



Engineered in Australia  
for Australian Conditions



## A Secure & Reliable Investment

Tindo Solar has extended the product warranty of our Karra panels by an additional 13 years, from 12 years to 25 years.



## Great Visual Appearance

The Tindo Karra series has been designed with appearance in mind. Their deep black cells, with black frames and thinner wires give an aesthetically pleasing appearance.



## High Efficiency

Higher module conversion efficiency (up to 18.9%) benefit from Passivated Emmitter Rear Contact (PERC) technology.



## Proven Field Performance

Our panels are mounted and performing everyday at the Desert Knowledge Testing Centre in Alice Springs. The Karra series panels are consistently one of the highest performing panels at the centre. [www.dkasolarcentre.com.au](http://www.dkasolarcentre.com.au)



## Maximum Cost Reductions

Much lower logistics costs due to our modules being made in South Australia with flexible module numbers per pallet on request.



## Innovative All Weather Technology

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.



## Low-light Performance

Advanced glass and solar cell surface texturing allow for excellent performance in low-light environment.

# Karra Series Data Sheet

## Electrical Characteristics

66 Cells Panel Description		Karra-330		Karra-335		Karra-340		Karra-345	
Item	Unit	*STC	*NOC	STC	NOC	STC	NOC	STC	NOC
Max. Power (Pmax)	Wp	330	241.81	335	245.45	340	249.13	345	252.78
Max. Power voltage (Vmp)	V	35.78	32.49	36.15	32.82	36.48	33.12	36.83	33.44
Max. Power current (Imp)	A	9.22	7.44	9.27	7.48	9.32	7.52	9.37	7.56
Open circuit voltage (Voc)	V	43.56	40.19	43.90	40.50	44.24	40.82	44.58	41.13
Short circuit current (Isc)	A	9.80	7.98	9.84	8.01	9.89	8.05	9.94	8.1
Panel efficiency	%	18.1	13.2	18.3	13.4	18.6	13.6	18.9	13.8
Positive power tolerance	W	0 + ~ 5							

\*STC(Standard Test Condition) : 1,000W/m<sup>2</sup>, AM 1.5, 25 °C / \*NOC (Nominal Operating Condition) : 800W/m<sup>2</sup>, 20°C, wind speed 1m/s, NOCT

## Qualification Test

Thermal cycling test	- 40 °C to 85 °C for 200 cycles
Damp heat test	85 °C and 85% relative humidity for 1000hr
Front load test	5400Pa
Rear load test	3600Pa
Hail impact test	25mm hail at 23m/s from 1m distance

## Safety Ratings & Warranties

Safety application class	Class A
Fire Safety Classification	Class C
Certifications	IEC 61215, IEC 61730
Warranty	25 years limited product warranty
Performance guarantee	25 years limited warranty 80% power

## Mechanical Characteristics

Cells per Panel	66 Cells (6 x 11)
Cell Type	5BB PERC Mono-crystalline
Panel Dimension (L x W x H)	1827 x 1000 x 40 mm
Panel Weight	20Kg
Front Glass	3.2mm Tempered Glass
Frame	Anodized Aluminum
Junction Box	With bypass diode / IP67
Output cable	(+, -) 1,200mm / 4mm² cable

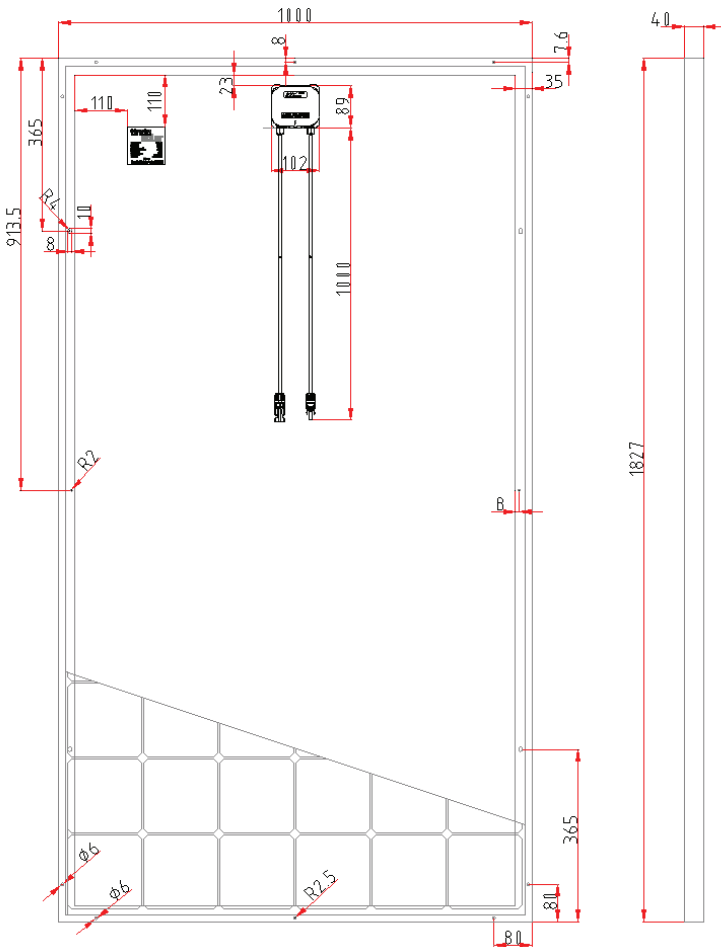
## System Integration Parameters

Temperature range	-40°C to 85°C
Maximum system voltage	1,500 V DC(IEC)
Maximum over-current protection	15 A

## Thermal Characteristics

Rating		Unit	Value
*NOCT		°C	45± 2
Temperature Coefficient	Isc	%/°C	+ 0.05
	Voc	%/°C	– 0.32
	Pmax	%/°C	– 0.37

\*NOCT : Nominal Operating Cell Temperature



[Panel Diagram]



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