

GEM G12R/108S



Module efficiency up to 23.2% based on N-Type wafer and TOPCon technology



More power output in field operation due to better thermal behaviors, weak-light performance and bifaciality



Unsusceptible to LID, LeTID and less annual degradation due to special characteristics of N-Type



High module quality ensures long-term reliability



-Year
Product Warranty

-Year
Linear Power Warranty

First Year Degradation

Annual Power Degradation





Technical Specifications

Cell Type	N-Type TOPCon
No. of cells	108 (2×54)
Output Cables	TÜV 1×4mm ²
	(+)300mm,(-)200mm in length or customized length
Glass	Front: 3.2mm, AR-coating tempered glass
Frame	Anodized aluminum alloy frame
Weight	23.1 kg (50.93 lbs)
Dimension	1961×1134×30mm
Packaging	37 pcs per pallet
	185 pcs per 20' HC, 888 pcs per 40' HC
Protection Class	Class II



* Length:±2mm Width:±2mm Height:±1mm Row Pitch:±2mm

Performance Data

Module Type												
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	490	371	495	375	500	379	505	383	510	386	515	390
Open-circuit Voltage (Voc/V)	39.61	36.84	39.81	37.02	40.02	37.22	40.22	37.40	40.42	37.59	40.62	37.78
Short-circuit Current (Isc/A)	15.74	12.91	15.81	12.96	15.88	13.02	15.95	13.08	16.02	13.14	16.08	13.19
Maximum Power Voltage (Vmp/V)	32.65	30.30	32.85	30.48	33.05	30.67	33.25	30.86	33.45	31.04	33.64	31.22
Maximum Power Current (Imp/A)	15.01	12.25	15.07	12.30	15.13	12.35	15.19	12.40	15.25	12.44	15.31	12.49
Module Efficiency (%)												

Note: 1 STC: Irradiance 1000W/M², Cell Temperature25 , AM=1.5 2 NOCT: Irradiance 800W/M², Ambient Temperature 20 AM=1.5, Wind Speed 1M/S

Guaranteed Module Performance



Operating Conditions

Operating Temperature	-40 ~ +85
Power Tolerance	0~ +5W
Maximum System Voltage	1500V(IEC)
NOCT	45±2
Maximum Series Fuse Rating	30A
Junction Box	IP68

Temperature Coefficients

Temperature coefficient of Isc	+ 0.045%/
Temperature coefficient of Voc	- 0.25%/
Temperature coefficient of Pmax	- 0.29%/

Mechanical Load

Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Hailstone Test	25mm hailstone at 23m/s

Gokin



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Product data is updated as of May 2024. Gokin Solar Co., Ltd. reserves the right to change specifications.