



KEY FEATURES



Excellent module efficiency up to: 20.90%



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



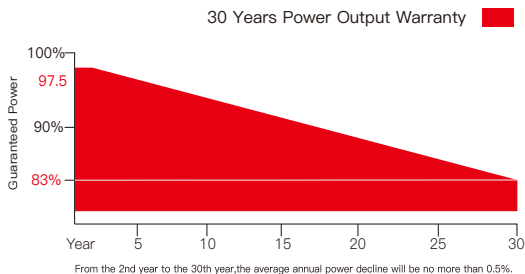
WARRANTY



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



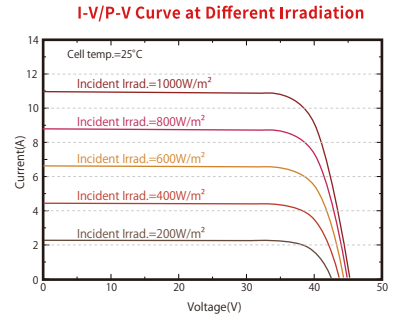
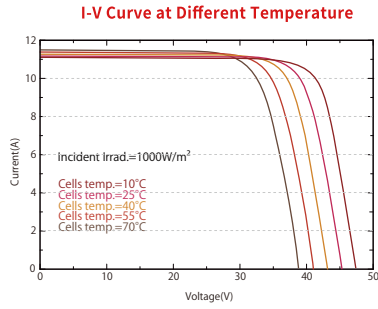
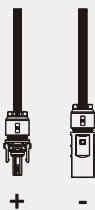
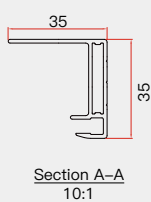
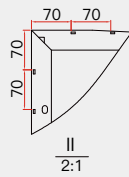
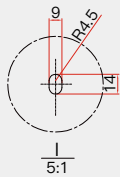
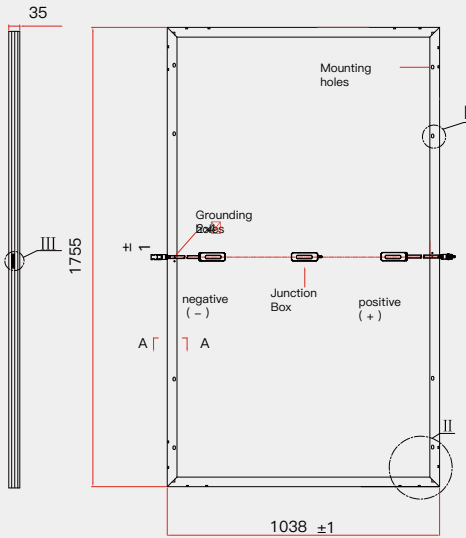
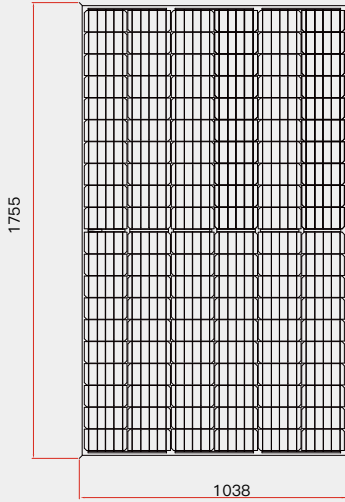
Product warranty on materials and workmanship
 According to the applicable Einnova Solarline Limited Warranty Statement



Einnova Solarline

invented for solar

DIMENSIONS OF PV MODULE (unit:mm)



ELECTRICAL SPECIFICATION	Unit	ESM-435H	ESM-440H	ESM-445H	ESM-450H	ESM-455H
Maximum Power (Pmax)	W	435	440	445	450	455
Module Efficiency (%)	%	20.00	20.20	20.50	20.70	20.90
Open Circuit Voltage (Voc)	V	48.70	48.90	49.10	49.30	49.50
Short Circuit Current (Isc)	A	11.39	11.46	11.53	11.60	11.66
Maximum Power Voltage (Vmp)	V	40.89	41.10	41.30	41.50	41.70
Maximum Power Current (Imp)	A	10.64	10.71	10.77	10.84	10.91
Maximum System Voltage	V	ICE 1500VDC				

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

ELECTRICAL DATA@NOCT	ESM-435H	ESM-440H	ESM-445H	ESM-450H	ESM-455H
Pmax [W]	324.9	328.6	332.3	336.1	339.8
Vmp[V]	38.10	38.30	38.50	38.60	38.80
Imp [A]	8.53	8.59	8.64	8.70	8.75
Voc[V]	45.70	45.80	46.00	46.20	46.40
Isc[A]	9.21	9.27	9.33	9.38	9.43

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 166*166mm
Number of Cells	144pcs (24x6)
Module Size	2094*1038*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)