ABS-096GWS-G12R
435W – 455W
TOPCon Half-Cut PV Module
Glass/White Back sheet-Silver Frame

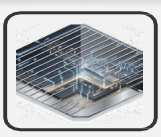


455W MAXIMUM POWER OUTPUT

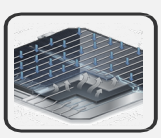
0 to+5W POSITIVE POWER SORTING

22.77% MAXIMUM EFFICIENCY

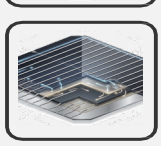
KEY FEATURES



HIGH POWER DENSITY
Module efficiency up to 22.77% at STC



MECHANICAL TEST LOADS
Front: 5,400 Pa. Rear: 2,400 Pa.
Subject to specified mounting configuration.



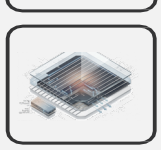
TOPCon CELL TECHNOLOGY
Half-cut cells with 16-busbar interconnection



LOW-LIGHT PERFORMANCE
Efficient power generation even under low irradiance conditions

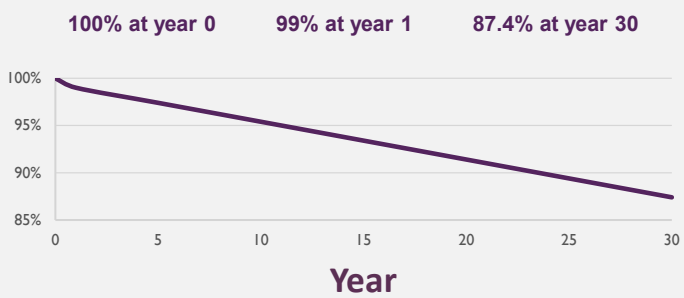


TEMPERATURE PERFORMANCE
Pmax temperature coefficient: −0.30%/°C.



GLASS / BACK SHEET CONSTRUCTION
3.2 mm front glass and White rear Back sheet.

30-YEAR LINEAR POWER WARRANTY



30-year linear power warranty
99% at year 1 · 87.4% at year 30

Maximum degradation: 1% in year 1, then 0.40 percentage points/year. Subject to limited warranty terms.

15-year product warranty
Covers defects in materials and workmanship.

THE IDEAL SOLUTION FOR



STANDARDS and CERTIFICATIONS

IEC 61215 | IEC 61730 | IEC 61701 | IEC 62716 | IEC 60068-2-68

C SA US

TÜVNORD TÜV NORD CERT GmbH Type Tested tuev-nord.de

CE

UL 61730 | MCS | CEC | ISO 9001 | ISO 14001 | ISO 45001

ADVANTAGES

MADE IN UAE
Manufactured in Abu Dhabi, United Arab Emirates.

A RELIABLE INVESTMENT
Products up to 455Wp, 30 years of warranty.

ENCOURAGING INNOVATION
European production technology

Address: Abundance Solar Panels Industries – L .L .C Plot No 7-8, KHIA5, KEZAD, Abu Dhabi, UAE
Website: www. bronzesolar.com

ABS-MOD/TDS096GWS-G12R/Rev-00
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ABS-096GWS-G12R-435-455W

ENGINEERING DRAWINGS & TECHNICAL PARAMETERS

BRONZE SOLAR

ELECTRICAL CHARACTERISTICS (STC/NMOT)

Models	Maximum Rating Power (Pmax) (W)		Open Circuit Voltage (Voc) (V)		Maximum Power Voltage (Vmp) (V)		Short Circuit Current (Isc) (A)		Maximum Power Current (Imp) (A)		Module Efficiency
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	%
ABS-096GWS-G12R-435	435	325.2	35.43	33.31	29.10	27.15	15.66	12.64	15.01	12.02	21.77%
ABS-096GWS-G12R-440	440	328.9	35.52	33.40	29.32	27.36	15.70	12.67	15.07	12.07	22.02%
ABS-096GWS-G12R-445	445	332.6	35.61	33.48	29.55	27.57	15.73	12.69	15.12	12.11	22.27%
ABS-096GWS-G12R-450	450	336.4	35.71	33.58	29.74	27.75	15.75	12.71	15.19	12.16	22.52%
ABS-096GWS-G12R-455	455	340.1	35.80	33.66	29.90	27.90	15.80	12.75	15.28	12.24	22.77%

STC: 1,000 W/m² front, cell temperature 25 °C, AM1.5.

NMOT: 800 W/m², ambient 20 °C, wind 1 m/s, module operating near maximum power.

Electrical measurement uncertainty: ±3% for Pmax, Voc, Vmp, Isc and Imp at STC and NMOT. Pmax is the nominal power class. Power-class assignment and numerical rounding may cause slight differences between nominal Pmax and Vmp × Imp. Positive sorting applies to measured STC power.

MECHANICAL DATA

Solar cell	TOPCon half-cut, 182.2 × 105 mm, 16BB
Number of half-cells	096 (6 × 16)
Dimensions	1,762 × 1,134 × 30 mm (69.37 × 44.65 × 1.18 in)
Weight	24 kg (±3%)
Front Glass	3.2 mm, High Transmission, Low Iron, Tempered ARC Glass
Encapsulant	Front: EPE multilayer film / Rear: EVA
Back Sheet	White Back sheet
Frame	Silver-anodized aluminium alloy, 6005-T6
Junction box	Dhash JB 12Y, 30 A; IP68; 1,500 V DC; 3 bypass diodes
Connectors	Dhash DS01
Output cable	4 mm²; 400 mm or 1,300 mm, per order
Packaging	36 modules/pallet; 936 modules/40-foot HC container

OPERATING CONDITION

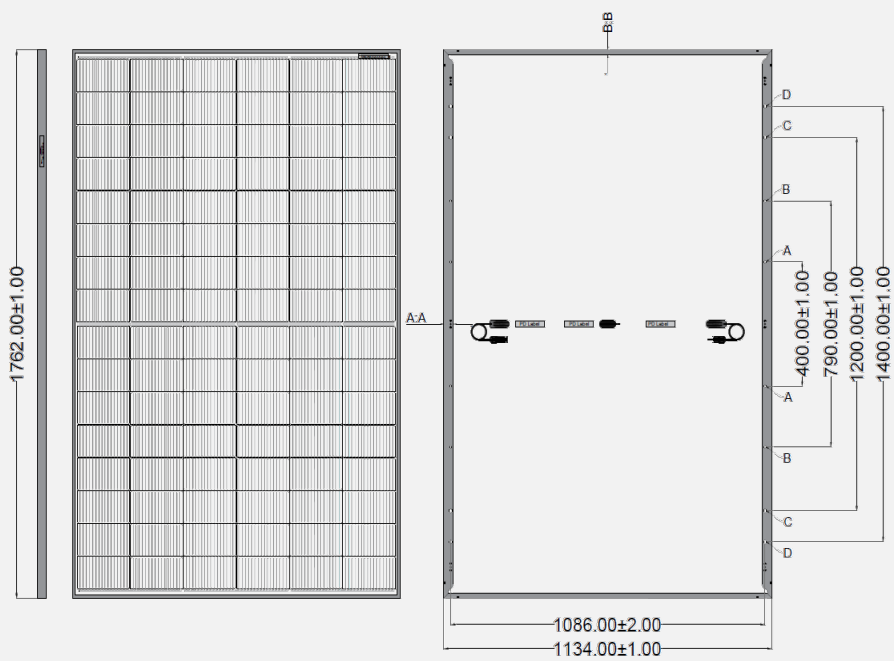
Front test load	5,400 Pa
Rear test load	2,400 Pa
Maximum system voltage	1,500 V DC
Maximum series fuse	30 A
Operating temperature	−40 to +85 °C
Protection class	Class II
Fire classification	Class C

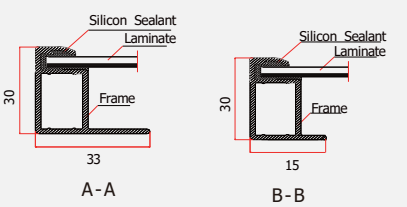
TEMPERATURE CHARACTERISTICS

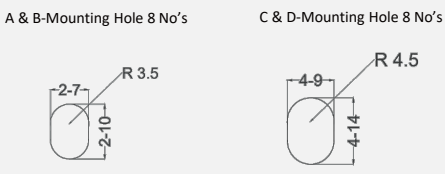
Nominal Module Operating Temperature	43°C ± 2°C
Temperature Coefficient of Isc	+0.05 % / °C
Temperature Coefficient of Voc	-0.25 % / °C
Temperature Coefficient of Pmax	-0.30 % / °C

Loads apply to the specified mounting configurations. Test loads are not allowable design loads.

DIMENSIONS OF PV MODULE (mm)

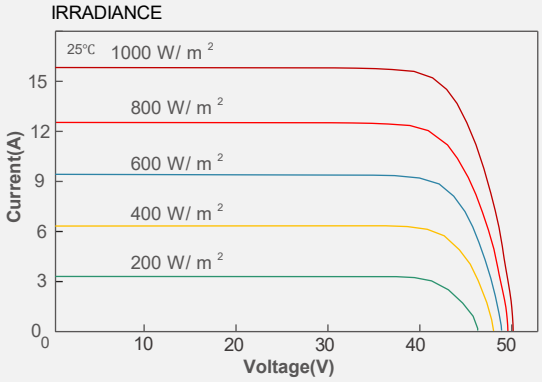




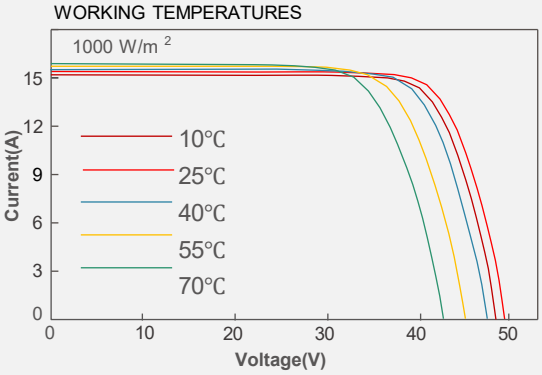


IV-CURVES

CURRENT-VOLTAGE CURVE UNDER DIFFERENT IRRADIANCE



CURRENT-VOLTAGE CURVE UNDER DIFFERENT WORKING TEMPERATURES



Typical I–V characteristics are presented for reference purpose only.

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