MEASUREMENT AND TEST REPORT

For

Shenzhen wanmai technology innovation Co., LTD
501, 5th Flr. BLDG 4, Pingshan Minqi Technology Park, No. 65 Lishan Road Pingshan Community, Taoyuan Street, Nanshan District, Shenzhen, China

Model(s): Savior 300
Adding model:Savior C300T,A15003

This Report Concerns: ☒ Original Report	**Equipment Type:** Portable power station
Test Engineer:	Lin Xue
Review By:	Safety Engineer: Jerry Liu
Report No.:	SZ4210413-11206E-EE
Issue Date:	2021-06-07
Test Date:	2021-05-24 to 2021-05-26
Regulation:	☒DOE: 10 CFR Section 430.32(z) (Energy and water conservation standards and their compliance dates) ☒CEC: Title 20 APPLIANCE EFFICIECY REGULATIONS California Code of Regulations, Title 20, Sections 1601through 1608. (18-AAER-10Amendments to Title 20 Appliance Efficiency Regulations Rulemaking)
Test Methods:	10 C.F.R. section 430.23(aa) (Appendix Y to subpart B of part 430)
Conclusion:	The submitted sample(s) Comply With the above regulation(s)
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 5F(B-West), 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China Tel: +86-0755-33320018 Fax: +86-0755-33320008

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1- Applicant And Factory Information

A. 1 Applicant	
Company Name	Shenzhen wanmai technology innovation Co., LTD
Address:	501, 5th Flr. BLDG 4, Pingshan Minqi Technology Park, No. 65 Lishan Road Pingshan Community, Taoyuan Street, Nanshan District, Shenzhen, China
A. 2 Manufacturer	
Company Name	The same as applicant
Address:	The same as applicant
A. 3 Factory	
Company Name	Shenzhen Li Bang New Energy limited
Address:	1st building, Jiahongtai Industrial Park, You gan yuan Rd, Henggang town, long gang district, Shenzhen, China

2 - GeneralProduct Information

2.1 Adapter Information

Type	Manufacturer/ Trade Mark	Model Number	Description	Rating
Power Aapter	Shenzhen YingHuiYuan Electronics Co Ltd	YHY-19003150	AC/DC ADAPTER	INPUT: 100-240V~, 50/60Hz, 1.5A OUTPUT: 19V ⎓3.15A 59.85W

2.2Battery Information

Type	Manufacturer/ Trade Mark	Model Number	Chemistry	Battery Voltages (Vdc)	Battery Capacity (mAh)
Battery	Shenzhen Li Bang New Energy limited	296Wh/80000mAh	Li-ion battery	14.4V	80000
Note:					

2.3 End Use Product

Manufacturer	Shenzhen wanmai technology innovation Co., LTD
Trade Mark	N/A
Product type	Portable power station
Model number	Savior 300
Multi-type	Savior C300T,A15003
Input Rating	DC19V
Product class	5
Inductive charger	☐Yes ☒No
Uninterruptable power supply	☐Yes ☒No
Multi-port charger	☐Yes ☒No
Multi-voltage charger	☐Yes ☒No
Multi-capacity charger	☐Yes ☒No
Model differences description(if any)	See 6 Model Difference Declaration

3-Test Equipment List and Details

No.	Description	Model	Serial Number	Last Cal. Date	Next Cal. Date	Manufacturer	Equipment Stauts
T-03-SF184	Power Meter	WT210	91K610292	2020-12-24	2021-12-23	YOKOGAWA	☒OK
T-03-EE199	Digital power meter	PF9811	807021	2020-10-14	2021-10-13	EVERFINE	☒OK
T-03-SF491	Temperature Humidity Tester	TA218B	N/A	2020-12-28	2021-12-27	N/A	☒OK
T-03-SF132	Electronic Load	3711A	A06BG04009	2020-11-09	2021-11-08	Array Electronic	☒OK
T-03-SF183	Stop Watch	PC396	N/A	2020-12-31	2021-12-31	Tian Fu	☒OK
T-03-SF346	Rechargeable battery test system	CT-3008-5V6A-S1	T1507-084049	2020-10-14	2021-10-13	N/A	☒OK
T-03-EE203	Air Speed Meter	AVM-01	11020109	2020-11-07	2021-11-06	N/A	☒OK

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Shenzhen). attests that all calibration has been performed using suitable standards traceable to the National Primary Standards and International System of Units (SI).

GENERAL REMARKS:

1) This report cannot be reproduced except in full, without prior written approval of Bay Area Compliance Laboratories Corp. (Shenzhen)
2) Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
3) This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.
4) Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
5) The test samples were in good condition and received: 2021-02-19.
6) BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.
7) Test sample identification

Sample Number	Sample Card Number	Date Received	Manufacturer, Product Identification and Ratings
#1-#2	SZ4210413-11206E-EE-S01 to SZ4210413-11206E-EE-S02	2021-05-24	Manufacturer: Shenzhen wanmai technology innovation Co., LTD Model: Savior 300 Aadapter model: YHY-19003150 Input: 100-240V~, 50/60Hz, 1.5A OUTPUT: 19V ⎓3.15A 59.85W

#3-#4	SZ4210413-11206E-EE-S03 to SZ4210413-11206E-EE-S04	2021-05-24	Manufacturer: Shenzhen wanmai technology innovation Co., LTD Model: Savior 300 PD Input: 5V,3A; 9V,3A; 12V,3A; 15V,3A; 20V,3A;

4-Summary of Test Result

Note:

4.1	Battery Discharge Test	Pass	Pass
Battery Sample No.:		1#	2#
Energy Delivered During Discharge(Wh)		262.51	255.03
Starting Battery Voltage(V)		16.32	15.896
Ending Battery Voltage(V)		10.827	10.737
The Length of The Rest Period Before Discharge(Minutes)		60	60
Sample Rate(s)		1	1
Eb(Wh)		262.51	255.85
Average Energy Delivered During Discharge(Wh)		259.18	
Supplementary: 1) One battery used in the EUT; 2) Ambient: 25℃, air speed<0.5m/s			

4.2	Charge Mode And Maintenance Mode Test								Pass
Test Voltage V/Hz	Beginning of the charge test		End of the charge test		**Charge and Maintenance Energy (Wh)**	The total time duration of the charging test (Hours)	Average power during maintenance mode (W)	The time duration used forthe maintenance mode power (Hours)	The length of the rest period before charging (Minutes)
	THD (at least total of 13 harmonic voltage)	Crest factor of voltage	THD (at least total of 13 harmonic voltage)	Crest factor of voltage					
1# 115.0V/ AC	---	---	---	---	395.08	24	0.240	4	60
2# 115.0V/ AC	---	---	---	---	384.53	24	0.195	4	60
Average	---	---	---	---	389.805	24	0.2175	4	60
Calculated Maximum 24 hours Charge And Maintenance Energy (Wh)									
Eb=100Wh<259.18 Wh <1000 Wh (Eb Capacity of all batteries in ports)					22*N+1.5Eb= 432.77 (Where N is number of charger ports)				

Supplementary:
1) Ambient: 25℃,air speed<0.5m/s.
2) Sample rate: average of 1s interval samples.
3) The measured charge and maintenance energy shall be less than calculated Maximum 24 hours charge and maintenance Energy.

4.2	Charge Mode And Maintenance Mode Test								Pass
Test Voltage V/Hz	Beginning of the charge test		End of the charge test		**Charge and Maintenance Energy (Wh)**	The total time duration of the charging test (Hours)	Average power during maintenance mode (W)	The time duration used forthe maintenance mode power (Hours)	The length of the rest period before charging (Minutes)
	THD (at least total of 13 harmonic voltage)	Crest factor of voltage	THD (at least total of 13 harmonic voltage)	Crest factor of voltage					
3# 20V/DC	---	---	---	---	387.68	24	0.220	4	60
4# 20V/DC	---	---	---	---	381.15	24	0.210	4	60
Average	---	---	---	---	384.415	24	0.215	4	60
Calculated Maximum 24 hours Charge And Maintenance Energy (Wh)									
Eb=100Wh<259.18 Wh <1000 Wh (Eb Capacity of all batteries in ports)					22*N+1.5Eb= 432.77 (Where N is number of charger ports)				
Supplementary: 1) Ambient: 25℃,air speed<0.5m/s. 2) Sample rate: average of 1s interval samples. 3) The measured charge and maintenance energy shall be less than calculated Maximum 24 hours charge and maintenance Energy.									

4.2	Charge Mode And Maintenance Mode Test								Pass
Test Voltage V/Hz	Beginning of the charge test		End of the charge test		**Charge and Maintenance Energy (Wh)**	The total time duration of the charging test (Hours)	Average power during maintenance mode (W)	The time duration used forthe maintenance mode power (Hours)	The length of the rest period before charging (Minutes)
	THD (at least total of 13 harmonic voltage)	Crest factor of voltage	THD (at least total of 13 harmonic voltage)	Crest factor of voltage					
3# 5V/DC	---	---	---	---	386.95	24	0.230	4	60

4# 5V/DC	---	---	---	---	380.02	24	0.220	4	60
Average	---	---	---	---	383.485	24	0.215	4	60
Calculated Maximum 24 hours Charge And Maintenance Energy (Wh)									
Eb=100Wh<259.18 Wh <1000 Wh (Eb Capacity of all batteries in ports)					22*N+1.5Eb= 432.77 (Where N is number of charger ports)				
Supplementary: 1) Ambient: 25℃,air speed<0.5m/s. 2) Sample rate: average of 1s interval samples. 3) The measured charge and maintenance energy shall be less than calculated Maximum 24 hours charge and maintenance Energy.									

4.3	**No-Battery Mode**				
Test Voltage V/Hz	No-battery mode power		No-battery mode power energy (Wh)	The total time duration of No-battery mode power (Minutes)	Average power during No-battery mode (W)
	THD (at least total of 13 harmonic voltage)	Crest factor of voltage			
1# 115.0V/AC	---	---	0.2	60	0.2
2# 115.0V/AC	---	---	0.2	60	0.2
Average	---	---	0.2	60	0.2
Supplementary: 1) Ambient: 25℃,air speed<0.5m/s; 2) Sample rate: average of 1s interval samples (Where E_b=capacitor of all batteries in ports and N=number of charger ports)					

4.3	**No-Battery Mode**				
Test Voltage V/Hz	No-battery mode power		No-battery mode power energy (Wh)	The total time duration of No-battery mode power (Minutes)	Average power during No-battery mode (W)
	THD (at least total of 13 harmonic voltage)	Crest factor of voltage			
3# 5V/DC	---	---	0	60	0
4# 5V/DC	---	---	0	60	0
Average	---	---	0	60	0

Supplementary:
1) Ambient: 25℃,air speed<0.5m/s;
2) Sample rate: average of 1s interval samples
(Where E_b=capacitor of all batteries in ports and N=number of charger ports)

4.3	No-Battery Mode				
Test Voltage V/Hz	No-battery mode power		No-battery mode power energy (Wh)	The total time duration of No-battery mode power (Minutes)	Average power during No-battery mode (W)
	THD (at least total of 13 harmonic voltage)	Crest factor of voltage			
3# 20V/DC	---	---	0	60	0
4# 20V/DC	---	---	0	60	0
Average	---	---	0	60	0

Supplementary:
1) Ambient: 25℃,air speed<0.5m/s;
2) Sample rate: average of 1s interval samples
(Where E_b=capacitor of all batteries in ports and N=number of charger ports)

4.4	Calculated Sum of Maintenance Mode Power and No battery Mode Power	Pass
Test Voltage		Calculated Power
1# 115.0V/AC		0.20
2# 115.0V/AC		0.20
Average		0.20

Supplementary:
1) The sum of maintenance mode power and no battery mode power must be less than
1*N+0.0021*E_b= 2.544278 W

4.4	Calculated Sum of Maintenance Mode Power and No battery Mode Power	Pass
Test Voltage		Calculated Power
3# 5V/DC		0
4# 5V/DC		0
Average		0

Supplementary:
1) The sum of maintenance mode power and no battery mode power must be less than 1*N+0.0021*E_b= 2.544278 W

4.4	Calculated Sum of Maintenance Mode Power and No battery Mode Power	Pass

Test Voltage	Calculated Power
3# 20V/DC	0
4# 20V/DC	0
Average	0

Supplementary:
1) The sum of maintenance mode power and no battery mode power must be less than 1*N+0.0021*E_b= 2.544278 W

4.5	Off Mode				
Test Voltage V/Hz	Off mode power		Off mode power energy (Wh)	The total time duration of off mode(H)	Average power during off mode(W)
	THD (at least total of 13 harmonic voltage)	Crest factor of voltage			
---	---	---	---	---	---

Supplementary:

4.6	Unit Energy Consumption Calculation								
Sample No.	E_{24}(Wh)	E_{batt}(Wh)	P_m(W)	P_{sb}(W)	P_{off}(W)	t_{cd}(h)	n	$t_{a\&m}$	UEC(kWh/yr)
Sample 1#	395.08	262.51	0.240	0.2	0	24	0.11	6.52	5.747
Sample 2#	384.53	255.85.	0.195	0.2	0	24	0.11	6.52	5.527
Mean value	389.805	259.18	0.2175	0.2	0	24	0.11	6.52	5.637
Represented values	389.805	259.18	0.2175	0.2	0	24	---	---	See below table 4.7

Supplementary:

1. These represented values of E_{24}, E_{batt}, P_m, P_{sb}, P_{off}, t_{cd} will simply be the arithmetic mean of the measured values for each of these metrics from the units tested in the compliance certification sample.

2. $(t_{cd}-5) * n = (24-5)*0.10 = 1.9 < t_{a\&m}$, use equation (i) to calculate UEC

Calculate unit energy consumption (UEC) for a battery charger using one of the two equations (equation (i) or equation (ii)) listed below. If a battery charger is tested and its charge duration as determined in section 5.2 of this appendix minus 5 hours is greater than the threshold charge time listed in table 5.3 below (*i.e.* $(t_{cd}-5) * n > t_{a\&m}$), use equation (ii) to calculate UEC; otherwise calculate the battery charger's UEC using equation (i).

(i) $$UEC = 365\left\{ n\left(E_{24} - 5P_m - E_{batt}\right)\frac{24}{t_{cd}} + P_m\left[t_{a\&m} - \left(t_{cd} - 5\right)n\right] + \left(P_{sb}t_{sb}\right) + \left(P_{off}t_{off}\right)\right\}$$ or;

(ii) $$UEC = 365\left[n\left(E_{24} - 5P_m - E_{batt}\right)\frac{24}{\left(t_{cd} - 5\right)} + \left(P_{sb}t_{sb}\right) + \left(P_{off}t_{off}\right)\right]$$

Where:

E_{24} = 24-hour energy as determined in section 5.10 of this appendix,

E_{batt} = Measured battery energy as determined in section 5.8 of this appendix,

P_m = Maintenance mode power as determined in section 5.9 of this appendix,

P_{sb} = Standby mode power as determined in section 5.11 of this appendix,

P_{off} = Off mode power as determined in section 5.12 of this appendix,

t_{cd} = Charge test duration as determined in section 5.2 of this appendix, and

$t_{a\&m}$, n, t_{sb}, and t_{off}, are constants used depending upon a device's product class and found in the following table:

TABLE 3.3.3—BATTERY CHARGER USAGE PROFILES

Product class				Hours per day***			Charges (n)	Threshold charge time*
Number	Description	Rated battery energy (ebatt)**	Special characteristic or battery voltage	Active + maintenance ($t_{a\&m}$)	Standby (t_{sb})	Off (t_{off})	Number per day	Hours
1	Low-Energy	≤5 Wh	Inductive Connection****	20.66	0.10	0.00	0.15	137.73
2	Low-Energy, Low-Voltage	<100 Wh	<4 V	7.82	5.29	0.00	0.54	14.48
3	Low-Energy, Medium-Voltage		4-10 V	6.42	0.30	0.00	0.10	64.20
4	Low-Energy, High-Voltage		>10 V	16.84	0.91	0.00	0.50	33.68
5	Medium-Energy, Low-Voltage	100-3000 Wh	<20 V	6.52	1.16	0.00	0.11	59.27
6	Medium-Energy, High-Voltage		≥20 V	17.15	6.85	0.00	0.34	50.44
7	High-Energy	>3000 Wh		8.14	7.30	0.00	0.32	25.44

*If the duration of the charge test (minus 5 hours) as determined in section 3.3.2 of appendix Y to subpart B of this part exceeds the threshold charge time, use equation (ii) to calculate UEC otherwise use equation (i).

**E_{batt} = Rated battery energy as determined in 10 CFR part 429.39(a).

***If the total time does not sum to 24 hours per day, the remaining time is allocated to unplugged time, which means there

is 0 power consumption and no changes to the UEC calculation needed.

****Inductive connection and designed for use in a wet environment (*e.g.* electric toothbrushes).

4.6	Unit Energy Consumption Calculation								
Sample No.	E_{24}(Wh)	E_{batt}(Wh)	P_m(W)	P_{sb}(W)	P_{off}(W)	t_{cd}(h)	n	$t_{a\&m}$	UEC(kWh/yr)
Sample 3# 5V	386.95	262.51.	0.23	0	0	24	0.11	6.52	5.322
Sample 4# 5V	380.02	255.85	0.22	0	0	24	0.11	6.52	5.297
Mean value	383.485	259.18	0.225	0	0	24	0.11	6.52	5.309
Represented values	383.485	259.18	0.225	0	0	24	---	---	See below table 4.7

Supplementary

1. These represented values of E_{24}, E_{batt}, P_m, P_{sb}, P_{off}, t_{cd} will simply be the arithmetic mean of the measured values for each of these metrics from the units tested in the compliance certification sample.
2. $(t_{cd}-5) * n = (24-5)*0.10 = 1.9 < t_{a\&m}$, use equation (i) to calculate UEC

Calculate unit energy consumption (UEC) for a battery charger using one of the two equations (equation (i) or equation (ii)) listed below. If a battery charger is tested and its charge duration as determined in section 5.2 of this appendix minus 5 hours is greater than the threshold charge time listed in table 5.3 below (*i.e.* $(t_{cd}-5) * n > t_{a\&m}$), use equation (ii) to calculate UEC; otherwise calculate the battery charger's UEC using equation (i).

(i) $$UEC = 365\left\{ n\left(E_{24} - 5P_m - E_{batt}\right)\frac{24}{t_{cd}} + P_m\left[t_{a\&m} - \left(t_{cd} - 5\right)n\right] + \left(P_{sb}t_{sb}\right) + \left(P_{off}t_{off}\right)\right\}$$ or;

(ii) $$UEC = 365\left[n\left(E_{24} - 5P_m - E_{batt}\right)\frac{24}{\left(t_{cd} - 5\right)} + \left(P_{sb}t_{sb}\right) + \left(P_{off}t_{off}\right)\right]$$

Where:

E_{24} = 24-hour energy as determined in section 5.10 of this appendix,

E_{batt} = Measured battery energy as determined in section 5.8 of this appendix,

P_m = Maintenance mode power as determined in section 5.9 of this appendix,

P_{sb} = Standby mode power as determined in section 5.11 of this appendix,

P_{off} = Off mode power as determined in section 5.12 of this appendix,

t_{cd} = Charge test duration as determined in section 5.2 of this appendix, and

$t_{a\&m}$, n, t_{sb}, and t_{off}, are constants used depending upon a device's product class and found in the following table:

TABLE 3.3.3—BATTERY CHARGER USAGE PROFILES

Product class				Hours per day***			Charges (n)	Threshold charge time*
Number	Description	Rated battery energy (ebatt)**	Special characteristic or battery voltage	Active + maintenance ($t_{a\&m}$)	Standby (t_{sb})	Off (t_{off})	Number per day	Hours
1	Low-Energy	≤5 Wh	Inductive Connection****	20.66	0.10	0.00	0.15	137.73
2	Low-Energy, Low-Voltage	<100 Wh	<4 V	7.82	5.29	0.00	0.54	14.48
3	Low-Energy, Medium-Voltage		4-10 V	6.42	0.30	0.00	0.10	64.20
4	Low-Energy, High-Voltage		>10 V	16.84	0.91	0.00	0.50	33.68
5	Medium-Energy, Low-Voltage	100-3000 Wh	<20 V	6.52	1.16	0.00	0.11	59.27
6	Medium-Energy, High-Voltage		≥20 V	17.15	6.85	0.00	0.34	50.44
7	High-Energy	>3000 Wh		8.14	7.30	0.00	0.32	25.44

*If the duration of the charge test (minus 5 hours) as determined in section 3.3.2 of appendix Y to subpart B of this part exceeds the threshold charge time, use equation (ii) to calculate UEC otherwise use equation (i).

**E_{batt} = Rated battery energy as determined in 10 CFR part 429.39(a).

***If the total time does not sum to 24 hours per day, the remaining time is allocated to unplugged time, which means there is 0 power consumption and no changes to the UEC calculation needed.

****Inductive connection and designed for use in a wet environment (*e.g.* electric toothbrushes).

4.6	Unit Energy Consumption Calculation								
Sample No.	E_{24}(Wh)	E_{batt}(Wh)	P_m(W)	P_{sb}(W)	P_{off}(W)	t_{cd}(h)	n	$t_{a\&m}$	UEC(kWh/yr)
Sample 3#20V	387.68	262.51	0.22	0	0	24	0.11	6.52	5.337
Sample 4#20V	381.15	255.85	0.21	0	0	24	0.11	6.52	5.328
Mean value	384.415	259.18	0.215	0	0	24	0.11	6.52	5.333
Represented values	384.415	259.18	0.215	0	0	24	---	---	See below table 4.7

Supplementary

1. These represented values of E_{24}, E_{batt}, P_m, P_{sb}, P_{off}, t_{cd} will simply be the arithmetic mean of the measured values for each of these metrics from the units tested in the compliance certification sample.
2. $(t_{cd}-5) * n = (24-5)*0.10 = 1.9 < t_{a\&m}$, use equation (i) to calculate UEC

Calculate unit energy consumption (UEC) for a battery charger using one of the two equations (equation

(i) or equation (ii)) listed below. If a battery charger is tested and its charge duration as determined in section 5.2 of this appendix minus 5 hours is greater than the threshold charge time listed in table 5.3 below (*i.e.* $(t_{cd}-5) * n > t_{a\&m}$), use equation (ii) to calculate UEC; otherwise calculate the battery charger's UEC using equation (i).

(i) $$UEC = 365\left\{ n\left(E_{24} - 5P_m - E_{batt}\right)\frac{24}{t_{cd}} + P_m\left[t_{a\&m} - \left(t_{cd} - 5\right)n\right] + \left(P_{sb}t_{sb}\right) + \left(P_{off}t_{off}\right)\right\}$$ or;

(ii) $$UEC = 365\left[n\left(E_{24} - 5P_m - E_{batt}\right)\frac{24}{\left(t_{cd} - 5\right)} + \left(P_{sb}t_{sb}\right) + \left(P_{off}t_{off}\right)\right]$$

Where:

E_{24} = 24-hour energy as determined in section 5.10 of this appendix,

E_{batt} = Measured battery energy as determined in section 5.8 of this appendix,

P_m = Maintenance mode power as determined in section 5.9 of this appendix,

P_{sb} = Standby mode power as determined in section 5.11 of this appendix,

P_{off} = Off mode power as determined in section 5.12 of this appendix,

t_{cd} = Charge test duration as determined in section 5.2 of this appendix, and

$t_{a\&m}$, n, t_{sb}, and t_{off}, are constants used depending upon a device's product class and found in the following table:

TABLE 3.3.3—BATTERY CHARGER USAGE PROFILES

Product class				Hours per day***			Charges (n)	Threshold charge time*
Number	Description	Rated battery energy (ebatt)**	Special characteristic or battery voltage	Active + maintenance ($t_{a\&m}$)	Standby (t_{sb})	Off (t_{off})	Number per day	Hours
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2	Low-Energy, Low-Voltage	<100 Wh	<4 V	7.82	5.29	0.00	0.54	14.48
3	Low-Energy, Medium-Voltage		4-10 V	6.42	0.30	0.00	0.10	64.20
4	Low-Energy, High-Voltage		>10 V	16.84	0.91	0.00	0.50	33.68
5	Medium-Energy, Low-Voltage	100-3000 Wh	<20 V	6.52	1.16	0.00	0.11	59.27
6	Medium-Energy, High-Voltage		≥20 V	17.15	6.85	0.00	0.34	50.44
7	High-Energy	>3000 Wh		8.14	7.30	0.00	0.32	25.44

*If the duration of the charge test (minus 5 hours) as determined in section 3.3.2 of appendix Y to subpart B of this part exceeds the threshold charge time, use equation (ii) to calculate UEC otherwise use equation (i).

**E_{batt} = Rated battery energy as determined in 10 CFR part 429.39(a).

***If the total time does not sum to 24 hours per day, the remaining time is allocated to unplugged time, which means there is 0 power consumption and no changes to the UEC calculation needed.

****Inductive connection and designed for use in a wet environment (*e.g.* electric toothbrushes).

4.7	Calculation of UEC according to 10 CFR 429.39 (a), Maximum UEC according to 10 CFR 430.32 (z) and represented value of UEC	Pass
Average UEC	5.637	
Standard deviation *s*	0.156	
Sample numbers *n*	2	
The upper 97.5-percent confidence limit (UCL) of the true mean *UCL* (kWh/yr)	7.035	
UCL/1.05 (kWh/yr)	6.699	
Represented value of UEC (kWh/yr)	6.699	
Maximum UEC (kWh/yr)	0.0257* Ebatt + 0.815 = 7.476	

Supplementary:
Test Sample: 1#-2# (Test Voltage: 115V/60Hz)

1. The mean of the sample, $\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$,

$\bar{x}$ is the sample mean; n is the number of samples; and x_i is the UEC of the i/th sample.

2. The upper 97.5-percent confidence limit (UCL) of the true mean, $UCL = \bar{x} + t_{0.975}\left(\frac{s}{\sqrt{n}}\right)$

$\bar{x}$ is the sample mean; s is the sample standard deviation; n is the number of samples; and $t_{0.975}$ is the t-statistic for a 97.5-percent one-tailed confidence interval with n-1 degrees of freedom (from appendix A of this 10 CFR 429);

3. The represented value of UEC should be greater than or equal to the higher of $\bar{x}$ and UCL/1.05;
4. The represented value of UEC should be less than or equal to Maximum UEC.

Standards for Federally Regulated Battery Chargers
Manufactured on or after June 13, 2018

Product Class	Product Class Description	Rated Battery Energy (E_{batt}**)	Special characteristic or battery voltage	Maximum UEC (kWh/yr) (as a function of E_{batt}**)
1	Low-Energy	≤ 5 Wh	Inductive Connection*	3.04
2	Low-Energy, Low-Voltage	< 100 Wh	< 4 V	0.1440 * E_{batt} + 2.95
3	Low-Energy, Medium-Voltage	< 10 Wh	≥ 4 V and ≤ 10 V	1.42 kWh/year
		≥ 10 Wh		0.0255 * E_{batt} + 1.16
4	Low-Energy High-Voltage		> 10 V	0.11 * E_{batt} + 3.18
5	Medium-Energy Low-Voltage	≥100 Wh and ≤ 3000 Wh	< 20 V	0.0257 * E_{batt} + 0.815
6	Medium-Energy High-Voltage		≥ 20 V	0.0778 * E_{batt} + 2.4
7	High-Energy	> 3000 Wh		0.0502 * E_{batt} + 4.53

*Inductive connection and designed for use in a wet environment (*e.g.* electric toothbrushes).
**E_{batt} = Rated battery energy as determined in 10 C.F.R. part 429.39(a).

*Inductive connection and designed for use in a wet environment (*e.g.* electric toothbrushes).

**E_{batt} = Rated battery energy as determined in 10 CFR part 429.39(a)

4.7	Calculation of UEC according to 10 CFR 429.39 (a), Maximum UEC according to 10 CFR 430.32 (z) and represented value of UEC	Pass
Average UEC	5.309	
Standard deviation *s*	0.018	
Sample numbers *n*	2	
The upper 97.5-percent confidence limit (UCL) of the true mean *UCL* (kWh/yr)	5.468	
UCL/1.05 (kWh/yr)	5.208	
Represented value of UEC (kWh/yr)	5.309	
Maximum UEC (kWh/yr)	0.0257* Ebatt + 0.815 = 7.476	

Supplementary:
Test Sample: 3#-4#(Test Voltage: 5V/DC)

1. The mean of the sample, $\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$,

$\bar{x}$ is the sample mean; n is the number of samples; and x_i is the UEC of the i/th sample.

2. The upper 97.5-percent confidence limit (UCL) of the true mean, $UCL = \bar{x} + t_{0.975}\left(\frac{s}{\sqrt{n}}\right)$

$\bar{x}$ is the sample mean; s is the sample standard deviation; n is the number of samples; and $t_{0.975}$ is the t-statistic for a 97.5-percent one-tailed confidence interval with n-1 degrees of freedom (from appendix A of this 10 CFR 429);

3. The represented value of UEC should be greater than or equal to the higher of $\bar{x}$ and UCL/1.05;
4. The represented value of UEC should be less than or equal to Maximum UEC.

Standards for Federally Regulated Battery Chargers
Manufactured on or after June 13, 2018

Product Class	Product Class Description	Rated Battery Energy (E_{batt}**)	Special characteristic or battery voltage	Maximum UEC (kWh/yr) (as a function of E_{batt}**)
1	Low-Energy	≤ 5 Wh	Inductive Connection*	3.04
2	Low-Energy, Low-Voltage	< 100 Wh	< 4 V	0.1440 * E_{batt} + 2.95
3	Low-Energy, Medium-Voltage	< 10 Wh	≥ 4 V and ≤ 10 V	1.42 kWh/year
		≥ 10 Wh		0.0255 * E_{batt} + 1.16
4	Low-Energy High-Voltage		> 10 V	0.11 * E_{batt} + 3.18
5	Medium-Energy Low-Voltage	≥100 Wh and ≤ 3000 Wh	< 20 V	0.0257 * E_{batt} + 0.815
6	Medium-Energy High-Voltage		≥ 20 V	0.0778 * E_{batt} + 2.4
7	High-Energy	> 3000 Wh		0.0502 * E_{batt} + 4.53

*Inductive connection and designed for use in a wet environment (*e.g.* electric toothbrushes).
**E_{batt} = Rated battery energy as determined in 10 C.F.R. part 429.39(a).

*Inductive connection and designed for use in a wet environment (*e.g.* electric toothbrushes).

**E_{batt} = Rated battery energy as determined in 10 CFR part 429.39(a)

4.7	Calculation of UEC according to 10 CFR 429.39 (a), Maximum UEC according to 10 CFR 430.32 (z) and represented value of UEC	Pass
Average UEC	5.333	
Standard deviation *s*	0.006	
Sample numbers *n*	2	
The upper 97.5-percent confidence limit (UCL) of the true mean *UCL* (kWh/yr)	5.389	
UCL/1.05 (kWh/yr)	5.133	

Represented value of UEC (kWh/yr)	5.333
Maximum UEC (kWh/yr)	0.0257* Ebatt + 0.815 = 7.476

Supplementary:
Test Sample: 3#-4# (Test Voltage: 20V/DC)

1. The mean of the sample, $\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$,

$\bar{x}$ is the sample mean; n is the number of samples; and x_i is the UEC of the i/th sample.

2. The upper 97.5-percent confidence limit (UCL) of the true mean, $UCL = \bar{x} + t_{0.975}\left(\frac{s}{\sqrt{n}}\right)$

$\bar{x}$ is the sample mean; s is the sample standard deviation; n is the number of samples; and $t_{0.975}$ is the t-statistic for a 97.5-percent one-tailed confidence interval with n-1 degrees of freedom (from appendix A of this 10 CFR 429);

3. The represented value of UEC should be greater than or equal to the higher of $\bar{x}$ and UCL/1.05;
4. The represented value of UEC should be less than or equal to Maximum UEC.

Standards for Federally Regulated Battery Chargers
Manufactured on or after June 13, 2018

Product Class	Product Class Description	Rated Battery Energy (E_{batt}**)	Special characteristic or battery voltage	Maximum UEC (kWh/yr) (as a function of E_{batt}**)
1	Low-Energy	≤ 5 Wh	Inductive Connection*	3.04
2	Low-Energy, Low-Voltage	< 100 Wh	< 4 V	0.1440 * E_{batt} + 2.95
3	Low-Energy, Medium-Voltage	< 10 Wh	≥ 4 V and ≤ 10 V	1.42 kWh/year
		≥ 10 Wh		0.0255 * E_{batt} + 1.16
4	Low-Energy High-Voltage		> 10 V	0.11 * E_{batt} + 3.18
5	Medium-Energy Low-Voltage	≥100 Wh and ≤ 3000 Wh	< 20 V	0.0257 * E_{batt} + 0.815
6	Medium-Energy High-Voltage		≥ 20 V	0.0778 * E_{batt} + 2.4
7	High-Energy	> 3000 Wh		0.0502 * E_{batt} + 4.53

*Inductive connection and designed for use in a wet environment (*e.g.* electric toothbrushes).
**E_{batt} = Rated battery energy as determined in 10 C.F.R. part 429.39(a).

*Inductive connection and designed for use in a wet environment (*e.g.* electric toothbrushes).

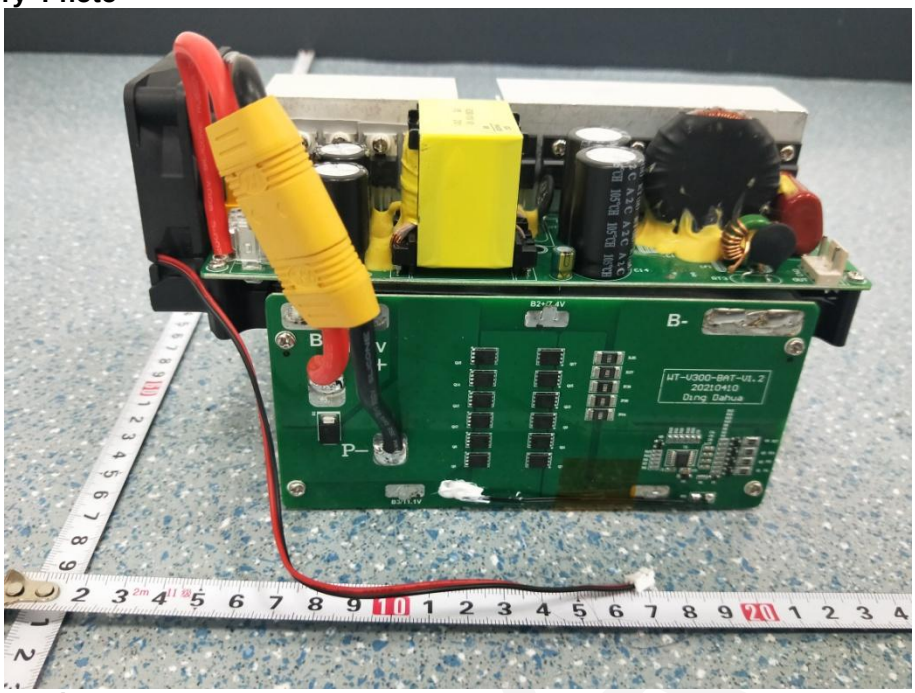
**E_{batt} = Rated battery energy as determined in 10 CFR part 429.39(a)

5 - EUT photos

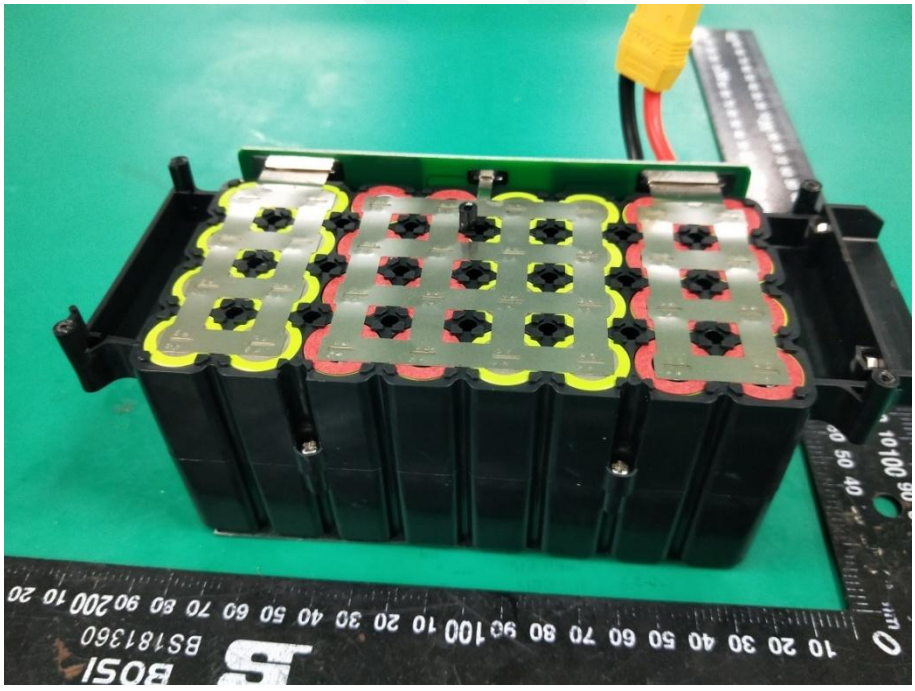
5.1 EUT Entirety Photo

5.2 EUT Adapter Photo

5.3EUT Battery Photo



5.4EUT Battery Photo 2



6 Model Difference Declaration

Shenzhen wanmai technology innovation Co., LTD.
501,5th Fir,BLDG 4,Pingshan Minqi Technology Park No.65 LishanRoad,Pingshan Community,Taoyuan Street,Nanshan District, Shenzhen,GuangDong 518055 China
Tel: 86-0755-84652162
Email: info@vantopgroup.com
Date: 2021-06-11

Portable power station Similarity Declaration

Dear Sir or Madam,

FEDERAL COMMUNICATIONS COMMISSIONS
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046

Dear Sir or Madam,

We, Shenzhen wanmai technology innovation Co., LTD. hereby declare that we have a product named as Portable power station (Model number: Savior 300 FCC ID: 2AZV4-SAVIOR300) was tested by BACL. Meanwhile, for our marketing purpose, we would like to list a series models (Savior C300T，A15003) on reports and certificate. All of the models are electrically identical, but the difference among them is model name.

We confirm that all information above is true, and we'll be responsible for all the consequences. Please contact me if you have any question.

Signature: Xiao yan Liu

Xiaoyan Liu

Title: Management Support Manager

Annex A- General Requirements Performance Value

Performance Parameter	Standard
Maximum 24 hour charge and maintenance energy (Wh) (E_b = capacity of all batteries in ports and N = number of charger ports)	For E_b of 2.5 Wh or less: **16 x N**
	For E_b greater than 2.5 Wh and less than or equal to 100 Wh: **12 x N +1.6E_b**
	For E_b greater than 100 Wh and less than or equal to 1000 Wh: **22 x N +1.5E_b**
	For E_b greater than 1000 Wh: **36.4 x N +1.486E_b**
Maintenance Mode Power and No Battery Mode Power (W) (E_b = capacity of all batteries in ports and N = number of charger ports)	The sum of maintenance mode power and no battery mode power must be less than or equal to: **1 x N +0.0021xE_b Watts**
Inductive Charger Systems	Shall meet either the applicable standards above or shall use less than 1 Watt in maintenance mode, in no battery mode, and average 1 Watt or less over the 24-hour charge and maintenance test.
Battery Backup and Uninterruptible Power Supplies (E_b = battery capacity in watt-hours)	Shall consume no more than **0.8+0.0021 x E_b** Watts in maintenance mode.

-End of Report-