

# ELITE SERIES N TOPCON TECHNOLOGY

BiN-19-370 to BiN-19-390

Framed Glass Transparent Backsheet Bifacial module

**WAAREE**<sup>®</sup>  
One with the Sun



Highest reliability & enhanced crack tolerance MBB module



High Power Output



Best in class thermal coefficients



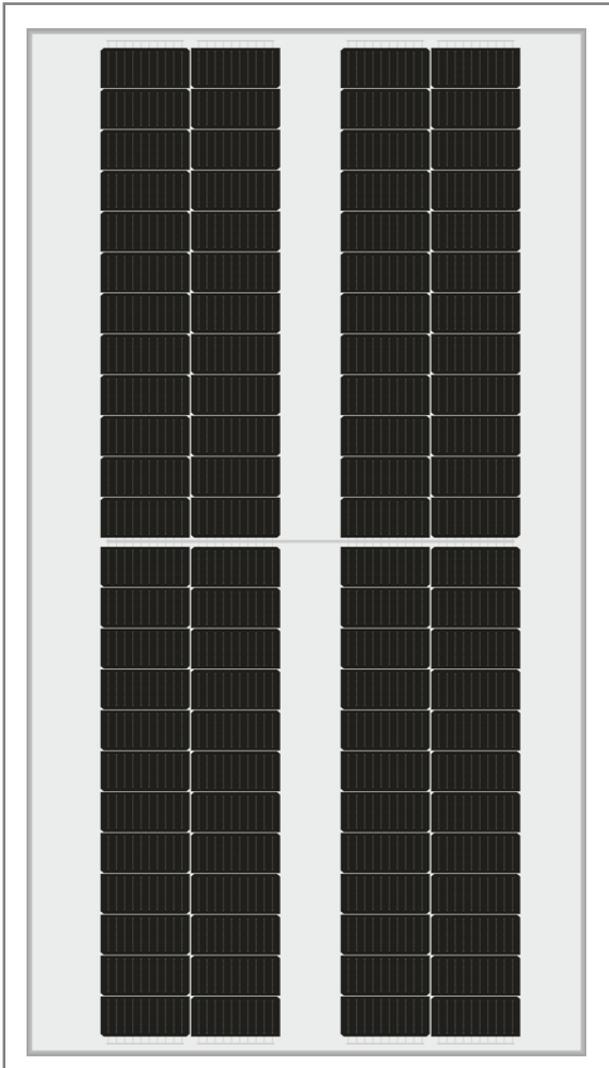
Highest commercial gains, lower LCOE



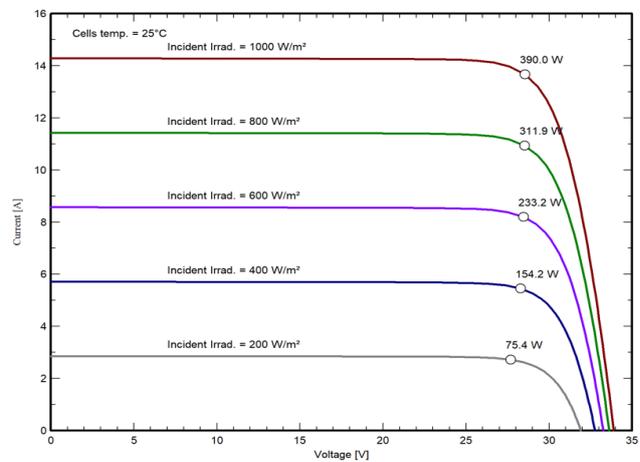
Better weak light performance



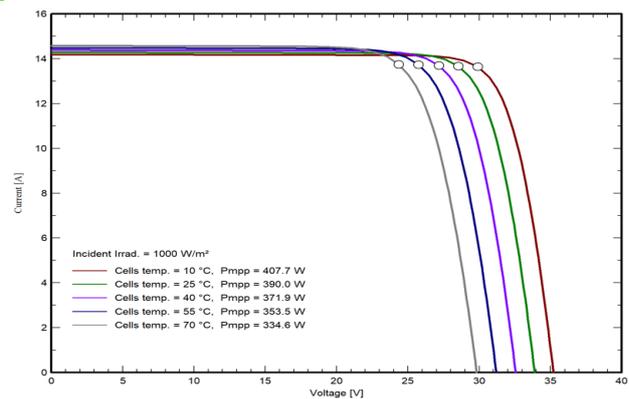
Excellent PID resistance



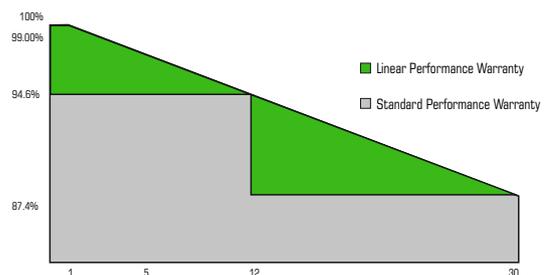
## I-V VARIATION WITH IRRADIANCE



## 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-19-370	370	279.7	28.01	26.24	13.21	10.65	13.99	11.27	33.01	31.52	14.37
BiN-19-375	375	283.5	28.24	26.46	13.28	10.70	14.06	11.33	33.24	31.74	14.57
BiN-19-380	380	287.3	28.46	26.67	13.35	10.76	14.13	11.39	33.46	31.96	14.76
BiN-19-385	385	291.1	28.69	26.88	13.42	10.82	14.20	11.44	33.69	32.17	14.96
BiN-19-390	390	294.8	28.89	27.07	13.50	10.88	14.28	11.51	33.89	32.36	15.15

\*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%.

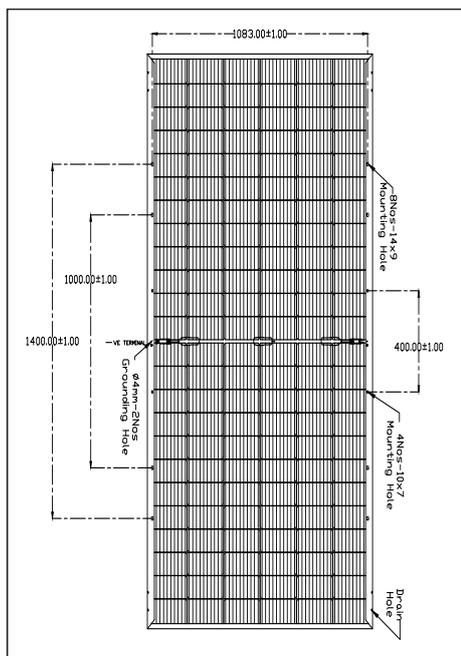
System Voltage	1500 V	Series Fuse Rating	30 A
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## BI-FACIAL OUTPUT - BACKSIDE POWER GAIN\*

		BiN-19-370	BiN-19-375	BiN-19-380	BiN-19-385	BiN-19-390
15%	Power Output (W)	426	431	437	443	449
	Module Efficiency (%)	16.53%	16.75%	16.98%	17.20%	17.42%
20%	Power Output (W)	444	450	456	462	468
	Module Efficiency (%)	17.25%	17.48%	17.71%	17.95%	18.18%
25%	Power Output (W)	463	469	475	481	488
	Module Efficiency (%)	17.97%	18.21%	18.45%	18.70%	18.94%
30%	Power Output (W)	481	488	494	501	507
	Module Efficiency (%)	18.69%	18.94%	19.19%	19.44%	19.70%

\*The bifacial gains are dependent 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)	-0.31
NOCT (°C)	43 ± 2
Operating temperature range (°C)	-40 to 85

## MECHANICAL CHARACTERISTICS

Length x Width x Thickness (L x W x T)	2272 mm (L) x 1133 mm (W) x 35 mm (T)
Weight	27.5 kgs
Solar Cells per Module (Units) / Arrangement	96 cells / (12x4     12x4)
Solar Cell Type & Size	TOPCon N-type Mono Bifacial, 91x182mm
Front / Back Glass (Material / Thickness)	3.2 mm Low Iron ARC Tempered glass
Encapsulate	PID Free & UV Resistant
Junction Box (Protection degree / Material)	IP68 / Weatherproof PPO
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 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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