

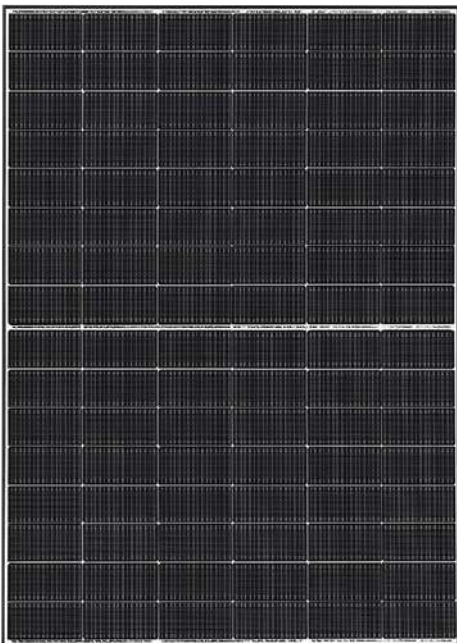
# Ultra T 2.0

HALF-CELL N-TYPE TOPCon

BLACK FRAME MONOFACIAL DOUBLE-GLASS MODULE

TYPE: STPXXXS-H48-Nkh+

**450-470W** **23.5%**  
POWER OUTPUT MAX EFFICIENCY



### High module conversion efficiency

Module efficiency up to **23.5%** achieved through advanced cell technology and manufacturing process



### Multi busbar technology

Superior optical utilization and current collection capability, effectively improving product power and reliability



### Excellent low light performance

More power output in low light conditions such as cloudy days, mornings and evenings



### Superior load-bearing capability

Module certified to withstand **5400 Pa** front side max static test load and **2400 Pa** rear side max static test load \*

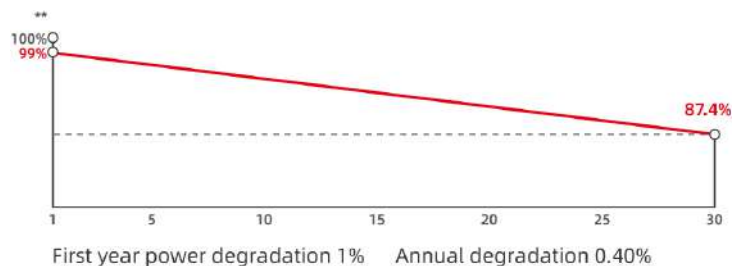


ISO 14001  
ISO 45001  
ISO 9001  
SA 8000  
IEC TS 62941  
IEC 61730-2 (UL790)

Environment Management System  
Occupational Health and Safety  
Quality Management System  
Social Responsibility Standards  
Guideline for Module Design  
Fire Class C



**30** years of linear warranty  
**25** years of product warranty



\* Please refer to Suntech Standard Module Installation Manual for details.

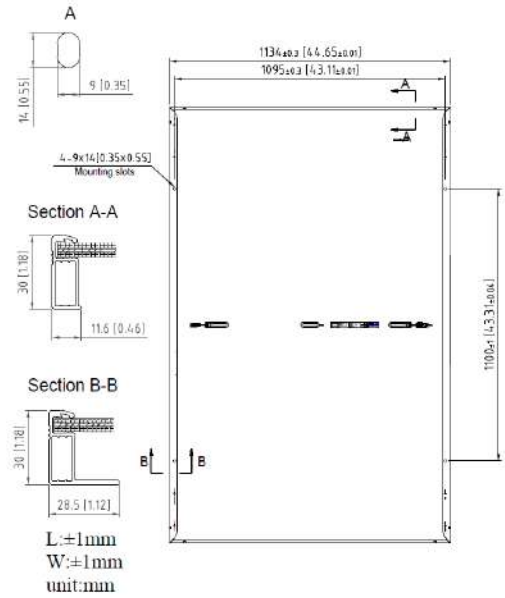
\*\* Please refer to Suntech Limited Warranty for details.

\*\*\* WEEE only for EU market.

\*\*\*\* Suntech reserves the right to the final.

### Mechanical Characteristics

Solar Cell	N-type monocrystalline silicon
No. of Cells	96 (6 × 16)
Dimensions	1762 × 1134 × 30 mm (69.4 × 44.6 × 1.2 inches)
Weight	24.8 kg (54.67 lbs.)
Front/Back Glass	2.0 + 2.0 mm (0.079 + 0.079 inches) semi-tempered glass
Output Cables	4.0 mm <sup>2</sup> , (-) 1400mm (+) 1400mm in length or customized length
Junction Box	IP68 rated (3 bypass diodes)
Operating Module Temperature	-40 °C to +70 °C (T98th)
Maximum System Voltage	1500 V DC (IEC)
Connectors	Wuxi Suntech STP-XC4-4 (Default) Stäubli PV-KST4-EVO2A/xy, PV-KBT4- EVO2A/xy (Optional)
Maximum Series Fuse Rating	35 A
Power Tolerance	0 ~ + 3%
Frame	Anodized aluminum alloy frame
Packing Configuration	36 pieces per pallet 936 pieces per container / 40'HC 1796 × 1120 × 1255 mm per pallet 935 kg per pallet



### Electrical Characteristics (STC)

Module Type	STP470S-H48-Nkh+	STP465S-H48-Nkh+	STP460S-H48-Nkh+	STP455S-H48-Nkh+	STP450S-H48-Nkh+
Maximum Power (P <sub>max</sub> /W)	470	465	460	455	450
Optimum Operating Voltage (V <sub>mp</sub> /V)	30.96	30.73	30.51	30.28	30.04
Optimum Operating Current (I <sub>mp</sub> /A)	15.18	15.13	15.08	15.03	14.98
Open Circuit Voltage (V <sub>oc</sub> /V)	36.59	36.42	36.25	36.08	35.91
Short Circuit Current (I <sub>sc</sub> /A)	15.92	15.87	15.82	15.77	15.72
Module Efficiency (%)	23.5	23.3	23.0	22.8	22.5

STC: Irradiance 1000 W/m<sup>2</sup>, module temperature 25 °C, AM=1.5; Measuring tolerance of P<sub>max</sub>, V<sub>oc</sub>, I<sub>sc</sub> is within +/- 3%;

### Temperature Characteristics

Temperature Coefficient of P <sub>max</sub>	-0.29%/°C
Temperature Coefficient of V <sub>oc</sub>	-0.25%/°C
Temperature Coefficient of I <sub>sc</sub>	0.046%/°C

Information on how to install and operate this product is available in the installation instruction. All values indicated in this data sheet are subject to change without prior announcement. The specifications may vary slightly. All specifications are in accordance with standard EN 50380. Color differences of the modules relative to the figures as well as discolorations of/in the modules which do not impair their proper functioning are possible and do not constitute a deviation from the specification.

### Graphs Current-Voltage & Power-Voltage (460W)

