

**TEST REPORT**  
**IEC 61683**  
**Photovoltaic systems – Power conditioners –**  
**Procedure for measuring efficiency**

**Report Number**..... : 64.290.22.30825.01  
**Date of issue**..... : 2022-11-03  
**Total number of pages** ..... : 57


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**Address** ..... : TÜV SÜD Testing Center, D1 building, No. 63 Chuangqi Road, Shilou Town, Panyu District, Guangzhou 511447, China  
**Testing location/ address** ..... : Same as above


**Applicant's name** ..... : AISWEI Technology (Shanghai) Co., Ltd.  
**Address**..... : Room 905B,757 Mengzi Road Huangpu District 200023 Shanghai  
 PEOPLE'S REPUBLIC OF CHINA

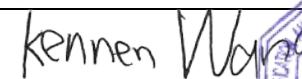
**Test specification:**  
**Standard** ..... : IEC 61683:1999 (First Edition)  
**Test procedure** ..... : Test report  
**Non-standard test method** ..... : N/A

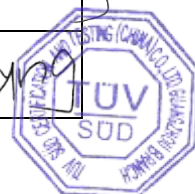
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**Master TRF** ..... : Dated 2014-10

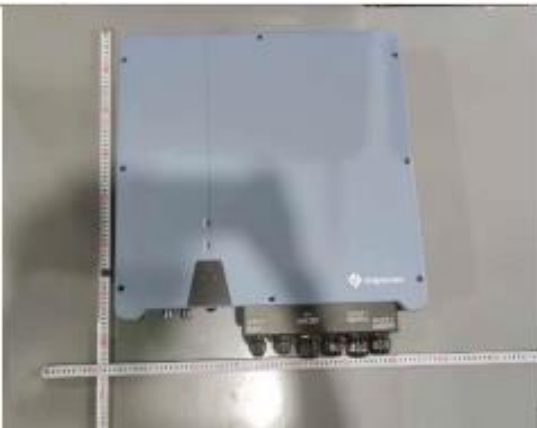


**General disclaimer:**  
 The test results presented in this report relate only to the object tested.

<b>Test item description</b> ..... :	Hybrid Solar Inverter
<b>Trade Mark</b> ..... :	
<b>Manufacturer</b> ..... :	Same as applicant
<b>Model/Type reference</b> ..... :	ASW06kH-T1, ASW08kH-T1, ASW10kH-T1, ASW12kH-T1, ASW15kH-T1
<b>Ratings</b> ..... :	See page 6

<b>Tested by (name + signature)</b> ..... :	Wendy Zhao, Jenn Huang	
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<b>Approved by (name + signature)</b> ..... :	Kennen Wang	
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<b>List of Attachments (including a total number of pages in each attachment):</b> N/A									
<b>Summary of testing:</b>									
<b>Tests performed (name of test and test clause):</b>	<b>Testing location:</b>								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Clause</th> <th>Requirement</th> </tr> </thead> <tbody> <tr> <td>6.2</td> <td>Measurement procedure</td> </tr> <tr> <td>7.1</td> <td>No-load loss</td> </tr> <tr> <td>7.2</td> <td>Standby loss</td> </tr> </tbody> </table>	Clause	Requirement	6.2	Measurement procedure	7.1	No-load loss	7.2	Standby loss	TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch TÜV SÜD Testing Center, D1 building, No. 63 Chuangqi Road, Shilou Town, Panyu District, Guangzhou 511447, China
Clause	Requirement								
6.2	Measurement procedure								
7.1	No-load loss								
7.2	Standby loss								
<b>Summary of compliance with National Differences:</b>									
N/A									
<b>Picture of the product:</b>									
 <p>Front view</p>	 <p>Inside view</p>								
 <p>Terminal view</p>									

Copy of marking plate:



Model: ASW06kH-T1

PV input port	Max. PV input power	9kW
	Max. PV input voltage	dc,1000V
	MPPT voltage range	dc,180-850V
	Full Power MPPT voltage range	dc,250-850V
	Max. PV input current	dc,2*13A
	Isc PV(adsolute maximum)	dc,2*25A
Battery input port	Rated battery voltage	200V
	Battery voltage range	125V-600V
	Rated battery charge /discharge current	dc,40/40A
	Max. battery charge /discharge current	dc,50/50A
	Battery type	Lithium-ion
Grid output/Input port	Rated grid voltage	3W+N+PE,230/400V
	Rated grid frequency	50Hz/60Hz
	Rated output power	6000W
	Max. grid output apparent power	6600VA
	Max. grid output current	ac,9.5A
	Max. grid input apparent power	13200VA
	Max. grid input current	ac,19A
Back-up output port	Rated BACK-UP voltage	3W+N+PE,230/400V
	Rated BACK-UP frequency	50Hz/60Hz
	Max. BACK-UP output apparent power	6600VA
	Max. BACK-UP output current	ac,9.5A
General information	Adjustable cos (φ)	0.8ind...0.8cap
	Operating temperature range	-25.....+60℃
	Inverter topology	Non-Isolated
	Ingress protection	IP65
	Protective class	I
Overvoltage category		II(PV),III(MAINS)



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Model: ASW08kH-T1

PV input port	Max. PV input power	12kW
	Max. PV input voltage	dc,1000V
	MPPT voltage range	dc,180-850V
	Full Power MPPT voltage range	dc,330-850V
	Max. PV input current	dc,2*13A
	Isc PV(adsolute maximum)	dc,2*25A
Battery input port	Rated battery voltage	250V
	Battery voltage range	125V-600V
	Rated battery charge /discharge current	dc,40/40A
	Max. battery charge /discharge current	dc,50/50A
	Battery type	Lithium-ion
Grid output/Input port	Rated grid voltage	3W+N+PE,230/400V
	Rated grid frequency	50Hz/60Hz
	Rated output power	8000W
	Max. grid output apparent power	8800VA
	Max. grid output current	ac,12.7A
	Max. grid input apparent power	17600VA
	Max. grid input current	ac,25.5A
Back-up output port	Rated BACK-UP voltage	3W+N+PE,230/400V
	Rated BACK-UP frequency	50Hz/60Hz
	Max. BACK-UP output apparent power	8800VA
	Max. BACK-UP output current	ac,12.7A
General information	Adjustable cos (φ)	0.8ind...0.8cap
	Operating temperature range	-25.....+60℃
	Inverter topology	Non-Isolated
	Ingress protection	IP65
	Protective class	I
Overvoltage category		II(PV),III(MAINS)



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**Model: ASW10kH-T1**

PV input port	Max. PV input power	15kW
	Max. PV input voltage	dc,1000V
	MPPT voltage range	dc,180-850V
	Full Power MPPT voltage range	dc,430-850V
	Max. PV input current	dc,2*13A
	Isc PV(absolute maximum)	dc,2*25A
Battery input port	Rated battery voltage	300V
	Battery voltage range	125V-600V
	Rated battery charge /discharge current	dc,40/40A
	Max. battery charge /discharge current	dc,50/50A
	Battery type	Lithium-ion
Grid output/Input port	Rated grid voltage	3W+N+PE,230/400V
	Rated grid frequency	50Hz/60Hz
	Rated output power	10000W
	Max. grid output apparent power	11000VA
	Max. grid output current	ac,15.9A
	Max. grid input apparent power	22000VA
	Max. grid input current	ac,31.9A
Back-up output port	Rated BACK-UP voltage	3W+N+PE,230/400V
	Rated BACK-UP frequency	50Hz/60Hz
	Max. BACK-UP output apparent power	11000VA
	Max. BACK-UP output current	ac,15.9A
General information	Adjustable cos (φ)	0.8ind...0.8cap
	Operating temperature range	-25.....+60°C
	Inverter topology	Non-Isolated
	Ingress protection	IP65
	Protective class	I
Overvoltage category		II(PV),III(MAINS)



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**Model: ASW12kH-T1**

PV input port	Max. PV input power	18kW
	Max. PV input voltage	dc,1000V
	MPPT voltage range	dc,180-850V
	Full Power MPPT voltage range	dc,510-850V
	Max. PV input current	dc,2*13A
	Isc PV(absolute maximum)	dc,2*25A
Battery input port	Rated battery voltage	350V
	Battery voltage range	125V-600V
	Rated battery charge /discharge current	dc,40/40A
	Max. battery charge /discharge current	dc,50/50A
	Battery type	Lithium-ion
Grid output/Input port	Rated grid voltage	3W+N+PE,230/400V
	Rated grid frequency	50Hz/60Hz
	Rated output power	12000W
	Max. grid output apparent power	13200VA
	Max. grid output current	ac,19.1A
	Max. grid input apparent power	26400VA
	Max. grid input current	ac,38.2A
Back-up output port	Rated BACK-UP voltage	3W+N+PE,230/400V
	Rated BACK-UP frequency	50Hz/60Hz
	Max. BACK-UP output apparent power	13200VA
	Max. BACK-UP output current	ac,19.1A
General information	Adjustable cos (φ)	0.8ind...0.8cap
	Operating temperature range	-25.....+60°C
	Inverter topology	Non-Isolated
	Ingress protection	IP65
	Protective class	I
Overvoltage category		II(PV),III(MAINS)



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**Model: ASW15kH-T1**

PV input port	Max. PV input power	22.5kW
	Max. PV input voltage	dc,1000V
	MPPT voltage range	dc,180-850V
	Full Power MPPT voltage range	dc,620-850V
	Max. PV input current	dc,2*13A
	Isc PV(absolute maximum)	dc,2*25A
Battery input port	Rated battery voltage	400V
	Battery voltage range	125V-600V
	Rated battery charge /discharge current	dc,40/40A
	Max. battery charge /discharge current	dc,50/50A
	Battery type	Lithium-ion
Grid output/input port	Rated grid voltage	3W+N+PE,230/400V
	Rated grid frequency	50Hz/60Hz
	Rated output power	15000W
	Max. grid output apparent power	16500VA
	Max. grid output current	ac,23.8A
	Max. grid input apparent power	30000VA
Back-up output port	Rated BACK-UP voltage	3W+N+PE,230/400V
	Rated BACK-UP frequency	50Hz/60Hz
	Max. BACK-UP output apparent power	16500VA
	Max. BACK-UP output current	ac,23.8A
General information	Adjustable cos ( φ)	0.8ind...0.8cap
	Operating temperature range	-25.....+60°C
	Inverter topology	Non-Isolated
	Ingress protection	IP65
	Protective class	I
Overvoltage category		II(PV),III(MAINS)



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Remark: For application of this standard, the nominal voltage is 230/400 Va.c., nominal frequency is 50Hz, the Pmax equal rated output power.



<b>Test item particulars..... :</b>
<b>Classification of installation and use..... :</b> Indoor or outdoor
<b>Supply Connection ..... :</b> Permanent connection
<b>Possible test case verdicts:</b> - test case does not apply to the test object ..... : N/A - test object does meet the requirement..... : P (Pass) - test object does not meet the requirement..... : F (Fail)



<b>Testing</b> ..... :	
<b>Date of receipt of test item</b> ..... : 2022-07-05; 2022-10-13	
<b>Date (s) of performance of tests</b> ..... : 2022-07-06 to 2022-10-06; 2022-10-13 to 2022-11-03	
<b>General remarks:</b>	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC62109-2:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....	<input type="checkbox"/> <b>Yes</b> <input checked="" type="checkbox"/> <b>Not applicable</b>
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies)</b> ..... : AISWEI New Energy Technology (Yangzhong) Co., Ltd. No.588 Gangxing Road, Economic Development Zone, 212200 Yangzhong PEOPLE'S REPUBLIC OF CHINA	
<b>General product information:</b>	
<ol style="list-style-type: none"> <li>1) The unit is non-isolated (transformerless) Hybrid Solar Inverter for connection with public low voltage grid, for outdoor use. It has below operated modes: <ul style="list-style-type: none"> <li>• PV to Grid mode;</li> <li>• PV to Load mode;</li> <li>• Grid to Battery charge mode;</li> <li>• Battery to Grid discharge mode;</li> <li>• Battery to Load discharge mode.</li> </ul> </li> <li>2) If certain functions are not permitted by local regulation, the function shall be disabled by hardware or software setting (if applicable) by the manufacturer before putting into the market. For example, it's not permissible to draw electricity from the grid and then feed it back in order to claim statutory reimbursement in some nations.</li> <li>3) Low voltage electrical installations shall comply with national and local regulation. Only qualified electricians are allowed to install and maintain the converter.</li> <li>4) In order to protect the inverter, user and installer, external DC and AC circuit breaker shall be equipped for all source port (battery, AC grid) at the end-use application.</li> <li>5) Software version: ARM: V1.03.08, DSP: V1.02.11</li> </ol>	

**Model differences:**

All models have same electrical schematic diagram and same software setting and control program except for different power output, The differences of ASW06kH-T1, ASW08kH-T1, ASW10kH-T1, ASW12kH-T1, ASW15kH-T1 as below table:

No	Component	Usage amount		
		ASW06kH-T1, ASW08kH-T1, ASW10kH-T1	ASW12kH-T1	ASW15kH-T1
1	IGBT (ST#STGWA40H120DF)	Quantity 2 (IGBT2-IGBT3)	Quantity 4 (IGBT1-IGBT4)	Quantity 4 (IGBT1-IGBT4)
2	IGBT (IKW40N120CS6)	Quantity 6 (IGBT10, IGBT13, IGBT14, IGBT16, IGBT19, IGBT20)		Quantity 12 (IGBT10-IGBT21)
3	Inductor	PV:1.2mH±10%@0A"0.7mH±10%@15A0.7mH±10%@15A" INV: 1.5mH±10%@0A0.77mH±10%@20.4Apk BAT: 0.44mH±10%@0A0.21mH±10%@50A*2PCS		PV:1.5mH±10%@0A 0.6mH±10%@25A INV:1mH±10%@0A0. 42mH±10%@30A BAT:0.44mH±10%@ 0A0.21mH±10%@50 A

**Inverter rating:**

Model	ASW06k H-T1	ASW08k H-T1	ASW10k H-T1	ASW12k H-T1	ASW15k H-T1
<b>Battery terminal parameters</b>					
Rated battery DC voltage	200 Vd.c.	250 Vd.c.	300 Vd.c.	350 Vd.c.	400 Vd.c.
Battery DC voltage range	125-600 Vd.c.				
Max charging / discharging current	50 Ad.c.				
Battery type	Lithium-ion				
Maximum charge/discharge power	15000 W				
<b>PV terminal parameters</b>					
Max. Input Power	9000 W	12000 W	15000 W	18000 W	22500 W
Maximum DC input voltage	1000 Vd.c.				
MPPT Range	180~850 Vd.c.				
MPPT Range (full load)	250~850 Vd.c.	330~850 Vd.c.	430~850 Vd.c.	510~850 Vd.c.	620~850 Vd.c.
Max. Input Current	2*13 Ad.c.				
Isc PV	2*25 Ad.c.				
<b>Grid terminal parameters</b>					
Rated output Power	6000 W	8000 W	10000 W	12000 W	15000 W
Maximum continuous output apparent power	6600 VA	8800 VA	11000 VA	13200 VA	16500 VA
Max. AC output current	9.5 Aa.c.	12.7 Aa.c.	15.9 Aa.c.	19.1 Aa.c.	23.8 Aa.c.
Maximum continuous input apparent power	13200 VA	17600 VA	22000 VA	26400 VA	33000 VA
Max. AC input current	19 Aa.c.	25.5 Aa.c.	31.9 Aa.c.	38.2 Aa.c.	47.6 Aa.c.
Rated AC voltage	230/400 Va.c., 3W+N+PE				
Rated AC frequency	50 Hz				
Power factor	0.9 lagging to 0.9 leading				
<b>Backup terminal parameters</b>					
Rated apparent power	6000 VA	8000 VA	10000 VA	12000 VA	15000 VA
Maximum continuous output apparent power	6600 VA	8800 VA	11000 VA	13200 VA	16500 VA
Max. AC current	9.5 Aa.c.	12.7 Aa.c.	15.9 Aa.c.	19.1 Aa.c.	23.8 Aa.c.
Rated AC voltage	230/400 Va.c., 3W+N+PE				
Rated AC frequency	50 Hz				



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Clause	Requirement – Test	Measuring result – Remark	Verdict
4	Efficiency measurement conditions		P
	Efficiency is measured under the conditions in the following clauses.		P
	Specific conditions may be excluded by mutual agreement when those conditions are outside the manufacturer's allowable operating range.		P
4.1	DC power source for testing		P
	For power conditioners operating with fixed input voltage, the d.c. power source is a storage battery or constant voltage power source to maintain the input voltage.	Constant voltage power source is used	P
	For power conditioners that employ maximum power point tracking (MPPT) and shunt-type power conditioners, either a photovoltaic array or a photovoltaic array simulator is utilized.		N/A
4.2	Temperature		P
	All measurements are to be made at an ambient temperature of $25\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ .		P
	Other ambient temperatures may be allowed by mutual agreement. However, the temperature used must be clearly stated in all documentation.		N/A
4.3	Output voltage and frequency		P
	The output voltage and frequency are maintained at the manufacturer's stated nominal values.	See appended table	P
4.4	Input voltage		P
	Measurements performed in each of the following tests are repeated at three power conditioner input voltages: a) manufacturer's minimum rated input voltage; b) the inverter's nominal voltage or the average of its rated input range; c) 90 % of the inverter's maximum input voltage.	See appended table	P
	In the case where a power conditioner is to be connected with a battery at its input terminals, only the nominal or rated input voltage may be applied.		P
4.5	Ripple and distortion		P
	Record input voltage and current ripple for each measurement. Also record output voltage and current distortion (if a.c.) or ripple (if d.c.). Ensure that these measurements remain within the manufacturer's specified values.		P
4.6	Resistive loads/utility grid		P
	At unity power factor, or at the intrinsic power factor of grid-connected inverters without power factor adjustment, measure the efficiency for power levels of 10 %, 25 %, 50 %, 75 %, 100 %	The PV inverter cannot output 120% of the nominal power The Pmax equal rated output power	P

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Clause	Requirement – Test	Measuring result – Remark	Verdict

	and 120 % of the inverter's rating.		
	Stand-alone inverters are also measured at a power level of 5 % of rated. The power conditioner test is conducted with a specified resistive and reactive grid impedance.		N/A
4.7	Reactive loads		N/A
	For stand-alone inverters, measure the efficiency with a load which provides a power factor equal to the manufacturer's specified minimum level (or 0,25, whichever is greater) and at power levels of 25 %, 50 % and 100 % of rated VA.		N/A
	Repeat for power factors of 0,5 and 0,75 (do not go below the manufacturer's specified minimum PF) and power levels of 25 %, 50 %, and 100 % of rated VA.		N/A
4.8	Resistive plus non-linear loads		N/A
	For stand-alone inverters, measure the efficiency with a fixed non-linear load (total harmonic distortion (THD) = $(80 \pm 5) \%$ ) equal to $(25 \pm 5) \%$ of the inverter's rated VA plus sufficient resistive load in parallel to achieve a total load of 25 %, 50 % and 100 % of rated VA.		N/A
	Repeat the measurements with a fixed non-linear load equivalent to $(50 \pm 5) \%$ of the inverter's rated VA plus sufficient resistive load in parallel to achieve a total load of 50% and 100% of rated VA.		N/A
	The type of non-linear load must be clearly stated in all documentation.		N/A
4.9	Complex loads		N/A
	When a non-linear plus a sufficient reactive load condition is specified for stand-alone inverters, measure the efficiency with a fixed non-linear load (THD = $(80 \pm 5) \%$ ) equal to $(50 \pm 5) \%$ of the inverter's rated VA plus a sufficient reactive load (PF = 0,5) in parallel to achieve a total load of 50 % and 100 % of rated VA.		N/A
	The type of complex load is clearly stated in all documentation.		N/A

5	Efficiency calculations		P
5.1	Rated output efficiency		P
5.2	Partial output efficiency		P
5.3	Energy efficiency		P
5.4	Efficiency tolerances		N/A

6	Conditions of loading for output ports		P
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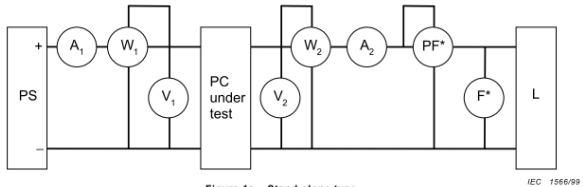
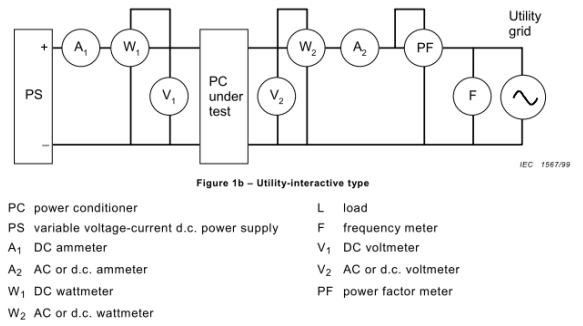
Clause	Requirement – Test	Measuring result – Remark	Verdict
6.1	Test circuit		P
	Figure 1a is applied to standard-alone power conditioners		P
	 <p style="text-align: center;">Figure 1a – Stand-alone type <span style="float: right;">IEC 1566/99</span></p>		P
	Figure 1b is applied to utility-interactive power conditioners		P
	 <p style="text-align: center;">Figure 1b – Utility-interactive type <span style="float: right;">IEC 1567/99</span></p> <p>       PS power conditioner        PS variable voltage-current d.c. power supply        A<sub>1</sub> DC ammeter        A<sub>2</sub> AC or d.c. ammeter        W<sub>1</sub> DC wattmeter        W<sub>2</sub> AC or d.c. wattmeter        L load        F frequency meter        V<sub>1</sub> DC voltmeter        V<sub>2</sub> AC or d.c. voltmeter        PF power factor meter     </p>		P
6.2	Measurement procedure		P
7	Loss measurement		P
7.1	No-load loss		P
7.2	Standby loss		P
Annex A	Power conditioner description		P
Annex B	Power efficiency and conversion factor		P
Annex C	Weighted-average energy efficiency		N/A
Annex D	Derivation of efficiency tolerance in table 2		N/A

TABLE		Efficiency recording and efficient calculation sheet				
power conditioner type	PV-GRID Connected					
Model:	ASW06kH-T1					
Parameters of power conditioner	Minimum rated input voltage: <u>250</u> V Nominal voltage: <u>700</u> V Maximum input voltage: <u>850</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>6000</u> W					
PV input voltage	Manufacturer's minimum rated input voltage					
Temperature (°C)	<u>25.0</u> °C					
Operating period for energy measurement (min)	<u>3</u> mins					
Percentage of rated output VA	10%	25%	50%	75%	100%	
Input voltage (V)	249.55	249.50	249.48	249.32	249.16	
Input current (A)	2.51	6.23	12.02	18.38	24.83	
Output voltage (V)	230.24	230.30	230.30	230.45	230.59	
Output current (A)	0.87	2.18	4.27	6.48	8.64	
Input power (Pi) (W)	627.06	1555.15	2998.70	4582.59	6187.02	
Output power (Po) (W)	593.55	1492.99	2925.26	4460.56	5964.45	
Output efficiency (%)	94.66	96.00	97.55	97.34	96.40	
Input energy (Wi) (Wh)	31.35	77.75	149.9	229.13	309.35	
Output energy (Wo) (Wh)	29.68	74.65	146.26	223.03	298.22	
Energy conversion efficiency (%)	94.66	96.00	97.55	97.34	96.40	
PV input voltage	The inverter's nominal voltage					
Temperature (°C)	<u>25.0</u> °C					
Operating period for energy measurement (min)	<u>3</u> mins					
Percentage of rated output VA	10%	25%	50%	75%	100%	
Input voltage (V)	699.76	699.73	699.70	699.65	699.60	
Input current (A)	0.90	2.22	4.30	6.59	8.77	
Output voltage (V)	230.24	230.30	230.29	230.45	230.10	
Output current (A)	0.87	2.19	4.30	6.52	8.67	
Input power (Pi) (W)	627.23	1554.94	3005.75	4606.02	6132.69	

Output power (Po) (W)	597.49	1503.25	2944.81	4491.00	5968.86
Output efficiency (%)	95.26	96.68	97.97	97.50	97.33
Input energy (Wi) (Wh)	31.36	77.74	150.28	230.30	306.63
Output energy (Wo) (Wh)	29.87	75.16	147.24	224.55	298.44
Energy conversion efficiency (%)	95.26	96.68	97.97	97.50	97.33
PV input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	25.0 °C				
Operating period for energy measurement (min)	3 mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	850.53	850.51	850.51	850.01	849.87
Input current (A)	0.75	1.82	3.59	5.40	7.22
Output voltage (V)	230.24	230.29	230.29	230.44	230.10
Output current (A)	0.88	2.16	4.33	6.46	8.60
Input power (Pi) (W)	633.52	1536.33	3032.97	4571.49	6121.82
Output power (Po) (W)	601.13	1479.56	2959.23	4444.63	5923.24
Output efficiency (%)	94.89	96.31	97.57	97.22	96.76
Input energy (Wi) (Wh)	31.67	76.81	151.64	228.57	306.09
Output energy (Wo) (Wh)	30.06	73.98	147.96	222.23	296.16
Energy conversion efficiency (%)	94.89	96.31	97.57	97.23	96.76
Remark: N/A					

TABLE		Efficiency recording and efficient calculation sheet				
power conditioner type	PV-GRID Connected					
Model:	ASW08kH-T1					
Parameters of power conditioner	Minimum rated input voltage: <u>330</u> V Nominal voltage: <u>700</u> V Maximum input voltage: <u>850</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>8000</u> W					
PV input voltage	Manufacturer's minimum rated input voltage					
Temperature (°C)	<u>25.0</u> °C					
Operating period for energy measurement (min)	<u>3</u> mins					
Percentage of rated output VA	10%	25%	50%	75%	100%	
Input voltage (V)	329.66	329.57	329.44	329.28	329.14	
Input current (A)	2.52	6.10	12.39	18.55	25.11	
Output voltage (V)	230.08	230.20	230.41	230.11	230.32	
Output current (A)	1.21	2.83	5.77	8.60	11.56	
Input power (Pi) (W)	826.79	2009.12	4081.55	6106.76	8263.58	
Output power (Po) (W)	782.50	1929.10	3968.42	5925.99	7973.27	
Output efficiency (%)	94.64	96.02	97.23	97.04	96.49	
Input energy (Wi) (Wh)	41.33	100.45	204.07	305.33	413.17	
Output energy (Wo) (Wh)	39.12	96.46	198.42	296.30	398.66	
Energy conversion efficiency (%)	94.64	96.02	97.23	97.04	96.49	
PV input voltage	The inverter's nominal voltage					
Temperature (°C)	<u>25.0</u> °C					
Operating period for energy measurement (min)	<u>3</u> mins					
Percentage of rated output VA	10%	25%	50%	75%	100%	
Input voltage (V)	700.20	700.14	699.64	699.55	699.47	
Input current (A)	1.22	2.97	5.80	8.78	11.71	
Output voltage (V)	230.09	230.21	230.41	230.11	230.32	
Output current (A)	1.25	2.95	5.77	8.72	11.56	
Input power (Pi) (W)	850.87	2078.78	4052.80	6136.97	8187.27	

Output power (Po) (W)	810.73	2009.46	3968.57	6007.83	7974.17
Output efficiency (%)	95.28	96.67	97.92	97.90	97.40
Input energy (Wi) (Wh)	42.54	103.93	202.64	306.84	409.36
Output energy (Wo) (Wh)	40.54	100.47	198.43	300.39	398.71
Energy conversion efficiency (%)	95.28	96.67	97.92	97.90	97.40
PV input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	849.98	850.50	850.35	850.11	849.89
Input current (A)	1.08	2.43	4.74	7.23	9.61
Output voltage (V)	230.09	230.20	230.40	230.61	230.31
Output current (A)	1.22	2.89	5.71	8.64	11.49
Input power (Pi) (W)	817.91	2040.31	4019.21	6136.39	8153.33
Output power (Po) (W)	776.86	1963.17	3922.43	5962.80	7929.17
Output efficiency (%)	94.98	96.22	97.59	97.17	97.25
Input energy (Wi) (Wh)	40.89	102.01	200.96	306.82	407.66
Output energy (Wo) (Wh)	38.84	98.16	196.12	298.14	396.46
Energy conversion efficiency (%)	94.98	96.22	97.59	97.17	97.25
Remark: N/A					

TABLE		Efficiency recording and efficient calculation sheet				
power conditioner type	PV-GRID Connected					
Model:	ASW10kH-T1					
Parameters of power conditioner	Minimum rated input voltage: <u>430</u> V Nominal voltage: <u>700</u> V Maximum input voltage: <u>850</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>10000</u> W					
PV input voltage	Manufacturer's minimum rated input voltage					
Temperature (°C)	<u>25.0</u> °C					
Operating period for energy measurement (min)	<u>3</u> mins					
Percentage of rated output VA	10%	25%	50%	75%	100%	
Input voltage (V)	429.76	429.67	429.56	429.55	429.24	
Input current (A)	2.54	5.86	11.81	17.91	23.80	
Output voltage (V)	230.11	230.24	230.49	230.26	230.01	
Output current (A)	1.57	3.56	7.20	10.87	14.40	
Input power (Pi) (W)	1092.16	2517.40	5070.23	7693.14	10216.71	
Output power (Po) (W)	1038.91	2433.78	4964.65	7495.61	9924.43	
Output efficiency (%)	95.13	96.68	97.92	97.43	97.14	
Input energy (Wi) (Wh)	54.60	125.87	253.65	384.95	511.26	
Output energy (Wo) (Wh)	51.95	121.69	248.37	375.06	496.64	
Energy conversion efficiency (%)	95.13	96.68	97.92	97.43	97.14	
PV input voltage	The inverter's nominal voltage					
Temperature (°C)	<u>25.0</u> °C					
Operating period for energy measurement (min)	<u>3</u> mins					
Percentage of rated output VA	10%	25%	50%	75%	100%	
Input voltage (V)	700.22	699.80	699.68	699.59	699.45	
Input current (A)	1.41	3.72	7.23	10.96	14.55	
Output voltage (V)	230.10	230.25	230.49	230.26	230.01	
Output current (A)	1.44	3.70	7.21	10.87	14.40	



Input power (Pi) (W)	983.67	2600.78	5058.17	7666.69	10178.68
Output power (Po) (W)	940.98	2532.71	4968.01	7498.96	9927.60
Output efficiency (%)	95.66	97.38	98.22	97.81	97.53
Input energy (Wi) (Wh)	49.18	130.13	252.91	383.48	509.22
Output energy (Wo) (Wh)	47.05	126.72	248.40	375.09	496.66
Energy conversion efficiency (%)	95.66	97.38	98.22	97.81	97.53
PV input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	850.03	850.47	850.31	849.90	849.81
Input current (A)	1.32	3.04	5.92	9.00	12.07
Output voltage (V)	230.11	230.24	230.48	230.24	230.52
Output current (A)	1.53	3.64	7.14	10.81	14.44
Input power (Pi) (W)	1049.11	2567.25	5015.69	7635.17	10243.68
Output power (Po) (W)	999.88	2485.60	4919.27	7454.03	9971.29
Output efficiency (%)	95.31	96.82	98.08	97.63	97.34
Input energy (Wi) (Wh)	52.45	128.36	250.78	381.75	512.18
Output energy (Wo) (Wh)	49.99	124.28	245.96	372.70	498.56
Energy conversion efficiency (%)	95.31	96.82	98.08	97.63	97.34
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet
power conditioner type	PV-GRID Connected
Model:	ASW12kH-T1
Parameters of power conditioner	Minimum rated input voltage: <u>510</u> V Nominal voltage: <u>700</u> V Maximum input voltage: <u>850</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>12000</u> W
PV input voltage	Manufacturer's minimum rated input voltage
Temperature (°C)	<u>25.0</u> °C

Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	509.77	509.69	509.53	509.37	509.25
Input current (A)	2.53	6.00	12.01	17.94	24.19
Output voltage (V)	230.12	230.29	230.10	230.40	230.22
Output current (A)	1.84	4.32	8.70	12.91	17.33
Input power (Pi) (W)	1285.40	3056.71	6117.18	9136.94	12315.53
Output power (Po) (W)	1225.45	2956.96	5990.81	8909.73	11958.63
Output efficiency (%)	95.34	96.74	97.93	97.51	97.10
Input energy (Wi) (Wh)	64.26	152.93	306.10	457.28	615.77
Output energy (Wo) (Wh)	61.27	147.95	299.80	445.91	597.93
Energy conversion efficiency (%)	95.34	96.74	97.94	97.51	97.10
PV input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	700.08	699.77	699.64	699.50	699.39
Input current (A)	1.76	4.36	8.73	13.02	17.56
Output voltage (V)	230.13	230.30	230.11	230.41	230.23
Output current (A)	1.75	4.32	8.71	12.92	17.34
Input power (Pi) (W)	1224.87	3048.20	6106.31	9109.12	12278.86
Output power (Po) (W)	1170.04	2960.72	5998.89	8918.28	11962.67
Output efficiency (%)	95.52	97.13	98.24	97.91	97.42
Input energy (Wi) (Wh)	615.77	152.41	305.31	455.62	613.94
Output energy (Wo) (Wh)	597.93	148.04	299.94	446.08	598.13
Energy conversion efficiency (%)	97.10	97.13	98.24	97.90	97.43
PV input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				

Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	849.88	850.42	850.17	849.97	849.77
Input current (A)	1.48	3.56	7.15	10.84	14.42
Output voltage (V)	230.13	230.30	230.10	230.42	230.24
Output current (A)	1.71	4.26	8.65	13.04	17.28
Input power (Pi) (W)	1185.16	3006.65	6069.31	9207.74	12248.91
Output power (Po) (W)	1128.97	2914.59	5951.45	8999.90	11923.60
Output efficiency (%)	95.26	96.94	98.06	97.74	97.34
Input energy (Wi) (Wh)	58.64	150.33	303.64	460.38	612.44
Output energy (Wo) (Wh)	55.85	145.73	297.74	450.00	596.18
Energy conversion efficiency (%)	95.23	96.94	98.06	97.74	97.34
Remark:	N/A				

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	PV-GRID connected				
Model:	ASW15kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>620</u> V Nominal voltage: <u>700</u> V Maximum input voltage: <u>850</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>15000</u> W				
PV input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	619.71	619.59	619.50	619.26	619.14
Input current (A)	2.51	6.25	12.43	230.16	230.58
Output voltage (V)	230.16	230.39	230.28	18.50	24.89
Output current (A)	2.20	5.46	10.95	16.24	21.72
Input power (Pi) (W)	1553.14	3869.08	7698.04	11452.13	15410.07
Output power (Po) (W)	1483.56	3752.75	7552.65	11203.58	15012.91
Output efficiency (%)	95.55	96.99	98.11	97.83	97.42

Input energy (Wi) (Wh)	77.66	193.45	384.90	572.60	770.50
Output energy (Wo) (Wh)	74.17	187.64	377.63	560.18	750.65
Energy conversion efficiency (%)	95.55	96.99	98.11	97.83	97.42
PV input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	700.19	699.66	699.51	699.36	699.25
Input current (A)	2.22	5.51	10.96	16.34	21.96
Output voltage (V)	230.17	230.39	230.28	230.16	230.58
Output current (A)	2.20	5.46	10.95	16.25	21.72
Input power (Pi) (W)	1553.06	3850.83	7663.44	11423.43	15350.58
Output power (Po) (W)	1485.06	3755.03	7552.23	11207.12	15012.92
Output efficiency (%)	95.62	97.51	98.55	98.11	97.80
Input energy (Wi) (Wh)	77.65	192.54	383.38	571.17	767.75
Output energy (Wo) (Wh)	74.25	187.75	377.82	560.36	750.86
Energy conversion efficiency (%)	95.62	97.51	98.55	98.11	97.80
PV input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	850.20	850.20	850.20	849.73	849.70
Input current (A)	1.83	4.50	9.00	13.42	18.07
Output voltage (V)	230.16	230.38	230.27	230.15	230.57
Output current (A)	2.14	5.40	10.89	16.19	21.67
Input power (Pi) (W)	1510.01	3814.36	7644.76	11395.78	15342.81
Output power (Po) (W)	1439.50	3707.94	7510.90	11165.10	14978.73
Output efficiency (%)	95.33	97.21	98.25	97.98	97.63
Input energy (Wi) (Wh)	75.50	190.72	382.23	569.78	767.36

Output energy (Wo) (Wh)	71.97	185.40	375.55	558.26	749.15
Energy conversion efficiency (%)	95.33	97.21	98.25	97.98	97.63
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	PV to load mode				
Model:	ASW06kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>250</u> V Nominal voltage: <u>700</u> V Maximum input voltage: <u>850</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>6000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	249.89	249.83	249.73	249.87	249.81
Input current (A)	2.63	6.30	12.37	18.54	24.89
Output voltage (V)	230.46	230.36	230.18	230.17	230.17
Output current (A)	0.91	2.19	4.36	6.52	8.70
Input power (Pi) (W)	656.90	1573.46	3087.98	4632.63	6217.93
Output power (Po) (W)	621.99	1509.70	3012.17	4502.58	6005.60
Output efficiency (%)	94.69	95.95	97.54	97.19	96.59
Input energy (Wi) (Wh)	32.84	78.66	154.42	231.64	310.92
Output energy (Wo) (Wh)	31.07	75.52	150.62	225.23	300.28
Energy conversion efficiency (%)	94.60	96.01	97.54	97.24	96.58
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	700.39	700.23	700.01	700.36	699.90

Input current (A)	0.91	2.25	4.40	6.60	8.82
Output voltage (V)	230.48	230.36	230.18	230.17	230.17
Output current (A)	0.88	2.21	4.37	6.53	8.69
Input power (Pi) (W)	633.94	1576.28	3076.32	4622.25	6172.67
Output power (Po) (W)	603.78	1525.89	3013.55	4505.92	6000.16
Output efficiency (%)	95.24	96.80	97.96	97.48	97.21
Input energy (Wi) (Wh)	31.68	78.82	153.84	231.11	308.62
Output energy (Wo) (Wh)	30.22	76.28	150.70	225.37	299.93
Energy conversion efficiency (%)	95.38	96.78	97.96	97.52	97.18
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	850.50	850.53	850.51	850.55	850.53
Input current (A)	0.75	1.86	3.62	5.45	7.30
Output voltage (V)	230.46	230.35	230.17	230.16	230.17
Output current (A)	0.88	2.21	4.35	6.53	8.70
Input power (Pi) (W)	637.88	1582.71	3076.08	4631.79	6202.08
Output power (Po) (W)	604.60	1525.08	3002.56	4506.48	6006.14
Output efficiency (%)	94.78	96.36	97.61	97.29	96.84
Input energy (Wi) (Wh)	31.88	79.10	153.87	231.62	310.00
Output energy (Wo) (Wh)	30.19	76.25	150.17	225.25	300.33
Energy conversion efficiency (%)	94.68	96.39	97.59	97.25	96.88
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet
power conditioner type	PV to load mode
Model:	ASW08kH-T1
Parameters of power conditioner	Minimum rated input voltage: <u>330</u> V Nominal voltage: <u>700</u> V Maximum input voltage: <u>850</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>8000</u> W

BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	329.43	329.50	329.43	329.49	329.34
Input current (A)	2.61	6.33	12.54	18.81	25.18
Output voltage (V)	230.43	230.32	230.07	230.07	230.07
Output current (A)	1.18	2.90	5.83	8.72	11.59
Input power (Pi) (W)	859.85	2086.34	4131.54	6196.21	8292.71
Output power (Po) (W)	815.68	2002.41	4023.05	6013.42	7993.34
Output efficiency (%)	94.86	95.98	97.37	97.05	96.39
Input energy (Wi) (Wh)	43.01	104.34	206.61	309.84	414.56
Output energy (Wo) (Wh)	40.82	100.21	201.13	300.72	399.79
Energy conversion efficiency (%)	94.89	96.04	97.34	97.06	96.44
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	700.32	700.37	700.32	700.37	700.37
Input current (A)	1.20	2.98	5.85	8.79	11.75
Output voltage (V)	230.45	230.32	230.07	230.08	230.07
Output current (A)	1.16	2.92	5.81	8.70	11.59
Input power (Pi) (W)	838.94	2086.54	4094.44	6153.74	8222.76
Output power (Po) (W)	799.18	2016.53	4008.38	5999.27	7994.97
Output efficiency (%)	95.26	96.64	97.90	97.49	97.23
Input energy (Wi) (Wh)	41.95	104.30	204.68	307.70	411.29
Output energy (Wo) (Wh)	39.96	100.89	200.51	300.01	399.72
Energy conversion efficiency (%)	95.27	96.73	97.97	97.50	97.19
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				

Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	850.50	850.51	850.54	850.52	850.48
Input current (A)	0.99	2.46	4.82	7.29	9.73
Output voltage (V)	230.44	230.31	230.07	230.07	230.07
Output current (A)	1.16	2.91	5.79	8.72	11.59
Input power (Pi) (W)	843.09	2086.83	4094.16	6189.69	8263.46
Output power (Po) (W)	800.80	2011.82	3997.76	6013.88	7996.69
Output efficiency (%)	94.98	96.41	97.65	97.16	96.77
Input energy (Wi) (Wh)	42.18	104.35	204.73	309.36	413.27
Output energy (Wo) (Wh)	40.02	100.53	199.87	300.76	399.72
Energy conversion efficiency (%)	94.88	96.33	97.62	97.22	96.72
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	PV to load mode				
Model:	ASW10kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>430</u> V Nominal voltage: <u>700</u> V Maximum input voltage: <u>850</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>10000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	430.28	430.26	430.20	430.30	430.31
Input current (A)	2.48	6.04	11.89	17.94	23.90
Output voltage (V)	230.44	230.26	229.97	229.97	229.97
Output current (A)	1.48	3.64	7.26	10.90	14.46
Input power (Pi) (W)	1067.80	2598.38	5113.33	7718.71	10282.30
Output power (Po) (W)	1018.19	2510.73	5004.21	7518.11	9970.01
Output efficiency (%)	95.35	96.63	97.87	97.40	96.96



Input energy (Wi) (Wh)	53.40	129.95	255.64	385.88	514.21
Output energy (Wo) (Wh)	50.86	125.55	250.21	375.91	498.57
Energy conversion efficiency (%)	95.24	96.62	97.88	97.42	96.96
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	700.39	700.33	700.33	700.34	700.18
Input current (A)	1.51	3.70	7.29	10.98	14.67
Output voltage (V)	230.44	230.25	229.97	229.97	229.97
Output current (A)	1.46	3.65	7.28	10.91	14.50
Input power (Pi) (W)	1056.58	2589.77	5105.02	7685.46	10266.80
Output power (Po) (W)	1008.14	2518.01	5018.50	7522.16	10003.30
Output efficiency (%)	95.42	97.23	98.31	97.88	97.43
Input energy (Wi) (Wh)	52.82	129.54	255.30	384.38	513.16
Output energy (Wo) (Wh)	50.38	125.96	250.97	376.07	500.20
Energy conversion efficiency (%)	95.39	97.24	98.30	97.84	97.48
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	850.45	850.44	850.51	850.51	850.44
Input current (A)	1.24	3.06	6.03	9.05	12.14
Output voltage (V)	230.42	230.25	229.96	229.96	229.96
Output current (A)	1.46	3.65	7.28	10.89	14.53
Input power (Pi) (W)	1052.53	2596.40	5121.29	7690.86	10314.70
Output power (Po) (W)	1006.15	2518.96	5018.24	7510.67	10019.50
Output efficiency (%)	95.59	97.02	97.99	97.66	97.14
Input energy (Wi) (Wh)	52.64	129.77	256.10	384.45	515.59
Output energy (Wo) (Wh)	50.32	125.92	250.92	375.44	501.03

Energy conversion efficiency (%)	95.60	97.03	97.98	97.66	97.18
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	PV to load mode				
Model:	ASW12kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>510</u> V Nominal voltage: <u>700</u> V Maximum input voltage: <u>850</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>12000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	509.60	510.28	510.23	510.32	510.27
Input current (A)	2.47	6.11	12.09	18.16	24.27
Output voltage (V)	230.41	230.19	229.82	229.83	229.83
Output current (A)	1.74	4.36	8.73	13.09	17.42
Input power (Pi) (W)	1259.51	3114.73	6164.11	9264.36	12379.60
Output power (Po) (W)	1198.53	3011.39	6018.25	9019.37	12004.60
Output efficiency (%)	95.16	96.68	97.63	97.36	96.97
Input energy (Wi) (Wh)	62.96	155.67	308.32	463.34	619.08
Output energy (Wo) (Wh)	59.93	150.61	301.18	450.94	600.15
Energy conversion efficiency (%)	95.18	96.75	97.69	97.32	96.94
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	700.40	700.38	699.82	699.75	699.68
Input current (A)	1.79	4.43	8.75	13.16	17.61

Output voltage (V)	230.40	230.18	229.83	229.83	229.83
Output current (A)	1.74	4.37	8.73	13.09	17.42
Input power (Pi) (W)	1254.55	3098.42	6121.41	9206.94	12318.60
Output power (Po) (W)	1200.22	3012.99	6017.65	9019.92	12004.90
Output efficiency (%)	95.67	97.24	98.30	97.97	97.45
Input energy (Wi) (Wh)	62.73	154.91	306.06	460.21	615.86
Output energy (Wo) (Wh)	60.03	150.61	300.89	450.99	600.25
Energy conversion efficiency (%)	95.70	97.22	98.31	98.00	97.47
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	850.48	850.52	850.56	850.53	850.52
Input current (A)	1.50	3.65	7.21	10.84	14.54
Output voltage (V)	230.39	230.18	229.82	229.82	229.82
Output current (A)	1.76	4.36	8.72	13.05	17.41
Input power (Pi) (W)	1272.05	3103.12	6127.22	9213.70	12354.10
Output power (Po) (W)	1216.49	3008.96	6009.44	8996.89	12002.50
Output efficiency (%)	95.63	96.97	98.08	97.65	97.15
Input energy (Wi) (Wh)	63.61	155.20	306.46	460.73	617.71
Output energy (Wo) (Wh)	60.80	150.42	300.47	449.89	600.21
Energy conversion efficiency (%)	95.58	96.92	98.05	97.65	97.17
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet
power conditioner type	PV to load mode
Model:	ASW15kH-T1
Parameters of power conditioner	Minimum rated input voltage: <u>620</u> V Nominal voltage: <u>700</u> V Maximum input voltage: <u>850</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>15000</u> W
BAT input voltage	Manufacturer's minimum rated input voltage

Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	620.36	619.60	619.60	619.64	619.68
Input current (A)	2.57	6.24	12.38	18.65	24.86
Output voltage (V)	230.38	230.13	229.65	229.65	229.65
Output current (A)	2.20	5.42	10.89	16.41	21.79
Input power (Pi) (W)	1594.12	3863.56	7669.50	11555.10	15399.50
Output power (Po) (W)	1520.19	3738.84	7500.91	11301.50	15005.00
Output efficiency (%)	95.36	96.77	97.80	97.81	97.44
Input energy (Wi) (Wh)	79.70	193.21	383.48	577.82	769.63
Output energy (Wo) (Wh)	75.97	187.07	375.29	565.13	750.35
Energy conversion efficiency (%)	95.32	96.82	97.86	97.80	97.50
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	700.37	700.30	700.40	700.03	700.39
Input current (A)	2.27	5.51	10.88	16.47	21.93
Output voltage (V)	230.37	230.12	229.65	229.65	229.65
Output current (A)	2.21	5.45	10.91	16.41	21.74
Input power (Pi) (W)	1591.54	3860.29	7618.54	11523.50	15354.20
Output power (Po) (W)	1525.47	3764.33	7511.12	11304.50	14973.00
Output efficiency (%)	95.85	97.51	98.59	98.10	97.52
Input energy (Wi) (Wh)	79.58	193.00	380.91	576.18	767.33
Output energy (Wo) (Wh)	76.26	188.23	375.55	565.25	749.13
Energy conversion efficiency (%)	95.83	97.53	98.59	98.10	97.63
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				

Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	850.53	850.50	850.47	850.53	850.48
Input current (A)	1.87	4.55	9.00	13.60	18.13
Output voltage (V)	230.36	230.11	229.64	229.64	229.64
Output current (A)	2.20	5.45	10.89	16.41	21.79
Input power (Pi) (W)	1592.65	3868.34	7648.43	11556.60	15399.90
Output power (Po) (W)	1517.15	3759.41	7502.43	11303.60	15009.00
Output efficiency (%)	95.26	97.18	98.09	97.81	97.46
Input energy (Wi) (Wh)	79.60	193.36	382.30	577.76	769.68
Output energy (Wo) (Wh)	75.88	187.94	375.41	565.18	750.40
Energy conversion efficiency (%)	95.33	97.20	98.20	97.82	97.49
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	Battery to Grid Discharging mode				
Model:	ASW06kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>220</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>6000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	124.92	124.80	124.60	124.37	124.06
Input current (A)	5.68	12.97	24.89	37.48	50.28
Output voltage (V)	230.06	230.15	230.29	230.44	230.57
Output current (A)	0.94	2.24	4.35	6.53	8.68
Input power (Pi) (W)	623.21	1581.86	3083.19	4651.13	6232.82
Output power (Po) (W)	587.07	1520.30	2992.23	4502.51	5996.63
Output efficiency (%)	94.20	96.11	97.05	96.80	96.21

Input energy (Wi) (Wh)	31.16	79.09	154.16	232.56	311.64
Output energy (Wo) (Wh)	29.35	76.01	149.61	225.13	299.83
Energy conversion efficiency (%)	94.20	96.11	97.05	96.80	96.21
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	199.83	199.78	199.66	199.54	199.41
Input current (A)	3.93	8.08	15.84	23.21	31.04
Output voltage (V)	230.06	230.15	230.30	230.44	230.59
Output current (A)	0.95	2.16	4.42	6.49	8.65
Input power (Pi) (W)	619.98	1517.50	3117.31	4600.83	6168.01
Output power (Po) (W)	587.52	1465.21	3040.61	4478.08	5974.67
Output efficiency (%)	94.76	96.55	97.54	97.33	96.87
Input energy (Wi) (Wh)	31.00	75.87	155.87	230.04	308.40
Output energy (Wo) (Wh)	29.38	73.26	152.03	223.90	298.73
Energy conversion efficiency (%)	94.76	96.55	97.54	97.33	96.87
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	599.90	599.86	599.78	599.73	599.68
Input current (A)	1.49	3.16	5.69	8.00	10.68
Output voltage (V)	230.05	230.15	230.31	230.45	230.11
Output current (A)	0.94	2.23	4.49	6.51	8.79
Input power (Pi) (W)	620.83	1573.17	3178.74	4624.56	6276.70
Output power (Po) (W)	586.95	1514.65	3093.72	4493.53	6063.32
Output efficiency (%)	94.54	96.28	97.33	97.17	96.60
Input energy (Wi) (Wh)	31.04	78.66	158.94	231.23	313.84
Output energy (Wo) (Wh)	29.35	75.73	154.69	224.68	303.17

Energy conversion efficiency (%)	94.54	96.28	97.33	97.17	96.60
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	Grid to Battery Charging mode				
Model:	ASW06kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>200</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>6000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.15	230.06	230.20	230.26	230.32
Input current (A)	1.05	2.36	4.59	6.75	8.75
Output voltage (V)	125.12	125.09	125.18	125.17	125.14
Output current (A)	5.00	11.99	23.95	35.46	45.86
Input power (Pi) (W)	642.71	1551.03	3084.13	4579.94	5961.78
Output power (Po) (W)	606.45	1488.91	2993.88	4433.50	5735.74
Output efficiency (%)	94.36	96.00	97.07	96.80	96.21
Input energy (Wi) (Wh)	32.14	77.55	154.21	229.00	298.09
Output energy (Wo) (Wh)	30.32	74.45	149.69	221.68	286.79
Energy conversion efficiency (%)	94.36	96.00	97.07	96.80	96.21
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.14	230.25	230.10	230.16	230.22
Input current (A)	1.04	2.33	4.53	6.65	8.76

Output voltage (V)	199.98	200.11	200.29	200.05	200.13
Output current (A)	3.20	7.53	14.87	21.93	28.86
Input power (Pi) (W)	633.06	1540.15	3044.46	4501.49	5960.29
Output power (Po) (W)	600.31	1486.12	2968.69	4380.62	5770.86
Output efficiency (%)	94.83	96.49	97.51	97.31	96.82
Input energy (Wi) (Wh)	31.65	77.01	152.22	225.07	298.01
Output energy (Wo) (Wh)	30.02	74.31	148.43	219.03	288.54
Energy conversion efficiency (%)	94.83	96.49	97.51	97.31	96.82
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.04	230.15	230.20	230.16	230.22
Input current (A)	1.03	2.29	4.52	6.60	8.76
Output voltage (V)	599.94	599.96	599.99	600.04	600.09
Output current (A)	1.45	2.63	5.05	7.31	9.63
Input power (Pi) (W)	628.96	1515.71	3040.12	4464.99	5948.82
Output power (Po) (W)	594.81	1458.35	2955.98	4333.59	5741.38
Output efficiency (%)	94.57	96.22	97.23	97.06	96.51
Input energy (Wi) (Wh)	31.45	75.79	152.01	223.25	297.44
Output energy (Wo) (Wh)	29.74	72.92	147.80	216.68	287.07
Energy conversion efficiency (%)	94.57	96.22	97.23	97.06	96.51
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet
power conditioner type	Battery to Grid Discharging mode
Model:	ASW08kH-T1
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>250</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>8000</u> W
BAT input voltage	Manufacturer's minimum rated input voltage



Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	124.87	124.70	124.36	124.03	124.03
Input current (A)	7.29	16.61	33.17	49.81	49.82
Output voltage (V)	230.08	230.20	230.40	230.07	230.07
Output current (A)	1.25	2.88	5.81	8.68	8.67
Input power (Pi) (W)	870.16	2054.38	4117.87	6172.32	6173.49
Output power (Po) (W)	819.82	1973.50	4004.74	5981.27	5980.72
Output efficiency (%)	94.21	96.06	97.25	96.90	96.88
Input energy (Wi) (Wh)	43.51	102.72	205.89	308.62	308.67
Output energy (Wo) (Wh)	40.99	98.67	200.24	299.06	299.04
Energy conversion efficiency (%)	94.21	96.06	97.25	96.90	96.88
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	249.81	249.75	249.62	249.45	249.27
Input current (A)	3.83	8.62	16.72	25.02	33.07
Output voltage (V)	230.09	230.20	230.40	230.11	230.31
Output current (A)	1.28	2.95	5.86	8.77	11.54
Input power (Pi) (W)	893.47	2089.06	4140.76	6221.73	8227.96
Output power (Po) (W)	848.67	2018.72	4038.65	6051.47	7966.83
Output efficiency (%)	94.99	96.63	97.53	97.26	96.83
Input energy (Wi) (Wh)	44.67	104.45	207.04	311.09	411.40
Output energy (Wo) (Wh)	42.43	100.94	201.93	302.57	398.34
Energy conversion efficiency (%)	94.99	96.63	97.53	97.26	96.83
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				

Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	599.87	599.81	599.74	599.68	599.61
Input current (A)	1.70	4.08	7.17	10.46	14.00
Output voltage (V)	230.09	230.21	230.40	230.60	230.31
Output current (A)	1.21	2.98	5.82	8.63	11.60
Input power (Pi) (W)	841.92	2119.16	4114.11	6138.31	8294.63
Output power (Po) (W)	795.65	2041.36	4010.82	5962.90	8011.68
Output efficiency (%)	94.50	96.33	97.49	97.14	96.59
Input energy (Wi) (Wh)	42.10	105.96	205.71	306.92	414.73
Output energy (Wo) (Wh)	39.78	102.07	200.54	298.15	400.58
Energy conversion efficiency (%)	94.50	96.33	97.49	97.14	96.59
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	Grid to Battery Charging mode				
Model:	ASW08kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>250</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>8000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.12	230.20	230.20	230.20	230.20
Input current (A)	1.33	3.07	6.05	9.10	9.11
Output voltage (V)	125.14	125.06	125.23	125.25	125.26
Output current (A)	6.32	15.69	31.84	48.06	48.06
Input power (Pi) (W)	824.40	2038.11	4097.78	6208.50	6209.18
Output power (Po) (W)	776.98	1956.80	3984.07	6016.15	6015.70
Output efficiency (%)	94.25	96.01	97.22	96.90	96.88

Input energy (Wi) (Wh)	41.22	101.91	204.89	310.43	310.46
Output energy (Wo) (Wh)	38.85	97.84	199.20	300.81	300.79
Energy conversion efficiency (%)	94.25	96.01	97.22	96.90	96.88
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.13	230.01	229.81	230.11	230.22
Input current (A)	1.33	3.06	5.97	8.89	11.69
Output voltage (V)	249.96	250.09	250.28	250.47	250.66
Output current (A)	3.28	8.01	15.78	23.52	30.95
Input power (Pi) (W)	821.60	2039.32	4031.54	6049.67	8000.56
Output power (Po) (W)	779.52	1967.18	3931.32	5880.20	7749.69
Output efficiency (%)	94.88	96.46	97.51	97.20	96.86
Input energy (Wi) (Wh)	41.08	101.97	201.58	302.48	400.03
Output energy (Wo) (Wh)	38.98	98.36	196.57	294.01	387.49
Energy conversion efficiency (%)	94.88	96.46	97.51	97.20	96.86
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	229.93	230.11	230.12	230.22	230.23
Input current (A)	1.23	3.02	5.87	8.83	11.60
Output voltage (V)	599.93	599.95	600.01	600.09	600.16
Output current (A)	1.66	3.42	6.59	9.85	12.84
Input power (Pi) (W)	785.07	2015.79	3969.03	6024.35	7934.91
Output power (Po) (W)	741.16	1940.06	3867.10	5850.34	7657.92
Output efficiency (%)	94.41	96.24	97.43	97.11	96.51
Input energy (Wi) (Wh)	39.25	100.79	198.45	301.22	396.75
Output energy (Wo) (Wh)	37.06	97.00	193.36	292.52	382.90

Energy conversion efficiency (%)	94.41	96.24	97.43	97.11	96.51
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	Battery to Grid Discharging mode				
Model:	ASW10kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>300</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>10000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	124.83	124.60	124.15	124.00	124.00
Input current (A)	9.23	20.95	41.60	49.87	49.87
Output voltage (V)	230.11	230.25	230.30	230.37	230.38
Output current (A)	1.57	3.63	7.26	8.67	8.67
Input power (Pi) (W)	1120.45	2598.07	5159.82	6178.52	6178.74
Output power (Po) (W)	1056.86	2494.90	5007.27	5986.85	5986.03
Output efficiency (%)	94.32	96.03	97.04	96.90	96.88
Input energy (Wi) (Wh)	56.02	129.90	257.99	308.93	308.94
Output energy (Wo) (Wh)	52.84	124.74	250.36	299.34	299.30
Energy conversion efficiency (%)	94.32	96.03	97.04	96.90	96.88
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	299.87	299.78	299.61	299.43	299.20
Input current (A)	3.75	8.83	17.28	25.97	34.74

Output voltage (V)	230.10	230.25	230.50	230.26	230.02
Output current (A)	1.53	3.62	7.26	10.92	14.58
Input power (Pi) (W)	1079.86	2575.74	5140.15	7745.17	10372.34
Output power (Po) (W)	1024.73	2487.05	5012.43	7536.96	10052.94
Output efficiency (%)	94.89	96.56	97.52	97.31	96.92
Input energy (Wi) (Wh)	53.99	128.79	257.01	387.26	518.62
Output energy (Wo) (Wh)	51.24	124.35	250.62	376.85	502.65
Energy conversion efficiency (%)	94.89	96.56	97.52	97.31	96.92
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	599.86	599.79	599.69	599.61	599.51
Input current (A)	2.02	4.92	9.01	13.14	17.48
Output voltage (V)	230.10	230.25	230.21	230.26	230.02
Output current (A)	1.43	3.68	7.38	10.92	14.60
Input power (Pi) (W)	1008.21	2628.94	5234.04	7762.46	10395.14
Output power (Po) (W)	953.37	2531.95	5089.64	7537.87	10066.70
Output efficiency (%)	94.56	96.31	97.24	97.11	96.84
Input energy (Wi) (Wh)	50.41	131.45	261.70	388.12	519.76
Output energy (Wo) (Wh)	47.67	126.60	254.48	376.89	503.34
Energy conversion efficiency (%)	94.56	96.31	97.24	97.11	96.84
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet
power conditioner type	Grid to Battery Charging mode
Model:	ASW10kH-T1
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>300</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>10000</u> W
BAT input voltage	Manufacturer's minimum rated input voltage

Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.11	230.26	230.31	230.38	230.37
Input current (A)	1.57	3.78	7.39	9.39	9.35
Output voltage (V)	125.19	125.26	125.17	125.20	125.17
Output current (A)	7.65	19.40	38.96	49.60	49.61
Input power (Pi) (W)	1002.95	2527.19	5023.16	6408.15	6403.16
Output power (Po) (W)	945.28	2426.03	4872.03	6203.55	6204.54
Output efficiency (%)	94.25	96.00	96.99	96.81	96.90
Input energy (Wi) (Wh)	50.15	126.36	251.16	320.41	320.16
Output energy (Wo) (Wh)	47.26	121.30	243.60	310.18	310.23
Energy conversion efficiency (%)	94.25	96.00	96.99	96.81	96.90
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.12	230.26	230.21	230.26	230.52
Input current (A)	1.55	3.77	7.40	11.01	14.43
Output voltage (V)	299.99	300.13	300.12	300.09	300.07
Output current (A)	3.27	8.19	16.34	24.45	32.09
Input power (Pi) (W)	984.63	2518.12	5012.71	7533.46	9924.74
Output power (Po) (W)	934.95	2431.02	4889.62	7326.01	9619.00
Output efficiency (%)	94.95	96.54	97.54	97.25	96.92
Input energy (Wi) (Wh)	49.23	125.91	250.64	376.67	496.24
Output energy (Wo) (Wh)	46.75	121.55	244.48	366.30	480.95
Energy conversion efficiency (%)	94.95	96.54	97.54	97.25	96.92
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				

Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.40	230.25	230.31	230.26	230.42
Input current (A)	1.61	3.76	7.35	10.94	14.43
Output voltage (V)	599.94	599.96	600.04	600.12	600.21
Output current (A)	2.00	4.21	8.17	12.15	16.05
Input power (Pi) (W)	1035.11	2517.79	4985.88	7479.80	9920.56
Output power (Po) (W)	979.09	2427.23	4847.86	7254.83	9606.49
Output efficiency (%)	94.59	96.40	97.23	96.99	96.83
Input energy (Wi) (Wh)	51.76	125.89	249.29	373.99	496.03
Output energy (Wo) (Wh)	48.95	121.36	242.39	362.74	480.32
Energy conversion efficiency (%)	94.59	96.40	97.23	96.99	96.83
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	Battery to Grid Discharging mode				
Model:	ASW12kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>350</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>12000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	124.82	124.50	123.98	124.97	124.97
Input current (A)	10.02	24.96	49.81	49.81	49.83
Output voltage (V)	230.11	230.33	230.11	230.12	230.12
Output current (A)	1.71	4.32	8.69	8.76	8.76
Input power (Pi) (W)	1220.93	3099.10	6171.69	6220.97	6222.54
Output power (Po) (W)	1151.22	2976.62	5992.64	6040.89	6041.19
Output efficiency (%)	94.29	96.05	97.10	97.11	97.09

Input energy (Wi) (Wh)	61.05	154.96	308.59	311.05	311.13
Output energy (Wo) (Wh)	57.56	148.83	299.63	302.04	302.06
Energy conversion efficiency (%)	94.29	96.05	97.10	97.11	97.09
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	349.88	349.78	349.61	349.42	349.18
Input current (A)	3.72	9.29	17.63	26.58	35.62
Output voltage (V)	230.15	230.34	230.63	230.35	230.27
Output current (A)	1.76	4.47	8.66	13.05	17.43
Input power (Pi) (W)	1252.60	3183.25	6130.35	9264.98	12420.15
Output power (Po) (W)	1190.47	3073.08	5983.78	9015.52	12038.80
Output efficiency (%)	95.04	96.54	97.61	97.31	96.93
Input energy (Wi) (Wh)	62.63	159.16	306.52	463.25	621.01
Output energy (Wo) (Wh)	59.52	153.65	299.19	450.78	601.94
Energy conversion efficiency (%)	95.04	96.54	97.61	97.31	96.93
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	599.84	599.76	599.64	599.54	599.41
Input current (A)	2.52	5.62	10.44	15.65	20.97
Output voltage (V)	230.16	230.34	230.15	230.17	230.29
Output current (A)	1.89	4.45	8.69	13.11	17.50
Input power (Pi) (W)	1353.57	3184.18	6156.49	9314.29	12523.25
Output power (Po) (W)	1280.82	3065.15	5990.45	9050.28	12086.07
Output efficiency (%)	94.63	96.26	97.30	97.17	96.51
Input energy (Wi) (Wh)	67.68	159.21	307.82	465.72	626.16
Output energy (Wo) (Wh)	64.04	153.26	299.52	452.51	604.30



Energy conversion efficiency (%)	94.63	96.26	97.30	97.17	96.51
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	Grid to Battery Charging mode				
Model:	ASW12kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>350</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>12000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.39	230.21	230.22	230.18	230.38
Input current (A)	1.84	4.52	8.90	9.45	9.36
Output voltage (V)	125.01	125.01	124.99	125.04	125.02
Output current (A)	9.33	23.45	47.17	50.09	49.81
Input power (Pi) (W)	1197.62	3036.01	6062.26	6445.98	6410.59
Output power (Po) (W)	1128.67	2916.42	5888.37	6256.79	6221.97
Output efficiency (%)	94.24	96.06	97.13	97.06	97.06
Input energy (Wi) (Wh)	59.88	151.80	303.11	322.30	320.53
Output energy (Wo) (Wh)	56.43	145.82	294.42	312.84	311.10
Energy conversion efficiency (%)	94.24	96.06	97.13	97.07	97.06
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.40	230.22	230.41	230.30	230.29
Input current (A)	1.92	4.42	8.91	13.23	17.44

Output voltage (V)	349.99	350.01	350.10	350.08	350.06
Output current (A)	3.63	8.47	17.06	25.32	33.31
Input power (Pi) (W)	1258.70	2967.78	6068.40	9084.39	12004.32
Output power (Po) (W)	1196.26	2865.11	5922.93	8832.12	11636.61
Output efficiency (%)	95.04	96.54	97.60	97.22	96.94
Input energy (Wi) (Wh)	62.93	148.39	303.42	454.22	600.22
Output energy (Wo) (Wh)	59.81	143.26	296.15	441.61	581.83
Energy conversion efficiency (%)	95.04	96.54	97.60	97.22	96.94
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.20	230.21	230.21	230.30	230.60
Input current (A)	1.89	4.57	8.91	13.15	17.25
Output voltage (V)	599.93	599.96	600.06	600.15	600.25
Output current (A)	2.65	5.38	10.10	14.76	19.24
Input power (Pi) (W)	1240.80	3073.21	6059.30	9022.52	11886.92
Output power (Po) (W)	1173.58	2958.96	5897.81	8752.73	11471.89
Output efficiency (%)	94.58	96.28	97.33	97.01	96.51
Input energy (Wi) (Wh)	62.04	153.66	302.96	451.13	594.35
Output energy (Wo) (Wh)	58.68	147.95	294.89	437.64	573.60
Energy conversion efficiency (%)	94.58	96.28	97.33	97.01	96.51
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet
power conditioner type	Battery to Grid Discharging mode
Model:	ASW15kH-T1
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>400</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>15000</u> W
BAT input voltage	Manufacturer's minimum rated input voltage

Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	124.76	124.31	124.98	124.97	125.00
Input current (A)	12.47	31.32	49.32	49.32	49.52
Output voltage (V)	230.17	230.40	230.10	230.11	230.08
Output current (A)	2.14	5.42	8.68	8.68	8.71
Input power (Pi) (W)	1536.73	3886.60	6159.11	6158.73	6184.65
Output power (Po) (W)	1449.40	3731.95	5986.56	5984.36	6003.71
Output efficiency (%)	94.32	96.02	97.20	97.17	97.07
Input energy (Wi) (Wh)	76.8365	194.33	307.955	307.936	309.233
Output energy (Wo) (Wh)	72.47	186.60	299.33	299.22	300.19
Energy conversion efficiency (%)	94.32	96.02	97.20	97.17	97.07
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	399.83	399.71	399.51	400.28	400.09
Input current (A)	4.27	9.92	19.44	28.85	38.69
Output voltage (V)	230.17	230.39	230.28	230.15	230.09
Output current (A)	2.26	5.44	10.95	16.26	21.71
Input power (Pi) (W)	1612.74	3877.92	7725.93	11519.28	15457.35
Output power (Po) (W)	1534.60	3751.98	7558.14	11223.78	14979.66
Output efficiency (%)	95.15	96.75	97.83	97.43	96.91
Input energy (Wi) (Wh)	80.6371	193.896	386.296	575.964	772.868
Output energy (Wo) (Wh)	76.73	187.60	377.91	561.19	748.98
Energy conversion efficiency (%)	95.15	96.75	97.83	97.43	96.91
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				

Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	599.83	599.73	600.10	599.98	599.83
Input current (A)	3.31	6.97	12.97	19.47	25.89
Output voltage (V)	230.18	230.20	230.27	230.16	230.54
Output current (A)	2.33	5.57	10.86	16.36	21.61
Input power (Pi) (W)	1674.63	3978.06	7678.97	11609.46	15474.75
Output power (Po) (W)	1586.77	3833.86	7492.36	11290.55	14937.78
Output efficiency (%)	94.75	96.38	97.57	97.25	96.53
Input energy (Wi) (Wh)	83.7315	198.903	383.949	580.473	773.738
Output energy (Wo) (Wh)	79.34	191.69	374.62	564.53	746.89
Energy conversion efficiency (%)	94.75	96.38	97.57	97.25	96.53
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	Grid to Battery Charging mode				
Model:	ASW15kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>400</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>15000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.37	230.14	230.18	230.18	230.18
Input current (A)	2.23	5.60	9.46	9.47	9.47
Output voltage (V)	125.23	125.59	125.07	125.10	125.12
Output current (A)	11.24	28.93	49.88	49.90	49.89
Input power (Pi) (W)	1460.69	3767.58	6451.77	6456.94	6456.91
Output power (Po) (W)	1378.14	3621.54	6230.99	6234.25	6234.18
Output efficiency (%)	94.35	96.12	96.58	96.55	96.55

Input energy (Wi) (Wh)	73.03	188.38	322.59	322.85	322.85
Output energy (Wo) (Wh)	68.91	181.08	311.55	311.71	311.71
Energy conversion efficiency (%)	94.35	96.12	96.58	96.55	96.55
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.27	230.14	230.26	230.38	230.48
Input current (A)	2.32	5.65	11.02	16.46	21.75
Output voltage (V)	399.94	400.07	400.25	400.06	400.08
Output current (A)	3.92	9.49	18.57	27.71	36.38
Input power (Pi) (W)	1529.60	3802.93	7539.95	11327.90	14995.75
Output power (Po) (W)	1456.20	3678.35	7375.84	11046.90	14526.18
Output efficiency (%)	95.20	96.72	97.82	97.52	96.87
Input energy (Wi) (Wh)	76.48	190.15	377.00	566.40	749.79
Output energy (Wo) (Wh)	72.81	183.92	368.79	552.35	726.31
Energy conversion efficiency (%)	95.20	96.72	97.82	97.52	96.87
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	230.36	230.13	230.26	230.38	230.49
Input current (A)	2.30	5.68	11.07	16.39	21.59
Output voltage (V)	599.96	600.00	600.01	600.04	600.06
Output current (A)	2.97	6.50	12.48	18.38	24.03
Input power (Pi) (W)	1523.25	3832.67	7568.92	11271.40	14881.63
Output power (Po) (W)	1442.93	3691.03	7379.66	10956.29	14365.63
Output efficiency (%)	94.73	96.30	97.50	97.20	96.53
Input energy (Wi) (Wh)	76.16	191.63	378.45	563.57	744.08
Output energy (Wo) (Wh)	72.15	184.55	368.98	547.82	718.28

Energy conversion efficiency (%)	94.73	96.30	97.50	97.20	96.53
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	Battery to load discharging mode				
Model:	ASW06kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>200</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>6000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	124.81	124.69	124.50	124.29	124.23
Input current (A)	5.48	12.59	25.16	37.72	50.04
Output voltage (V)	230.94	230.93	230.88	230.88	230.86
Output current (A)	0.93	2.18	4.39	6.55	8.70
Input power (Pi) (W)	681.47	1568.33	3131.52	4687.03	6215.04
Output power (Po) (W)	642.67	1508.55	3038.87	4535.02	6020.05
Output efficiency (%)	94.31	96.19	97.04	96.76	96.86
Input energy (Wi) (Wh)	34.06	78.41	156.56	234.65	310.76
Output energy (Wo) (Wh)	32.14	75.34	151.92	227.14	300.91
Energy conversion efficiency (%)	94.35	96.08	97.04	96.80	96.83
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	199.78	199.72	199.59	199.59	199.54
Input current (A)	3.50	8.39	15.51	23.69	30.09

Output voltage (V)	231.01	230.96	230.93	230.94	230.88
Output current (A)	0.93	2.33	4.36	6.63	8.39
Input power (Pi) (W)	675.10	1668.30	3091.59	4721.15	5999.80
Output power (Po) (W)	640.74	1610.04	3014.69	4589.42	5804.40
Output efficiency (%)	94.91	96.51	97.51	97.21	96.74
Input energy (Wi) (Wh)	33.79	83.39	154.56	236.04	299.94
Output energy (Wo) (Wh)	32.05	80.50	150.74	229.52	290.33
Energy conversion efficiency (%)	94.85	96.53	97.53	97.24	96.80
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	599.76	599.71	599.65	599.66	599.65
Input current (A)	1.17	2.67	5.22	7.78	10.07
Output voltage (V)	230.95	230.90	230.86	230.87	230.88
Output current (A)	0.94	2.21	4.37	6.51	8.37
Input power (Pi) (W)	684.64	1583.64	3114.10	4642.64	6013.72
Output power (Po) (W)	647.15	1527.61	3025.86	4503.65	5791.47
Output efficiency (%)	94.52	96.46	97.17	97.01	96.30
Input energy (Wi) (Wh)	34.22	79.21	156.00	232.09	300.77
Output energy (Wo) (Wh)	32.42	76.31	151.58	225.08	289.71
Energy conversion efficiency (%)	94.74	96.34	97.17	96.98	96.32
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet
power conditioner type	Battery to load discharging mode
Model:	ASW08kH-T1
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>250</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>8000</u> W
BAT input voltage	Manufacturer's minimum rated input voltage

Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	124.79	124.64	124.44	124.22	124.23
Input current (A)	7.06	16.66	33.48	50.04	50.04
Output voltage (V)	230.90	230.87	230.82	230.88	230.86
Output current (A)	1.20	2.88	5.84	8.70	8.70
Input power (Pi) (W)	878.69	2074.47	4165.66	6215.70	6215.50
Output power (Po) (W)	828.16	1990.97	4039.85	6020.48	6019.17
Output efficiency (%)	94.25	95.97	96.98	96.86	96.84
Input energy (Wi) (Wh)	43.97	103.72	208.52	310.72	310.72
Output energy (Wo) (Wh)	41.46	99.63	202.12	300.89	300.92
Energy conversion efficiency (%)	94.30	96.06	96.93	96.84	96.85
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	249.77	249.69	249.54	249.54	249.54
Input current (A)	3.41	8.40	16.51	24.86	33.14
Output voltage (V)	230.97	230.92	230.86	230.87	230.87
Output current (A)	1.17	2.92	5.80	8.70	11.56
Input power (Pi) (W)	846.72	2090.68	4116.13	6198.87	8264.75
Output power (Po) (W)	806.19	2018.73	4014.79	6024.71	8002.36
Output efficiency (%)	95.21	96.56	97.54	97.19	96.83
Input energy (Wi) (Wh)	42.29	104.57	205.80	309.96	413.22
Output energy (Wo) (Wh)	40.18	100.98	200.74	301.13	400.19
Energy conversion efficiency (%)	95.01	96.57	97.54	97.15	96.85
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				



Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	599.76	599.70	599.61	599.61	599.62
Input current (A)	1.46	3.55	6.89	10.34	13.86
Output voltage (V)	230.93	230.89	230.82	230.82	230.84
Output current (A)	1.17	2.93	5.79	8.67	11.56
Input power (Pi) (W)	857.20	2105.48	4120.11	6182.13	8289.91
Output power (Po) (W)	808.33	2024.52	4010.34	5998.92	7998.15
Output efficiency (%)	94.30	96.15	97.34	97.04	96.48
Input energy (Wi) (Wh)	42.87	105.19	206.30	309.16	414.49
Output energy (Wo) (Wh)	40.50	101.33	200.74	299.88	399.74
Energy conversion efficiency (%)	94.46	96.33	97.30	97.00	96.44
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	Battery to load discharging mode				
Model:	ASW10kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>300</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>10000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	124.79	124.58	124.24	124.23	124.23
Input current (A)	8.62	20.96	41.41	50.01	50.02
Output voltage (V)	230.92	230.87	230.83	230.85	230.86
Output current (A)	1.47	3.62	7.21	8.70	8.70
Input power (Pi) (W)	1072.70	2610.27	5143.50	6211.40	6212.78
Output power (Po) (W)	1011.96	2505.34	4992.96	6019.49	6018.86
Output efficiency (%)	94.34	95.98	97.07	96.91	96.88

Input energy (Wi) (Wh)	53.59	130.53	257.35	310.53	310.63
Output energy (Wo) (Wh)	50.51	125.23	249.78	300.88	300.89
Energy conversion efficiency (%)	94.25	95.94	97.06	96.89	96.86
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	299.81	299.72	299.59	299.59	299.59
Input current (A)	3.57	8.71	17.14	25.82	34.48
Output voltage (V)	230.94	230.90	230.84	230.83	230.81
Output current (A)	1.46	3.64	7.23	10.85	14.46
Input power (Pi) (W)	1063.29	2605.04	5130.74	7731.18	10324.30
Output power (Po) (W)	1010.77	2515.11	5006.00	7506.26	10005.40
Output efficiency (%)	95.06	96.55	97.57	97.09	96.91
Input energy (Wi) (Wh)	53.18	130.21	256.53	386.53	516.18
Output energy (Wo) (Wh)	50.52	125.68	250.25	375.36	500.35
Energy conversion efficiency (%)	95.00	96.52	97.55	97.11	96.93
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	599.78	599.71	599.60	599.58	599.58
Input current (A)	1.82	4.36	8.59	12.95	17.34
Output voltage (V)	230.89	230.86	230.80	230.82	230.82
Output current (A)	1.48	3.62	7.22	10.85	14.45
Input power (Pi) (W)	1082.21	2598.15	5141.28	7749.96	10379.90
Output power (Po) (W)	1022.59	2501.11	4999.86	7506.80	10003.90
Output efficiency (%)	94.49	96.27	97.25	96.86	96.38
Input energy (Wi) (Wh)	54.10	129.84	257.38	387.46	518.88
Output energy (Wo) (Wh)	51.18	125.14	250.36	375.31	500.42

Energy conversion efficiency (%)	94.60	96.38	97.27	96.87	96.44
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet				
power conditioner type	Battery to load discharging mode				
Model:	ASW12kH-T1				
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>350</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>12000</u> W				
BAT input voltage	Manufacturer's minimum rated input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	124.76	124.49	124.23	124.21	124.23
Input current (A)	10.30	25.00	50.04	50.06	50.06
Output voltage (V)	230.93	230.88	230.86	230.88	230.88
Output current (A)	1.76	4.31	8.70	8.69	8.68
Input power (Pi) (W)	1283.14	3110.96	6215.57	6217.28	6217.69
Output power (Po) (W)	1214.63	2984.99	6019.39	6016.74	6006.43
Output efficiency (%)	94.66	95.95	96.84	96.77	96.60
Input energy (Wi) (Wh)	64.13	155.74	310.80	310.85	310.86
Output energy (Wo) (Wh)	60.64	149.37	300.92	300.92	300.43
Energy conversion efficiency (%)	94.56	95.91	96.82	96.81	96.64
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	349.80	349.73	349.57	349.56	349.57
Input current (A)	3.63	8.87	17.55	26.48	35.51

Output voltage (V)	230.93	230.88	230.83	230.84	230.84
Output current (A)	1.73	4.33	8.65	13.00	17.37
Input power (Pi) (W)	1259.82	3096.02	6132.11	9249.55	12405.50
Output power (Po) (W)	1193.66	2994.78	5985.07	8997.69	12023.80
Output efficiency (%)	94.75	96.73	97.60	97.28	96.92
Input energy (Wi) (Wh)	62.97	155.12	306.82	462.50	620.34
Output energy (Wo) (Wh)	59.73	150.07	299.58	449.87	601.18
Energy conversion efficiency (%)	94.85	96.74	97.64	97.27	96.91
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	599.73	599.65	599.55	599.54	599.53
Input current (A)	2.14	5.22	10.32	15.52	20.78
Output voltage (V)	230.94	230.89	230.85	230.85	230.85
Output current (A)	1.74	4.35	8.68	13.02	17.37
Input power (Pi) (W)	1275.87	3117.51	6177.28	9295.52	12447.20
Output power (Po) (W)	1204.82	3008.87	6011.81	9015.42	12025.70
Output efficiency (%)	94.43	96.52	97.32	96.99	96.61
Input energy (Wi) (Wh)	63.75	155.93	308.87	464.76	622.29
Output energy (Wo) (Wh)	60.28	150.45	300.57	450.85	601.20
Energy conversion efficiency (%)	94.56	96.49	97.31	97.01	96.61
Remark: N/A					

TABLE	Efficiency recording and efficient calculation sheet
power conditioner type	Battery to load discharging mode
Model:	ASW15kH-T1
Parameters of power conditioner	Minimum rated input voltage: <u>125</u> V Nominal voltage: <u>400</u> V Maximum input voltage: <u>600</u> V Rated output voltage: <u>230</u> V Rated output frequency: <u>50</u> Hz Rated output power: <u>15000</u> W
BAT input voltage	Manufacturer's minimum rated input voltage

Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	124.69	124.49	124.23	124.24	124.23
Input current (A)	12.81	24.98	50.06	50.06	50.07
Output voltage (V)	230.92	230.88	230.87	230.88	230.88
Output current (A)	2.18	4.32	8.68	8.68	8.68
Input power (Pi) (W)	1595.36	3109.22	6217.60	6218.75	6219.70
Output power (Po) (W)	1507.72	2988.69	6007.41	6007.21	6008.82
Output efficiency (%)	94.51	96.12	96.62	96.60	96.61
Input energy (Wi) (Wh)	79.75	155.81	310.88	310.93	310.97
Output energy (Wo) (Wh)	75.43	149.70	300.48	300.45	300.48
Energy conversion efficiency (%)	94.59	96.08	96.65	96.63	96.62
BAT input voltage	The inverter's nominal voltage				
Temperature (°C)	<u>25.0</u> °C				
Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	399.72	399.64	399.49	399.49	399.49
Input current (A)	4.05	9.70	19.27	28.96	38.76
Output voltage (V)	230.94	230.89	230.83	230.83	230.82
Output current (A)	2.20	5.42	10.87	16.27	21.69
Input power (Pi) (W)	1599.21	3868.27	7686.94	11562.90	15473.80
Output power (Po) (W)	1518.89	3754.84	7522.62	11264.50	15016.80
Output efficiency (%)	94.98	97.07	97.86	97.42	97.05
Input energy (Wi) (Wh)	79.92	193.49	384.32	578.25	773.69
Output energy (Wo) (Wh)	76.01	187.73	376.08	563.32	750.66
Energy conversion efficiency (%)	95.12	97.03	97.86	97.42	97.02
BAT input voltage	Manufacturer's maximum input voltage				
Temperature (°C)	<u>25.0</u> °C				

Operating period for energy measurement (min)	<u>3</u> mins				
Percentage of rated output VA	10%	25%	50%	75%	100%
Input voltage (V)	599.80	599.67	599.53	599.53	599.53
Input current (A)	2.68	6.53	12.90	19.41	25.91
Output voltage (V)	230.88	230.84	230.79	230.81	230.82
Output current (A)	2.18	5.45	10.87	16.27	21.68
Input power (Pi) (W)	1592.65	3902.07	7727.98	11608.90	15516.20
Output power (Po) (W)	1507.78	3770.80	7526.43	11265.00	15009.70
Output efficiency (%)	94.67	96.64	97.39	97.04	96.74
Input energy (Wi) (Wh)	79.65	195.34	386.69	580.50	775.77
Output energy (Wo) (Wh)	75.39	188.67	376.47	563.23	750.72
Energy conversion efficiency (%)	94.66	96.58	97.36	97.02	96.77
Remark: N/A					

TABLE	No-load loss	
power conditioner type	PV to GRID Connected	
Model:	ASW06kH-T1	
Measure input voltage (V)	700.23Vd.c.	
Measured input power(W)	17.05W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

TABLE	Standby loss	
power conditioner type	PV to GRID Connected	
Model:	ASW06kH-T1	
Measure output voltage (V)	230.01Va.c.	
Measured output power(W)	27.40W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

TABLE	Standby loss	
power conditioner type	BAT to GRID discharging	
Model:	ASW06kH-T1	
Measure output voltage (V)	230.01Va.c.	
Measured output power(W)	76.90W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

TABLE	No-load loss	
power conditioner type	PV to GRID Connected	
Model:	ASW08kH-T1	
Measure input voltage (V)	700.18Vd.c.	
Measured input power(W)	16.89W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

TABLE	Standby loss	
power conditioner type	PV to GRID Connected	
Model:	ASW08kH-T1	
Measure output voltage (V)	230.01Va.c.	
Measured output power(W)	27.43W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

TABLE	Standby loss	
power conditioner type	BAT to GRID discharging	
Model:	ASW08kH-T1	
Measure output voltage (V)	230.01Va.c.	
Measured output power(W)	86.33W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

TABLE	No-load loss	
power conditioner type	PV to GRID Connected	
Model:	ASW10kH-T1	
Measure input voltage (V)	700.27Vd.c.	
Measured input power(W)	17.63W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

TABLE	Standby loss	
power conditioner type	PV to GRID Connected	
Model:	ASW10kH-T1	
Measure output voltage (V)	230.00Va.c.	
Measured output power(W)	27.42W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

TABLE	Standby loss	
power conditioner type	BAT to GRID discharging	
Model:	ASW10kH-T1	
Measure output voltage (V)	230.00Va.c.	
Measured output power(W)	93.40W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

TABLE	No-load loss	
power conditioner type	PV to GRID Connected	
Model:	ASW12kH-T1	
Measure input voltage (V)	700.38Vd.c.	
Measured input power(W)	16.89W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		



TABLE	Standby loss	
power conditioner type	PV to GRID Connected	
Model:	ASW12kH-T1	
Measure output voltage (V)	230.0Va.c.	
Measured output power(W)	27.42W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

TABLE	Standby loss	
power conditioner type	BAT to GRID discharging	
Model:	ASW12kH-T1	
Measure output voltage (V)	230.00Va.c.	
Measured output power(W)	96.87W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

TABLE	No-load loss	
power conditioner type	PV to GRID Connected	
Model:	ASW15kH-T1	
Measure input voltage (V)	700.21Vd.c.	
Measured input power(W)	16.42W	
Remark: No-load loss is measured when the power conditioner works at rated input voltage and in no-load mode.		

TABLE	Standby loss	
power conditioner type	PV to GRID Connected	
Model:	ASW15kH-T1	
Measure output voltage (V)	230.01Va.c.	
Measured output power(W)	27.28W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

TABLE	Standby loss	
power conditioner type	BAT to GRID discharging	
Model:	ASW15kH-T1	
Measure output voltage (V)	230.00Va.c.	
Measured output power(W)	96.29W	
Remark: Standby loss is measured when the power conditioner works at rated input voltage and in standby mode.		

--- End of test report---