



# N-Type ABC Black Hole Series

AIKO-A-MAH54Mb

Up to **23.6%**  
**445W-460W**



Product  
Warranty



Power  
Warranty



reddot winner 2023

## Higher Power Output

High Efficiency: 23.6%

Low Degradation: 1<sup>st</sup> year ≤ 1%, year-on-year ≤ 0.35%

Long Warranty: 15yrs on quality, 30yrs on power

Low Temperature Coefficient: -0.29%/°C

## Lower BOS Cost

Pure-black Front without Gridlines

## Complete Set of Quality Management System

IEC 61730 (2016) IEC 61215 (2021)

ISO 9001:2015 Quality Management System

ISO 14001:2015 Environmental Management System

ISO 45001:2018 Occupational Safety and Management System

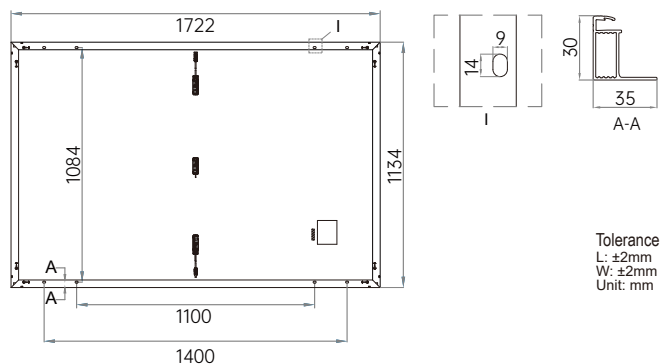
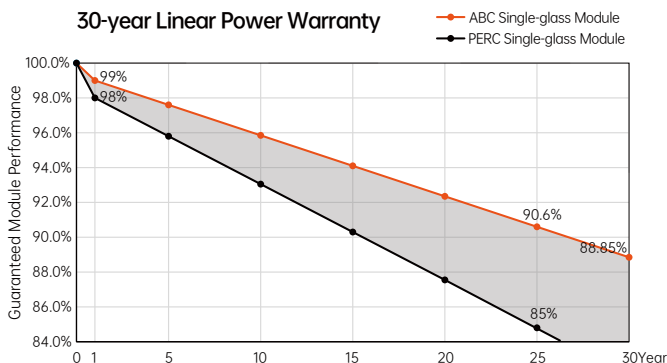


**460W**  
Output

**23.6%**  
Efficiency

**≤1%**  
First-year Degradation

**≤0.35%**  
Annual Degradation from Year 2-30



Electrical Characteristics		(STC: AM1.5 1000W/m <sup>2</sup> 25°C NOCT: AM1.5 800W/m <sup>2</sup> 20°C 1m/s)				Power Tolerance: 0~+3%		Max Power Test Uncertainty: ±3%	
Model	AIKO-A445-MAH54Mb		AIKO-A450-MAH54Mb		AIKO-A455-MAH54Mb		AIKO-A460-MAH54Mb		
Test Conditions	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	
P <sub>max</sub> [W]	445	336	450	339	455	343	460	347	
V <sub>oc</sub> [V]	40.09	37.76	40.19	37.85	40.29	37.94	40.39	38.04	
V <sub>mp</sub> [V]	33.91	31.94	34.01	32.03	34.11	32.12	34.21	32.22	
I <sub>sc</sub> [A]	13.69	11.10	13.75	11.15	13.81	11.20	13.87	11.25	
I <sub>mp</sub> [A]	13.13	10.52	13.24	10.61	13.35	10.70	13.45	10.78	
<b>Module Efficiency</b>	<b>22.8%</b>		<b>23.0%</b>		<b>23.3%</b>		<b>23.6%</b>		

Mechanical Specification	
Cell Type	Mono-crystalline Silicon
Front Cover	3.2 mm tempered glass, with anti-reflection coating
Single glass	
Frame	Black anodized aluminum
Cable	4mm <sup>2</sup> (IEC) 12AWG(UL) 350mm or Customized Length
No. of Cells	108(6*18)
Junction Box	IP68, three bypass diodes
Connector	MC4 compatible
Weight	22.2Kg±3%
Dimension	1722*1134*30mm
Package Detail	36pcs per pallet/216 pcs per 20' GQ/936pcs per 40' HQ

Temperature Ratings (STC)	
Temperature Coefficient of I <sub>sc</sub>	+ 0.05%/K
Temperature Coefficient of V <sub>oc</sub>	- 0.24%/K
Temperature Coefficient of P <sub>max</sub>	- 0.29%/K

Installation Guide	
Operation Temperature	- 40°C~+85°C
Maximum Series Fuse Rating	25A
Protection Class	Class II
Maximum System Voltage	DC1500V
Maximum Static Loading	Front 5400Pa Back 2400Pa
Hail Test	25 mm diameter hail at 23 m/s
Fire Rating	IEC Class C

