# Gokin

# FLAMINGO G12R/132D **590-620W**



## **Supreme Quality**



### **High Efficiency**

Module efficiency up to 23.0% based on N-Type wafer and TOPCon technology



### **Anti-degradation**

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



### **Excellent Energy Yield**

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



### **Quality Guarantee**

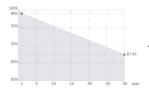
High module quality ensures long-term reliability



### **Module Characteristics**

15-Year Product Warranty **30**-Year Linear Power Warranty

1% First Year Degradation **0.4%**Annual Power Degradation



At least 87.4% of nominal power up to 30 years













2-30 Years Annual Power Attenuation

Mechanical Parameters				
Cell Type	N-Type TOPCon			
No. of cells	132 (2×66)			
Output Cables	TüV 1×4mm ²			
	(+)300mm,(-)200mm in length or customized length			
	Front: 2.0mm, AR-coating, semi-tempered			
Glass	Rear: 2.0mm, semi-tempered			
Frame	Anodized aluminum alloy frame			
Weight	32.4 kg (71.43 lbs)			
Dimension	2382×1134×30mm			
Packaging —	37 pcs per pallet			
	148 pcs per 20' HC, 740 pcs per 40' HC			
Protection Class	Class II			
Fire Rating	IEC Class A			

# Engineering Drawings 1134 1095 10

<sup>\*</sup> Length:±2mm Width:±2mm Height:±1mm Row Pitch:±2mm

Electrical Characteristics (STC Test)														
Module Type	GK-4-66H	TBD-590M	GK-4-66H	GK-4-66HTBD-595M GK-4-66HTBD-600M		GK-4-66HTBD-605M		GK-4-66HTBD-610M		GK-4-66HTBD-615M		GK-4-66HTBD-620M		
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	590	447	595	450	600	454	605	458	610	462	615	466	620	469
Open-circuit Voltage (Voc/V)	47.32	44.81	47.49	44.96	47.66	45.16	47.83	45.28	48.00	45.49	48.17	45.65	48.34	45.81
Short-circuit Current (Isc/A)	15.79	12.73	15.86	12.80	15.93	12.86	16.00	12.92	16.07	12.96	16.14	13.02	16.21	13.16
Maximum Power Voltage (Vmp/V)	39.67	37.55	39.81	37.65	39.95	37.78	40.09	37.91	40.22	38.06	40.35	38.16	40.48	38.31
Maximum Power Current (Imp/A)	14.88	11.90	14.96	11.97	15.03	12.03	15.10	12.08	15.18	12.16	15.25	12.20	15.33	12.27
Module Efficiency (%)	21.	.8	22.0	)	22	.2		22.4		22.6	2	2.8	2	3.0

Note: 1、STC: Irradiance 1000W/M², Cell Temperature 25°C, AM=1.5 2、NOCT: Irradiance 800W/M², Ambient Temperature 20°C, AM=1.5, Wind Speed 1M/S

Different Rearside Power Gain ((Reference to 605W)						
Rearside Power Gain	5%	10%	20%			
Maximum Power at STC (Pmax)	635.3	665.5	726.0			
Open-circuit Voltage (Voc/V)	47.8	47.8	47.8			
Short-circuit Current (Isc/A)	16.8	17.6	19.2			
Maximum Power Voltage (Vmp/V)	40.1	40.1	40.1			
Maximum Power Current (Imp/A)	15.9	16.6	18.1			
Module Efficiency (%)	23.5	24.6	26.9			

<sup>\*</sup>The above data is for reference only. When signing a contract, the latest version of the product specification shall prevail.

Temperature Ratings (STC)	
Temperature coefficient of lsc	+ 0.045%/°C
Temperature coefficient of Voc	- 0.25%/℃
Temperature coefficient of Pmax	- 0.29%/°C

### **Working Parameters**

Operating Temperature	-40°C~ +85°C
Power Tolerance	0~ +5W
Maximum System Voltage	1500V(IEC)
NMOT	45±2℃
Maximum Series Fuse Rating	35A
Bifacial Factor	80±5%
Junction Box	IP68

### **Mechanical Loading**

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



