



# ZION Series

Half-Cell Bifacial Module

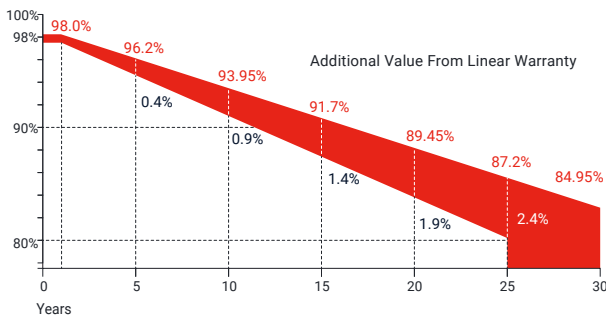
**445-460Wp** | **21.16%**  
 Module Power Output | Max Efficiency



## Key Features

-  High module conversion efficiency
-  Better temperature coefficient
-  Super multi busbar technology
-  Low attenuation long warranty
-  Superior load capacity
-  Higher bifacially
-  USA based liability insurance
-  Houston, Texas based company

## Warranty



**15** Years Guarantee on product material and workmanship

**30** Years Linear power output warranty

## Product Certification

IEC61215:2016; IEC 61730:2016; UL61215; UL61730	
IEC62804	PID
IEC61701	Salt Mist
IEC62716	Ammonia Resistance
IEC60068	Dust and Sand
IEC61215	Hailstone
Fire Type (UL61730): Type 29	
ISO14001:2015; ISO9001:2015; ISO45001:2018	



## About SEG Solar

Founded in 2016, SEG is a leading vertically integrated PV manufacturer headquartered in Houston, Texas, U.S., and is dedicated to delivering reliable and cost-effective solar modules to the utility, commercial and residential markets. By the end of 2023, SEG has shipped over 5 GW of solar modules worldwide. The company is expected to exceed a production capacity of 5.5 GW by the end of 2024.



Download Datasheet

## Electrical Characteristics

Module Type	SEG-445-BMA-BG			SEG-450-BMA-BG			SEG-455-BMA-BG			SEG-460-BMA-BG		
	Front STC	Front NOCT	Back STC	Front STC	Front NOCT	Back STC	Front STC	Front NOCT	Back STC	Front STC	Front NOCT	Back STC
Maximum Power -Pmp(Wp)*	445	334	312	450	338	315	455	342	319	460	346	322
Open Circuit Voltage -Voc(V)	49.90	46.60	49.60	50.10	46.80	49.80	50.30	46.90	50.00	50.50	47.10	50.20
Short Circuit Current -Isc(A)	11.34	9.17	8.00	11.42	9.22	8.04	11.49	9.29	8.09	11.57	9.34	8.14
Maximum Power Voltage -Vmp(V)	41.60	38.50	41.70	41.80	38.70	41.90	42.00	38.90	42.10	42.20	39.10	42.30
Maximum Power Current -Imp(A)	10.70	8.68	7.49	10.77	8.73	7.54	10.84	8.80	7.59	10.91	8.85	7.64
Module Efficiency(%)	20.47			20.70			20.93			21.16		
Power Tolerance(W)							(0, +4.99)					
Maximum System Voltage							1500V DC					
Maximum Series Fuse Rating							25 A					
Bifaciality							70±10%					

STC: Irradiance 1000 W/m<sup>2</sup> module temperature 25°C AM=1.5

NOCT: Irradiance 800W/m<sup>2</sup> ambient temperature 20°C module temperature 45°C wind speed: 1m/s

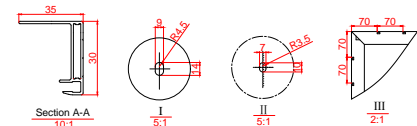
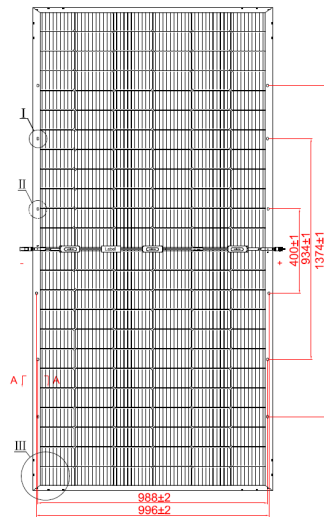
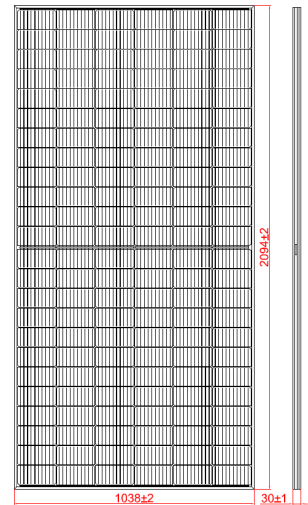
\*Measuring tolerance: ±3%

## Mechanical Specifications

External Dimension	2094 x 1038 x 30 mm
Weight	28.0 kg
Solar Cells	PERC Mono 166 x 83 mm(144 pcs)
Front Glass	2.0 mm AR coating semi-tempered glass
Back Glass	2.0 mm Semi-tempered glass
Frame	Anodized aluminium alloy
Junction Box	IP68 / 3 diodes
Connector Type	PV-C002-xy or MC4
Cable Type	12 AWG PV Wire(UL)
Cable Length	Portrait: 400 mm(+) / 200 mm(-) Landscape: 1200 mm(+) / 1200 mm(-) or customized length
Mechanical Load(Front)	5400 Pa / 113 psf*
Mechanical Load(Rear)	2400 Pa / 50 psf*

\*Refer to SEG installation manual for details

## Technical Drawing



\*Refer to SEG installation manual for details

## Temperature Characteristics

Pmax Temperature Coefficient	-0.35 %/°C
Voc Temperature Coefficient	-0.27 %/°C
Isc Temperature Coefficient	+0.05 %/°C
Operating Temperature	-40~+85 °C
Nominal Operating Cell Temperature (NOCT)	45±2 °C

## Packing Configuration

Container	20'GP	40'HQ	40'HQ (For USA)
Pieces per Pallet	36	36	36
Pallets per Container	5	22	18
Pieces per Container	180	792	648

## I-V Curve

