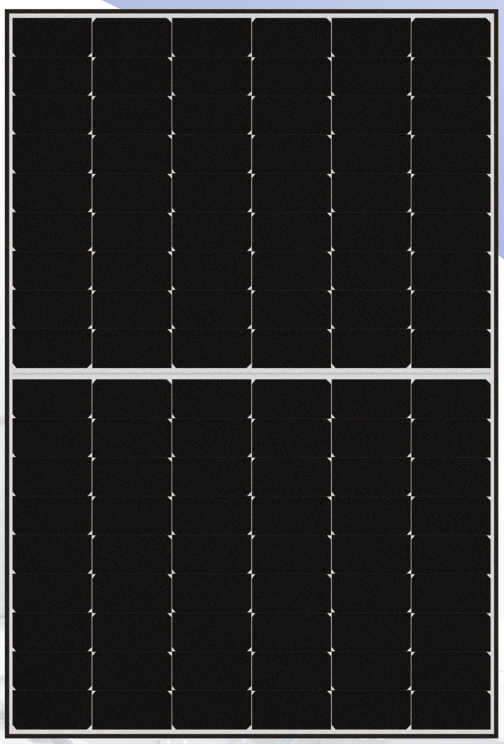
Gokin

BLACK FRAME

GEM G12R/108D

490-515W



Supreme Quality

High Efficiency

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

Excellent Energy Yield

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

Anti-degradation

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

Quality Guarantee

High module quality ensures long-term reliability

Module Characteristics

15-Year	30-Year	1%	0.4%
Product Warranty	Linear Power Warranty	First Year Degradation	Annual Power Degradation

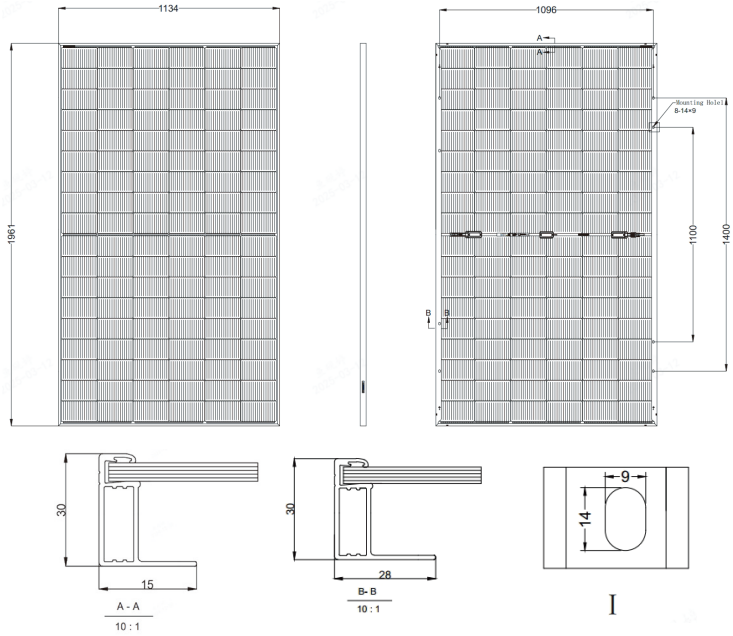
IEC 61215(2021) / IEC 61730(2023)
ISO 9001: 2015: ISO Quality Management System
Anti-PID / Ammonia / Salt-mist / Dust and sand
Made in China

515W	23.2%	1%	0.4%
Maximum Power	Highest Conversion Efficiency	First Year Degradation	2-30 Years Annual Power Attenuation

Mechanical Parameters

Cell Type	N-Type TOPCon
No. of cells	108 (6×18)
Output Cables	TüV 1×4mm ²
	(+)300mm,(-)200mm in length or customized length
Glass	Front: 2.0mm, AR-coating, semi-tempered
	Rear: 2.0mm, semi-tempered
Frame	Anodized aluminum alloy frame
Weight	26.3kg (57.98lbs)
Dimension	1961×1134×30mm
Packaging	37 pcs per pallet
	185 pcs per 20' GP, 888 pcs per 40' HC
Protection Class	Class II
Fire Rating	IEC Class C

Engineering Drawings

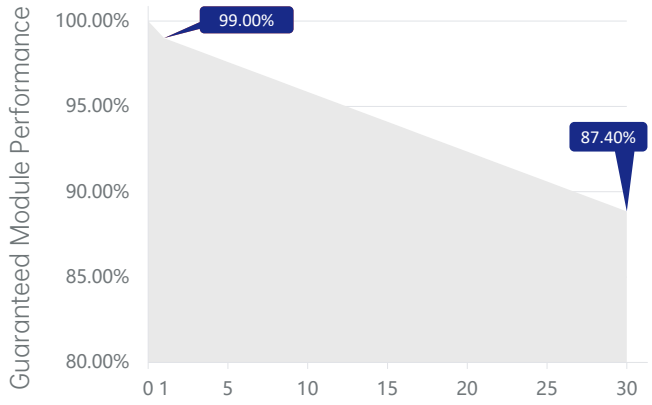


* Length:±2mm Width:±2mm Height:±1mm Row Pitch:±2mm

Electrical Characteristics (STC Test)

Module Type	GK-4-54HTBD-490M		GK-4-54HTBD-495M		GK-4-54HTBD-500M		GK-4-54HTBD-505M		GK-4-54HTBD-510M		GK-4-54HTBD-515M	
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 (%)	22.0		22.3		22.5		22.7		22.9		23.2	

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



Working Parameters

Operating Temperature	-40℃~ +70℃
Power Tolerance	0~ +5W
Maximum System Voltage	1500V(IEC)
NOCT	45±2℃
Maximum Series Fuse Rating	30A
Bifacial Factor	80±5%
Junction Box	IP68

Temperature Ratings (STC)

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

Mechanical Loading

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

Gokin

GK-4-54HTBD-BF-DG-F1 EN

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Note: Please read the safety and installation manual before using the product. We reserve the right of final interpretation. The specifications in this datasheet are subject to change without notice.

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