

## DRAGON SERIES

SMBBHALF-CELL N-Type Bifacial Double Glass  
Monocrystalline Steel Frame PV Module

**600-630W**

POWER RANGE

**23.32%**

MAXIMUM EFFICIENCY

**0.40%**

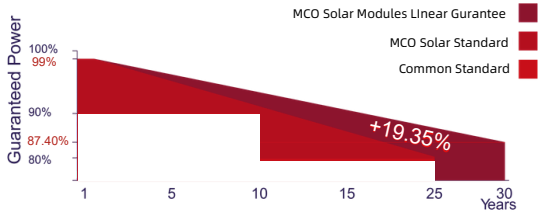
YEARLY DEGRADATION



12 YEARS PRODUCT WARRANTY



30 YEARS OUTPUT GUARANTEE



\*Please check the Limited Warranty for Standard PV Modules which is officially released by MCO Solar PV-TECH Co., Ltd.



IEC 61215/IEC 61730 ISO 14001: Environmental Management

System ISO 9001: Quality Management System ISO45001:

Occupational Health and Safety Management System

\*As there are different certification requirements in different markets, please contact your local MCO Solar sales representative for the specific certificates applicable to the products in the region in which the products are to be used.

## KEY FEATURES



### Excellent Cells Efficiency

SMBB technology reduce the distance between busbars and finger grid line which is benefit to power increase.



### Better Weak Illumination Response

More power output in weak light condition, such as haze, cloudy, and early morning.



### Anti PID

Ensured PID resistance through the quality control of cell manufacturing process and raw materials.



### Adapt To Harsh Outdoor Environment

Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity environment.



### TIER 1

Global, Tier 1 bankable brand, with independently certified advanced automated manufacturing.



### Excellent Quality Management System

Warranted reliability and stringent quality assurances well beyond certified requirements.

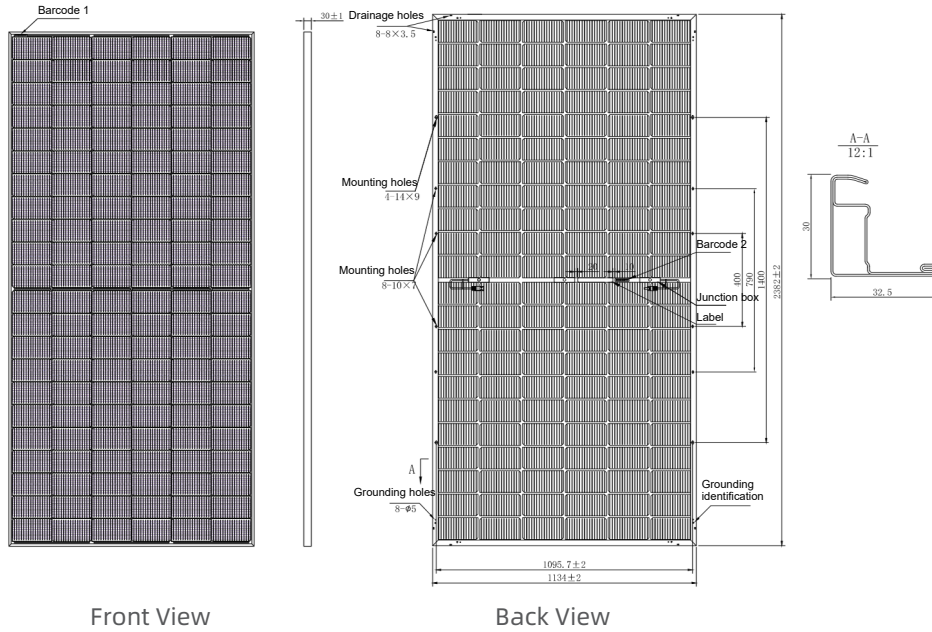


### Bifacial Technology

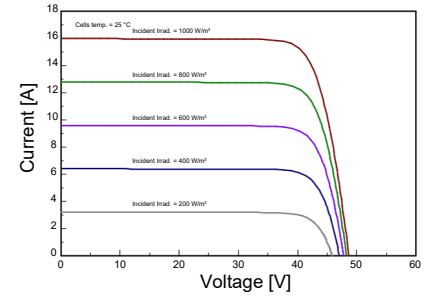
Up to 25% additional power gain from back side depending on albedo.



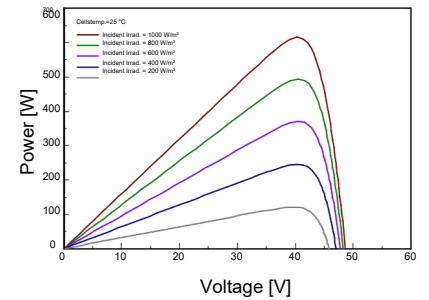
### DIMENSIONS OF PV MODULE(mm)



### I-V CURVES OF PV MODULE(615W)



### P-V CURVES OF PV MODULE(615W)



\*Remark: customized frame color and cable length available upon request  
only the classic 16BB assembly diagram is displayed here, other busbar can be customized according to requirements

### ELECTRICAL CHARACTERISTICS | STC\*

Nominal Power Watt Pmax(W)*	600	605	610	615	620	625	630
Maximum Power Voltage Vmp(V)	40.20	40.40	40.60	40.80	41.00	42.20	41.40
Maximum Power Current Imp(A)	14.93	14.98	15.03	15.08	15.13	15.17	15.22
Open Circuit Voltage Voc(V)	48.10	48.30	48.50	48.70	48.90	49.10	49.30
Short Circuit Current Isc(A)	15.85	15.90	15.95	16.00	16.05	16.09	16.14
Module Efficiency (%)	22.21	22.40	22.58	22.77	22.95	23.14	23.32

\*The data above is for reference only and the actual data is in accordance with the practical testing  
\*STC (Standard Test Condition): Irradiance 1000W/m², Module Temperature 25±2°C, AM 1.5  
\*Measuring uncertainty: ±3%, Power tolerance: ±3%  
\*Electrical data in this catalog do not refer to a single module and they are not part of the offer.  
\*They only serve for comparison among different module types.  
\*All the electrical characteristics such as Im, Vm, Isc, Voc and FF are within ±5% tolerance.

### MECHANICAL DATA

Solar cells	N-type Monocrystalline, Rectangular cells
Cells orientation	132 (6x22)
Module dimension	2382x1134x30 mm (With Frame)
Weight	35.5 ±1.0 kg
Glass	2.0 mm+2.0mm, High Transmission, AR Coated Heat Strengthened Glass
Junction box	IP 68, 3 diodes
Cables	4 mm², +300mm, -200mm or Customized Length(with connectors)
Connectors	MC4 Compatible or MC4 EVO2

### ELECTRICAL CHARACTERISTICS | NMOT\*

Maximum Power Pmax(Wp)	455.00	458.70	462.40	466.10	471.30	475.20	478.90
Maximum Power Voltage Vmpp(V)	37.50	37.60	37.80	38.00	38.04	38.50	38.70
Maximum Power Current Imp(A)	12.14	12.18	12.22	12.26	12.29	12.33	12.37
Open Circuit Voltage Voc(V)	45.40	45.60	45.80	46.00	46.30	46.50	46.70
Short Circuit Current Isc(A)	12.79	12.83	12.87	12.91	12.95	12.98	13.02

\*NMOT: Irradiance 800W/m², Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s

### TEMPERATURE RATINGS

Temperature coefficient of Pmax	44°C ±2°C	Maximum system voltage	1500 V DC
Temperature coefficient of Voc	(-0.28±0.028)%/°C	Operating temperature	-40°C~+85°C
Temperature coefficient of Isc	-0.23%/°C	Maximum series fuse	30 A
Refer. Bifacial Factor	0.045%/°C	Front Side Maximum Static Loading	Up to 5400Pa
	(80±10)%	Rear Side Maximum Static Loading	Up to 2400Pa

\*Remark: Do not connect Fuse in Combiner Box with two or more strings in parallel connection

### ELECTRICAL CHARACTERISTICS (REAR POWER GAIN)

Maximum Power: Pmax(W)	630	635	641	646	651	656	662
5% Module Efficiency(%)	23.32	23.52	23.71	23.91	24.10	24.29	24.50
Maximum Power: Pmax(W)	690	696	702	707	713	719	725
15% Module Efficiency(%)	25.54	25.76	25.97	26.18	26.40	26.61	26.80
Maximum Power: Pmax(W)	750	756	763	769	775	781	788
25% Module Efficiency(%)	27.77	28.00	28.23	28.46	28.69	28.92	29.20

### PACKAGING CONFIGURATION

Piece/Box	36
Piece/Container(40'HQ)	720