

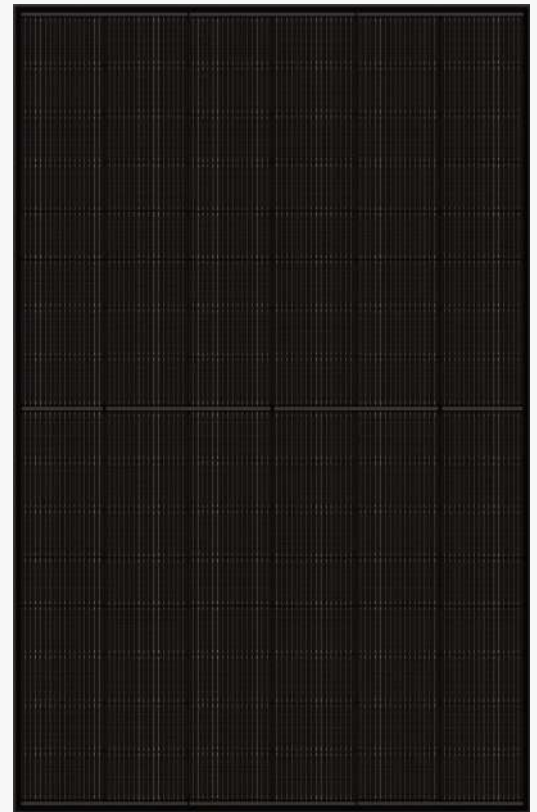
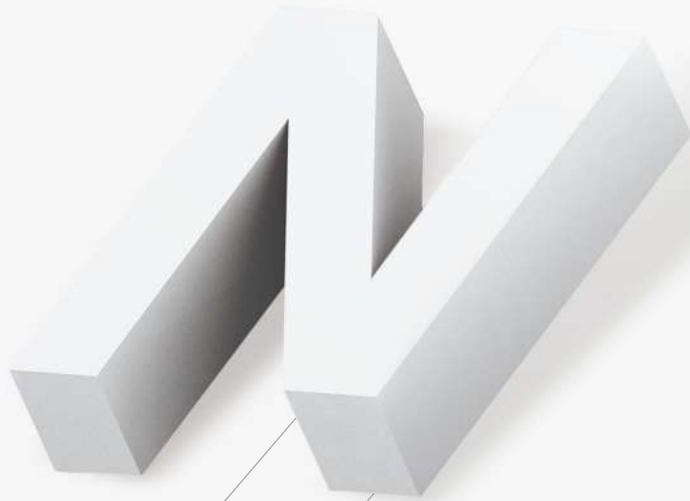
G12R-48P N-type Bifacial Double Glass Module (Full Black)

455W

Maximum Power Output

22.8%

Maximum Efficiency



High Energy Yield

- Lower temperature coefficient (Pmax): $-0.29\%/^{\circ}\text{C}$
- Up to 80% power bifaciality

Industry-leading G12 Wafer

- $<1\%$ degradation in the first year
- Smaller wafer chamfer, larger light receiving area

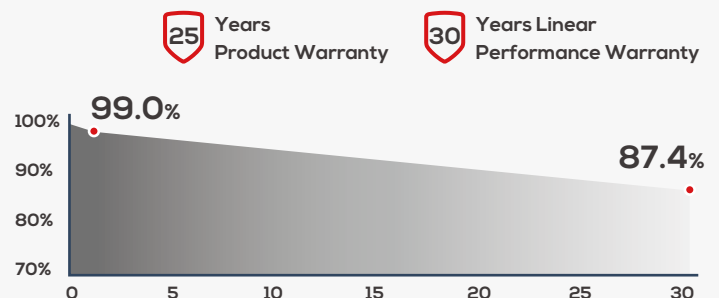
Superior Customer Value

- Higher installed DC capacity within limited rooftop space

Long-term Reliability

- Harsh environment resistance
- Damage-free laser cutting, lower micro-crack risk
- Mechanical load: Front 5400 Pa, Back 2400 Pa

Linear Performance Warranty



Comprehensive Products and System Certificates



IEC 61215 / IEC 61730 ISO 9001:2015 ISO 45001:2018 ISO 14001:2015

Electrical Parameters (STC*)

* STC: Irradiance 1000W/m², Cell Temperature 25°C, AM1.5, Measuring Tolerance: ±2%

Maximum Power	P _{max} (W)	435	440	445	450	455
Open Circuit Voltage	V _{oc} (V)	34.49	34.67	34.85	35.03	35.21
Short Circuit Current	I _{sc} (A)	15.90	15.95	16.00	16.05	16.10
Maximum Power Voltage	V _{mp} (V)	29.54	29.72	29.90	30.08	30.26
Maximum Power Current	I _{mp} (A)	14.73	14.81	14.89	14.97	15.04
Module Efficiency	(%)	21.8	22.0	22.3	22.5	22.8

Electrical Parameters (BNPI*)

* BNPI: Back Irradiance 135W/m², Cell temperature 25°C, Atmospheric quality AM 1.5G, Wind speed 1m/s

Maximum Power	P _{max} (W)	480	485	490	495	500
Open Circuit Voltage	V _{oc} (V)	34.69	34.87	35.05	35.23	35.41
Short Circuit Current	I _{sc} (A)	17.47	17.52	17.57	17.62	17.67
Maximum Power Voltage	V _{mp} (V)	29.74	29.92	30.10	30.28	30.46
Maximum Power Current	I _{mp} (A)	16.14	16.21	16.28	16.35	16.41

Mechanical Data

* Please refer to installation manual for details

No. of Cells	96pcs (6×16)
Dimension	1762×1134×30mm
Weight	23.6kg
Front Glass	2.0mm High Transmission, Heat Strengthened Glass
Back Glass	2.0mm Heat Strengthened Glass
Frame	Black, Anodized Aluminium Alloy
J-Box	IP68
Cables	4.0mm ² , +350mm, -280mm/±1400mm (can be customized)
Diodes	3
Maximum Static Load	Front: 5400Pa/Back: 2400Pa*

Temperature Coefficient

* NMOT: Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Nominal Module Operating Temperature*	45±2°C	Temperature Coefficient of Voc	-0.23%/°C
Temperature Coefficient of I _{sc}	+0.045%/°C	Temperature Coefficient of P _{max}	-0.29%/°C

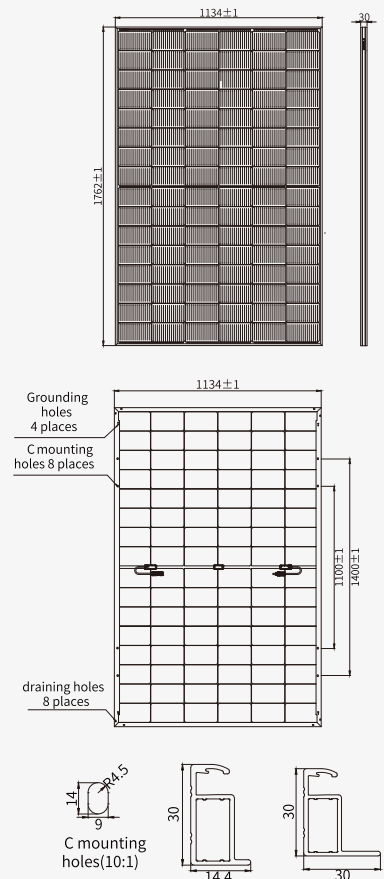
Operating Parameters

Operating Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
Maximum Series Fuse Rating	30A
Power Bifaciality	80±5%

Packaging Configuration

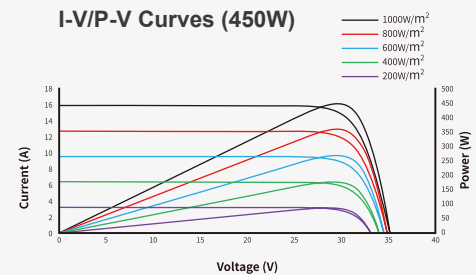
Modules per Pallet	36pcs
Modules per 40'HQ Container	936pcs
Pallets per 40'HQ Container	26plt

Engineering Drawing [Unit: mm]



Curve Graph

I-V/P-V Curves (450W)



P-V Curves (450W)

