



TEST REPORT

COMMISSION REGULATION (EU) 2019/1782

Ecodesign requirements for no-load condition electric power consumption and average active efficiency
Implementation Measure EC Regulation (EU) 2019/1782

Report Reference No.....: AST2202207001

Tested by (+ signature): Jerry Wu

Reviewed by (+ signature).....: Done Fan

Approved by (+ signature).....: Ron Long

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Testing laboratory

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Address.....: 3/F, Block A1, No. 5, 8th Road, Shapu Yangyong Industrial Park,
Songgang Street, Bao'an District, Shenzhen, Guangdong, China

Testing location: Same as above

Applicant Name.....: Chongqing Lianmao Electronics Co., Ltd

Address.....: Building 4, No.1008. Konggang Avenue, Shuangfengqiao Sub-district,
Yubei District, Chongqing, 401120.China

Manufacturer name.....: Same as applicant

Address.....: Same as applicant

Factory name: Same as applicant

Address.....: Same as applicant

Test specification :

Standard.....: (EC) 2019/1782

Test method: EN 50563:2011+A1:2013, 10 CFR 430 Appendix Z

Test procedure: EU-Directive

Non-standard test method.....: N/A

Test Report Form No.: EU 2019/1782-V01

Test Report Form(s) Originator: AST

Master TRF: 2020-05

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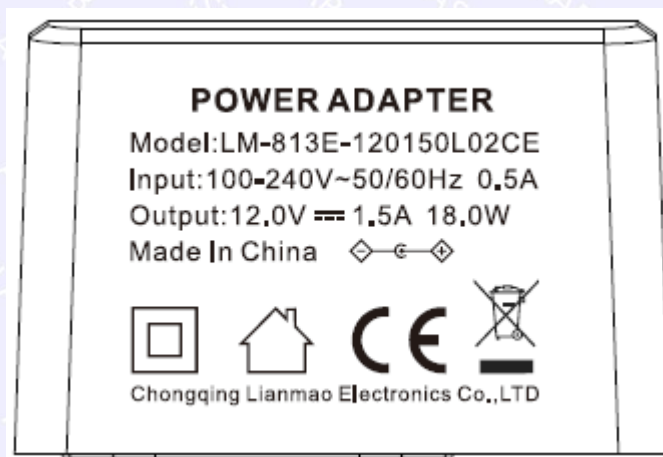
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Web. (网址) : www.ast-test.com

E-mail(邮箱) : ast@hangtianjc.com

Test item				
Test item description: Power Adapter				
Brand Name.....: N/A				
Model/Type reference: LM-813E-120XXXL02CE (XXX stands for output current, for example, 010 stands for 100mA, Output maximum current: 1500mA)				
Ratings.....: Input: 100-240V~, 50/60Hz, 0.5A Output: See model list table A in the following table.				
Product category:				
Name plate power output: 12.0W				
Declared No-load power consumption.....: 0.06				
Declared average active efficiency.....: 87.11%				
Declared efficiency at load 10%: 83.33%				
Type of power supply: <input type="checkbox"/> Multiple-voltage external power supply <input checked="" type="checkbox"/> Single-voltage external power supply				
Possible test case verdicts:				
- 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)				
Testing				
Date of receipt of test item: 2022-02-11				
Date (s) of performance of tests: 2022-02-11 to 2022-02-18				
Note:				
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.				
Summary of testing:				
After test, The product meets the stage 1 of (EU) 2019/1782 Annex II				
General remarks:				
All models are identical to each other except for model name, output rating and some non-critical components to adjust output rating. All tests were conducted under LM-813E-120XXXL02CE to represent all models. Models LM-813E-120XXXL02CE (XXX stands for output current, for example, 010 stands for 100mA, Output maximum current: 1500mA)				
Table A: Model list				
Model	Input	Output Voltage(Vdc)	Output Current(A)	Max. output power(W)
LM-813E-120XXXL02CE	100-240V~, 50/60Hz, 0.5A	12.0V	0.1-1.5	18.0W

Copy of Marking Plate



Remark: the final marking shall have rated output current, voltage and power in it.

Test environment requirements and instrument connection methods			Verdict
0.1	Ambient condition met requirement of: Ambient temperature (23 +5°C) Airspeed ≤0.5m/s	Ambient: 24.5°C Airspeed: 0.1m/s	P
0.2	Where the product has an ambient light sensor that affects the power consumption, the test shall be carried out with controlled ambient light conditions. Where the illuminance levels are externally defined (in a test procedure or in the instructions for use), these values shall be used. Where no illuminance levels are stated or defined, reference illuminance levels of >300 lx and <10 lx shall be used.		N/A
0.3	Power source meets requirement of: Voltage 230V +1% Frequency 50Hz + 1% THD value<2% Ratio of peak value of test voltage to rms of 1.34 to 1.49	Voltage: 115V/230V Frequency: 50/60Hz THD(voltage): <2% Crest factor: 1.41	P
0.4	Power measurement accuracy		P
	Any power measurements recorded, as well as any power measurement equipment utilized for testing, shall conform to the uncertainty and resolution requirements outlined in Clause 4, "General conditions for measurements," as well as Annexes B, "Notes on the measurement of low power modes," and D, "Determination of uncertainty of measurement," of IEC 62301:2011.		P
0.5	Test circuit		P
	Test circuit acc. To Fig.1 is used		P
<p style="text-align: center;">Fig.1 Test circuit</p>			

Section	Requirement + Test	Result - Remark	Verdict																				
Annex II	Ecodesign requirements for external power supplies		P																				
1.	Energy efficiency requirements:		P																				
(a)	From 1 April 2020, the no-load condition power consumption shall not exceed the following values:		P																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="font-size: 8px;">AC-AC external power supplies, except low voltage and multiple voltage output external power supplies</th> <th style="font-size: 8px;">AC-DC external power supplies, except low voltage and multiple voltage output external power supplies</th> <th style="font-size: 8px;">Low voltage external power supplies</th> <th style="font-size: 8px;">Multiple voltage output external power supplies</th> </tr> </thead> <tbody> <tr> <td>$P_o \leq 49,0 \text{ W}$</td> <td>0,21 W</td> <td>0,10 W</td> <td>0,10 W</td> <td>0,30 W</td> </tr> <tr> <td>$P_o > 49,0 \text{ W}$</td> <td>0,21 W</td> <td>0,21 W</td> <td>0,21 W</td> <td>0,30 W</td> </tr> </tbody> </table>		AC-AC external power supplies, except low voltage and multiple voltage output external power supplies	AC-DC external power supplies, except low voltage and multiple voltage output external power supplies	Low voltage external power supplies	Multiple voltage output external power supplies	$P_o \leq 49,0 \text{ W}$	0,21 W	0,10 W	0,10 W	0,30 W	$P_o > 49,0 \text{ W}$	0,21 W	0,21 W	0,21 W	0,30 W	See table 1	P					
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(b)	From 1 April 2020, the average active efficiency shall be not less than the following values:		P																				
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(b)	from 1 April 2020, instruction manuals for end-users (where applicable), and free access websites of manufacturers, importers or authorised representatives shall include the following information, in the order as set out below:		P																				

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(c)	from 1 April 2020, the technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:		P																	
(1)	for external power supplies with a nameplate output power greater than 10 watts:		P																	
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Table 1: Measurement and calculation						P
Test Item	Measure at load condition (Percentage of nameplate output current)					
	100%	75%	50%	25%	10%	0%
Rated Output: 12.0Vdc, 1.5A						
Output current (mA)	1500	1125	750	375	150	0
Output voltage (V)	11.96	12.01	12.17	12.27	12.32	12.35
Active output power (W)	17.94	13.51	9.13	4.60	1.85	--
Test voltage and frequency: 230V/50Hz						
Input voltage (V)	230	230	230	230	230	230
Input current (A)	0.177	0.135	0.093	0.053	0.027	0
Input power (W)	20.65	15.51	10.41	5.30	2.22	0.06
THD (current) (%)	166.8	169.4	175.2	204.6	247.6	--
THD (voltage) (%)	0.63	0.62	0.62	0.62	0.63	--
True power factor	0.507	0.501	0.488	0.437	0.364	--
Power Consumed (W)	0.64%	0.63%	0.62%	0.62%	0.37	0.06
Active mode Efficiency	86.88%	87.11%	87.70%	86.79%	83.33%	--
Average active Efficiency (%)	87.11				--	--
Test Item	Measure at load condition (Percentage of nameplate output current)					
	100%	75%	50%	25%	10%	0%
Rated Output: 12.0Vdc, 1.5A						
Output current (mA)	1500	1125	750	375	150	0
Output voltage (V)	11.97	12.07	12.17	12.27	12.32	12.36
Active output power (W)	17.96	13.58	9.13	4.60	1.85	--
Test voltage and frequency: 115V/60Hz						
Input voltage (V)	115	115	115	115	115	115
Input current (A)	0.322	0.244	0.169	0.092	0.042	0
Input power (W)	21.27	15.80	10.41	5.21	2.15	0.05
THD (current) (%)	130.0	140.4	153.8	175.8	206.1	--
THD (voltage) (%)	1.52	1.30	1.05	0.70	0.50	--
True power factor	0.579	0.560	0.533	0.491	0.435	--
Power Consumed (W)	0.64%	0.63%	0.62%	0.62%	0.3	0.05

Active mode Efficiency	84.44%	85.95%	87.70%	88.29%	86.05%	--
Average active Efficiency (%)	86.59				--	--
Supplementary information: - Input cable: -- - Output cable: 1500mm*2, 24AWG - * 10% load test only for external power supply with a name plate output power great than 10W						

Table 2: Test results summary					P
Rated Output	No Load Power Consumption (W)		Average Active Efficiency (%)		Verdict
	Measure	Limit	Measure	Limit	
Output: 12.0Vdc, 1.5A	0.06	0.1	87.11	82.96	P

Table 3: Information in instruction manuals for end-users (where applicable), and free access websites of manufacturers, importers or authorised representatives			P
Information published	Value and precision	Unit	Notes
Manufacturer's name or trade mark, commercial registration number and address	--	-	-
Model identifier	--	-	-
Input AC voltage	100-240	V	Specified by the manufacturer. Shall be a value or a range.
Input frequency	50/60	Hz	Specified by the manufacturer. Shall be a value or a range.
Output voltage	12.0	V	Nameplate output voltage. Shall indicate whether is AC or DC. In cases where more than one physical output or more than one output voltage at load condition 1 are measured, the sets of available Output voltage - Output current- Output power shall be published.
Output current	1.5	A	Nameplate output current. In cases where more than one physical output or more than one output voltage at load condition 1 are measured, the sets of available Output voltage - Output current – Output power shall be published.
Output power	12.0	W	Nameplate output power. In cases where more than one physical output or more than one output voltage at load condition 1 are measured, the sets of available Output voltage - Output current – Output power shall be published.
Average active efficiency	87.11	%	Declared by the manufacturer based on the value calculated as arithmetical mean of efficiency at load conditions 1-4. In cases where multiple average active efficiencies are declared for multiple output voltages available at load condition 1, the value published shall be the average active efficiency declared for the lowest output voltage.

Efficiency at low load (10 %)	83.33	%	<p>Declared by the manufacturer based on the value calculated at load condition 5.</p> <p>External power supplies with a nameplate output power of 10 W or less shall be exempted from this requirement.</p> <p>In cases where multiple average active efficiencies are declared for multiple output voltages available at load condition 1, the value published shall be the value declared for the lowest output voltage.</p>
No-load power consumption	0.06	W	<p>Declared by the manufacturer based on the value measured for load condition 6.</p>

Photograph



Fig 1 Overview



Fig 2 Overview

=====END OF REPORT=====