

PHANTOM

swiss solar

144-TCA

BIFACIAL DOUBLEGLASS

605W | UP TO **25.98%**

► **TOPCon ADVANCE**
TECHNOLOGY

Next-generation cell architecture with enhanced passivation for higher output, reduced LID & PID, and stable performance under high temperatures and low light.

► **DuraGlassX™**

Ultra-strong tempered glass with advanced anti-reflective coating ensures maximum transparency, impact resistance, and long-term durability in extreme climates.

► **Phantom Design**

Deep black cells with an elegant black frame deliver a modern, premium look that blends seamlessly into architectural projects.

► **AluForce™ Black Frames**

Equivalent to up to +32% higher frame strength under front and side load tests.



COMPLETE SYSTEM AND PRODUCT CERTIFICATIONS



PHANTOM

144-TCA BIFACIAL DOUBLEGLASS 600-605

up to
25.98%
maximum efficiency

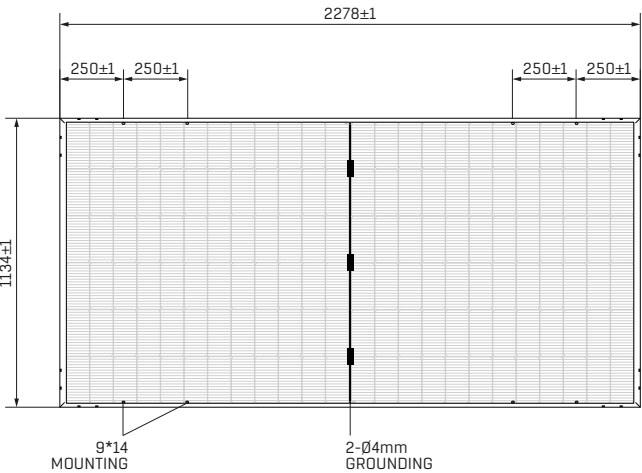
0~3
power
tolerance

<1%
first year
power degradation

0.35%
year 2-30
power degradation

N-TYPE CELL
lower operating
teperature

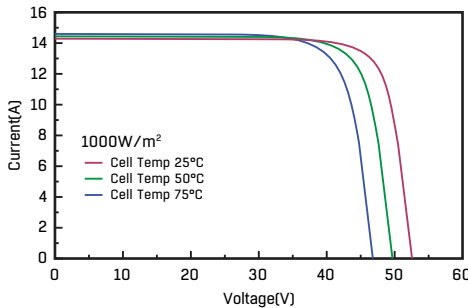
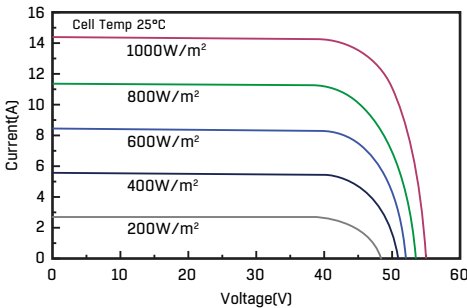
MECHANICAL CHARACTERISTICS	
Solar Cells	N-type Mono
No. of Cells	144 (12x12)
Dimensions	2278x 1134 x 30mm
Weight	31.5kg
Front / Back Glass	2.0mm coated semi-tempered glass
Frame	Anodized aluminium alloy
Junction Box	Ip68 rated (3 by pass diodes)
Output Cables	4.0mm², 250mm (+) / 350mm (-) Length can be customized
Connectors	Mc4 compatible
Mechanical load test	Front 6200Pa / Rear 4200Pa



POWER CLASS	PH144-TCA-600		PH144-TCA-605	
	STC	BNPI	STC	BNPI
Maximum power (Pmax)	600W	665W	605W	671W
Open Circuit Voltage (Voc)	52.93±3%	53.09±3%	53.00±3%	53.16±3%
Short Circuit Current (Isc)	14.17±3%	15.66±3%	14.27±3%	15.77±3%
Voltage at Maximum power (Vmpp)	44.99V	45.13V	45.05V	45.19V
Current Maximum Power (Impp)	13.33A	14.74A	13.43A	14.84A
MODULE EFFICIENCY (%)	23.23%	25.75%	23.42%	25.98%

STC: Irradiance 1000W/m², cell temperature 25°C, AM1.5G | NOCT: Irradiance 800W/m², ambient temperature 20°C, wind speed 1m/s, AM1.5G m²

PACKING CONFIGURATION	
Container	40'HQ
Pieces per pallet	37
Pallets per container	20
Pieces per container	740



OPERATING CHARACTERISTICS	
Operating Module Temperature	-40°C to +85°C
Maximum System Voltage	1500 DC (IEC)
Maximum Series Fuse Rating	25A
Power Tolerance	0/+5W

TEMPERATURE CHARACTERISTICS	
Nominal Operating Cell Temperature	45±2°C
Temperature Coefficient of Pmax	-0.29%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	+0.045%/°C