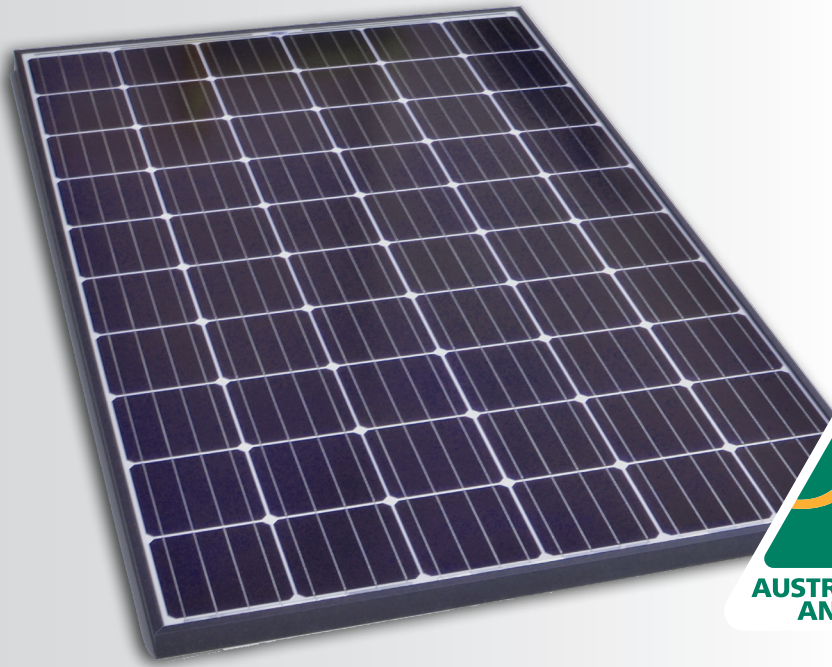


# Tindo Karra 300 PERC

285 - 300 Watt  
Mono-Crystalline Module



## Engineered in Australia for Australian Conditions



### A Secure & Reliable Investment

Tindo Solar has extended the product warranty of our Karra panels by an additional 2 years, from 10 years to 12 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%) benefit from Passivated Emitter 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.



### 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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# Karra Series Data Sheet

## Electrical Characteristics

| 60Cells Panel Description   |      | Karra-285         |        | Karra-290 |        | Karra-295 |        | Karra-300 |        |
|-----------------------------|------|-------------------|--------|-----------|--------|-----------|--------|-----------|--------|
| Item                        | Unit | *STC              | *NOC   | STC       | NOC    | STC       | NOC    | STC       | NOC    |
| Max. Power (Pmax)           | Wp   | 285               | 208.84 | 290       | 212.51 | 295       | 216.15 | 300       | 219.81 |
| Max. Power voltage (Vmp)    | V    | 31.81             | 28.88  | 32.19     | 29.23  | 32.56     | 29.56  | 32.93     | 29.90  |
| Max. Power current (Imp)    | A    | 8.96              | 7.23   | 9.01      | 7.27   | 9.06      | 7.31   | 9.11      | 7.35   |
| Open circuit voltage (Voc)  | V    | 39.20             | 36.17  | 39.50     | 36.44  | 39.80     | 36.72  | 40.10     | 37.00  |
| Short circuit current (Isc) | A    | 9.50              | 7.73   | 9.55      | 7.77   | 9.60      | 7.82   | 9.65      | 7.86   |
| Panel efficiency            | %    | 17.1              | 12.5   | 17.4      | 12.7   | 17.7      | 13.0   | 18.0      | 13.2   |
| Power tolerance             | %    | STC ± 3 / NOC ± 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

## Thermal Characteristics

| Rating                  | Unit | Value |         |
|-------------------------|------|-------|---------|
| *NOCT                   | °C   | 45±2  |         |
| Temperature Coefficient | Isc  | %/°C  | + 0.045 |
|                         | Voc  | %/°C  | - 0.292 |
|                         | Pmax | %/°C  | - 0.410 |

\*NOCT : Nominal Operating Cell Temperature

## 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        |

## Mechanical Characteristics

|                             |  |
|-----------------------------|--|
| Cells per Panel             | 60Cells (6 x 10)                                 |
| Cell Type                   | 4BB Mono -crystalline                            |
| Panel Dimension (L x W x H) | 1667 x 1000 x 40 mm                              |
| Panel Weight                | 18.2Kg   |
| Front Glass                 | 3.2mm Tempered Glass                             |
| Back Sheet                  | Tedlar film-based / Dupont                       |
| Frame                       | Anodized Aluminum                                |
| Junction Box                | 3 bypass diode / IP67                            |
| Output cable                | (+, -) 1,000mm / 4mm <sup>2</sup> cable          |
| Connectors type             | PV-KST4 (male), PV-KBT4 (female) / Multi Contact |
| Edge seal & J -box Sealant  | Dow Corning                                      |

## 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 |

## System Integration Parameters

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

