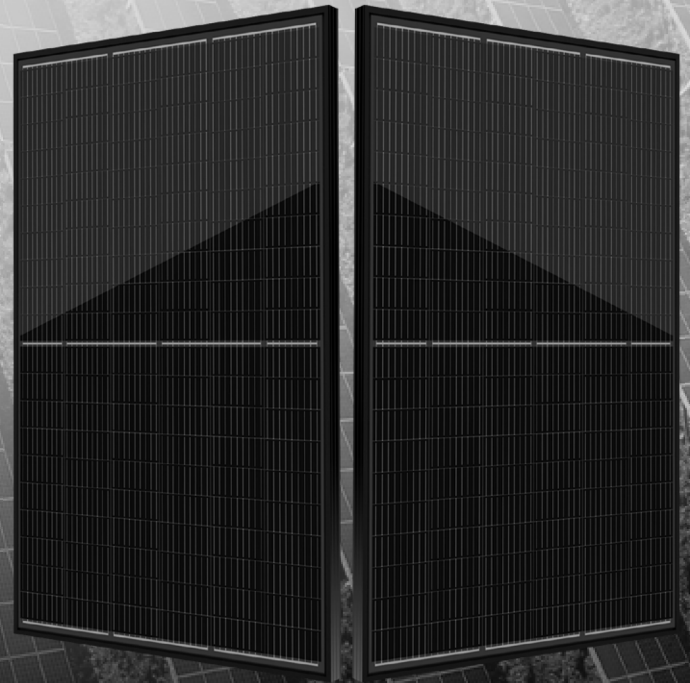




YOUR RELIABLE
PARTNER FOR
SOLAR ENERGY
SINCE 1992



EMMVEE BLACK MODULE

MOST AESTHETIC SNIPER FOR YOUR ROOF!

Emmvee is an intelligent solar solutions producer born from an idea to implement green energy to better use. We aim at providing universally designed products to support all kinds of contemporary and lavish living. Amidst our industrial product range, Photovoltaics and Solar Water Heating Systems have been our strongest since inception in 1992.

Worried about the sustainability of your solar modules in the extreme harsh weather conditions?

Emmvee Solar Photovoltaic Modules are the best for On-Grid solar power plants. Our modules are built to withstand extreme harsh weather conditions and sustain for more than 25 years. The rigid performance and safety measures adopted by our products are one of its kind. These modules are carved into perfection with our state-of-the-art machinery and premium materials sourced from across the world.

FEATURES



AR COATED HIGH
TRANSMISSION GLASS



ANODISED BLACK
ALUMINIUM FRAME



PID
RESISTANT



MECHANICAL
LOAD OF 5400 Pa



MC4 COMPATIBLE
CONNECTORS

BENEFITS



CAPABLE OF BEARING
HIGH SNOW LOAD AND



EXCELLENT CURRENT
DISTRIBUTION



FLEXIBILITY IN
INVERTER SELECTION



RESISTS CORROSION
OF THE FRAME



NO DEGRADATION OF
ELECTRICAL POWER,

TECHNICAL SPECIFICATION FOR EMMVEE BLACK MODULE

Electrical data at 1000W/m², 25°C and A.M1.5 (STC in accordance with IEC 60904-3)

| MODEL NAME | E330P72-B | E335P72-B | E390M72-B | E395M72-B | E440H CM120-B | E445H CM120-B | E450H CM120-B |
|---------------------------------------|-----------|-----------|-----------|-----------|------------------|------------------|------------------|
| RATED POWER AT STC | 330 Wp | 335 Wp | 390 Wp | 395 Wp | 440 Wp | 445 Wp | 450 Wp |
| MODULE EFFICIENCY AT STC | 16.92% | 17.18% | 19.45% | 19.70% | 20.28% | 20.51% | 20.74% |
| OPEN CIRCUIT VOLTAGE - Voc (volts) | 45.9 | 46.0 | 49.0 | 49.1 | 41.44 | 41.46 | 41.56 |
| SHORT CIRCUIT CURRENT - Isc (amps) | 9.2 | 9.31 | 10.12 | 10.21 | 13.55 | 13.75 | 13.81 |
| MAX POWER VOLTAGE - Vpm (volts) | 37.7 | 37.8 | 40.37 | 40.45 | 34.21 | 34.28 | 34.31 |
| MAX POWER CURRENT - Ipm (amps) | 8.76 | 8.86 | 9.66 | 9.75 | 12.87 | 12.99 | 13.12 |

THE MEASUREMENT TOLERANCE OF THE RATED POWER IS ±3%. THE MODULES DELIVERED ARE SORTED IN A RANGE OF +5WP. AT LOW IRRADIANCE (200W/M², 25°C AND AM1.5) THE MODULE YIELDS AT LEAST 96% OF THE STC EFFICIENCY.

Thermal data

| | | | |
|-----------------------------------------------|-------------|-------------|-------------|
| TEMPERATURE COEFFICIENT OPEN-CIRCUIT VOLTAGE | -0.34% / °K | -0.29% / °K | -0.29% / °K |
| TEMPERATURE COEFFICIENT SHORT CIRCUIT CURRENT | +0.05% / °K | +0.05% / °K | +0.05% / °K |
| TEMPERATURE COEFFICIENT RATED POWER | -0.4% / °K | -0.39% / °K | -0.39% / °K |
| NOCT (NORMAL OPERATING CELL TEMPERATURE) | 44°C ± 2°C | 44°C ± 2°C | 44°C ± 2°C |

Mechanical data

| NUMBER OF CELLS AND CELL TYPE | 72 MULTICRYSTALLINE SOLAR CELLS (157 mm X 157 mm) | 72 MONO PERC SOLAR CELLS (158.75 mm X 158.75 mm) | 120 MONO PERC SOLAR CUT CELLS (182 mm X 91 mm) |
|-------------------------------------|---------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|
| DIMENSIONS: LENGTH X WIDTH X HEIGHT | 1970 mm x 990 mm x 35 mm | 1993 mm x 1006 mm x 35 mm | 1913 mm x 1134 mm x 35 mm |
| WEIGHT | 22 Kg | 23 Kg | 24 Kg |
| FRONT GLASS | 3.2 mm HIGH TRANSMISSION, TEMPERED GLASS | 3.2 mm HIGH TRANSMISSION, TEMPERED GLASS | 3.2 mm HIGH TRANSMISSION, TEMPERED GLASS |
| EMBEDDING | EVA | EVA | EVA |
| BACK SHEET | COMPOSITE FILM, BLACK | COMPOSITE FILM, BLACK | COMPOSITE FILM, BLACK |
| FRAME | BLACK ANODIZED ALUMINIUM FRAME | BLACK ANODIZED ALUMINIUM FRAME | BLACK ANODIZED ALUMINIUM FRAME |
| JUNCTION BOX | IP67 | IP67 | IP68 |
| NUMBER OF BYPASS DIODES | 3 | 3 | 3 |
| CABLES | 4mm ² SOLAR CABLES, LENGTH 1200 ± 10 mm | 4mm ² SOLAR CABLES, LENGTH 1200 ± 10 mm | 4mm ² SOLAR CABLES, LENGTH 500 ± 10 mm |
| CONNECTORS | MC4 COMPATIBLE | MC4 COMPATIBLE | MC4 COMPATIBLE |

Permissible operating conditions

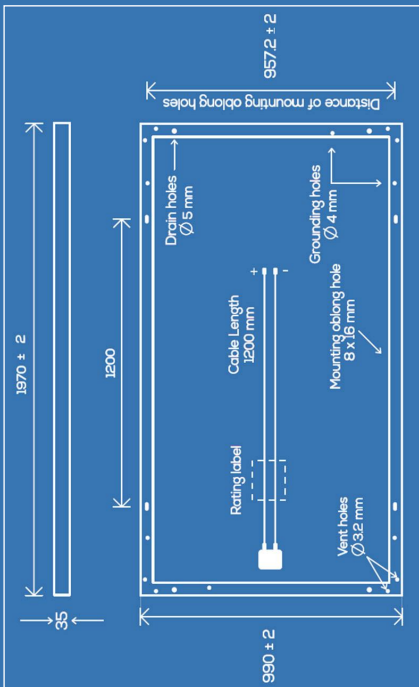
| | | | |
|-------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|
| OPERATING TEMPERATURE RANGE | -40°C to 85°C | -40°C to 85°C | -40°C to 85°C |
| MAX.SYSTEM VOLTAGE | 1500V DC | 1500V DC | 1500V DC |
| MAX.REVERSE CURRENT | 20A | 20A | 25A |
| MAXIMUM SURFACE LOAD CAPACITY | 5400Pa | 5400Pa | 5400Pa |
| RESISTANCE AGAINST HAIL | MAX Ø24 mm WITH IMPACT SPEED OF 83km/h | MAX Ø24 mm WITH IMPACT SPEED OF 83km/h | MAX Ø24 mm WITH IMPACT SPEED OF 83km/h |
| PROTECTION CLASS | II | II | II |

TECHNICAL SPECIFICATION FOR EMMVEE BLACK MODULE

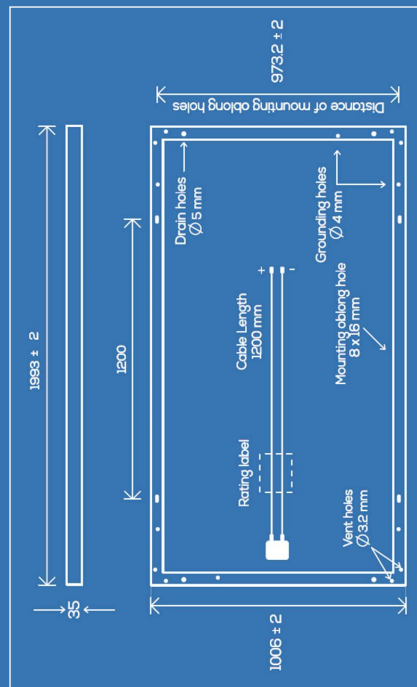
Warranty

| | | | |
|----------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| PRODUCT WARRANTY | 10 YEARS | 10 YEARS | 12 YEARS |
| PERFORMANCE WARRANTY | 25 YEARS | 25 YEARS | 25 YEARS |
| ANNUAL DEGRADATION | 1ST YEAR DEGRADATION, 2.5%, FROM 2ND YEAR 0.73% ANNUAL DEGRADATION AND 80% AT THE END OF 25 YEARS. | 1ST YEAR DEGRADATION, 2.5%, FROM 2ND YEAR 0.73% ANNUAL DEGRADATION AND 80% AT THE END OF 25 YEARS. | 1ST YEAR DEGRADATION, 2%, FROM 2ND YEAR 0.55% ANNUAL DEGRADATION AND 85% AT THE END OF 25 YEARS. |

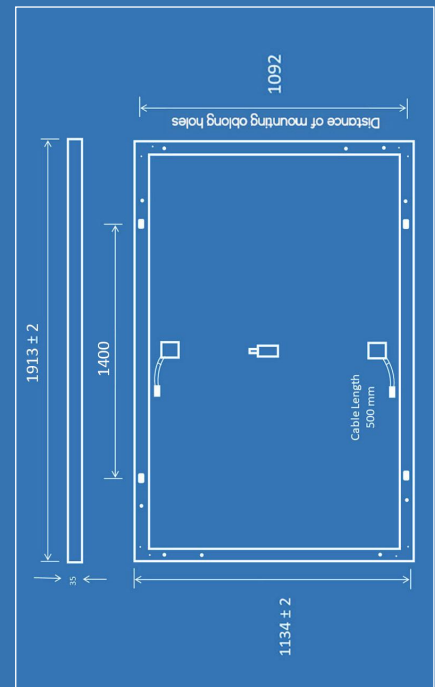
72 MULTICRYSTALLINE SOLAR CELLS (157 mm x 157 mm)



72 MONO PERC SOLAR CELLS (158.75 mm x 158.75 mm)



120 MONO PERC SOLAR CUT CELLS (182 mm x 91 mm)



YOUR RELIABLE
PARTNER FOR
SOLAR ENERGY
SINCE 1992



IEC 61215
IEC 61730
Regular Production
Surveillance
www.tuv.com
ID 1111219282



Salt Mist
Resistance
Regular Production
Surveillance
www.tuv.com
ID 1111219443



Ammonia
Resistance
Regular Production
Surveillance
www.tuv.com
ID 1111219415



ISO 9001= ISO 14001
OHSAS 18001



EMMVEE PHOTOVOLTAIC POWER PRIVATE LIMITED

Corporate Office: No. 13/1, International Airport Road, Bettahalasur Post, Bengaluru - 562 157, India