

HD SOLAR

Monocrystalline Black Half-cell Single Glass PV Module

HDM-Topcon M10 Half cell 108cells 435-460wp Single glass PV MODULE

RELIABLE QUALITY

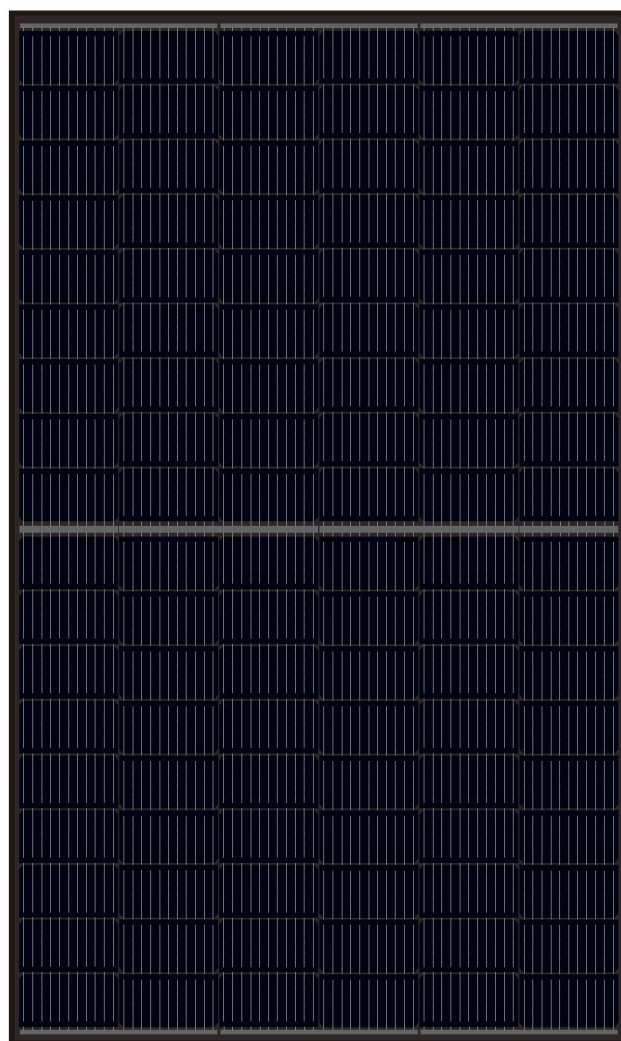
- 16BB Half-cut cell technology New circuit design, Lower internal current, Lower R_s loss Ga doped wafer, attenuation $<2\%$ (1st year) / $\leq 0.55\%$ (linear)
- Significantly Lower the risk of hot spot Special circuit design with much lower hot spot temperature
- Lower LCOE 2% More power generation, lower LCOE
- Excellent Anti-PID performance 2 times of industry standard Anti-PID test TUV SUD
- Higher power generation under working conditions, thanks to passivating contact cell technology
- Designed with aesthetics in mind, thinner wires that appear all black at a distance

MECHANICAL PARAMETERS

Weight(kg)	21.5KG
Dimensions(LxWxH)(mm)	1762x1134x30mm
Cable cross section size(mm ²)	4mm ² 300mm in length
NO. of cells and connections	108(6x18)
Front Glass	3.2mm AR Coating Tempered Glass
Frame	Anodized Aluminium
Junction Box	IP68, 3 diodes
Connector	MC4 Compatible

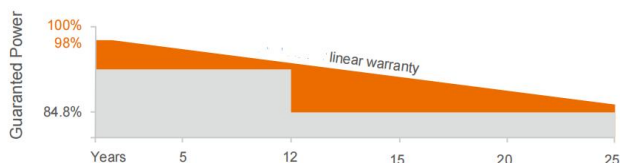
WORKING CONDITIONS

Maximum system voltage	DC1500V(IEC)
Operating temperature	-40°C --- +85°C
Maximum series fuse	25A
Static Loading Snow Loading:5400Pa/Wind Loading:2400Pa	
Conductivity at Ground	$\leq 0.1\Omega$
Resistance	$\geq 100M\Omega$
Fire Safety	Class C
Power Tolerance	0 -+ 5WP



Linear Performance Warranty

Standard Performance Warranty



Electrical data in this catalog do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types

HD solar power ltd

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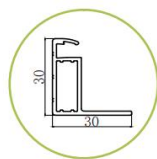
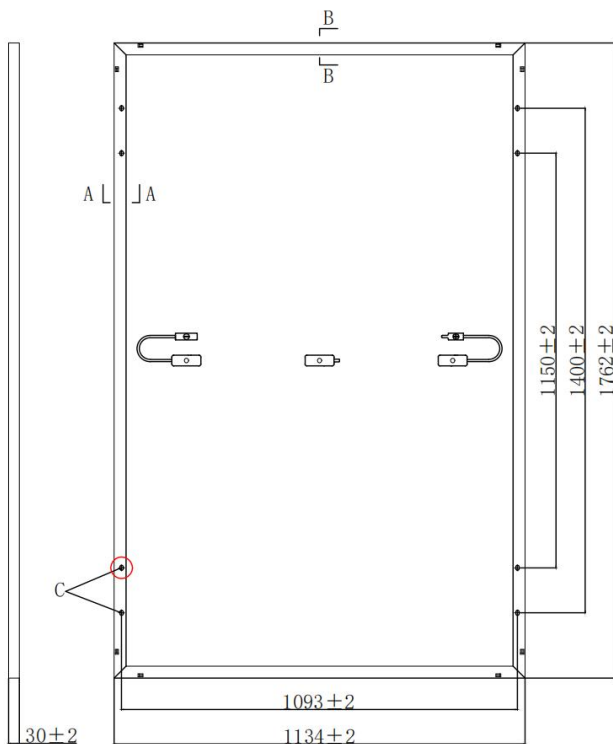
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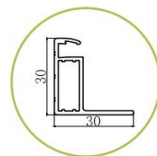
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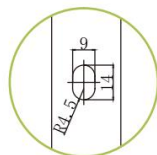
Engineering Drawing(unit mm)



A 长边截面

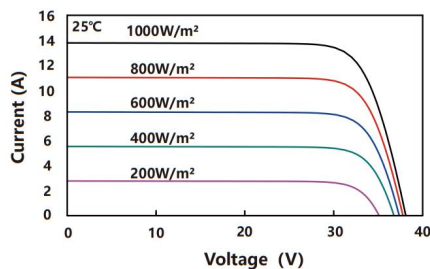


B 短边截面

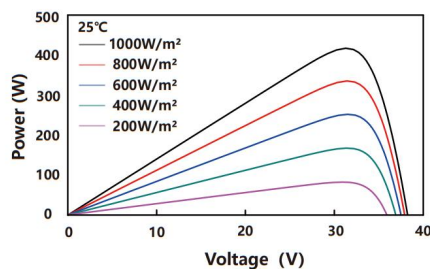


C 安装孔

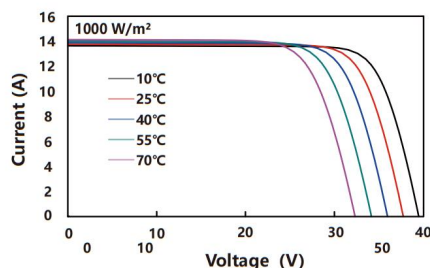
I-V CURVE



I-V Characteristics At Different Irradiations



P-V Characteristics At Different Irradiations



I-V Characteristics At Different Temperatures

customized cable length available upon request

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

Rated maximum power at STC(W)	435	440	445	450	455	460
Open circuit voltage (Voc/V)	38.37	38.57	38.77	38.97	39.17	39.37
Maximum power voltage(Vmp/V)	32.95	33.13	33.31	33.49	33.67	33.85
Short circuit current(Isc/A)	14.00	14.07	14.14	14.21	14.28	14.35
Maximum power current(Imp/A)	13.20	13.28	13.36	13.44	13.51	13.59
Module Efficiency [%]	21.80	22.00	22.30	22.50	22.80	23.00

Performance at NMOT NOCT:Irradiance at 800w/m²,Ambient Temperature 20 Wind Speed 1m/s

Peak Pwer(Pmax)(w)	326	330	333	337	341	345
Mpp Voltage(Vmp)(v)	31.55	31.72	31.89	32.06	32.24	32.41
MPP Current(Imp)(A)	10.33	10.39	10.45	10.51	10.57	10.63
Open Circuit Voltage(VOC)(V)	36.74	36.93	37.12	37.32	37.51	37.70
Short Circuit Current(Isc)(A)	11.30	11.36	11.42	11.47	11.53	11.59

Temperature Coefficient

Tempertrue Coefficient of Pmax -0.350%/°C

Temperature Coefficiency of Voc -0.260%/°C

Temperature Coefficient of Isc +0.048%/°C

NOCT 43 ±2°C

Temperature Coefficient of Pmax 0.03%°C

Packing Configuration

36pcs/Pallet 40HQ 936 PCS