

640~670 Watt

HORAY



HS 192R-144 BN-D Nova BC Bifacial Modules



BC Technology

Relocate all electrical contacts to the rear side, eliminating front-side shading to maximize light absorption and power generation.



Anti-Shading Technology

With anti-shading technology, complex environments are no obstacle to generating more power.



Better Weather Adaptability

Excellent low light performance, lower temperature coefficients and power loss under high temperature.



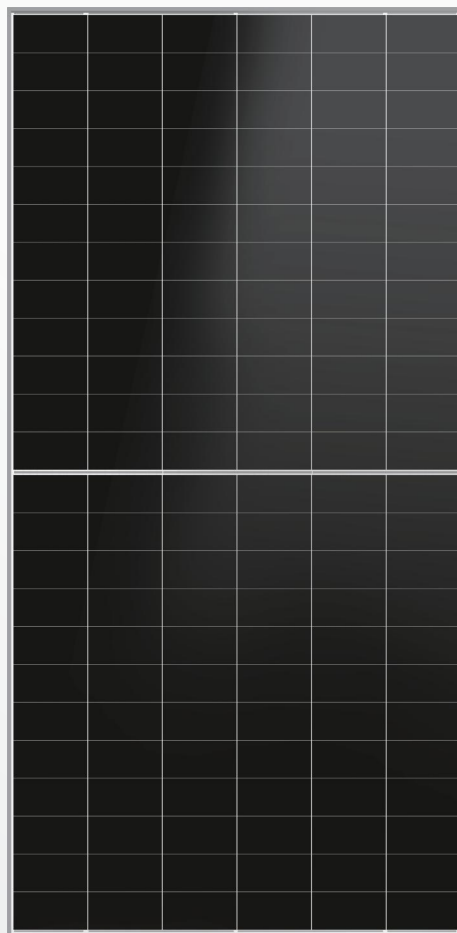
Lower Power Attenuation

Anti PID and negligible LID/LeTID attenuation, which can reduce power loss.



Ideal Choice For Utility Project

Lower BOS cost, lower LCOE, and improved ROI.



IEC61215:2021

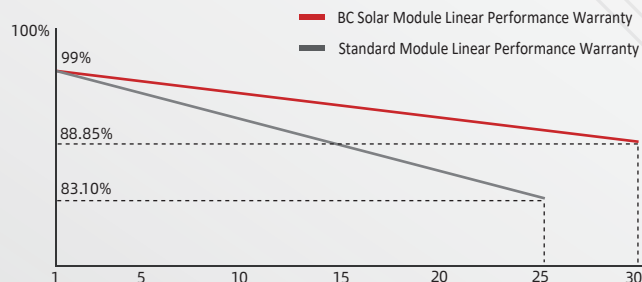
IEC61730:2023

ISO9001:2015 Quality Management System

ISO14001:2015 Environmental Management System

ISO45001:2018 Occupational Health and Safety Management System

CE: Europe Standard



15-year product warranty



30-year linear power output warranty

HEADQUARTER: HORAY SOLAR CO., LTD.

GLOBAL MARKETING AND SERVICE: HORAY SOLAR GMBH

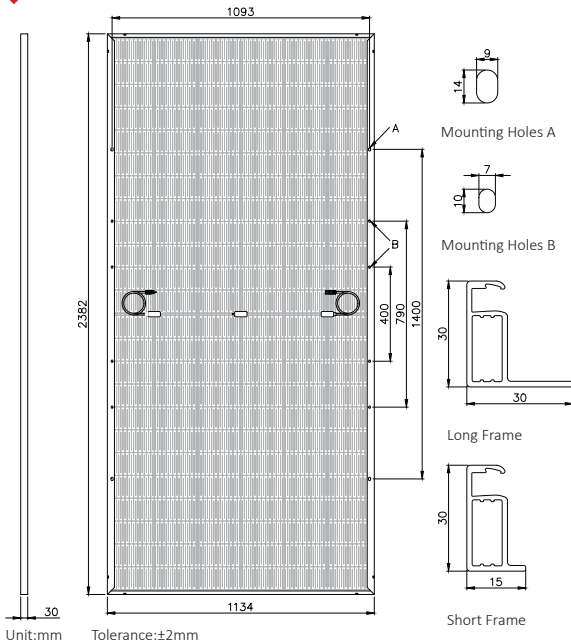
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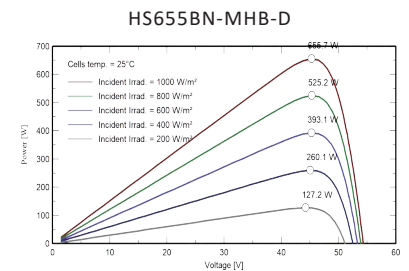
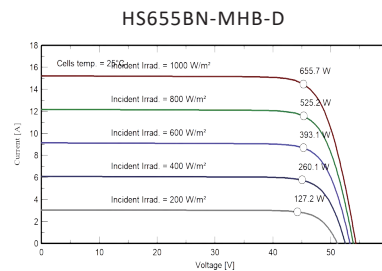
MECHANICAL DIAGRAMS



MECHANICAL PARAMETERS

Weight	32.5kg
Dimension	2382×1134×30mm
Cell Orientation	144(6×24)
Junction Box	IP68, three diodes
Output Cable	4mm ² , +400,-200mm/±1400mm (length can be customized)
Connector	MC4 compatible
Glass	2.0+2.0mm AR coated heat strengthened glass
Frame	Anodized aluminum alloy frame
Packaging	36pcs per pallet/720pcs per 40'HC

CURVES OF PV MODULE



ELECTRICAL CHARACTERISTICS

Module Type	HS640BN-MHB-D	HS645BN-MHB-D	HS650BN-MHB-D	HS655BN-MHB-D	HS660BN-MHB-D	HS665BN-MHB-D	HS670BN-MHB-D
Testing Condition	STC	STC	STC	STC	STC	STC	STC
Maximum Power(P _{max} /W)	640	645	650	655	660	665	670
Open Circuit Voltage(V _{oc} /V)	53.66	53.77	53.89	54.01	54.12	54.24	54.36
Short Circuit Current(I _{sc} /A)	14.87	14.96	15.04	15.12	15.21	15.29	15.37
Maximum Power Voltage(V _{mp} /V)	45.90	46.00	46.10	46.20	46.30	46.40	46.50
Maximum Power Current(I _{mp} /A)	13.94	14.02	14.10	14.18	14.25	14.33	14.41
Module Efficiency(%)	23.7	23.9	24.1	24.3	24.4	24.6	24.8

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

ELECTRICAL CHARACTERISTICS WITH DIFFERENT REAR SIDE POWER GAIN (BASED ON 655W)

P _{max} /W	V _{oc} /V	I _{sc} /A	V _{mp} /V	I _{mp} /A	P _{max} gain
688	54.03	16.82	46.22	14.89	5%
721	54.05	17.61	46.24	15.59	10%
755	54.07	18.43	46.26	16.32	15%
788	54.09	19.24	46.28	17.03	20%
821	54.11	20.03	46.30	17.73	25%

*Rear side power gain:The additional gain from the rear side compared to the power of the front side at the standard test condition.It depends on mounting (structure,height,tilt angle etc.)and albedo of the ground.

OPERATING PARAMETERS

Operational Temperature	-40°C~+85°C
Power Output Tolerance	0~3%
Maximum System Voltage	1500V
Maximum Series Fuse Rating	30A
Nominal Operating Cell Temperature	45±2°C
Protection Class	Class II
Bifaciality	70±5%
Fire Rating	IEC Class C

*The actual test value may be slightly deviated from the technical parameters due to the difference in test methods.

MECHANICAL LOADING

Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Hailstone Test	25mm Hailstone at the speed of 23m/s

TEMPERATURE RATINGS (STC)

Temperature Coefficient of I _{sc}	+0.05%/°C
Temperature Coefficient of V _{oc}	-0.20%/°C
Temperature Coefficient of P _{max}	-0.26%/°C

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.
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Specifications included in this datasheet are subject to change without notice.
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