

KEY FEATURES



Excellent module efficiency up to: 21.48%



IP68 junction box for long-term weather endurance



Heavy snow loading up to 5400 Pa, wind loading up to 2400 Pa



PID: selected material and stringent quality system ensure PID free



Applicable to harsh environment of deserts, farmlands and seashores



Much lower risk of Hot Spot

CERTIFICATE



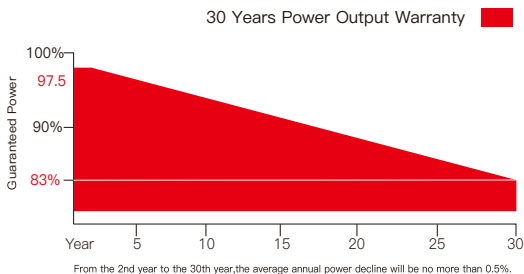
WARRANTY



Linear power output warranty
 -12 years minimum 92% power output
 -30 years minimum 83% power output



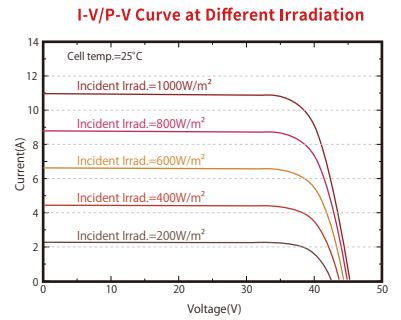
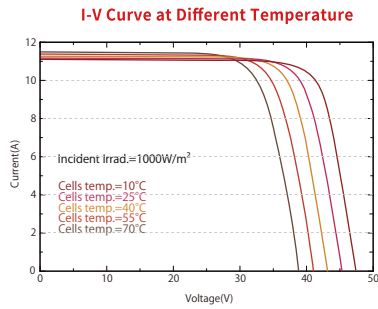
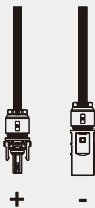
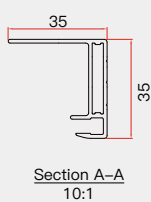
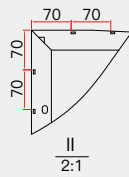
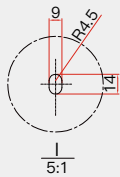
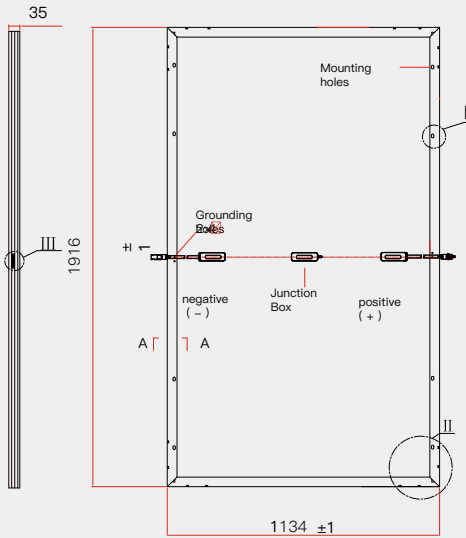
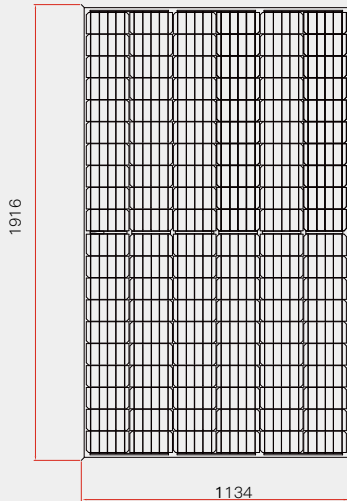
Product warranty on materials and workmanship
 According to the applicable Einnova Solarline Limited Warranty Statement



Einnova Solarline

invented for solar

DIMENSIONS OF PV MODULE (unit:mm)



| ELECTRICAL SPECIFICATION | Unit | ESM-445H | ESM-450H | ESM-455H | ESM-460H | ESM-465H |
|-----------------------------|------|-------------|----------|----------|----------|----------|
| Maximum Power (Pmax) | W | 445 | 450 | 455 | 460 | 465 |
| Module Efficiency (%) | % | 20.56 | 20.79 | 21.02 | 21.25 | 21.48 |
| Open Circuit Voltage (Voc) | V | 41.2 | 41.4 | 41.60 | 41.8 | 42.00 |
| Short Circuit Current (Isc) | A | 13.63 | 13.68 | 13.73 | 13.78 | 13.83 |
| Maximum Power Voltage (Vmp) | V | 34.4 | 34.6 | 34.8 | 35.0 | 35.4 |
| Maximum Power Current (Imp) | A | 12.90 | 12.96 | 13.02 | 13.08 | 13.14 |
| Maximum System Voltage | V | ICE 1500VDC | | | | |

STC:Irradiance:1000W/m²,Module Temperature:25°C,Air Mass:1.5

| ELECTRICAL DATA@NOCT | ESM-445H | ESM-450H | ESM-455H | ESM-460H | ESM-465H |
|----------------------|----------|----------|----------|----------|----------|
| Pmax [W] | 328 | 331 | 335 | 339 | 343 |
| Vmp[V] | 32.14 | 32.34 | 32.5 | 32.74 | 32.94 |
| Imp [A] | 10.21 | 10.24 | 10.30 | 10.35 | 10.40 |
| Voc[V] | 38.48 | 38.68 | 38.88 | 39.08 | 39.28 |
| Isc[A] | 10.73 | 10.78 | 10.83 | 10.88 | 10.93 |

NOCT:Irradiance:800W/m², Ambient Temperature:20°C,Air Mass:1.5,Wind Speed:1m/s

| MECHANICAL SPECIFICATIONS | |
|---------------------------|--|
| Solar Cell Type | Half Cut Monon Crystalline 182*182mm |
| Number of Cells | 120pcs (20x6) |
| Module Size | 1916*1134*35mm |
| Weight | 23.5kg |
| Glass | 3.2mm tempered glass |
| Back Sheet | White or Black |
| Frame | Anodized aluminium alloy,silver or black |
| Junction Box | IP68 |
| Quantity of Diodes | 3pcs |
| Cable | 4.0mm ² 1100mm |
| Connector | MC4 Compatible |
| Wind/Snow Load | 2400pa/5400pa |

| TEMPERATURE CHARACTERISTIC | |
|---|-------------|
| NMOT (Nominal Module Operating Temperature) | 45°C (±2°C) |
| Temperature Coefficient of P _{MAX} | - 0.36%/°C |
| Temperature Coefficient of U _{OC} | - 0.26%/°C |
| Temperature Coefficient of I _{SC} | 0.04%/°C |

| MAXIMUM RATINGS | |
|-------------------------|--------------------------------------|
| Operational Temperature | -40 to +85°C |
| Maximum System Voltage | 1500V DC(IEC) |
| Max Series Fuse Rating | 20A |
| Protection Class | Class II |
| Snow Loading | 5400 Pa |
| Wind Loading | 2400 Pa |
| Hailstone Test | 25mm Hailstone at the speed of 23m/s |

| PACKAGING CONFIGURATION | |
|-------------------------|------------|
| Modules per box: | 30 pieces |
| Number per 20GP | 225 pieces |
| Modules per 40' HQ: | 660 pieces |

*design load with safety factor 1.5
(DO NOT connect Fuse in Combiner Box with two or more strings in parallel connection)