

# 3SUN B60

Powered by **CORE-H** Technology

**640-680 W** up to **24% efficiency** and **95% bifaciality**.

## Best in class performance. Everywhere.



Utility  
Scale



Commercial  
& Industrial



### Made in Europe.

Cells and Modules designed and manufactured exclusively in Italy.



### Superior energy yield.

Market-leading bifaciality factor and temperature coefficients.



### Unrivalled customer value.

Engineered for best return on investment and reduced BOP costs in a variety of applications.



### Long-term reliability.

High quality glass-glass product with strong mechanical performances.



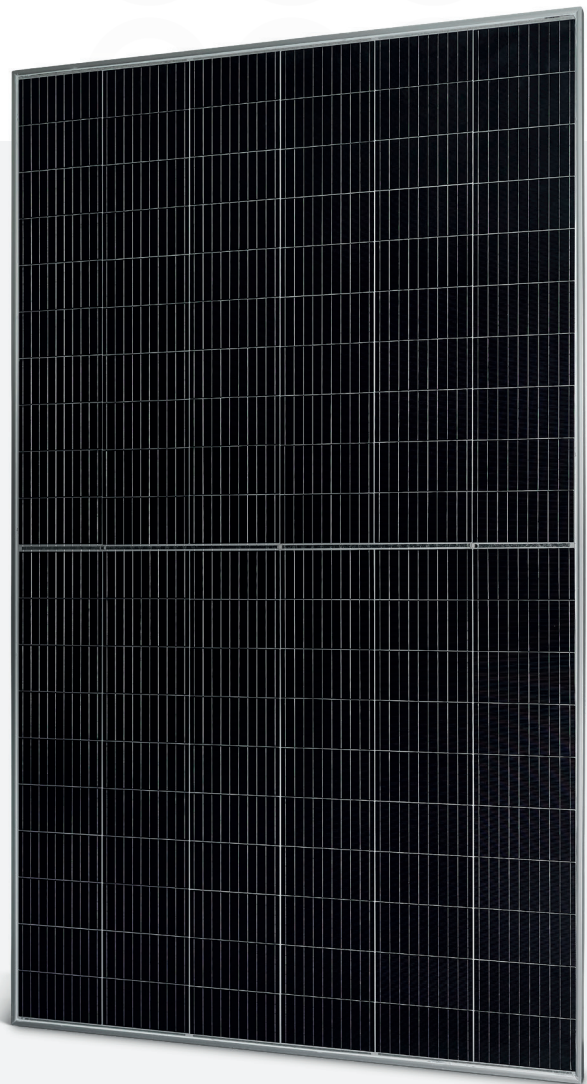
### Trusted performance.

PID & LeTID free with low yearly performance degradation.



### The sustainable choice.

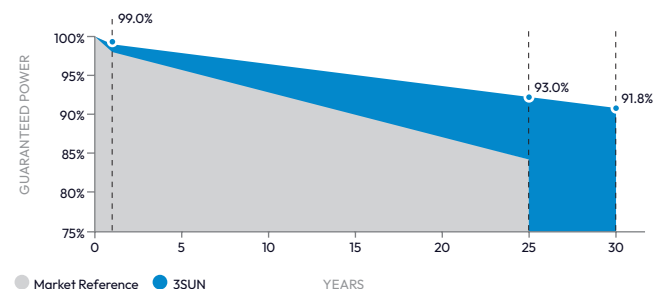
Committed to sustainability for a low carbon footprint and a traceable and transparent supply chain with a lead and fluorine free product. Reduced use of silicon and low water and energy footprint thanks to a highly automated and low temperature manufacturing process.



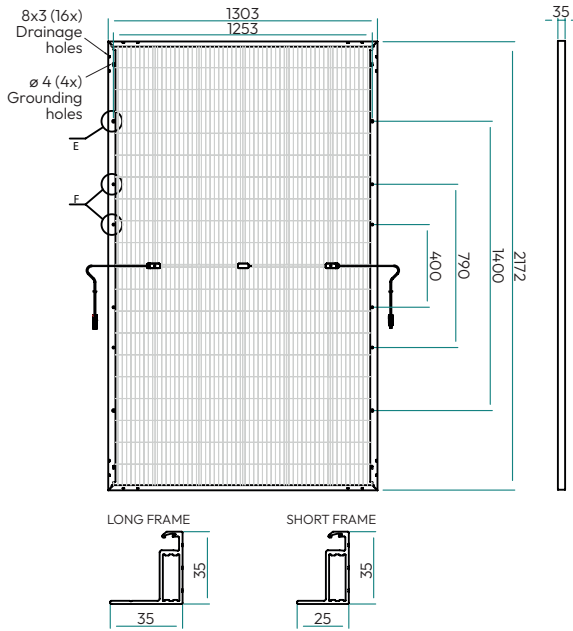
## WARRANTY

- Dedicated aftersales
- Product Warranty **15 years**
- Performance Warranty **30 years**  
(1% first year, then 0.25% per year)

## LINEAR PERFORMANCE WARRANTY



Cells and Modules manufactured by 3SUN S.r.l., Contrada Blocco Torrazze, Zona Industriale, 95121 Catania (Italy)



## MECHANICAL CHARACTERISTICS

<b>Cell Type</b>	Mono-crystalline, n-type Si HJT, G12 (210 mm x 210 mm)
<b>Number of cells</b>	120 1/2 cells (6 x 10) x 2
<b>Dimensions</b>	2172 x 1303 x 35 mm
<b>Weight</b>	36 kg
<b>Frame</b>	Anodized aluminium
<b>Front Cover</b>	Glass - 2.0 mm, AR coated, Low Iron, Semi-Tempered
<b>Back Cover</b>	Glass - 2.0 mm, Semi-Tempered
<b>Junction Box</b>	IP68, 1500VDC, 3 bypass diodes
<b>Output Cable</b>	4 mm <sup>2</sup> , (+): 400mm, (-): 400mm   (+): 1200mm, (-): 1200mm
<b>Type of Connector</b>	MC4 alternative
<b>Maximum static test loading</b>	Front: up to 5400 Pa Rear: up to 2400 Pa
<b>Module Fire Performance</b>	IEC 61730 - A Class UNI 9177 - Class 1

## PACKAGING

**Pallet dimensions (L x W x H)**  
Bi-pack: 2205 x 1373 x 2501 mm  
Top: 2205 x 1373 x 1070 mm  
Bottom: 2205 x 1373 x 1431 mm

**Pallet weight**  
Bi-pack: 2273 kg  
Top: 944 kg  
Bottom: 1329 kg

**Packing Configuration**  
Bi-pack: 63 pcs  
Top: 26 pcs  
Bottom: 37 pcs

**Modules per Container (40'HQ)**  
504 pcs (8 Bi-packs)

## TEMPERATURE RATINGS

<b>Nominal Module Operating Temperature</b>	°C	44 ± 2
<b>P<sub>max</sub> Temperature Coefficient</b>	%/°C	-0.24 ± 0.04
<b>I<sub>sc</sub> Temperature Coefficient</b>	%/°C	0.044
<b>V<sub>oc</sub> Temperature Coefficient</b>	%/°C	-0.20

## MAXIMUM RATINGS

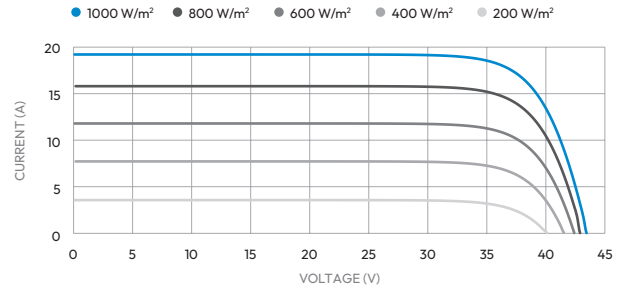
<b>Operating Temperature</b>	°C	-40~+85
<b>Maximum System Voltage (IEC/UL)</b>	V <sub>DC</sub>	1500
<b>Maximum Series Fuse</b>	A	35

## BIFACIAL PERFORMANCES

<b>Bifaciality Factor</b>	95 % ± 5%
<b>Power @STC</b>	W 640 645 650 655 660 665 670 675 680
<b>Power @BSTC*</b>	W 722 728 733 739 745 750 756 762 767

\*BSTC = Bifacial Standard Test Condition according to IEC 60904-1-2:2019

## CURRENT - VOLTAGE CURVES - 3SHBGH-A#-640-680



## ELECTRICAL CHARACTERISTICS

	UNIT	3SHBGH-A#-640		3SHBGH-A#-645		3SHBGH-A#-650		3SHBGH-A#-655		3SHBGH-A#-660		3SHBGH-A#-665		3SHBGH-A#-670		3SHBGH-A#-675		3SHBGH-A#-680	
		STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
<b>P<sub>max</sub></b> - Power at Mpp	W	640	484	645	488	650	491	655	495	660	499	665	503	670	507	675	510	680	514
<b>V<sub>mp</sub></b> - Voltage at Mpp	V	35.81	34.07	35.90	34.16	35.99	34.24	36.08	34.33	36.17	34.41	36.25	34.49	36.33	34.57	36.41	34.64	36.49	34.72
<b>I<sub>mp</sub></b> - Current at Mpp	A	17.87	14.20	17.96	14.27	18.06	14.35	18.15	14.42	18.25	14.50	18.35	14.58	18.44	14.65	18.54	14.73	18.64	14.81
<b>V<sub>oc</sub></b> - Open Circuit Voltage	V	43.32	41.20	43.44	41.31	43.55	41.42	43.66	41.52	43.77	41.63	43.88	41.73	43.98	41.83	44.09	41.94	44.20	42.04
<b>I<sub>sc</sub></b> - Short Circuit Current	A	19.00	15.33	19.10	15.41	19.20	15.49	19.30	15.57	19.40	15.65	19.49	15.72	19.59	15.80	19.68	15.88	19.78	15.96
<b>Module efficiency</b>	%	22.6		22.8		23.0		23.1		23.3		23.5		23.7		23.9		24.0	

### Electrical Characteristics measured under:

Measurement Tolerance ± 3%  
Power tolerance Pmax: -0+5 W  
STC = AM 1.5, 1000 W/m<sup>2</sup>, Cells Temperature 25°C



IEC 61215-1:2021; IEC 61215-2:2021; IEC 61730-2:2016; UL 61730:2017