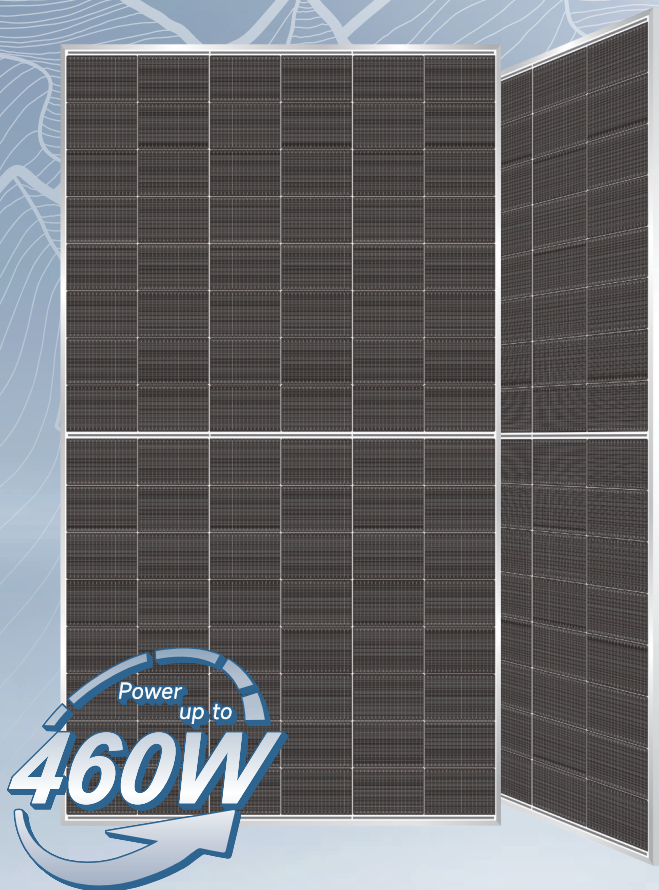




# Himalaya G12R Series 440-460W

96-cell Bifacial HJT Half Cell  
Double-glass Solar Module



### HJT 3.0

Combining gettering process and double-sided  $\mu\text{-Si}$  to maximize cell efficiency and module power.



### Up to 90% Bifaciality

Natural symmetrical bifacial structure bringing more energy yield from the backside.



### Sealing with PIB based sealant

Stronger water resistance, greater air impermeability to extend module lifespan.



### Higher reliability

Industrial leading product and performance warranty, ensuring modules' consistent outstanding performance.



### Suitable for Utility Solar projects

## WARRANTY

Product  
Warranty **15**  
years

Linear  
Power  
Warranty **30**  
years



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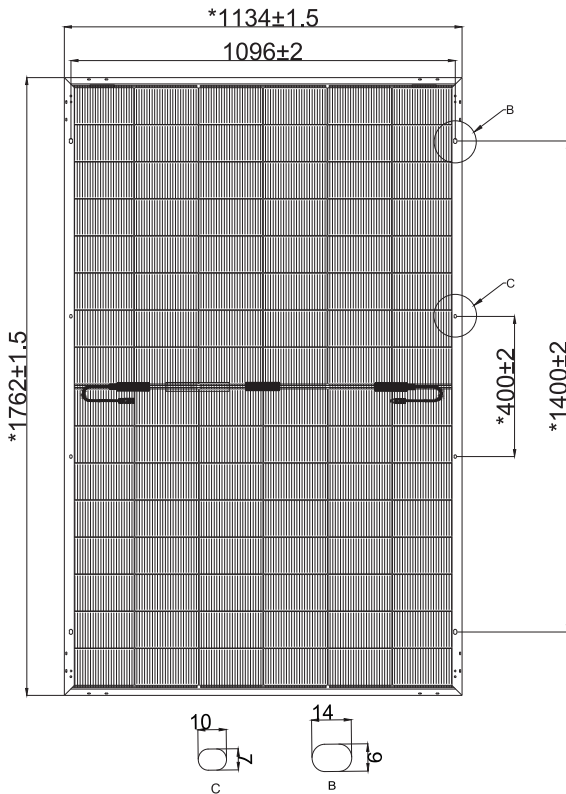
# Himalaya G12R Series 440-460W

96-cell Bifacial HJT Half Cell Solar Module

- BloombergNEF Tier 1 PV module manufacturer
- Reinsurance underwritten by Ariel Re

## Engineering Drawings

Unit: mm



## Electrical Characteristics (STC\*)

HS-210R-B96	DS440	DS445	DS450	DS455	DS460
Maximum Power (P <sub>max</sub> )	440W	445W	450W	455W	460W
Module Efficiency (%)	22.02%	22.27%	22.52%	22.77%	23.02%
Optimum Operating Voltage (V <sub>mp</sub> )	30.43V	30.66V	30.88V	31.10V	31.30V
Optimum Operating Current (I <sub>mp</sub> )	14.47A	14.53A	14.60A	14.66A	14.72A
Open Circuit Voltage (V <sub>oc</sub> )	36.68V	36.95V	37.22V	37.47V	37.72V
Short Circuit Current (I <sub>sc</sub> )	15.26A	15.30A	15.36A	15.41A	15.45A
Operating Module Temperature	-40 to +85 °C				
Maximum System Voltage	DC1500V (IEC)				
Maximum Series Fuse	30A				
Power Tolerance	0~+5W				
Bifaciality	85% ± 5%				

\*STC: Irradiance 1000 W/m<sup>2</sup>, cell temperature 25 °C, AM=1.5. Tolerance of P<sub>max</sub> is within +/- 3%.

## BSTC\*\*/NOTC\*\*

Maximum Power (P <sub>max</sub> )	490W	495W	500W	505W	510W
Optimum Operating Voltage (V <sub>mp</sub> )	30.43V	30.66V	30.88V	31.10V	31.30V
Optimum Operating Current (I <sub>mp</sub> )	16.11A	16.15A	16.19A	16.24A	16.30A
Open Circuit Voltage (V <sub>oc</sub> )	36.68V	36.95V	37.22V	37.47V	37.72V
Short Circuit Current (I <sub>sc</sub> )	17.01A	17.05A	17.12A	17.17A	17.22A
**BSTC: Front side irradiation 1000W/m <sup>2</sup> , back side reflection irradiation 135W/m <sup>2</sup> , AM=1.5, ambient temperature 25 °C.					
Maximum Power (P <sub>max</sub> )	335W	338W	342W	346W	350W
Optimum Operating Voltage (V <sub>mp</sub> )	28.91V	29.11V	29.30V	29.51V	29.71V
Optimum Operating Current (I <sub>mp</sub> )	11.58A	11.62A	11.68A	11.73A	11.78A
Open Circuit Voltage (V <sub>oc</sub> )	35.01V	35.27V	35.52V	35.77V	36.00V
Short Circuit Current (I <sub>sc</sub> )	12.21A	12.24A	12.29A	12.33A	12.36A
**NOCT: Irradiance 800W/m <sup>2</sup> , Ambient Temperature 20 °C, Wind Speed 1m/s.					

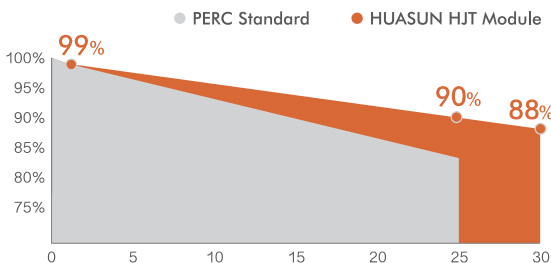
## Temperature Characteristics

Nominal Operating Cell Temp. (NOCT)	44 °C ± 2 °C
Temperature Coefficient of P <sub>max</sub>	-0.26%/°C
Temperature Coefficient of V <sub>oc</sub>	-0.22%/°C
Temperature Coefficient of I <sub>sc</sub>	0.04%/°C

## Safety & Warranty

Safety Class	Class II
Product Warranty	15 yrs Workmanship
Performance Warranty	30 yrs Linear Warranty*

\* Less than 1% attenuation in the 1st year, the annual attenuation from the 2nd year is no more than 0.375%, and the power is no less than 88% until the 30th year.



\* Refer to HUASUN standard warranty for details

## Mechanical Characteristics

Cell Type	HJT Mono 182 × 105mm
Cell Connection	96 (6 × 16)
Module Dimension	1762 x 1134 x 30 mm
Weight	23 kg
Junction Box	IP68
Output Cable	4mm <sup>2</sup> , 300mm in length, length can be customized / UV resistant
Connectors Type	MC4 original / MC4 compatible
Frame	Anodised aluminum alloy
Front Load	5400 Pa
Rear Load	2400 Pa
Glass Thickness	Double glass, 1.6mm

## Shipping Configurations

Container Size	40'HC
Pallets Per Container (pcs)	26
Modules Per Pallet (pcs)	36
Modules Per Container	936

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