

# P-Type

182 Mono-Facial Module

120 cells

## 450W-465W

Maximum output power	Maximum efficiency	Power tolerance
465W	21.55%	0~+3%



### ▶ Key Features



#### Multi Busbar Technology

Better light trapping and current collection to improve module power output and reliability.



#### Reduced Hot Spot Loss

Optimized electrical design and lower operating current for reduced hot spot loss and better temperature coefficient.



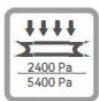
#### PID Resistance

Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.



#### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance.



#### Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).

### ▶ Quality System

IEC61215(2016), IEC61730(2016)

ISO9001:2015:Quality Management System

ISO14001:2015:Environment Management System

ISO45001:2018:Occupational Health and Safety Management Systems

### ▶ Product Certifications

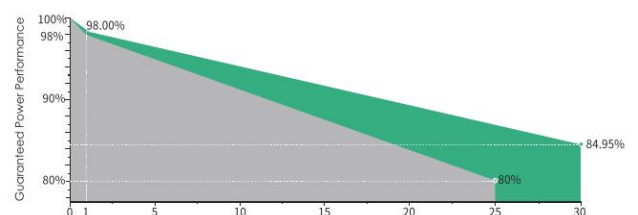


### ▶ Linear performance warranty

**12** Year Product Warranty

**30** Year Linear Warranty

**0.45%** Annual Degradation Over **30** Years



**SUZHOU PRETA INTELLIGENCE AND TECHNOLOGY CO.,LTD**

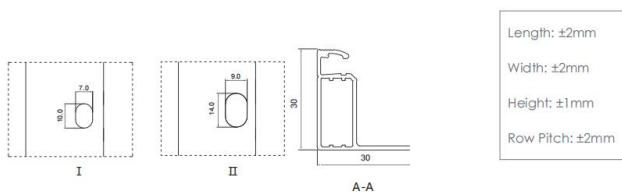
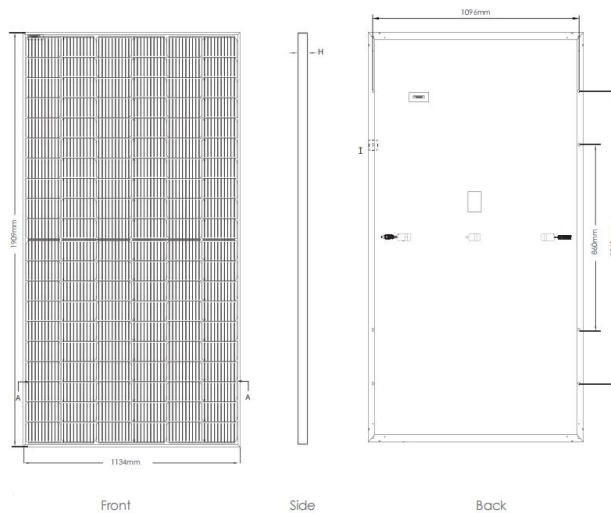
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## Engineering Drawings



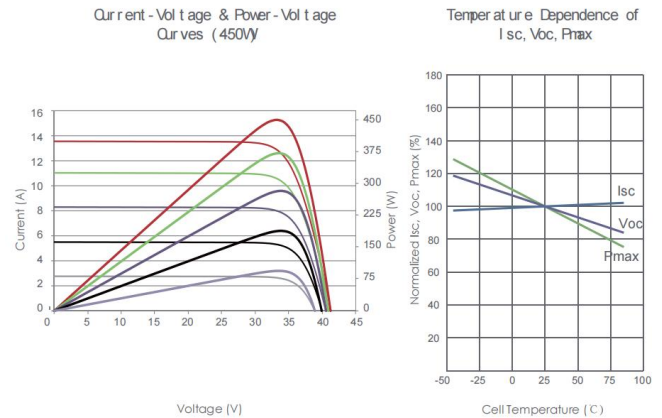
## Packaging Configuration

36pcs/pallets, 72pcs/stack, 864pcs/ 40'HQ Container

## Specifications

Module Type	GPM-450W(120)		GPM-455W(120)		GPM-460W(120)		GPM-465W(120)	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	450Wp	335Wp	455Wp	339Wp	460Wp	342Wp	465Wp	346Wp
Maximum Power Voltage (Vmp)	34.88V	31.73V	35.03V	31.91V	35.18V	32.07V	35.33V	32.12V
Maximum Power Current (Imp)	12.91A	10.55A	12.99A	10.61A	13.08A	10.67A	13.17A	10.77A
Open-circuit Voltage (Voc)	41.40V	38.87V	41.60V	39.01V	41.80V	39.15V	42.00V	39.29V
Short-circuit Current (Isc)	13.68A	11.19A	13.73A	11.25A	13.78A	11.32A	13.83A	11.38A
Module Efficiency STC (%)	20.85%		21.08%		21.32%		21.55%	
Operating Temperature(°C)	-40°C~+85°C							
Maximum system voltage	1000/1500VDC (IEC)							
Maximum series fuse rating	25A							
Power tolerance	0~+3%							
Temperature coefficients of Pmax	-0.35%/°C							
Temperature coefficients of Voc	-0.28%/°C							
Temperature coefficients of Isc	0.048%/°C							
Nominal operating cell temperature (NOCT)	45±2°C							

## Electical Performance (580W)



## Mechanical Parameters

Cell Type	182 P type Mono-crystalline
No. of cells	120 (6×20)
Dimensions	1909×1134×30mm/35mm
Weight	21.5kg
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68 Rated
Output Cables	TUV 1×4.0mm² (+): 300mm, (-): 300mm or Customized Length

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