Overhead glazing

PHONO

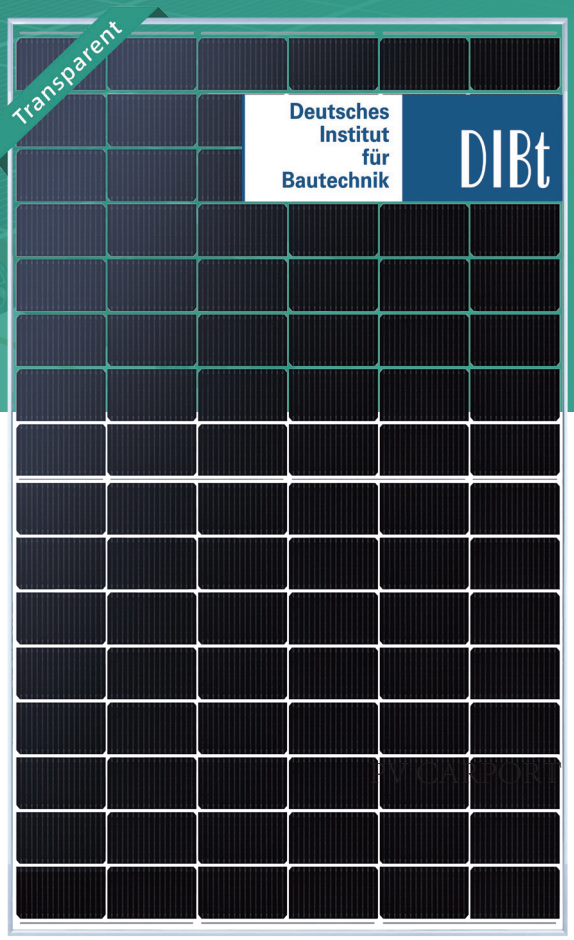
435-455w

Scutum System - Module Series

N-TOPCON HIGH EFFICIENCY 96-16BB-W-TG

Bloomberg NEW ENERGY FINANCE Tier 1

TOP PERFORMER 2026 kiwa PV MODULE RELIABILITY SCORECARD

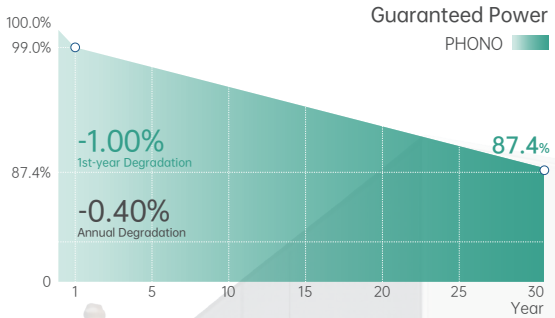


High Quality Reliability

- Resistant to impact, reliable under harsh weather
- Strong structural integrity, secure under extreme loads
- Long-term UV protection, sustained power generation efficiency
- Durable bonding strength, proven long-term stability
- Certified by German authority for premium carport & BIPV markets

Extraordinary Product Performance

- N-type with lower LID and LeTID
- Up to 30% additional power yield benefited from bifacial technology and over 80% cell bifaciality
- Better weak illumination response, higher power generation with N-TOPCon technology



15-year
Product Warranty

30-year
Linear Performance Warranty

MANAGEMENT SYSTEM CERTIFICATES

IEC 61215, IEC 61730

ISO 9001
2015 /Quality management system

ISO 14001
2015/Standards for environmental management system

ISO 45001
2018 /International standards for occupational health & safety

DIN EN 12600:
Resistance to impact under harsh weather conditions

DIN EN 18008:
Ensures structural integrity under extreme loads

DIN ISO 12543-4:
Maintains stable power generation efficiency under prolonged UV exposure

DIN 4102-1:
Validates flame-retardant and fire-resistant properties

DIN EN ISO 8510-2:
Tests bonding strength and long-term aging resistance

DIBt Certified:
Germany's top construction authority, ensuring compliance for high-end carport and BIPV markets

Phono Solar Technology Co., Ltd.
Allgemeinen bauaufsichtliche Zulassung
Z-70.3-312
Deutsches Institut für Bautechnik

GL-EN-VERSION 2026.06.18 © PHONO SOLAR CO., LTD. ALL RIGHTS RESERVED

www.phonosolar.com / info@phonosolar.com

Electrical Typical Values

Model	1000V	PS435L8GF-16/QNH		PS440L8GF-16/QNH		PS445L8GF-16/QNH		PS450L8GF-16/QNH		PS455L8GF-16/QNH	
	1500V	PS435L8GFH-16/QNH		PS440L8GFH-16/QNH		PS445L8GFH-16/QNH		PS450L8GFH-16/QNH		PS455L8GFH-16/QNH	
Testing Condition		STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Rated Power (Pmpp)		435	333	440	337	445	341	450	345	455	348
Rated Current (Impp)		14.84	11.95	14.87	11.98	14.90	12.00	14.93	12.02	14.96	12.05
Rated Voltage (Vmpp)		29.32	27.87	29.59	28.13	29.87	28.39	30.15	28.65	30.42	28.92
Short Circuit Current (Isc)		15.50	12.48	15.54	12.52	15.58	12.55	15.62	12.58	15.66	12.61
Open Circuit Voltage (Voc)		34.87	33.39	35.17	33.68	35.48	33.97	35.79	34.27	36.09	34.56
Module Efficiency (%)		21.77		22.02		22.27		22.52		22.77	

STC (Standard Testing Conditions): Irradiance 1000W/m², AM 1.5, Cell Temperature 25°C

NOCT (Nominal Operation Cell Temperature): Irradiance 800W/m², Ambient Temperature 20°C , Spectra at AM1.5, Wind at 1m/s

BNPI

Maximum Power (Pmax)	479	485	490	496	501
Optimum Operating Current (Impp)	16.34	16.38	16.41	16.44	16.48
Optimum Operating Voltage (Vmpp)	29.32	29.59	29.87	30.15	30.42
Short Circuit Current (Isc)	17.06	17.13	17.15	17.21	17.24
Open Circuit Voltage (Voc)	34.87	35.17	35.48	35.79	36.09

BNPI:Front Side Irradiation 1000W/m², Back Side Reflection Irradiation 135W/m² , AM 1.5, Ambient Temperature 25℃

Mechanical Characteristics

Cell Type	N Type Monocrystalline
Cell Format	182x210mm±0.5mm
Cell Number	96 Half Cell
Dimension (L × W × H)	Length: 1762mm (69.37 inch) Width: 1134mm (44.65 inch) Height: 30mm (1.18 inch)
Weight	24.5kg (54.01 lbs)
Front Glass	2.0mm Heat Strengthened Glass With AR Coating
Back Glass	2.0mm Heat Strengthened Glass
Frame	Anodized Aluminium Alloy
Cable (Including Connector)	4mm² (IEC), (+): 350mm,(-): 250mm or Customized Length
Junction Box	IP 68 Rated

Temperature Ratings

Voltage Temperature Coefficient	-0.25%/°C
Current Temperature Coefficient	+0.04%/°C
Power Temperature Coefficient	-0.29%/°C
Power Tolerance	0~+3%
NOCT	42±2°C
Bifaciality	80±5%

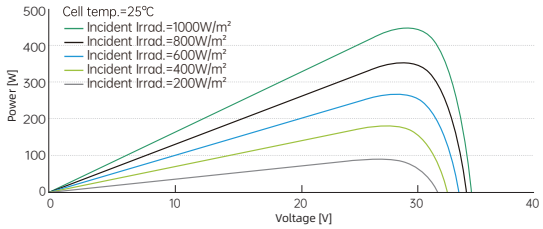
Absolute Maximum Rating

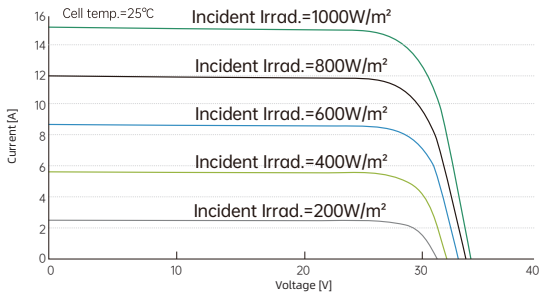
Operating Temperature	From -40 to + 85°C
Hail Diameter @ 80km/h	Up to 25mm
Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Maximum Series Fuse Rating	30A
PV Moudle Classification	II
Fire Rating (IEC61730)	C
Maximum System Voltage	DC 1000V/1500V

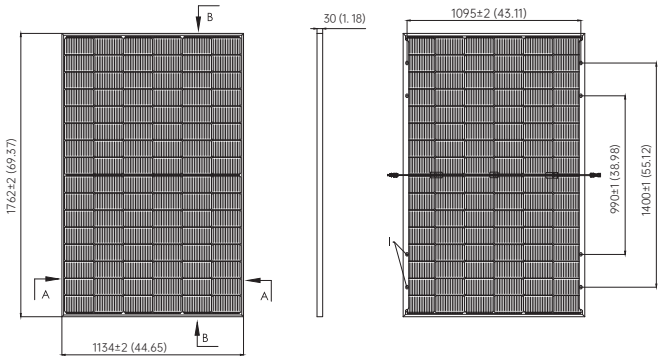
Packing Configuration

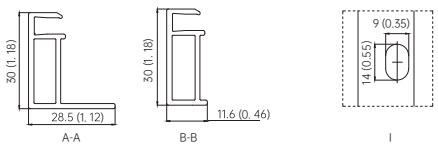
Container	40' HQ
Pcs/Container	936
Pcs/Pallet	36
Pallets/Container	26

Electrical Characteristics









Note:mm (inch)

PHONO SOLAR TECHNOLOGY CO., LTD. reserves the right to make necessary adjustments to the information described herein at any time without further notice. The specifications and certificates contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. Please be sure to use the most recent version of data.