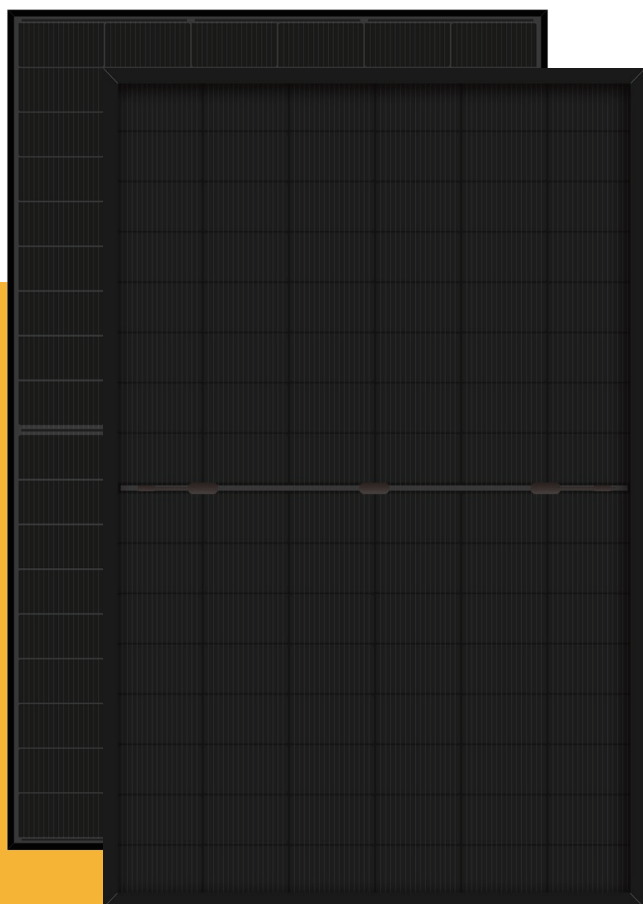




440W-460W

G12R 96HC All-Black Double-Glass

KEY FEATURES



High Efficiency

Leading module efficiency in industry, the highest efficiency up to 23.82%



Excellent Appearance and Performance

Bifacial solar cell, symmetrical design, low risk of micro-crack



High Reliability

Passed 3*IEC standard test, 15 years materials warranty, 30 years output linear power warranty



Excellent Rear Side Power Generation

Bifaciality is up to 80%, up to 30% more energy yield than conventional modules



Better low irradiance performance

Higher power output even under low irradiance environments like on cloudy or foggy days



Extensive Application Scenes

More extensive application scenes, such as snow field, high humidity, vertical installation, strong wind and desert

Maximum Power Output

460W

Maximum Module Efficiency

23.00%

Power Output Tolerance

0-+3%

Product and Quality Certifications

IEC 61215, IEC 61730

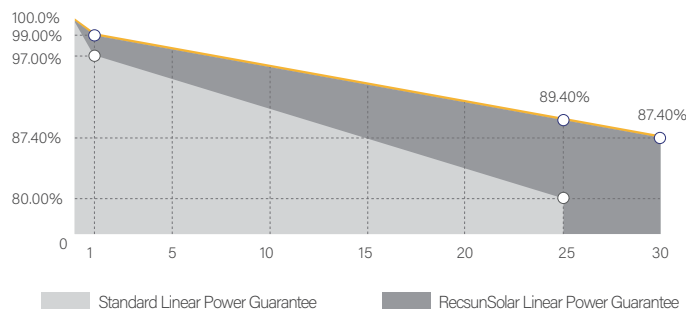
ISO 9001: Quality Management System

ISO 14001: Environment Management System

ISO 45001: Occupational Health and Safety Management System

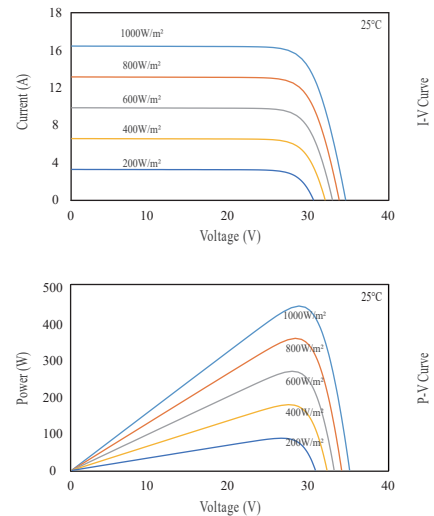
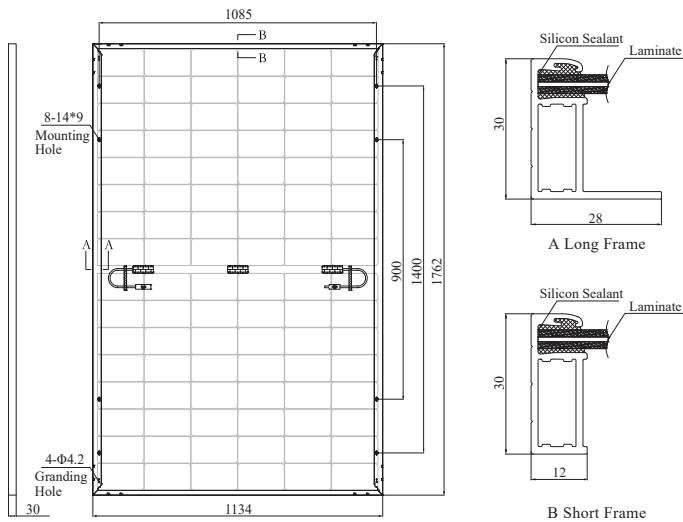
IEC 62716, IEC 61701: Ammonia, Salt mist corrosion test

IEC TS 62804-1, IEC 60068-2-68: PID test, Dust and Sand test



Leading Product and Power Warranty

-1.00%1st-Year Degradation -0.40%Annual Degradation 15Materials and Workmanship Warranty 30Linear Power Warranty



ELECTRICAL PARAMETERS (Test Condition is Based on the Front Side)

Module Type	N440H96G12RD-AB		N445H96G12RD-AB		N450H96G12RD-AB		N455H96G12RD-AB		N460H96G12RD-AB	
Testing Condition	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC
Nominal Max. Power(Pmax/W)	440	345	445	339	450	343	455	347	460	351
Open Circuit Voltage(Voc/V)	34.92	33.44	35.11	33.62	35.30	33.80	35.50	33.99	35.70	34.17
Short Circuit Current(Isc/A)	15.94	12.85	16.01	12.91	16.08	12.96	16.16	13.03	16.24	13.09
Maximum Power Voltage(Vmp/V)	29.65	28.02	29.83	28.19	30.02	28.37	30.22	28.56	30.42	28.74
Maximum Power Current(Imp/A)	14.84	11.96	14.92	12.03	14.99	12.08	15.06	12.14	15.13	12.21
Efficiency(%)	22.00%		22.30%		22.50%		22.80%		23.00%	

STC: Irradiance = 1000 W/m², Cell Temperature = 25°C, AM = 1.5, Average efficiency reduction of 4.5% at 200W/m².

NOTC: Irradiance = 800 W/m², Ambient Temperature = 20°C, AM = 1.5, Wind Speed = 1 m/s.

MECHANICAL PARAMETERS

Cell Type	182*105mm, 96HC	Connector	MC4 Original/Compatible
Module Size&Weight	1762×1134×30mm, 25Kg	Junction Box	IP68, 3 Bypass Diodes
Glass	2.0mm AR Coated Heat Strengthened Glass	Frame	Anodized Aluminium Alloy(Black)
Backsheet	2.0mm Ultra-Clear Float Glass	Cable	4mm², Cable Length 300mm(customized)

TEMPERATURE COEFFICIENTS

Nominal Operating Cell Temperature	45°C(± 2°C)	Temperature Coefficient of Voc	-0.260%/°C
Temperature Coefficient of Pmax	-0.310%/°C	Temperature Coefficient of Isc	+0.046%/°C

BACKSIDE POWER GAIN 10% FOR REFERENCE

Module Frontside Power(W)	440	445	450	455	460
Nominal Max. Power(Pmax/W)	484.0	489.5	495.0	500.5	506.0
Open Circuit Voltage(Voc/V)	34.92	35.11	35.30	35.50	35.70
Short Circuit Current(Isc/A)	17.24	17.33	17.42	17.49	17.57
Max. Power Voltage(Vmp/V)	29.65	29.83	30.02	30.22	30.42
Max. Power Current(Imp/A)	16.32	16.41	16.49	16.56	16.63

OPERATING PARAMETERS

Max. System Voltage	DC1500V
Power Tolerance	0 - +3%
Operating Temperature	-40°C - +85°C
Max. Fuse Rated Current	30A
Front Static Load	Snow 5400Pa, Wind 2400Pa
Packaging Data	36PCS/Pallet; 936PCS/40HQ