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Solar Panel Guide Specification Data Sheet

**Waaree Energies Ltd
Arka Series WS-40-95
WS-90/24V**

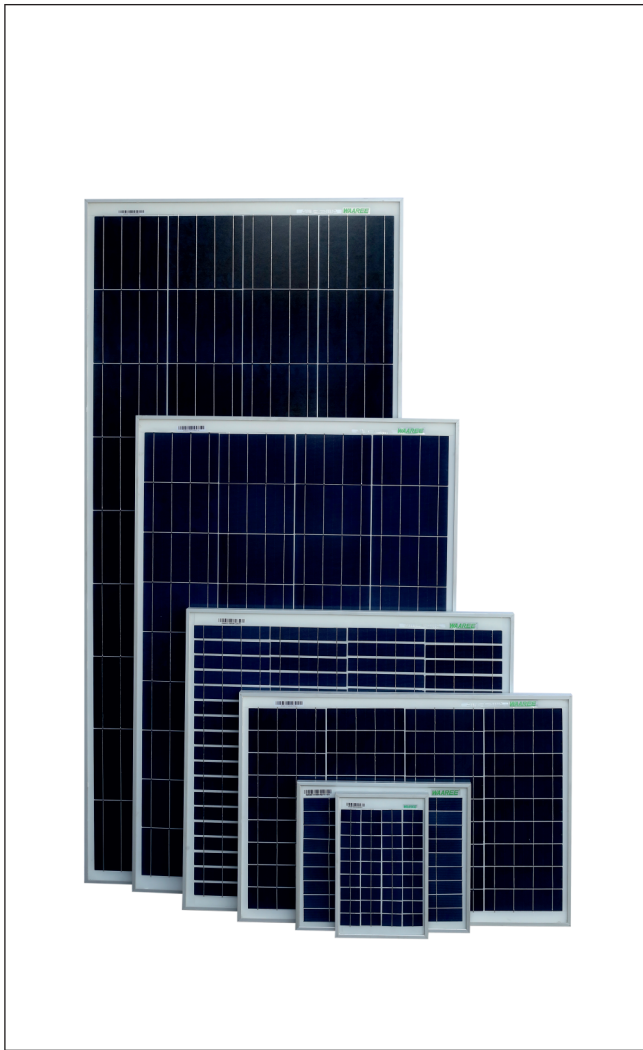
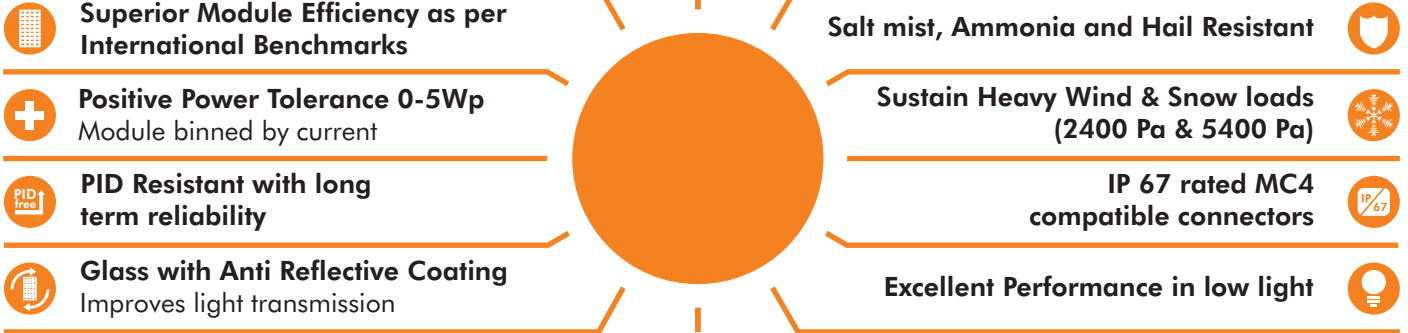
Also available on the web at
EnergyPal.com/waaree-energies-ltd-solar-panels/ws-90-24v

WS-40 to WS-90

ARKA SERIES

WAAREE[®]

One with the Sun



THERMAL CHARACTERISTICS

| | |
|---------------------------------------|-------------|
| Temperature coefficient of Current/°C | 0.0154 |
| Temperature coefficient of Voltage/°C | -0.2775 |
| Temperature coefficient of Power/°C | -0.3859 |
| NOCT | 46° ± 2° |
| Operating Temperature Range | -40° to 85° |

WARRANTY

-5 years Limited Product Warranty**

-25 years Limited Power Output Warranty**

- ♦ Minimum 90% at the end of 10 years
- ♦ Minimum 80% at the end of 25 years

INTERNATIONAL & NATIONAL CERTIFICATIONS

IEC 62804 | UI1703 | ROHS Compliance | REACH Compliance | IS 14286

ISO 9001:2015 | ISO 14001:2015 | OHSAS 18001:2007 / ISO 45001:2018
IEC 61215 | IEC 61730-1&2 | IEC 60068-2-68 | IEC 61701 | IEC 62716

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WS-40 to WS-90

ARKA SERIES



| ELECTRICAL CHARACTERISTICS | | | | | | | | | | | | | | | | | | | |
|--|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| Model | WS-40 / 12V | WS-45 / 12V | WS-50 / 24V | WS-50 / 12V | WS-55 / 12V | WS-60 / 12V | WS-60 / 24V | WS-65 / 12V | WS-70 / 12V | WS-74 / 12V | WS-74 / 24V | WS-75 / 12V | WS-75 / 24V | WS-80 / 12V | WS-80 / 24V | WS-85 / 12V | WS-90 / 12V | WS-90 / 24V | WS-95 / 12V |
| Nominal Maximum Power, Pm (W)* | 40 | 45 | 50 | 50 | 55 | 60 | 60 | 65 | 70 | 74 | 74 | 75 | 75 | 80 | 80 | 85 | 90 | 90 | 95 |
| Positive Tolerance Only | | | | | | | | | | | | | | | | | | | |
| Power Tolerance | | | | | | | | | | | | | | | | | | | |
| Open Circuit Voltage, Voc (V)* | 21.37 | 21.42 | 21.47 | 21.47 | 21.52 | 21.57 | 43.70 | 21.62 | 21.67 | 21.71 | 43.80 | 21.72 | 43.85 | 21.77 | 43.90 | 21.82 | 21.87 | 43.95 | 21.92 |
| Short Circuit Current, Isc (A)* | 2.50 | 2.80 | 3.11 | 1.53 | 3.41 | 3.71 | 1.83 | 4.01 | 4.31 | 4.54 | 2.25 | 4.60 | 2.28 | 4.90 | 2.43 | 5.19 | 5.49 | 2.73 | 5.78 |
| Voltage at Maximum Power, Vmp (V)* | 17.18 | 17.185 | 17.21 | 35.15 | 17.235 | 17.26 | 35.25 | 17.285 | 17.31 | 17.33 | 35.35 | 17.335 | 35.4 | 17.36 | 35.45 | 17.385 | 17.41 | 35.5 | 17.435 |
| Current at Maximum Power, Imp (A)* | 2.33 | 2.62 | 2.91 | 1.43 | 3.2 | 3.48 | 1.71 | 3.77 | 4.05 | 4.28 | 2.10 | 4.33 | 2.12 | 4.61 | 2.26 | 4.89 | 5.17 | 2.54 | 5.45 |
| Maximum System Voltage (V) | 1000 | | | | | | | | | | | | | | | | | | |
| Module Efficiency (%) | 12.22% | 10.58% | 11.76% | 11.76% | 12.93% | 14.11% | 14.11% | 13.01% | 12.49% | 12.18% | 12.18% | 12.35% | 12.35% | 13.17% | 13.17% | 13.69% | 14.49% | 14.49% | 13.60% |
| Maximum Series Fuse Rating (A) | 10 | 10 | 10 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 10 | 10 | 10 | 10 | 10 |
| Limiting Reverse Current (A) | 10 | | | | | | | | | | | | | | | | | | |
| Rated Voltage (V dc) | 17.18 | 17.19 | 17.21 | 35.15 | 17.24 | 17.26 | 35.25 | 17.29 | 17.31 | 17.33 | 35.35 | 17.34 | 35.40 | 17.36 | 35.45 | 17.39 | 17.41 | 35.50 | 17.44 |
| Rated Current (A dc) | 2.33 | 2.62 | 2.91 | 1.42 | 3.19 | 3.48 | 1.70 | 3.76 | 4.04 | 4.27 | 2.09 | 4.33 | 2.12 | 4.61 | 2.26 | 4.89 | 5.17 | 2.54 | 5.45 |
| MECHANICAL CHARACTERISTICS | | | | | | | | | | | | | | | | | | | |
| Model | WS-40 | WS-45 | WS-50 | WS-50 | WS-55 | WS-60 | WS-60 | WS-65 | WS-70 | WS-74 | WS-74 | WS-75 | WS-75 | WS-80 | WS-80 | WS-85 | WS-90 | WS-90 | WS-95 |
| Length x Width x Thickness (LxWxT) - mm | 485x 675x 35 | 630x 675x 35 | 630x 675x 35 | 630x 675x 35 | 630x 675x 35 | 630x 675x 35 | 630x 675x 35 | 700x 675x 35 | 830x 675x 35 | 900x 675x 35 | 900x 675x 35 | 900x 675x 35 | 900x 675x 35 | 920x 675x 35 | 920x 675x 35 | 920x 675x 35 | 920x 675x 35 | 920x 675x 35 | 1035x 675x 35 |
| Mounting holes pitch (Y)-mm | 245 | 310 | 310 | 310 | 310 | 310 | 310 | 360 | 410 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 545 |
| Mounting holes pitch (X)-mm | 633 | 633 | 633 | 633 | 633 | 633 | 633 | 633 | 633 | 633 | 633 | 633 | 633 | 633 | 633 | 633 | 633 | 633 | 633 |
| Weight (kg) | 4.8 | 5.15 | 5.15 | 5.15 | 5.15 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Cells per module (Units)/ Arrangement | 36 / (9 x 4) | | | | | | | | | | | | | | | | | | |
| Cell Type | Polycrystalline Silicon | | | | | | | | | | | | | | | | | | |
| Front Cover (Material/ Thickness) | Tempered & Low Iron Glass, 3.2 / 4.0 mm | | | | | | | | | | | | | | | | | | |
| Encapsulate | Ethylene Vinyl Acetate | | | | | | | | | | | | | | | | | | |
| Frame Material | Anodized Aluminium Alloy | | | | | | | | | | | | | | | | | | |
| Junction Box (Protection degree/ Material) | Ip65 rated/ Weatherproof PPO enclosure with bypass diodes | | | | | | | | | | | | | | | | | | |
| Connector | Optional | | | | | | | | | | | | | | | | | | |
| Cable | Optional | | | | | | | | | | | | | | | | | | |
| Fire Safety Class | C | | | | | | | | | | | | | | | | | | |
| Application Class | A | | | | | | | | | | | | | | | | | | |
| Safety Class | II | | | | | | | | | | | | | | | | | | |

* Mentioned electrical data are reference values which was derived at STC condition - Temp: 25°, Irradiance: 1000w/m2 and Am: 1.5Am with cleaned modules

**Refer installation Manual instructions & Waaree warranty statement for terms & conditions.
Waaree Reserves The Right To Change The Specifications Without Prior Notice.

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