

ARKA SERIES

WSMD-420 to WSMD-455

WAAREE®

One with the Sun



Highest reliability & enhanced crack tolerant 9BB module



Better performance under all climatic conditions



Split junction box



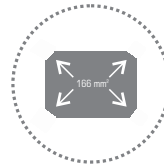
Reduced power losses up to 1/4 times



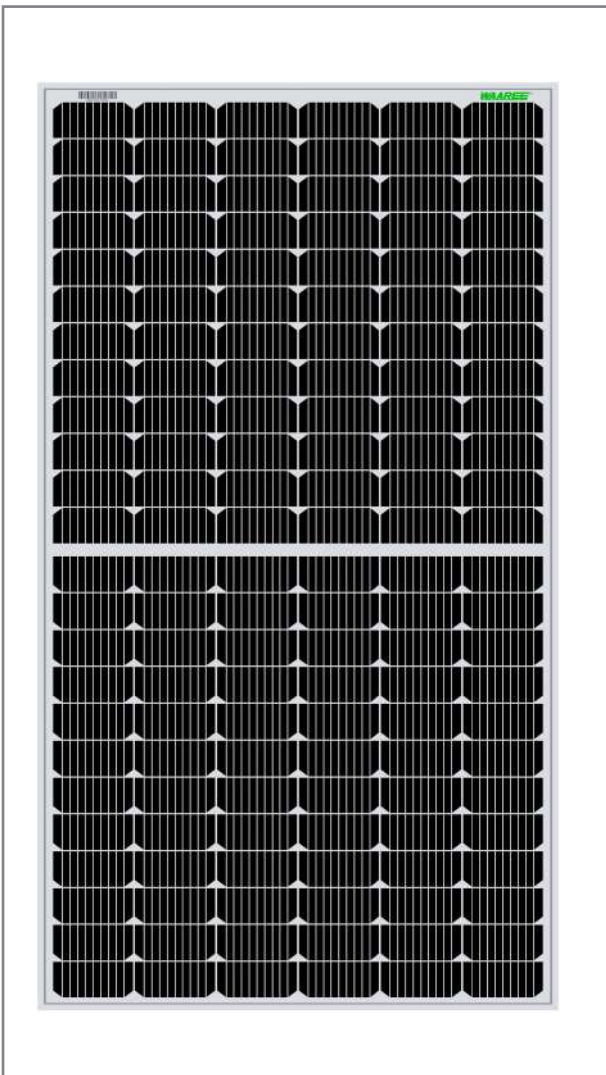
PID resistant with long term reliability



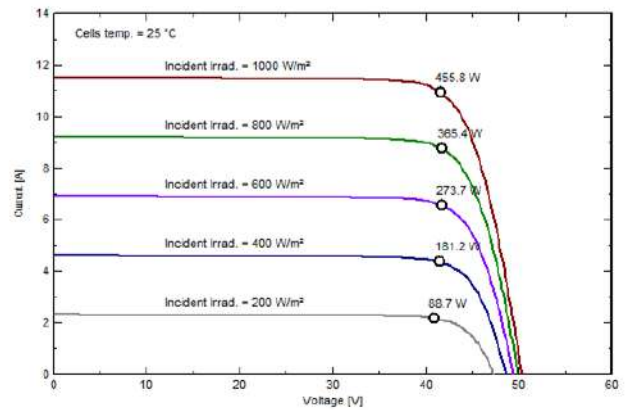
Sustain heavy wind & snow loads (2400 pa & 5400 pa)



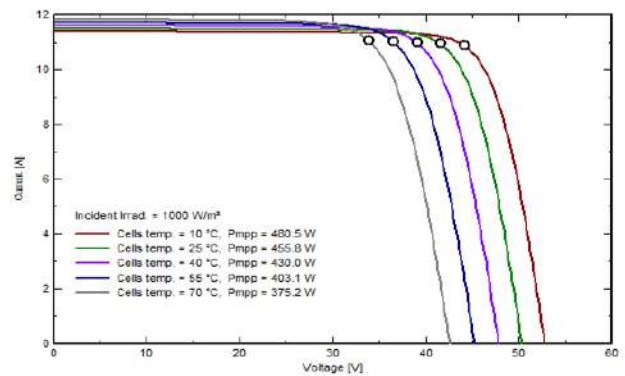
M6 Mono PERC cells



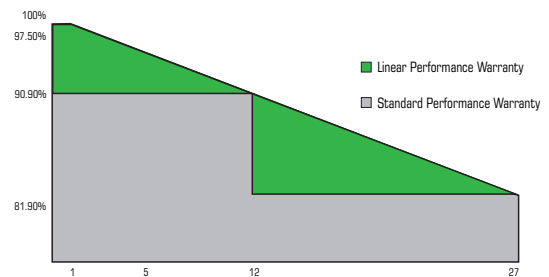
I-V VARIATION WITH IRRADIANCE



I-V VARIATION WITH TEMPERATURE



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



ARKA SERIES

WSMD-420 to WSMD-455

WAAREE[®]

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	
WSMD-420	420	314.7	40.61	37.40	10.35	8.42	11.04	8.93	49.01	45.70	19.32
WSMD-425	425	318.4	40.81	37.60	10.42	8.47	11.11	8.99	49.19	45.80	19.55
WSMD-430	430	322.2	41.01	37.70	10.49	8.55	11.19	9.05	49.39	46.00	19.78
WSMD-435	435	326.0	41.21	37.90	10.56	8.60	11.25	9.10	49.59	46.20	20.01
WSMD-440	440	329.8	41.41	38.10	10.63	8.65	11.34	9.17	49.69	46.30	20.24
WSMD-445	445	333.3	41.61	38.20	10.70	8.72	11.41	9.23	49.89	46.50	20.47
WSMD-450	450	336.8	41.81	38.50	10.77	8.75	11.46	9.27	50.10	46.70	20.70
WSMD-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/m² irradiance, Air Mass 1.5 and 25°C cell temperature. Nominal Operating Cell Temperature (NOCT) - 800 W/m² irradiance, Air Mass 1.5, Ambient temperature 20°C and Wind speed 1 m/s. Average power reduction of 4.5% at 200 W/m² as per IEC 60904-1. Measuring Uncertainty ± 3%.

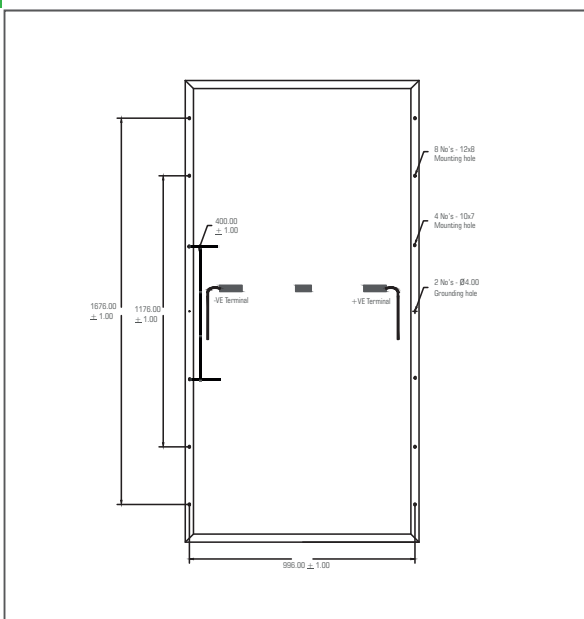
System Voltage	1500 V
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Series Fuse Rating	20 A
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MECHANICAL CHARACTERISTICS

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, 83 x 166 mm
Front Glass	3.2 mm Low Iron and Tempered glass with ARC coating
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 ² & 500mm
Frame	Anodized Aluminium Alloy

DESIGN SPECIFICATIONS



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.

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

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.

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ARKA SERIES

WSMD-515 to WSMD-545

WAAREE[®]

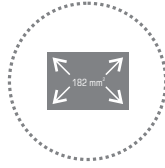
One with the Sun



Highest reliability & enhanced crack tolerant 10BB module



Module utilizing Half cut cell for optimum performance



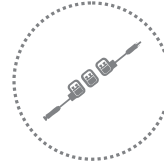
Highly efficient Mono PERC M10 cells



Best in class thermal coefficients



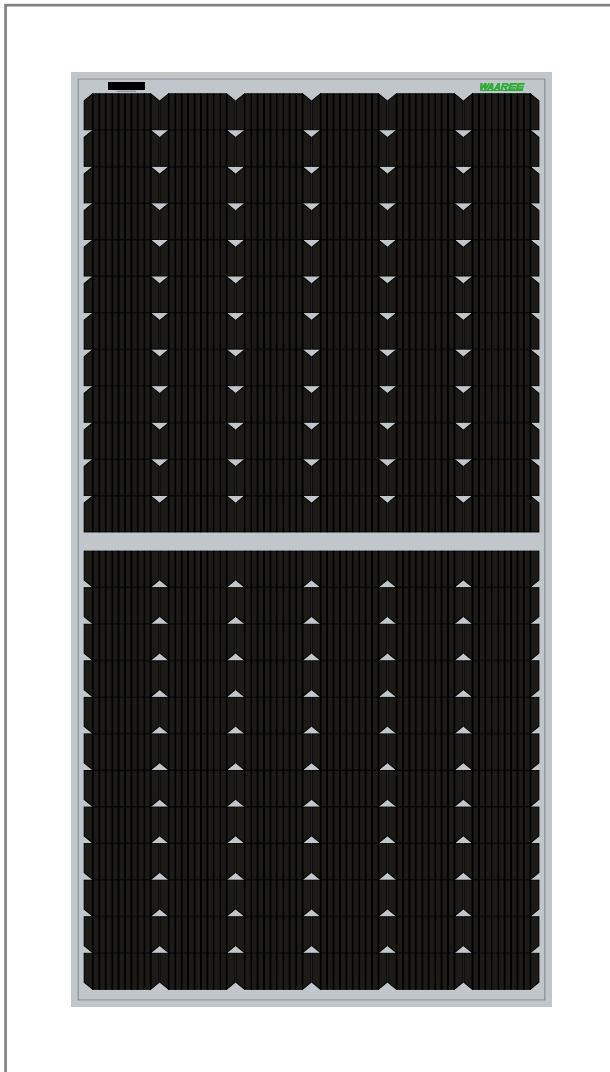
Highest commercial gains, lower LCOE



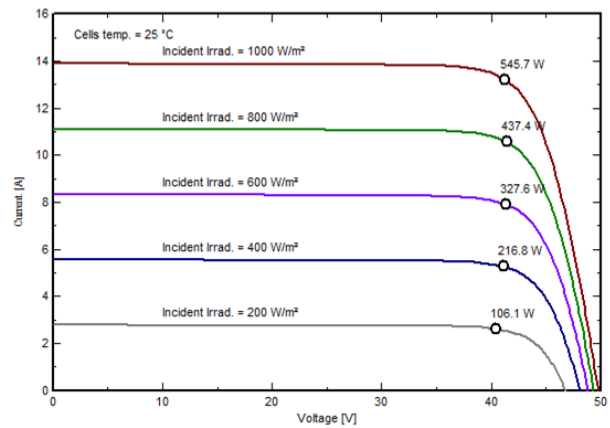
Split junction box improve heat dissipation



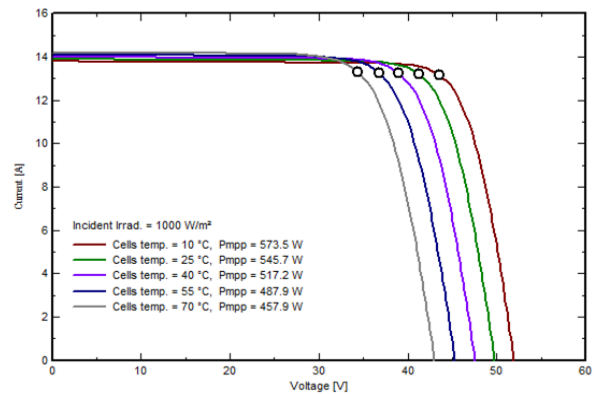
Increase shade tolerance



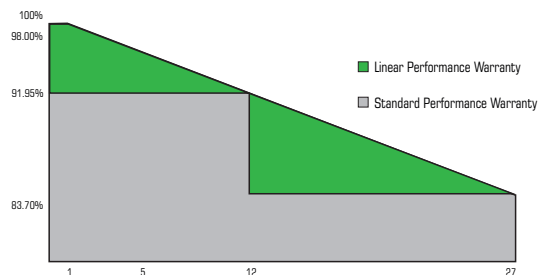
I-V VARIATION WITH IRRADIANCE



I-V VARIATION WITH TEMPERATURE



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ARKA SERIES

WSMD-515 to WSMD-545

WAAREE[®]

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	
WSMD-515	515	388.3	40.99	37.70	12.57	10.29	13.49	10.89	48.86	45.80	20.01
WSMD-520	520	391.9	41.14	37.90	12.65	10.34	13.55	10.94	49.01	46.00	20.20
WSMD-525	525	395.6	41.29	38.00	12.73	10.40	13.63	11.00	49.16	46.10	20.39
WSMD-530	530	399.2	41.45	38.20	12.80	10.45	13.69	11.05	49.31	46.20	20.59
WSMD-535	535	403.1	41.60	38.40	12.88	10.51	13.76	11.11	49.46	46.40	20.78
WSMD-540	540	406.7	41.75	38.50	12.95	10.56	13.83	11.16	49.61	46.50	20.98
WSMD-545	545	410.4	41.90	38.70	13.02	10.62	13.90	11.22	49.76	46.70	21.17

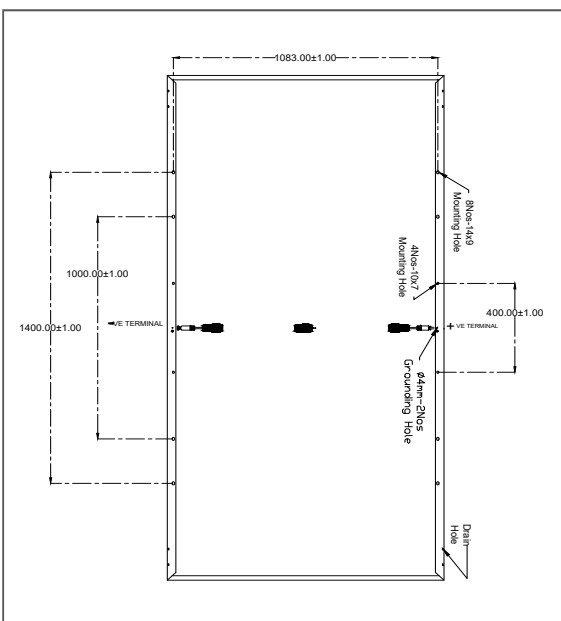
*Standard Test Conditions (STC) - 1000 W/m² irradiance, Air Mass 1.5 and 25°C cell temperature. Nominal Operating Cell Temperature (NOCT) - 800 W/m² irradiance, Air Mass 1.5, Ambient temperature 20°C and Wind speed 1 m/s. Average power reduction of 4.5% at 200 W/m² as per IEC 60904-1. Measuring Uncertainty ± 3%.

System Voltage	1500 V	Series Fuse Rating	25 A
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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	144 cells / (12x6 12x6)
Solar Cell Type & Size	Mono PERC, 91 x 182 mm
Front Glass	3.2 mm Low Iron and Tempered glass with ARC coating
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 ² & 500mm
Frame	Anodized Aluminium Alloy

DESIGN SPECIFICATIONS



12 Years Product Warranty • 27 Years Power Output Warranty

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- Refer installation Manual instructions & Waaree warranty statement for terms & conditions.
- Waaree Reserves the right to change the specifications without prior notice.z

THERMAL CHARACTERISTICS

Temperature coefficient of Current (Isc), α (%/°C)	0.05
Temperature coefficient of Voltage (Voc), β (%/°C)	-0.27
Temperature coefficient of Power (Pm), γ (%/°C)	-0.35
NOCT (°C)	43 ± 2
Operating temperature range (°C)	-40 to 85

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.

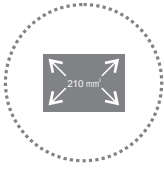
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ARKA SERIES

WSMD-580 to WSMD-600

WAAREE®

One with the Sun



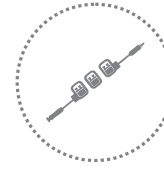
Full square
Mono PERC
M12 cells



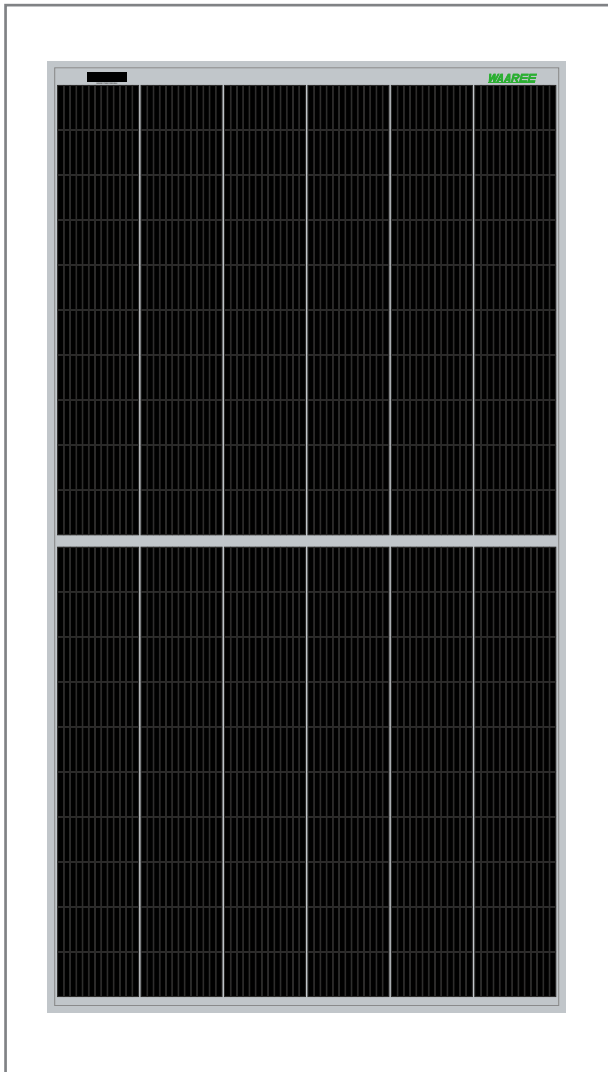
Best in class thermal
coefficients



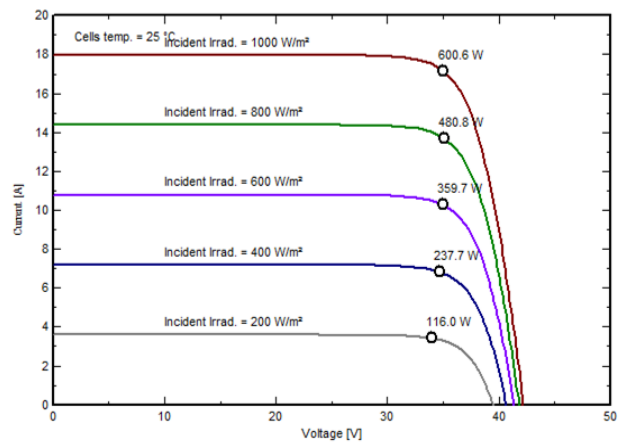
Split junction box
improve heat dissipation
& lower risk of hotspot



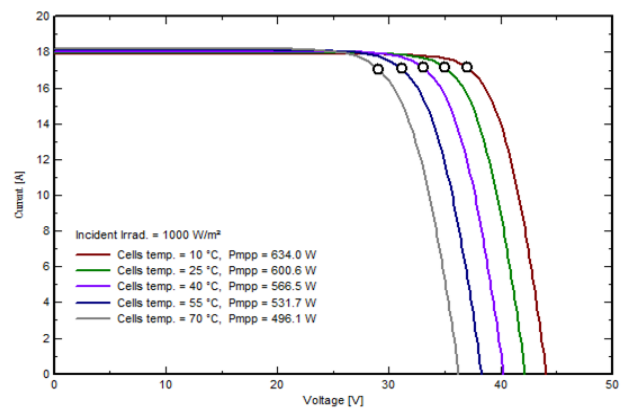
Increase
shade
tolerance



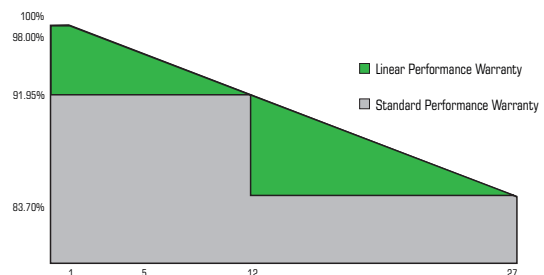
I-V VARIATION WITH IRRADIANCE



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

ARKA SERIES

WSMD-580 to WSMD-600

WAAREE[®]

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	
WSMD-580	580	436.2	34.21	32.20	16.96	13.53	17.73	14.29	41.56	39.10	20.35
WSMD-585	585	440.1	34.34	32.40	17.04	13.57	17.78	14.33	41.76	39.30	20.52
WSMD-590	590	444.1	34.39	32.60	17.16	13.63	17.84	14.37	41.90	39.40	20.70
WSMD-595	595	448.7	34.44	32.80	17.29	13.68	17.90	14.42	42.05	39.60	20.88
WSMD-600	600	452.4	34.62	32.90	17.35	13.75	17.98	14.49	42.18	39.70	21.06

*Standard Test Conditions (STC) - 1000 W/m² irradiance, Air Mass 1.5 and 25°C cell temperature. Nominal Operating Cell Temperature (NOCT) - 800 W/m² irradiance, Air Mass 1.5, Ambient temperature 20°C and Wind speed 1 m/s. Average power reduction of 4.5% at 200 W/m² as per IEC 60904-1. Measuring Uncertainty ± 3%.

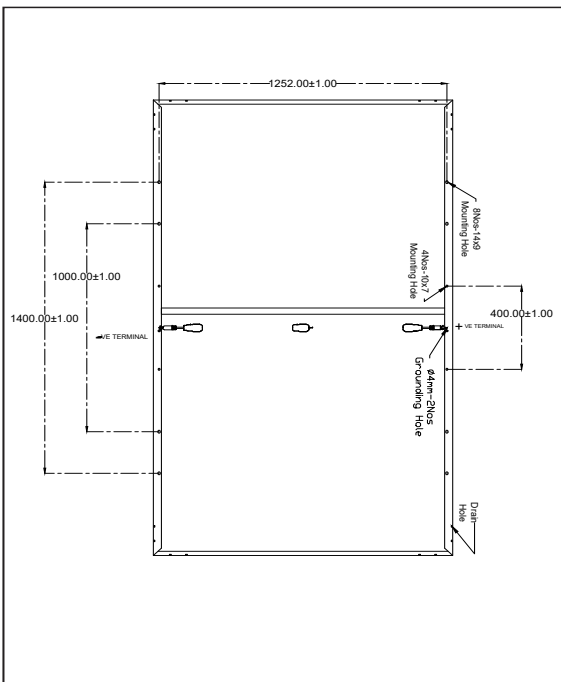
System Voltage	1500 V
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Series Fuse Rating	30 A
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MECHANICAL CHARACTERISTICS

Length x Width x Thickness (L x W x T)	2190 mm (L) x 1302 mm (W) x 35 mm (T)
Weight	31 kgs
Solar Cells per Module (Units) / Arrangement	120 cells / (10x6 10x6)
Solar Cell Type & Size	Mono PERC, 105 x 210 mm
Front Glass	3.2 mm Low Iron and Tempered glass with ARC coating
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 ² & 500mm
Frame	Anodized Aluminium Alloy

DESIGN SPECIFICATIONS



12 Years Product Warranty • 27 Years Power Output Warranty

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THERMAL CHARACTERISTICS

Temperature coefficient of Current (Isc), α (%/°C)	0.04
Temperature coefficient of Voltage (Voc), β (%/°C)	-0.25
Temperature coefficient of Power (Pm), γ (%/°C)	-0.34
NOCT (°C)	43 ± 2
Operating temperature range (°C)	-40 to 85

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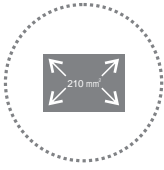
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ARKA SERIES

WSMD-645 to WSMD-665

WAAREE®

One with the Sun



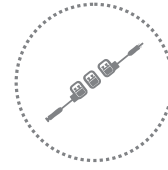
Full square
Mono PERC
M12 cells



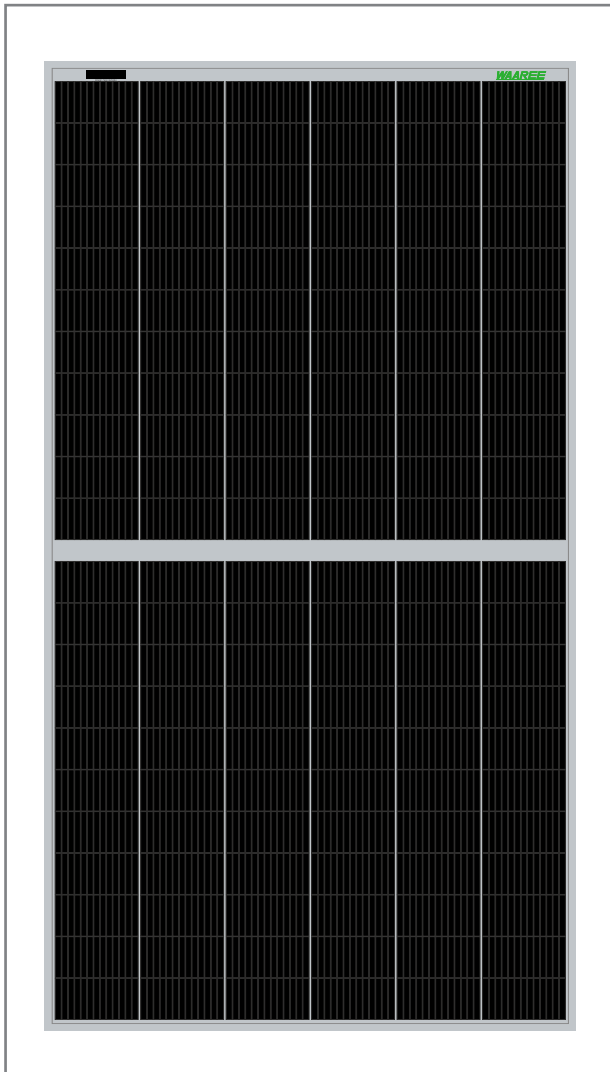
Best in class thermal
coefficients



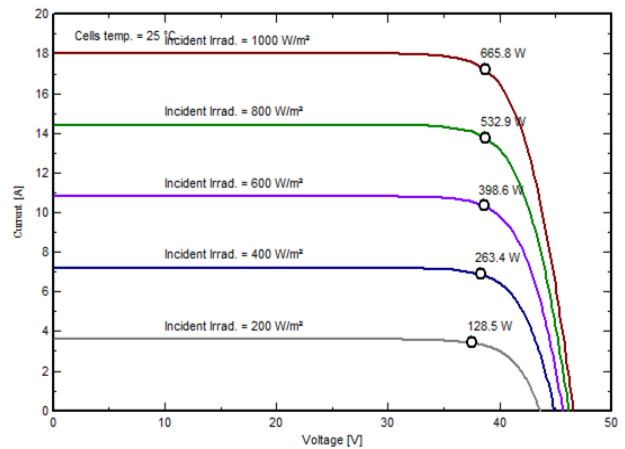
Split junction box
improve heat dissipation
& lower risk of hotspot



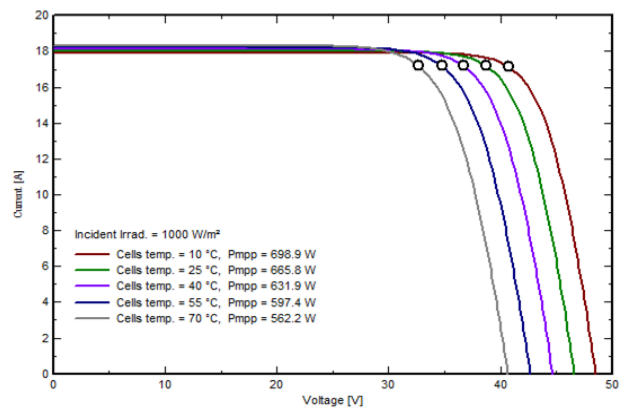
Increase
shade
tolerance



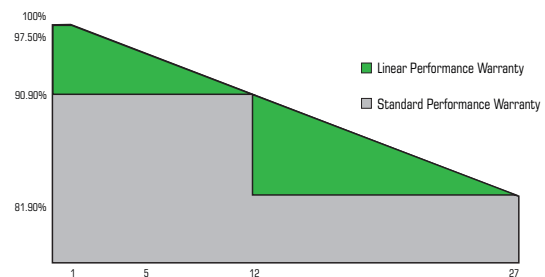
I-V VARIATION WITH IRRADIANCE



I-V VARIATION WITH TEMPERATURE



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Independent assessment of factories by BLACK & VEATCH

ARKA SERIES

WSMD-645 to WSMD-665

WAAREE[®]

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	
WSMD-645	645	485.2	37.87	35.70	17.04	13.58	17.78	14.33	45.94	43.20	20.65
WSMD-650	650	489.5	37.91	35.90	17.16	13.63	17.84	14.37	46.09	43.40	20.82
WSMD-655	655	494.2	37.94	36.10	17.29	13.69	17.90	14.42	46.26	43.50	20.99
WSMD-660	660	497.3	38.06	36.20	17.35	13.75	17.98	14.49	46.40	43.60	21.13
WSMD-665	665	501.7	38.10	36.40	17.46	13.79	18.03	14.53	46.58	43.80	21.29

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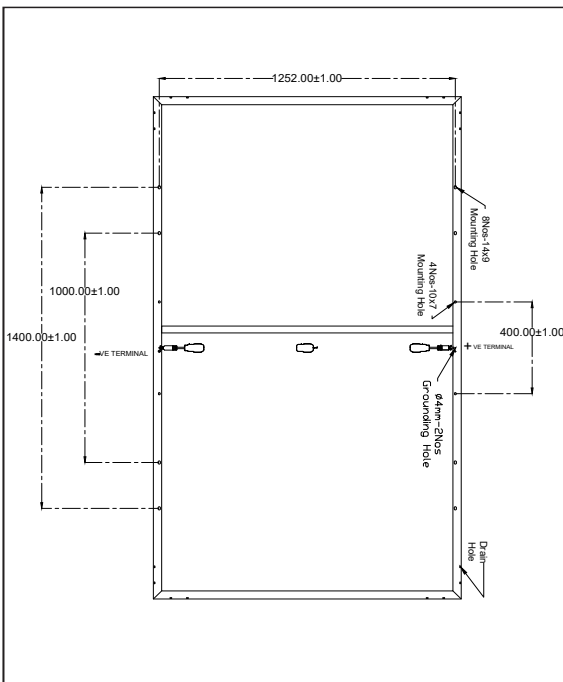
System Voltage	1500 V
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Series Fuse Rating	30 A
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MECHANICAL CHARACTERISTICS

Length x Width x Thickness (L x W x T)	2400 mm (L) x 1302 mm (W) x 35 mm (T)
Weight	34.5 kgs
Solar Cells per Module (Units) / Arrangement	132 cells / (11x6 11x6)
Solar Cell Type & Size	Mono PERC, 105 x 210 mm
Front Glass	3.2 mm Low Iron and Tempered glass with ARC coating
Encapsulate	PID Free & UV Resistant
Junction Box (Protection degree/ Material)	IP68 / Weatherproof PPO
Cable & Connector (Protection degree / Type)	IP68 rated / MC4 compatible
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