INDEPWR™

Independent Power. Energy for Everyone.

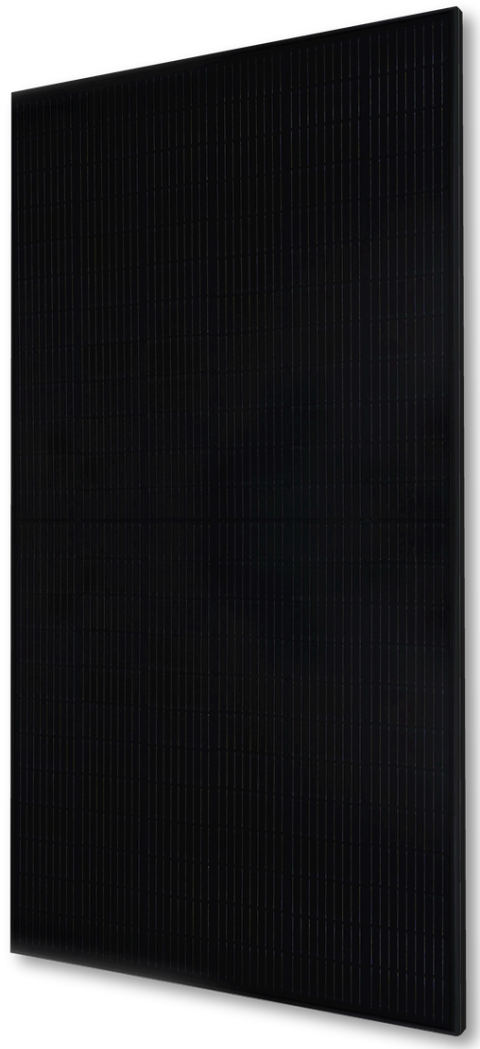
iPWR-M10-54BX2S-440W

430W | 435W | 440W

RESIDENTIAL | COMMERCIAL

N-Type Bifacial 54X2 Cell, Single Glass Module

Step into the future with the iPWR-M10-54BX2S-440W. 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

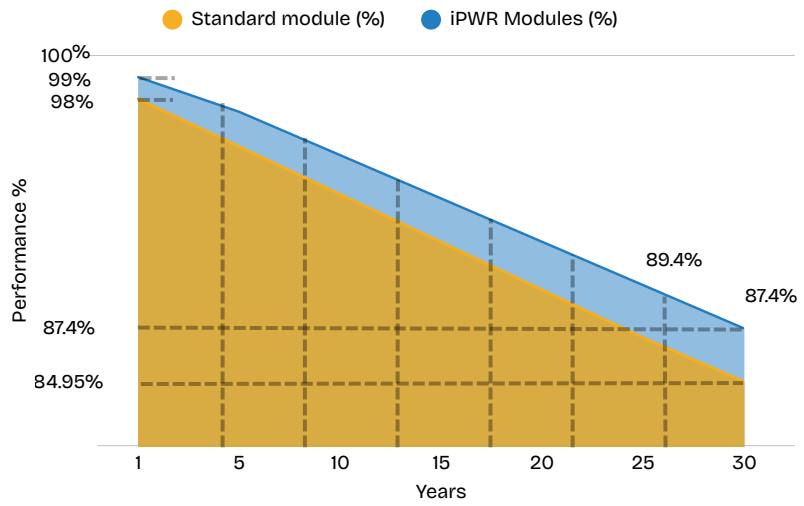
Low Light-Induced Degradation (LID)
Low Light-Induced Degradation (LID) Maintains energy output consistently over time, unlike conventional P-type panels, for enhanced reliability and long-lasting performance.

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



up to **25** years
Product quality & process guarantee

30 years
Linear power guanatee

0.40%
Annual degradation

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

Made in the Country of Georgia

INDEPWR™

Electrical Specifications

	430W		435W		440W	
	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power - Pmax [Wp]	430	319	435	323	440	327
Open-circuit Voltage - Voc [V]	38.70	37.16	38.84	37.26	38.98	37.37
Short-circuit Current - Isc [A]	13.71	11.44	13.78	11.49	13.85	11.54
Maximum Power Current - Imp [A]	32.86	30.65	32.99	30.85	33.11	31.05
Maximum Power Voltage - Vmp [V]	13.10	10.45	13.19	10.50	13.29	10.55
Module Efficiency STC [%]	22.00		22.30		22.50	
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)	452	457	462
5%-Module Efficiency STC (%)	23.12	23.39	23.66
15%-Maximum Power Pmax (W)	495	500	506
15%-Module Efficiency STC (%)	25.32	25.62	25.91
25%-Maximum Power Pmax (W)	538	405	544
25%-Module Efficiency STC (%)	27.53	20.74	27.85

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 / 5400 Wind Load
IEC Fire Performance	Class A

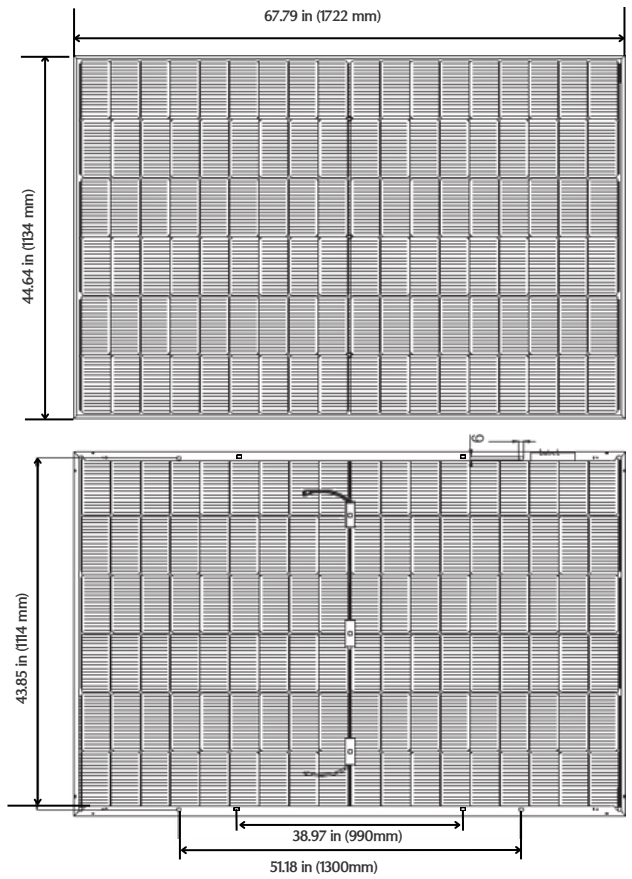
Temperature Coefficients

Temperature Coefficients Pmmp (%/°C)	-0.29
Temperature Coefficients Voc (%/°C)	-0.28
Temperature Coefficients Isc (%/°C)	+0.04
Norminal Operating Cell Temperature (NOCT) (°C)	45±2 (-40°C ~ +85°C)

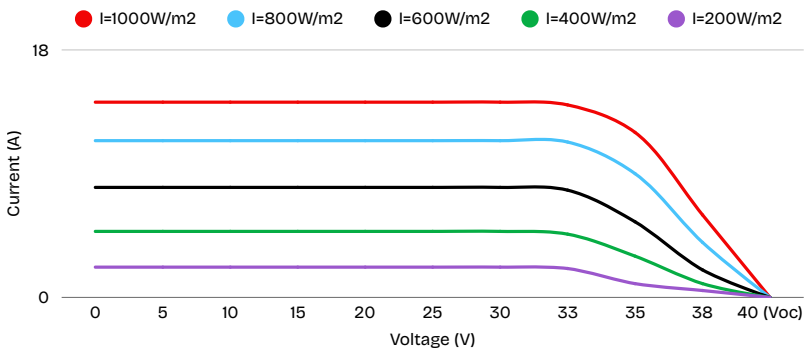
Mechanical Propertiess

Cell Type	N-Type Monocristalline (M10)
Number of Cells	54 x 2 (108 half-cut cells)
Glass	AR coating, High Transmission, Low Iron ,Semi-Tempered Single Glass
Frame	Black Anodized Aluminum Alloy
Junction Box	IP68, 3 bypass diodes
Output Cable	12 AWG (4mm2 EU)
Cable Length (in)	47.2 (1200mm)
Connector Type	Staubli EVO2
Dimensions (in)	67.7 x 44.6 x 1.3 (1722 x 113 x 35 mm)
Weight (1lb)	44.53 (20.2kg)

Engineering Drawings



I-V Curves : iPWR-M10-54BX2S-440W



Packaging Configuration

Modules per Pallet (EA)	31
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)	1503.5 (682.0kg)
Modules per 40ft. Container (EA)	806

Mateis Solar Co., Ltd. All rights reserved.

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.