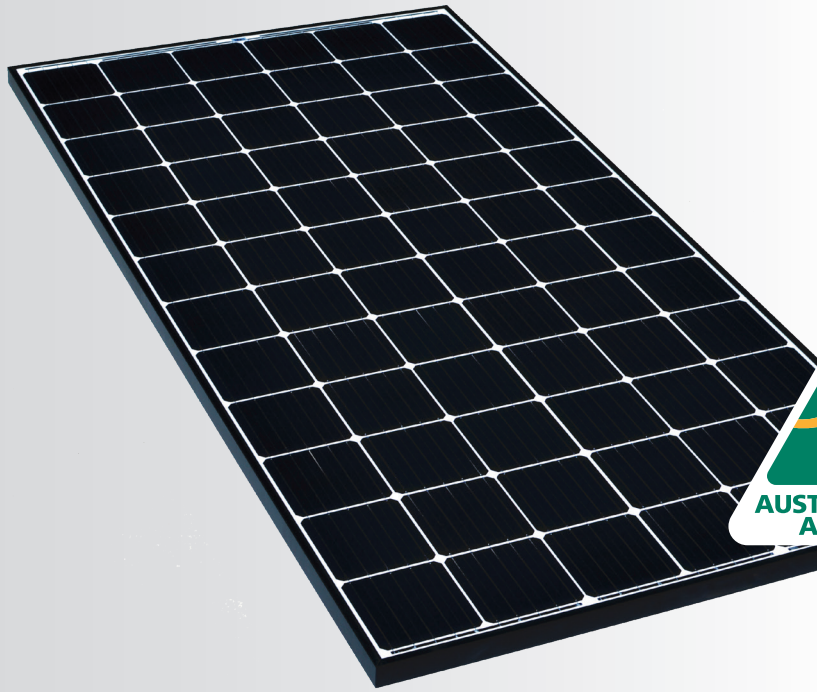


# Tindo Karra 345 PERC

335 - 345 Watt  
Mono-Crystalline Module



Engineered in Australia  
for Australian Conditions



## A Secure & Reliable Investment

Tindo Solar offers a 12 warranty for our 66 cell modules with a 25 year performance guarantee.



## 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. \*fully black panel available on request.



## 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.

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tindo  
solar

# Karra Series Data Sheet

## Electrical Characteristics

66 Cells Panel Description		Karra-335		Karra-340		Karra-345	
Item	Unit	STC	*NMOT	STC	NMOT	STC	NMOT
Max. Power (Pmax)	Wp	335	245.49	340	249.11	345	252.78
Max. Power voltage (Vmp)	V	36.51	33.15	36.86	33.47	37.23	33.80
Max. Power current (Imp)	A	9.18	7.47	9.22	7.51	9.27	7.54
Open circuit voltage (Voc)	V	43.95	40.55	44.30	40.87	44.65	41.19
Short circuit current (Isc)	A	9.80	7.91	9.84	7.94	9.89	7.98
Panel efficiency	%	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 / \*NMOT (Nominal Module Operating Temperature) :800W/m<sup>2</sup>, 20 °C, wind speed 1m/s, Tolerance of Pmax, Voc & Isc ±3% within each watt class at STC.

## Qualification Test

Thermal cycling test	- 40°C to 85°C for 200 cycles
Damp heat test	85°C and 85% relative humidity for 1,000hr
Front load test	5,400Pa
Rear load test	2,400Pa
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	12 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)	1,827 x 1,000 x 40 mm
Panel Weight	20 Kg
Front Glass	3.2mm Tempered Glass
Frame	Black Anodized Aluminum
Junction Box (Cable)	With bypass diode / IP67 (1.0M/4mm <sup>2</sup> )
Connectors type	KST4-EVO2(M), KBT4-EVO2(F) / Stabli - MC4

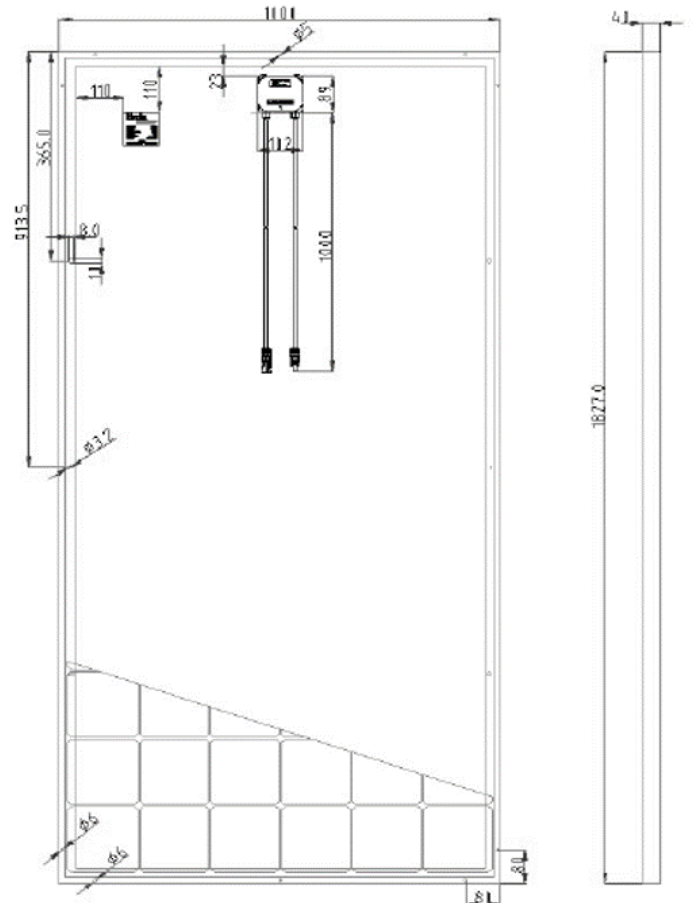
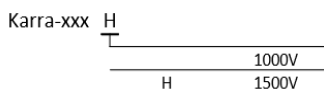
## System Integration Parameters

Temperature range	-40°C to 85°C
Maximum system voltage	1,000 / 1,500 V DC(IEC)
Maximum over-current protection	15 A

## Thermal Characteristics

Rating	Unit	Value
Measuring of *NMOT	°C	44
Temperature Coefficient	Isc	%/°C + 0.06
	Voc	%/°C - 0.30
	Pmax	%/°C - 0.37

\*NMOT : Nominal Module Operating Temperature



[Panel Diagram]