



# N-Type ABC Black Hole Series

AIKO-A-MAH54Mb

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



Product  
Warranty



Performance  
Warranty



reddot winner 2023

## Full Black Design

No grid lines on the front

## Higher Power Output

Higher efficiency: 23.6%

Lower degradation: 1 Year  $\leq 1.0\%$ , 2 -30 Year  $\leq 0.35\%$

Better Temperature Coefficient:  $-0.29\%/^{\circ}\text{C}$

## Optimized Balance of System (BOS)

Significant savings on mounting structure, cabling, and labour cost

## 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

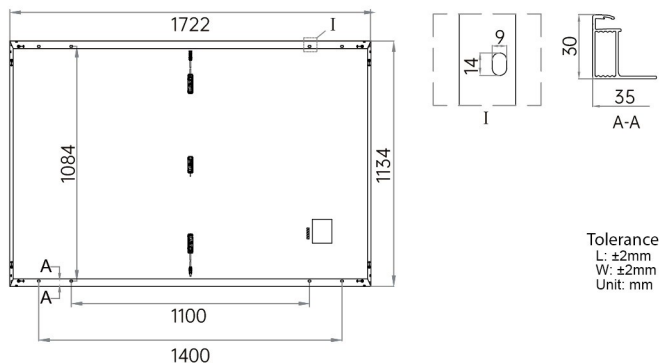
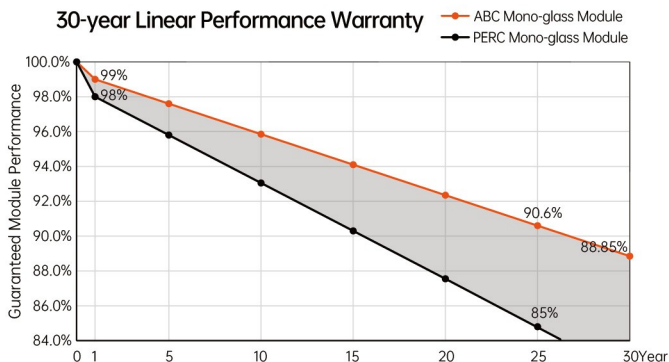


**460W**  
Output

**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	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
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
Mono 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	20.5kg±3%
Dimension	1722*1134*30mm
Package Detail	36pcs per pallet/216 pcs per 20' GP/936pcs per 40' HQ

**Temperature Ratings (STC)**

Temperature Coefficient of I <sub>sc</sub>	+ 0.05%/ °C
Temperature Coefficient of V <sub>oc</sub>	- 0.24%/ °C
Temperature Coefficient of P <sub>max</sub>	- 0.29%/ °C

**Installation Guide**

Operation Temperature	- 40°C~+85°C
Maximum Series Fuse Rating	25A
Protection Class	Class II
V <sub>oc</sub> and I <sub>sc</sub> Tolerance	±3%
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



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\*Aiko Energy reserves right to update the specification without notice  
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