# TEST REPORT

## REQUIREMENTS FOR NO-LOAD CONDITION ELECTRIC POWER CONSUMPTION AND AVERAGE ACTIVE EFFICIENCY OF EXTERNAL POWER SUPPLIES ACCORDING TO THE EC REGULATION 278/2009

Part of underlying framework Directive 2009/125/EC, of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies

**Applicant, identification of the test sample**

| | | |
|---|---|---|
| **Applicant** | | |
| **Address** | | |
| **Manufacturer** | | |
| **Address** | | |
| **Type of appliance** | AC ADAPTER | |
| **Intended use** | General use | |
| **Brand name** | | |
| **Type** | NLB200050W1U4Sa,<br>NLB200050W1E4Sa<br>(Sa=S95 or S65 or S58 or S47 or S35) | |
| **Serial number** | N/A (Engineering sample) | |
| **Receipt condition** | Intact | |
| **Sample receipt date** | 2016-02-29 | |
| **Test date** | 2016-03-05 | |
| **Electrical data** | Input: 100-240V~ 50/60Hz 0.4A Max<br>Output: 5Vd.c., 2A | Po: 10W |

**Discrepancy of models**

The EUT are AC ADAPTER, model list:

| Model name | Output Voltage | Output Current | Output Wattage | DC output cord length |
|---|---|---|---|---|
| NLB200050W1U4Sa<br>NLB200050W1E4Sa<br>(Sa=S95 or S65 or S58 or S47 or S35) | 5Vd.c. | 2A | 10W | 153cm |

Models NLB200050W1U4Sa and NLB200050W1E4Sa are identical to each other except for model number and mains plug type(Sa=S95 or S65 or S58 or S47 or S35).

Models NLB200050W1U4Sa are EU plug type,and NLB200050W1E4Sa are BS plug.

Unless otherwise specified,all tests were performed on model NLB200050W1U4S95.

**Product Function and Intended Use**

General use.

**Standard and environmental condition**

| | |
|---|---|
| **Test laboratory** | Guangzhou ITL Co., Ltd. |
| **Address** | 1-2 floor, South Block, Building A2, No.3 Keyan Lu, Science City, Guangzhou, Guangdong, P.R. CHINA |
| **Standard applied** | EN 50563: 2011+A1:2013<br>EN 50564: 2011 |
| **Tested at** | 230VAC / 50Hz; 115VAC / 60Hz |
| **Ambient temperature** | 23.7 ℃ |
| **Relative humidity** | 52% RH |
| **THD V%** | 0.07% |
| **Set-up and circuits used for electrical testing** | See page 4 testing circuit |

**List of Test and Measurement Equipment:**

| Kind of Equipment | Manufacturer | Model | S/N | Calibrated until |
|---|---|---|---|---|
| Power analyzer | XITRON | 2801 | ITL-241 | Mar. 25, 2016 |
| DC electric load | KIKUSUI | PLZ 300W | ITL-004h | Mar. 20, 2016 |
| Measuring tape | TaJima | 5.5m | ITL-056b | Mar. 10, 2017 |
| AC power source | KIKUSUI | PCR 2000 | ITL-001d | Non-calibrated Equipment |

**Summary of test results**

The test results see table 1.

Table 1:

| **Model name** | **average active efficiency** | | **no-load condition electric power consumption** | | **energy performance requirement** | **No load** |
|---|---|---|---|---|---|---|
| | **230V/50Hz** | **115V/60Hz** | **230V/50Hz** | **115V/60Hz** | | |
| NLB200050W1U4S95 | 80.52% | 0.06W | 80.57% | 0.03W | 73.37% | ≤0.3 W |

These results are in compliance with the 2nd stage requirements of the COMMISSION REGULATION (EC) No. 278/2009.

**Measurement conditions**

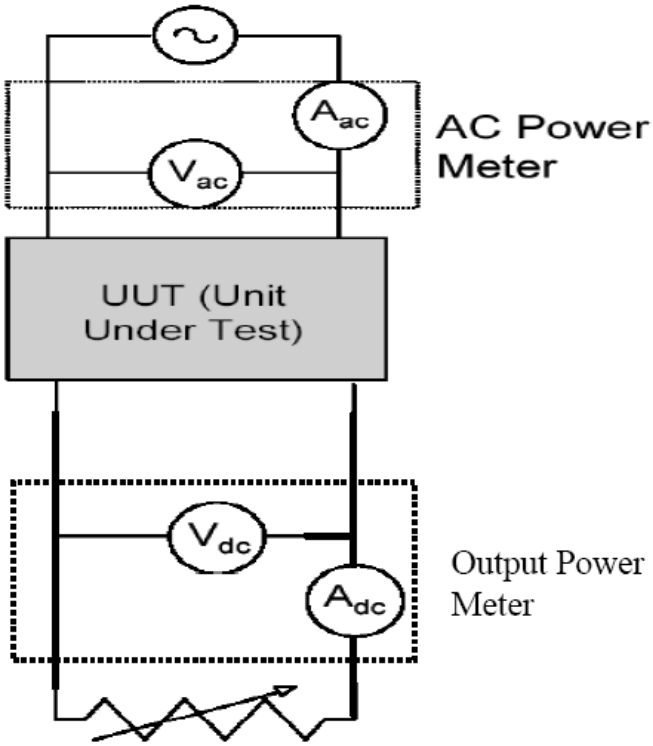
The UUT is operated at 100% of nameplate current output for 30 minutes immediately prior to conducting efficiency measurements.

After this warm-up period, the ac input power is monitored for a period of 5 minutes to assess the stability of the UUT.

The power level has not drifted by more than 5% from the maximum value observed. The UUT is considered stable and the measurements have been recorded at the end of the 5 minute period.

Measurements of power of 0.50 W or greater are made with an uncertainty of less than or equal to 2% at the 95% confidence level. Measurements of power of less than 0.50 W are made with an uncertainty of less than or equal to 0.01 W at the 95% confidence level.

**Testing circuits**



**Test and verification results**

**Model: NLB200050W1U4S95**

| | No Load | Load condition | | | |
|---|---|---|---|---|---|
| Percentage of nameplate current | 0% | 25% | 50% | 75% | 100% |
| Output current (mA) | | 500 | 1000 | 1500 | 2000 |
| Output voltage (V) | 5.16 | 5.19 | 5.18 | 5.18 | 5.21 |
| Output power (W) | | 2.60 | 5.18 | 7.77 | 10.42 |
| AC input current (mA) | | 53.10 | 98.20 | 134.30 | 171.90 |
| AC input voltage (V) | 230.00 | 230.00 | 230.00 | 230.00 | 230.00 |
| AC supply frequency (Hz) | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 |
| AC input power (W) | 0.06 | 3.23 | 6.41 | 9.61 | 13.04 |
| Total Harmonic distortion (THD)V% | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |
| True power factor (W/VA) | 0.19 | 0.27 | 0.28 | 0.31 | 0.33 |
| Power consumed by EUT (W) | 0.06 | 0.63 | 1.23 | 1.84 | 2.62 |
| Efficiency | | 80.50% | 80.81% | 80.85% | 79.91% |
| Average active efficiency | 80.52% | | | | |
| | No Load | Load condition | | | |
| Percentage of nameplate current | 0% | 25% | 50% | 75% | 100% |
| Output current (mA) | | 500 | 1000 | 1500 | 2000 |
| Output voltage (V) | 5.16 | 5.19 | 5.20 | 5.19 | 5.23 |
| Output power (W) | | 2.60 | 5.20 | 7.79 | 10.46 |
| AC input current (mA) | | 69.10 | 146.60 | 205.60 | 263.80 |
| AC input voltage (V) | 115.00 | 115.00 | 115.00 | 115.00 | 115.00 |
| AC supply frequency (Hz) | 60.00 | 60.00 | 60.00 | 60.00 | 60.00 |
| AC input power (W) | 0.03 | 3.13 | 6.39 | 9.80 | 13.35 |
| Total Harmonic distortion (THD)V% | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |
| True power factor (W/VA) | 0.21 | 0.34 | 0.38 | 0.41 | 0.44 |
| Power consumed by EUT (W) | 0.03 | 0.53 | 1.19 | 2.01 | 2.89 |
| Efficiency | | 83.07% | 81.38% | 79.49% | 78.35% |
| Average active efficiency | 80.57% | | | | |

* ) Arithmetic average of efficiency at load conditions 1-4.

| Clause | Ecodesign requirements, 2nd stage | Result – Remark | Verdict |
|---|---|---|---|
| 1b) | AC-AC external power supplies except low voltage external power supplies, the no-load condition power consumption shall not exceed 0.50 W | | N/A |
| | AC-DC external power supplies with Po ≤ 51.0 W except low voltage external power supplies, the no-load condition power consumption shall not exceed 0.30 W | | N/A |
| | AC-DC external power supplies with Po > 51.0 W except low voltage external power supplies, the no-load condition power consumption shall not exceed 0.50 W | | N/A |
| | Low voltage external power supplies, the no-load condition power consumption shall not exceed 0.30 W | See table 1 | Pass |
| | AC-AC and AC-DC external power supplies except low voltage external power supplies, the average active efficiency shall be not less than: | | -- |
| | 0.480·Po + 0.140, for Po ≤ 1.00 W | | N/A |
| | 0.063·ln(Po)+ 0.622, for 1.00 W < Po ≤ 51.00 W | | N/A |
| | 0.870, for Po > 51.00 W | | N/A |
| | Low voltage external power supplies, The average active efficiency shall be not less than: | | -- |
| | 0.497·Po + 0.067, for Po ≤ 1.0 W | | N/A |
| | 0.075·ln(Po)+ 0.561, for 1.0 W < Po ≤ 51.0 W | See table 1 | Pass |
| | 0.860, for Po > 51.0 W | | N/A |

**Label(s):**

**Model NLB200050W1U4S95:**


**Model NLB200050W1U4S58:**


**Model NLB200050W1U4S47:**

**Model NLB200050W1U4S35:**


**Model NLB200050W1E4S95:**


**Model NLB200050W1E4S58:**


**Model NLB200050W1E4S47:**


**Model NLB200050W1E4S35:**

**Photo(s) of the appliance:**

**Model NLB200050W1U4Sa(Sa=S95 or S65 or S58 or S47 or S35)**

**Model NLB200050W1E4Sa(Sa=S95 or S65 or S58 or S47 or S35)**


**The results only relate to the item tested**

| Place | Date | Name of laboratory |
|---|---|---|
| Guangzhou | Mar. 14, 2016 | Guangzhou ITL Co., Ltd. |

| Tested by | Approved by |
|---|---|
| George Chen | Bob Dai |
| George Chen | Bob Dai |
| Project Engineer | Project Engineer |

-- THE END --