

# ELITE SERIES

## N-TYPE

BiN-03-680 to BiN-03-715

Framed Dual Glass Bifacial module

# WAAREE®

One with the Sun



Highest reliability & enhanced crack tolerance MBB module



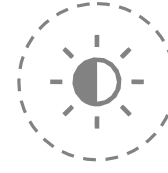
Sustain heavy snow & wind loads (5400 Pa & 2400 Pa)



Best in class thermal coefficients



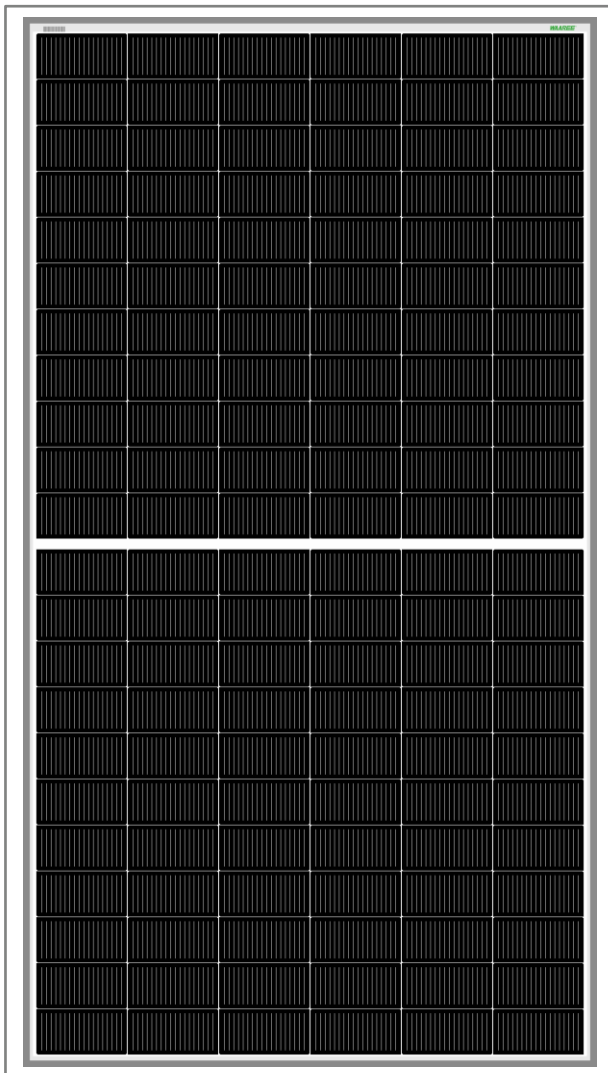
Highest commercial gains, lower LCOE



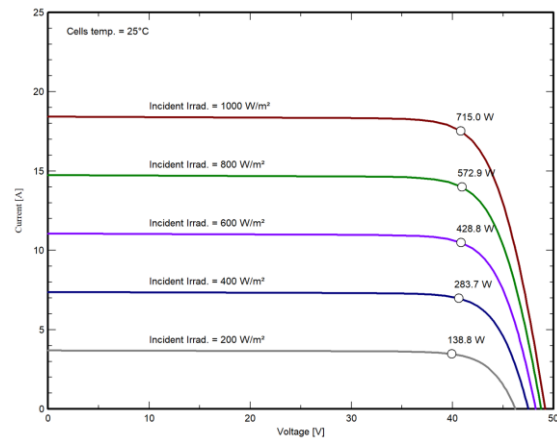
Better weak light performance



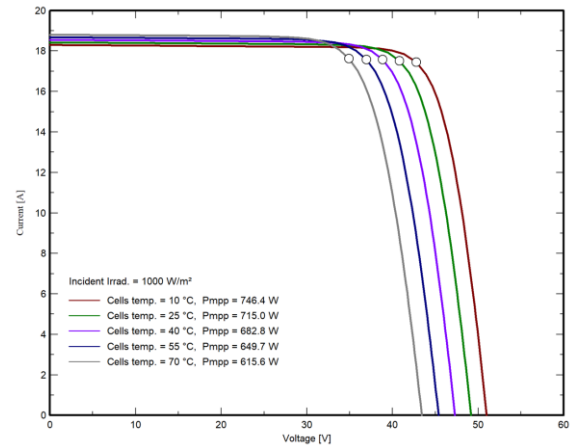
Excellent PID resistance



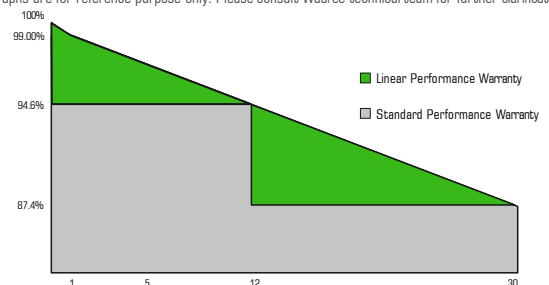
### I-V VARIATION WITH IRRADIANCE



### I-V VARIATION WITH TEMPERATURE



The Graphs are for reference purpose only. Please consult Waaree technical team for further clarifications.



ISO 9001:2015 | ISO 14001:2015 | ISO 45001:2018  
Independent assessment of factories by BLACK & VEATCH

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### ELECTRICAL CHARACTERISTICS

Models	Pmax (W)		Vmp (V)		Imp (A)		Isc (A)		Voc (V)		Module Eff. (%)
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	
BiN-03-680	680	515.40	39.67	36.98	17.14	13.81	18.16	14.64	47.78	45.39	21.89
BiN-03-685	685	519.20	39.87	37.16	17.18	13.85	18.20	14.67	47.98	45.58	22.05
BiN-03-690	690	523.00	40.09	37.37	17.21	13.87	18.23	14.69	48.18	45.77	22.21
BiN-03-695	695	526.80	40.29	37.55	17.25	13.90	18.27	14.73	48.38	45.96	22.37
BiN-03-700	700	530.60	40.49	37.73	17.29	13.94	18.31	14.76	48.58	46.15	22.53
BiN-03-705	705	534.40	40.68	37.91	17.33	13.97	18.36	14.80	48.77	46.33	22.70
BiN-03-710	710	538.20	40.90	38.12	17.36	13.99	18.39	14.82	48.97	46.52	22.86
BiN-03-715	715	542.00	41.12	38.32	17.39	14.02	18.42	14.85	49.17	46.71	23.02

\*Standard Test Conditions (STC) - 1000 W/m<sup>2</sup> irradiance, Air Mass 1.5 and 25°C cell temperature. Nominal Operating Cell Temperature (NOCT) - 800 W/m<sup>2</sup> irradiance, Air Mass 1.5, Ambient temperature 20°C and Wind speed 1 m/s. Average power reduction of 4.5% at 200 W/m<sup>2</sup> as per IEC 60904-1. Measuring Uncertainty ± 3%.

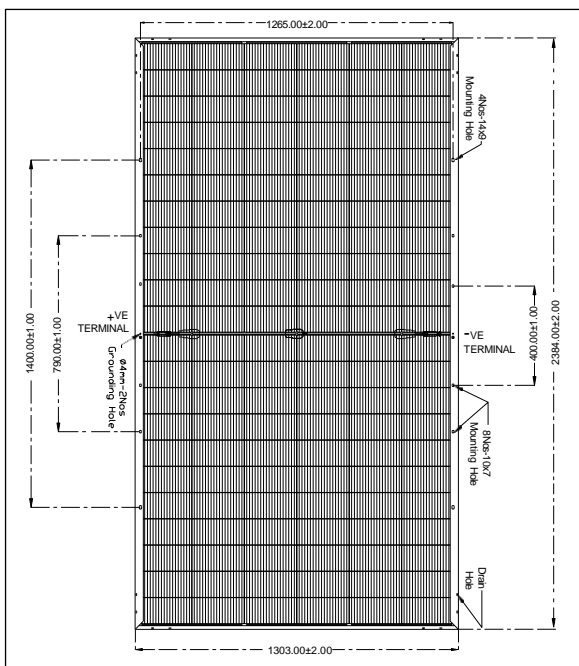
System Voltage	1500 V	Series Fuse Rating	35 A
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### BI-FACIAL OUTPUT - BACKSIDE POWER GAIN\*

		BiN-03-680	BiN-03-685	BiN-03-690	BiN-03-695	BiN-03-700	BiN-03-705	BiN-03-710	BiN-03-715
15%	Power Output (W)	782	788	794	799	805	811	817	822
	Module Efficiency (%)	25.17	25.36	25.54	25.73	25.91	26.11	26.29	26.47
20%	Power Output (W)	816	822	828	834	840	846	852	858
	Module Efficiency (%)	26.27	26.46	26.65	26.84	27.04	27.24	27.43	27.62
25%	Power Output (W)	850	856	863	869	875	881	888	894
	Module Efficiency (%)	27.36	27.56	27.76	27.96	28.16	28.38	28.58	28.78
30%	Power Output (W)	884	891	897	904	910	917	923	930
	Module Efficiency (%)	28.46	28.67	28.87	29.08	29.29	29.51	29.72	29.93

\*The bifacial gains are dependant on the power plant design and location

### DESIGN SPECIFICATIONS



### THERMAL CHARACTERISTICS

Temperature coefficient of Current (Isc), $\alpha$ (%/°C)	0.046
Temperature coefficient of Voltage (Voc), $\beta$ (%/°C)	-0.26
Temperature coefficient of Power (Pm), $\gamma$ (%/°C)	-0.30
NOCT (°C)	43 ± 2
Operating temperature range (°C)	-40 to 85
Bifaciality	80 ± 10%

### MECHANICAL CHARACTERISTICS

Length x Width x Thickness (L x W x T)	2384 mm (L) x 1303 mm (W) x 35 mm (T)
Weight	39 kgs
Solar Cells per Module (Units) / Arrangement	132 cells / (11x6    11x6)
Solar Cell Type & Size	G12 N-type TOPCon Bifacial
Front Glass (Material / Thickness)	2 mm Low Iron HTAR semi-tempered glass
Back Glass (Material / Thickness)	2 mm Low Iron Printed semi-tempered glass
Encapsulate	PID Free & UV Resistant
Junction Box (Protection degree / Material)	IP68 / Weatherproof PPO, 3 Diodes
Cable & Connector (Protection degree / Type)	IP68 rated / MC4 compatible
Cable cross - section & Length	4 mm <sup>2</sup> & 500mm
Frame	Anodized Aluminium Alloy

Waaree Energies Ltd. is amongst the top Solar Energy Companies and has the country's largest Solar PV Module manufacturing capacity of 12 GW. In addition, it is committed to provide top notch EPC services, project development, rooftop solutions, solar water pumps and also in an Independent Power Producer. Waaree has its presence in over 350+ locations nationally and 68 countries globally.

**12 Years Product Warranty • 30 Years Power Output Warranty**

- The electrical data given here is for reference purpose only.
- Please confirm your exact requirements with the sales representative while placing your order.
- Refer installation Manual instructions & Waaree warranty statement for terms & conditions.
- Waaree Reserves the right to change the specifications without prior notice.

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