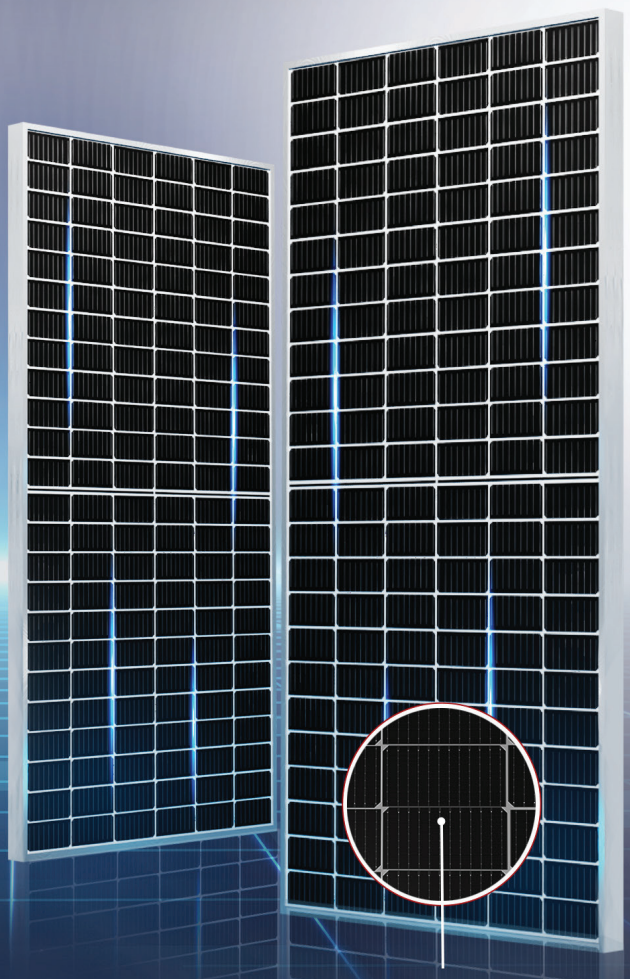
BLUE PINE™

Half-Cell Monofacial PV Module
HSA72M10MF

530-550 Watt MBB

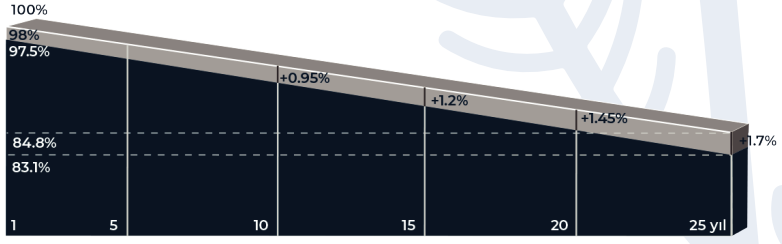
- Half - Cell Technology
- M10 (182mm) 11BB Technology
- Longer Lasting Efficiency



Assembled with new generation M10 (182mm) Mono PERC cells, 11BB half-cell configuration provides the highest efficiency in Watt/m² and better LCOE. Blue Pine Solar Modules offer lower Hot Spot risk and a better temperature coefficient thanks to its optimized electrical design, the best choice for safe investment.

Superior Warranty

- 12-year product warranty
- 25-year linear power output warranty
- 0,55% Annual Degradation



Multi-Busbar Half-Cell Technology

It provides better light absorption, current passage and less shading loss.

Lower Electricity Generation Cost (LCOE)

PV module with the highest Watt/m² value. It offers the advantages BOS cost of land and roof applications.

Long Life-High Efficiency

0.55% annual degradation offered by the enhanced warranty, your investment will now be more efficient.

Lower Hot Spor Risk

The lower temperature operating current due to the optimized electrical design both reduces the risk of Hot Spots and offers a better temperature coefficient.

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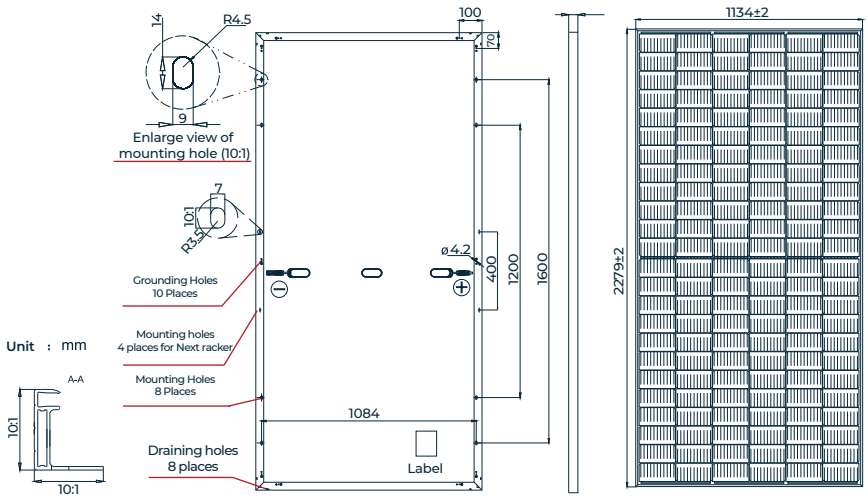
BLUE PINE™

HSA72M10MF 530-550

Specifications

Cell	Mono PERC
Weight	28.6kg±3%
Dimensions	2279±2mm×1134±2mm×35+1mm
Cable Cross Section Size	4mm² (IEC) , 12 AWG(UL)
No Of Cells	144(6×24)
Junction Box	IP68, 3 Diodes
Connector	QC 4.10(1000V) QC 4.10-35(1500V)
Cable Length (Including Connector)	Portrait: 300 mm(+)/400mm(-); Landscape: 1300 mm(+)/1300mm(-)
Packaging Configuration	31 pcs/Pallet 620 pcs/40ft Container

Mechanical Diagrams



Electrical Parameters At STC

Module Type	HSA72M10 MF-530	HSA72M10 MF-535	HSA72M10 MF-540	HSA72M10 MF-545	HSA72M10 MF-550
Rated Maximum Power (Pmax) [W]	530	535	540	545	550
Open Circuit Voltage (Voc) [V]	49.30	49.45	49.60	49.75	49.90
Maximum Power Voltage (Vmp) [V]	41.31	41.47	41.64	41.80	41.96
Short Cicuit Current (Isc) [A]	13.72	13.79	13.86	13.93	14.00
Maximum Power Current (Imp) [A]	12.83	12.90	12.97	13.04	13.11
Module Efficiency [%]	20.5	20.7	20.9	21.1	21.3
Power Tolerance	0~+5W				
Temperature Coefficient of Isc (α_Isc)	+0.045%/C°				
Temperature Coefficient of Voc (β_Voc)	-0.275%/C°				
Temperature Coefficient of Pmax (γ_Pmp)	-0.350%/C°				
STC (Standard Test Conditions)	Irradiance 1000W/m² Cell Temperature 25C, AM=1.5 (IEC 60904-3)				

Electrical Parameters At NMOT

Module Type	HSA72M10 MF-530	HSA72M10 MF-535	HSA72M10 MF-540	HSA72M10 MF-545	HSA72M10 MF-550
Rated Max Power (Pmax) [W]	401	405	408	412	416
Open Circuit Voltage (Voc) [V]	46.18	46.31	46.43	46.55	46.68
Max Power Voltage (Vmp) [V]	38.57	38.78	38.99	39.20	39.43
Short Circuit Current (Isc) [A]	11.01	11.05	11.09	11.13	11.17
Max Power Current (Imp) [A]	10.39	10.43	10.47	10.51	10.55
NMOT (Nominal Module Operating Temperature)	Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s, AM1.5				

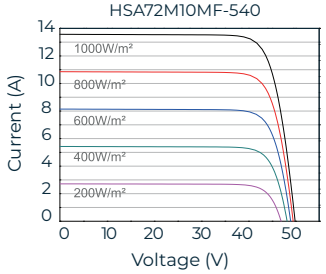
Operating Conditions

Maximum System Voltage	1000V/1500V DC
Operating Temperature	-40C°~+85C°
Maximum Series Fuse Rating	25A
Max. Static Load, Front*(Snow) Max. Static Load, Back*(Wind)	5400Pa(112lb/ft²) 2400Pa(50lb/ft²)
NMOT	45±2C°
Safety Class	Class Ⅱ
Fire Performance	UL Type 1

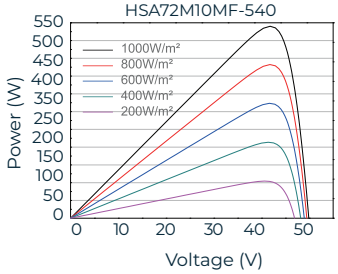
*In tracker installations; Maximum Static Load, Front Side 2400Pa, Maximum Static Load, Back Side 2400Pa

Characteristics

Current - Voltage Curve
HSA72M10MF-540



Power - Coltage Curve
HSA72M10MF-540



Current - Voltage Curve
HSA72M10MF-540