



TEST REPORT PPP 11007D:2015 Rev.00 TÜV SÜD Test report for ErP – External Power Supply Ecodesign requirements for no-load condition electric power consumption and average active efficiency Implementation Measure EC Regulation 278/2009	
Report reference No.	64.182.15.03285.01
Date of issue	2015-07-07
Project handler.....	Eddy Luo
Testing laboratory	TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
Address.....	5F, Communication Building 163 Pingyun Rd, Huangpu Ave. West Guangzhou 510656, PR China
Testing location.....	as above
Client	Mass Power Electronic Limited
Client number.....	73014
Address.....	10/F, TOWER A, BILLION CENTRE 1 WANG KWONG ROAD, KOWLOON BAY, KOWLOON, HONG KONG
Contact person.....	Mr. Joseph Zhou
Standard.....	This TÜV SÜD test report form is based on the following requirements: (EC) 278/2009:2009-04-06 Amended by: (EU) 617/2013:2013-06-26 Test Method: EN 50563:2011+A1:2013
TRF originated by	TÜV SÜD Product Service GmbH, Mr. Gary Sun
Copyright blank test report.....	This test report is based on the content of the standard (see above). The test report considered selected clauses of the a.m. standard(s) and experience gained with product testing. It was prepared by TÜV SÜD Product Service GmbH. TÜV SÜD Group takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.
Test procedure	<input type="checkbox"/> TÜV Mark, <input type="checkbox"/> EU-Directive, <input checked="" type="checkbox"/> without certification Non-standard test method..... <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, see details under Summary National deviations..... None
Number of pages (Report).....	9
Number of pages (Attachments)	1
Compiled by	Approved by.....
(+ signature) Eddy Luo	(+ signature) Snowman Zhao

Test sample	One (Pre-production)		
Type of test object	AC ADAPTER		
Trademark	N		
Model and/or type reference	NBS12E120100VE-1, NBS12E120100HE-1, NBS12E120100UV-1		
Rating(s)	Rated input : AC 100-240V or 200-240V, 50/60Hz, 0.3A Rated output: DC 12.0V, 1.0A		
Manufacturer	Mass Power Electronic Limited		
Manufacturer number	73014		
Address	10/F, TOWER A, BILLION CENTRE 1 WANG KWONG ROAD, KOWLOON BAY, KOWLOON, HONG KONG		
Sub-contractors/ tests (clause)	N		
Address	N		
Order description	<input checked="" type="checkbox"/>	Complete test according to TRF	
	<input type="checkbox"/>	Partial test according to manufacturer's specifications	
	<input type="checkbox"/>	Preliminary test	
	<input type="checkbox"/>	Spot check	
	<input type="checkbox"/>	Others:	
Date of order	2015-06-29		
Date of receipt of test item	2015-07-01		
Date(s) of performance of test	2015-07-06		
Test item particulars:			
Name plate power output	12W		
Declared No-load power	< 0.3W		
Declared Average active	> 78%		
Built-in ON/OFF	N		
Output	Fixed		
Attachments:			
1. Equipment list			
General remarks:			
<p>"(see remark #)" refers to a remark appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p> <p>The test results presented in this report relate only to the object tested.</p> <p>This report shall not be reproduced except in full without the written approval of the testing laboratory.</p> <p>Measurement uncertainty budgets have been determined for applicable test methods and are available upon request.</p>			

Summary of testing:

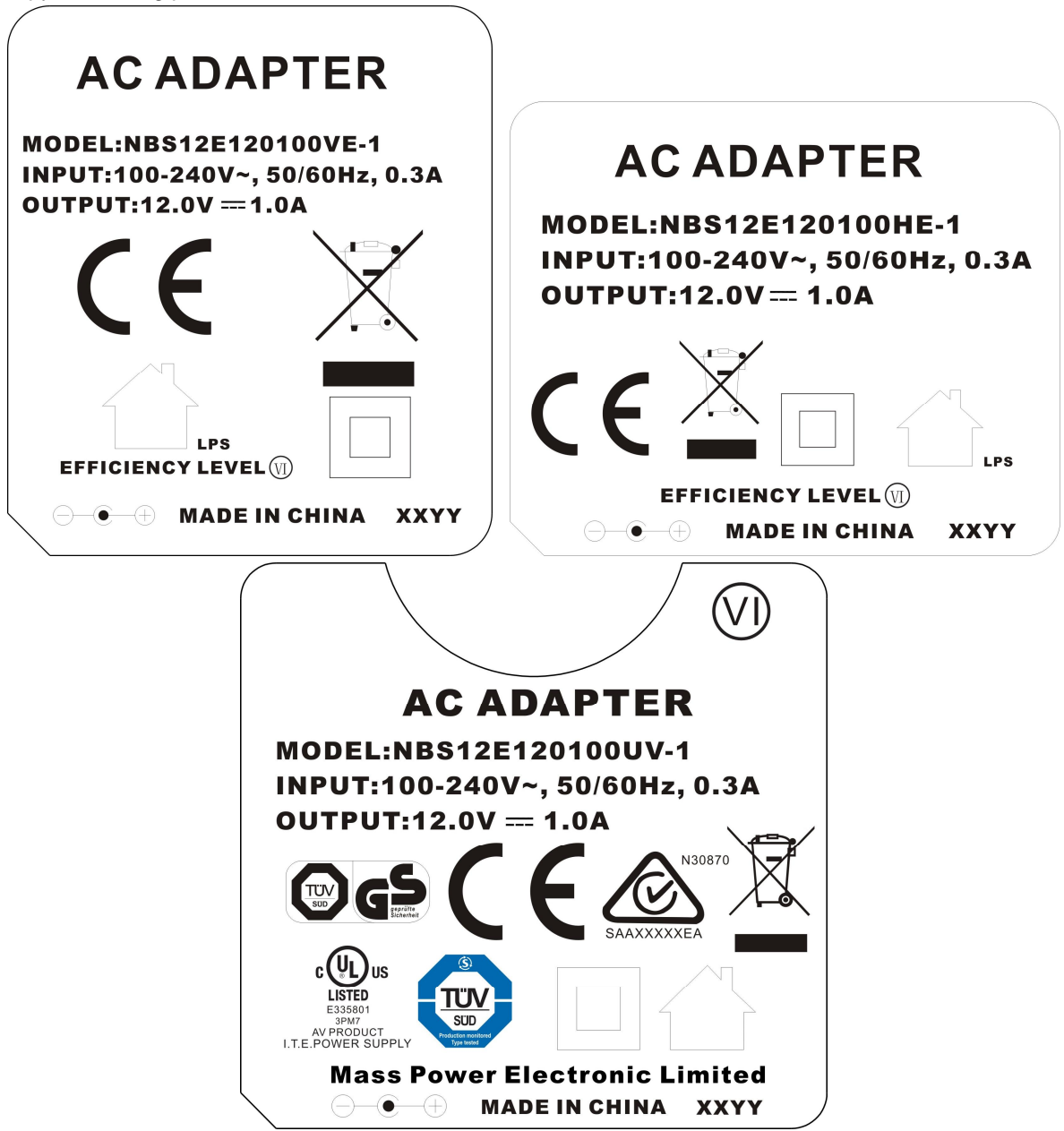
The product meets the stage 2 requirement of the implementation measure.

The model NBS12E120100VE-1 tested in this report.

Remark:

	Stage 1	Stage 2
Start Date	27.Apr.2010	27.Apr.2011

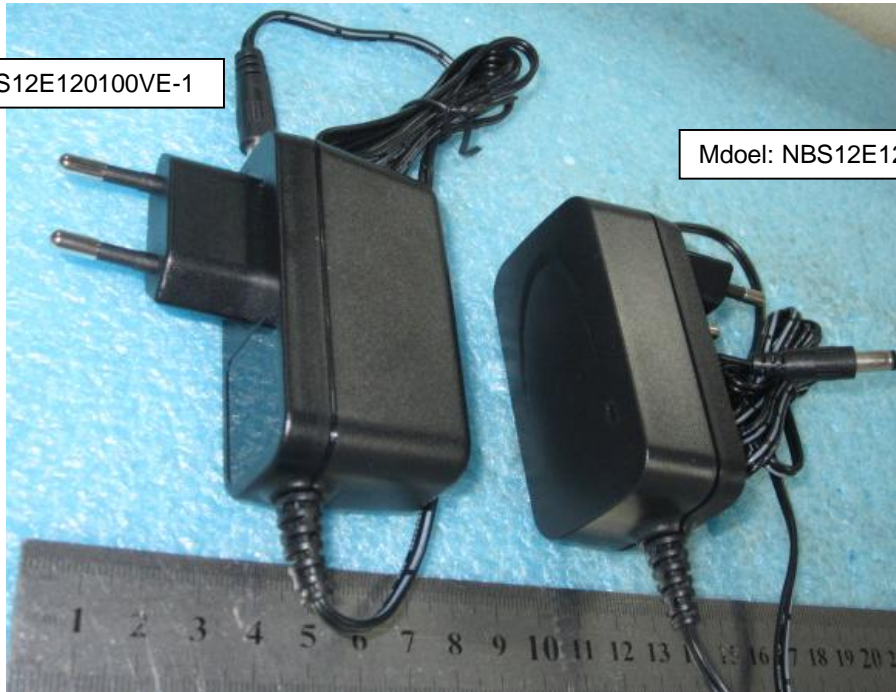
Copy of marking plate:



Picture of the product

Model: NBS12E120100VE-1

Mdoel: NBS12E120100HE-1





Characteristic data

(not shown on the marking plate)

Dimensions (except plug): 39.4mm x 76.0mm x 29.5mm, or 76.5mm x 41.0mm x 27.6mm

Weight: 0.088kg

The all models have the similar electrical and mechanical constructions, except for the enclosure outline is different.

Name and address of factory

(only if certification is provided)

N

Purpose of the product

(Description of intended use)

AC-DC external power supply units.

Possible test case verdicts:

- test case does not apply to the test object.....: N(.A.) / not included in the order
- test object does meet the requirement: P(ass)
- test object does not meet the requirement: F(ail)

Possible suffixes to the verdicts:

- suffix for detailed information for the: - C(omment)
- suffix for important information for factory: - M(anufacturing)

Clause	Requirement – Test	Measuring result – Remark	Verdict
0.	General		P
0.1	Ambient condition met requirement of: Ambient temperature (23 ±5)°C Airspeed ≤0.5m/s Ambient illuminance between 10lx and 300lx if not stated otherwise (EN 50563 cl.5.2)		P
0.2	Power source meets requirement of: Voltage 230V ±1% Frequency 50Hz ±1% THD value <2% (up to and including 12 harmonic) ratio of peak value of test voltage to rms of 1.34 to 1.49 (EN 50563 cl.5.3)		P
0.3	Power measurement accuracy		P
	Measurements of power of 0,5 W or greater shall be made with an uncertainty of less than or equal to 2 % at the 95 % confidence level. Measurements of power of less than 0,5 W shall be made with an uncertainty of less than or equal to 0,01 W at the 95 % confidence level.		P
0.4	Test approach used		P
	- Sampling method (EN 50563 cl. 6.7, EN 50564 cl.5.3.2)		P
	- Average reading method - Accumulated power approach (EN 50563 cl. 6.7, EN 50564 cl.5.3.3)		N
0.5	Test circuit		P
	- Test circuit acc. to Fig.1 is used		P
	- Other test circuit is used	See attachment	N

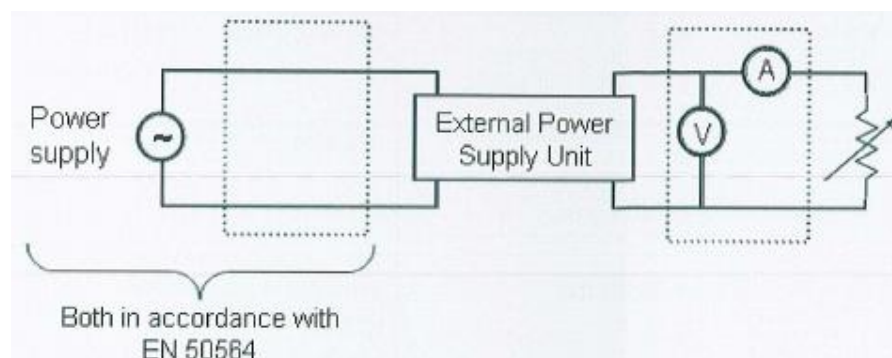


Fig. 1 Test circuit



Clause	Requirement – Test	Measuring result – Remark	Verdict
1.	No-load power consumption		P
1.1	Measured power consumption in no-load condition:	See table 1	P
1.1.1	Stage 1 limit: ≤ 0.50 W		N
1.1.2	Stage 2 limit:		P
	≤ 0.50 W AC-AC external power suppliers except low voltage external power supplies, Po ≤ 51.0 W		N
	≤ 0.50 W AC-AC external power suppliers except low voltage external power supplies, Po > 51.0 W		N
	≤ 0.30 W AC-DC external power suppliers except low voltage external power supplies, Po ≤ 51.0 W	0.088 W ≤ 0.30 W	P
	≤ 0.50 W AC-DC external power suppliers except low voltage external power supplies, Po > 51.0 W		N
	≤ 0.30 W Lower voltage external power supplies , Po ≤ 51.0 W		N
2.	Average active efficiency		P
2.1	Measured average active efficiency:	See table 1	P
2.1.1	Stage 1 limit:		N
	$\geq 0.500 * P_o$ for Po < 1.0 W		N
	$\geq 0.090 * \ln(P_o) + 0.500$ for 1.0 W $\leq P_o \leq 51.0$ W		N
	≥ 0.850 for Po > 51.0 W		N
2.1.2	Stage 2 limit :		P
	$\geq 0.480 * P_o + 0.140$ for AC-AC and AC-DC external power suppliers, except low voltage external power supplies, Po ≤ 1.0 W		N
	$\geq 0.063 * \ln(P_o) + 0.622$ for AC-AC and AC-DC external power suppliers, except low voltage external power supplies, 1.0 W < Po ≤ 51.0 W	$82.14\% \geq 77.85\%$	P
	≥ 0.870 for AC-AC and AC-DC external power suppliers, except low voltage external power supplies, Po > 51.0 W		N

Clause	Requirement – Test	Measuring result – Remark	Verdict
	$\geq 0.497 * P_o + 0.067$ for lower voltage external power supplies , $P_o \leq 1.0 \text{ W}$		N
	$\geq 0.075 * \ln(P_o) + 0.561$ for lower voltage external power supplies , $1.0 \text{ W} < P_o \leq 51.0 \text{ W}$		N
	≥ 0.860 for lower voltage external power supplies , $P_o > 51.0 \text{ W}$		N

TABLE1	Measurement and calculation				
Model:	NBS12E120100VE-1				
	Load condition 1	Load condition 2	Load condition 3	Load condition 4	Load condition 5
	100% ± 2%	75% ± 2%	50% ± 2%	25% ± 2%	0%
Output current (mA)	1000	750	500	250	--
Output Voltage (V)	11.949	11.997	12.046	12.095	12.140
Active Output Power (W)	11.949	8.998	6.023	3.024	--
Input Voltage (V)	230	230	230	230	230
Input current (mA)	146.03	114.19	76.62	42.14	1.80
Input Power (W)	14.500	11.091	7.276	3.676	0.088
THD _i (%)	0.204%	0.163%	0.117%	0.071%	0.039%
True Power Factor	0.4316	0.4222	0.4128	0.3792	--
Power consumed (W)	2.551	2.093	1.253	0.652	--
Efficiency	82.41%	81.13%	82.78%	82.26%	--
Average Efficiency	82.14%				--
Calculation information:					
True Power Factor = Input Power / (Input Voltage * Input current)					
Power consumed = Input Power - Active Output Power					
Efficiency = Active Output Power / Input Power					
Average Efficiency = (Efficiency 1 + Efficiency 2 + Efficiency 3 + Efficiency 4)/4					
No Load Power consumption = Input Power @ 0% load					
Supplementary information:					
- Setting: Fig.1 test circuit.					
- Test load: Electronic load					
- Stability achieved: 35 min.					
- Output cable length (cm): 150 cm					

Attachment 1: Equipment List

Equipment	ID No.	Model	Brand/Manufacturer	Calibration due date
Power source	64-1-09-07-001	AFC-500W	ACPOWER	2016/06/04
Multi-function digital power meter	64-1-32-10-006	WT210 760401-H/C2/HRM	YOKOGAWA	2016-03-08
Luminance meter	64-1-44-09-001	ST-80C	Sensing	2015/07/29
Temperature/Humidity recorder	64-1-53-10-007	SK-L200 THII@	Sato	2015/10/21
Anemometer	64-1-26-12-001	417	Testo	1015/10/29
Electronic load	64-1-57-10-003	IT8512C	ITECH	2015/09/22
Stop watch	64-1-39-08-002	PC396	TIANFU	2015/11/10

END OF TEST REPORT