

SUMEC

Phono[®] Solar

AUSTRALIA

PHOTOVOLTAIC MODULES



The Engineers Choice



**450W TWIN PLUS
MODULE SERIES**



**DIAMOND
MODULE
TECHNOLOGY**

**15 YEAR
PRODUCT
WARRANTY**



40+ YEARS OF EXPERIENCE

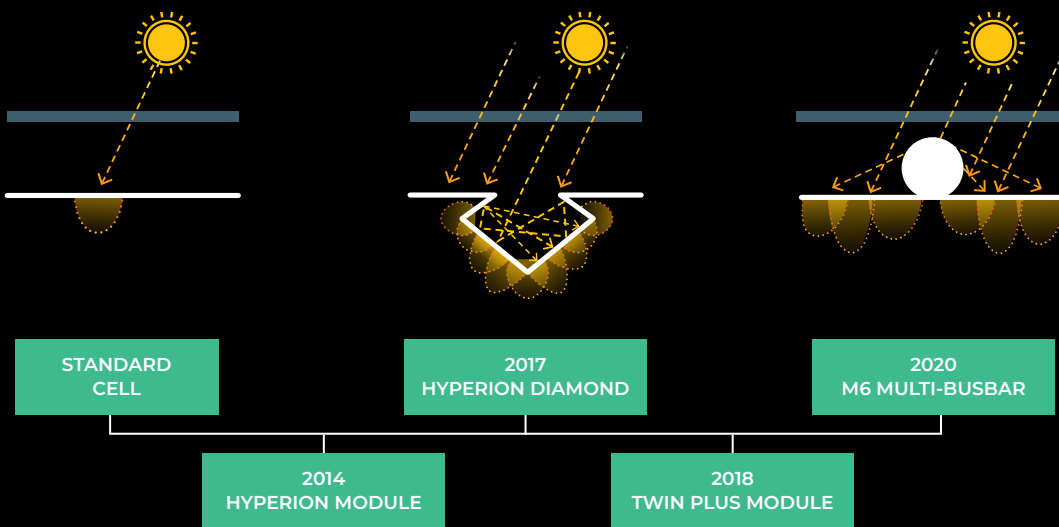
1978	2010	2018	2019	2020
Sumec starts business	Phono Solar first sell solar panels in Australia Diamond Module Technology is pioneered	Phono re-brands to Sumec Phono Solar	Introduction of Market Leading 15 Year Product Warranty	New manufacturing facility opens for production

“ 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. ”

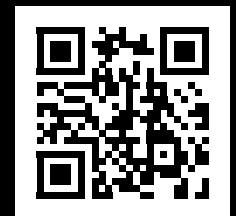
President Zhao, Sumec Phono Solar



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**

SUMEC

Phono[®] Solar
AUSTRALIA

450W



**BLUE
CHIP[™]**
Solar Panel



DIAMOND MODULE TECHNOLOGY

TWIN PLUS SERIES

Standard 15 Year
Product Warranty

Outstanding Module
Efficiency

PID Resistant

Better Performance
Under Shading Effect

Brand New
Manufacturing
Plant

**144
CELLS**



**DIAMOND
MODULE
TECHNOLOGY**

**15 YEAR
PRODUCT
WARRANTY**



**AUSTRALIAN
OFFICE AND
REPRESENTATION**

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TWIN PLUS SERIES

ELECTRICAL TYPICAL VALUES

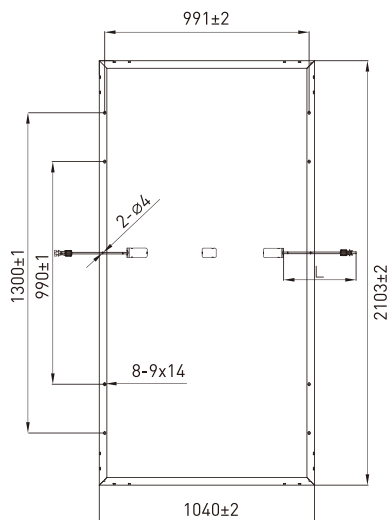
Model	PS450M4-24/TH PS450M4H-24/TH
Cell Type	144 x Monocrystalline 166mm x 83mm
Rated Power (Pmpp) ²	450W
Tolerance	0~+5
Rated Current (Impp)	10.87
Rated Voltage (Vmpp)	41.40
Short Circuit Current (Isc)	11.38
Open Circuit Voltage (Voc)	49.24
Module Efficiency (%)	20.58
NOCT (Nominal Operation Cell Temperature)	43°C ± 2°C
Voltage Temperature Coefficient	-0.30%/°C
Current Temperature Coefficient	+0.050%/°C
Power Temperature Coefficient	-0.38%/°C

MECHANICAL CHARACTERISTICS

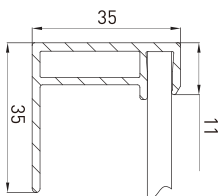
Dimensions	Length: 2103mm, Width: 1040mm Height: 35mm
Weight	25.0kg
Front Glass	3.2mm toughened glass
Frame	Anodised aluminium alloy
Cable	4mm ² (IEC), 1250mm
Junction Box	IP 68 rated
Connectors	Genuine MC4 (1000V) / MC4-EVO 2 (1500V)

PACKING CONFIGURATION

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



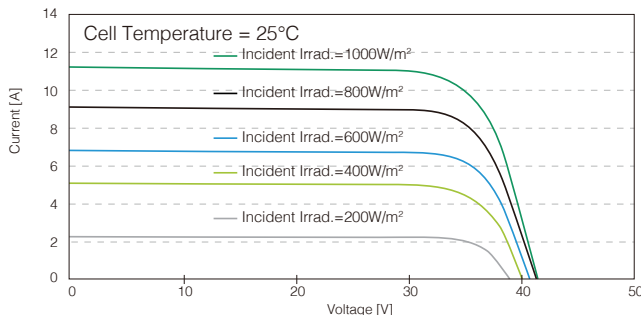
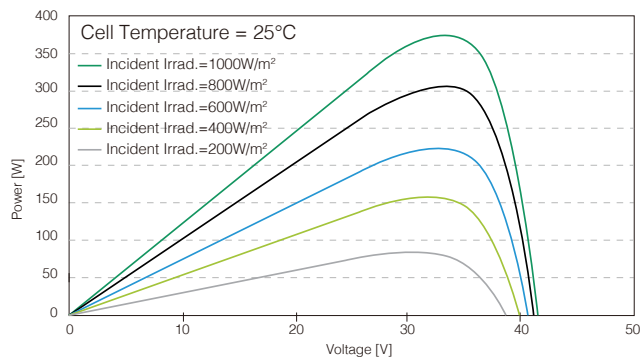
- In compliance with our warranty terms and conditions.
- Measurement conditions under irradiance level of Standard Test Conditions (STC): Irradiance 1000W/m², AM 1.5G, Cell Temperature 25°C.



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 80.2%
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