INDEPWR™

Independent Power. Energy for Everyone.

iPWR-M10-54BX2D-450W

440W | 445W | 450W

RESIDENTIAL | COMMERCIAL

N-Type Bifacial 54X2 Cell, Dual Glass Module

Step into the future with the iPWR-M10-54BX2D-450W. Its N-type technology ensures low LID, superior PID resistance, and unmatched thermal stability. Engineered for independence on power usage, it combines high efficiency, top-class technology, and value for money with an industry leading performance warranty- delivering consistent, industry-leading performance year after year.



Key Features

Enhanced Durability
Built with robust materials and advanced encapsulation, offering long-term reliability and resistance against extreme weather, mechanical stress, and UV exposure

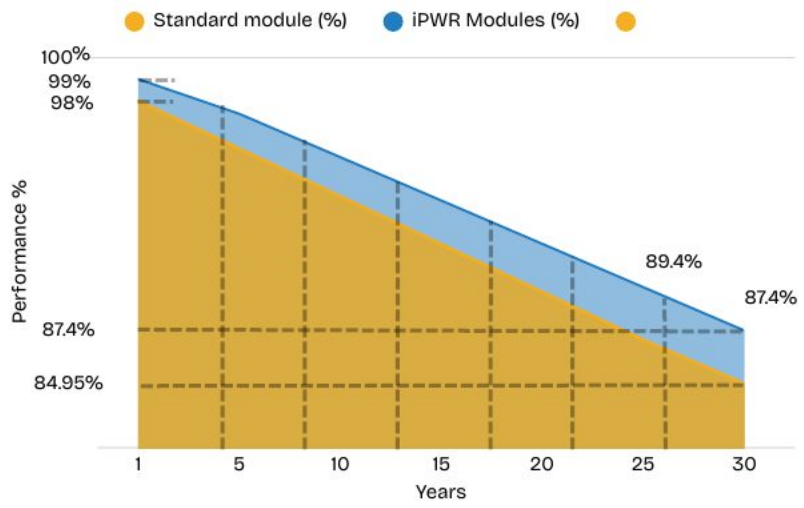
Low Light-Induced Degradation (LID)
Low Light-Induced Degradation (LID) Maintains energy output consistently over time, unlike conventional P-type panels, for enhanced reliability and long-lasting performance.

High PID Resistance
Resistant to potential-induced degradation (PID), ensuring stable power generation and extended reliability in high-humidity or high-voltage environments.

N-type Technology
Delivers superior efficiency with lower light-induced degradation (LID), ensuring long-term stable output and maximum energy harvest even under challenging environmental conditions

Modern Design
Split-cell architecture minimizes resistive losses and maximizes active area utilization, ensuring superior space efficiency on rooftops and ground-mounted projects.

Linear Performance Warranty



Comprehensive Certificates

- UL / CEC / FSEC
- IEC61215:2021 / IEC61730:2023
- ISO 9001: Quality Management System
- ISO 14001: Environmental Management System Standard
- ISO 45001: International Occupational Health and Safety Assessment System Standard

up to **30** years
Product quality & process guarantee

30 years
Linear power guanatee

0.40%
Annual degradation

Electrical Specifications

	440W		445W		450W	
	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power - Pmax [Wp]	440	328	445	331	450	334
Open-circuit Voltage - Voc [V]	39.84	36.65	40.04	36.84	40.24	37.02
Short-circuit Current - Isc [A]	14.02	11.22	14.09	11.27	14.16	11.33
Maximum Power Voltage - Vmp [V]	33.34	31.34	33.55	31.44	33.66	31.64
Maximum Power Current - Imp [A]	13.24	10.46	13.31	10.51	13.38	10.57
Module Efficiency STC [%]	22.53		22.79		23.04	
Power Tolerance	0 ~ + 3%					
STC for front-face of panel: 1000 W/m2, 25°C, measurement uncertainty <3% NOCT for front-face of panel: 800W/m²,45°C, Wind speed 1 m/s						

Bifacial Output - Rearside Power Gain

5%-Maximum Power Pmax (W)	462	467	473
5%-Module Efficiency STC (%)	23.66	23.93	24.20
15%-Maximum Power Pmax (W)	506	512	518
15%-Module Efficiency STC (%)	25.91	26.21	26.50
25%-Maximum Power Pmax (W)	550	556	563
25%-Module Efficiency STC (%)	28.17	28.49	28.81

Test Operating Conditions

Maximum Series Fuse (A)	30
Maximum System Voltage (VDC)	1,500 (UL&IEC)
Maximum Load Capacity (Per UL 1703) (Pa)	5400 Snow Load / 2400 Wind Load
Fire Performance (UL1703)	Type 29

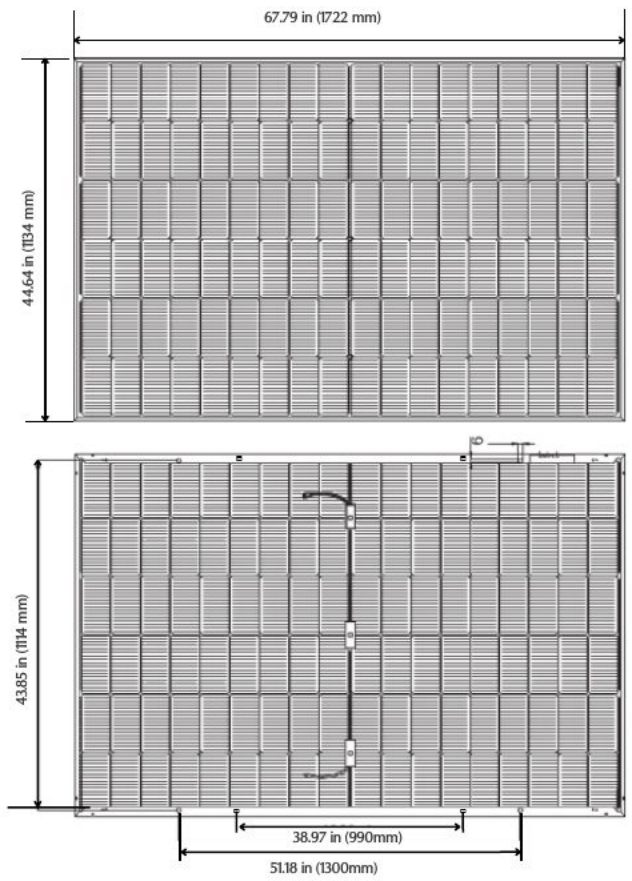
Temperature Coefficients

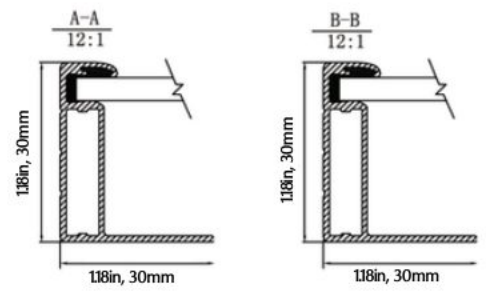
Temperature Coefficients Pmmp (%/°C)	-0.30
Temperature Coefficients Voc (%/°C)	-0.25
Temperature Coefficients Isc (%/°C)	+0.046
Nominal Operating Cell Temperature (NOCT) (°C)	45±2 (-40°C ~ +85°C)

Mechanical Properties

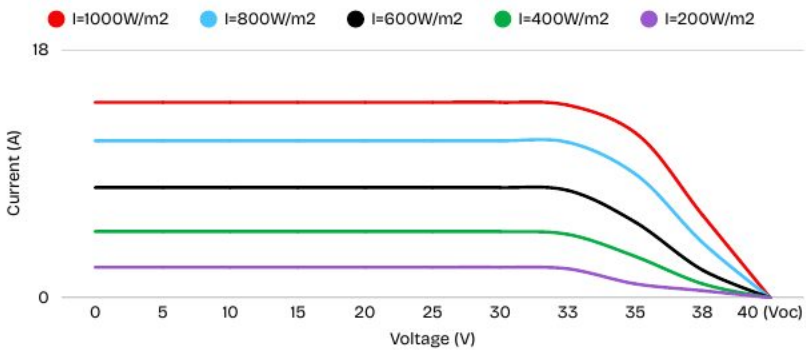
Cell Type	N-Type Monocristalline (M10)
Number of Cells	54 x 2 (108 half-cut cells)
Front Glass (in)	0.078 (2mm) thickness, AR coating, High-transmittance-Tempered Glass
Back Glass (in)	0.078 (2mm) thickness, Semi-tempered Glass
Frame	Black Anodized Aluminum Alloy
Junction Box	IP68, 3 bypass diodes
Output Cable	12 AWG (4mm2 EU)
Cable Length (in)	47.24 (1200mm)
Connector Type	Staubli EVO2
Dimensions (in)	67.79 x 44.64 x 1.18 (1722 x 1134 x 30 mm)
Weight (lb)	50.70 (23kg)

Engineering Drawings





I-V Curves : iPWR-M10-54BX2D-450W



Packaging Configuration

Modules per Pallet (EA)	36
Pallets per 40ft. Container (EA)	26
Pallet Dimensions (in)	68.97 x 44.48 x 49.76 (1752 x 1130 x 1264mm)
Pallet Weight (lbs)	1825.42 (828kg)
Modules per 40ft. Container (EA)	936

Note on Fire Rating: The 'Fire Class' rating (A, B, or C) is designated for the fully installed PV System, which includes, but is not limited to, the module, the mounting system, roof pitch, and roof composition. Type 1 (Single Glass) and Type 29 (Dual Glass) modules are compatible with UL-certified Class A system fire-rated installations.

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Note: Please read the safety and installation manual before using the product. We reserve the right of final interpretation. The specifications in this data sheet are subject to change without notice.