182L
N-type TOPCon

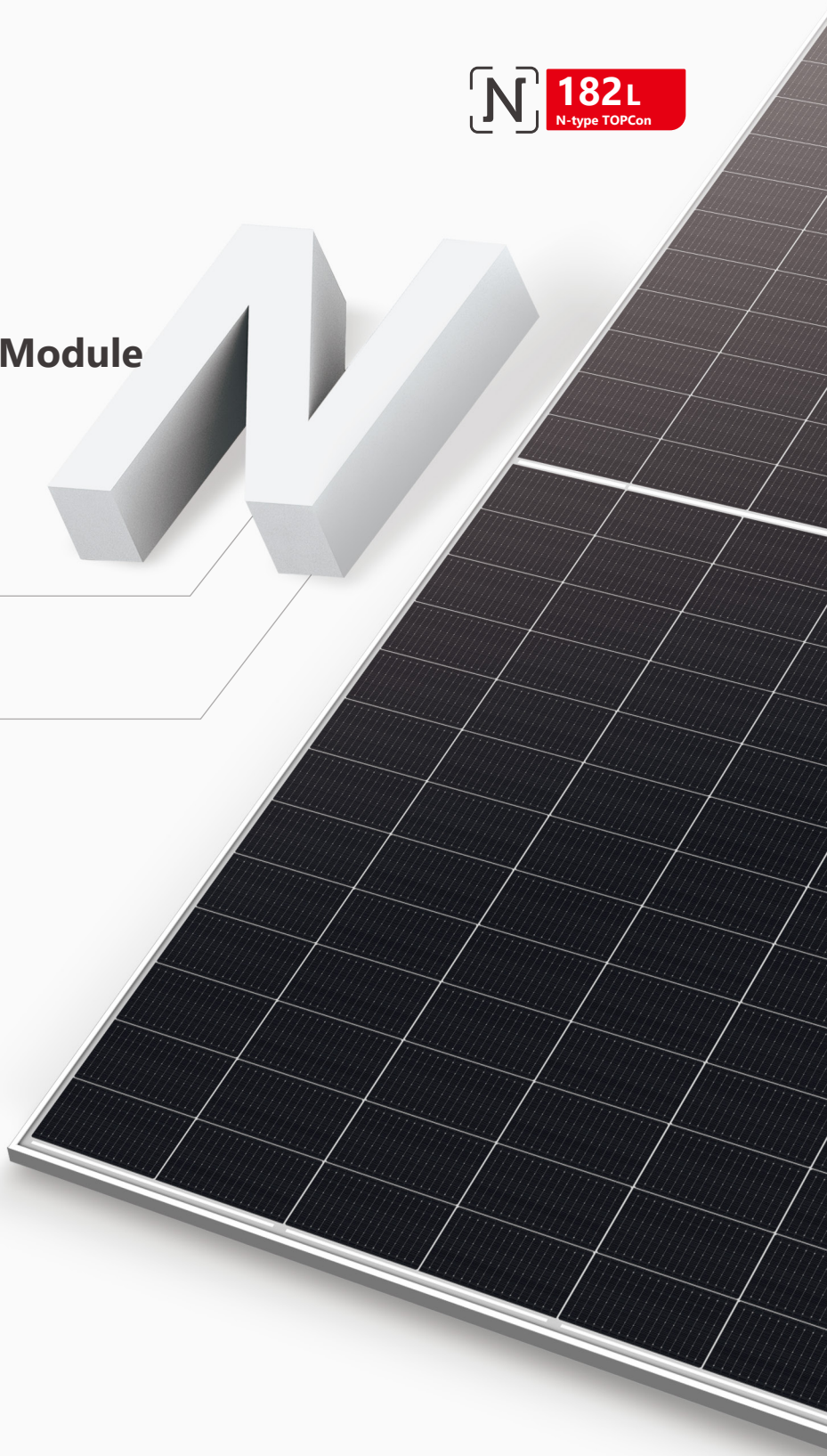
G10L-78P

N-type Bifacial Dual-Glass Module

HSM-ND78-GF620~645

645W
Max. Output Power

23.1%
Max. Efficiency



High Customer Value

- Layout designs for a wide range of applications
- Extensive project cases for system design reference
- Scenario-specific designs (e.g. anti-soiling)

High Energy Yield

- Better high-temperature and bifacial performance
- Strong energy yield across applications

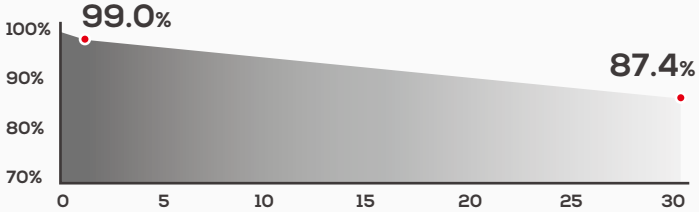
High Reliability

- High-weatherability encapsulation for long-term output
- High-strength Al frame and tempered glass for wind & snow
- Resistant to salt mist, sand, heat and humidity

Excellent Linear Power Warranty

15 Year Product Warranty

30 Year Linear Power Warranty*



* See warranty

Comprehensive Certification & Quality Management

IEC 61215 / IEC 61730 ISO 9001:2015 ISO 45001:2018 ISO 14001:2015

HSM-ND78-GF620~645 | TOPCon

645W Max. Output Power | **23.1%** Max. Efficiency | **0~+3%** Power Tolerance

Electrical Characteristics (STC* & BNPI*)

* STC: 1000 W/m², cell 25°C, AM1.5, Pmax tolerance ±3%
* BNPI: Front 1000 W/m², rear 135 W/m², 25°C, AM1.5, Pmax tolerance ±3%

Test Conditions	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI
Peak Power Pmax (W)	620	684	625	689	630	695	635	700	640	706	645	711
OC Voltage Voc (V)	56.60	56.78	56.80	56.96	57.00	57.18	57.20	57.36	57.40	57.58	57.60	57.76
SC Current Isc (A)	13.76	15.17	13.80	15.21	13.86	15.29	13.92	15.35	13.98	15.42	14.04	15.48
Op. Voltage Vmp (V)	48.07	48.14	48.23	48.29	48.39	48.47	48.55	48.58	48.71	48.76	48.87	48.90
Op. Current Imp (A)	12.90	14.21	12.96	14.27	13.02	14.34	13.08	14.41	13.14	14.48	13.20	14.54
Efficiency (%)	22.2		22.4		22.5		22.7		22.9		23.1	

Characteristics at Different Rear Power Gains*

* Rear-side extra gain vs. front power depends on installation (structure, height, tilt, etc.) and albedo

Power Gain	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Peak Power Pmax (W)	651	682	656	688	662	693	667	699	672	704	677	710
OC Voltage Voc (V)	56.60	56.60	56.80	56.80	57.00	57.00	57.20	57.20	57.40	57.40	57.60	57.60
SC Current Isc (A)	14.45	15.14	14.49	15.18	14.55	15.25	14.62	15.31	14.68	15.38	14.74	15.44
Op. Voltage Vmp (V)	48.07	48.07	48.23	48.23	48.39	48.39	48.55	48.55	48.71	48.71	48.87	48.87
Op. Current Imp (A)	13.55	14.19	13.61	14.26	13.67	14.32	13.73	14.39	13.80	14.45	13.86	14.52

Temperature Coefficients

Nominal Temp.	NMOT	43±2°C
Temp. Coefficient	Isc	+0.045%/°C
Temp. Coefficient	Voc	-0.24%/°C
Temp. Coefficient	Pmax	-0.28%/°C

Operating Conditions

Operating Temperature	-40~+85°C
Max. System Voltage	1500V DC
Max. Series Fuse Rating	30A
Bifaciality	80±5%
Safety Class	Class II
Fire Rating (IEC)	Class A

Mechanical Characteristics

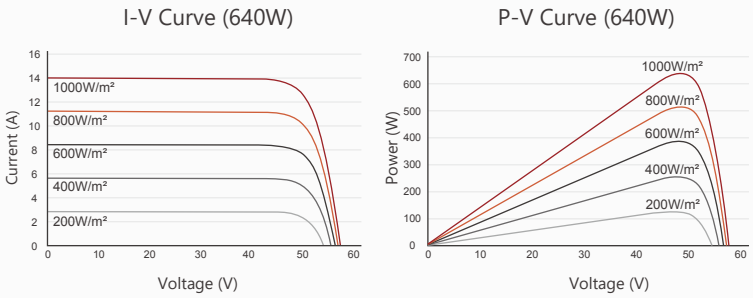
* See installation manual

Number of Cells	156pcs (6×26)
Dimensions	2465×1134×30 mm
Weight	33.4kg ±3%
Front Glass	2.0 mm HT semi-tempered glass
Rear Glass	2.0 mm semi-tempered glass
Frame	Anodized aluminum alloy
Junction Box / Diodes	IP68 / 3 diodes
Cables	4.0 mm², +400 mm / −200 mm (customizable)
Max. Static Load	Front 5400 Pa / Rear 2400 Pa*

Packing Information

Pieces per Pallet	36 pcs
40' HQ Container	576 pcs
13.5 m Flatbed	720 pcs
17.5 m Flatbed	864 pcs

Curves



Drawing

[Unit: mm]

