

ZEN POWER SOLAR

ZEN POWER SOLAR 445-144M-BB

445W

Highest power output

20.14%

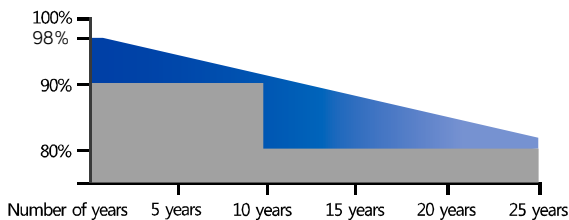
Module efficiency

12 years

Material & Workmanship warranty

25 years

Linear power output warranty



ZEN POWER SOLAR

Standard Warranty

Munich RE 

ZP 445-144M-BB ZP 440-144M-BB ZP 435-144M-BB
ZP 430-144M-BB ZP 425-144M-BB



PERC cell technology



Higher output power



Lower risk of micro-crack



Positive tolerance offer



Lower risk of hot spot



Better shading tolerance



Certified for salt/ammonia corrosion resistance



Load certificates: wind to 2400Pa and snow to 5400Pa



Made in Vietnam

Delivered to the world

Electrical Characteristics at Standard Test Conditions(STC)

Module Type	ZP 445-144M-BB	ZP 440-144M-BB	ZP 435-144M-BB	ZP 430-144M-BB	ZP 425-144M-BB
Maximum Power - Pmax (W)	445	440	435	430	425
Open Circuit Voltage - Voc (V)	49.8	49.6	49.4	49.2	49
Short Circuit Current - Isc (A)	11.42	11.34	11.26	11.19	11.11
Maximum Power Voltage - Vmpp (V)	41.2	41	40.8	40.6	40.4
Maximum Power Current - Imp (A)	10.81	10.74	10.67	10.6	10.52
Module Efficiency	20.14%	19.92%	19.69%	19.46%	19.24%

Standard Test Conditions (STC): irradiance 1,000 W/m²; AM 1.5; Cell temperature 25°C. Pmax Sorting : 0- 5W. Measuring Tolerance: ± 3%.

Remark: Electrical data do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

Electrical Characteristics at Normal Operating Cell Temperature(NOCT)

Module Type	ZP 445-144M-BB	ZP 440-144M-BB	ZP 435-144M-BB	ZP 430-144M-BB	ZP 425-144M-BB
Maximum Power - Pmax (W)	331.7	328	324.3	320.7	316.8
Open Circuit Voltage - Voc (V)	46.4	46.2	46	45.9	45.7
Short Circuit Current - Isc (A)	9.22	9.16	9.09	9.04	8.97
Maximum Power Voltage - Vmpp (V)	38.2	38.1	37.9	37.7	37.6
Maximum Power Current - Imp (A)	8.67	8.61	8.55	8.5	8.43

Normal Operating Cell Temperature(NOCT) : irradiance 800W/m²; wind speed 1 m/s, ambient temperature 20 . Measuring Tolerance: ± 3%.

Temperature Characteristics

NOCT	45 (± 2)
Voltage Temperature Coefficient	-0.27%/
Current Temperature Coefficient	+ 0.048%/
Power Temperature Coefficient	-0.35%/

Maximum Ratings

Maximum System Voltage [V]	1000
Series Fuse Rating [A]	20

Material Characteristics

Dimensions	2108×1048×35mm (L× W× H)
Weight	24.4kg
Frame	Black anodized aluminum profile
Front Glass	White toughened safety glass, 3.2 mm
Cell Encapsulation	EVA (Ethylene-Vinyl-Acetate)
Back Sheet	Composite film
Cells	12× 12 pieces monocrystalline solar cells series strings
Junction Box	IP68, 3 diodes
Cable& Connector	Potrait: 500 mm (cable length can be customized) , 1× 4 mm ² , compatible with MC4

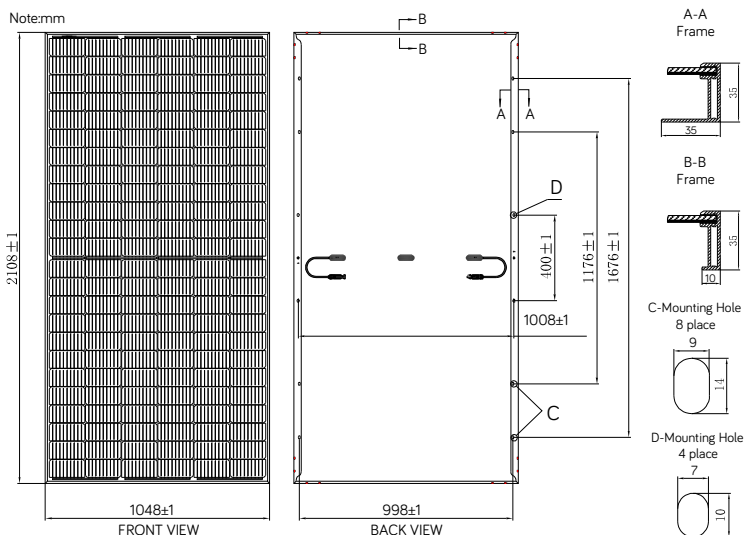
Packaging

Dimensions(L× W× H)	2140× 1125× 1168mm
Container 20'	155
Container 40'	341
Container 40'HC	682

System Design

Temperature Range	-40 °C to + 85 °C
Withstanding Hail	Maximum diameter of 25 mm with impact speed of 23 m/s
Maximum Surface Load	5,400 Pa
Application class	class A

Dimensions



IV-Curves

