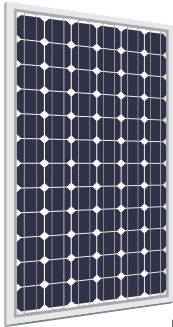




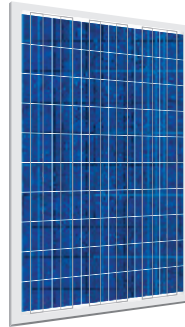
BETTER DESIGN • BETTER MATERIALS • BETTER PROCESSES

BETTER MODULES

FULL RANGE OF CERTIFIED MODULES

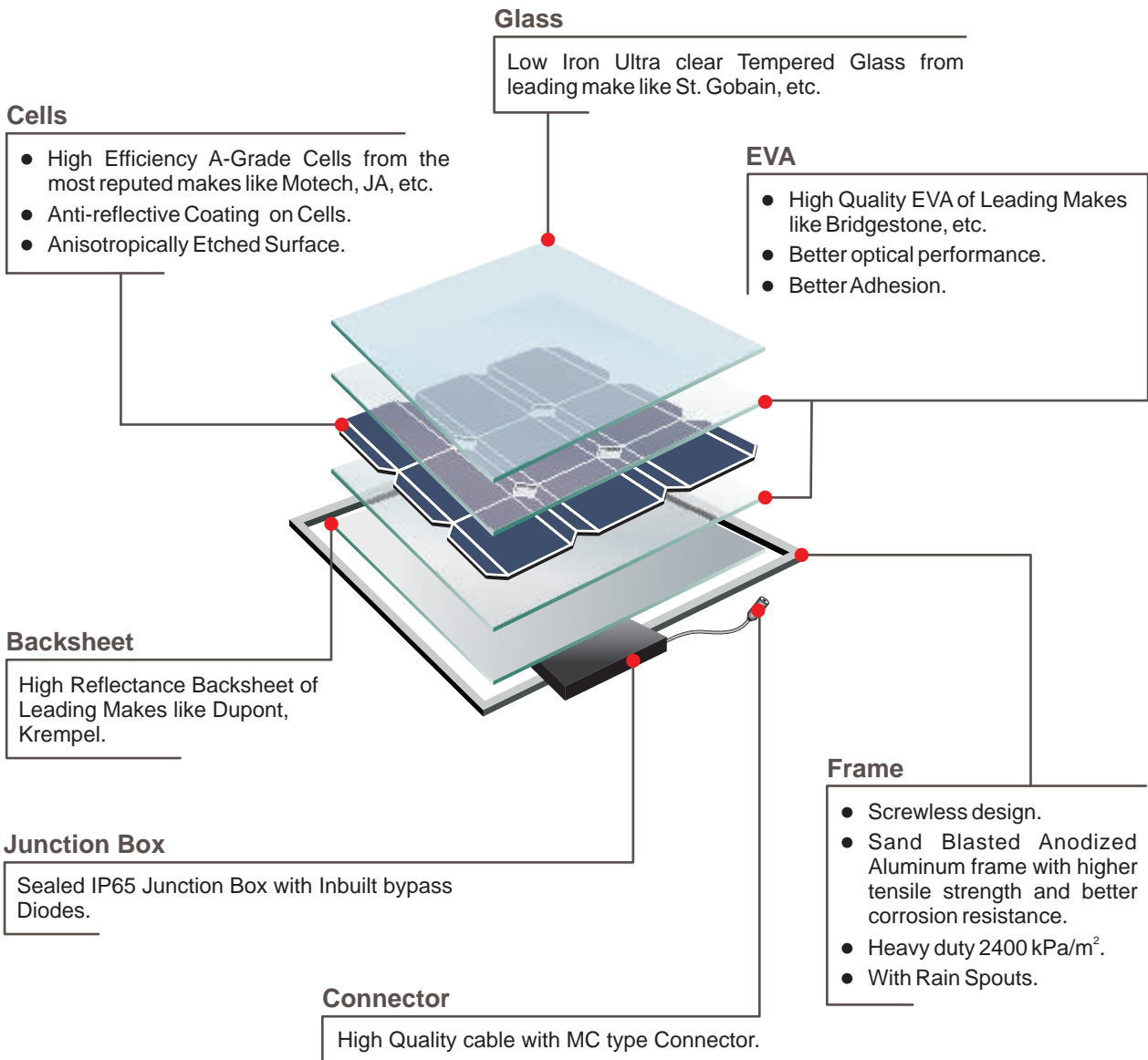


Mono Crystalline
160 Watt to 250 Watt



Poly (Multi) Crystalline
160 Watt to 280 Watt

BETTER MATERIALS



FEATURES

- Very high efficiency modules (**Upto 15% module efficiency**).
- Wide range of certified modules from 160 to 280 Watts.
- Positive oriented power tolerance: **0%** on lower side to **+3%**.
- Bypass Diodes to ensure power output even in case of shading.
- Reverse current protection.
- Plug and play (MC type Connector & cable included).
- Light weight.
- Higher safety as modules are certified to IEC 61730, Safety Class II 1000VDC (also save on cabling costs).
- All certified components from leading brands.

DURABILITY

Tests performed:

- Electric Isolation.
- Outdoor Exposure.
- Wet Leakage Current.
- Thermal Cycling (-40°C to +85°C).
- Thermal Shock.
- Humidity Freeze.
- Damp Heat Test (1000H at +85°C, 85%RH).
- Hot-Spot.
- Salt Mist Test.
- UV Exposure.
- Outdoor Exposure (60KWh/m²).
- Bypass Diode Thermal Test.
- Mechanical, Wind and Twist Loading.
- Hail Impact (25mm diameter ice ball at 23 m/s).

WARRANTY

- Long term output warranty shall warrant if PV Module(s) exhibits power output of less than 90% of the original minimum rated power specified at the time of sale within 10 years and less than 80% within 25 years after the date of sale to the customer.
- 5 Years Warranty against any manufacturing defects.

25
years

APPLICATIONS

- Large Solar Farms
- Roof-Top Grid-Connect
- Rural Electrification
- Street Lighting
- Telecom
- Cathodic Protection
- Solar Pumping
- Railway & Traffic Signaling

SMALL MODULES

Small Modules also available from 50 Wp onwards up to 130 Wp for off Grid & Rural Application (Suitable for 12 V Configuration).



- Qualified, IEC 61215 : 2005
- Safety Tested, IEC 61730



ISO 9001:2000
Plant



Poly - Crystalline Silicon Modules

Technical Specifications (PCA160 to PCA210)

MODELS	PCA - 48 - 160	PCA - 48 - 170	PCA - 48 - 180	PCA - 54 - 190	PCA - 54 - 200	PCA - 54 - 210	PCA - 60 - 210
Type of Cells	Poly (Multi) Crystalline Silicon						
Wattage (Wp)	160	170	180	190	200	210	210
Volt. at Max. Power (Vmp)	21.9	22.3	22.6	26.0	26.2	26.4	29.0
Open Circuit Volt. (Voc)	29.3	29.6	29.6	33.0	33.4	33.6	36.5
Current at Max. Power (Imp)	7.32	7.61	7.95	7.31	7.63	7.95	7.24
Short Circuit Curr. (ISC)	7.85	8.11	8.33	7.89	8.12	8.33	7.88
Number of cells per module	48	48	48	54	54	54	60
Dimensions (mm)	1324 X 990 X 40	1324 X 990 X 40	1324 X 990 X 40	1482 X 990 X 50	1482 X 990 X 50	1482 X 990 X 50	1640 X 990 X 50
Weight (kg)	16.5	16.5	16.5	18.5	18.5	18.5	21

Technical Specifications (PCA220 to PCA280)

MODELS	PCA - 60 - 220	PCA - 60 - 230	PCA - 60 - 240	PCA - 72 - 250	PCA - 72 - 260	PCA - 72 - 270	PCA - 72 - 280
Type of Cells	Poly (Multi) Crystalline Silicon						
Wattage (Wp)	220	230	240	250	260	270	280
Volt. at Max. Power (Vmp)	29.5	29.8	30.2	34.6	34.8	35	35.2
Open Circuit Volt. (Voc)	37.0	37.0	37.2	43.8	44.0	44.5	44.8
Current at Max. Power (Imp)	7.45	7.73	7.95	7.23	7.47	7.71	7.95
Short Circuit Curr. (ISC)	8.10	8.22	8.33	7.87	8.09	8.20	8.33
Number of cells per module	60	60	60	72	72	72	72
Dimensions (mm)	1640 X 990 X 50	1640 X 990 X 50	1640 X 990 X 50	1950 X 990 X 50	1950 X 990 X 50	1950 X 990 X 50	1950 X 990 X 50
Weight (kg)	21	21	21	24	24	24	24

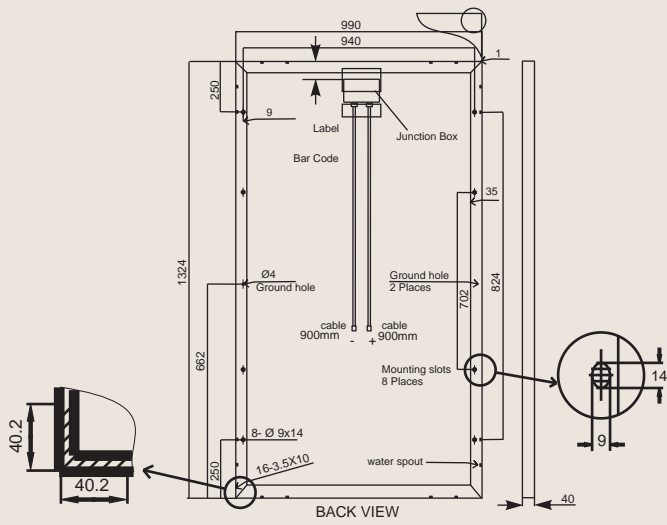
Common Specifications to all Models

Frame	Anodized Aluminium
Front Glass	Tempered 3.2 mm
Oper. Temp. (Deg. C)	-40 to +85
Relative Humidity	0 to 100%
Max. System Voltage	1000 VDC
NOCT	46°C +/-2°C
Junction Box	IP 65
Connector	MC4
Temp. Coefficients	Current(Isc) : 0.07%/°C ; Voltage(Voc) : - 0.36%/°C ; Power(Pmax) : - 0.45%/°C
Reverse current protection	15 Amps
Application class	Class A

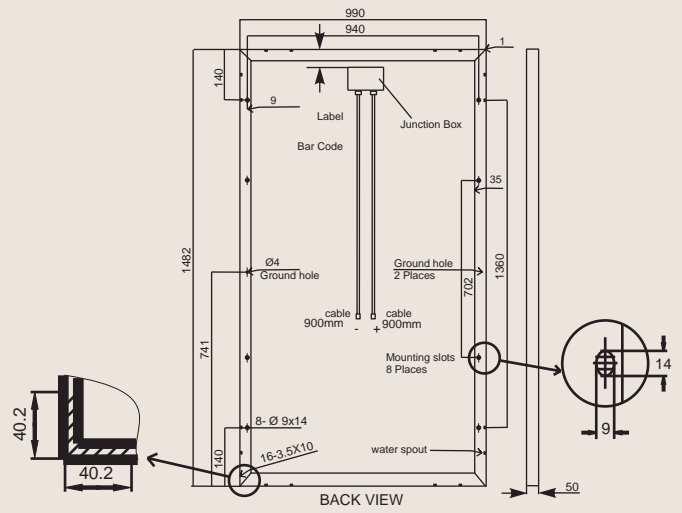
All Electrical Parameters apply to Standard Test Conditions (STC) : 1000W/m², AM1.5, 25°C



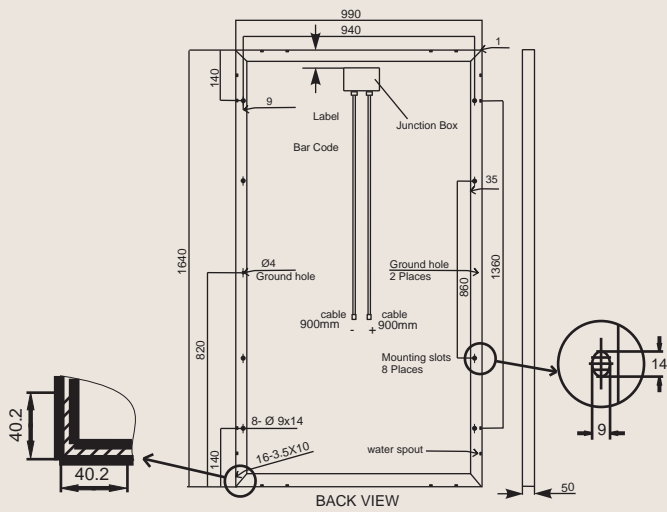
PCA - 48 Cells Modules



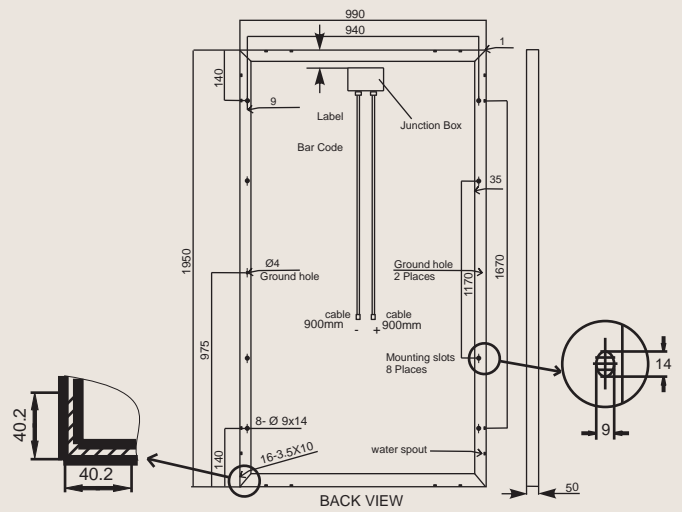
PCA - 54 Cells Modules



PCA - 60 Cells Modules



PCA - 72 Cells Modules

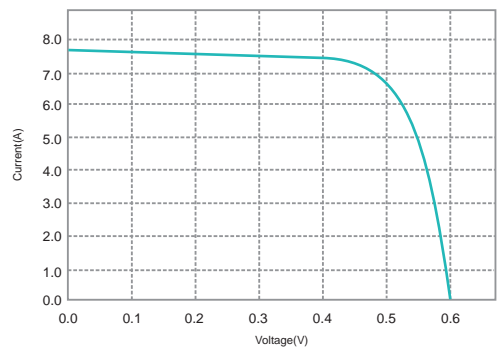


I-V Curve (Cell Characteristics)

INTENSITY DEPENDENCE

Intensity [W/m^2]	Isc* [mA]	Voc* [mV]
1000	1.0	1000
900	0.9	0.996
500	0.5	0.968
300	0.3	0.943
200	0.2	0.922

*Ratio of Voc(Isc) at reduced intensity to Voc(Isc) at 1000 W/m^2



Specifications are subject to change without prior notice.

Mono - Crystalline Silicon Modules

Technical Specifications (MCA 160 to MCA 190)

MODELS	MCA 160	MCA 165	MCA 170	MCA 175	MCA 180	MCA 185	MCA 190
Type of Cells	Mono Crystalline Silicon						
Wattage (Wp)	160	165	170	175	180	185	190
Volt. at Max. Power (Vmp)	35.0	35.0	35.6	35.8	36.0	36.2	36.4
Open Circuit Volt. (Voc)	44.0	44.0	44.4	44.6	44.8	44.8	44.8
Current at Max. Power (Imp)	4.57	4.71	4.77	4.88	5.0	5.11	5.2
Short Circuit Curr. (ISC)	5.10	5.36	5.41	5.43	5.48	5.51	5.62
Size of Cells (mm)	125 X 125						
Cells per Module	72						
Dimensions (mm)	1580 X 808 X 40						
Weight (Kg)	16.0						
Diodes	3 bypass						
Connector	MC4						
Cable	Cross section : 4.0mm ² ; Length : 900 mm						

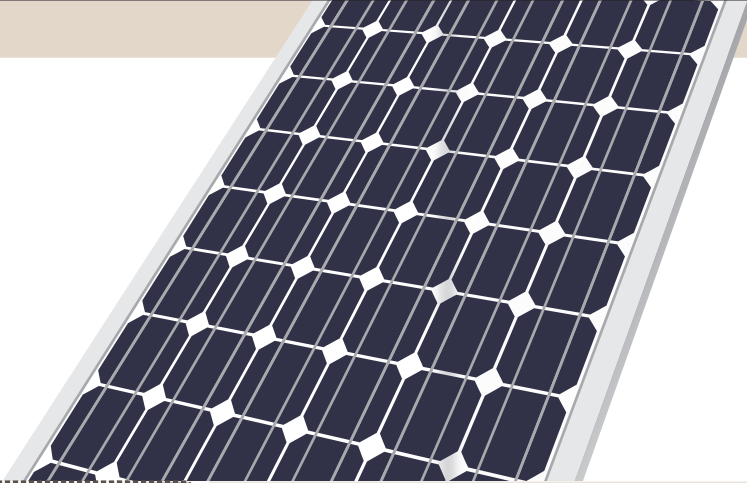
Technical Specifications (MCA 210 to MCA 250)

MODELS	MCA 210	MCA 215	MCA 220	MCA 225	MCA 230	MCA 235	MCA 240	MCA 245	MCA 250
Type of Cells	Mono Crystalline Silicon								
Wattage (Wp)	210	215	220	225	230	235	240	245	250
Volt. at Max. Power (Vmp)	44.3	44.7	45.2	45.8	46.4	46.6	46.9	47.1	47.3
Open Circuit Volt. (Voc)	59.2	59.2	59.2	59.5	59.5	59.5	59.5	60	60
Current at Max. Power (Imp)	4.74	4.81	4.87	4.91	4.96	5.04	5.11	5.20	5.28
Short Circuit Curr. (ISC)	5.20	5.34	5.43	5.44	5.47	5.48	5.50	5.52	5.56
Size of Cells (mm)	125 X 125								
Cells per Module	96								
Dimensions (mm)	1580 X 1060 X 50								
Weight (Kg)	21.0								
Diodes	4 bypass								
Connector	MC4								
Cable	Cross section : 4.0mm ² ; Length : 1100 mm								

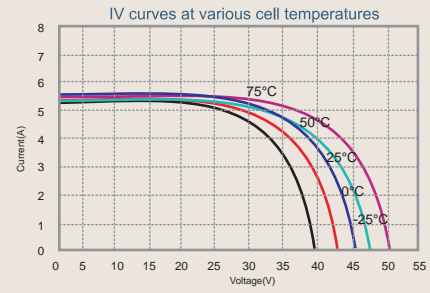
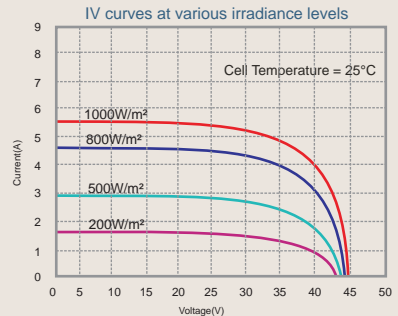
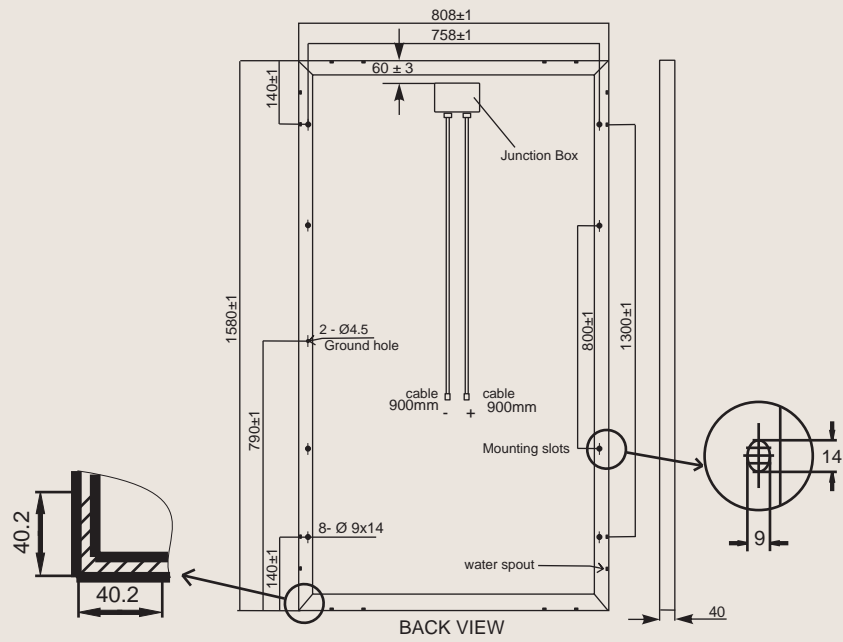
Common Specifications to all Models

Frame	Anodized Aluminium
Front Glass	Tempered 3.2 mm
Oper. Temp. (Deg. C)	-40 to +85
Relative Humidity	0 to 100%
Max. System Voltage	1000 VDC
NOCT	45°C +/-2°C
Junction Box	IP 65
Temp. Coefficients	Current(Isc) : 0.10%/°C ; Voltage(Voc) : - 0.38%/°C ; Power(Pmax) : - 0.47%/°C
Reverse current protection	10 Amps
Application class	Class A

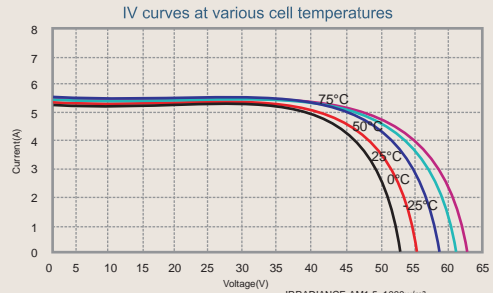
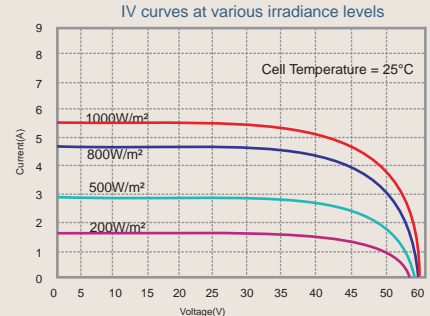
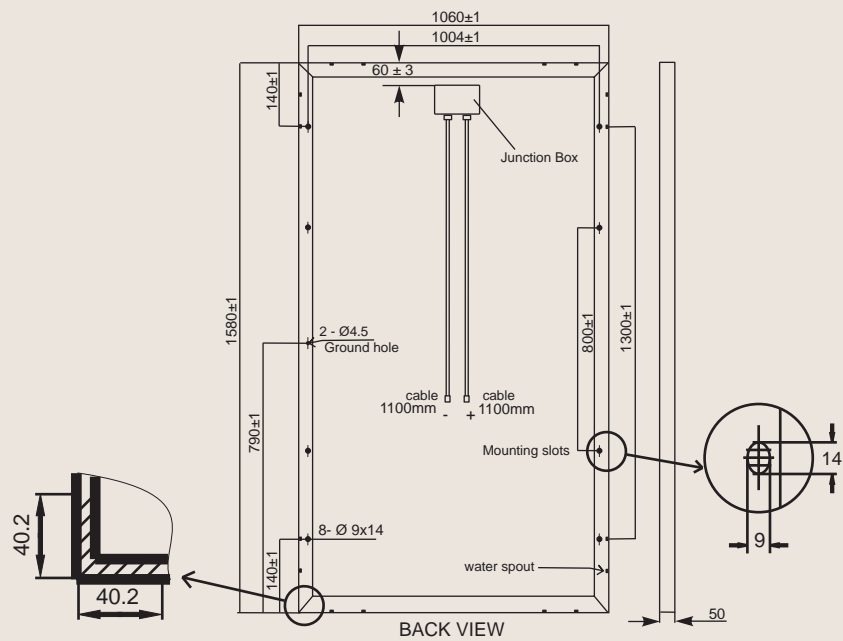
All Electrical Parameters apply to Standard Test Conditions (STC) : 1000W/m², AM1.5, 25°C



Other Details (MCA-160 to MCA-190)



Other Details (MCA-210 to MCA-250)



Specifications are subject to change without prior notice.

Accessories

Inverters Grid Connect



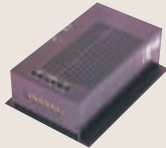
- Grid Connect String Inverters
- Different model upto 12.5 Kw
- High Efficiency (upto 97.5%)
- MPPT technology
- Standard Protections in-built

Inverters Off-Grid



- Pure Sinewave
- High Efficiency
- Available Models with chargers & without chargers
- Different Models upto 8 Kw

MPPT Chargers



- High Efficiency Upto 98%
- Available in 12V / 24 V / 48V
- Available upto maximum 210 amps



Novergy Energy Solution Pvt. Ltd.

1 Navlok Navrartna Comp., Bedla Road, Udaipur- 313001, India

Phone : +91-294-2450467, 2415487, Fax +91-294-2415488

E-mail: sales@novergy.net, info@novergy.co.in

www.novergy.co.in

Distributor / Dealer / Agent