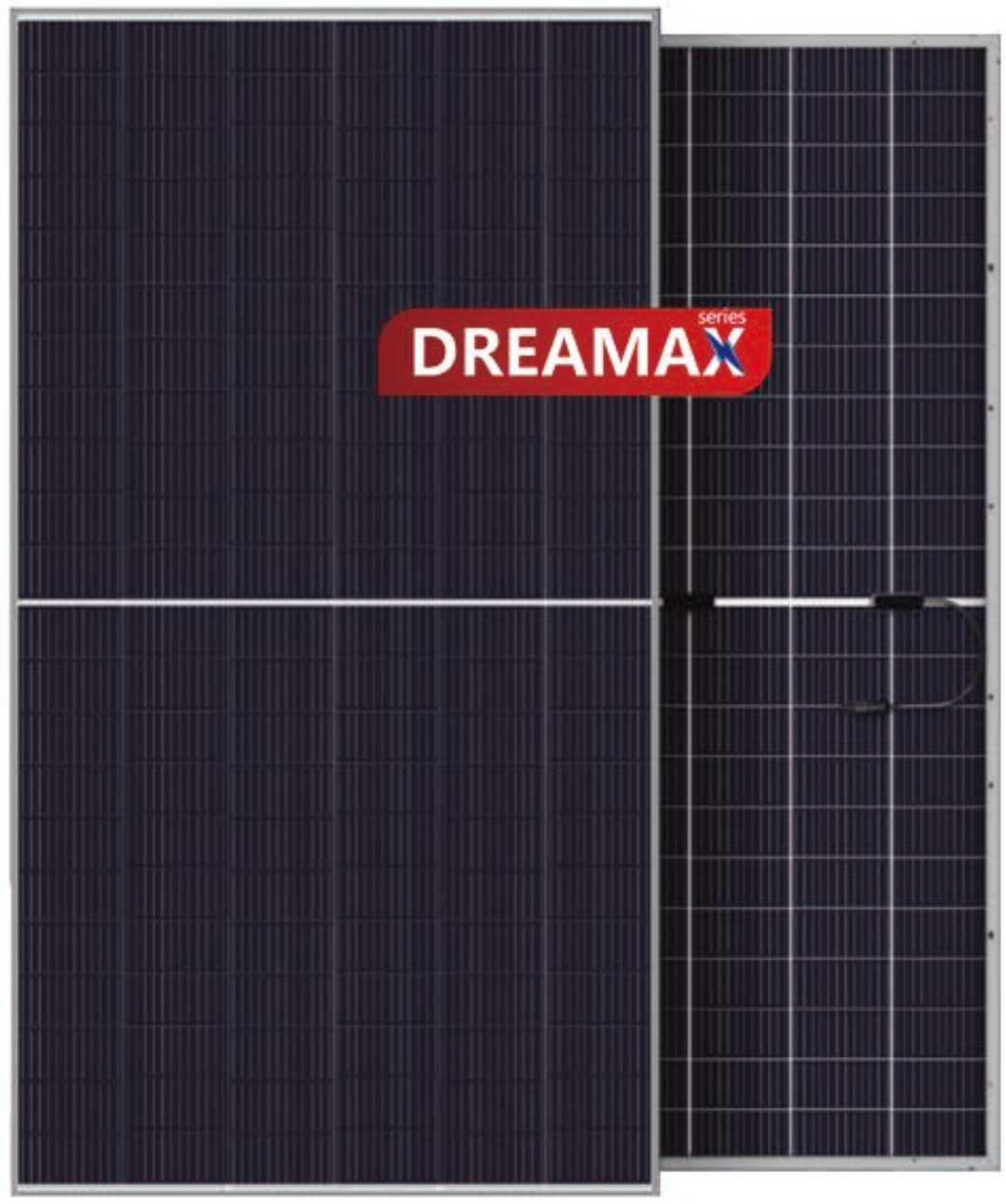
DREAMAX series
VL-690W-210M/132HB

N-HJT
Bifacial Monocrystalline Module



2384×1303×35	**210×105**
Module dimensions (mm)	Cell size (mm)
132 CELL	**670-690Wp**
Mono HJT module	Power output
1500V DC	**22.21%**
Max. system voltage	Max. efficiency

KEY FEATURES

Higher Power Output
Module power increases by 5-25% generally, bringing significantly lower LCOE and higher IRR.
0-5w positive tolerance output warranty.

Optimal Choice for Ultra-large Power Plants
Contribute to Lower BOS cost and LCOE.

ZERO LID
N-Type cell is characterized by "0" LID, which generates more power

PID Resistance
Excellent Anti-PID performance guarantee via optimized mass-production process and material control.

Durability Against Extreme Environmental Conditions
High salt mist and ammonia resistance certified by TUV NORD.
Lower temperature coefficient and operating temperature.

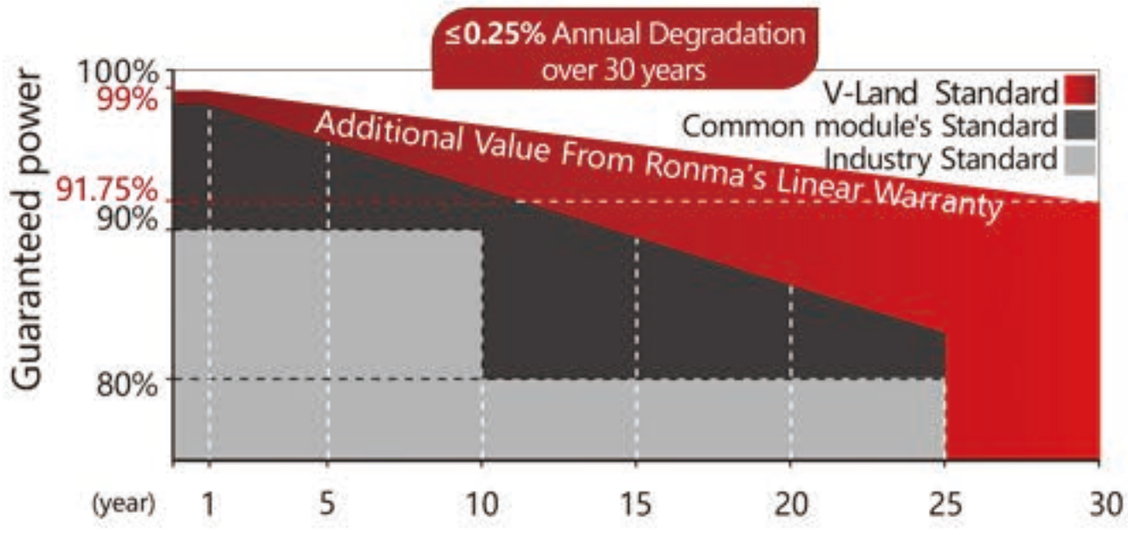
More Outstanding Low-light Performance
Higher power output even under low-light environments like on cloudy days

Enhanced Mechanical Load
Certified to withstand: wind load (2400 Pa) and snow load (5400 Pa).

EL Full Inspection
Dual stage 100% EL Inspection warranting defect-free product.

Comprehensive Products and System Certificates
IEC61215/IEC61730/IEC61701/IEC62716
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse Gases Emissions Verification
OHSAS 18001: Occupational Health and Safety Management System

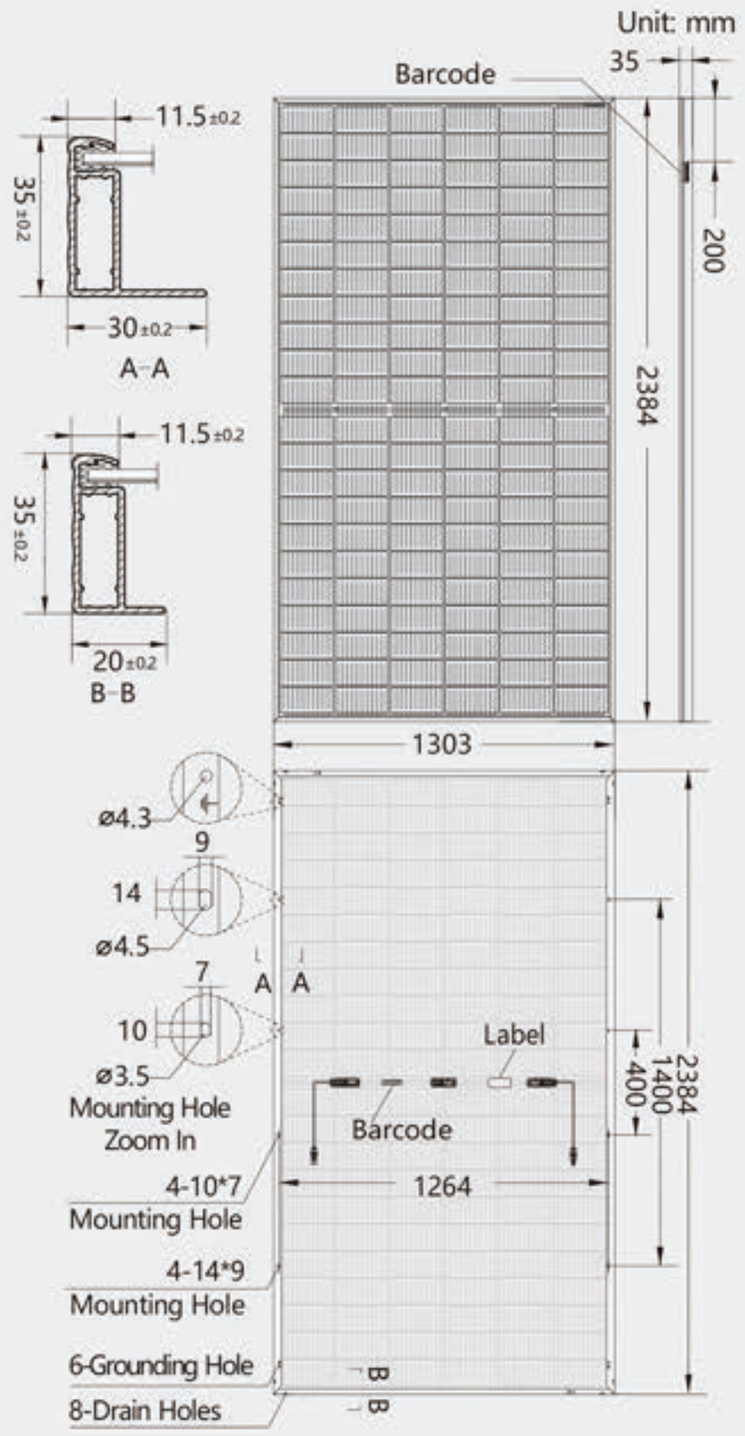
LINEAR PERFORMANCE WARRANTY
12-year product warranty / 30-year linear power warranty



VL-690W-210M/132HB

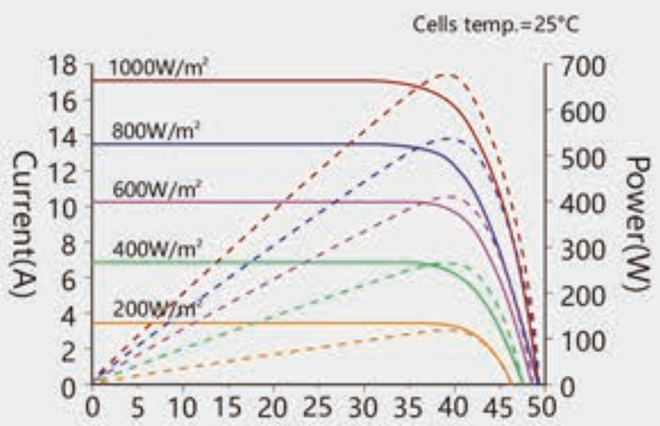
N-HJT | Bifacial Monocrystalline Module

Dimensions of PV Module

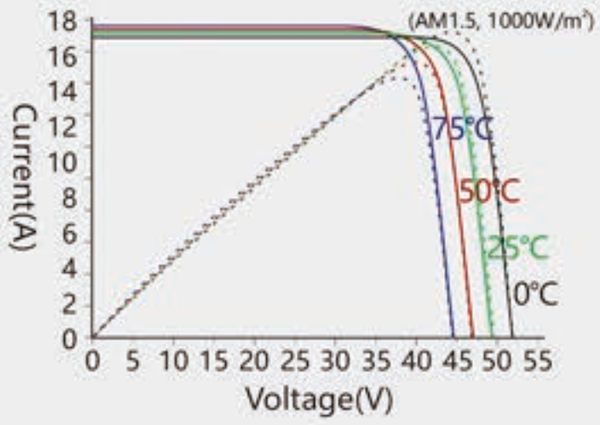


VL-680W-210M/132HB

I-V characteristics at different irradiations



I-V characteristics at different temperatures



ELECTRICAL DATA(STC)

Model Number	VL-670W-210M/132HB	VL-675W-210M/132HB	VL-680W-210M/132HB	VL-685W-210M/132HB	VL-690W-210M/132HB
Rated Power in Watts-Pmax(Wp)	670	675	680	685	690
Open Circuit Voltage-Voc(V)	49.11	49.31	49.51	49.71	49.91
Short Circuit Current-Isc(A)	17.09	17.11	17.13	17.15	17.17
Max. Power Voltage-Vmpp(V)	41.62	41.85	42.08	42.32	42.55
Max. Power Current-Impp(A)	16.10	16.13	16.16	16.19	16.22
Module Efficiency(%)	21.57	21.73	21.89	22.05	22.21

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM 1.5,
NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

Electrical characteristics with different rear side power gain (reference to 680Wp front)

Bifacial Gain ★	Pmax/W	Voc/V	Isc/A	Vmpp/V	Impp/A
5%	714	49.51	17.99	42.08	16.97
10%	748	49.51	18.84	42.08	17.78
15%	780	49.61	19.70	41.98	18.58
20%	814	49.61	20.56	41.98	19.39
25%	848	49.61	21.41	41.98	20.20

★ Bifacial Gain: The additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

MECHANICAL DATA

Solar Cells	N-HJT Mono
Cell Size	210mm×105mm
Cell Configuration	132 Cells (6×11+6×11)
Module Dimensions	2384×1303×35mm
Weight	40.8kg
Front Glass	High Transmission, Low Iron, Tempered Arc Glass 2.0mm
Back Glass	High Transmission, Low Iron, Tempered Arc Glass 2.0mm
Frame	Anodized Aluminium Alloy Type 6005 T6 , Silver Color
J-box	PV-RM01, IP68, 1500V DC, 3 Diodes
Cables	4.0mm², (+) 300mm, (-) 300mm (connector Included)
Connector	MC4-compatible

TEMPERATURE & MAXIMUM RATINGS

Nominal Operating Cell Temperature (NOCT)	44°C ± 2°C
Temperature Coefficient of Voc	-0.22%/°C
Temperature Coefficient of Isc	0.047%/°C
Temperature Coefficient of Pmax	-0.24%/°C
Operational Temperature	-40°C ~ +85°C
Max. System Voltage	1500V DC
Max. Series Fuse Rating	35A
Bifacial factor	90±5%
Fire rating	Class A

PACKAGING CONFIGURATION

	40ft (HQ)
Number of Modules Per Container	558
Number of Modules Per Pallet	31
Number of Pallets Per Container	18
Packaging Box Dimensions (l×w×h) (mm)	1325×1120×2510
Box Gross Weight (kg)	1296