

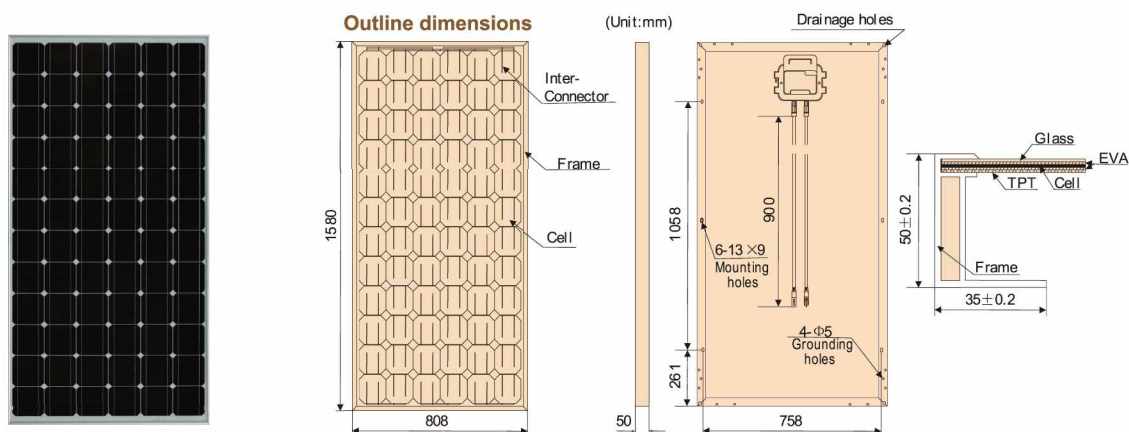
## Guarantee and Certification

Product warranty	10 years
Performance guarantee	Guaranteed output of 90% for 10 years and 80% for 25 years
Approvals and certificates	TUV; CEC; IEC 61215, IEC 61730

## Products

### Monocrystalline silicon photovoltaic series

#### Module power with 190-210w



### Specifications

Cell	Monocrystalline silicon solar cells 125mm square
Number of cells and connections	72 in series
Application	DC 24V system
Maximum system voltage(V)	DC 1,000
Series fuse rating(A)	10
Nominal power(W)	190-210
Dimension(mm)	1580×808×35
Weight(Kg)	14.8
Type of output terminal	Lead wire with connections
Junction box	3 bypass diodes

### Packaging specifications

Number of modules per pallet	21/29
Number of pallets per 40' container	28
Packaging box dimensions(L / W / H)(mm)	1620×1110×960
Box weight(Kg)	385/475

### Temperature coefficients

Parameters	Rating
Operating temperature(°C)	-40 to +85 °C
Storage temperature(°C)	-40 to +85 °C
$\alpha$ Pm	-0.452%/K
$\alpha$ Isc	+0.060%/K
$\alpha$ Voc	-0.336%/K
NOCT	46 ±2/ °C

### Electro-optical characteristics

Parameters	Symbol	HG-190S	HG-195S	HG-200S	HG-205S	HG-210S
Open circuit voltage	Voc	44.6V	44.9V	45.1V	45.9V	46.0V
Maximum power voltage	Vmp	36.9V	37.4V	37.7V	38.3V	38.5V
Short circuit current	Isc	5.57A	5.62A	5.65A	5.73A	5.88A
Maximum power current	Imp	5.15A	5.21A	5.31A	5.35A	5.46A
Maximum power	Pm	190W	195W	200W	205W	210W
Module efficiency	$\eta$	14.90%	15.30%	15.70%	16.10%	16.40%
Power output tolerance		0 ~ +3%	0 ~ +3%	0 ~ +3%	0 ~ +3%	0 ~ +3%

### Mechanical specifications

Cable	Solar cable, 900mm length, 4mm <sup>2</sup> prefabricated with plugs (male/female)
Front glass	Transparent toughened safety glass 3.2mm
Cell encapsulation	EVA(Ethylene-Vinyl-Acetate), 0.5mm
Backside	Composite film
Frame	Anodised aluminium cavity frame
Maximum surface load	(Screwless) with drainage holes. Entire module certified to withstand high wind loads(2400Pa), snow loads(5400Pa)
Hail resistance	Maximum diameter of 25mm with impact speed 83km/h