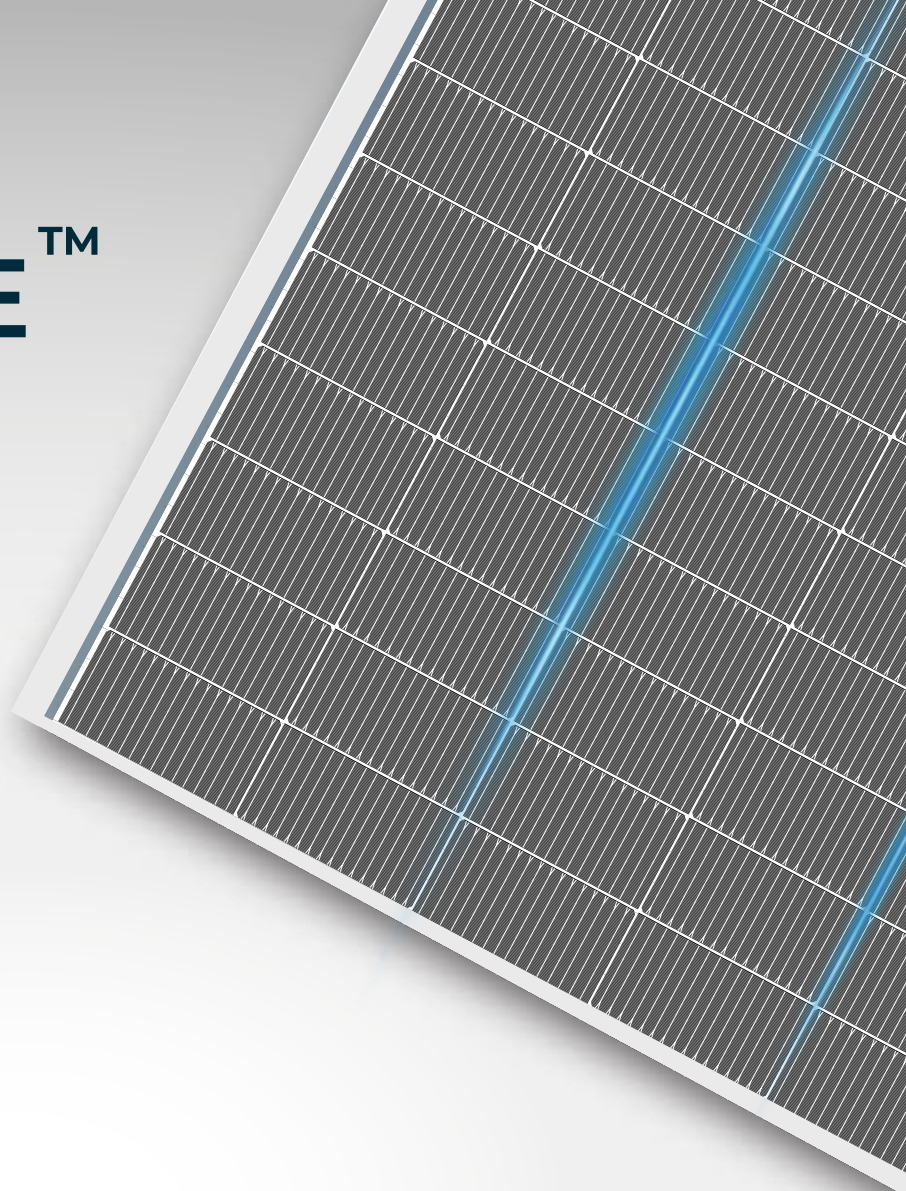


# BLUE PINE™

## N-Type Bifacial PV Module HSA72M10GGNS

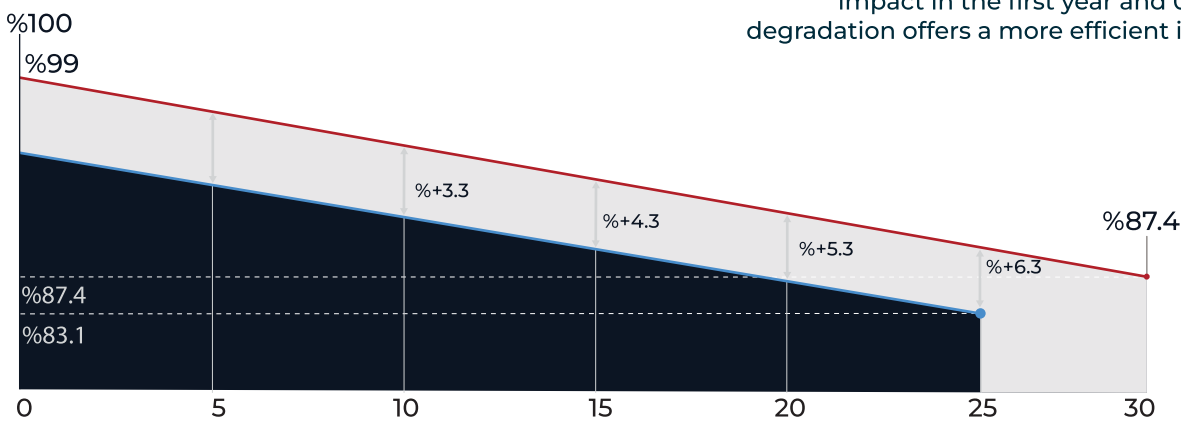
560-570 Watt SMBB

-  TOPCon Technology
-  16 BB Technology
-  Long-Lasting Yield Guarantee
-  Lower Annual Power Loss
-  Better Low Light Performance
-  Lower Temperature Coefficient



### Superior Warranty

- 15-year product warranty
- 30-year linear power output warranty
- 0,4% Annual Degradation



- N-type Bifacial Blue Pine Power Warranty
- Standard Module Linear Power Warranty

### Low Electricity Generation Cost (LCOE)

Solar module with the highest Watt/m<sup>2</sup> value. Offers a more advantageous BOS cost in land applications.

### Long Life-High Efficiency

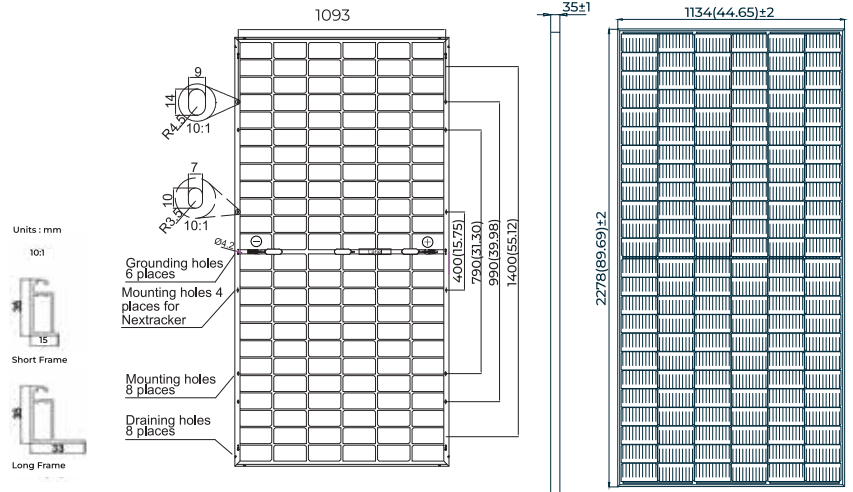
The lower temperature coefficient  $\leq 1\%$  LID impact in the first year and 0.4% annual degradation offers a more efficient investment.



**Specifications**

**Mechanical Diagrams**

<b>Cell</b>	16 BB N-Type
<b>Weight</b>	32.7 kg 72.09 lbs
<b>Dimensions</b>	2278 mm×1134 mm×35 mm 89.69×44.65×1.38 inches
<b>Cable Cross Section Size</b>	4mm <sup>2</sup> (IEC) , 12 AWG(UL)
<b>No Of Cells</b>	144(6×24)
<b>Junction Box</b>	IP68, 3 Diodes
<b>Connector</b>	QC 4.10(1000V) QC 4.10-35(1500V)
<b>Cable Length</b> (Including Connector)	Portrait: 500mm
<b>Front Glass / Back Glass</b>	2.0mm/2.0mm
<b>Packaging Configuration</b>	30 pcs/Pallet 600pcs/40ft Container



**Electrical Parameters At STC**

Module Type	HSA72M10 GGNS-560	HSA72M10 GGNS-565	HSA72M10 GGNS-570
<b>Rated Maximum Power (Pmax) [W]</b>	560	565	570
<b>Open Circuit Voltage (Voc) [V]</b>	50.67	50.87	51.07
<b>Maximum Power Voltage (Vmp) [V]</b>	41.95	42.14	42.34
<b>Short Circuit Current (Isc) [A]</b>	14.13	14.19	14.25
<b>Maximum Power Current (Imp) [A]</b>	13.34	13.41	13.48
<b>Module Efficiency [%]</b>	21.68	21.87	22.07
<b>Power Tolerance</b>	45°C(±2°C)		
<b>Temperature Coefficient of Isc (α<sub>Isc</sub>)</b>	-0.26%/°C		
<b>Temperature Coefficient of Voc (β<sub>Voc</sub>)</b>	+0.046%/°C		
<b>Temperature Coefficient of Pmax (γ<sub>Pmp</sub>)</b>	-0.30%/°C		
<b>STC (Standard Test Conditions)</b>	irradiance 1,000 W/m <sup>2</sup> ; AM 1.5; module temperature 25°C. Pmax Sorting : 0~5W. Measuring Tolerance: ±3%.		

**Remark** Electrical data do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

**Electrical Characteristics with different rear side power gain**

**Operating Conditions**

Module Type	HSA72M10 GGNS-570	HSA72M10 GGNS-570	HSA72M10 GGNS-570	HSA72M10 GGNS-570	Maximum System Voltage	1500V DC
<b>Rated Max Power (Pmax) [W]</b>	599	628	684	713	<b>Operating Temperature</b>	-40°C~+85°C°
<b>Open Circuit Voltage (Voc) [V]</b>	51.07	51.07	51.11	51.11	<b>Maximum Series Fuse Rating</b>	30 A
<b>Max Power Voltage (Vmp) [V]</b>	42.34	42.34	42.29	42.29	<b>Max. Static Load, Front*(Snow) Max. Static Load, Back*(Wind)</b>	+5400/-2400 Pa +113 /-50 psf
<b>Short Circuit Current (Isc) [A]</b>	14.96	15.68	17.10	17.81	<b>NMOT</b>	45±2°C°
<b>Max Power Current (Imp) [A]</b>	14.15	14.83	16.18	16.85	<b>Bifaciality**</b>	%80±%10
<b>Pmax Gain</b>	5%	10%	20%	25%	<b>Fire Performance</b>	Class C for IEC and TYPE 29 for U

\*Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s, AM1.5  
\*\*Bifaciality=Back / Front

**Characteristics**

