULE(mm)



Current-Voltage & Power-Voltage Curve(440W)



ELECTRICAL DATA (STC)

Parameter	435W	440W	445W	450W
Maximum Power (Pmax)	435W	440W	445W	450W
Power Tolerance-P _{MAX} (W)	0 ~ +5W			
Maximum Power Voltage (Vmp)	33.70V	33.90V	34.10V	34.30V
Maximum Power Current (Imp)	12.90A	12.98A	13.06A	13.14A
Open Circuit Voltage (Voc)	40.80V	41.00V	41.20V	41.40V
Short Circuit Current (Isc)	13.34A	13.41A	13.49A	13.60A
Module Efficiency η_m (%)	20.1%	20.3%	20.6%	20.8%

STC: Irradiance 1000W/m², Cell Temperature 25 °C, Air Mass AM1.5.
*Measuring tolerance: ±3%.

ELECTRICAL DATA (NMOT)

Parameter	353W	358W	362W	365W
Maximum Power (Pmax)	353W	358W	362W	365W
Maximum Power Voltage (Vmp)	34.5V	34.80V	35.00V	35.20V
Maximum Power Current (Imp)	10.25A	10.29A	10.33A	10.37A
Open Circuit Voltage (Voc)	41.10V	41.30V	41.50V	41.70V
Short Circuit Current (Isc)	10.82A	10.86A	10.90A	10.94A

NMOT: Irradiance at 800W/m², Ambient Temperature 20 °C, Air Mass AM1.5, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline silicon 182mm
No. of cells	120 cells (6x20)
Module Dimensions	1909 × 1134 × 30 mm
Weight	23.5 kg
Glass	High Transmission, AR Coated fully tempered Glass
Encapsulant Material	EVA
Frame	Anodized Aluminium Alloy
J-Box	IP 68 rated (3 bypass diodes)
Backsheet	Black
Cables	4.0mm ² cable length +350mm/-350mm or customized length
Connector	MC4 Compatible

TEMPERATURE RATINGS

NMOT(Nominal Operating Cell Temperature)	42 ± 2 °C
Temperature Coefficient of P _{MAX}	-0.36%/°C
Temperature Coefficient of V _{OC}	-0.304%/°C
Temperature Coefficient of I _{SC}	0.050%/°C

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

MAXIMUM RATINGS

Operational Temperature	-40~+85 °C
Maximum System Voltage	1500V/DC(IEC)
Max Series Fuse Rating	25A

WARRANTY

12 year Product Workmanship Warranty
25 year Power Warranty
2% first year degradation
0.55% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Pieces per pallet	36
Pallets per container	26
Pieces per container 40'HC	864
Packaging box dimensions	1960x1140x1270mm
Packaging box weight	885kg