



Letter of Attestation

Document: 70097867

Master Contract: 235284

Project: 70097867

Date Issued: December 15, 2016

Issued to: Huawei Technologies Co., Ltd.
Huawei Industrial Base
Bantian Town
Longgang District
Shenzhen, 518129
China
Attention: Mr. Zhengyou Zhou

*CSA Group, Certification and Testing hereby confirms that it has completed an evaluation of
Utility Interactive Inverter*

Models SUN2000-33KTL-US, SUN2000-36KTL-US and SUN2000-40KTL-US

*CSA Group, Certification and Testing hereby attests that the products identified above and described
in CSA report 70097867, dated December 15, 2016
complies with the following standards/tests, to the extent applicable:*

The testing of the subject inverters were completed according to the following sections of the test protocol entitled "Performance Test Protocol for Evaluating Inverters Used in Grid-Connected Photovoltaic Systems" prepared by "Sandia National Laboratories, Endecon Engineering, BEW Engineering, and Institute for Sustainable Technology", dated October 14, 2004 as modified by the "CEC Guideline for the use of the Performance Test Protocol for Evaluating Inverters Used in Grid-Connected Photovoltaic Systems - (draft for immediate use)" prepared by KEMA-Xenergy, and BEW Engineering, dated March 1, 2005 with deviations according to the requirements of the Guidelines for California's Solar Electric Incentive Programs (Senate Bill1) Fourth Edition (CEC-300-2011-005-CMF), Appendix 1- "Inverters":

- **Maximum Continuous Power**
- **Conversion Efficiency**
- **Tare Losses**

Notes:

1. Units verified against CSA report 70097867, dated December 15, 2016.
2. Refer to test report (5 Pages) and Attachment A (12 pages) for test results and setup details.

Issued by: Kyle Song
Kyle Song, Certifier

THIS LETTER OF ATTESTATION DOES NOT AUTHORIZE THE USE OF THE CSA MARK ON THE SUBJECT PRODUCTS. QUOTATIONS FROM THE TEST REPORT OR THE USE OF THE NAME OF THE CANADIAN STANDARDS ASSOCIATION AND CSA GROUP OR ITS REGISTERED TRADEMARK, IN ANY WAY, IS NOT PERMITTED WITHOUT PRIOR WRITTEN CONSENT OF THE CANADIAN STANDARDS ASSOCIATION OPERATING AS CSA GROUP, CERTIFICATION AND TESTING DIVISION.

Manufacturer: Huawei Technologies Co., Ltd

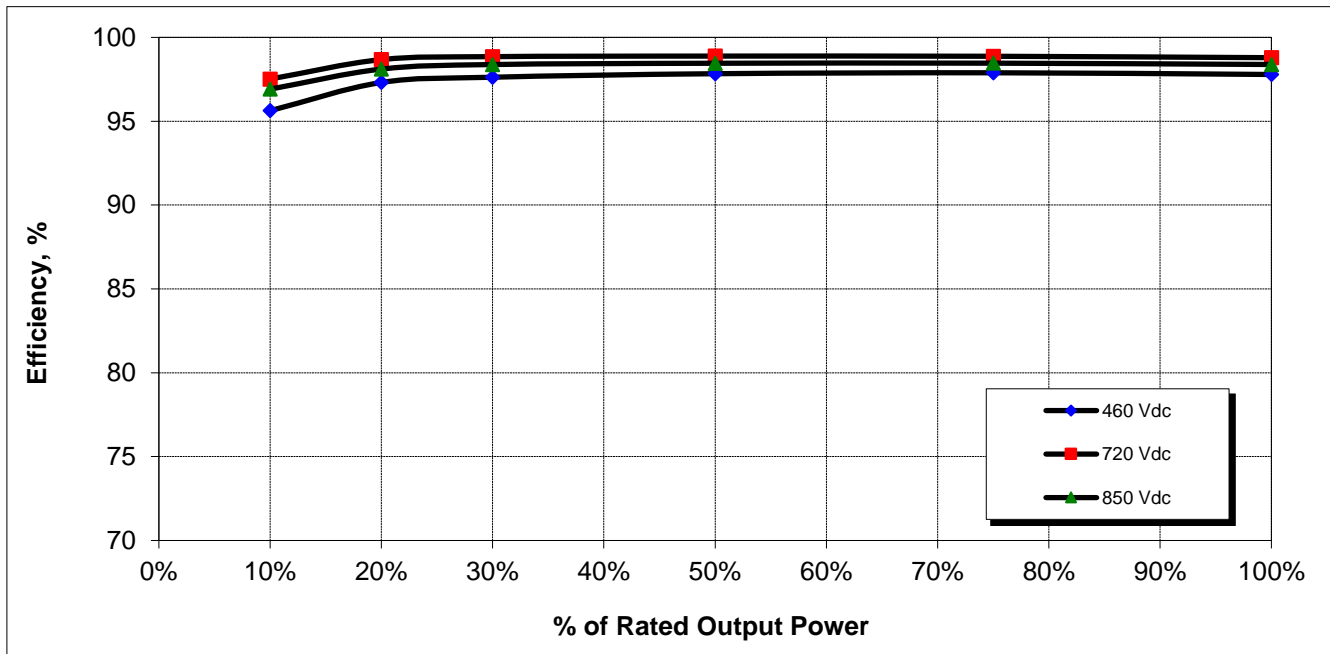
Model #: SUN2000-33KTL-US

Rated Maximum Continuous Output Power: 33.00 kW Night Tare Loss: 1.80 W

Vmin: 460 Vdc Vnom: 720 Vdc Vmax: 850 Vdc

Input Voltage (Vdc)	Power Level (%; kW)						Wtd
	10%	20%	30%	50%	75%	100%	
Vmin 460	95.6	97.3	97.6	97.8	97.9	97.8	97.7
Vnom 720	97.5	98.7	98.9	98.9	98.9	98.8	98.8
Vmax 850	96.9	98.1	98.4	98.5	98.5	98.4	98.4

CEC Efficiency = 98.5%



MAXIMUM CONTINUOUS OUTPUT POWER

Manufacturer: Huawei Technologies Co., Ltd

Model: SUN2000-33KTL-US

Samples	Time	Vin (Vdc)	Iin (Aac)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	HS1 (C)	HS2 (C)	Amb (C)
	Averages																
1	5	718.8	51.7	37086.8	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36610.0	73.9	67.1	41.2
2	10	718.8	51.7	37083.4	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36605.8	74.1	67.4	41.2
3	15	718.8	51.7	37082.6	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36605.8	74.2	67.6	41.0
4	20	718.8	51.7	37095.8	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36604.4	71.9	66.2	41.1
5	25	718.8	51.7	37083.4	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36608.2	72.7	66.5	41.2
6	30	718.8	51.7	37085.6	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36609.6	73.4	67.0	41.1
7	35	718.8	51.7	37086.4	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36610.4	73.8	67.2	41.2
8	40	718.8	51.7	37085.8	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36609.6	74.2	67.5	41.2
9	45	718.8	51.7	37087.0	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36610.4	74.2	67.6	41.2
10	50	718.8	51.7	37086.4	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36610.0	74.3	67.6	41.1
11	55	718.8	51.7	37084.6	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36609.2	74.5	67.8	41.3
12	60	718.8	51.7	37090.0	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36614.6	74.5	67.8	41.1
13	65	718.8	51.7	37086.4	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36610.2	74.5	67.9	41.2
14	70	718.8	51.7	37121.4	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36610.2	73.2	67.1	41.3
15	75	718.8	51.7	37087.2	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36609.6	73.5	67.3	41.1
16	80	718.8	51.7	37087.2	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36609.6	74.1	67.7	41.2
17	85	718.8	51.7	37091.6	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36613.2	74.4	67.8	41.3
18	90	718.8	51.7	37089.8	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36611.6	74.4	67.8	41.3
19	95	718.8	51.7	37090.2	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36612.2	74.6	67.9	41.2
20	100	718.8	51.7	37089.6	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36611.6	74.6	68.0	41.2
21	105	718.8	51.7	37085.6	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36607.6	74.5	68.1	41.0
22	110	718.8	51.7	37088.6	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36610.2	74.7	68.1	41.1
23	115	718.8	51.7	37125.0	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36610.8	72.4	66.8	41.1
24	120	718.8	51.7	37088.0	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36610.2	73.0	67.1	41.2
25	125	718.8	51.7	37085.6	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36607.8	73.9	67.6	41.2
26	130	718.8	51.7	37088.8	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36609.6	74.2	67.8	41.2
27	135	718.8	51.7	37088.0	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36609.4	74.5	67.9	41.3
28	140	718.8	51.7	37092.4	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36613.6	74.7	68.0	41.1
29	145	718.8	51.7	37093.4	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36614.0	74.6	68.3	41.2
30	150	718.8	51.7	37093.8	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36614.6	74.7	68.1	41.1
31	155	718.8	51.7	37095.2	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36615.8	74.8	68.1	41.2
32	160	718.8	51.7	37094.2	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36615.0	74.8	68.1	41.2
33	165	718.8	51.7	37093.4	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36614.2	74.8	68.1	41.2
34	170	718.8	51.7	37093.2	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36613.8	74.8	68.3	41.4
35	175	718.8	51.8	37134.6	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36618.6	73.1	67.2	41.1
36	180	718.8	51.7	37095.0	277.8	277.8	277.9	277.8	44.0	43.9	43.9	43.9	60.0	36616.0	73.9	67.6	41.2

Max Continuous AC Output Power (W)					36,604
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TARE LOSSES

Manufacturer: Huawei Technologies Co., Ltd
 Model: SUN2000-33KTL-US

Inverter Stand by Mode																
Date	Time	Vin(Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)	
2016/10/20	15:05:39	0.00	0.00	0.00	276.92	276.98	276.82	276.91	0.49	0.49	0.49	0.49	60.00	-1.40	25.03	

Minimum Array Voltage																
Date	Time	Vin(Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)	
2016/10/20	15:08:56	457.13	0.04	9.90	276.91	276.97	276.81	276.90	0.49	0.49	0.49	0.49	60.00	-1.78	25.03	

Nominal Array Voltage																
Date	Time	Vin(Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)	
2016/10/20	15:12:32	716.28	0.04	10.90	276.92	276.98	276.82	276.91	0.49	0.49	0.49	0.49	60.00	-1.77	25.03	

Maximum Array Voltage																
Date	Time	Vin(Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)	
2016/10/20	15:13:12	845.65	0.05	11.70	276.92	276.98	276.82	276.90	0.49	0.49	0.49	0.49	60.00	-1.78	25.03	

Input power before Start-up																
Date	Time	Vin(Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)	
2016/10/20	15:14:26	716.06	0.11	11.90	276.92	276.97	276.81	276.90	0.49	0.49	0.49	0.49	60.00	-1.77	25.03	

Input power after Start-up																
Date	Time	Vin(Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)	
2016/10/20	15:14:44	706.36	0.41	79.90	276.93	276.98	276.81	276.91	0.80	0.80	0.79	0.80	60.00	28.22	25.03	

Manufacturer: Huawei Technologies Co., Ltd

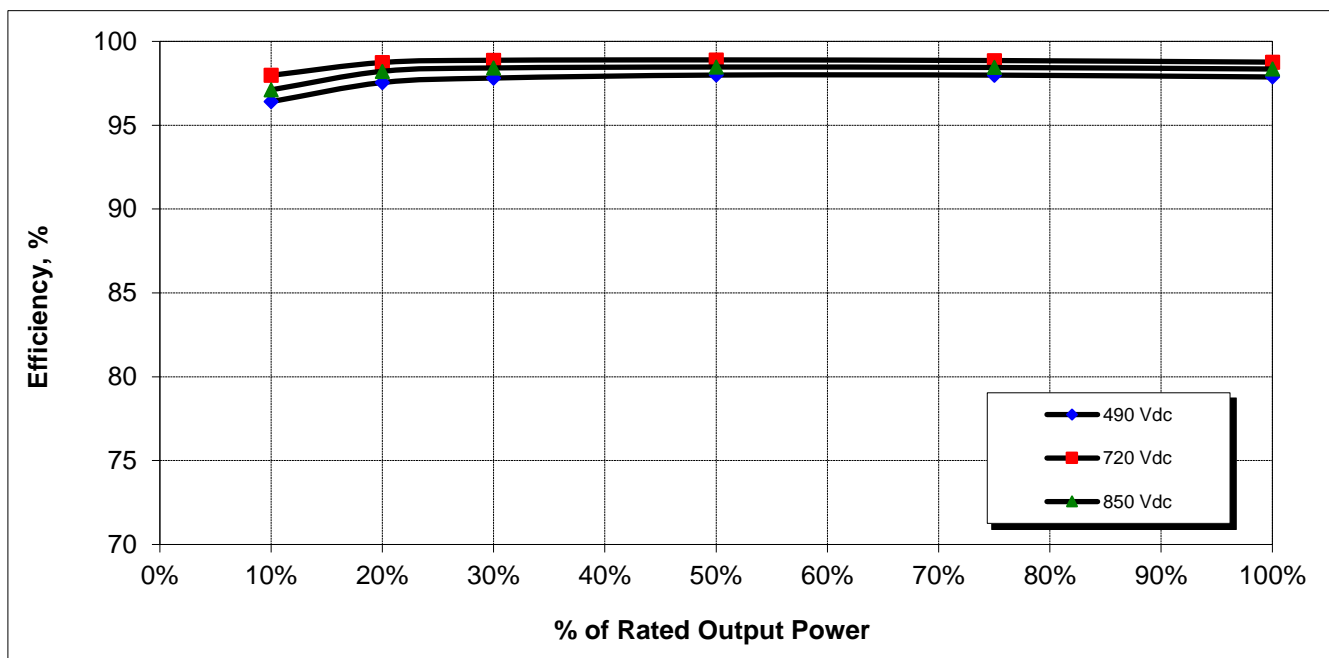
Model #: SUN2000-36KTL-US

Rated Maximum Continuous Output Power: 36.00 kW Night Tare Loss: 1.80 W

Vmin: 490 Vdc Vnom: 720 Vdc Vmax: 850 Vdc

Input Voltage (Vdc)	Power Level (%; kW)						Wtd
	10%	20%	30%	50%	75%	100%	
Vmin 490	96.4	97.5	97.8	98.0	98.0	97.9	97.9
Vnom 720	98.0	98.7	98.9	98.9	98.9	98.8	98.8
Vmax 850	97.1	98.2	98.4	98.5	98.4	98.4	98.4

CEC Efficiency = 98.5%



MAXIMUM CONTINUOUS OUTPUT POWER

Manufacturer: Huawei Technologies Co., Ltd

Model: SUN2000-36KTL-US

Samples	Time	Vin (Vdc)	Iin (A)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	HS1 (C)	HS2 (C)	Amb (C)
	Averages																
1	5	718.9	56.5	40563.2	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40049.0	78.3	70.8	41.2
2	10	718.9	56.5	40568.0	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40053.2	78.4	71.2	41.4
3	15	718.9	56.6	40568.2	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40054.0	78.5	71.2	41.4
4	20	718.9	56.5	40562.6	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40048.6	78.5	71.2	41.2
5	25	718.9	56.5	40563.4	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40049.8	78.7	71.3	41.3
6	30	718.9	56.6	40569.0	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40054.6	78.7	71.5	41.3
7	35	718.9	56.5	40562.8	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40048.4	78.7	71.5	41.1
8	40	718.9	56.5	40564.4	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40050.4	78.7	71.4	41.4
9	45	718.9	56.5	40559.4	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40045.0	78.7	71.5	41.4
10	50	718.9	56.5	40564.2	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40050.2	78.7	71.5	41.3
11	55	718.9	56.5	40565.0	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40050.2	78.8	71.7	41.4
12	60	718.9	56.6	40568.4	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40053.8	78.8	71.6	41.4
13	65	718.9	56.6	40570.8	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40056.0	78.8	71.5	41.4
14	70	718.9	56.6	40569.4	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40054.4	78.9	71.6	41.3
15	75	718.9	56.5	40567.2	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40051.6	78.9	71.7	41.1
16	80	718.9	56.5	40568.4	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40053.2	79.0	71.5	41.3
17	85	718.9	56.5	40566.8	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40051.2	78.9	71.5	41.3
18	90	718.9	56.5	40564.8	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40049.2	78.8	71.5	41.2
19	95	718.9	56.5	40566.4	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40050.6	78.9	71.5	41.0
20	100	718.9	56.5	40567.6	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40052.4	79.0	71.8	41.3
21	105	718.9	56.6	40570.6	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40054.4	78.9	71.7	41.4
22	110	718.9	56.6	40570.2	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40054.2	79.0	71.6	41.3
23	115	718.9	56.5	40569.2	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40053.0	79.1	71.8	41.5
24	120	718.9	56.6	40571.4	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40054.8	79.0	71.9	41.4
25	125	718.9	56.6	40570.0	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40054.2	79.1	71.6	41.1
26	130	718.9	56.5	40568.0	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40051.8	79.0	72.0	41.2
27	135	718.9	56.6	40570.6	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40054.6	79.0	71.6	41.2
28	140	718.9	56.6	40571.8	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40054.8	79.1	71.8	41.3
29	145	718.9	56.6	40569.6	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40053.0	79.1	71.8	41.2
30	150	718.9	56.6	40573.2	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40056.2	79.1	71.8	41.4
31	155	718.9	56.6	40571.2	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40054.0	79.2	71.8	41.4
32	160	718.9	56.5	40568.2	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40050.4	79.1	71.8	41.3
33	165	718.9	56.6	40571.6	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40053.4	79.1	71.8	41.2
34	170	718.9	56.6	40577.6	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40059.0	79.1	71.9	41.4
35	175	718.9	56.6	40571.8	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40052.8	79.1	71.7	41.3
36	180	718.9	56.6	40569.2	277.0	277.1	277.1	277.1	48.3	48.1	48.2	48.2	60.0	40050.0	79.0	71.9	41.2

Max Continuous AC Output Power (W)					40,045
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TARE LOSSES

Manufacturer: Huawei Technologies Co., Ltd
 Model: SUN2000-36KTL-US

Inverter Stand by Mode															
Date	Time	Vin (Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)
2016/10/20	15:05:39	0.00	0.00	0.00	276.92	276.98	276.82	276.91	0.49	0.49	0.49	0.49	60.00	-1.40	25.03

Minimum Array Voltage															
Date	Time	Vin (Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)
2016/10/20	15:10:12	486.73	0.05	10.00	276.93	276.99	276.82	276.91	0.49	0.49	0.49	0.49	60.00	-1.77	25.03

Nominal Array Voltage															
Date	Time	Vin (Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)
2016/10/20	15:12:32	716.28	0.04	10.90	276.92	276.98	276.82	276.91	0.49	0.49	0.49	0.49	60.00	-1.77	25.03

Maximum Array Voltage															
Date	Time	Vin (Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)
2016/10/20	15:13:12	845.65	0.05	11.70	276.92	276.98	276.82	276.90	0.49	0.49	0.49	0.49	60.00	-1.78	25.03

Input power before Start-up															
Date	Time	Vin (Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)
2016/10/20	15:14:26	716.06	0.11	11.90	276.92	276.97	276.81	276.90	0.49	0.49	0.49	0.49	60.00	-1.77	25.03

Input power after Start-up															
Date	Time	Vin (Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)
2016/10/20	15:14:44	706.36	0.41	79.90	276.93	276.98	276.81	276.91	0.80	0.80	0.79	0.80	60.00	28.22	25.03

Manufacturer: Huawei Technologies Co., Ltd

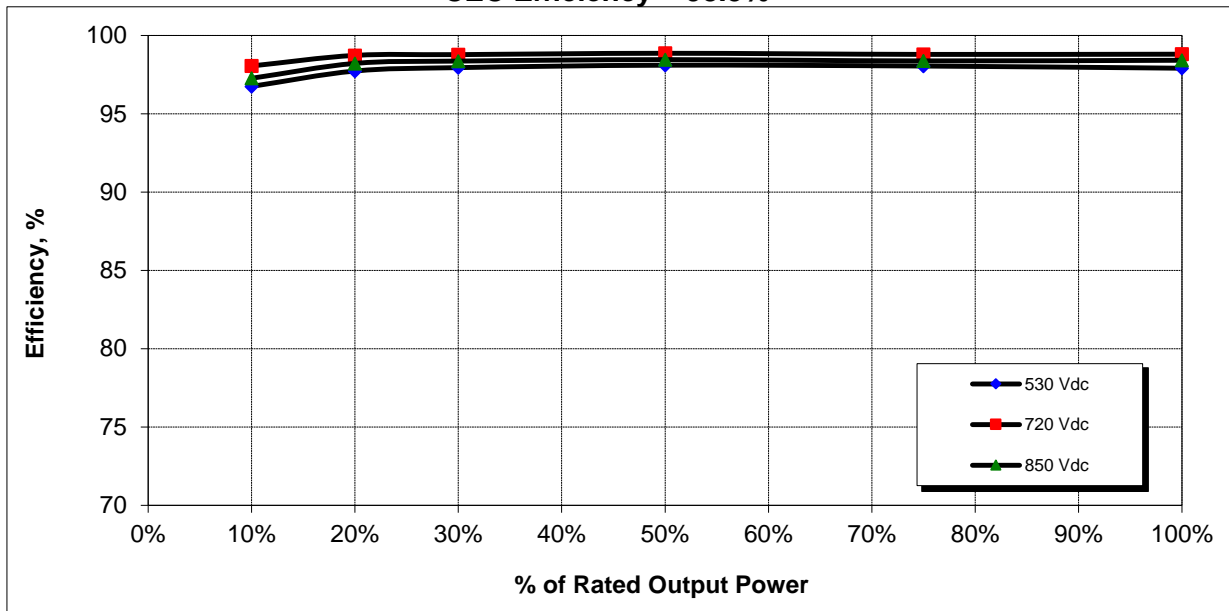
Model #: SUN2000-40KTL-US

Rated Maximum Continuous Output Power: 40.00 kW Night Tare Loss: 1.80 W

Vmin: 530 Vdc Vnom: 720 Vdc Vmax: 850 Vdc

Input Voltage (Vdc)		Power Level (%; kW)						Wtd
		10%	20%	30%	50%	75%	100%	
Vmin	530	96.7	97.7	97.9	98.1	98.0	97.9	98.0
Vnom	720	98.1	98.7	98.8	98.9	98.8	98.8	98.8
Vmax	850	97.3	98.2	98.4	98.5	98.4	98.4	98.3

CEC Efficiency = 98.5%



MAXIMUM CONTINUOUS OUTPUT POWER

Manufacturer: Huawei Technologies Co., Ltd

Model: SUN2000-40KTL-US

Samples	Time	Vin (Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	HS1 (C)	HS2 (C)	Amb (C)
	Averages																
1	5	720.4	62.0	44581.4	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43989.6	83.6	75.4	41.3
2	10	720.4	62.0	44578.0	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43987.0	83.6	75.5	41.5
3	15	720.4	62.0	44576.8	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43986.6	83.6	75.6	41.5
4	20	720.4	62.0	44576.8	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43986.2	83.6	75.6	41.2
5	25	720.4	62.0	44577.2	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43987.4	83.6	75.3	41.5
6	30	720.4	62.0	44575.6	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43985.4	83.6	75.6	41.7
7	35	720.4	62.0	44582.4	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43991.6	83.5	75.6	41.7
8	40	720.4	62.0	44579.6	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43989.0	83.5	75.3	41.6
9	45	720.4	62.0	44580.4	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43989.8	83.6	75.4	41.6
10	50	720.4	62.0	44577.6	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43987.4	83.6	75.5	41.3
11	55	720.4	62.0	44578.2	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43988.2	83.6	75.4	41.4
12	60	720.4	62.0	44583.4	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43993.6	83.6	75.5	41.5
13	65	720.4	62.0	44581.6	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43992.2	83.7	75.7	41.3
14	70	720.4	62.0	44582.4	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43993.4	83.6	75.4	41.5
15	75	720.4	62.0	44584.6	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43995.0	83.6	75.5	41.6
16	80	720.4	62.0	44581.6	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43992.2	83.5	75.7	41.6
17	85	720.4	62.0	44578.4	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43989.2	83.5	75.4	41.6
18	90	720.4	62.0	44576.0	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43987.6	83.6	75.4	41.7
19	95	720.4	62.0	44578.4	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43989.6	83.6	75.6	41.3
20	100	720.4	62.0	44575.4	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43986.2	83.6	75.4	41.4
21	105	720.4	62.0	44581.6	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43992.6	83.6	75.5	41.6
22	110	720.4	62.0	44580.0	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43991.4	83.7	75.7	41.3
23	115	720.4	62.0	44578.6	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43989.4	83.6	75.5	41.4
24	120	720.4	62.0	44572.6	277.1	277.1	277.2	277.1	53.0	52.8	52.9	52.9	60.0	43983.4	83.6	75.4	41.6
25	125	720.4	62.0	44574.6	277.1	277.1	277.2	277.1	53.0	52.8	52.9	52.9	60.0	43984.6	83.5	75.7	41.6
26	130	720.4	62.0	44574.0	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43984.6	83.5	75.4	41.7
27	135	720.4	62.0	44567.4	277.1	277.1	277.2	277.1	53.0	52.8	52.9	52.9	60.0	43977.6	83.6	75.4	41.6
28	140	720.4	62.0	44571.0	277.1	277.1	277.2	277.1	53.0	52.8	52.9	52.9	60.0	43981.0	83.6	75.5	41.4
29	145	720.4	62.0	44574.2	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43985.0	83.6	75.4	41.3
30	150	720.4	62.0	44574.4	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43984.4	83.6	75.4	41.6
31	155	720.4	62.0	44571.2	277.1	277.1	277.2	277.1	53.0	52.8	52.9	52.9	60.0	43981.6	83.6	75.7	41.4
32	160	720.4	62.0	44574.4	277.1	277.1	277.2	277.1	53.0	52.8	52.9	52.9	60.0	43984.2	83.6	75.4	41.3
33	165	720.4	62.0	44574.6	277.1	277.1	277.2	277.1	53.0	52.8	52.9	52.9	60.0	43983.8	83.6	75.4	41.5
34	170	720.4	62.0	44575.8	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43984.8	83.5	75.7	41.7
35	175	720.4	62.0	44577.6	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43985.6	83.5	75.5	41.7
36	180	720.4	62.0	44578.8	277.1	277.1	277.2	277.1	53.0	52.9	52.9	52.9	60.0	43987.4	83.5	75.4	41.6

Max Continuous AC Output Power (W)						43,978
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TARE LOSSES

Manufacturer: Huawei Technologies Co., Ltd
 Model: SUN2000-40KTL-US

Inverter Stand by Mode																
Date	Time	Vin(Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)	
2016/10/20	15:05:39	0.00	0.00	0.00	276.92	276.98	276.82	276.91	0.49	0.49	0.49	0.49	60.00	-1.40	25.03	

Minimum Array Voltage																
Date	Time	Vin(Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)	
2016/10/20	15:11:04	527.06	0.04	10.10	276.91	276.97	276.81	276.90	0.49	0.49	0.49	0.49	60.00	-1.77	25.03	

Nominal Array Voltage																
Date	Time	Vin(Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)	
2016/10/20	15:12:32	716.28	0.04	10.90	276.92	276.98	276.82	276.91	0.49	0.49	0.49	0.49	60.00	-1.77	25.03	

Maximum Array Voltage																
Date	Time	Vin(Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)	
2016/10/20	15:13:12	845.65	0.05	11.70	276.92	276.98	276.82	276.90	0.49	0.49	0.49	0.49	60.00	-1.78	25.03	

Input power before Start-up																
Date	Time	Vin(Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)	
2016/10/20	15:14:26	716.06	0.11	11.90	276.92	276.97	276.81	276.90	0.49	0.49	0.49	0.49	60.00	-1.77	25.03	

Input power after Start-up																
Date	Time	Vin(Vdc)	Iin (A dc)	Pin (W)	Vout (a)	Vout (b)	Vout (c)	Vout (avg)	Iout (a)	Iout (b)	Iout (c)	Iout (avg)	Freq (Hz)	Pout (W)	Amb (C)	
2016/10/20	15:14:44	706.36	0.41	79.90	276.93	276.98	276.81	276.91	0.80	0.80	0.79	0.80	60.00	28.22	25.03	