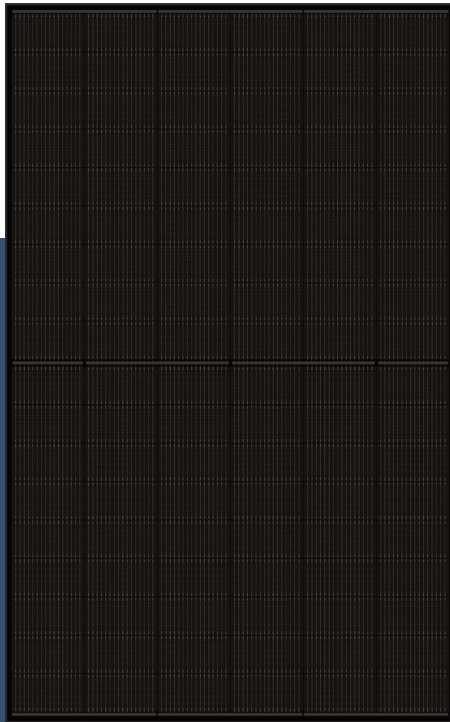




N Type



## Bifacial Double Glass Module (Black Pro)

DAS-DH108ND

# 435W~465W

### Key Features



#### High Efficiency

Leading module efficiency in industry, up to 22.8%



#### Excellent Appearance and Performance

Bifacial solar cell, symmetrical design, low risk of micro-crack



#### High Reliability

Passed 3\*IEC standard test, 25 years materials warranty, 30 years power warranty



#### Excellent Rear Side Power Generation

Bifaciality is up to 80%, up to 30% more energy yield than conventional modules



#### Better low irradiance performance

Higher power output even under low irradiance environments like on cloudy or foggy days



#### Extensive Application Scenes

More extensive application scenes, such as BIPV, snow field, vertical installation, high humidity, strong wind and desert region

Maximum Power Output

**465W**

Maximum Module Efficiency

**22.8%**

Power Output Tolerance

**0~+5W**

### Product and Quality Certifications

IEC 61215, IEC 61730

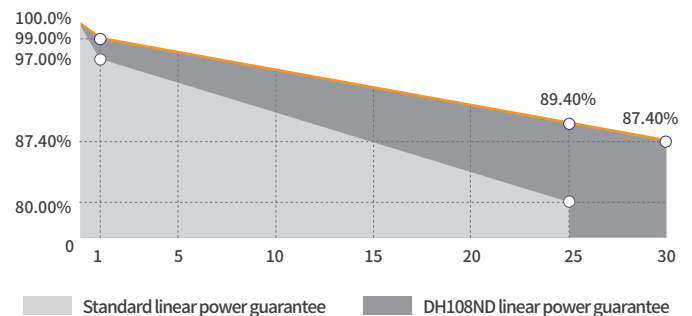
ISO 9001: Quality Management System

ISO 14001: Environment Management System

ISO 45001: Occupational Health and Safety Management System

IEC 62716, IEC 61701: Ammonia, Salt mist corrosion test

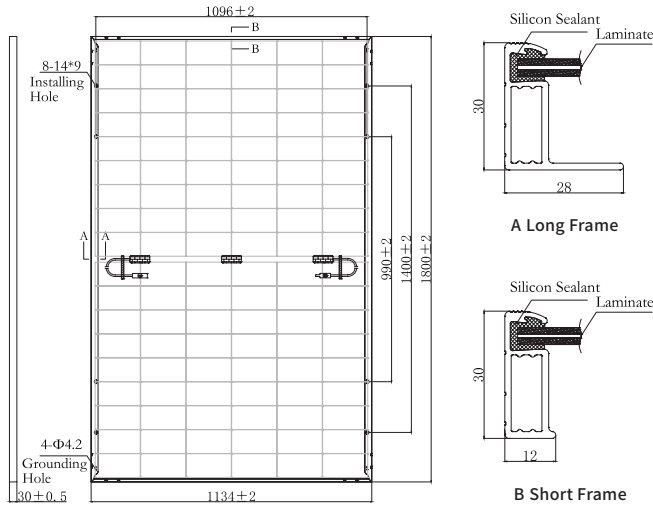
IEC TS 62804-1, IEC 60068-2-68: PID test, Dust and Sand test



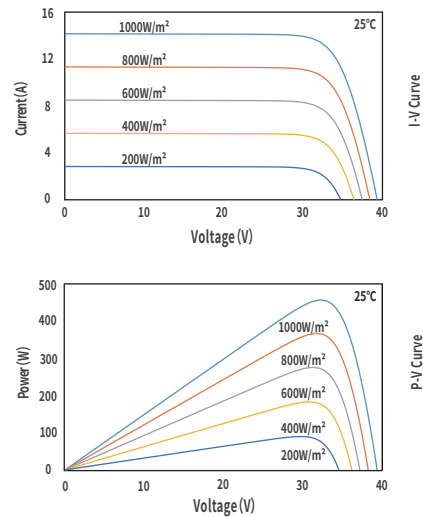
### Leading product and power warranty

**-1.00%** 1st-year Degradation **-0.40%** Annual Degradation **25** Materials and workmanship warranty **30** Linear power warranty

## Engineering Drawing (mm)



## Characteristic Curves(455W)



## Electrical Parameters (STC \*)

Nominal Max. Power(Pmax/W)	435	440	445	450	455	460	465
Open Circuit Voltage(Voc/V)	38.28	38.82	39.00	39.18	39.36	39.54	39.72
Short Circuit Current(Isc/A)	14.53	14.58	14.63	14.68	14.73	14.79	14.85
Operating Voltage(Vmp/V)	31.92	32.10	32.28	32.47	32.65	32.84	33.03
Operating Current(Imp/A)	13.63	13.71	13.79	13.86	13.94	14.01	14.08
Efficiency(%)	21.3	21.6	21.8	22.0	22.3	22.5	22.8

STC \*: Irradiance = 1000 W/m<sup>2</sup>, Cell Temperature = 25°C, AM = 1.5  
Test condition is based on the front side

## Mechanical Parameters

Cell Type	N Type
Module Size	1800×1134×30mm
Glass Thickness	1.6mm
Module Weight	21.7Kg
Output Cable	4mm <sup>2</sup> , cable length 1200mm (can be customized)
Connector	MC4 compatible
Junction Box	IP68, 3 bypass diodes
Frame	Anodized aluminium alloy (Black)

## Electrical Parameters (NMOT \*)

Nominal Max. Power(Pmax/W)	331	335	339	343	347	350	354
Open Circuit Voltage(Voc/V)	36.65	37.17	37.34	37.51	37.69	37.86	38.03
Short Circuit Current(Isc/A)	11.71	11.75	11.79	11.83	11.87	11.92	11.97
Operating Voltage(Vmp/V)	30.16	30.33	30.50	30.69	30.85	31.03	31.21
Operating Current(Imp/A)	10.99	11.05	11.12	11.17	11.24	11.29	11.35

NMOT \*: Irradiance = 800 W/m<sup>2</sup>, Ambient Temperature = 20°C, AM = 1.5,  
Wind Speed = 1 m/s  
Test condition is based on the front side

## Temperature Coefficients

Short Circuit Current(Isc)	+0.045%/°C
Open Circuit Voltage(Voc)	-0.250%/°C
Nominal Max. Power(Pmax)	-0.280%/°C
NMOT	42±2°C

## Backside Power Gain (For 455W)

Power Gain	10%	15%	20%	25%	30%
Nominal Max. Power(Pmax/W)	501	523	546	569	592
Open Circuit Voltage(Voc/V)	39.36	39.36	39.46	39.46	39.46
Short Circuit Current(Isc/A)	16.20	16.94	17.68	18.41	19.15
Operating Voltage(Vmp/V)	32.65	32.65	32.75	32.75	32.75
Operating Current(Imp/A)	15.33	16.03	16.67	17.37	18.06

## Operating Parameters

Max. System Voltage	DC1500V
Power Tolerance	0 ~ +5 W
Operating Temperature	-40°C ~ +85°C
Max. Fuse Rated Current	30A
Front Static Load	Snow load 5400Pa, Wind load 2400Pa
Packing Data	36 pcs/Pallet; 216(20GP); 936(40HQ)