AIKO

N-Type ABC

Black Hole Series

AIKO-A-MAH54Mb

Up to 23.6%

445W-460W



15 year Product Warranty

30 year Power Warranty

reddot winner 2023

Higher Power Output

High Efficiency: 23.6%
Low Degradation: 1st year≤1%, year-on-year≤0.35%
Long Warranty: 15yrs on quality, 30yrs on power
Low Temperature Coefficient: -0.29%/℃

Lower BOS Cost

Pure-black Front without Gridlines

Complete Set of Quality Management System

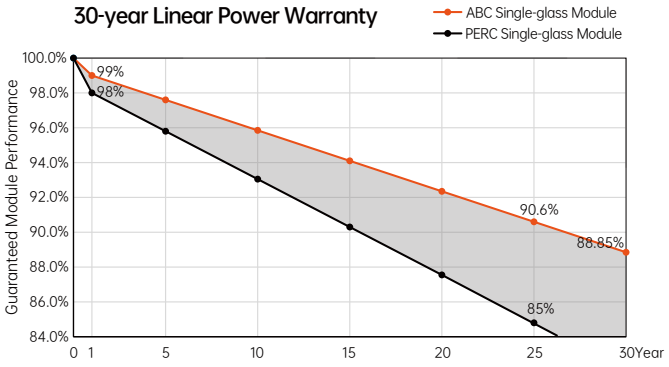
IEC 61730 (2016) IEC 61215 (2021)
ISO 9001:2015 Quality Management System
ISO 14001:2015 Environmental Management System
ISO 45001:2018 Occupational Safety and Management System

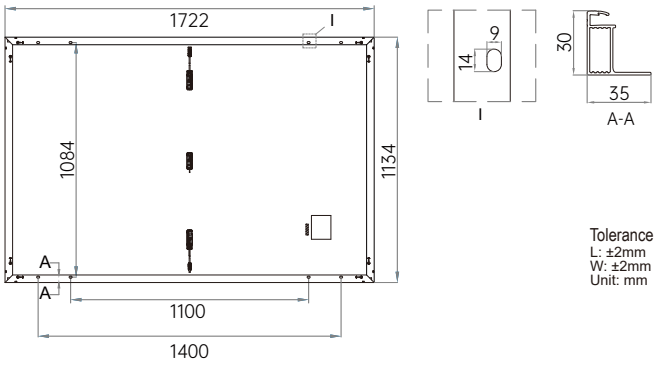
Munich RE CE TÜVRheinland CQC

N-Type ABC Black Hole Series BLACK HOLE

AIKO-A-MAH54Mb

460W	23.6%	⩽1%	⩽0.35%
Output	Efficiency	First-year Degradation	Annual Degradation from Year 2-30





Electrical Characteristics (STC: AM1.5 1000W/m² 25℃ NOCT: AM1.5 800W/m² 20℃ 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_{max} [W]	445	336	450	339	455	343	460	347
V_{oc} [V]	40.09	37.76	40.19	37.85	40.29	37.94	40.39	38.04
V_{mp} [V]	33.91	31.94	34.01	32.03	34.11	32.12	34.21	32.22
I_{sc} [A]	13.69	11.10	13.75	11.15	13.81	11.20	13.87	11.25
I_{mp} [A]	13.13	10.52	13.24	10.61	13.35	10.70	13.45	10.78
Module Efficiency	**22.8%**		**23.0%**		**23.3%**		**23.6%**	

Mechanical Specification

Cell Type	Mono-crystalline Silicon
Front Cover Single glass	3.2 mm tempered glass, with anti-reflection coating
Frame	Black anodized alumninum
Cable	4mm²(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

Temeprature Ratings (STC)

Temperature Coefficient of I_{sc}	+ 0.05%/K
Temperature Coefficient of V_{oc}	- 0.24%/K
Temperature Coefficient of P_{max}	- 0.29%/K

Installation Guide

Operation Temperature	- 40℃-+85℃
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

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*Aiko Energy reserves right to change the specification without notice

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