

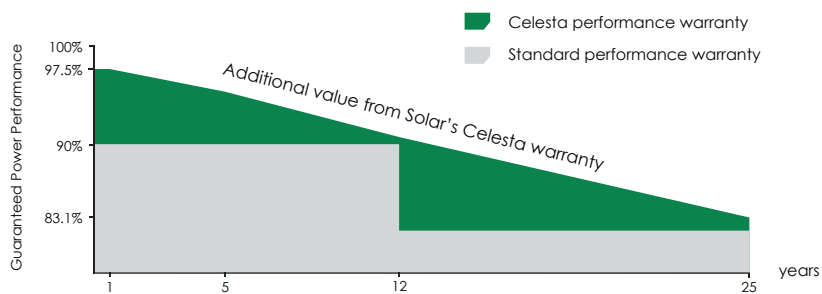


celesta[®]

CL450M-HC
Bifacial Series

CELESTA PERFORMANCE WARRANTY

12 Year Product Warranty • 25 Year Celesta Power Warranty



450W



ZBB-TF (Tiling Film)
Zero-busbar integrated interconnection



Sleek Design
≤ 2 m² area, easy to transport and install



All-black Technology
Sleek crystalline black appearance, seamlessly blending into rooftops

450W

POWER RANGE

0~+3%

POWER SORTING

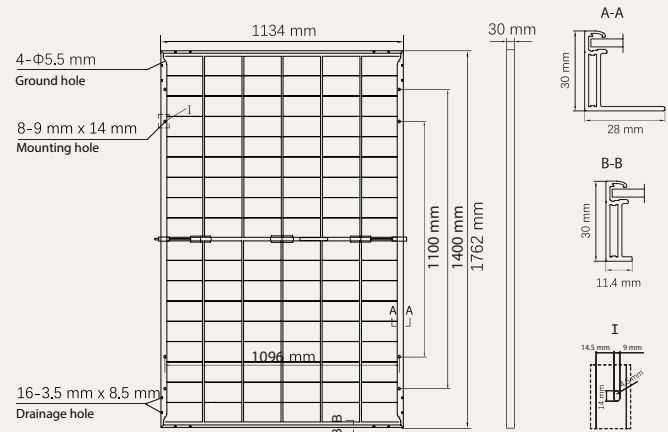
23.0%

MAX MODULE
EFFICIENCY

Mechanical Specifications

Outer dimensions (L x W x H)	1762 x 1134 x 30 mm
Cell type	n-type mono-crystalline
No. of cells	108 (6*18)
Frame technology	Aluminum, black anodized
Front / Back glass	1.6+1.6 mm
Cable length (Including connector)	Portrait: (+)350 mm, (-)250 mm ; Customized length
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 (Standard) / MC4-EVO2A (Optional)
Module weight	21.5 kg
Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	820 kg
Modules per 40' HQ container	936 pcs (Subject to sales contract)

① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.



Electrical Specifications

STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

Rated output (Pmpp / Wp)	450
Rated voltage (Vmpp / V)	33.39
Rated current (Impp / A)	13.48
Open circuit voltage (Voc / V)	39.40
Short circuit current (Isc / A)	14.28
Module efficiency	22.5%

NMOT: Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

Rated output (Pmpp / Wp)	338.4
Rated voltage (Vmpp / V)	31.43
Rated current (Impp / A)	10.77
Open circuit voltage (Voc / V)	37.42
Short circuit current (Isc / A)	11.53

Electrical Specifications (Integrated power)

Pmpp gain	Pmpp / Wp	Vmpp / V	Impp / A	Voc / V	Isc / A
5%	473	33.39	14.15	39.40	14.99
10%	495	33.39	14.82	39.40	15.70
15%	518	33.39	15.50	39.40	16.42
20%	540	33.39	16.17	39.40	17.13
25%	563	33.39	16.85	39.40	17.85

Electrical characteristics with different rear power gain (reference to 450W)

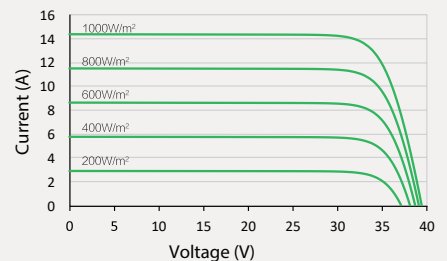
Temperature Ratings (STC)

Operating Parameters

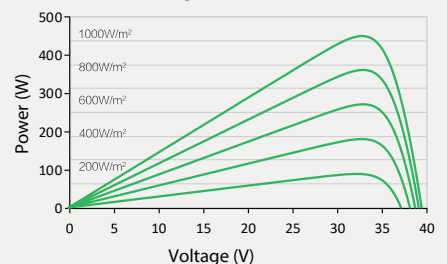
Temperature coefficient (Pmpp)	-0.29%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.043%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.25%/°C	Max. series fuse rating	30 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

Curve

Current-Voltage (450W)



Power-Voltage (450W)



Current-Voltage (450W)

