

# AHNAY SERIES

Bi-33-420 to Bi-33-455

Framed glass transparent backsheet bifacial module

**WAAREE**<sup>®</sup>

One with the Sun



Highest reliability & enhanced crack tolerant 9BB module



Better performance under all climatic conditions



Split junction box



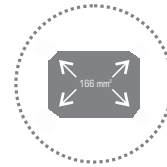
Reduced power losses up to 1/4 times



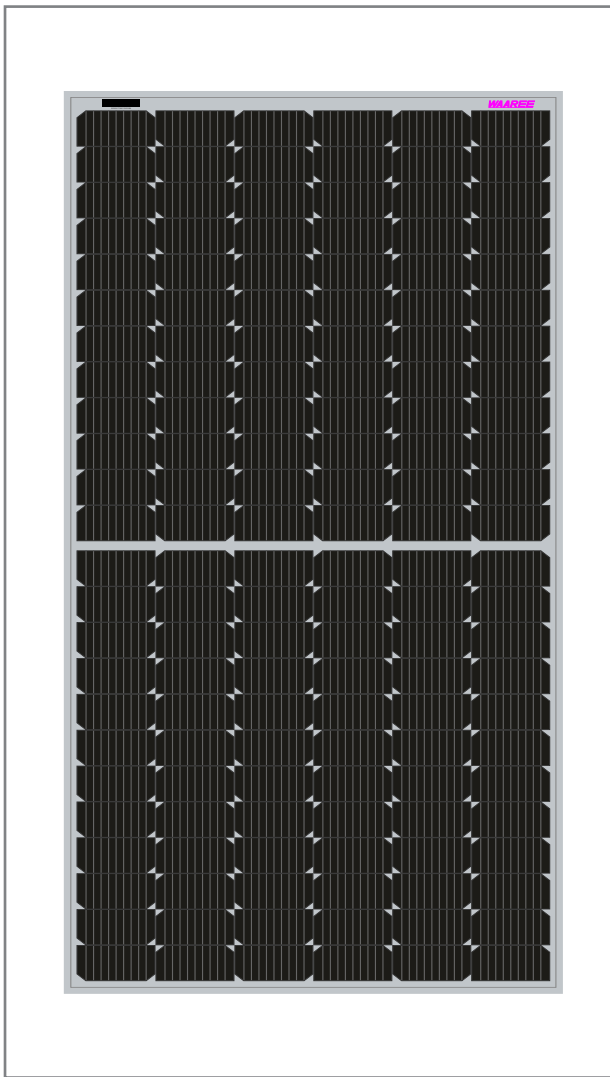
PID resistant with long term reliability



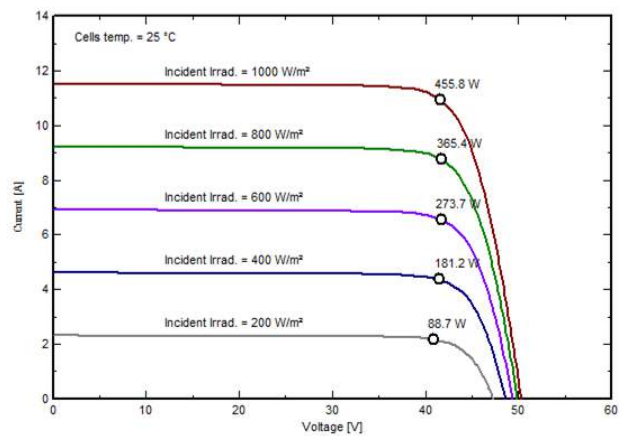
Sustain heavy wind & snow loads (2400 pa & 5400 pa)



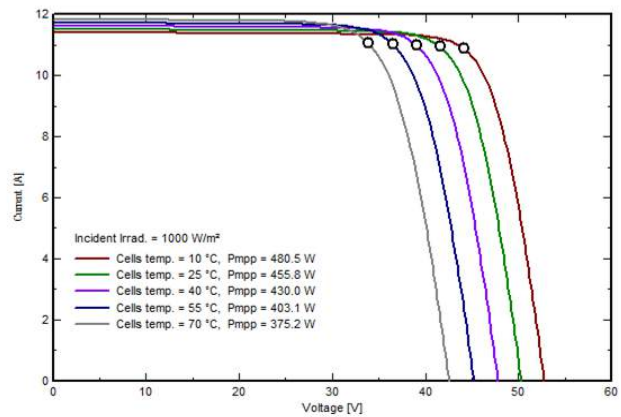
M6 Mono PERC cells



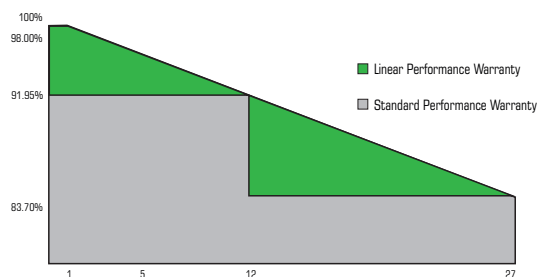
## I-V VARIATION WITH IRRADIANCE



## I-V VARIATION WITH TEMPERATURE



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



# AHNAY SERIES

Bi-33-420 to Bi-33-455

Framed glass transparent backsheet bifacial module

**WAAREE**<sup>®</sup>

One with the Sun

## 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	
Bi-33-420	420	314.7	40.61	37.40	10.35	8.42	11.04	8.93	49.01	45.70	19.32
Bi-33-425	425	318.4	40.81	37.60	10.42	8.47	11.11	8.99	49.19	45.80	19.55
Bi-33-430	430	322.2	41.01	37.70	10.49	8.55	11.19	9.05	49.39	46.00	19.78
Bi-33-435	435	326.0	41.21	37.90	10.56	8.60	11.25	9.10	49.59	46.20	20.01
Bi-33-440	440	329.8	41.41	38.10	10.63	8.65	11.34	9.17	49.69	46.30	20.24
Bi-33-445	445	333.3	41.61	38.20	10.70	8.72	11.41	9.23	49.89	46.50	20.47
Bi-33-450	450	336.8	41.81	38.50	10.77	8.75	11.46	9.27	50.10	46.70	20.70
Bi-33-455	455	340.5	42.02	38.70	10.84	8.80	11.53	9.32	50.30	46.80	20.93

\*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%.

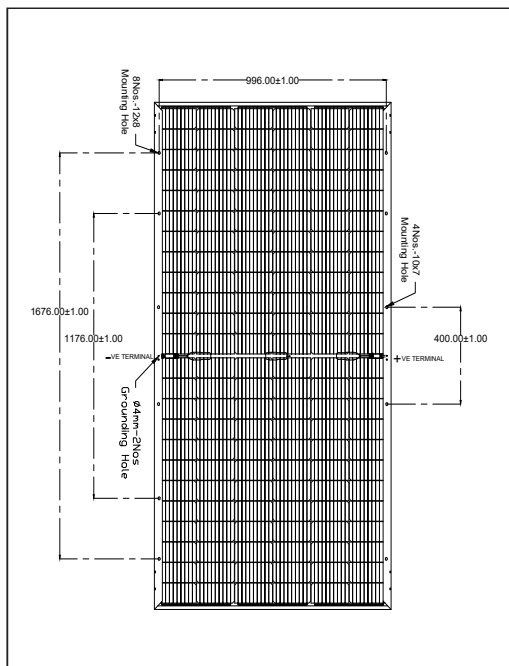
System Voltage	1500 V	Series Fuse Rating	25 A
----------------	--------	--------------------	------

## BI-FACIAL OUTPUT - BACKSIDE POWER GAIN

		Bi-33-420	Bi-33-425	Bi-33-430	Bi-33-435	Bi-33-440	Bi-33-445	Bi-33-450	Bi-33-455
15%	Power Output (W)	483	489	495	500	506	512	518	523
	Module Efficiency (%)	22.22%	22.49%	22.75%	23.02%	23.28%	23.54%	23.81%	24.07%
20%	Power Output (W)	504	510	516	522	528	534	540	546
	Module Efficiency (%)	23.19%	23.46%	23.74%	24.02%	24.29%	24.57%	24.84%	25.12%
25%	Power Output (W)	525	531	538	544	550	556	563	569
	Module Efficiency (%)	24.15%	24.44%	24.73%	25.02%	25.30%	25.59%	25.88%	26.17%
30%	Power Output (W)	546	553	559	566	572	579	585	592
	Module Efficiency (%)	25.12%	25.42%	25.72%	26.02%	26.32%	26.62%	26.91%	27.21%

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

## DESIGN SPECIFICATIONS



## THERMAL CHARACTERISTICS

Temperature coefficient of Current (Isc), α (%/°C)	0.055
Temperature coefficient of Voltage (Voc), β (%/°C)	-0.285
Temperature coefficient of Power (Pm), γ (%/°C)	-0.365
NOCT (°C)	43 ± 2
Operating temperature range (°C)	-40 to 85

## MECHANICAL CHARACTERISTICS

Length x Width x Thickness (L x W x T)	2094 mm (L) x 1038 mm (W) x 35 mm (T)
Weight	23.5 kgs
Solar Cells per Module (Units) / Arrangement	144 cells / (12x6   12x6)
Solar Cell Type & Size	Mono PERC Bifacial, 83 x 166 mm
Front Glass	3.2 mm Low Iron and Tempered glass with ARC coating
Rear Cover	Transparent Backsheet
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 5 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 325+ locations nationally and 68 countries globally.

**12 Years Product Warranty • 27 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.z

[www.waaree.com](http://www.waaree.com)