

GERMAN BRAND SOLAR PANEL
M10 HALF CELL MONO

470W

120 CELL

M10 MBB MONO PERC

21.72%

MAXIMUM EFFICIENCY

450W-470W

POWER OUTPUT RANGE

0 to +5W

POSITIVE POWER TOLERANCE



Higher Output of Power

Effectively reduce the unit cost of PV solar system by watt



Optimize the temperature coefficient

Improve the performance under the condition of shadow and low temperature coefficient



Reduce the shadow loss on the power output

Effectively reduce the risk of heat spot on high efficiency



Stronger the physical property

Optimize the property of power generating and reliability of the system



Module Type		HTS-120M10H450		HTS-120M10H455		HTS-120M10H460		HTS-120M10H465		HTS-120M10H470	
Test Environment		STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power	$P_{MAX}(W)$	450	334.9	455	338.62	460	342.34	465	346.06	470	349.78
Maximum Power Voltage	$V_{MPP}(V)$	34.31	31.92	34.36	31.98	34.41	32.03	34.46	32.08	34.51	32.13
Maximum Power Current	$I_{MPP}(A)$	13.12	10.49	13.26	10.59	13.39	10.69	13.52	10.79	13.65	10.89
Open Circuit Voltage	$V_{OC}(V)$	41.56	39.23	41.62	39.3	41.68	39.36	41.74	39.42	41.8	39.48
Short Circuit Current	$I_{SC}(A)$	13.81	11.15	13.97	11.27	14.11	11.38	14.25	11.49	14.39	11.6
Tolerance	(W)	0 - +5		0 - +5		0 - +5		0 - +5		0 - +5	
Module Efficiency	(%)	20.80		21.03		21.26		21.49		21.72	

STC: Irradiance 1000 W/m², Cell Temperature 25°C, Air Mass AM1.5 according to EN 60904-3.

Average efficiency reduction of 4.5% at 200W/m² according to EN 60904-1

NOCT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Mono PERC
Cell Orientation	120 (6 x 20)
Module Dimensions	1908 x 1134 x 30mm
Weight	23.5kg
Glass	Anti-Reflective, AR Coated and Heat Tempered Solar Glass-3.2mm
Backsheet	Black
Frame	Black Anodized Aluminium Alloy
J-Box	IP 68 Rated
Cables	4.0mm ² , 350mm or Customized Length
Connector	MC4 Compatible
PACKAGE	Modules per box: 36 pieces Modules per 40' container: 864 pieces

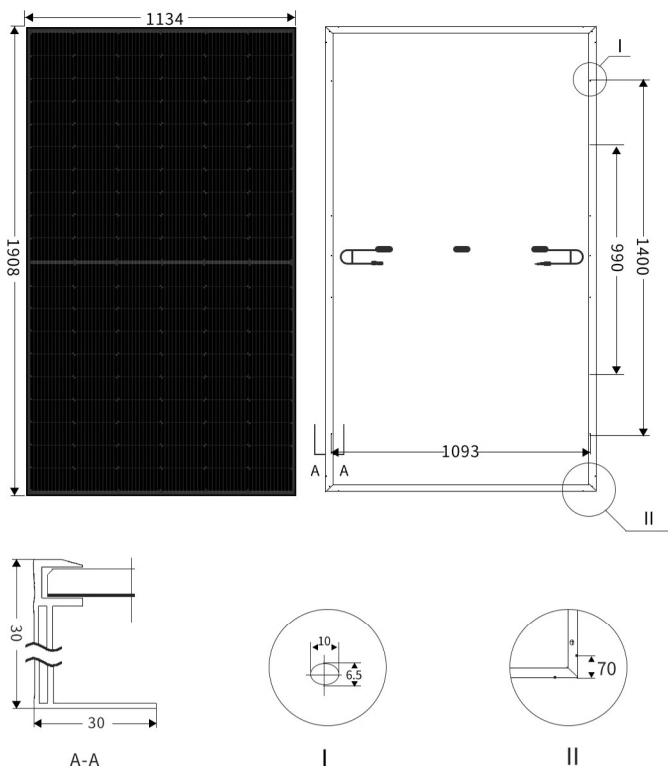
TEMPERATURE RATINGS

Nominal Operating Cell Temperature(NOCT)	45±2°C
Temperature Coefficient of P_{MAX}	-0.35%/°C
Temperature Coefficient of V_{OC}	-0.28%/°C
Temperature Coefficient of I_{SC}	+0.048%/°C

MAXIMUM RATINGS

Operational Temperature	-40 to +85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	25A
Mechanical Load	5400pa
Wind Load	2400pa

DIMENSIONS OF PV MODULE



LINEAR PERFORMANCE WARRANTY

15 Year Product Warranty

30 Year Linear Power Warranty

