IDEAL POWER
experts in power conversion

# SPECIFICATION FOR APPROVAL

CUSTOMER: Ideal Power

MODEL NO. : XA065BQ1200500

CUSTOMER P/N: 40XA065BQ1200500

P/N: S-1900184

CUSTOMER MODEL:

REV. NO. : 3

DATE : 20191016

DESCRIPTION: Input:100-240Vac ;Output:12.0Vdc 5.0A, SMPS Adaptor

Dear Customer:
Please send one copy of this specification back after you sign and approve for Production.

*Customer approved comments:*
*We have reviewed and approved all pages（page1 to page17）of this SPEC.*

*Approved By:* _____

*Date:* _____

| ISSUED BY | Sky | CHECKED BY | Alan | APPROVED BY | Eric |
|---|---|---|---|---|---|

# 样品说明(SAMPLE DESCRIPTION)

| 样品用途 THE PURPOSE OF THE SAMPLE | 无样板 (NO-SAMPLE) | 工作样板 (WORK-SAMPLE) | 功能样板 (FUNCTION-SAMPLE) | 最终样板 (FINALLY-SAMPLE) |
|---|---|---|---|---|
| | □ | □ | ☑ | □ |

此次送样后如客人测试 OK,还需继续的事项/
THE ITEMS NEED BE CONTINUED OF THESE SAMPLES CONFIRMED BY CLIENT

| EMI 整改/EMI MODIFICATION | 安规申请 /SAFETY APPLY | 修改 PCB 设计/ PCB MODIFICATION | 开模/MOULD | | | 试产 /TRIAL-PRODUCE |
|---|---|---|---|---|---|---|
| | | | PCB | DC CORD | CASE | |
| □ | □ | □ | □ | □ | □ | ☑ |

送样材料偏差清单/
DIFFERENCE OF THE SAMPLE WITH BOM:

| 位置编号 POSITION NO. | 元件类型 PART TYPE | 本次送样实际使用 MATERIAL OF THIS SAMPLE | 未来量产应用 MASS-PRODUCTION MATERIAL | 备注 REMARK |
|---|---|---|---|---|
| | | | | |
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| | | | | |
| | | | | |

与上次送样差异描述/
DIFFERENCE OF THE SAMPLE WITH BOM:

| 编号 NO. | 上次样品内容 ITEM OF LAST TIME | 本次样品改变内容 CHANGED ITEM OF THIS TIME | 改变原因 CHANGE REASON |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

| P/N | REV. | DATE | ISSUED BY | CHECKED BY | APPROVED BY |
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# Design Revision History

| REV. | Description of Change | | Reason of Change | Changed Date | Revised By | Approved By |
|---|---|---|---|---|---|---|
| | Before | After | | | | |
| **0** | | | **Initial Issue** | **2019.07.10** | **Sky** | **Eric** |
| **1** | | **Add UL mark** | **Engineer Change** | **2019.07.16** | **Sky** | **Eric** |
| **2** | | Add mark on carton and white box | **Customer need** | **2019.10.7** | **Sky** | **Eric** |
| **3** | CUSTOMER P/N: 40XA065BC141200500<br>Carten to show part number:40XA065BC141200500&RoHS | CUSTOMER P/N: 40XA065BQ1200500<br>Carten to show part number:40XA065BQ1200500&RoHS | Customer change | 2019-10-16 | SKY | Eric |
| | | | | | | |
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|---|---|---|---|---|---|
| **S-1900184** | **3** | **20191016** | **Sky** | **Alan** | **Eric** |

# Table of Contents

# 1. SCOPE

This document details the electrical, mechanical and environmental specifications of a switching power supply.

## 1.1 Description

☐ Wall Mount ☑ Desk-Top

☐ Open Frame ☐ Others

# 2. INPUT REQUIREMENTS

## 2.1 Input Voltage & Frequency

The range of input voltage is from **90Vac** to **264Vac**

| | Min | Normal | Max. |
|---|---|---|---|
| Input Voltage | 90Vac | 100-240Vac | 264Vac |
| Input Frequency | 47Hz | 50/60Hz | 63Hz |

## 2.2 Input current

The maximum input current is **1.5A** Max. at **100-240Vac** .

## 2.3 Inrush Current

The inrush current will not exceed **50A** at **100-240Vac** input and Max load for a cold start at 25℃.

# 3. OUTPUT FEATURES

## 3.1 Output Parameters

| | Output Data | Spec. Limit | | | Test Condition |
|---|---|---|---|---|---|
| 3.1.1 | **12.0Vdc** | Min. Value | Typical | Max. Value | |
| 3.1.2 | Output Voltage | **11.4Vdc** | **12.0Vdc** | **12.6Vdc** | **0-5.0A** Loading |
| 3.1.3 | Output Load | **0A** | — | **5.0A** | |
| 3.1.4 | Ripple and Noise | — | — | **200mVp-p** | 20MHz Bandwidth 10uF Elec. Cap.0.1uF Cer. Cap. |
| 3.1.5 | Output Overshoot | — | — | 10% | MAX. load & 100-240Vac |

## 3.2 Turn On Delay

During turn on and turn off, no output voltage shall exceed its nominal voltage by more than **10%** and no output shall change its polarity with respect to its return line. All outputs shall reach their steady state values within **3** seconds of turn on.

## 3.3 Hold Up Time

**10** ms minimum at **115Vac/60Hz** input at maximum load, and **20** ms minimum at **230Vac/50Hz** input at maximum load.

### 3.4 Output Transient Response

The power supply shall maintain output transient response time within **1500mV** with a loading current change from 20% to 80% of maximum current and 0.5A/μs rise up /drop down test at end of output terminal.

## 4. PROTECTION REQUIREMENT

### 4.1 Over Voltage Protection

Over voltage protection shall be included in the adaptor circuit. A single component failure must not cause an over voltage.

### 4.2 Over Current Protection

The adaptor must have a current limiting function on the output voltage. in overload mode, the output must drop to a low voltage. The OCP **6.5A max**

### 4.3 Short Circuit Protection

The adaptor must withstand a continuous short circuit on the output without damage.

## 5. ENVIRONMENTAL CONDITIONS

### 5.1 Operating

The power supply shall be capable of operating normally in any mode without malfunction happens in the following environmental conditions.

5.1.1 Operating Temperature: **0℃ ~40℃**
Relative Humidity: **10% ~ 90%**
Altitude: Sea level to **2,000 m**.

5.1.2 Vibration: 1.0mm, **10 –55Hz**, 15 minutes per cycle for each axis (X, Y, Z).

5.1.3 Cooling: Natural convection cooling.

### 5.2 Non - Operating

The power supply shall be capable of withstanding the following environmental conditions extended periods of time, without sustaining electrical or mechanical damage and subsequent operational deficiencies.

5.2.1 Storage Temperature: **-10℃ ~ 70℃**

5.2.2 Relative Humidity: **5% ~ 95%**

5.2.3 Altitude: Sea level to **2,000 m.**

5.2.4 Vibration and Shock:
The power supply shall be designed to withstand normal transportation vibration per **MIL–STD-810D**, method 514 and procedures X, as it is mounted in the chassis assembly and packed for shipping.

## 6. RELIABILITY AND QUALITY CONTROL

### 6.1 MTBF

When the power supply is operating within the limits of this specification the MTBF shall be at least **50000** hours at 25℃ (MIL-HDBK-217F).

### 6.2 Burn-In

The power supply shall withstand a minimum of **4** hours Burn-In test under full load at **35℃ ~40℃** room temperature, after test, product shall operate normally.

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### 6.3 Component De-rating

Semiconductor junction temperatures shall not exceed the manufacturer's maximum thermal rating.

## 7. MECHANICAL CHARACTERISTICS

### 7.1 Physical Dimensions

The detail dimension of the power supply is drawing on APPENDIX A.

### 7.2 Nameplate

The label of the power supply, please see APPENDIX B.

### 7.3 Drop test

Dropped freely from 1 m (for wall mount product) height onto the surface is consisted of hardwood 13 mm thick, mounted on two layers of plywood each 19-20 mm thick, all supported on concrete floor 1 time from 3 different surface, after test, it's no safety damage for product.

## 8. SAFETY

### 8.1 Safety Standard

The power supply shall be certified under the following international regulatory standards.

| Item | Country | Certified | Standard | Present |
|---|---|---|---|---|
| UL | USA | APPROVED | UL60950-1 2nd /UL62368-1 | √ |
| CUL | Canada | APPROVED | CSA C22.2 NO.60950-1/62368-1 | √ |
| FCC | USA | APPROVED | PART 15 CLASS B | √ |
| TUV/GS | Europe | | EN 60950-1 2nd /EN60065/EN62368-1 | □ |
| CE | Europe | APPROVED | EN 55032 EN55024 | √ |
| BS/UK | Britain | | BS EN 60950-1 2nd/EN60065 | □ |
| SAA | Australia | | AS/NZS 60950-1/NZS60065 | □ |
| CCC | China | | GB9254/GB8898/GB4943 | □ |
| KC | Korea | | K60950 | □ |
| PSE | Japan | | J60950 (H27)/J60065(H26) | □ |
| Others | | | | □ |

### 8.2 Insulation Resistance

Input to output: 10 MΩ min. at 500 VDC.

### 8.3 Dielectric Strength (Hi-Pot)

Primary to Secondary DC2121V or AC1500V 10mA 1 minute for type test, 3 seconds for product.

### 8.4 Leakage Current

The leakage current shall be less than 5mA when the power supply is operated maximum input voltage and maximum frequency.

## 9. EMC STANDARDS

### 9.1 EMI Standards

The power supply shall meet the radiated and conducted emission requirements for EN55032 CLASS B,FCC PART 15 CLASS B.

### 9.2 EMS Standards(EN55035)

The power supply shall meet the following EMS standards.

9.2.1 IEC61000-4-2 Electrostatic Discharge (ESD)
Static – discharge test by contract or air should be conducted with Static – discharge teeter, energy storage capacitance of 150pF, and discharge resistance of 330Ω.
**8KV** air discharge, **4KV** contact discharge, Performance Criterion B.

9.2.2 IEC61000-4-3 Radiated Electromagnetic Fields(RS)
Radio- frequency Electromagnetic Field Susceptibility Test, RS, 80-1000MHz,3V/m, 80%AM(1KHz), Performance Criterion A.

9.2.3 IEC61000-4-4 Electrical Fast Transient / Burst (EFT)
Power Line to Line: **1KV**
Performance Criterion B.

9.2.4 IEC61000-4-5 Lightning Surge Attachment
Lightning Surge voltage of differential and common modes shall be applied across AC input lines and across input and frame ground.
Power Line to Line (Common Mode): **1KV**
Power Line & Neutral to Earth (Different Mode): **2KV**

9.2.5 IEC61000-4-6 Conducted Radio Frequency Disturbances (CS)
Conducted Radio Frequency Disturbances Test, CS, 0.15-80 MHz, 3V/m, 80%AM, 1KHz, Performance Criterion A.

9.2.6 IEC61000-4-11 Voltage Dips/Short Interruption/Variations
Voltage dips >95%,0.5 preiods, Performance criterion B,
Voltage dips 30%,25 preiods, Performance criterion C,
Voltage interruptions >95%,250 preiods, Performance criterion C.

## 10. OTHER REQUIREMENTS

### 10.1 Hazardous Substances

The components and used materials shall be in compliance with

☑ EU Directive 2011/65/EU "RoHS 2"

### 10.2 Energy Efficiency

The power supply shall meet the following EMS standards.

10.2.1 The No-Load power consumption shall be less than **0.21W** at input **115/230 Vac.**

10.2.2 The average active mode efficiency shall be higher than **88.0%** at input **115/230 Vac.**

10.2.3 International Efficiency Level **Ⅵ**

10.2.4 This power supply is therefore in compliance with the requirements of

□ California Energy Commission for external power supplies (CEC)

☑ Energy Star requirements for external power supplies(EPS Version 2.0)

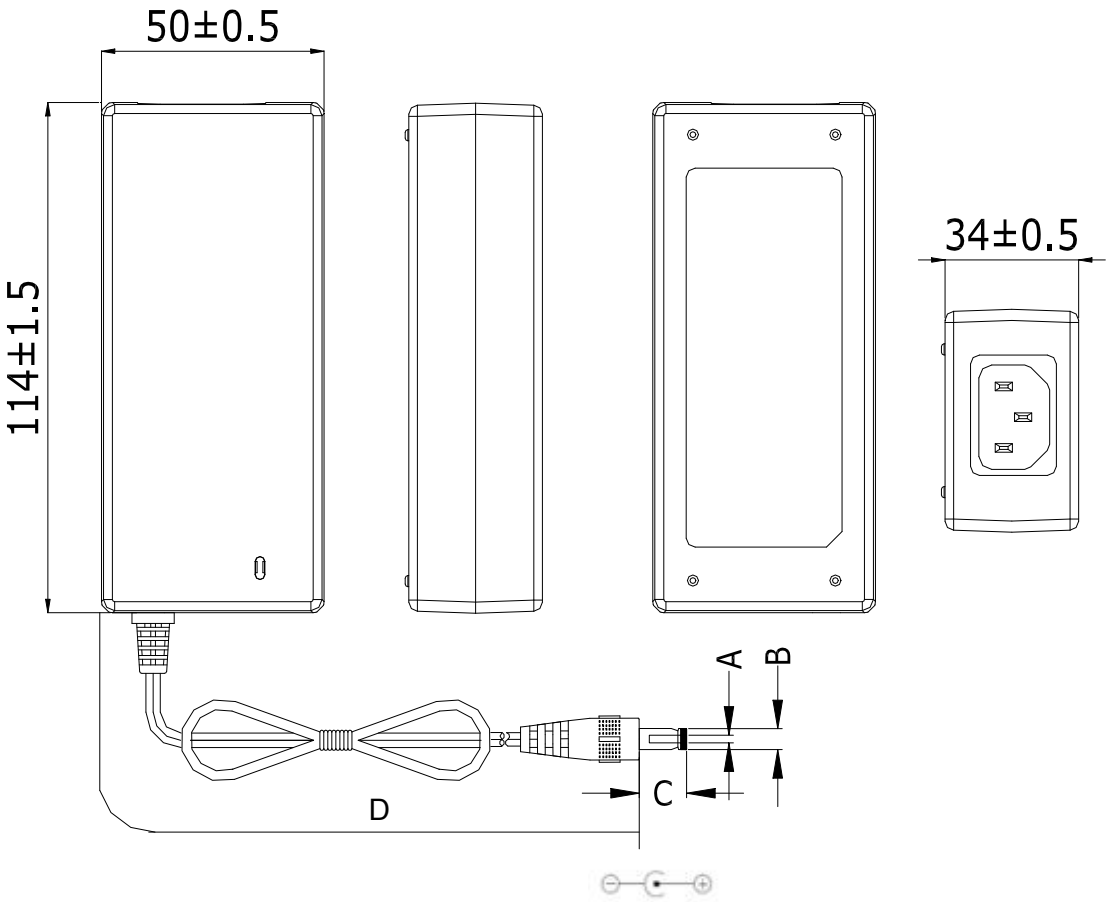
□ EU Code of Conduct Energy requirements of external power supplies

□ Australian and New Zed Energy Performance Requirements for external power supplies (MEPS)

□ China Energy Efficiency requirements for external power supplies (GB20943)

# APPENDIX A

## External View




Unit : mm

| | ΦA | ΦB | C | D |
|---|---|---|---|---|
| DIMENSION | 2.1 | 5.5 | 11 | 1500 |
| TOLERANCE | +0.1/-0 | ±0.1 | ±0.5 | ±50 |
| REMARK | AWG18#/2C UL2468 BLACK "Tunning fork with groove" | | | |

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# APPENDIX B

Nameplate


Unit: mm
Tolerance: +0/-0.2
Printed by Laser Printer

* Please Advise If Any Comments About The Name Plate Information
Otherwise, This Information Is Defaulted As Customer Approval,
And Will Be Applied To Production.

| P/N | REV. | DATE | ISSUED BY | CHECKED BY | APPROVED BY |
|---|---|---|---|---|---|
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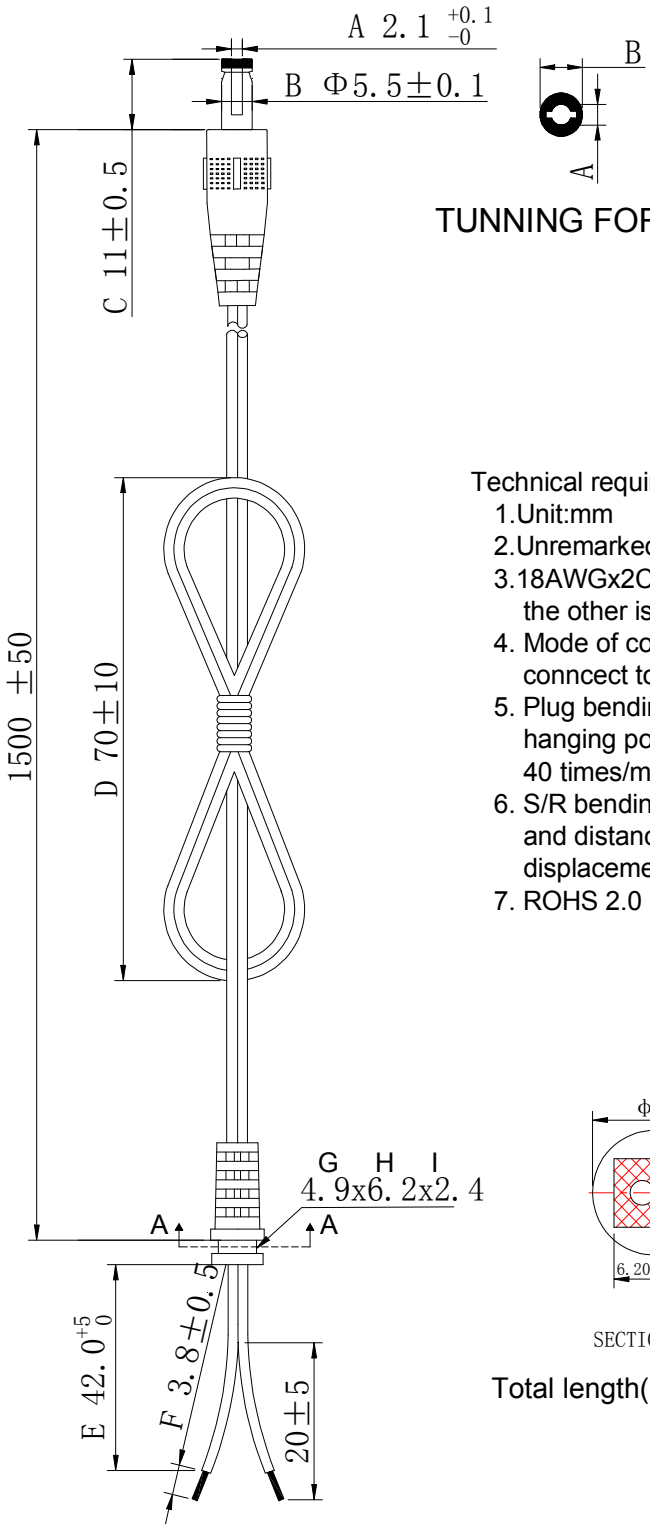
# APPENDIX C

## DC CORD



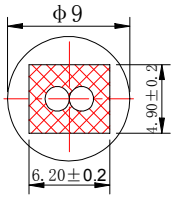




TUNNING FORK WITH GROOVE

Technical requirements:

1. Unit:mm
2. Unremarked Tolerance:±0.3;
3. 18AWGx2C,UL2468;one is black , the other is with white minus sign
4. Mode of connection:wire with white minus sign conncect to inner tip
5. Plug bending test:load 200g weight,distance of hanging point and fulcrum:30cm,angle:60° 40 times/minute, min 2500 times
6. S/R bending test: load 20LB(9072g), continous 1minute and distance of hanging point and fulcrum is 30cm, displacement no more than 5mm
7. ROHS 2.0




SECTION A-A

Total length(L):1500 ±50(IQC checks)

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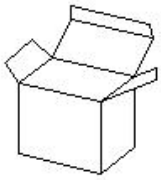
# APPENDIX D

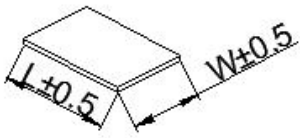
## Packing Drawing

PRUDUCT/产品：

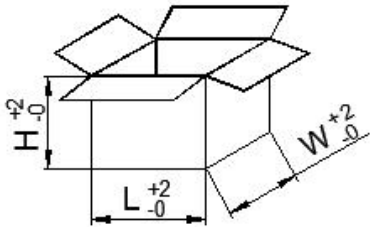

PRIMARY BOX/小白盒：



PAPERBOARD/平卡：




CARTON/纸箱：




DIMENSION(UNIT IN cm):

| | L | W | H |
|---|---|---|---|
| WHITE BOX | 9.0 | 4.0 | 14.0 |
| PAPERBOARD | 37.0 | 37.0 | 0.5 |
| CARTON | 38.5 | 38.5 | 30.8 |

PACKING METHOD:

| | |
|---|---|
| PAPERBOARD PLACEMENT METHOD | PUT A PAPERBOARD BETWEEN THE TOP AND BOTTOM,TOTAL 2PCS |
| PACKING METHOD | 36PCS/LAYER X 2 LAYERS |
| QTY | 72PCS |
| N.W. | 14.50KG |
| G.W. | 15.65KG |

备注：以上 N.W/G.W 供参考，实际以大货生产为准。

REMARK:

1. STORAGE CONDITION
   TEMPERATURE: -10℃～+60℃
   RELATIVE HUMIDITY: 30%～80%
2. STORAGE PERIOD: 6 MONTHES
3. ANLISTATIG: NO REQUIREMENT
4. PLEASE ADVISE IF ANY COMMENTS ABOUT THE PACKING INFORMATION. OTHERWISE,THIS INFORMATION IS DEFAULTED AS CUSTOMER APPROVAL, AND WILL BE APPLIED TO PRODUCTION.

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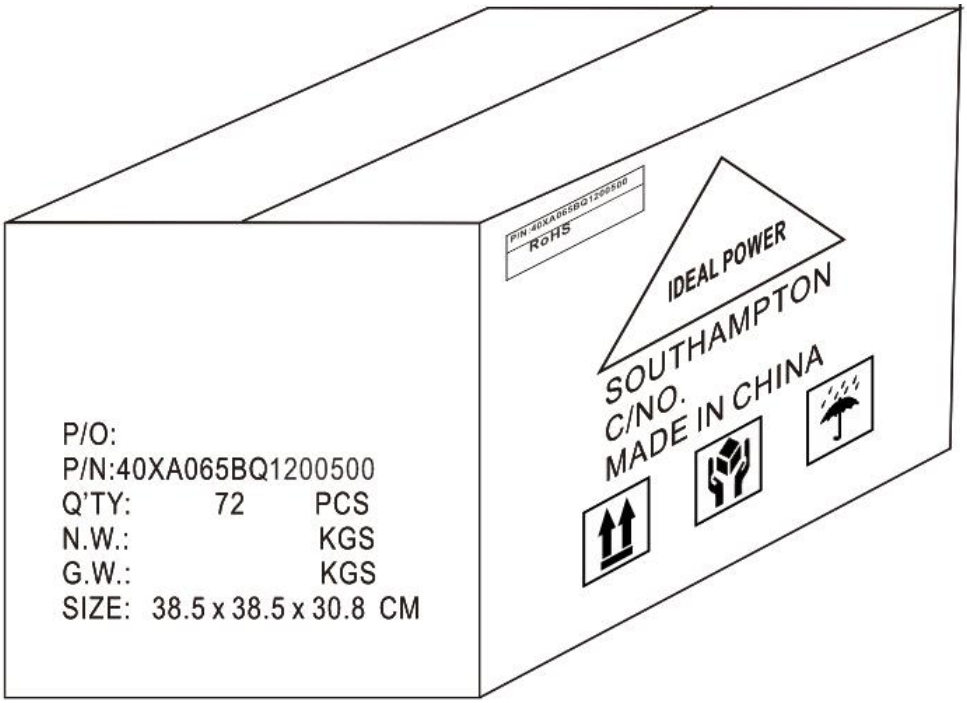
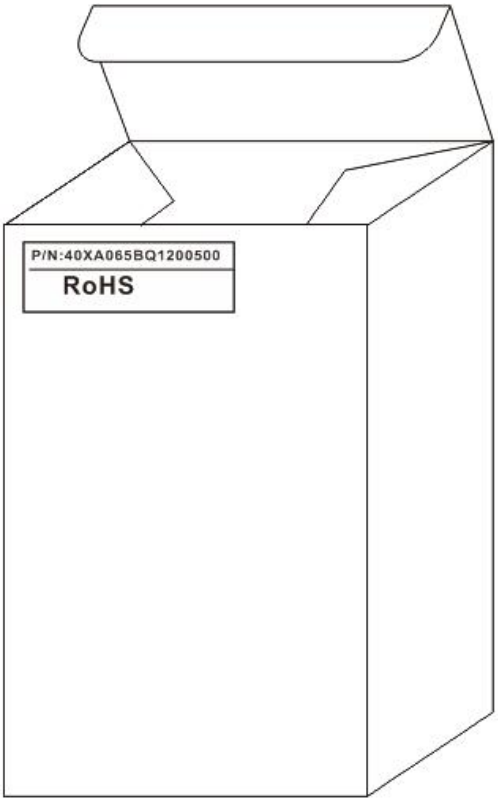
# APPENDIX E

## Description for marking on carton and white box

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# APPENDIX F

## SAMPLE TEST REPORT

| CUSTOMER | Ideal Power | P/N | S-1900184 |
|---|---|---|---|
| MODEL NO. | XA065BQ1200500 1# | CUSTOMER P/N | 40XA065BQ1200500 |

| Items No. | Test Items | Unit | Test condition & result | | | | Spec. Limit | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| | | | 90Vac 60Hz | 115Vac 60Hz | 230Vac 50Hz | 264Vac 50Hz | | |
| 1 | Unload input current | mA | 16.56 | 21.08 | 35.51 | 39.81 | — | - |
| 2 | Unload input power | W | 0.05 | 0.08 | 0.13 | 0.15 | ＜0.21W | Pass |
| 3 | Rated load input current | mA | 1228.7 | 983.3 | 503.6 | 449.8 | ≤1500mA | Pass |
| 4 | Rated load input power | W | 68.81 | 67.86 | 67.12 | 67.21 | — | - |
| 5 | Unload output voltage (0.0A) | V | 12.27 | 12.27 | 12.26 | 12.25 | 11.4-12.6Vdc | Pass |
| 6 | Rated load output voltage (5.0A) | V | 11.65 | 11.69 | 11.72 | 11.71 | 11.4-12.6Vdc | Pass |
| 7 | Rated load Output ripple&noise voltage (5.0A) | mV | 185 | 173 | 129 | 129 | ≤200mVp-p | Pass |
| 8 | Short-circuittest (Pin&Iout) | W | 3.65 | 3.84 | 4.23 | 3.94 | ≤6W | Pass |
| 9 | Over current protection | A | 5.99 | 6.27 | 6.26 | 6.07 | OCP≤6.5A | Pass |
| 10 | Output overshoot | % | - | - | - | - | ≤10% | - |
| 11 | Turn on delay time | mS | - | - | - | - | ≤3000mS | - |
| 12 | Hold up time | mS | - | - | - | - | ≥10mS /(115Vac)<br>≥20mS /(230Vac) | - |
| 13 | Efficiency | % | - | - | - | - | ≥88.0% | - |
| 14 | Hi-pot test | Pri. to Sec. : 2121Vdc, 1Minute, Cut off current≤10mA (Test result: 0.0002mA) | | | | | | Pass |
| 15 | Max. and Light load change test | Max. load to Light load：OK Light load to max. load: OK (90-264Vac) | | | | | | |
| 16 | Burn-in | Burn-in 4 Hrs, The sample OK | | | | | | |
| 17 | Appe. label and fusion | Appearance: OK, Label: OK, Fusion: OK | | | | | | |

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|---|---|---|---|---|---|
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# APPENDIX F

## Energy Star TEST REPORT

| CUSTOMER | Ideal Power | P/N | S-1900184 |
|---|---|---|---|
| MODEL NO. | XA065BQ1200500 1# | CUSTOMER P/N | 40XA065BQ1200500 |

| Items No. | Test parameter | Unit | Input voltage 115Vac/60Hz | | | | | | Spec. Limit | Pass/Fail |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 100% | 75% | 50% | 25% | 0% | Aver.Eff. | | |
| 1 | Input current | mA | 972.0 | 723.2 | 476.5 | 274.2 | 21.08 | | ⩽ 1500mA | Pass |
| 2 | Input power | W | 67.81 | 50.63 | 33.55 | 16.82 | 0.08 | | - | - |
| 3 | Output current | A | 5 | 3.75 | 2.5 | 1.25 | | | - | - |
| 4 | Output voltage | V | 11.67 | 11.84 | 11.99 | 12.13 | | | - | - |
| 5 | Power factor | - | - | - | - | - | | | - | - |
| 6 | Efficiency | % | 86.05 | 87.70 | 89.34 | 90.15 | | 88.37 | ⩾88.0% | Pass |

| Items No. | Test parameter | Unit | Input voltage 230Vac/50Hz | | | | | | Spec. Limit | Pass/Fail |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 100% | 75% | 50% | 25% | 0% | Aver.Eff. | | |
| 1 | Input current | mA | 499.1 | 374.5 | 248.9 | 143.1 | 35.51 | | ⩽1500mA | Pass |
| 2 | Input power | W | 67.18 | 50.25 | 33.44 | 16.86 | 0.13 | | - | - |
| 3 | Output current | A | 5 | 3.75 | 2.5 | 1.25 | | | - | - |
| 4 | Output voltage | V | 11.70 | 11.84 | 11.99 | 12.13 | | | - | - |
| 5 | Power factor | - | - | - | - | - | | | - | - |
| 6 | Efficiency | % | 87.08 | 88.35 | 89.64 | 89.93 | | 88.75 | ⩾88.0% | Pass |

Note: 1. Aver.Eff.Spec.(⩾88.0 %) & Unload input power Spec.(⩽0.21W)for EPS Version 2.0)

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|---|---|---|---|---|---|
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# APPENDIX F

## SAMPLE TEST REPORT

| CUSTOMER | Ideal Power | P/N | S-1900184 |
|---|---|---|---|
| MODEL NO. | XA065BQ1200500 2# | CUSTOMER P/N | 40XA065BQ1200500 |

| Items No. | Test Items | Unit | Test condition & result | | | | Spec. Limit | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| | | | 90Vac 60Hz | 115Vac 60Hz | 230Vac 50Hz | 264Vac 50Hz | | |
| 1 | Unload input current | mA | 17.56 | 20.08 | 34.91 | 38.99 | — | - |
| 2 | Unload input power | W | 0.05 | 0.08 | 0.13 | 0.15 | ＜0.21W | Pass |
| 3 | Rated load input current | mA | 1229.1 | 985.4 | 504.2 | 450.2 | ≤1500mA | Pass |
| 4 | Rated load input power | W | 68.80 | 67.85 | 67.13 | 67.25 | — | - |
| 5 | Unload output voltage (0.0A) | V | 12.27 | 12.27 | 12.26 | 12.25 | 11.4-12.6Vdc | Pass |
| 6 | Rated load output voltage (5.0A) | V | 11.65 | 11.69 | 11.72 | 11.71 | 11.4-12.6Vdc | Pass |
| 7 | Rated load Output ripple&noise voltage (5.0A) | mV | 185 | 173 | 129 | 129 | ≤200mVp-p | Pass |
| 8 | Short-circuittest (Pin&Iout) | W | 3.55 | 3.76 | 4.32 | 4.63 | ≤6W | Pass |
| 9 | Over current protection | A | 6.00 | 6.26 | 6.28 | 6.06 | OCP≤6.5A | Pass |
| 10 | Output overshoot | % | - | - | - | - | ≤10% | - |
| 11 | Turn on delay time | mS | - | - | - | - | ≤3000mS | - |
| 12 | Hold up time | mS | - | - | - | - | ≥10mS /(115Vac)<br>≥20mS /(230Vac) | - |
| 13 | Efficiency | % | - | - | - | - | ≥88. 0% | - |
| 14 | Hi-pot test | Pri. to Sec. : 2121Vdc, 1Minute, Cut off current≤10mA (Test result: 0.0002mA) | | | | | | Pass |
| 15 | Max. and Light load change test | Max. load to Light load：OK Light load to max. load: OK (90-264Vac) | | | | | | |
| 16 | Burn-in | Burn-in 4 Hrs, The sample OK | | | | | | |
| 17 | Appe. label and fusion | Appearance: OK, Label: OK, Fusion: OK | | | | | | |

| P/N | REV. | DATE | ISSUED BY | CHECKED BY | APPROVED BY |
|---|---|---|---|---|---|
| S-1900184 | 3 | 20191016 | Sky | Alan | Eric |

IDEALPOWER
experts in power conversion

# APPENDIX F

## Energy Star TEST REPORT

| CUSTOMER | Ideal Power | P/N | S-1900184 |
|---|---|---|---|
| MODEL NO. | XA065BQ1200500 2# | CUSTOMER P/N | 40XA065BQ1200500 |

| Items No. | Test parameter | Unit | Input voltage 115Vac/60Hz | | | | | | Spec. Limit | Pass/Fail |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 100% | 75% | 50% | 25% | 0% | Aver.Eff. | | |
| 1 | Input current | mA | 972.8 | 722.8 | 477.7 | 273.9 | 20.08 | | ≤ 1500mA | Pass |
| 2 | Input power | W | 67.80 | 50.64 | 33.52 | 16.79 | 0.08 | | - | - |
| 3 | Output current | A | 5 | 3.75 | 2.5 | 1.25 | | | - | - |
| 4 | Output voltage | V | 11.67 | 11.84 | 11.99 | 12.13 | | | - | - |
| 5 | Power factor | - | - | - | - | - | | | - | - |
| 6 | Efficiency | % | 86.06 | 87.68 | 89.42 | 90.30 | | 88.36 | ≥ 88.0% | Pass |

| Items No. | Test parameter | Unit | Input voltage 230Vac/50Hz | | | | | | Spec. Limit | Pass/Fail |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 100% | 75% | 50% | 25% | 0% | Aver.Eff. | | |
| 1 | Input current | mA | 499.3 | 375.4 | 249.0 | 143.9 | 34.91 | | ≤ 1500mA | Pass |
| 2 | Input power | W | 67.15 | 50.28 | 33.46 | 16.90 | 0.13 | | - | - |
| 3 | Output current | A | 5 | 3.75 | 2.5 | 1.25 | | | - | - |
| 4 | Output voltage | V | 11.71 | 11.83 | 12.00 | 12.13 | | | - | - |
| 5 | Power factor | - | - | - | - | - | | | - | - |
| 6 | Efficiency | % | 87.19 | 88.23 | 89.66 | 89.71 | | 88.70 | ≥88.0% | Pass |

Note: 1. Aver.Eff.Spec.(≥88.0 %) & Unload input power Spec.(≤0.21W)for EPS Version 2.0)

| P/N | REV. | DATE | ISSUED BY | CHECKED BY | APPROVED BY |
|---|---|---|---|---|---|
| S-1900184 | 3 | 20191016 | Sky | Alan | Eric |