

# Swan series

Double Glass BiFacial N-Type TOPCon Solar Module

# 435~460W

Model: UL-\*\*\*M-108BDGN

Maximum Efficiency: **23.02%**



### Cutting Free Technology

The half cells are made directly from half silicon wafer, reducing power losses and hidden cracks



### Longer Term Reliability

Passed the IEC63209-1:2021 standard test (With testing standards 2 to 3 times stricter than regular IEC requirements)



### Outstanding Mechanical load Resistance

2mm+2mm front and back sides tempered glass, sturdy and durable, resistant to hail impact, with a snow load of 5400Pa and a wind load of 2400Pa



### Anti-PID(potential induced degradation)

Passed anti-PID test under 85°C damp heat 85% relative humidity for 192 hours



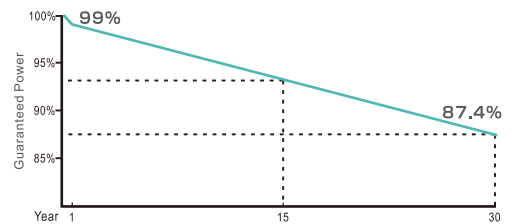
### Lower LCOE

Lower shading and resistive loss Lower temperature coefficient



### Full-Scenario Resilience

Proven through rigorous resistance tests for salt mist, ammonia corrosion, sand & dust, and LeTID degradation.



**15** Year Product Warranty    **1%** Power Degradation In The First Year

**30** Year Linear Power Warranty    **0.4%** Linear Power Degradation

IEC 61215, IEC 61730

ISO 9001: 2015(Quality management systems)

ISO 14001: 2015 (Environmental management systems)

ISO45001: 2018 (Occupational health and safety)

UNI 9177 Fire Test: Class 1



Add:No.238, Yunlin Middle Road, Gulin Town Haishu District, Ningbo, China PC

TEL:+86-574-28828999

Email: sales@ulsolar.com.cn

# DOUBLE GLASS BIFACIAL 435~460Watt



## ELECTRICAL SPECIFICATIONS

Module Type	UL-435M-108BDGN		UL-440M-108BDGN		UL-445M-108BDGN		UL-450M-108BDGN		UL-455M-108BDGN		UL-460M-108BDGN		
	STC*	NOCT*	STC*	NOCT*	STC*	NOCT*	STC*	NOCT*	STC*	NOCT*	STC*	NOCT*	
Maximum Power(Pmax)	W	435	330	440	333	445	337	450	341	455	345	460	348
Maximum Power Voltage(Vmp)	V	32.87	30.24	32.91	30.28	33.02	30.38	33.22	30.56	33.42	30.75	33.63	30.94
Maximum Power Current(Imp)	A	13.24	10.90	13.37	11.01	13.48	11.10	13.55	11.16	13.61	11.21	13.68	11.27
Open-circuit Current(Voc)	V	39.18	35.65	39.38	35.84	39.58	36.02	39.78	36.20	39.98	36.38	40.18	36.56
Short-circuit Current(Isc)	A	14.15	11.41	14.22	11.47	14.30	11.53	14.38	11.60	14.45	11.66	14.46	11.67
Module Efficiency STC	%	21.77		22.02		22.27		22.52		22.77		23.02	

\*STC: Cell temperature: 25°C, Irradiance: 1000W/m², Air mass: 1.5G, Power measurement tolerance: ±3%  
 \*NOCT: Air temperature: 20°C, Irradiance: 1000W/m², Air mass: 1.5G, Wind speed: 1m/s

## OPERATING PARAMETERS

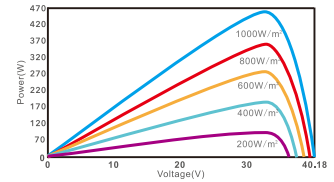
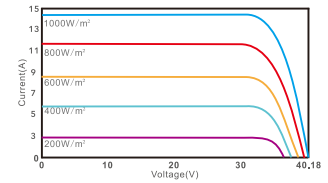
Operating Temperature	-40°C~85°C
Maximum system voltage	DC1500V(IEC)
Maximum series fuse rating	30A
Nominal operating cell temperature	43±2°C
Power tolerance	0~+5Watt

## TEMPERATURE RATINGS

Temperature coefficients of Pmax	-0.29%/°C
Temperature coefficients of Voc	-0.25%/°C
Temperature coefficients of Isc	0.046%/°C

## I-V CURVE

I-V characteristics at different irradiances (reference to 460 W)

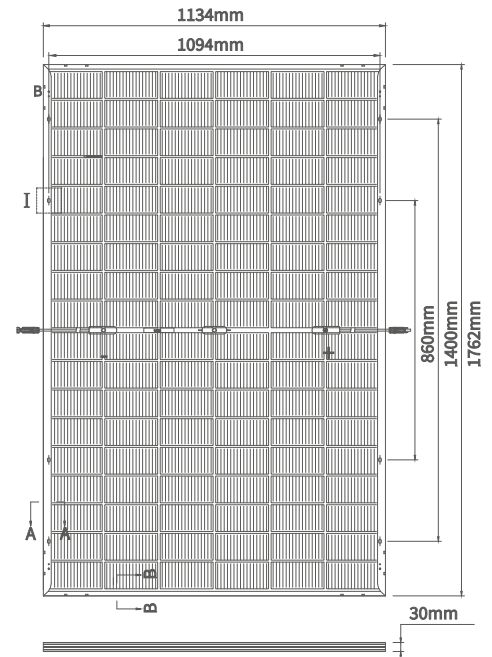


## REAR SIDE POWER GAIN(REFERENCE TO 460W FRONT SIDE)

Pmax/W	460	483	506	529	552	575	598
Pmax gain	0%	5%	10%	15%	20%	25%	30%
Voc/V	40.18	40.18	40.18	40.18	40.18	40.18	40.18
Isc/A	14.46	15.18	15.91	16.63	17.35	18.08	18.80
Vmp/V	33.63	33.63	33.63	33.63	33.63	33.63	33.63
Imp/A	13.68	14.36	15.05	15.73	16.42	17.10	17.78

## SPECIFICATIONS

Cell Type	N-type TOPCon Mono Half Cell	
No. of cells	108(6×9×2)	
Dimensions	1762*1134*30mm	
Weight	24.2kg	
Front Glass	2.0mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass	
Back Glass	2.0mm, High Transmission, Low Iron, Tempered Glass	
Frame	Anodized Aluminium Alloy	
Junction Box	IP68, 3 diodes	
Connector	MC4 Compatible: PV-UL608 or others	Original: MC4-EVO2A
Cable Length (Including Connector)	4mm² Short Cable: (+)400/(-)200mm or Long Cable: (+)1200/(-)1200mm or Customized Length	



## PACKAGING INFORMATION



37 Pcs/Pallet



74 Pcs/Stack



Length: 1775mm



Width: 1140mm



Height: 2550mm



Weight: 1855kg/Stack



13 Stack/40HQ  
962 Pcs/40HQ



I



B-B



A-A

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



Specifications included in this datasheet are subject to change without notice.

Ulica Solar reserves the right of final interpretation.

Version number: UL-1762-108BDGNBB-30-EN-V3.1