

SUMEC

Phono[®] Solar
AUSTRALIA

450W

DIAMOND MODULE TECHNOLOGY

TWIN PLUS SERIES

- ✓ Standard 15 Year Product Warranty
- ✓ Outstanding Module Efficiency
- ✓ PID Resistant
- ✓ Better Performance Under Shading Effect
- ✓ Salt Mist Certified to the Highest Severity Level

**144
CELLS**



**DIAMOND
MODULE
TECHNOLOGY**

**15 YEAR
PRODUCT
WARRANTY**



**BLUE
CHIP[™]**
Solar Panel



40+ YEARS OF EXPERIENCE

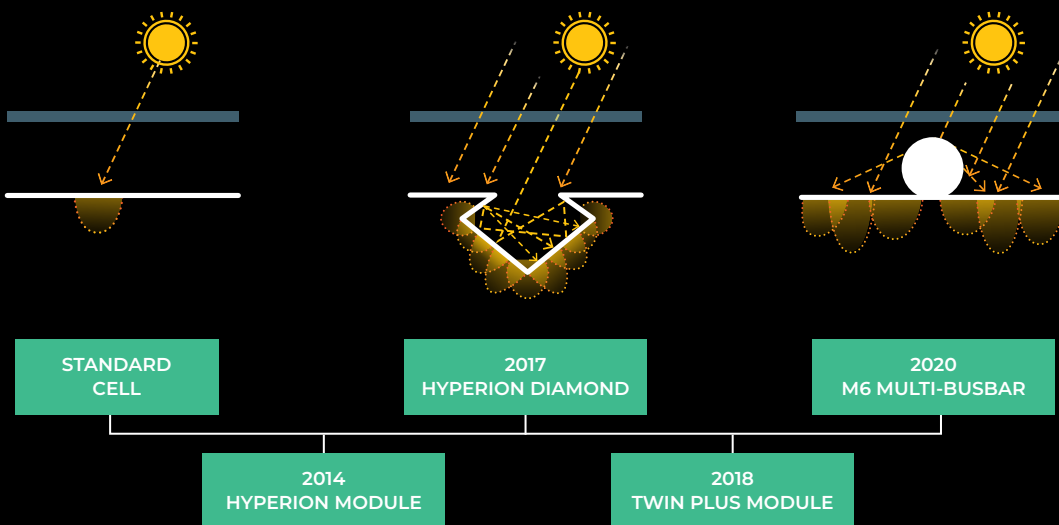
1978	2010	2018	2019	2020
Sumec starts business	Phono Solar first sell solar panels in Australia Diamond Module Technology is pioneered	Phono re-brands to Sumec Phono Solar	Introduction of Market Leading 15 Year Product Warranty	New manufacturing facility opens for production

“ We have invested in a brand new, state of the art, manufacturing line and are proud to introduce our latest Diamond Module Technology and leading Warranty to the Australian market. ”

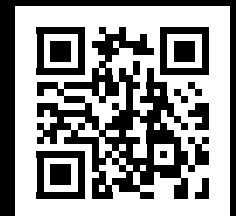
President Zhao, Sumec Phono Solar



ADVANCED **DIAMOND** MODULE TECHNOLOGY



SCAN CODE TO
WATCH VIDEO



Learn about the
evolution of Diamond
Module Technology



BLOOMBERG
TIER 1 BRAND



OWNED BY
FORTUNE 500
GLOBAL COMPANY



**2019 TOP
PERFORMING
PANEL**



**25 YEAR
PERFORMANCE
WARRANTY**

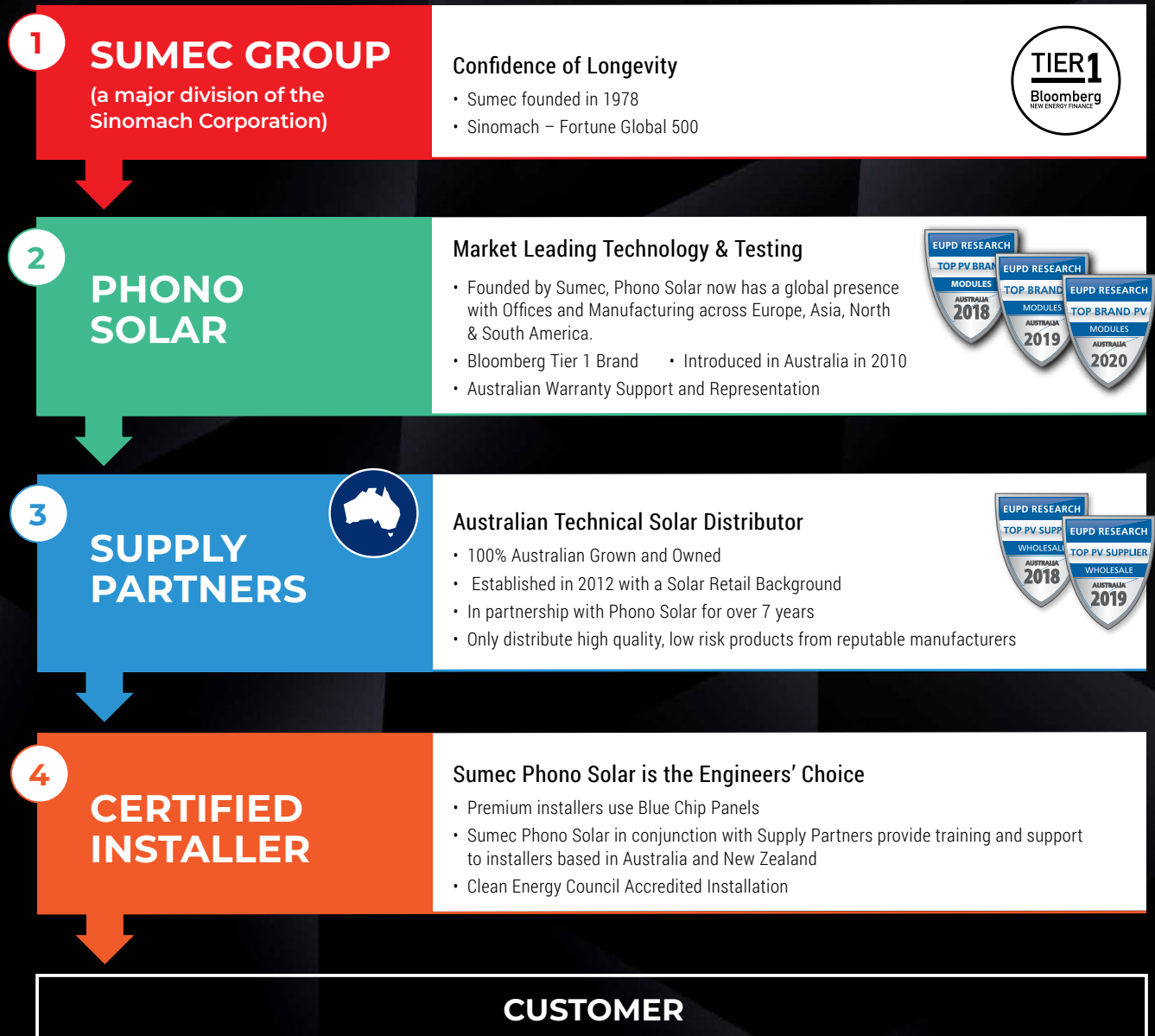
MAKE A SECURE INVESTMENT

4 LAYERS OF PROTECTION

Your choice of Solar Panels is a critical part of your solar investment that affects how well your system can generate renewable energy and savings.

Choosing the right manufacturer to protect your investment is essential when you consider that **in 2013 there were more than 400** Solar Panel Manufacturers approved for install in Australia and **today there are fewer than 100**.

As a **Blue Chip brand**, Sumec Phono Solar has **longevity, commitment and stability** at every layer of protection. From the Fortune 500 Founding Corporation, through to the experienced Australian Distributor, **you can feel secure in your solar investment** for decades to come.



**AUSTRALIAN
OFFICE AND
REPRESENTATION**

SUMEC PHONO SOLAR AUSTRALIA
Level 35, Tower One, 100 Barangaroo Ave, Sydney, AUSTRALIA
TEL: 02 8114 4516 www.phonosolar.com.au

PHONO SOLAR INTERNATIONAL (SUMEC)
No. 1 Xinghuo Rd., Nanjing Hi-tech Zone, Nanjing, CHINA
www.phonosolar.com

TWIN PLUS SERIES

ELECTRICAL TYPICAL VALUES

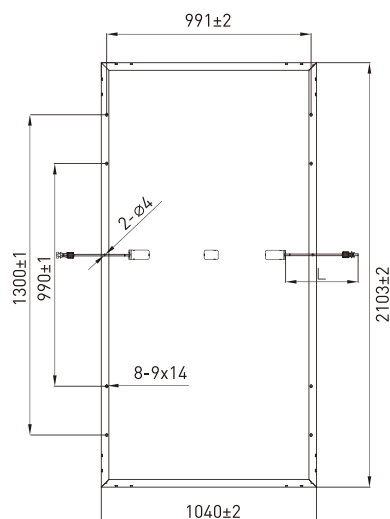
Model	PS450M4-24/TH PS450M4H-24/TH
Cell Type	144 x Monocrystalline 166mm x 83mm
Rated Power (P _{mpp}) ²	450W
Tolerance	0~+5
Rated Current (I _{mpp})	10.87
Rated Voltage (V _{mpp})	41.40
Short Circuit Current (I _{sc})	11.38
Open Circuit Voltage (V _{oc})	49.24
Module Efficiency (%)	20.58
NOCT (Nominal Operation Cell Temperature)	43°C ± 2°C
Voltage Temperature Coefficient	-0.30%/°C
Current Temperature Coefficient	+0.050%/°C
Power Temperature Coefficient	-0.38%/°C

MECHANICAL CHARACTERISTICS

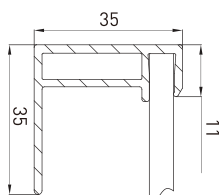
Dimensions	Length: 2103mm, Width: 1040mm Height: 35mm
Weight	25.0kg
Front Glass	3.2mm toughened glass
Frame	Anodised aluminium alloy
Cable	4mm ² (IEC), 1250mm
Junction Box	IP 68 rated
Connectors	Genuine MC4 (1000V) / MC4-EVO 2 (1500V)

PACKING CONFIGURATION

Container	Pallet	20'GP	40'HQ
Pieces per container	31	255	682



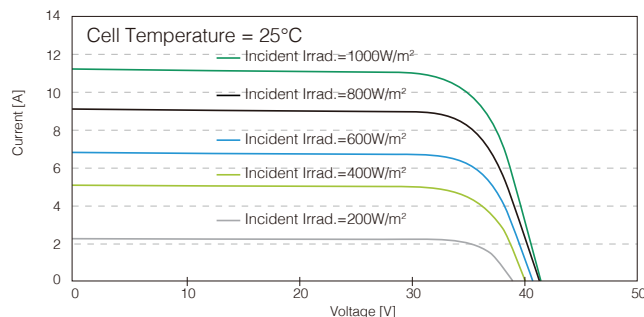
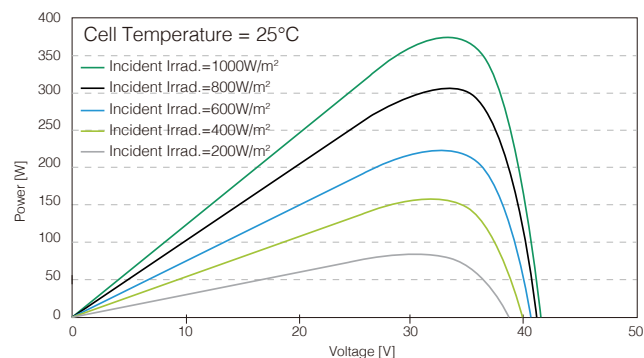
1. In compliance with our warranty terms and conditions.
2. Measurement conditions under irradiance level of Standard Test Conditions (STC): Irradiance 1000W/m², AM 1.5G, Cell Temperature 25°C.



ABSOLUTE MAXIMUM RATING

Operating Temperature	From -40 to +85°C
Hail Diameter@ 80km/h	Up to 25mm
Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Maximum Series Fuse Rating	20A
PV Module Classification	II
Module Fire Performance (UL 1703)	Type 4
Maximum System Voltage	DC 1000V/1500V

ELECTRICAL CHARACTERISTICS



- 15 year product warranty
- 25-year linear performance warranty to 84.8%

1. In compliance with our warranty terms and conditions.

NOTE: This datasheet is not legally binding. Phono Solar reserves the right to make specifications changes without notice.

Further information can be found on our website: www.phonosolar.com