

C2 Black Solar Panel

Product: HSM-BE54-DD

480-495 W | Up to **24.3%** efficiency



Ideal for
residential
applications



Back-contact
gapless
technology



Framed glass-
glass with
black tint

More energy from your system

Innovative back-contact gapless technology minimizes resistive losses

Increased power density and bifaciality up to 70%

Lower operating temperature

Long term reliability

Reduced risk of micro-cracks

Reinforced circuit design

Elegant design

Busbar-free front side

Gapless cell design

Comprehensive warranty coverage

Product and power coverage 25-30 Years

Year 1 minimum warranted output 99.0%

Maximum annual degradation 0.35%



SOLAR
STEWARDSHIP
INITIATIVE



Electrical Data - STC* & BNPI*

*STC: Irradiance 1000W/m², Cell Temperature 25°C, AM1.5, Measuring Tolerance: ±3%
*BNPI: Back Irradiance 135 W/m², Cell Temperature 25 °C, AM1.5, Measuring Tolerance: ±3 %

Test Conditions		STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI
Maximum Power	Pmax (W)	480	525	485	531	490	536	495	542
Open Circuit Voltage	Voc (V)	40,34	40,34	40,45	40,45	40,56	40,56	40,66	40,66
Short Circuit Current	Isc (A)	15,08	16,50	15,18	16,61	15,28	16,72	15,38	16,83
Maximum Power Voltage	Vmp (V)	33,53	33,53	33,64	33,64	33,75	33,75	33,86	33,86
Maximum Power Current	Imp (A)	14,32	15,67	14,42	15,78	14,52	15,89	14,62	16
Module Efficiency	(%)	23.5		23.8		24.0		24.3	

Electrical Characteristic with Different Bifacial Gain*

* The additional gain from the back side depends on the mounting (structure, height, tilt angle etc.) and albedo of the ground

Bifacial Gain		5 %	10 %	5 %	10 %	5 %	10 %	5 %	10 %
Maximum Power	Pmax (W)	504	528	509	534	515	539	520	545
Open Circuit Voltage	Voc (V)	40,34	40,34	40,45	40,45	40,56	40,56	40,66	40,66
Short Circuit Current	Isc (A)	15,83	16,59	15,94	16,70	16,04	16,81	16,15	16,92
Maximum Power Voltage	Vmp (V)	33,53	33,53	33,64	33,64	33,75	33,75	33,86	33,86
Maximum Power Current	Imp (A)	15,04	15,75	15,14	15,86	15,25	15,97	15,35	16,08

Temperature Coefficient

Nominal Module Operating Temperature*	42+/-2°C
Temperature Coefficient of Isc	+0.046 %/°C
Temperature Coefficient of Voc	-0.22 %/°C
Temperature Coefficient of Pmax	-0.26 %/°C

Mechanical Data

Operating Temperature	-40~+70°C
Maximum System Voltage	1500 V DC
Maximum Series Fuse Rating	30 A
Safety Protection Class	Class II
Fire Rating	Class C

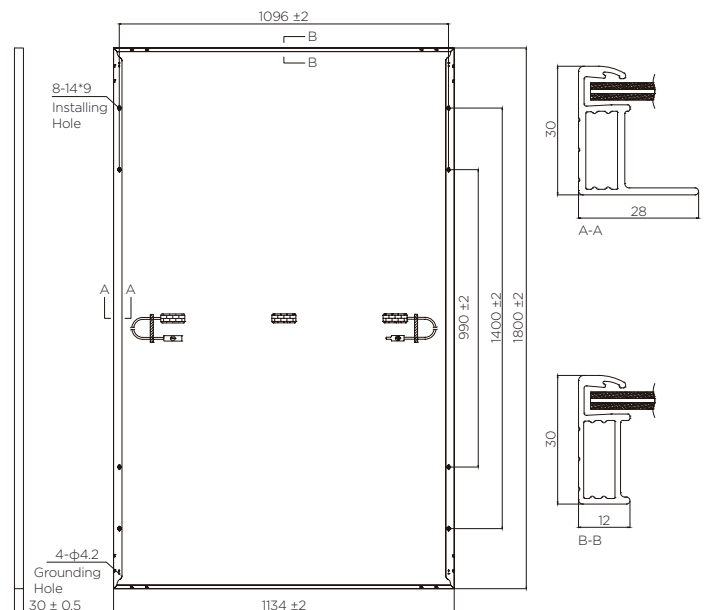
Mechanical Data

* Please refer to installation manual for details

No. of Cells	108 pcs
Dimensions	1800×1134×30 mm
Weight	24.7 kg ±3 %
Front Glass	2.0mm, Heat Strengthened, AR coating Glass
Back Glass	2.0mm, Heat Strengthened Glass
Frame	Black Anodized Aluminium Alloy
J-Box / Diodes	IP68 / three diodes
Cables / Connectors	4.0 mm / ±1200mm / EVO2
Maximum Static Load	Front: 5400Pa / Back: 2400Pa*

Packaging Configuration

Modules per Pallet	36 pcs
Modules per 40'HQ Container	936 pcs



Please read the safety and installation instructions.
Visit www.tclsolar.com/resources
Paper version can be requested through
techsupport.EN@sunpowerglobal.com



IEC 61215 / IEC 61730 ISO 9001:2015 ISO 45001:2018 ISO 14001:2015

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