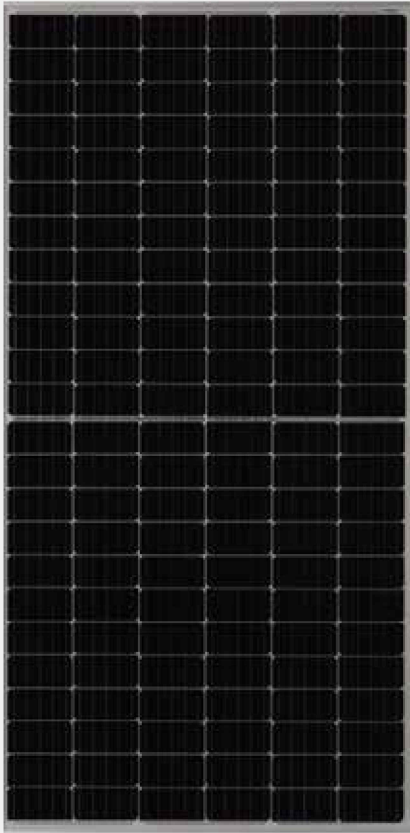


Einnova Solarline

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PERC Half Cut Mono Crystalline Solar Module ESM 435/440/445/450/455H

KEY FEATURES



Excellent module efficiency up to: 20.90%



IP68 junction box for long-term weather endurance



Heavy snow load up to 5400 Pa, wind load up to 3600 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



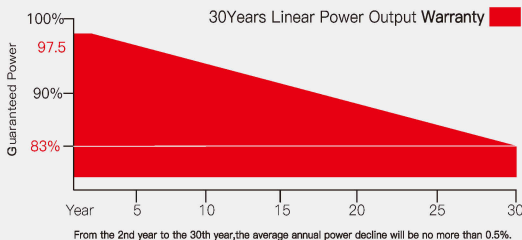
WARRANTY



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



China Jiangsu
International Group Ltd.

5 West Beijing Road,
Nanjing, 210008, China

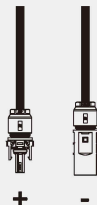
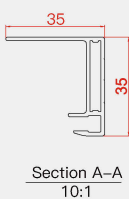
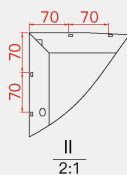
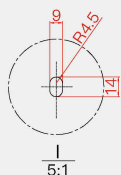
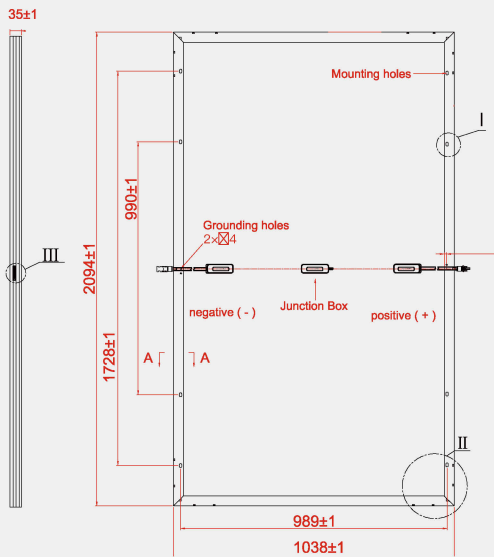
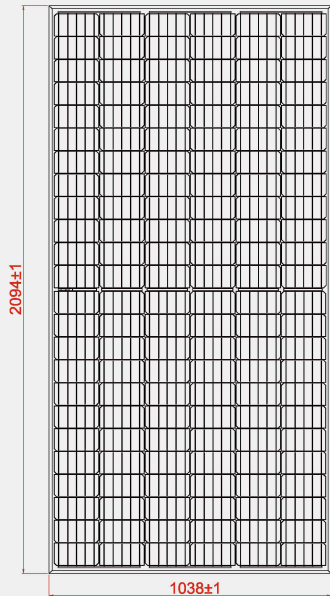
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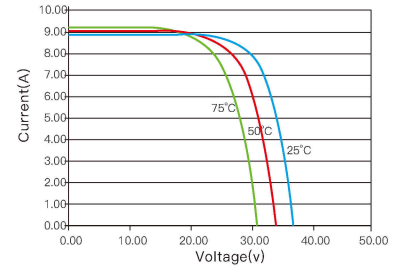
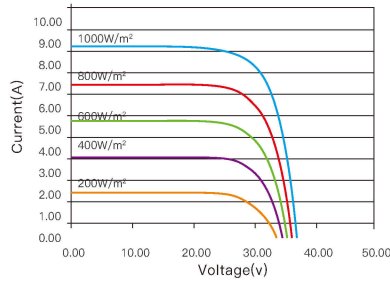
EN

Ennova Solarline

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IV CURVE



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/UL1500(VDC)				
Maximum Series Fuse Rating	A	20				

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	Mono Crystalline 166x166mm
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 aluminum alloy ,silver or black
Junction Box	IP68
Quantity of Diodes	3pcs
Cable	4.0mm2 1100mm
Connector	MC4 Compatible
Wind/Snow Load	3600pa/5400pa

TEMPERATURE CHARACTERISTIC

NMOT (Nominal Module Operating Temperature)	41°C (±3°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

PACKAGING CONFIGURATION

Modules per box:	30 pieces
Number per 20GP:	275 pieces
Modules per 40' HQ:	660 pieces

MAXIMUM RATINGS

Operational Temperature	-40 to +85°C
Maximum System Voltage	1500V DC(IEC) 1500V DC (UL)
Max Series Fuse Rating	20A
Snow Load	5400 Pa (3600 Pa)
Wind Load	3600 Pa (1600 Pa)

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