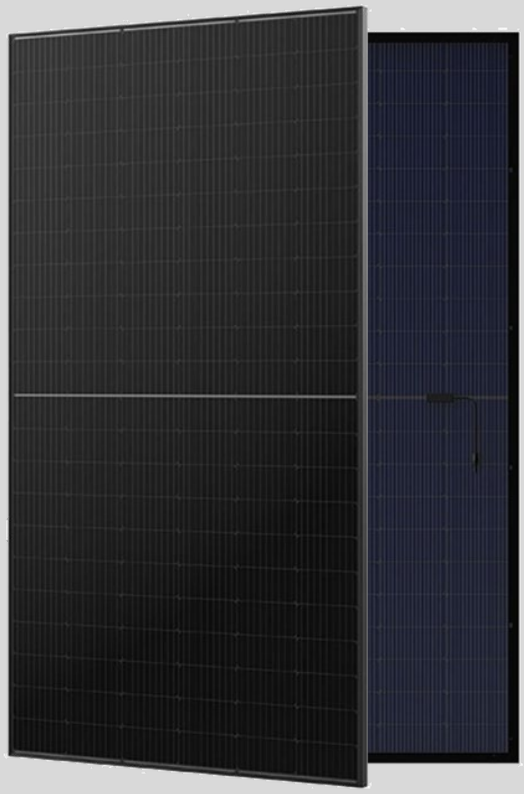
BRONZE SOLAR

ABS-132GGB-G12R
630W – 650W
TOPCon Half-Cut PV Module
Glass/Glass-Black Frame

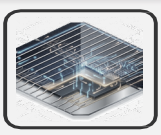


650W MAXIMUM POWER OUTPUT

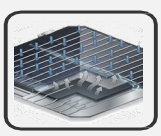
0 to+5W POSITIVE POWER SORTING

24.06% MAXIMUM EFFICIENCY

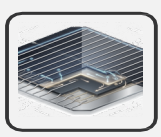
KEY FEATURES



HIGH POWER DENSITY
Module efficiency up to 24.06% at STC



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



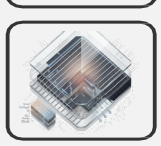
TOPCon CELL TECHNOLOGY
Half-cut cells with 16-busbar interconnection



BIFACIAL POWER GENERATION
Rear irradiance can increase output.

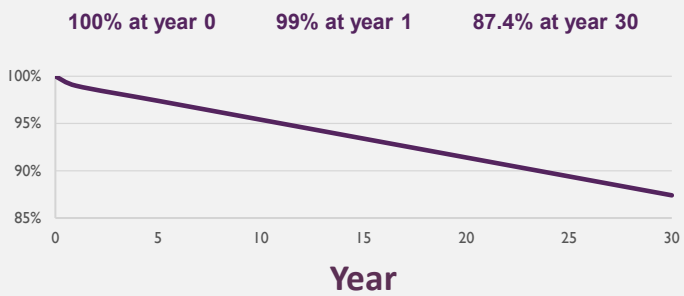


TEMPERATURE PERFORMANCE
Pmax temperature coefficient: −0.30%/°C.



GLASS / GLASS CONSTRUCTION
2.0 mm front glass and 2.0 mm rear glass.

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

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 650Wp, 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/TDS132GGB-G12R/Rev-00
Date-31.10.2026

ABS-132GGB-G12R-630-650W

ENGINEERING DRAWINGS & TECHNICAL PARAMETERS

BRONZE SOLAR

ELECTRICAL CHARACTERISTICS (STC/NMOT/BNPI)

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	BNPI	STC	NMOT	BNPI	STC	NMOT	BNPI	STC	NMOT	BNPI	STC	NMOT	BNPI	%
ABS-132GGB-G12R-630	630	470.9	690	49.11	46.17	49.11	41.53	38.75	41.53	15.79	12.74	17.68	15.21	12.18	16.62	23.32%
ABS-132GGB-G12R-635	635	474.6	695	49.24	46.30	49.24	41.73	38.93	41.73	15.82	12.77	17.72	15.26	12.22	16.66	23.51%
ABS-132GGB-G12R-640	640	478.4	700	49.37	46.42	49.37	41.93	39.12	41.93	15.86	12.80	17.76	15.30	12.25	16.69	23.69%
ABS-132GGB-G12R-645	645	482.1	702	49.50	46.54	49.50	42.06	39.24	42.06	15.89	12.82	17.80	15.38	12.32	16.71	23.88%
ABS-132GGB-G12R-650	650	485.9	705	49.61	46.64	49.61	42.19	39.36	42.19	15.94	12.86	17.85	15.44	12.36	16.73	24.06%

STC: 1,000 W/m² front, cell temperature 25 °C, AM1.5. BNPI: 1,000 W/m² front + 135 W/m² rear; other conditions require confirmation.

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.

ILLUSTRATIVE BIFACIAL POWER GAIN

Models		630 W	635 W	640 W	645 W	650 W
10%	Power (W)	693	699	704	710	715
15%	Power (W)	725	730	736	742	748
20%	Power (W)	756	762	768	774	780
25%	Power (W)	788	794	800	806	813

Assumed power gain relative to front-side STC rating. Calculated output = nominal power × (1 + Power gain). Actual gain depends on rear irradiance, albedo, mounting height, spacing and shading. These figures are not guaranteed site yields.

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

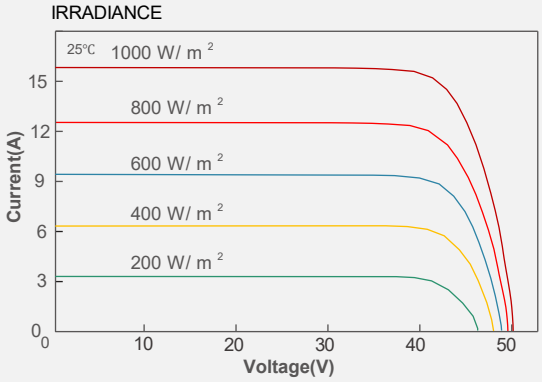
Loads apply to the specified mounting configurations. Test loads are not allowable design loads.

MECHANICAL DATA

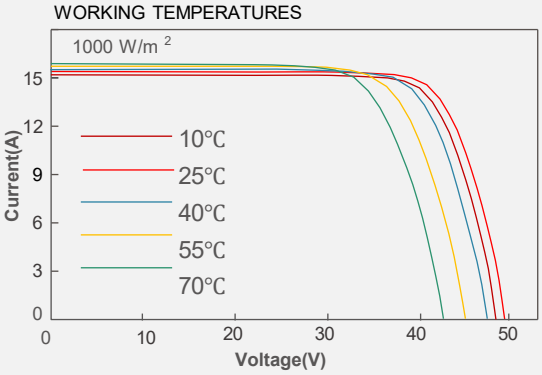
Solar cell	TOPCon half-cut, 182.2 × 105 mm, 16BB
Number of half-cells	132 (6 × 22)
Dimensions	2,382 × 1,134 × 30 mm (93.78 × 44.65 × 1.18 in)
Weight	33 kg (±3%)
Front Glass	2.0 mm, High Transmission, Low Iron, Tempered ARC Glass
Encapsulant	Front: EPE multilayer film / Rear: EVA
Back Glass	2.0 mm Semi Tempered Glass with Glaze
Frame	Black-anodized aluminum 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; 720 modules/40-foot HC container

IV-CURVES

CURRENT-VOLTAGE CURVE UNDER DIFFERENT IRRADIANCE

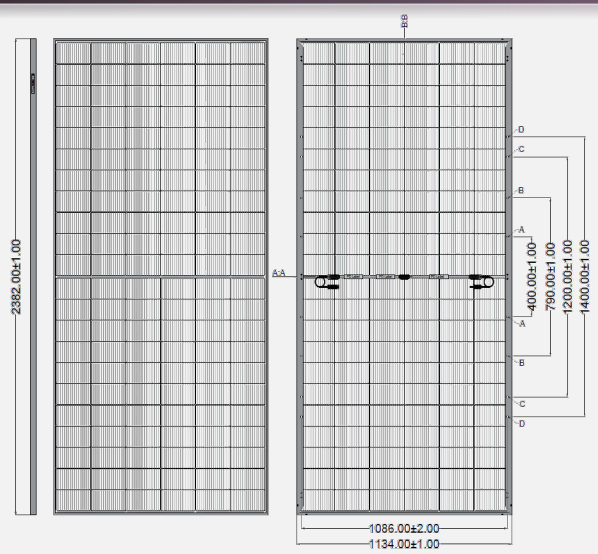


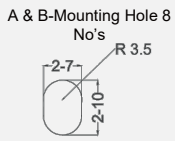
CURRENT-VOLTAGE CURVE UNDER DIFFERENT WORKING TEMPERATURES

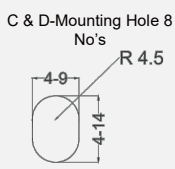


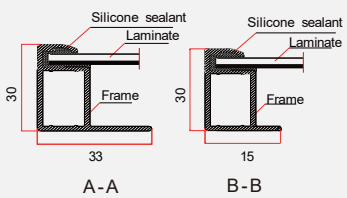
Typical I–V characteristics are presented for reference purpose only.

DIMENSIONS OF PV MODULE (mm)









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

ABS-MOD/TDS132GGB-G12R/Rev-00
Date-31.10.2026