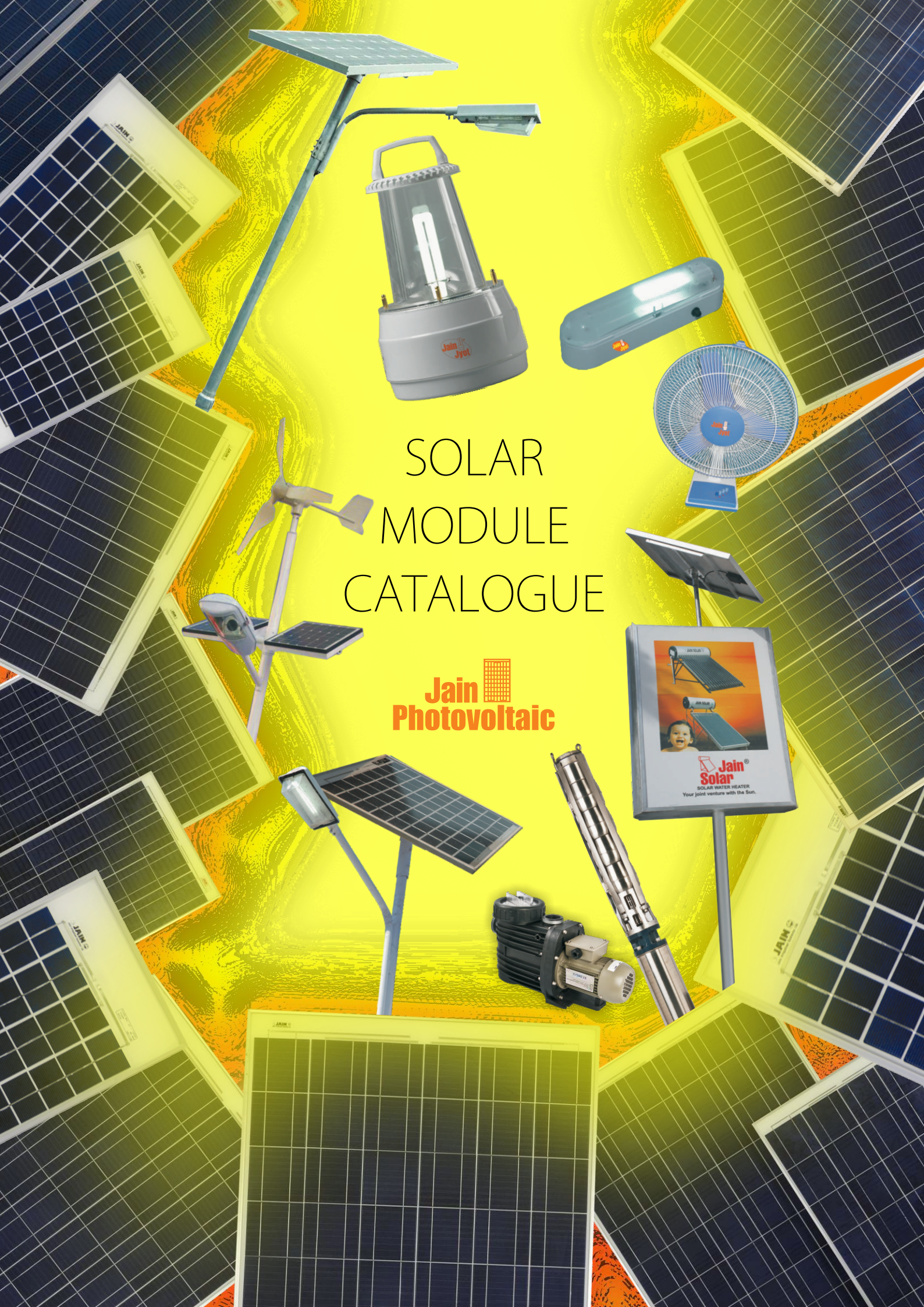


SOLAR MODULE CATALOGUE

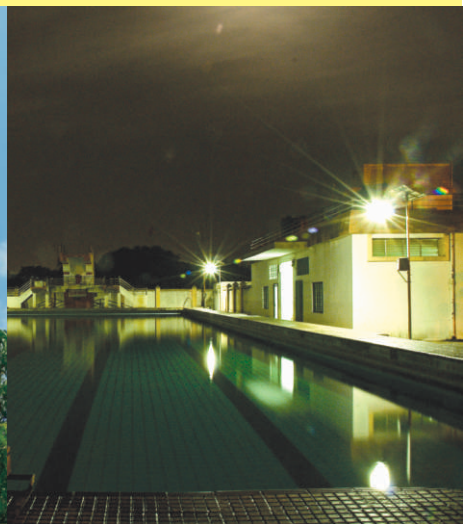
Jain 
Photovoltaic



Solar Home Lighting System



CFL and LED Based Solar Street Light



Solar Water Pumping System and Solar Blinker





JAIN SOLAR PHOTOVOLTIC MODULE PLANT



JAIN SOLAR PHOTOVOLTIC MODULE PLANT

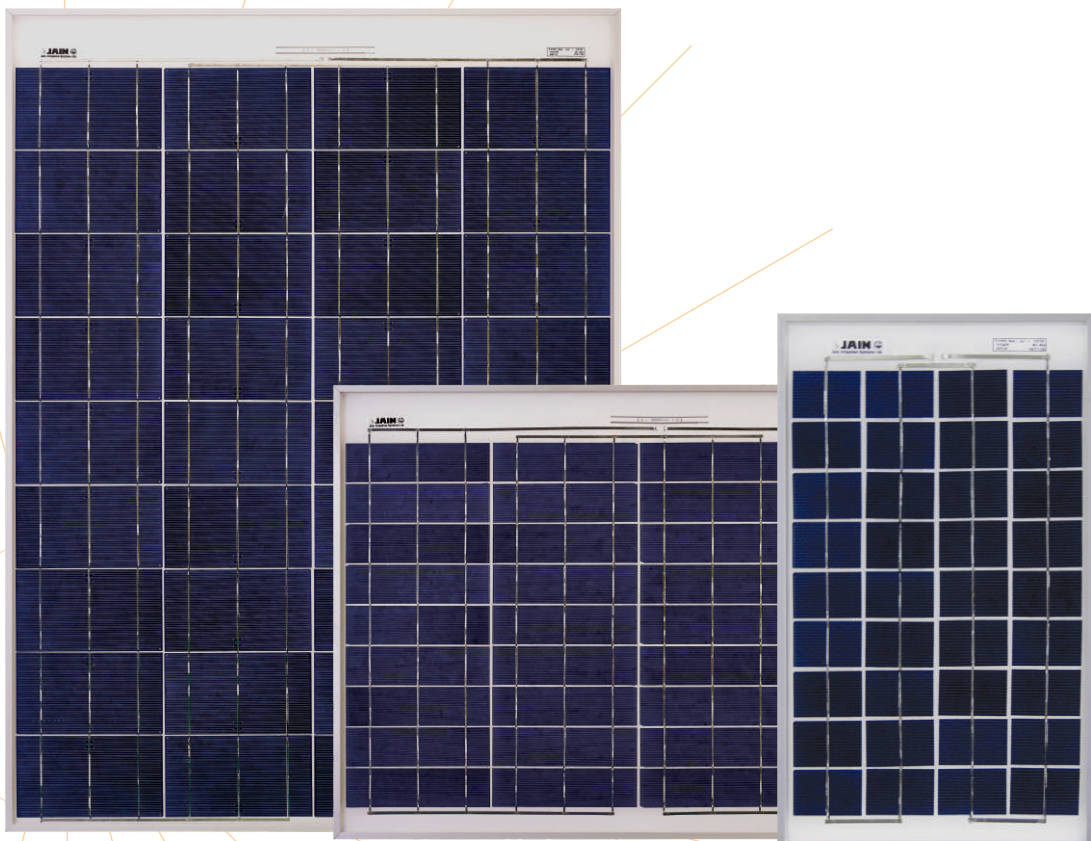


JAIN ENERGY PARK

Jain Photovoltaic Module are made from high efficiency Multi Crystalline solar cells. Suitable number of cells are interconnected in series and then encapsulated in low iron content, high transmissivity tempered glass using UV stable Ethylene Vinyl Acetate (EVA) sheets and premium quality back sheet. These encapsulating materials protect the cells from the harsh environmental conditions when laminated together these ensure long life. The laminates are then framed with anodized aluminum frame with holes for ease of installation. PV module are fitted with terminal box of different type and rating depending upon the application.

Features

- State of Art lamination technology used
- Positive power tolerance of modules in all ranges to ensure functioning of the system as per design
- All Materials of Lamination are of highest quality.
- Designed to withstand moderate mechanical load
- Anodized aluminum frame
- Terminal box with provision for replacing the cables.
- Holes provided for mounting on the structure
- Modules as per the MNRE specifications and designed to meet International Standards.
- Manufacturing facility certified to ISO 9001:2008, ISO 14000:2004, BS OHSAS 18001:2007 and EN ISO 50001:2011.



Typical Electrical Characteristics*

| Module Type | JJ-1210 | JJ-1212 | JJ-1218 | JJ-1224 | JJ-1237 | JJ-1240 | JJ-1274 |
|---|------------|------------|------------|------------|------------|------------|------------|
| Maximum Power (Wp) [Tolerances +5%,-0%] | 10 | 12 | 18 | 24 | 37 | 40 | 74 |
| Maximum Power Voltage [V _{mp} (V)] | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.80 |
| Maximum Power Current [I _{mp} (A)] | 0.57 | 0.69 | 1.03 | 1.37 | 2.11 | 2.29 | 4.16 |
| Open Circuit Voltage [V _{oc} (V)] | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 21.50 | 22.00 |
| Short Circuit Current [I _{sc} (A)] | 0.65 | 0.78 | 1.17 | 1.56 | 2.39 | 2.58 | 4.64 |
| Max. System Voltage [VDC] | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Module Size (mm) [Tolerance ±2mm] | 422X240X22 | 470X240X22 | 490X340X22 | 660X340X22 | 470X655X35 | 505X655X35 | 850X655X35 |
| Module Weight (kg) (Approximate) | 1.5 | 1.5 | 2 | 2.5 | 4.5 | 4.5 | 6.5 |

- All electrical measurement are at STC (25°C, 1.5AM, 1000W/m²).
- Other Wattages are available on request.

Characteristics

- Cell Type : Multi Crystalline Silicon Solar Cells
- Cell Configuration : 36 cells
- Temperature coefficient of P_{max} : -0.45%/°K
- Temperature coefficient of I_{sc} : +0.034%/°K
- Temperature coefficient of V_{oc} : -0.32%/° K
- Normal Operating Cell Temperature (NOCT) : 45 ± 2°C
- Maximum Series Fuse : 3 X Rated I_{mp} of the module
- Operating Temperature : -40 ~ +85°C

Warranty

- Power Production (Limited Warranty) : 90% for 10 years & 80% for 25 years.
- Contact Jain Irrigation System Ltd. for complete warranty details.

Applications

- LED and CFL based Lanterns, Home Lighting and Street Lighting, Off-Grid applications, Roof-Top System and Telecom Sites etc.

* Specifications are subject to change without prior notice .The specification may vary slightly.

Features

- High efficiency multi crystalline silicon solar cells.
- High transmission textured toughened glass.
- Module as per IEC-61215(2005); IEC-61730 part 1 & 2. IEC-61701 Salt Mist Test.
- Suitable for off-grid & grid connected systems.
- Narrow power tolerance for minimizing losses due to module power mismatch in an array.
- High quality screwless anodized aluminum frame to provide structural strength to the Laminate.
- TUV approved, IP65 rated 3 terminal junction box with 2 by-pass diodes (15A) for quick & safe installation.
- Bypass diodes to reduce the effect of partial shading of modules.
- Preassembled cable of length 1000 mm each with MC4 type +Ve and -Ve connectors.
- Manufacturing facility certified to ISO 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007 and EN ISO 50001:2011.

Typical Electrical Characteristics*

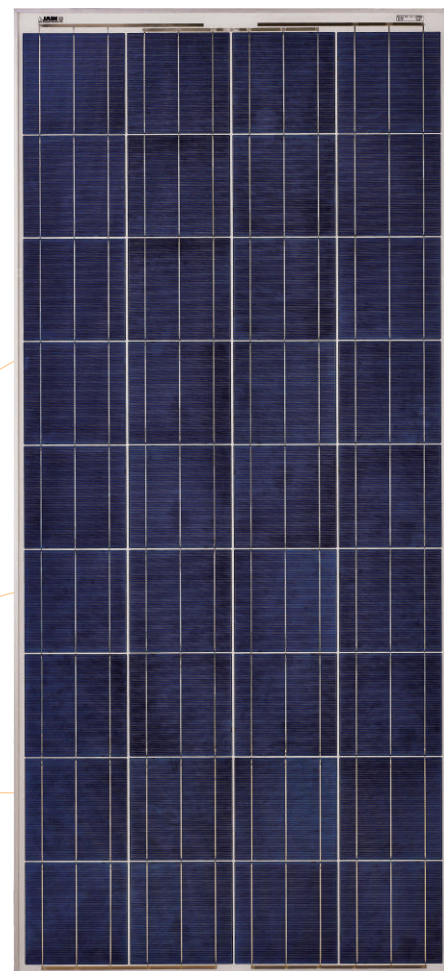
| Module Type | JJ-M636 | | |
|---|---------|--------|--------|
| Maximum Power [P _m (Wp)] | 140 | 145 | 150 |
| Power tolerance [Wp] | + 4.99 | + 4.99 | + 4.99 |
| Maximum Power Voltage [V _{mp} (V)] | 17.12 | 17.54 | 18.06 |
| Maximum Power Current [I _{mp} (A)] | 8.18 | 8.27 | 8.31 |
| Open Circuit Voltage [V _{oc} (V)] | 22.08 | 22.27 | 22.64 |
| Short Circuit Current [I _{sc} (A)] | 8.53 | 8.70 | 8.77 |
| Module Efficiency [%] | 14.46 | 14.98 | 15.49 |

*All electrical measurement are at STC (25°C, 1.5AM, 1000W/m²).

*Best in Class A Solar Sun simulator. (As per IEC 60904-9)

Thermal Characteristics

| | |
|---|-----------|
| Temperature coefficient of P _{max} | -0.43%/°K |
| Temperature coefficient of I _{sc} | 0.046%/°K |
| Temperature coefficient of V _{oc} | -0.33%/°K |
| NOCT | 45 ± 2 °C |



Mechanical Characteristics

| | |
|--|--|
| Front Cover | Low Iron tempered glass |
| Solar Cells (Quantity/type/arrangement/size) | 36 pcs/Multicrystalline/4 x 9/156mm x 156mm |
| Junction Box | TUV approved, IP65 rated 3 terminal junction box with 2by-pass diodes (15 A) |
| Cable (length/size) | 1000 mm/ 4.0mm ² |
| Connectors | MC4 type +Ve and -Ve |
| Dimensions (LxWxH) | 1478 mm x 655 mm x 35 mm (± 1 mm) |
| Weight | 12 kg approximate |

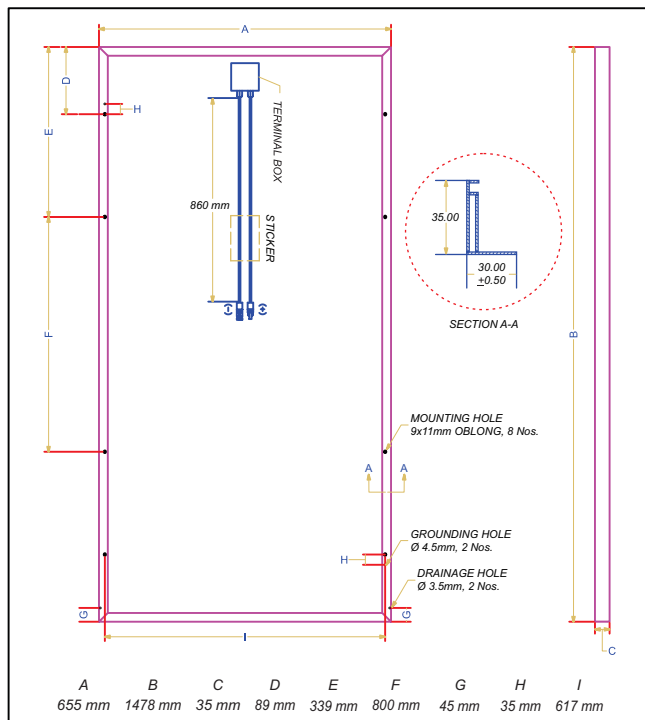
Operating Conditions

| | |
|-----------------------|----------------|
| Max. System Voltage | 1000 VDC |
| Safety Class | II |
| Maximum Series fuse | 15A |
| Operating Temperature | -40°C to +85°C |

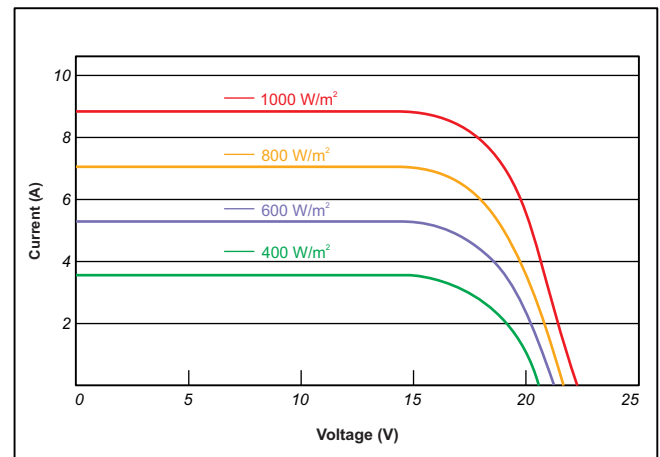
Warranty

- Manufacturing defect & workmanship: 5 Years
- Power Production (Limited Warranty): 90% for 10 years & 80% for 25 years
- In compliance with our warranty terms and conditions. Contact Jain Irrigation System Ltd. for complete warranty details.
- For any kind of technical or design support, you may contact Jain Irrigation System Ltd.

Module dimensions



I-V Curves



Positive power tolerance system applied while categorizing the module in various powers ranges.

*Above Specifications are subject to change without prior notice. The specifications may vary slightly

Features

- High efficiency multi crystalline silicon solar cells.
- High transmission textured toughened glass.
- Module as per IEC-61215(2005); IEC-61730 part 1 & 2. IEC-61701 Salt Mist Test.
- Suitable for off-grid & grid connected systems.
- Narrow power tolerance for minimizing losses due to module power mismatch in an array.
- High quality screwless anodized aluminum frame to provide structural strength to the Laminate.
- TUV approved, IP65 rated 4 terminal junction box with 3 by-pass diodes (15A) for quick & safe installation.
- Bypass diodes to reduce the effect of partial shading of modules.
- Preassembled cable of length 1000 mm each with MC4 type +Ve and -Ve connectors.
- Manufacturing facility certified to ISO 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007 and EN ISO 50001:2011.

Typical Electrical Characteristics*

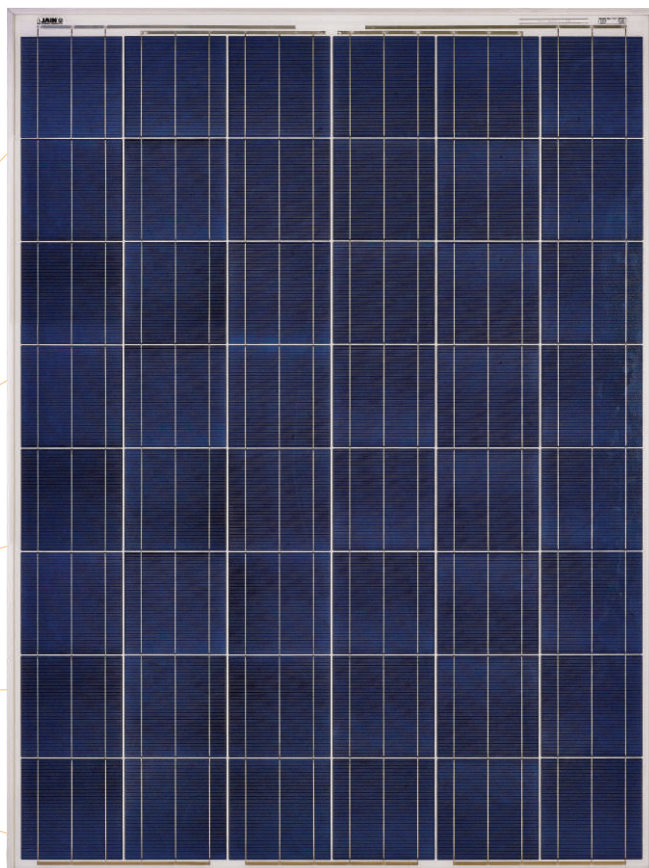
| Module Type | JJ-M648 | | | |
|---|---------|--------|--------|--------|
| Maximum Power [P _m (Wp)] | 185 | 190 | 195 | 200 |
| Power tolerance [Wp] | + 4.99 | + 4.99 | + 4.99 | + 4.99 |
| Maximum Power Voltage [V _{mp} (V)] | 22.64 | 23.00 | 23.36 | 23.80 |
| Maximum Power Current [I _{mp} (A)] | 8.18 | 8.27 | 8.35 | 8.41 |
| Open Circuit Voltage [V _{oc} (V)] | 29.22 | 29.24 | 29.36 | 29.64 |
| Short Circuit Current [I _{sc} (A)] | 8.51 | 8.68 | 8.83 | 8.96 |
| Module Efficiency [%] | 14.00 | 14.38 | 14.75 | 15.13 |

*All electrical measurements are at STC (25° C, 1.5 AM, 1000 W/m²)

*Best in Class A Solar Sun simulator. (As per IEC 60904-9)

Thermal Characteristics:

| | |
|---|-----------|
| Temperature coefficient of P _{max} | -0.43%/°K |
| Temperature coefficient of I _{sc} | 0.046%/°K |
| Temperature coefficient of V _{oc} | -0.33%/°K |
| NOCT | 45 ± 2 °C |



Mechanical Characteristics

| | |
|--|---|
| Front Cover | Low Iron tempered glass |
| Solar Cells (Quantity/type/arrangement/size) | 48 pcs/Multicrystalline/6 x 8/156mm x 156mm |
| Junction Box | TUV approved, IP65 rated 4 terminal junction box with 3 by-pass diodes (15 A) |
| Cable (length/size) | 1000 mm/ 4.0mm ² |
| Connectors | MC4 type +Ve and -Ve |
| Dimensions (LxWxH) | 1327 mm x 996 mm x 40 mm (± 1 mm) |
| Weight | 16 kg approximate |

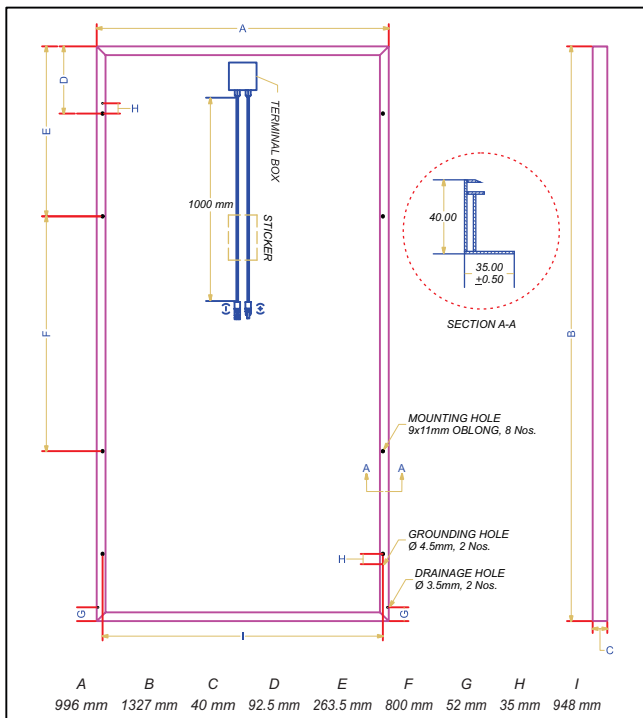
Operating Conditions

| | |
|-----------------------|----------------|
| Max. System Voltage | 1000 VDC |
| Safety Class | II |
| Maximum Series fuse | 15A |
| Operating Temperature | -40°C to +85°C |

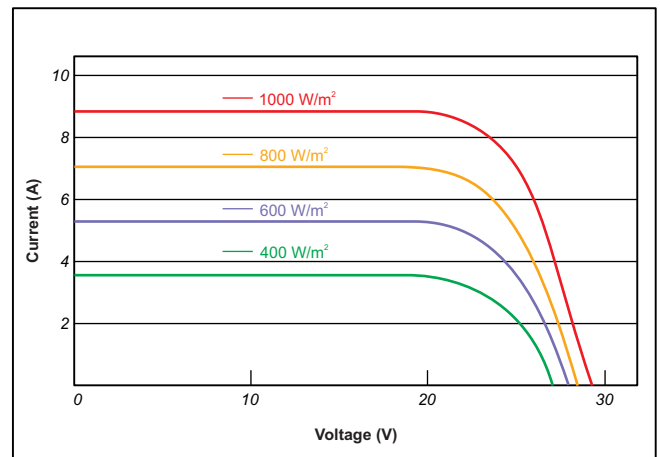
Warranty

- Manufacturing defect & workmanship: 5 Years
- Power Production (Limited Warranty): 90% for 10 years & 80% for 25 years
- In compliance with our warranty terms and conditions. Contact Jain Irrigation System Ltd. for complete warranty details.
- For any kind of technical or design support, you may contact Jain Irrigation System Ltd.

Module dimensions



I-V Curves



Positive power tolerance system applied while categorizing the module in various powers ranges.

*Above Specifications are subject to change without prior notice. The specifications may vary slightly.

Features

- High efficiency multi crystalline silicon solar cells.
- High transmission textured toughened glass.
- Module as per IEC-61215(2005); IEC-61730 safety class & IEC-61701 Salt Mist Test.
- Suitable for off-grid & grid connected systems.
- Narrow power tolerance for minimizing losses due to module power mismatch in an array.
- High quality screwless anodized aluminum frame to provide structural strength to the Laminate.
- TUV approved, IP65 rated 4 terminal junction box with 3 by-pass diodes (15A) for quick & safe installation.
- Bypass diodes to reduce the effect of partial shading of modules.
- Preassembled cable of length 1000 mm each with MC4 type +Ve and –Ve connectors.
- Manufacturing facility certified to ISO 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007 and EN ISO 50001:2011.

Typical Electrical Characteristics*

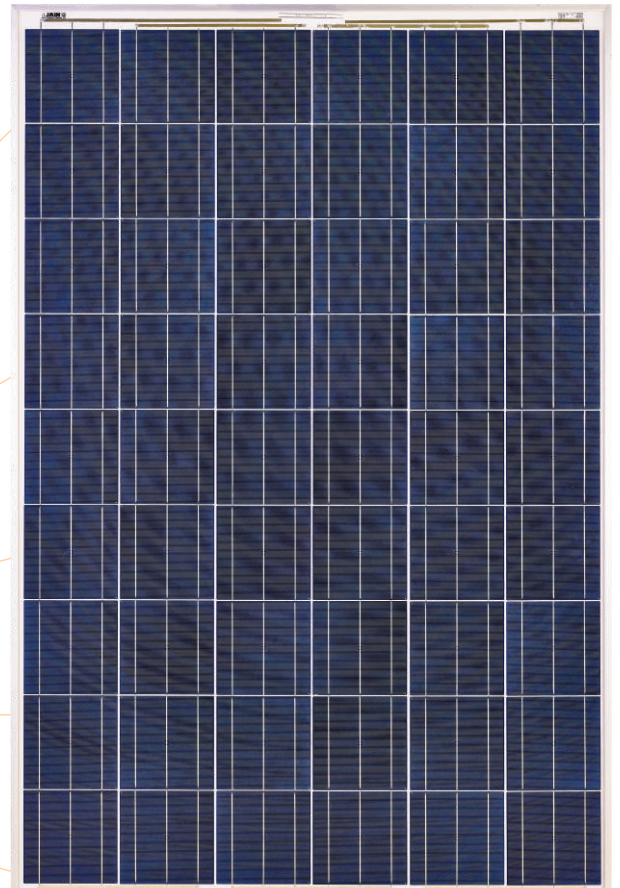
| Module Type | JJ-M654 | | | |
|---|---------|--------|--------|--------|
| Maximum Power [P _m (Wp)] | 210 | 215 | 220 | 225 |
| Power tolerance [Wp] | + 4.99 | + 4.99 | + 4.99 | + 4.99 |
| Maximum Power Voltage [V _{mp} (V)] | 25.10 | 25.60 | 26.13 | 26.66 |
| Maximum Power Current [I _{mp} (A)] | 8.37 | 8.40 | 8.42 | 8.44 |
| Open Circuit Voltage [V _{oc} (V)] | 32.35 | 32.78 | 33.40 | 33.60 |
| Short Circuit Current [I _{sc} (A)] | 8.76 | 8.79 | 8.82 | 8.90 |
| Module Efficiency [%] | 14.19 | 14.53 | 14.87 | 15.21 |

*All electrical measurements are at STC (25° C, 1.5 AM, 1000 W/m²)

*Best in Class A Solar Sun simulator. (As per IEC 60904-9)

Thermal Characteristics

| | |
|---|-----------|
| Temperature coefficient of P _{max} | -0.43%/°K |
| Temperature coefficient of I _{sc} | 0.046%/°K |
| Temperature coefficient of V _{oc} | -0.33%/°K |
| NOCT | 45 ± 2 °C |



Mechanical Characteristics

| | |
|--|---|
| Front Cover | Low Iron tempered glass |
| Solar Cells (Quantity/type/arrangement/size) | 54 pcs/Multicrystalline/6 x 9/156mm x 156mm |
| Junction Box | TUV approved, IP65 rated 4 terminal junction box with 3 by-pass diodes (15 A) |
| Cable (length/size) | 1000 mm/ 4.0mm ² |
| Connectors | MC4 type +Ve and -Ve |
| Dimensions (LxWxH) | 1485 mm x 996 mm x 40 mm (± 1 mm) |
| Weight | 18 kg approximate |

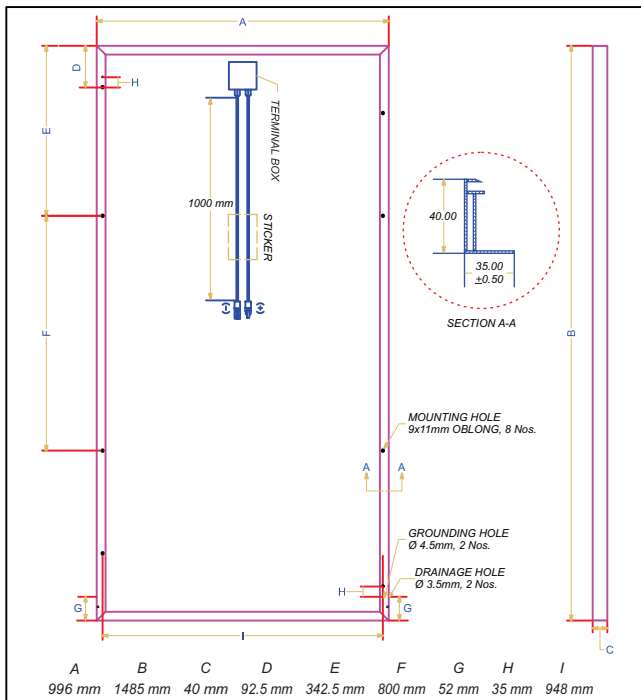
Operating Conditions

| | |
|-----------------------|----------------|
| Max. System Voltage | 1000 VDC |
| Safety Class | II |
| Maximum Series fuse | 15A |
| Operating Temperature | -40°C to +85°C |

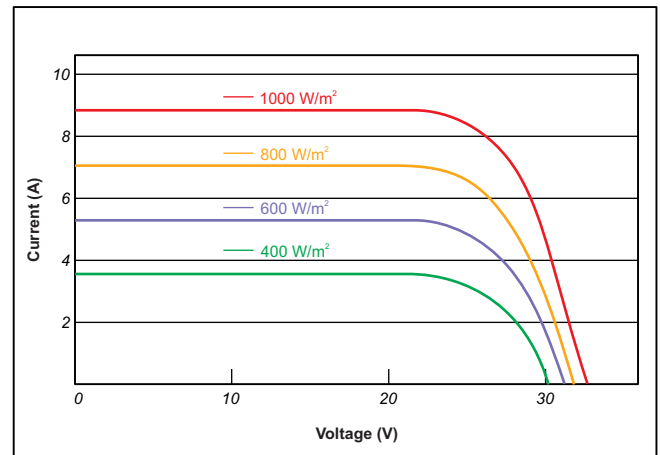
Warranty

- Manufacturing defect & workmanship: 5 Years
- Power Production (Limited Warranty): 90% for 10 years & 80% for 25 years
- In compliance with our warranty terms and conditions. Contact Jain Irrigation System Ltd. for complete warranty details.
- For any kind of technical or design support, you may contact Jain Irrigation System Ltd.

Module dimensions



I-V Curves



Positive power tolerance system applied while categorizing the module in various powers ranges.

*Above Specifications are subject to change without prior notice. The specifications may vary slightly.

Features

- High efficiency multi crystalline silicon solar cells.
- High transmission textured toughened glass.
- Module as per IEC-61215(2005); IEC-61730 safety class & IEC-61701 Salt Mist Test.
- Suitable for off-grid & grid connected systems.
- Narrow power tolerance for minimizing losses due to module power mismatch in an array.
- High quality screwless anodized aluminum frame to provide structural strength to the Laminate.
- TUV approved, IP65 rated 4 terminal junction box with 3 by-pass diodes (15A) for quick and safe installation.
- Bypass diodes to reduce the effect of partial shading of modules.
- Preassembled cable of length 1000 mm each with MC4 type +Ve and –Ve connectors.
- Manufacturing facility certified to ISO 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007 and EN ISO 50001:2011.

Typical Electrical Characteristics*

| Module Type | JJ-M660 | | | | |
|--|---------|--------|--------|--------|--------|
| Maximum Power [P _m (W _p)] | 235 | 240 | 245 | 250 | 255 |
| Power tolerance [W _p] | + 4.99 | + 4.99 | + 4.99 | + 4.99 | + 4.99 |
| Maximum Power Voltage [V _{mp} (V)] | 28.56 | 28.92 | 29.31 | 29.77 | 30.18 |
| Maximum Power Current [I _{mp} (A)] | 8.23 | 8.30 | 8.36 | 8.40 | 8.45 |
| Open Circuit Voltage [V _{oc} (V)] | 36.52 | 36.65 | 36.75 | 37.04 | 37.45 |
| Short Circuit Current [I _{sc} (A)] | 8.62 | 8.73 | 8.87 | 8.96 | 8.98 |
| Module Efficiency [%] | 14.36 | 14.66 | 14.97 | 15.22 | 15.58 |

*All electrical measurements are at STC (25° C, 1.5 AM, 1000 W/m²)

*Best in Class A Solar Sun simulator. (As per IEC 60904-9)

Thermal Characteristics

| | |
|---|-----------|
| Temperature coefficient of P _{max} | -0.43%/°K |
| Temperature coefficient of I _{sc} | 0.046%/°K |
| Temperature coefficient of V _{oc} | -0.33%/°K |
| NOCT | 45 ± 2 °C |



Mechanical Characteristics

| | |
|--|---|
| Front Cover | Low Iron tempered glass |
| Solar Cells (Quantity/type/arrangement/size) | 60 pcs/Multicrystalline/6 x 10/156mm x 156mm |
| Junction Box | TUV approved, IP65 rated 4 terminal junction box with 3 by-pass diodes (15 A) |
| Cable (length/size) | 1000 mm/ 4.0mm ² |
| Connectors | MC4 type +Ve and -Ve |
| Dimensions (LxWxH) | 1643 mm x 996 mm x 40 mm (± 1 mm) |
| Weight | 19 kg approximate |

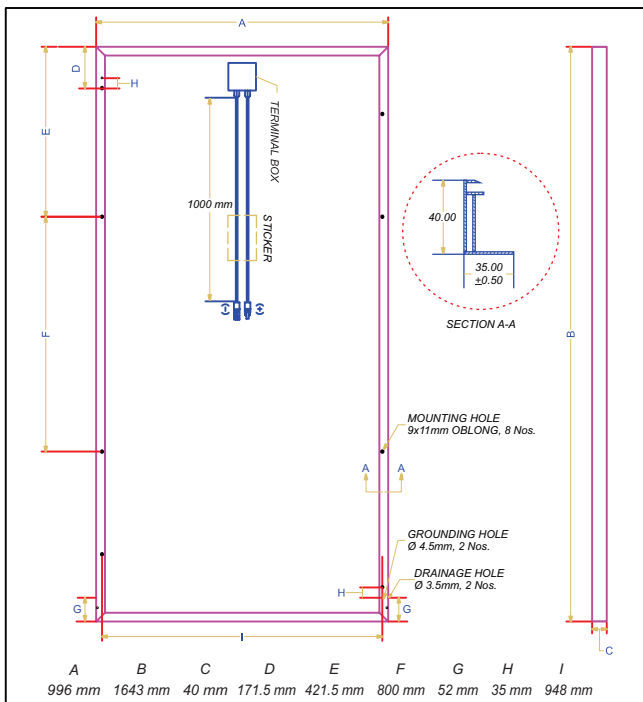
Operating Conditions

| | |
|-----------------------|----------------|
| Max. System Voltage | 1000 VDC |
| Safety Class | II |
| Maximum Series fuse | 15A |
| Operating Temperature | -40°C to +85°C |

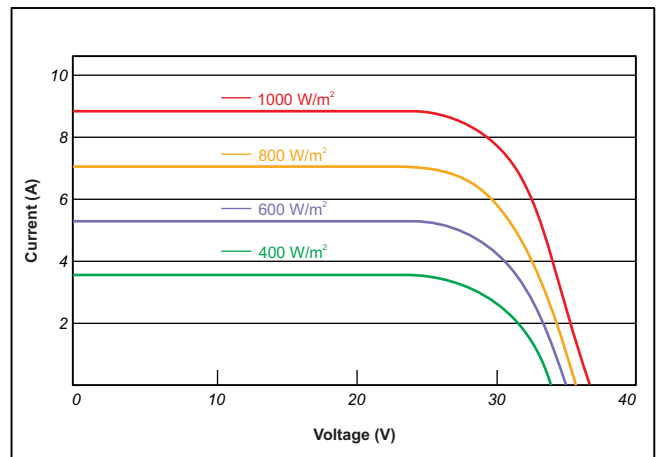
Warranty

- Manufacturing defect & workmanship: 5 Years
- Power Production (Limited Warranty): 90% for 10 years & 80% for 25 years
- In compliance with our warranty terms and conditions. Contact Jain Irrigation System Ltd. for complete warranty details.
- For any kind of technical or design support, you may contact Jain Irrigation System Ltd.

Module dimensions



I-V Curves



Positive power tolerance system applied while categorizing the module in various powers ranges.

*Above Specifications are subject to change without prior notice. The specifications may vary slightly.

Features

- High efficiency multi crystalline silicon solar cells.
- High transmission textured toughened glass.
- Module as per IEC-61215(2005); IEC-61730 safety class & IEC-61701 Salt Mist Test.
- Suitable for off-grid & grid connected systems.
- Narrow power tolerance for minimizing losses due to module power mismatch in an array.
- High quality screwless anodized aluminum frame to provide structural strength to the Laminate.
- TUV approved, IP65 rated 4 terminal junction box with 3 by-pass diodes (15A) for quick and safe installation.
- Bypass diodes to reduce the effect of partial shading of modules.
- Preassembled cable of length 1000 mm each with MC4 type +Ve and –Ve connectors.
- Manufacturing facility certified to ISO 9001:2008, ISO 14001:2004, BS OHSAS 18001:2007 and EN ISO 50001:2011.

Typical Electrical Characteristics*

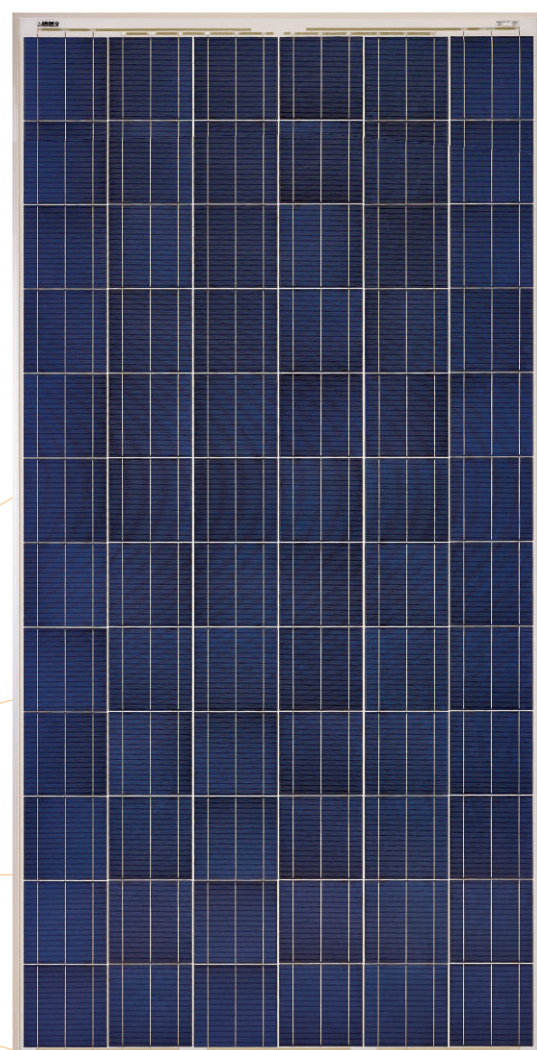
| Module Type | JJ-M672 | | | | | |
|---|---------|--------|--------|--------|--------|--------|
| Maximum Power [P _m (Wp)] | 280 | 285 | 290 | 295 | 300 | 305 |
| Power tolerance [Wp] | + 4.99 | + 4.99 | + 4.99 | + 4.99 | + 4.99 | + 4.99 |
| Maximum Power Voltage [V _{mp} (V)] | 33.90 | 34.30 | 34.73 | 35.25 | 35.76 | 36.27 |
| Maximum Power Current [I _{mp} (A)] | 8.26 | 8.31 | 8.35 | 8.37 | 8.39 | 8.41 |
| Open Circuit Voltage [V _{oc} (V)] | 43.29 | 43.45 | 43.65 | 43.95 | 44.40 | 45.00 |
| Short Circuit Current [I _{sc} (A)] | 8.62 | 8.70 | 8.79 | 8.84 | 8.86 | 8.88 |
| Module Efficiency [%] | 14.34 | 14.60 | 14.86 | 15.11 | 15.37 | 15.62 |

*All electrical measurements are at STC (25° C, 1.5 AM, 1000 W/m²)

*Best in Class A Solar Sun simulator. (As per IEC 60904-9)

Thermal Characteristics

| | |
|---|-----------|
| Temperature coefficient of P _{max} | -0.43%/°K |
| Temperature coefficient of I _{sc} | 0.046%/°K |
| Temperature coefficient of V _{oc} | -0.33%/°K |
| NOCT | 45 ± 2 °C |



Mechanical Characteristics

| | |
|--|---|
| Front Cover | Low Iron tempered glass |
| Solar Cells (Quantity/type/arrangement/size) | 72 pcs/Multicrystalline/6 x 12/156mm x 156mm |
| Junction Box | TUV approved, IP65 rated 4 terminal junction box with 3 by-pass diodes (15 A) |
| Cable (length/size) | 1000 mm/ 4.0mm ² |
| Connectors | MC4 type +Ve and -Ve |
| Dimensions (LxWxH) | 1960 mm x 996 mm x 40 mm (± 1 mm) |
| Weight | 22 kg approximate |

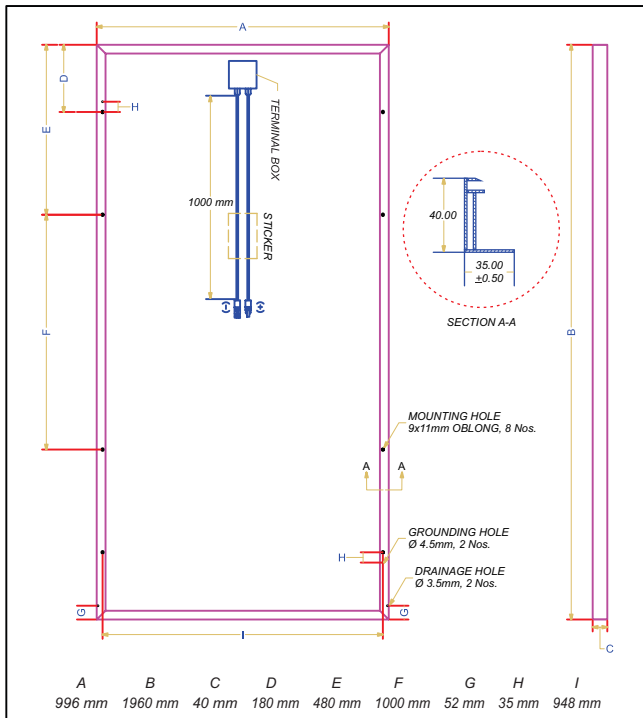
Operating Conditions

| | |
|-----------------------|----------------------|
| Max. System Voltage | 1000 V _{DC} |
| Safety Class | II |
| Maximum Series fuse | 15A |
| Operating Temperature | -40°C to +85°C |

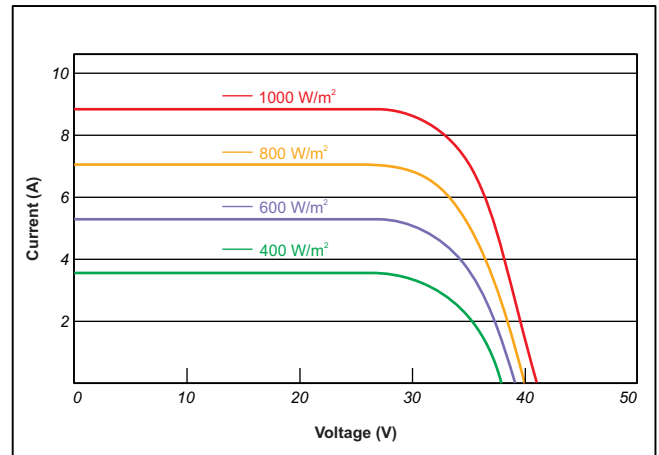
Warranty:

- Manufacturing defect & workmanship: 5 Years
- Power Production (Limited Warranty): 90% for 10 years & 80% for 25 years
- In compliance with our warranty terms and conditions. Contact Jain Irrigation System Ltd. for complete warranty details.
- For any kind of technical or design support, you may contact Jain Irrigation System Ltd.

Module dimensions



I-V Curves



Positive power tolerance system applied while categorizing the module in various powers ranges.

*Above Specifications are subject to change without prior notice. The specifications may vary slightly



The Company

Jain Irrigation Systems Limited (JISL) with more than 10,000 associates worldwide and revenue of 59 billion rupees, is an Indian multinational company with manufacturing plants in 28 locations across the globe. It is engaged in manufacturing of Micro Irrigation Systems, PVC Pipes, HDPE Pipes, Plastic Sheets, Agro Processed Products, Renewable Energy solutions, Tissue Culture Plants, Financial Services and other agricultural inputs since last 34 years. It has pioneered silent revolution with modern irrigation systems and innovative technologies in order to save precious water and has helped to get significant increase in crop yields, especially for millions of the small farmers. It has also ushered in new concept of large scale Integrated Irrigation Solutions (IIS). All the products and services of JISL help create sustainable future while fulfilling its vision 'Leave this world better than you found it'. JISL is listed in NSE-Mumbai at JISLJAEQS and in BSE at code 500219. Please visit us at www.jains.com

Solar Products:

Solar Thermal:

- Jain Solar Water Heater (FPC Type) • Jain Solar Water Heater (ETC Type).

Solar Photovoltaic:

- Jain Solar Photovoltaic Module • Jain Solar Water Pumping System • Jain Solar Blinker • Jain CFL/LED Based Solar AD Board
- Jain Solar Lantern • Jain Solar Street Lighting System • Jain Solar Home Lighting System • Jain PV Power Plant & Power Pack.

Bio-Energy:

- Biogas Power Plant on Turnkey Basis • Consultancy for Vermi-Compost Project.



Our joint venture with Nature



Quality is way of Life
Jain Irrigation, Green Energy Park is an ISO 9001,
ISO 14001 & BS OHSAS 18001 Certified Company

Jain Plastic Park, N. H. No. 6, P.O. Box 72, Jalgaon - 425001. India.

Tel: +91 257 2258011; Fax: +91 257 2258111; E-mail: solar@jains.com; Website: www.jains.com

