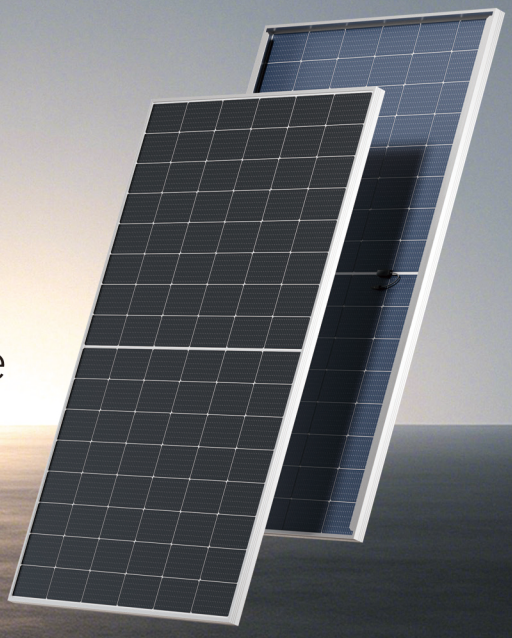
Himin 2.0 210R 0BB

HG-450W-182R/96TB

TOPCon Bifacial high efficiency PV module



23.27%
Conversion Efficiency

Product Features

High Power Output
N-type 0BB half cut technology, improve energy density, bring higher power output. High Bifacial Factor, up to 25% extra power generation

High Reliability
Passed TUV-certified salt mist and ammonia corrosion tests, as well as 2400 Pa wind load and 5400 Pa snow load tests, ensuring superior reliability.

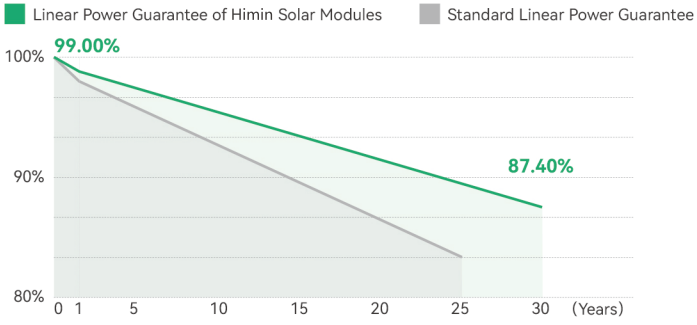
Better Low Light Performance
Outperforms conventional modules under low irradiance conditions such as cloudy, hazy, or overcast weather.

Low Power Degradation
First-year degradation < 1.0%, with a linear degradation of 0.40% per year over 30 years (years 2–30).

Low Temperature Coefficient
Passivated contact cell technology enables higher power generation under actual operating conditions.

Better Anti-LID
N-type cells are free from Boron-Oxygen (B-O) complex-induced LID, further enhancing the module's long-term energy yield.

Linear Performance Warranty



12 YEARS Product warranty

30 YEARS Linear power warranty

0.4% Linear attenuation of 0.40% per year within 30 years

Certifications

ISO 9001:2015 Quality Management System
ISO 14001:2015 Environmental Management System
ISO 45001:2018 Occupational Health and Safety Management System
IEC 62941:2019 PV Module Manufacturer Quality System
IEC 61215:2021 Crystalline Silicon Terrestrial Photovoltaic (PV) Modules–Design Qualification and Type Approval
IEC 61730:2023 PV Module Safety qualification

Electrical Data (STC)

Maximum Power (Pmax/W)	440	445	450	455	460	465
Open-Circuit Voltage (Voc/V)	34.84	34.99	35.14	35.29	35.44	35.59
Short-Circuit Current (Isc/A)	15.79	15.90	16.01	16.12	16.23	16.33
Voltage at Pmax (Vmp/V)	29.42	29.57	29.72	29.87	30.02	30.17
Current at Pmax (Imp/A)	14.96	15.05	15.15	15.24	15.33	15.42
Module Efficiency (%)	22.02	22.27	22.52	22.77	23.02	23.27
Operating Temperature	-40° C~+85° C					
Maximum System Voltage	1000/1500V					
STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25℃ , AM1.5						

Electrical Data (NMOT)

Maximum Power (Pmax/W)	331	335	339	343	347	351
Open-Circuit Voltage (Voc/V)	33.07	33.22	33.37	33.52	33.67	33.83
Short-Circuit Current (Isc/A)	12.92	13.01	13.11	13.21	13.30	13.39
Voltage at Pmax (Vmp/V)	27.14	27.29	27.44	27.59	27.74	27.89
Current at Pmax (Imp/A)	12.20	12.28	12.36	12.44	12.51	12.59
NMOT (Nominal Moudule Operating Temperature): Irradiance 800W/m², Ambient Temperature 20℃ , AM1.5, Wind Speed 1m/s						

Bifacial Power Generation Parameters (Backside Gains)

5%	Maximum Power (Pmax/W)	462	467	473	478	483	488
	Module Efficiency (%)	23.12	23.38	23.65	23.91	24.17	24.44
15%	Maximum Power (Pmax/W)	506	512	518	523	529	535
	Module Efficiency (%)	25.32	25.61	25.90	26.19	26.48	26.76
25%	Maximum Power (Pmax/W)	550	556	563	569	575	581
	Module Efficiency (%)	27.53	27.84	28.15	28.46	28.78	29.09

Mechanical Data

Cell Type	182×105mm Mono
Cell Configuration	96(6×16)
Module Dimensions	1762×1134×30mm
Module Weight	24.5kg
Front Glass	2.0mm high transmittance, reinforced glass
Rear Glass	2.0mm part of the structure is grid-like white ceramic glass
Frame	Anodized aluminum alloy
Junction Box	Protection class IP68
Cable	4.0mm² positive pole: 300 mm negative pole: 200 mm wire length can be customized

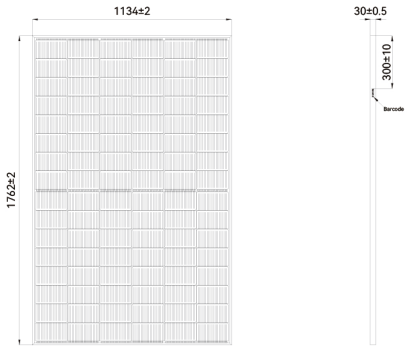
Temperature Coefficients

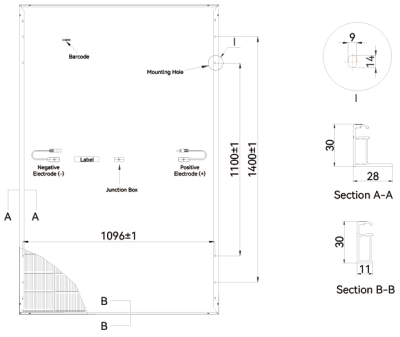
Temperature Coefficient (Pm)	-0.290%/℃
Temperature Coefficient (Voc)	-0.250%/℃
Temperature Coefficient (Isc)	0.045%/℃
NMOT (Nominal Module Operating Temperature)	41±3℃

Packaging

Transportation method	Number of modules per cabinet	Number of modules per pallet
40HQ container	962 pcs	37 pcs + 37 pcs

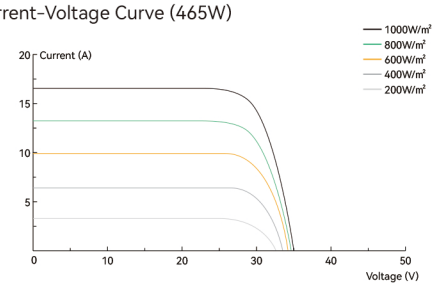
Module Dimensions (mm)



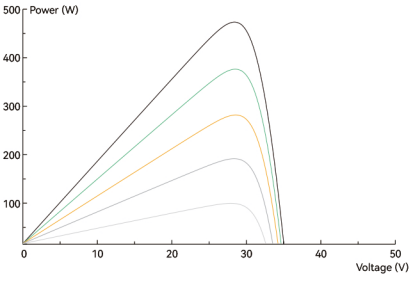


I-V Curves

Current-Voltage Curve (465W)



Power-Voltage Curve (465W)



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All specifications and data are subject to change without prior notice.
Himin Clean Energy Holdings Co., Ltd. reserves the right of final interpretation.