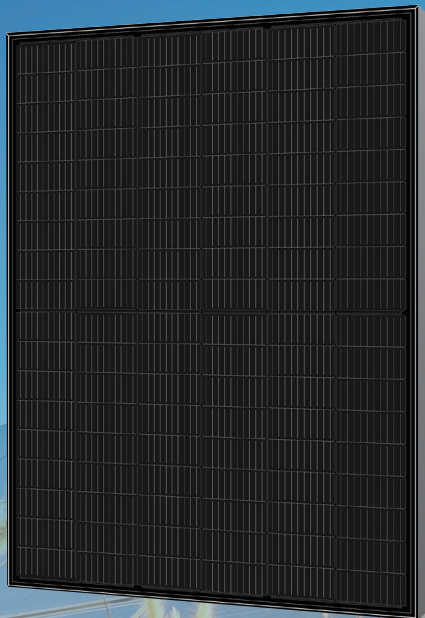


High Efficiency
All-Black HJT Module

GSM- MH4/108- HDGB430

410W | 415W | 420W
425W | 430W



430W
Maximum Power Output

85%
Bifaciality

21.99%
Maximum Efficiency

30Years
Linear Power Warranty

Product Features



SMBB Half Cell
Multi-busbar half-cell design, higher module efficiency and power output



High Energy Yield
Maximum Module Efficiency up to 21.99% achieved by mature mass production HJT cell technology



G10 Cell / Module
G10 size wafer, applicable to multiple scenarios



High Reliability
Certified mechanical performance up to 5400 Pa positive load and 2400 Pa negative load, with better protection against harsh weather



Higher Performance
Lower temperature coefficient and low operation temperature, resulting in better energy yield in all-weather

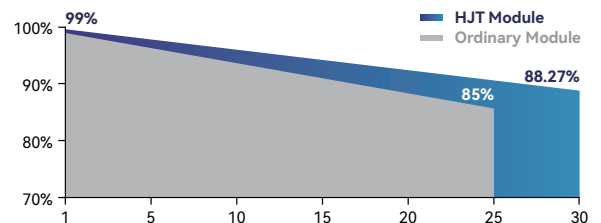


Better Warranty
Extremely low LID/PID in longer service life, less than 11.73% power degradation in 30 years

Quality Assurance

12 Years Product Warranty

30 Years Linear Power Warranty



Certificates



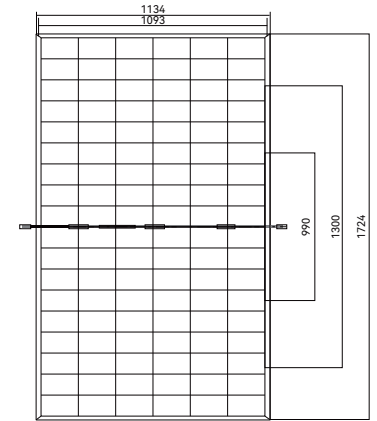
Guosheng Energy Co., Ltd.

Web: www.grandsunergy.com E-mail: sales@grandsunergy.com

Add: West Side to Zhongjing 7th Road, South Side to Pengcheng Boulevard, Xuzhou Industrial Park, Xuzhou City, Jiangsu Province

Mechanical Data

Cell(mm)	182×91
Weight(kg)	24.5±0.5kg
Dimension(L×W×H)(mm)	1724×1134×30mm
Cable(mm)	4mm ² , 300mm(customized length based on needs)
Frame	anodized aluminum, black frame
Junction Box	IP68, 1500VDC, 3 Diodes
Packaging Configuration (40' Container; 17.5' Trailer)	36pcs. / pallet; 26pallet / container; 936pcs / container 36pcs. / pallet; 32pallet / Trailer; 1152pcs / Trailer



Electrical Data (STC)

Model	GSM-MH4/108-HDGB410	GSM-MH4/108-HDGB415	GSM-MH4/108-HDGB420	GSM-MH4/108-HDGB425	GSM-MH4/108-HDGB430
Pmax(Wp)	410	415	420	425	430
Voc(V)	39.30	39.55	39.80	40.05	40.30
Isc(A)	13.08	13.13	13.18	13.23	13.28
Vmpp(V)	32.54	32.79	33.04	33.29	33.54
Impp(A)	12.63	12.68	12.73	12.78	12.83
Efficiency	20.97%	21.23%	21.48%	21.74%	21.99%

STC: AM1.5 Irradiance: 1000W/m² Temperature=25°C

Electrical Characteristics (BSTC)

Model	GSM-MH4/108-HDGB410	GSM-MH4/108-HDGB415	GSM-MH4/108-HDGB420	GSM-MH4/108-HDGB425	GSM-MH4/108-HDGB430
Pmax(Wp)	456	461	466	471	476
Voc(V)	39.30	39.55	39.80	40.05	40.30
Isc(A)	14.51	14.55	14.59	14.63	14.67
Vmpp(V)	32.54	32.79	33.04	33.29	33.54
Impp(A)	14.02	14.06	14.10	14.14	14.18

α_{sc} (%/K) : 0.04; β_{Voc} (%/K) : -0.24; γ_{Pmp} (%/K) : -0.26

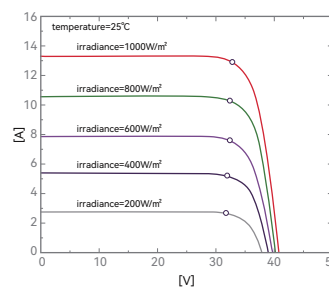
AM1.5, Front irradiance: 1000W/m², Back irradiance: 135W/m², Temperature=25°C, wind speed=1m/s

Working Condition

Maximum System Voltage	1500VDC
Operating Temperature	-40°C ~ +85°C
Maximum Fuse Rating	30A
Rear Side Mechanical Load	2400Pa
Front Side Mechanical Load	5400Pa
NOCT	44±2°C
Safety Class	Class II
Grounding Electric Conductivity	< 0.1Ω

I-V Diagram

(Different Irradiance)



I-V Diagram

(Different Temperature)

