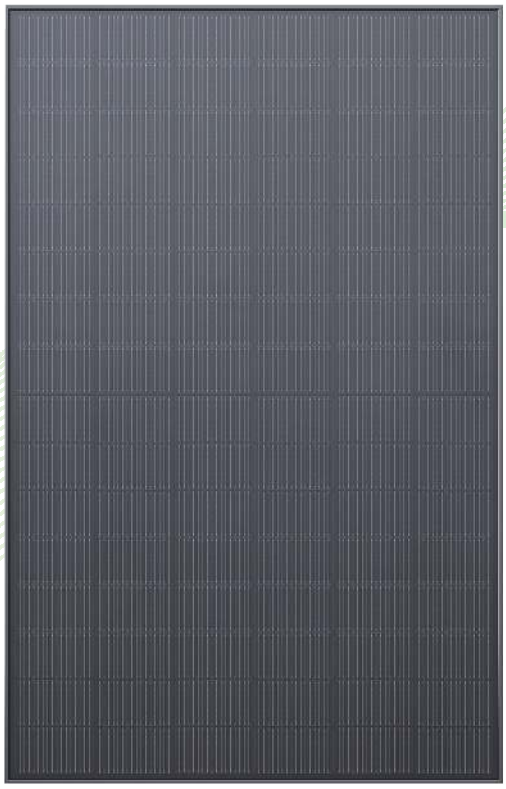
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440W-455W

N-Type Bifacial Dual-Glass Module



455 W / MAXIMUM POWER OUTPUT

22.8% / MAXIMUM MODULE EFFICIENCY

20 Year / PRODUCT WARRANTY

30 Year / LINEAR POWER WARRANTY

N-Type SMBB Technology

Combines N-type cells with SMBB technology to improve current collection, reduce resistive losses, and enhance long-term reliability.

Bifacial Power Gain

Bifacial cells capture rear-side reflected light for up to 30% additional energy under favorable conditions, with durable dual-glass protection.

Advanced AR Coating & Optimized Grid Mesh

Dual-layer front AR coating and an optimized rear-glass grid enhance light capture and reflection for improved energy output.

PID Resistance

Optimized cell technology and high-quality encapsulation help resist potential-induced degradation (PID) in hot and humid environments.

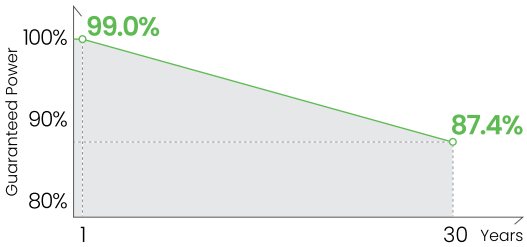
0.4% Annual Degradation

≤1% power degradation in the first year and ≤0.4% annually thereafter, backed by a 30-year linear power warranty.

Lower LCOE

High module efficiency and a -0.29%/°C power temperature coefficient support higher energy yield and lower overall system costs.

Performance Warranty



1% First-year Degradation

0.4% Annual Degradation

* Please refer to product warranty for details

- IEC 61215, IEC 61730
- ISO 9001: Quality management systems
- ISO 14001: Environmental management systems
- ISO 45001: Occupational health and safety management systems

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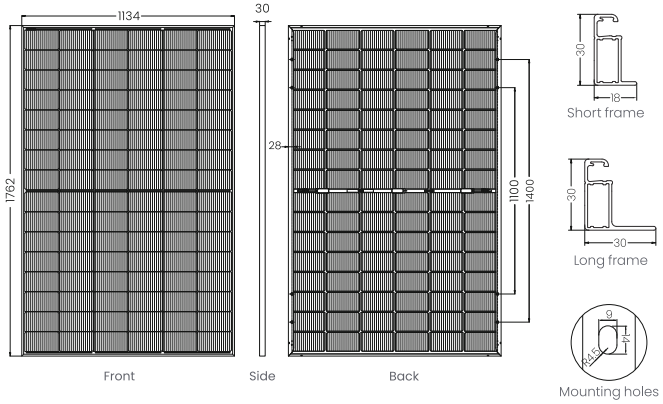
Disclaimer: Specifications included in this datasheet are subject to change without notice.
Please contact our technical team for the latest version.

MECHANICAL CHARACTERISTICS

Cell Type	N-Type Monocrystalline
No. of Cells	96 (8 × 6) × 2
Dimensions	1762 × 1134 × 30mm (69.37 × 44.65 × 1.18 inches)
Weight	23.97kg (52.84 lb)
Front Glass	2.0 mm (0.08 inches), Anti-reflection Coating
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass
Frame	30 mm (1.18 inches), Anodized Aluminium Alloy
Junction Box	IP 68 rated (3 bypass diodes)
Output Cables	4.0 mm² / 12 AWG ±1200 mm or Customized Length
Connector	Staubli MC4-EVO2 (IP68, 1500V DC)
Fire Rating	Type 29 (UL)
Safety Class	Class II

ENGINEERING DRAWINGS

Unit: mm



*Length/Width: ±2mm, Height: ±1mm.
*For detailed sizes and tolerance specification, please consult detailed module drawing.

PACKAGING CONFIGURATION

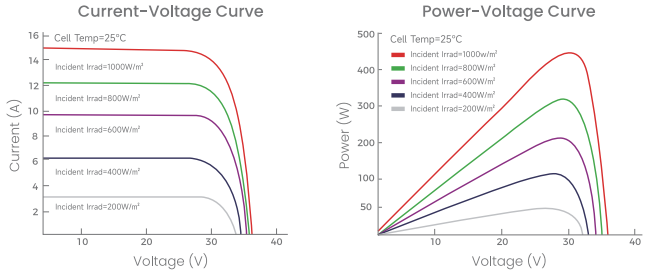
Palletized Dimensions (L × W × H)	1785 × 1120 × 1255mm
Modules per Pallet	36pcs
Modules per 40' HQ Container	936pcs

APPLICATION CONDITIONS

Operational Temperature	-40°C ~ +85°C (-40°F ~ +185°F)
Maximum System Voltage	1500 V DC (UL)
Max. Series Fuse Rating	30 A

CHARACTERISTIC CURVES

CS455-M2HD2608



ELECTRICAL CHARACTERISTICS (STC/BNPI)

Type	CS440-M2HD2608		CS445-M2HD2608		CS450-M2HD2608		CS455-M2HD2608	
Testing Condition	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI
Maximum Power - Pmax (Wp)	440	487.52	445	493.06	450	498.60	455	504.14
Open-circuit Voltage - Voc (V)	35.55	35.75	35.69	35.89	35.84	36.04	35.99	36.19
Short-circuit Current - Isc (A)	15.76	17.46	15.87	17.58	15.98	17.70	16.09	17.82
Maximum Power Voltage - Vmp (V)	29.53	/	29.63	/	29.73	/	29.83	/
Maximum Power Current - Imp (A)	14.90	/	15.02	/	15.14	/	15.25	/
Module Efficiency (%)	22.0	/	22.3	/	22.5	/	22.8	/
Temperature Coefficients of Pmax	-0.29% / °C							
Temperature Coefficients of Voc	-0.25% / °C							
Temperature Coefficients of Isc	0.045% / °C							

STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5
STC-Pmax [W]/Tolerance: ±3%, Voc [V] /Tolerance:±3%, Isc [Adc] /Tolerance:±3%
BNPI: Front Irradiance 1000W/m², Back Irradiance 135W/m², Cell Temperature 25°C, AM=1.5
BNPI-Pmax [W]/Tolerance: ±3%, Voc [V] /Tolerance:±3%, Isc [Adc] /Tolerance:±3%

ELECTRICAL CHARACTERISTICS (NMOT)

Type	CS440-M2HD2608	CS445-M2HD2608	CS450-M2HD2608	CS455-M2HD2608
Testing Condition	NMOT	NMOT	NMOT	NMOT
Maximum Power - Pmax (Wp)	335.0	338.7	342.5	345.3
Maximum Power Voltage - Vmp (V)	27.62	27.73	27.83	27.84
Maximum Power Current - Imp (A)	12.12	12.22	12.31	12.37
Open-circuit Voltage - Voc (V)	33.73	33.87	33.92	34.07
Short-circuit Current - Isc (A)	12.72	12.80	12.89	12.98

NMOT: Irradiance 800W/m², Ambient Temperature 20°C, AM=1.5, Wind speed 1m/s.

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