







NEOSTAR

2S Mono-Glass Module

500W-515W

Technical Features:

-  Partial Shading Optimisation
-  Better Temperature Coefficient
-  High Temperature Restriction
-  Micro-crack Resistance
-  Higher Power
-  Lower BOS
-  More Aesthetic Values



red dot winner 2023




Product Warranty



Performance Warranty



Munich RE 

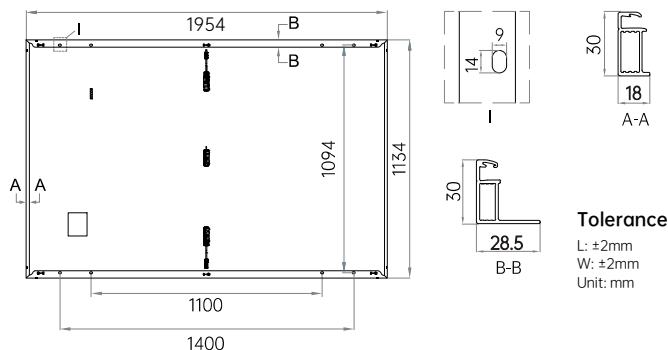
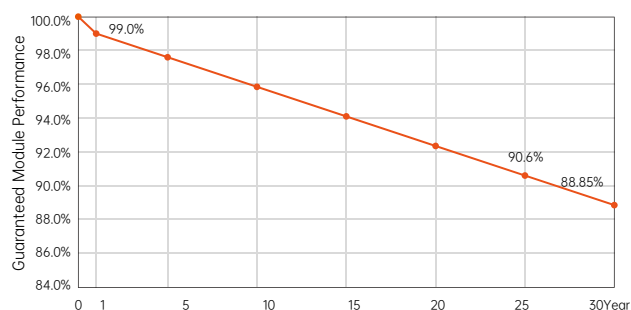
515W
Output

23.2%
Efficiency

≤1%
First-year Degradation

≤0.35%
Annual Degradation from Year 2-30

30-year Linear Performance Warranty



Electrical Characteristics (STC: AM1.5 1000W/m² 25°C NOCT: AM1.5 800W/m² 20°C 1m/s) Power Tolerance: 0~ + 3%

Module Type	AIKO-A500-MAH60Mb		AIKO-A505-MAH60Mb		AIKO-A510-MAH60Mb		AIKO-A515-MAH60Mb	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
P _{max} [W]	500	379	505	383	510	386	515	390
V _{oc} [V]	45.02	42.71	45.12	42.80	45.22	42.90	45.32	42.99
V _{mp} [V]	37.90	35.96	38.00	36.05	38.10	36.15	38.20	36.24
I _{sc} [A]	14.05	11.35	14.11	11.40	14.17	14.45	14.23	11.49
I _{mp} [A]	13.02	10.55	13.30	10.63	13.39	10.70	13.49	10.78
Module Efficiency	22.6%		22.8%		23.0%		23.2%	

Product Specification

Cell Type	N-Type ABC
Glass	3.2 mm tempered glass
Backsheet	High weather resistant backsheet
Frame	Black Anodized aluminum
Cable	4mm ² (IEC) 12AWG(UL) ±1200mm
No. of Cells	120(6*20)
Junction Box	IP68, 3 bypass diodes
Connector	MC4-Evo2
Weight	23.1Kg+3%
Dimension	1954*1134*30mm
Package Detail	37pcs per pallet / 185pcs per 20'GP / 888pcs per 40'HC

Temperature Ratings (STC)

Temperature Coefficient of I _{sc}	+ 0.05%/ °C
Temperature Coefficient of V _{oc}	- 0.22%/ °C
Temperature Coefficient of P _{max}	- 0.26%/ °C

Installation Guide

Operation Temperature	-40°C - +85°C
Maximum Series Fuse Rating	25A
Protection Class	ClassII
V _{oc} and I _{sc} Tolerance	±3%
Maximum System Voltage	DC1500V
Maximum Static Loading	Front 5400Pa Back 2400Pa
Hail Test	40 mm diameter hail at 23 m/s
Fire Rating	IEC Class C



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*AIKO reserves right to update the specification without notice
DSDr_EN_2409_V1.1

SMART ENERGY CONTROLLER

SUN2000-5/6/8/10/12K-MAP0



Asymmetric Load
Three-phase asymmetric output
200% overload



Active Safety
AFCI & RSD (with optimizer)
Connector temperature detection



Future Ready
LUNA S0 or S1
Whole home backup (with SmartGuard)

SUN2000-5/6/8/10/12K-MAP0

Technical Specification

Technical Specification	SUN2000 -5K-MAP0	SUN2000 -6K-MAP0	SUN2000 -8K-MAP0	SUN2000 -10K-MAP0	SUN2000 -12K-MAP0
Max. efficiency	98.4%	98.6%	98.6%	98.6%	98.6%
European weighted efficiency	97.5%	97.7%	98.0%	98.1%	98.2%
Input (PV)					
Recommended max. PV power	9,000 Wp	11,000 Wp	14,600 Wp	18,000 Wp	22,000 Wp
Max. input voltage ¹	1,100 V				
Operating voltage range ²	160 - 1,000 V				
Startup voltage	160 V				
Rated input voltage	600 V				
Max. input current per MPPT	16 A				
Max. short-circuit current	22 A				
Number of MPP trackers	2				
Max. input per MPP tracker	1				
Input (DC Battery)					
Compatible battery	LUNA2000-5/10/15-S0 / LUNA2000-7/14/21-S1				
Operating voltage range	600 ~ 980 V				
Max. operating current	20 A				
Max. charging power	12,000 W				
Max. discharging power	5,500 W	6,600 W	8,800 W	11,000 W	12,000 W
Output (On Grid)					
Grid connection	Three-phase				
Rated output power	5,000 W	6,000 W	8,000 W	10,000 W	12,000 W
Max. apparent power	5,500 VA	6,600 VA	8,800 VA	11,000 VA	13,200 VA
Rated output voltage	220 V AC/380 V AC, 230 V AC/400 V AC, 240 V AC/415 V AC 3W/N + PE				
Overload capability	110%				
Rated AC grid frequency	50 Hz/60 Hz				
Max. output current	8.3 A	10.0 A	13.3 A	16.7 A	20.2 A
Adjustable power factor	0.8 leading ... 0.8 lagging				
Max. total harmonic distortion	≤ 3%				
Output (Off Grid)					
Compatible backup device	SmartGuard-63A-T0 (3 phase)				
Rated output power	5,000 W	6,000 W	8,000 W	10,000 W	12,000 W
Rated output voltage	220 V AC/380 V AC, 230 V AC/400 V AC, 240 V AC/415 V AC 3W/N + PE				
110% overload	Continuous				
150% overload	5 min (3-phase) / 5 min (Single-phase)			1 min (3-phase) / 5 min (Single-phase)	
200% overload	10 seconds				
Automatic switchover time	≤ 20 ms (with SmartGuard-63A-T0)				
Protection Feature					
Asymmetric load	Yes, supports 100% three-phase asymmetric load				
Input-side disconnection device	Yes				
Anti-islanding protection	Yes				
DC reverse polarity protection	Yes				
Insulation detection	Yes				
DC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11				
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11				
Residual current detection	Yes				
AC overcurrent protection	Yes				
AC short-circuit protection	Yes				
AC overvoltage protection	Yes				
Arc fault protection	Yes				
Connector temperature detection	Yes (PV & Battery connectors)				
Ripple receiver control	Yes				
Battery charging from grid	Yes				
General Specification					
Operating temperature range	-25°C - +60°C (-13°F - +140°F)				
Relative operating humidity	0 % - 100% RH				
Max. operating altitude	4,000 m				
Cooling	Natural convection				
Noise	≤ 29 dB				
Display	LED Indicators; Integrated WLAN + FusionSolar APP				
Communication	RS485; WLAN / Ethernet via Smart Dongle-WLAN-FE (Optional) 4G/3G/2G via Smart Dongle-4G (Optional); EMMA (Optional)				
Weight (incl. mounting brackets)	21 kg				
Dimensions (incl. mounting brackets)	490 mm x 460 mm x 130 mm				
IP rating	IP66				
Nighttime power	< 5.5 W				
Optimizer Compatibility					
DC MBUS compatible optimizer	SUN2000-450W-P2, SUN2000-600W-P				
Safety	EN/IEC62109-1, EN/IEC62109-2				
Grid connection standards	IEC61727, IEC62116, MEA/PEA, G99, Philippine Grid Code Resolution No. 07, NRS 097-2-1, EN50549-1, VDE4105, UTE15-712-1/VFR 2019, UNE217002, NTS631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuger, CEI 0-21:2020-12 V1, C10/C11				

*1 The max. input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage the inverter.

*2 Any DC input voltage beyond the operating voltage range may result in inverter malfunction.



SUN2000-2-6-KTL-L1



Active Safety

AI Powered
Active Arcing Protection



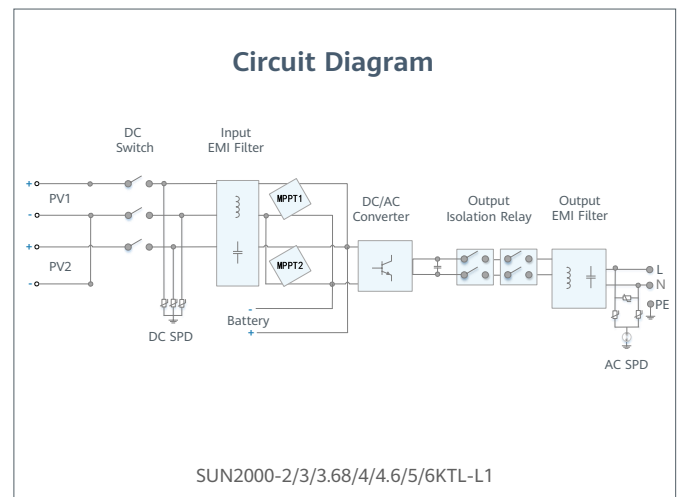
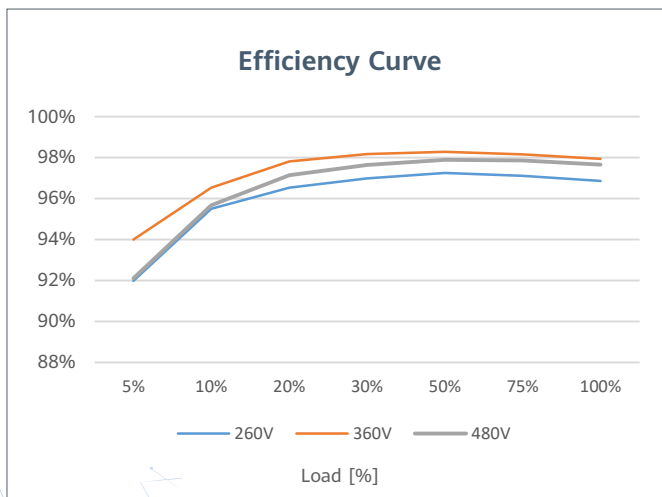
Higher Yields

Up to 30% More
Energy with Optimizer



2x POWER Battery Ready

5KW AC Output plus
5KW Battery Charge



Technical Specification

Technical Specification	SUN2000 -2KTL-L1	SUN2000 -3KTL-L1	SUN2000 -3.68KTL-L1	SUN2000 -4KTL-L1	SUN2000 -4.6KTL-L1	SUN2000 -5KTL-L1	SUN2000 -6KTL-L1 ¹
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Efficiency

Max. efficiency	98.2 %	98.3 %	98.4 %	98.4 %	98.4 %	98.4 %	98.4 %
European weighted efficiency	96.7 %	97.3 %	97.3 %	97.5 %	97.7 %	97.8 %	97.8 %

Input (PV)

Recommended max. PV power ²	3,000 Wp	4,500 Wp	5,520 Wp	6,000 Wp	6,900 Wp	7,500 Wp	9,000 Wp
Max. input voltage	600 V ³						
Start-up voltage	100 V						
MPPT operating voltage range	90 V – 560 V ³						
Rated input voltage	360 V						
Max. input current per MPPT	12.5 A						
Max. short-circuit current	18 A						
Number of MPP trackers	2						
Max. number of inputs	2						

Input (DC Battery)

Compatible Battery	LG Chem RESU 7H_R / 10H_R						
Operating voltage range	350 ~ 450 Vdc						
Max operating current	10 A @7H_R / 15 A @10H_R						
Max charge power	3,500 W @7H_R / 5,000 W @10H_R						
Max discharge Power @7H_R	2,200 W	3,300 W	3,500 W	3,500 W	3,500 W	3,500 W	3,500 W
Max discharge Power @10H_R	2,200 W	3,300 W	3,680 W	4,400 W	4,600 W	5,000 W	5,000 W
Compatible Battery	HUAWEI Smart ESS Battery 5kWh – 30kWh ¹						
Operating voltage range	350 ~ 560 Vdc						
Max operating current	15 A						
Max charge Power	5,000 W ⁴						
Max discharge Power	2,200 W	3,300 W	3,680 W	4,400 W	4,600 W	5,000 W	5,000 W

Output

Grid connection	Single phase						
Rated output power	2,000 W	3,000 W	3,680 W	4,000 W	4,600 W	5,000 W ⁵	6,000 W
Max. apparent power	2,200 VA	3,300 VA	3,680 VA	4,400 VA	5,000 VA ⁶	5,500 VA ⁷	6,000 VA
Rated output voltage	220 Vac / 230 Vac / 240 Vac						
Rated AC grid frequency	50 Hz / 60 Hz						
Max. output current	10 A	15 A	16 A	20 A	23 A ⁸	25 A ⁸	27.3 A
Adjustable power factor	0.8 leading ... 0.8 lagging						
Max. total harmonic distortion	≤ 3 %						
Backup power output	Yes (via Backup Box-5000 ¹)						

Protection & Feature

Anti-Islanding protection	Yes
DC reverse polarity protection	Yes
Insulation monitoring	Yes
DC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11
Residual current monitoring	Yes
AC overcurrent protection	Yes
AC short-circuit protection	Yes
AC overvoltage protection	Yes
Over-heat protection	Yes
Arc fault protection	Yes
Battery reverse charging from grid	Yes

General Data

Operating temperature range	-25 ~ +60 °C (Derating above 45°C @ Rated output power)
Relative operating humidity	0 %RH ~ 100 %RH
Operating altitude	0 ~ 4,000 m (Derating above 2,000 m)
Cooling	Natural convection
Display	LED indicators; integrated WLAN + FusionSolar APP
Communication	RS485, WLAN via inverter built-in WLAN module Ethernet via Smart Dongle-WLAN-FE (Optional); 4G / 3G / 2G via Smart Dongle-4G (Optional)
Weight (incl. mounting bracket)	12.0 kg (26.5 lb)
Dimension (incl. mounting bracket)	365mm * 365mm * 156 mm (14.4 x 14.4 x 6.1 inch)
Degree of protection	IP65

Optimizer Compatibility

DC MBUS compatible optimizer	SUN2000-450W-P
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Standard Compliance (more available upon request)

Safety	EN/IEC 62109-1, EN/IEC 62109-2
Grid connection standards	G98, G99, EN 50549-1, CEI 0-21, VDE-AR-N-4105, AS 4777.2, C10/11, ABNT, UTE C15-712, RD 1699, TOR D4, IEC61727, IEC62116

¹ Available in 2020 Q3.

² Inverter max input PV power is 10,000 Wp when long strings are designed and fully connected with SUN2000-450W-P power optimizers.

³ The maximum input voltage and operating voltage upper limit will be reduced to 495 V when inverter connects and works with LG battery.

⁴ 2,500 W @ 5kWh HUAWEI ESS battery

⁵ AS4777.2: 4999W. ⁶ VDE-AR-N 4105: 4600VA / AS4777.2: 4999VA. ⁷ AS4777.2: 4999VA. ⁸ AS4777.2: 21.7A.