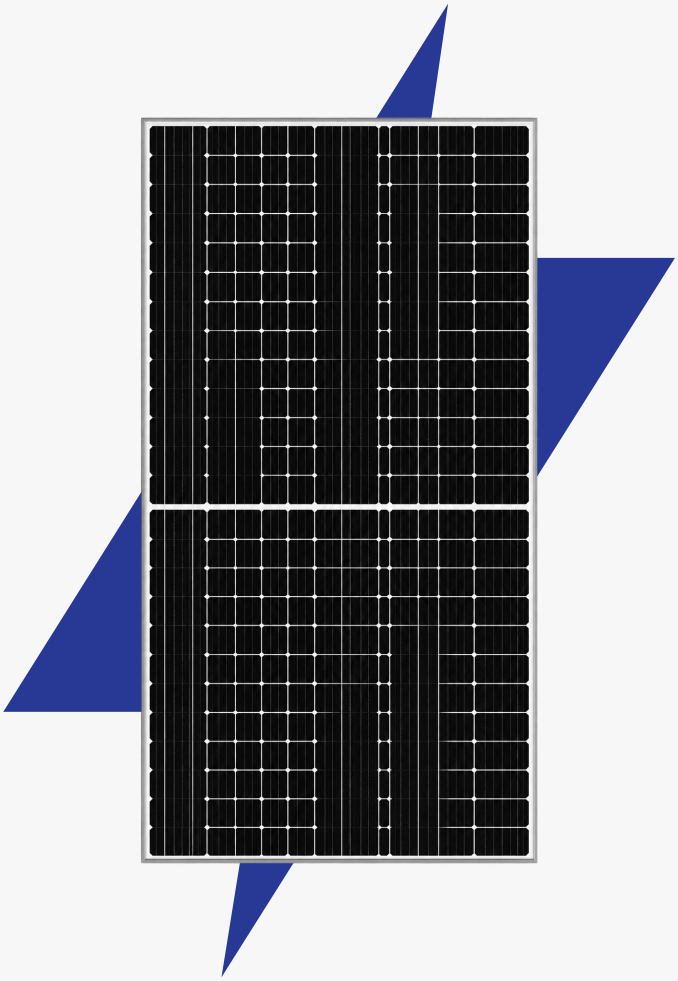
ZAP91
A SOLAR JV BY ZETWERK & PENNAR

ZAP-G12RTG-132

TOPCon Technology
Dual Glass Bifacial Module



- Excellent PID resistance
- Execellent LeTID resistance
- Power tolerance of 0 to +4.99W
- Sustain heavy snows and wind loads (5400Pa & 2400Pa)

SUITABLE FOR

Residential | Utility | Commercial | Off- grid

CERTIFICATES *

Product | Plant

- PID:IEC TS 62804-1:2015(600-640), LeTID:IEC TS 63342:2022(620)
- BIS IS 14286:Part1:Sec1(2023). IS/IEC 61730:PART1(2023), IS/IEC 61730:PART2(2023) (600-640)
- Ammonia Corrosion IEC 62716:2013 (600-640)
- Salt Mist Corrosion: IEC 61701:2020 Ed. 3.0 2020-6-11(600-640)
- Dust and Sand: IEC 60068-2-68:1994 (600-640)
- PAN: IEC 61853-1: 2011 (620)
- IAM: IEC 61853-2: 2016 (620)
- EN ISO 9001: 2015 Quality Management System
- EN ISO 14001: 2015 Environmental Management System
- EN ISO 45001: 2018 Occupational health and safety management systems

12 YEAR WARRANTY
12 YEARS PRODUCT WARRANTY

30 YEAR WARRANTY
30 YEARS POWER OUTPUT WARRANTY

0.40%
ANNUAL POWER DEGRADATION FROM 2ND YEAR

1%
LID LOSS IN THE FIRST YEAR

640W
MAXIMUM POWER OUTPUT

Scan to Visit
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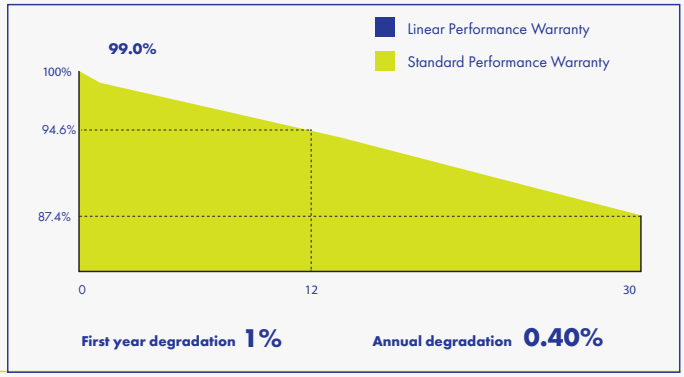

The Graphs are for reference purpose only. Please contact Zap91 technical team for further clarifications.

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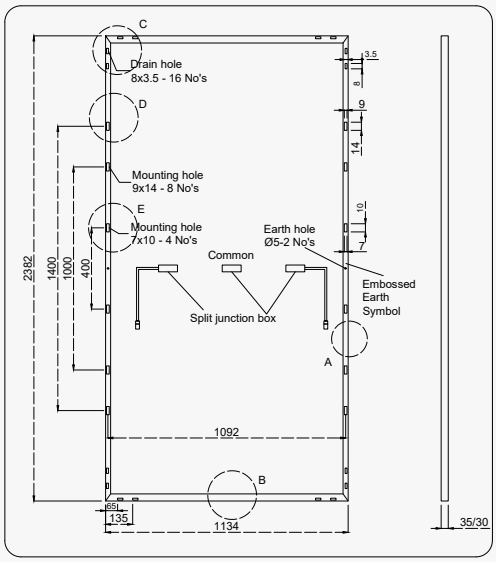
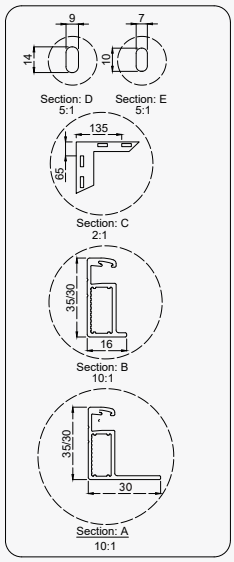




PACKING CONFIGURATION

Container	40' HQ
Pieces per Pallet	31/36
Pallet per Container	20
Pieces per Container	620/720

ZAP-G12RTG-132

ELECTRICAL CHARACTERSTICS (STC)	M2, Module Temperature 25 Deg C, AM-1.5, Irradiance 1000 W/m²								
Peak power, P Max(Wp)	600	605	610	615	620	625	630	635	640
Maximum voltage, Vmp(V)	40.52	40.64	40.78	40.95	41.06	41.18	41.30	47.42	41.54
Maximum Current, Imp(A)	14.81	14.89	14.96	15.02	15.1	15.18	15.26	15.33	15.42
Open Circuit Voltage, Voc(V)	48.17	48.33	48.45	48.65	48.88	49.04	49.19	49.35	49.50
Short Circuit current, Isc(A)	15.58	15.66	15.73	15.81	15.87	15.95	16.03	16.10	16.18
Module Efficiency(%)	22.21	22.40	22.58	22.77	22.95	23.15	23.32	23.51	23.69
Power Tolerence	0 to +4.99 W								
Maximum System Voltage	1500 V								
Maximum Series Fuse Rating	30 A								

Measurement Tolerance +/-3%

Bifacial gain	600	605	610	615	620	625	630	635	640
5% Maximum Power (P max)	630	635.25	640.5	645.75	651	656.25	661.50	666.76	672
10% Maximum Power (P max)	660	665.5	671	676.5	682	687.5	693	698.5	704
20% Maximum Power (P max)	720	726	732	738	744	750	756	762	768
30% Maximum Power (P max)	780	786.5	793	799.5	806	853.12	859.95	866.77	873.6

NOCT	600	605	610	615	620	625	630	635	640
Maximum Power (P max)	446.54	450.26	453.98	457.70	461.42	465.14	468.87	472.59	476.31
Maximum Power Voltage(Vmp)	37.06	37.17	37.30	37.45	37.55	37.66	37.77	37.88	37.99
Maximum Power Current (Imp)	12.05	12.12	12.18	12.23	12.29	12.36	12.42	12.48	12.55
Open Circuit Voltage (Voc)	44.79	44.94	45.05	45.24	45.45	45.60	45.74	45.89	46.03
Short Circuit Current(Isc)	12.73	12.79	12.85	12.92	12.96	13.03	13.10	13.15	13.22

MECHANICAL SPECIFICATIONS

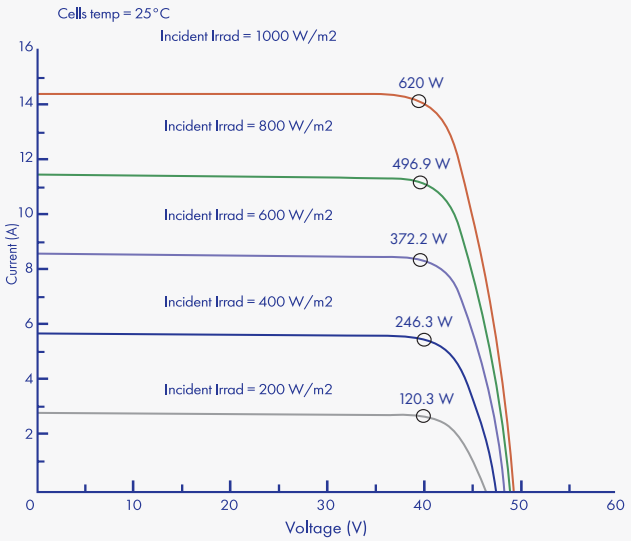
External Dimensions	2382 (±2mm) X 1134 (±2mm) X 35/30 (±1mm)
Weight	32.8 Kg
No of Pieces	132-16BB, 105 mm X 182.2 mm
Front Glass	2.0 mm ARC Heat Strengthened
Rear Cover	2.0 mm Heat Strengthened
Frame	Anodized Aluminium Alloy (Silver)
Junction Box	3 Split, IP 68 Rated
Connector	MC4 Compatible Connector
Output Cable	4.0 mm² / 400 mm Cable Length

TEMPERATURE CHARASTERISTICS

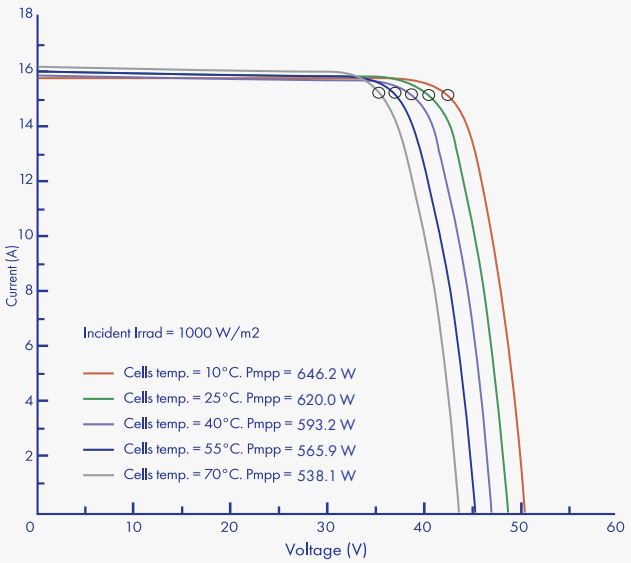
Pmax Temp. Coefficient (%/°C)	-0.29
Voc Temp. Coefficient (%/°C)	-0.24
Isc Temp. Coefficient (%/°C)	0.042
Operating Temp. (°C)	-40°C to + 85°C
Nominal Operating Cell Temp. (°C)	45±2°C

Bifaciality Factor	80 ± 10%

I-V VARIATION WITH IRRADIANCE



I-V VARIATION WITH TEMPERATURE



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