



**ASPEN WOODS**  
GROUP INC. —



*The Rob Rockefeller S.C.*

# 700W N-TYPE SOLAR PANEL

N-TYPE -TOPCON BIFACIAL DUAL GLASS  
MONOCRYSTALLINE MODULE

**700W**

Max Power Output

**22.5%**

Max Module Efficiency

**0~+5W**

Power Tolerance

Comprehensive Products and System Certificates



ISO 9001:2015 Quality Management System  
ISO 14001:2015 Environmental Management System  
ISO 45001:2018 Occupational Health and Safety Management System

# DELIVERING EXCEPTIONAL CUSTOMER VALUE

- **Leading in LCOE Optimization:** Advanced string power capabilities reduce Balance of System (BOS) costs and drive significant improvements in Levelized Cost of Energy (LCOE).
- **Enhanced Energy Performance:** Incorporates state-of-the-art N-type i-TOPCon technology to maximize energy yield.
- **Seamless System Integration:** Meticulously designed for full compatibility with industry-standard system components.

## UNMATCHED PERFORMANCE AND EFFICIENCY

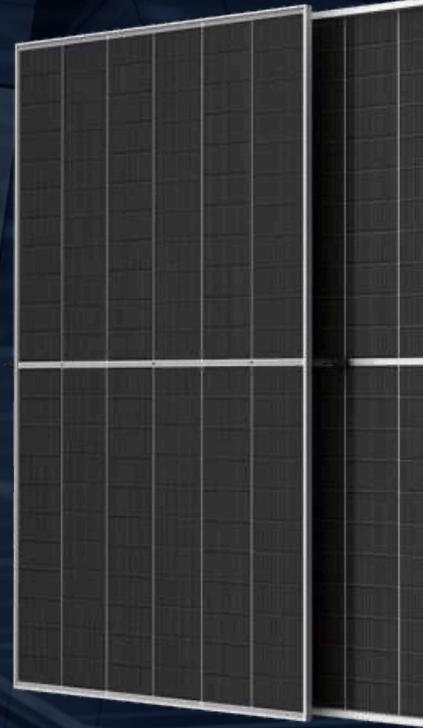
- **High Power Output:** Delivers exceptional power up to 700W for superior performance.
- **Industry-Leading Module Efficiency:** Achieves up to 22.5% efficiency through advanced high-density interconnect technology.
- **Enhanced Technology Integration:** Features Super Multi-Busbar (SMBB) technology for improved light trapping, reduced series resistance, and optimized current collection.

## ENHANCED DURABILITY AND RELIABILITY

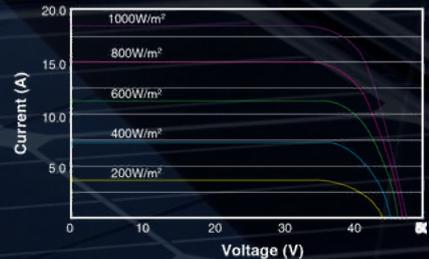
- **World-class manufacturer of crystalline silicon photovoltaic modules.**
- **Meets the highest international standards:** ISO 9001, ISO 14001, ISO 17025.
- **Independently verified quality control by accredited institutes.**
- **Proven durability through rigorous testing for harsh environments,** including IEC 61701, IEC 62716, and DIN EN 60068-2-68 standards.
- **Long-term reliability with 2x 100% EL inspections,** guaranteeing defect-free modules.

## HIGH ENERGY YIELD

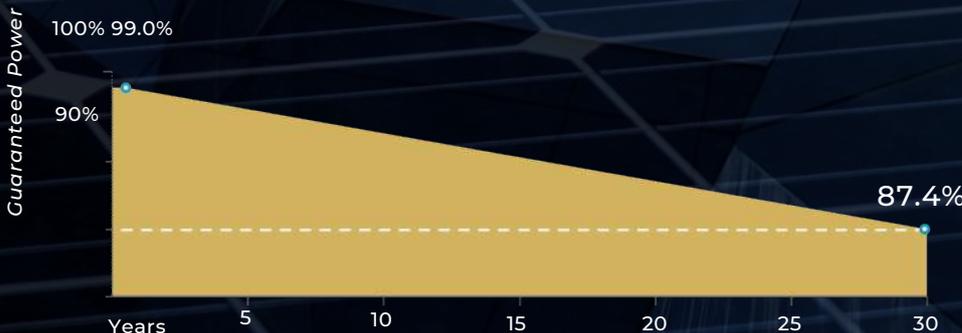
- **Exceptional Bifacial Performance:** Demonstrates outstanding bifacial and low irradiation efficiency, validated by independent third-party testing.
- **Reduced Degradation Rates:** Ensures minimal performance loss with only 1% degradation in the first year and 0.4% annually thereafter.
- **Low-Temperature Coefficient:** Features a temperature coefficient of -0.30% for optimized performance under varying conditions.
- **Enhanced Power Gain:** Delivers up to 30% additional power from the rear side, depending on albedo.



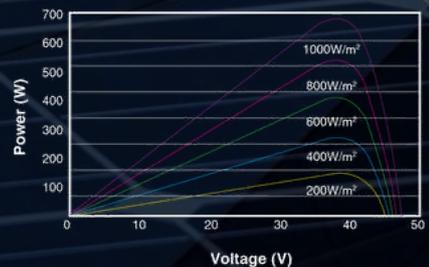
I-V CURVES OF PV MODULE (690W)



## AWG BIFACIAL DUAL GLASS PERFORMANCE WARRANTY



P-V CURVES OF PV MODULE (690W)



## Mechanical Data

Solar Cell	N-Type Monocrystalline
No. Of Cell	132 Cells
Module Dimensions	2384 x 1303 x 33mm (93.86 x 51.30 x 1.30 Inches)
Weight	38.3KG (84.4Lb)
Front Glass	2.0mm (0.08 inches), High Transmission, AR Cpted Heat Strengthened Glass
Encapsulant Material	POE/EVA
Back Glass	2.0mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	33mm (1.30 Inches) Anodized Aluminium Alloy
J-Box	IP68 Rated
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ) Portrait: 350/280mm (13.78/11.02 inches) Length can be customized
Connector	MC4 EV02 / TS4 PLUS / TS4

\*please refer to regional datasheet for specified connector.

## ELECTRICAL DATA(STC&NOCT)

Testing Condition	STC	NOCT										
Peak Power Watts-P <sub>max</sub> (Wp)*	675	514	680	517	685	521	690	526	695	530	700	534
Power Tolerance-P <sub>max</sub> (Wp)*	0~+5											
Maximum Power Voltage-V <sub>MPP</sub> (V)	39.4	37.0	39.6	37.2	39.8	37.3	40.1	37.7	40.3	37.8	40.5	38.0
Maximum Power Current-I <sub>MPP</sub> (A)	17.12	13.89	17.16	13.91	17.19	13.94	17.23	13.96	17.25	14.02	17.29	14.05
Open Circuit Voltage-V <sub>oc</sub> (V)	47.2	44.7	47.4	44.9	47.7	45.2	47.9	45.4	48.3	45.8	48.6	46.0
Short Circuit Current-I <sub>sc</sub> (A)	17.12	13.89	17.16	13.91	17.19	13.94	17.23	13.96	17.25	14.02	17.29	14.05
Module Efficiency η <sub>m</sub> (%)	21.7		21.9		22.1		22.2		22.4		22.5	

STC Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM 1.5, NOCT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s.

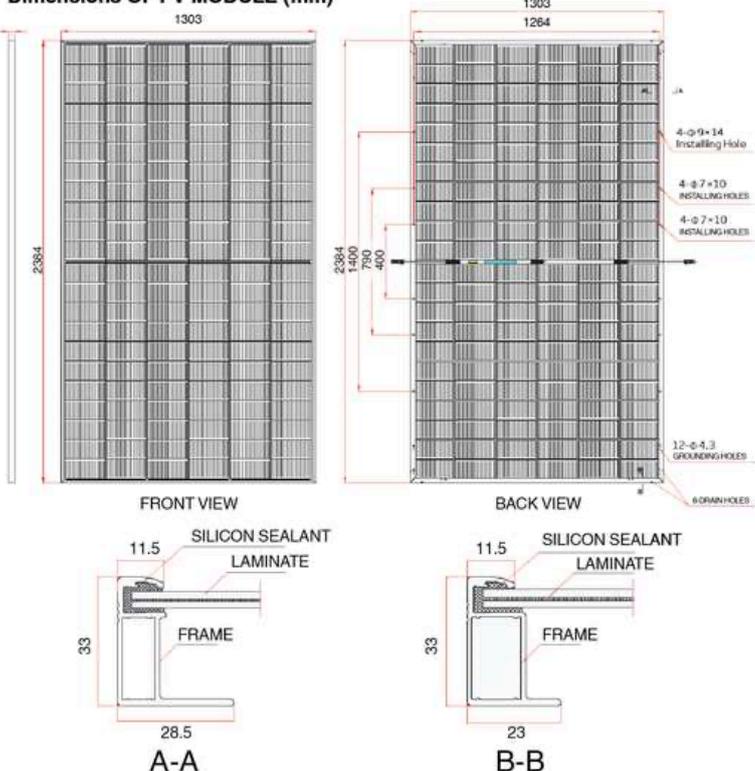
\*Measuring tolerance: ± 3%

## Electrical characteristics with different power bin (reference to 5% & 10% backside power gain)

Backside Power Gain	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Total Equivalent Power-P <sub>max</sub> (Wp)	709	743	714	748	719	754	725	759	730	765	735	770
Maximum Power Voltage-V <sub>MPP</sub> (V)	39.4	39.4	39.6	39.6	39.8	39.8	40.1	40.1	40.3	40.3	40.5	40.5
Maximum Power Current-I <sub>MPP</sub> (A)	17.98	18.83	18.02	18.88	18.05	18.91	18.09	18.95	18.11	18.89	18.15	19.02
Open Circuit Voltage-V <sub>oc</sub> (V)	47.2	47.2	47.4	47.4	47.7	47.7	47.9	47.9	48.3	48.3	48.6	48.6
Short Circuit Current-I <sub>sc</sub> (A)	19.05	19.95	19.09	20.00	19.12	20.03	19.16	20.08	19.19	20.11	19.24	20.15

Power Bifaciality: 80 ± 5%

### Dimensions OF PV MODULE (mm)



### TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient Of P <sub>max</sub>	-0.30%/°C
Temperature Coefficient Of V <sub>oc</sub>	-0.24%/°C
Temperature Coefficient Of I <sub>sc</sub>	-0.04%/°C

### MAXIMUM RATINGS

Operating Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	35A

### WARRANTY

12 Year Product Workmanship Warranty  
30 Years Power Warranty  
1% First Year Degradation  
0.40% Annual Power Attenuation

(Please refer to product warranty for details)

### PACKAGING CONFIGURATION

Modules Per Box: 33 Pieces  
Modules Per 40' Container: 594 Pieces



ASPEN WOODS  
— GROUP INC. —



*The Rob Rockefeller S.C.*

# GET IN TOUCH

5700 TENNYSON PARKWAY, SUITE 300  
PLANO, TX, 75024  
INFO@AWGROUPINC.COM  
WWW.AWGROUPINC.COM

 /ASPENWOODSGROUPINC

 /ASPENWOODSGROUP