

Ultra V Pro mini

HALF-CELL N-Type TOPCon

FULL-BLACK MONOFACIAL MODULE

TYPE: STPXXXS - C54/Nshb

410-430W **22.0%**
POWER OUTPUT MAX EFFICIENCY



Multi busbar technology

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



Aesthetic appearance design

Elegant design in all-black appearance, harmonious integration with the components of the building to provide an intense aesthetic experience



Excellent low light performance

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



Extended wind and snow load tests

Module certified to withstand extreme wind (3800 Pascal) and snow loads (6000 Pascal)*

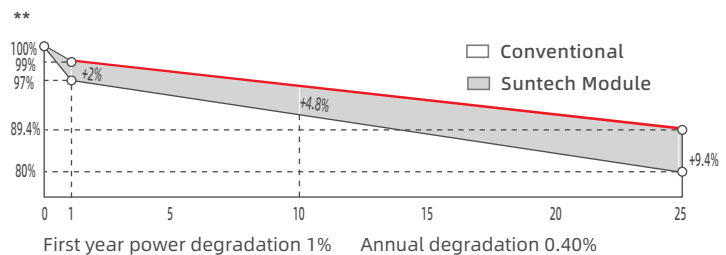


ISO 14001 Environment Management System
 ISO 45001 Occupational Health and Safety
 ISO 9001 Quality Management System
 SA 8000 Social Responsibility Standards
 IEC TS 62941 Guideline for Module Design

IEC 61701 Salt-mist certification
 IEC 62716 ammonia certification
 IEC 60068-2-68 Dust and Sand
 IEC 61730-2 (UL790) fire class C



25 years of linear warranty
15 years of product warranty
 (25 years optionally)



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

** Please refer to Suntech Limited Warranty for details.

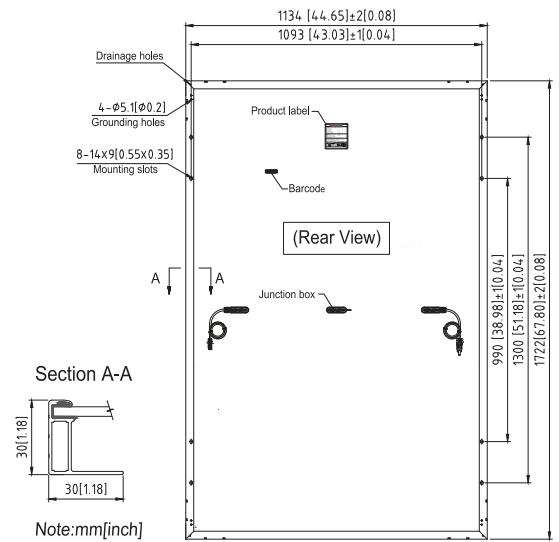
*** WEEE only for EU market.

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

Ultra V Pro STPXXXS - C54/Nshb 410-430W

Mechanical Characteristics

Solar Cell	N-type Monocrystalline silicon 182 mm
No. of Cells	108 (6 × 18)
Dimensions	1722 × 1134 × 30 mm (67.8 × 44.6 × 1.2 inches)
Weight	21.0 kgs (46.3 lbs.)
Front Glass	3.2 mm (0.126 inches) fully tempered glass
Output Cables	4.0 mm ² , (-) 350 mm (+) 160 mm in length or customized length
Junction Box	IP68 rated (3 bypass diodes)
Operating Module Temperature	-40 °C to +85 °C
Maximum System Voltage	1500 V DC (IEC)
Connectors	MC4-EVO2
Maximum Series Fuse Rating	25 A
Power Tolerance	0/+5 W
Frame	Anodized aluminum alloy frame
Packing Configuration	36 Pieces per pallet 936 Pieces per container /40'HC 1755×1120×1255 794kg



Electrical Characteristics

Module Type	STP430S-C54/Nshb		STP425S-C54/Nshb		STP420S-C54/Nshb		STP415S-C54/Nshb		STP410S-C54/Nshb	
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Testing Condition	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power (Pmax/W)	430	328.7	425	324.9	420	321.0	415	317.3	410	313.5
Optimum Operating Voltage (Vmp/V)	32.33	30.2	32.15	30.0	31.96	29.9	31.78	29.7	31.59	29.6
Optimum Operating Current (Imp/A)	13.30	10.89	13.22	10.82	13.14	10.75	13.06	10.68	12.98	10.60
Open Circuit Voltage (Voc/V)	38.72	36.8	38.59	36.6	38.46	36.5	38.33	36.4	38.2	36.3
Short Circuit Current (Isc/A)	14.25	11.49	14.17	11.42	14.09	11.36	14.01	11.30	13.93	11.23
Module Efficiency (%)	22.0%		21.8%		21.5%		21.3%		21.0%	

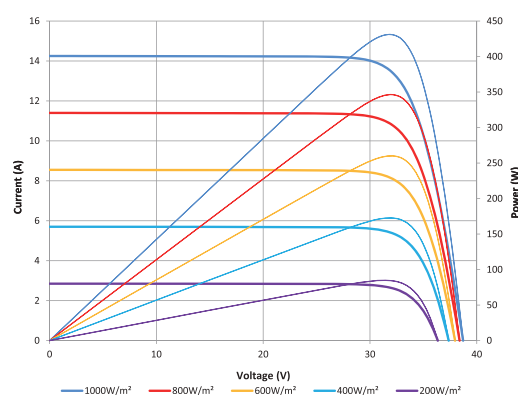
STC: Irradiance 1000 W/m², module temperature 25 °C, AM=1.5; NMOT: Irradiance 800 W/m², ambient temperature 20 °C, AM=1.5, wind speed 1 m/s; Tolerance of Pmax is within +/- 3%;

Temperature Characteristics

Nominal Module Operating Temperature (NMOT)	42 ± 2 °C
Temperature Coefficient of Pmax	-0.30%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	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 Curve (430S)



Information bar



SUNTECH

LIMITED WARRANTY FOR PV MODULES

Effective January 1, 2023

You have made the right choice by purchasing SUNTECH products with a long life time. Suntech double-glass photovoltaic modules are covered by our 25 years workmanship and 30 years performance warranty as described in detail below.

Suntech Standard PV Module Products covered under this warranty include:

STPXXXS- C54/Nshb+ [XXX=390-450]

For the standard solar module types listed above, Wuxi Suntech Power Co., Ltd. (hereinafter referred to as "SUNTECH") warrants its Photovoltaic Solar Modules (MODULES) starting from the date of sale with an Original Copy of Suntech certifiable invoice (SALES DATE) to the first customer installing (for their own use) the MODULES (CUSTOMER), or starting at the latest 12 months after MODULES dispatch from SUNTECH factory, whichever occurs earlier ("WARRANTY START DATE").

1. Limited Product Warranty – Twenty-five Years Repair, Replacement or Refund Remedy

SUNTECH warrants its MODULES, including factory-assembled DC connectors and cables, if any, to be free from defect in materials and workmanship, as per the mechanical and electrical characteristics of the product's datasheet, under normal application, proper installation as per Suntech installation guide, use and service conditions. If MODULES fail to conform to this warranty, during the period of Three Hundreds (300) months from the WARRANTY START DATE, SUNTECH will, at its option, either repair or replace the product, or refund the current list price at the time of warranty claim resolution of comparable SUNTECH MODULES. The repair or replacement or refund remedy shall be the sole and exclusive remedy provided under the "Limited Product Warranty" and shall not be extended beyond the period set forth herein. The replacement will be Grade A and above modules. This "Limited Product Warranty" does not warrant a specific power output, which shall be exclusively covered under clause 2 hereinafter ("Limited Peak Power Warranty").

2. Limited Peak Power Warranty - Limited Remedy

Suntech warrants that for a period of twenty-five years the module will maintain a level of performance as set forth below:

- For N-type Mono TOPCon bifacial double-glass module, the actual average power output of the modules will be no less than 99% of the labelled power output in the first year; thereafter, 0.4% maximum decrease per year, ending with 87.4% in the 30th year after the WARRANTY START DATE.

SUNTECH warrants each module against defects in materials and workmanship that result in the failure of the MODULES to produce the warranted percentage specified above of the nominal power output for the module set forth in SUNTECH product datasheet. If SUNTECH determines in its discretion that any module is not providing the warranted percentage of the nominal power output because of defects in materials and workmanship, SUNTECH will at its option either (1) replace such loss in power by either, (a) providing additional MODULES to the CUSTOMER to make up for such loss in power, or (b) replacing the defective module(s) or part by a functional equivalent; or (2) refund the percentage of the module(s) price, representing the percentage of the power that is less than the warranted percentage of the nominal power according to the current list price, at the time of warranty claim resolution, of comparable SUNTECH MODULES.

The remedies set forth in this clause 2 shall be the sole and exclusive remedies provided under the "Limited Peak Power Warranty".

Nominal Power Output in product datasheet is the power in Watt peak that a Photovoltaic Solar Modules generates in its Maximum Power Point under Standard Testing Conditions (STC). STC are as follows:

(a) light spectrum of AM 1.5, (b) an irradiation of 1000 W per m² and (c) a cell temperature of 25 degrees centigrade at right angle irradiation. The measurements are carried out in accordance with IEC 61215 as tested at the connectors or junction box terminals – as applicable – per calibration and testing standards of SUNTECH valid at the date of

manufacture of the PV-modules.

3. Exclusions and Limitations

(1) In any event, all warranty claims must be received within the applicable warranty period for this warranty to be effective.

(2) The "Limited Product Warranty" and the "Limited Peak Power Warranty" do not apply to any MODULES which have been subjected to:

- Misuse, abuse, vandalism, neglect or accident;
- Alteration, improper installation or application;
- Extreme thermal or environmental conditions, high density dust environment, or rapid changes in such conditions, not authorized by Suntech
- Contamination by chemical products in the environment
- Non-observance of SUNTECH installation manual or maintenance instructions detailed within the document named <Global Installation Guide for Suntech Power Standard Photovoltaic Module>,& <Global Installation Guide for Suntech Power Bifacial & Double Glass Module>download address:www.suntech-power.com;
- Repair or modifications by someone other than an approved service technician of SUNTECH;
- Power failure surges, lightning, flood, fire, accidental breakage, improper connections resulting in hazardous reverse current or other events outside SUNTECH control.
- Modules which have been installed and energized on a permanent structure and later removed and re-installed on a different structure for energy harvest.

(3) Both "Limited Product Warranty" and "Limited Peak Power Warranty" do not cover any costs associated with installation, removal or re-installation of the MODULES and customs clearance or any other costs for return of the MODULES, except as explicitly set forth in the final paragraph of Section 5.

(4) Warranty claims will not be honored if the type or serial number of the MODULES have been altered, removed or made illegible.

(6) Both "Limited Product Warranty" and "Limited Peak Power Warranty" do not apply to MODULES marked as "Grade A" or substandard modules. SUNTECH explicitly refers to its "Limited Warranty for PV Modules marked Grade A".

4. Limitation of Warranty Scope

THIS "LIMITED WARRANTY FOR PV MODULES" AS SET FORTH HEREIN IS EXPRESSLY IN LIEU OF AND EXCLUDES ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR PARTICULAR PURPOSE, USE, OR APPLICATION, AND ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF SUNTECH, UNLESS SUCH OTHER OBLIGATIONS OR LIABILITIES ARE EXPRESSLY AGREED TO IN WRITING SIGNED AND APPROVED BY SUNTECH. SUNTECH SHALL HAVE NO RESPONSIBILITY OR LIABILITY WHATSOEVER FOR DAMAGE OR INJURY TO PERSONS OR PROPERTY, OR FOR OTHER LOSS OR INJURY RESULTING FROM ANY CAUSE WHATSOEVER ARISING OUT OF OR RELATED TO THE MODULES, INCLUDING, WITHOUT LIMITATION, ANY DEFECTS IN THE MODULES, OR FROM USE OR INSTALLATION. UNDER NO CIRCUMSTANCES SHALL SUNTECH BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, HOWSOEVER CAUSED. LOSS OF USE, LOSS OF PROFITS, LOSS OF PRODUCTION, AND LOSS OF REVENUES ARE SPECIFICALLY AND WITHOUT LIMITATION EXCLUDED. SUNTECH AGGREGATE LIABILITY, IF ANY, IN DAMAGES OR OTHERWISE, SHALL NOT EXCEED THE INVOICE VALUE AS PAID BY THE CUSTOMER, FOR THE SINGLE UNIT OF MODULE.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE. THIS LIMITED WARRANTY DOES NOT AFFECT ANY ADDITIONAL RIGHTS YOU

HAVE UNDER LAWS IN YOUR JURISDICTION GOVERNING THE SALE OF CONSUMER GOODS, INCLUDING, WITHOUT LIMITATION, NATIONAL LAWS IMPLEMENTING EC DIRECTIVE 99/44. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE LIMITATIONS OR EXCLUSIONS IN THIS LIMITED WARRANTY STATEMENT MAY NOT APPLY TO YOU.

THE FOLLOWING STATEMENT APPLIES TO CUSTOMERS THAT ARE 'CONSUMERS' WITHIN THE MEANING OF THE AUSTRALIAN CONSUMER LAW: "Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure."

5. Obtaining Warranty Performance

If the CUSTOMER has a justified claim covered by this "Limited Warranty for PV Modules", an immediate notification shall be filed directly to (a) the installer company, or (b) SUNTECH authorized distribution partner, who supplied affected modules, or (c) SUNTECH directly by mailing a registered letter in writing, or sending an email letter to the email account of SUNTECH listed hereunder. Together with the notification, should enclose (a) party making claim; (b) detailed description; (c) evidence, including photographs and data; (d) relevant serial numbers; (e) Warranty Start Date; (f) Module type; (g) physical address; (h) any additional evidence reasonably requested by Suntech. A related invoice document with stamp or signature of SUNTECH or its authorized distributor should cover those requirements and should be part of the evidence. Regional addresses of SUNTECH offices are listed in the end of this document.

The return of any MODULES will not be accepted unless prior written authorization has been given by SUNTECH. In connection with both the "Limited Product Warranty" and "Limited Peak Power Warranty", SUNTECH shall reimburse CUSTOMER for reasonable, customary and documented transportation charges by sea freight for both the return of the MODULES and reshipment of any repaired or replaced MODULES, only if this cost is authorized by SUNTECH customer service department.

6. Severability

If a part, provision or clause of this "Limited Warranty for PV Modules", or the application thereof to any person or circumstance, is held invalid, void or unenforceable, such holding shall not affect and shall leave all other parts, provisions, clauses or applications of this "Limited Warranty for PV Modules", and to this end such other parts, provisions, clauses or applications of this "Limited Warranty for PV Modules" shall be treated as severable.

7. Disputes

In case of any discrepancy in a warranty-claim, a first-class international test-institute such as Fraunhofer ISE in Freiburg/ Germany, TÜV Rheinland in Cologne/ Germany or ASU Arizona State University shall be involved to judge the claim finally. All fees and expenses shall be borne by the losing party, unless otherwise awarded. And the final explanation right shall be borne by Suntech.

8. Various

The repair or replacement of the MODULES or the supply of additional MODULES, does not cause the beginning of new warranty terms, nor shall the original terms of this "Limited Warranty for PV Modules" be extended. Any replaced MODULES shall become the property of SUNTECH for disposal. SUNTECH has the right to deliver another type (different in size, color, shape and/or power) in case SUNTECH has discontinued producing the replaced MODULES at the time of warranty claim resolution.

9. Warranty Transfer

This "Limited Warranty for PV Modules" is transferable when the module products remain installed in their original installation location.

10. Force Majeure

SUNTECH shall not be responsible or liable in any way to the customer or any third-party arising from any non-performance or delay in performance of any terms and conditions of sale, including this "Limited Warranty for PV Modules", due to a force majeure event, including, without limitation, acts of God, war, riots, strikes, warlike conditions, perils of the seas, plague or other epidemics, fire, flood, or any other similar cause or circumstance beyond the reasonable control of SUNTECH. In such cases, performance by SUNTECH of this Limited Warranty shall be suspended without liability for the period of delay

reasonably attributable to such causes.

11. Validity

This "Limited Warranty for PV Modules" is valid for all MODULES dispatched from SUNTECH factories between 1st January 2023 and 31st December 2023.

THIS "LIMITED WARRANTY FOR PV MODULES" WILL BECOME NULL AND VOID IF THE MODULE IS TRANSFERRED FROM THE ORIGINAL CONTINENT OF DESTINATION (E.G. NORTH AMERICA, EUROPE, ASIA, AUSTRALIA, AFRICA OR SOUTH AMERICA) OR FROM CHINA TO JAPAN, WITHOUT WRITTEN PERMISSION FROM SUNTECH. ALL CUSTOMERS, DIRECT AND INDIRECT, ARE HEREBY NOTIFIED OF SUCH POTENTIAL NULLIFICATION.

In case of questions regarding the products, quality and performance, contact the regional headquarters or your nearest SUNTECH office. Please find the detailed contact info as below.

China

Wuxi Suntech Power Co., Ltd.

Add: 9 Xinhua Road, Xinwu District, Wuxi 214028, China
Tel: +86 400 8888 009 (Customer Service Hot Line)
Tel: +86 510 8531 8000 (Sales Hot Line)
Fax: +86 510 8534 3321
Email: service.china@suntech-power.com
Website: www.suntech-power.com

Suntech Power Japan Corporation

Add: 6F, Nishishinjuku KS Building, 3-6-11, Tokyo 160-0023, Japan
Tel: +81 3 33423838
Fax: +81 3 33426534
Email: japan_sales@suntech-power.com

APMEA

Email: service.APMEA@suntech-power.com

SF Suntech Australia Pty Ltd

Add: Suite 1203, Level 12, Tower 2, 475 Victoria Avenue, Chatswood, NSW 2067 Australia
Tel: +61 81882450
Fax: +61 81882440
Email: services@suntech-power.com.au
Website: <https://www.suntech-power.com.au/>

Europe(Suntech Deutschland GmbH)

Add: Alfred-Herrhausen-Allee 3-5, 65760 Eschborn, Germany
Tel: +49/6196 58655 580
Fax: +49/6196 58655 500
Email: service.europe@suntech-power.com

America

Email: service.America@suntech-power.com

Global

Email: services@suntech-power.com