

Premium Quality Mono-facial & Bifacial

Half-Cut Solar PV Modules

120
Cells

440W-475W



bluebird SOLAR
co-powering the future



MBB
Solar Cell
Technology



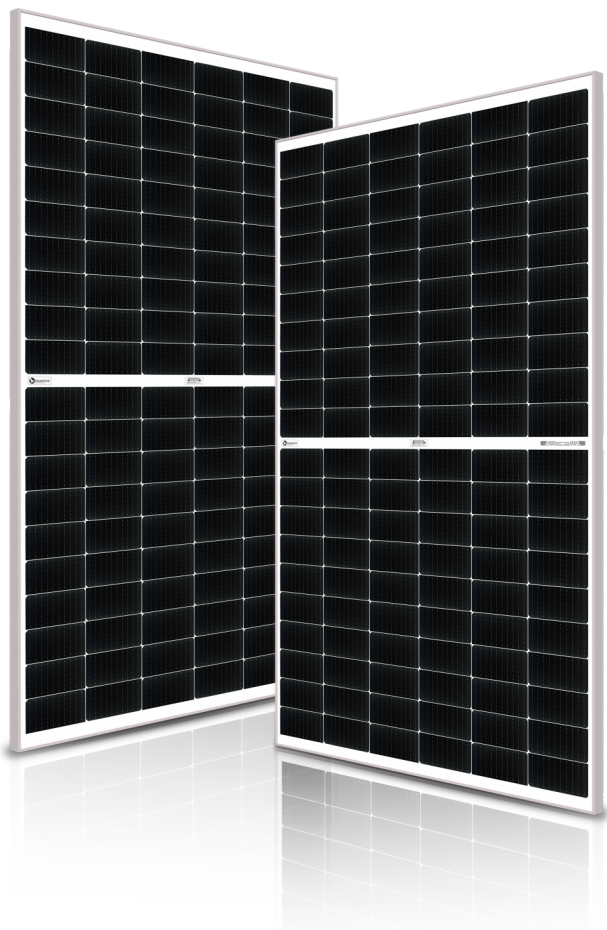
M10
120 Half
Cut Cells



Maximum
Efficiency
Upto 21.3%



+VE Power
Tolerance
0~+ 4.99wp



Multi-busbar technology based half-cut Mono PERC cells.



Better performance in partial shading & low light conditions.



Increased tolerance to microcracks and hotspots.



M10 sized solar cell for lower LCOE & Better ROI.



Reduced internal cell resistance & increased power output.



Double EL tested for 0% micro cracks



Superior module efficiency & better field reliability.

Why Bluebird ?

- ◆ Part of a 40+ years old reputed brand
- ◆ Widest range of PV modules
- ◆ Intensive R&D and 34 In house QCs
- ◆ Best in class BOM sourced from top suppliers
- ◆ First In industry 30 years warranty
- ◆ Robust supply chain & logistics
- ◆ Pre and post lamination EL testing

More Reliable Products

- | PID Resistant M10 cells and encapsulants.
- | Salt mist & ammonia resistant.
- | AR Coated tempered PV grade glass.
- | Excellent low light performance.
- | Certified to withstand harsh environmental conditions.



On Grid Large
Scale Utility
System



Industrial &
Commercial
Rooftop Systems



Residential
Rooftop
Systems



Solar Water
Pumps
(PM KUSUM)

ALMM
APPROVED



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TECHNICAL DATA



Module Series	BBS24MC440	BBS24MC445	BBS24MC450	BBS24MC455	BBS24MC460	BBS24MC465	BBS24MC470	BBS24MC475
ELECTRICAL CHARACTERISTICS (STC)								
Maximum Power Point Pmax (Wp)	440	445	450	455	460	465	470	475
Maximum Voltage Vmpp (V)	33.72	33.82	33.92	34.06	34.21	34.35	34.49	34.65
Maximum Current Imp (A)	13.05	13.16	13.27	13.36	13.45	13.54	13.63	13.72
Open Circuit Voltage Voc (V)	41.02	41.10	41.18	41.33	41.48	41.63	41.78	41.93
Short Circuit Current Isc (A)	13.73	13.79	13.85	13.93	13.98	14.03	14.08	14.13
Module Efficiency (%)	19.73	19.95	20.18	20.40	20.63	20.85	21.08	21.31

*STC Irradiance 1000W/m², Module Temperature 25°C and AM 1.5
 *No Negative Power Tolerance in Nominal Power

Test Uncertainty: ±3%

ELECTRICAL CHARACTERISTICS (NOCT)								
Maximum Power Point Pmax (Wp)	329.12	332.86	336.60	340.34	344.08	347.82	351.56	355.30
Maximum Voltage Vmpp (V)	31.35	31.44	31.53	31.66	31.80	31.93	32.06	32.21
Maximum Current Imp (A)	10.50	10.59	10.68	10.75	10.82	10.90	10.97	11.04
Open Circuit Voltage Voc (V)	38.35	38.43	38.50	38.64	38.78	38.92	39.06	39.20
Short Circuit Current Isc (A)	11.06	11.11	11.16	11.22	11.26	11.30	11.34	11.38

*NOCT-Irradiance 800 W/m², AM 1.5, Ambient Temperature 20°C and Wind Speed 1m/s
 *No Negative Power Tolerance in Nominal Power

Test Uncertainty: ±3%

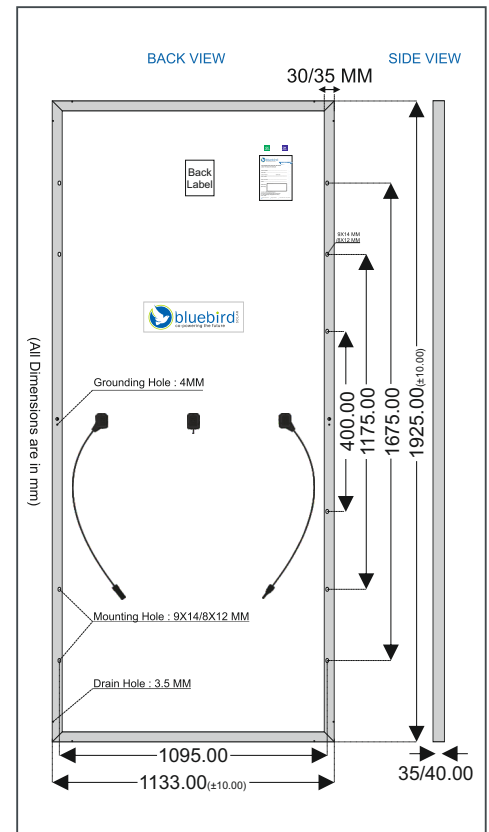
Temperature coefficient (Tc) and permissible operating conditions

Tc of Open Circuit Voltage (β)	-0.27%/°C
Tc of Short Circuit Current (α)	0.050%/°C
Tc of Power (γ)	-0.35%/°C
NOCT	45 ± 2°C
Maximum series fuse ratings	25A
Temperature Range	-40°C to +85°C
Maximum System Voltage	1500 V DC

Mechanical Data

Dimension (LxWxH)	1925mm x 1133mm x 35mm
Weight	21.3 Kg
Solar Cells (PID Free)	120 (10 x 6 x 2) Mono Cut Cells, 10BB, (91x182mm)
Junction Box	IP68, Split Junction Box with individual bypass diodes
Cables & Connectors	400 mm (+ve) and 400 mm (-ve) length cables, MC4 Compatible or MC4 Connectors
Superstrate	3.2 mm high transmission low iron tempered glass, AR coated
Cell Encapsulant	PID Free EVA (Ethylene Vinyl Acetate) - FC/UFC
Backsheet	Composite Film - White (Black & Transparent optional)
Frame	Silver Anodized Aluminum frame with twin wall profile
Application Class	Class A (safety class II)
Mechanical Load Test	Sustain heavy static load (2400 Pa & 5400 Pa)
Packaging	Standard 30 Modules per Pallet

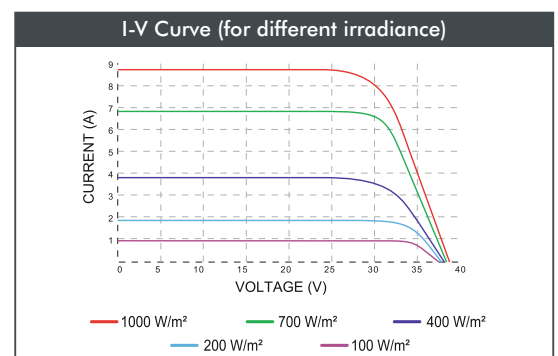
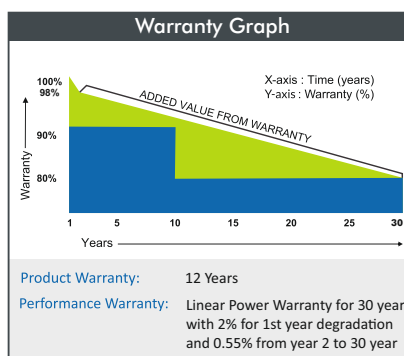
**Refer to Bluebird Solar's warranty documents for terms and conditions.
 Specification and electrical data included in this datasheet are subject to change without notice. Please confirm your requirements with the company representative while placing your order.
 Note: It is mandatory to make negative grounding of modules in all installation to avoid PID Issue.



Approvals and certifications	
Products:	ALMM, BIS, IEC 61215/S 14286, IEC 61730-I & II, IEC 61701, IEC 61853, IEC 62804, IEC 62716
Manufacturing:	ISO 9001:2015, ISO 14001: 2015, ISO 45001:2018

*some certifications are under process

Packaging Information			
Truck Type	Pallet/Truck	Modules/Truck	KW/Truck(Approx)
19 ft.	10	300	135
22 ft.	12	360	162
32 ft.	18	540	243
40 ft.	22	660	297
Container Type	Pallet/Truck	Module/Truck	KW/Truck(Approx)
40 HQ	22	660	297



Above quantities are subject to variation depending on miscellaneous Factors | Trucks under consideration are all open body trucks. | Customized packaging available.

CORPORATE OFFICE

70, Rajasthani Udyog Nagar Industrial Area, G.T. Karnal Road,
 (Oppsite Jahangirpuri Metro Station) Delhi-110033

WORKS

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