CUSTOMER JAMES

SPECIFICATION FOR APPROVAL

AC/DC ADAPTOR

CUSTOMER SPEC:INPUT: 100-240V AC 50/60Hz OUTPUT:5VDC 1000mA

CUSTOMER DWG./PART NO.

PART NO. **KSAS0050500100VUD (RoHS)**

SAMPLE NO: **S94013** **REV.:** **A** **ISSUE DATE: 2021-12-24**

PRDUCT NO: **KS210874**

Unit Color: Black ☑ **White** ☐

APPROVED SIGNATURES/客户确认		
核准/APPROVED BY	审核/ CHECKED BY:	检测/TESTED BY:

Manufacturer/制造商			
业务/SALES	品管/QE	核准/APPROVED BY	制样/DESIGNED BY
EDDY 袁	周松平	宋军	阳灿

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Project Modify List

Item	Content	Rev.	Date	Prepared By	Checked By
1	First Rev.	A	2021-12-20	GUO	Feng xiaoshan

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1 GENERAL

1.1 Description

This specification defines the performance characteristics for a class Ⅱ adapter, single-phase 5.0 watts. Single output level power supply.

- Simple design philosophy.
- Reliability level of 50K hours MTBF @ 25° C(rated input voltage, and using the Telcordia SR-332 issue 3 method).
- DC output voltage must be Safe Extra Low Voltage (SELV) & Limited Power as defined by IEC62368-1.
- The maximum room ambient temperature (T_{mra}), as mentioned in clause B.1.6 and B.2.6 of IEC62368-1, for the external power supply is 50°C.
- Cooling: natural convection.

2 INPUT REQUIREMENTS

2.1 Input Conditions

The supply shall operate over the voltage ranges as follows:

Rated input voltage	100-240Vac
Operating range	90-264Vac
Rated input frequency	50/60Hz +/- 3Hz
Rated input current	0.18A max.
Power consumption (no-loading)	0.1W max.
Primary current protection	An adequate internal fuse on the AC input line is provide.
Configuration	2 Conductor

2.2 AC Inrush Current

No damage shall be occurred and the input fuse shall not be blown up nominal input voltage full load 25°C cold start.

3 OUTPUT REQUIREMENTS

3.1	Nominal DC output voltage	+5.0V
3.2	Minimum load current	0.01A
3.3	Rating load current	1.0A
3.4	Rating output power	5.0W
3.5	Line regulation	The line regulation is less than +/-5% while measuring at rated load and +/-10% of input voltage changing.
3.6	Load regulation	The load regulation for +5.0V is less than +/-5%, at measured output load from 0% to 100% rated load.

3.7	Ripple and noise	200mV nominal input AC voltage at 25℃ ambient temperature
		Add 0.1uF/50V ceramic capacitor and 10uF/50V aluminum electrolytic capacitor across the output terminal. Measured with 20MHz Bandwidth Oscilloscope.
3.8	Average efficiency	73.62% minimum
		115V/60Hz and 230V/50Hz, output current from 100%, 75%, 50%, 25%.
3.9	Turn on delay time	4000mS max at nominal input AC voltage and full load
3.10	Rise time	The supply shall have a start-up rise time of less than 50mS to rise to within regulation limits for all DC outputs.
3.11	Hold up time	8 mS minimum at nominal input 100Vac minimum voltage and full load
3.12	Output over-shoot	Less than 7% of nominal voltage value
3.13	LED indication function	/
3.14	Protection function	
	Short-circuit protection	The adapter shall not be damaged by short the DC output to Ground. The adapter shall resume normal operation when a short circuited fault condition is removed.
	Over current protection	The output shall be protected against the over current conditions.

4 MECHANICAL

4.1 Enclosure and Layout

Plastic case: UL94V-0
Weight : 60g(max.)
Dimensions: 55.1*24.1*35.47mm
Color : Black

4.2 Input and Output Configuration

Input pin: US Pin
Output connector : DC plug type: 5.5*2.1*10mm(FORK AND GROOVE)
Polarity: Center “+”
Cable: 6FT VW-1 80℃ 300V 2468 24AWG 2C BLACK+WHITE (RoHS)

5 REGULATORY COMPLIANCE

5.1 EMC Specifications

The external power supply must meet all specification in this section. It is recommended that the external power supply be tested with the customer's equipment in order to get the best EMC solution.

5.1.1 Radiated and Conducted Emission

The power supply shall comply to:
FCC part 15: Class B for radiated and conducted emissions.
EN55032, Class B for radiated and conducted emissions.

5.2 Immunity

5.2.1 Electrostatic Discharge Immunity

EN 55024, EN 61000-4-2
- Air Discharge: ±8kV
- Contact Discharge: ±4kV
- Performance Criteria B

Electrostatic-discharge test by contact or air should be conducted with Static-discharge tester, energy storage capacitance of 150pF, and discharge resistance of 330Ω, 8kV air discharge, 4kV contact discharge.

5.2.2 Radiated Field Immunity

EN 55024EN 61000-4-3
Frequency Range: 80-1000MHz
Field Strength: 3 V/m with 80% amplitude modulation of 1 kHz
Performance Criteria A

Radio-frequency electromagnetic field susceptibility test, RS 80-1000MHz, 3V/m, 80%AM(1kHz).

5.2.3 Fast Transient Immunity

EN 55024, EN 61000-4-4
- Power line: 1kV
- Signal line: 0.5kV
- Performance Criteria B

5.2.4 Surge Immunity

EN 55024, EN 61000-4-5
- 1.2/50 μs Open Circuit voltage
- 8/20 μs Short Circuit current
- Power line: 1kV
- Line to Earth: 2kV

Lightning Surge Voltage shall be applied in differential and common mode to AC input lines and cross primary AC input and secondary GND.

5.3 Safety Requirements and Certification

5.3.1 Regulatory Standard

The power supply shall comply with the following international regulatory standards:

for short	Country	Certified Status	Standard
UL	USA	Meet	UL 62368-1
CUL	Canada	Meet	CSA C22.2 NO.62368-1

5.3.2 Additional Safety Requirements

◎ Dielectric Withstand Voltage, Primary(input AC short)-to-Secondary(output DC short): 3000Vac, 5m A, 1 minute.

◎ Insulation Resistance, Input to output: 40MΩ(Min.) at 500VDC.

◎ Reinforced insulation system, Primary-to-Ground and Primary-to-Secondary.

◎ The leakage current shall not exceed 0.25mA.

6 ENVIRONMENTAL REQUIREMENTS

6.1 Temperature

◎ Operating: 0 °C +50 °C

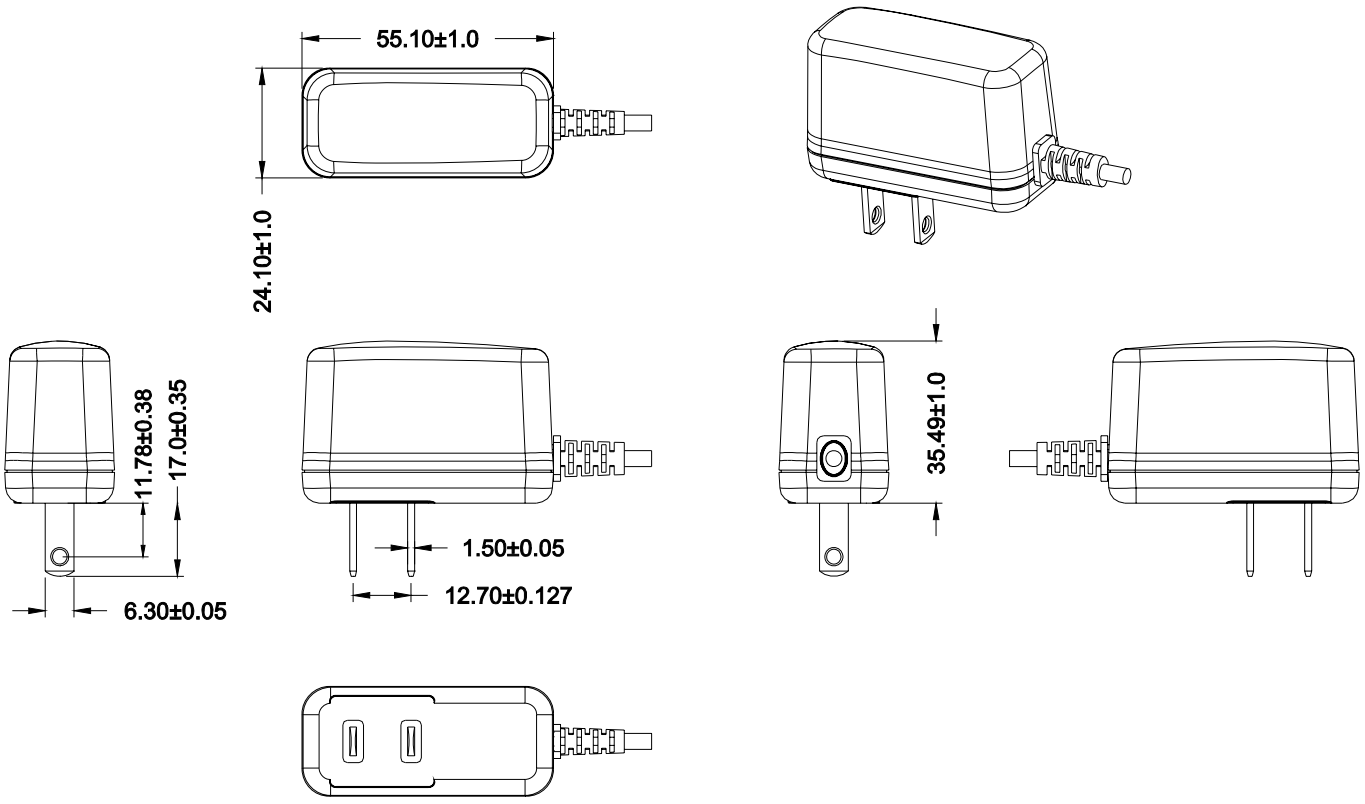
◎ Non-Operating: -20 °C +80 °C

6.2 Humidity

◎ Operating: 10%~90% (Non Condensing)

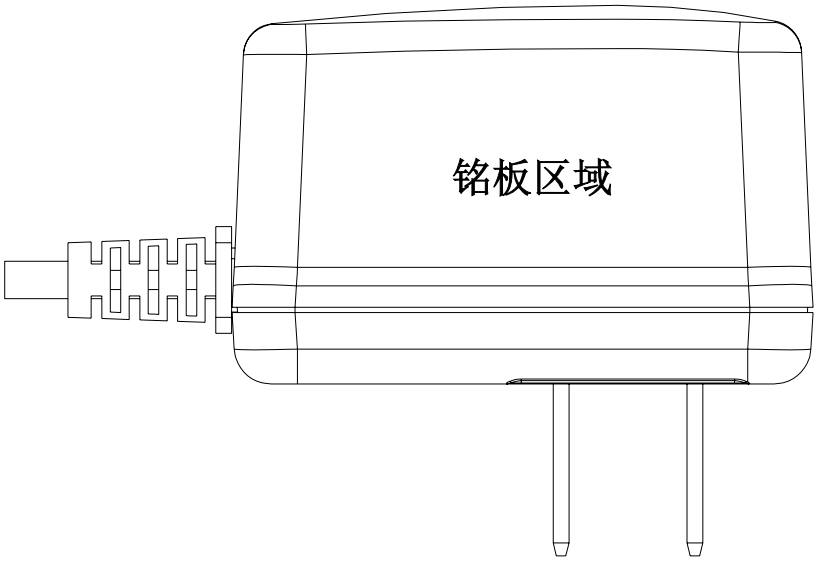
◎ Non-Operating: 10%~90% (Non Condensing)

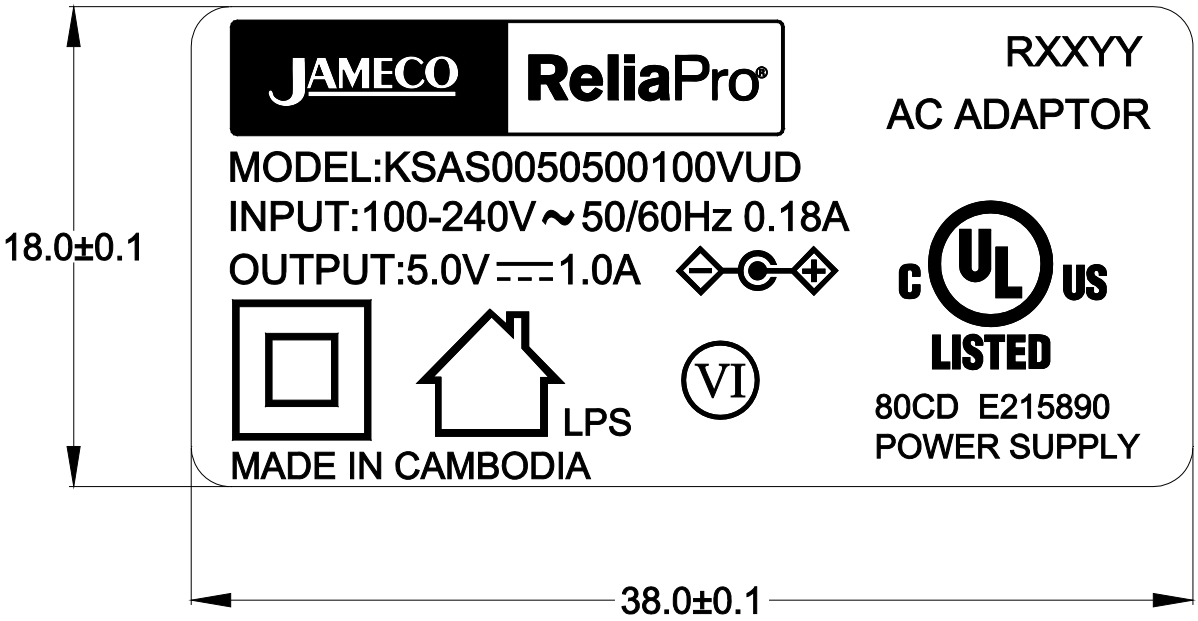
7 APPEARANCE DRAWING: (Unit: mm)



NOTE: 1. Case cover & chassis material:
PC BLACK (NO KTEC)
2. AC PIN MATERIAL: BRASS (NI PLATED)
3. RoHS
4. Satin Finish 雾面

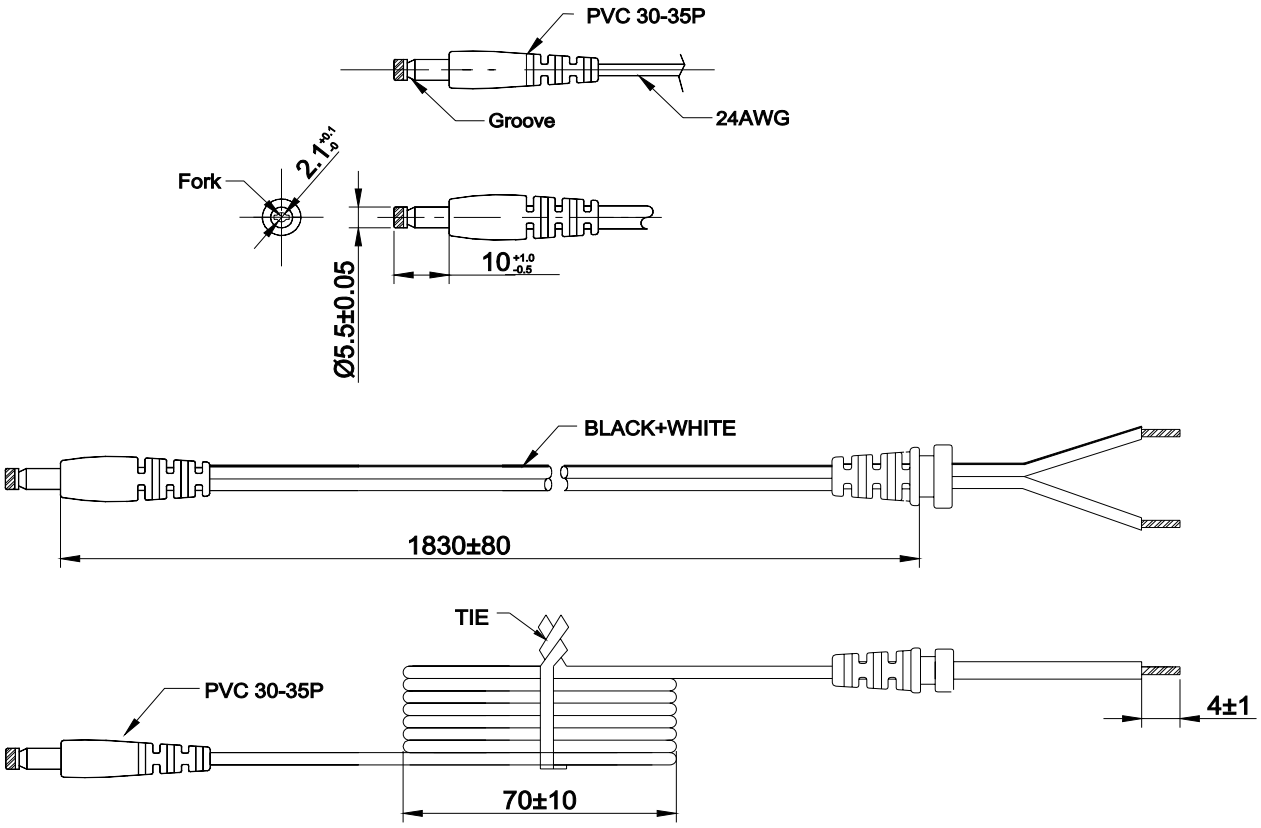
8 NAME PLATE:





Note: ☑ Laser 镭射
DATE CODE (RXXYY: R=RoHS, XX=WEEK, YY=YEAR)按实际生产日期

9 DIMENSION OF OUTPUT PLUG & DC CORD (Unit: mm)



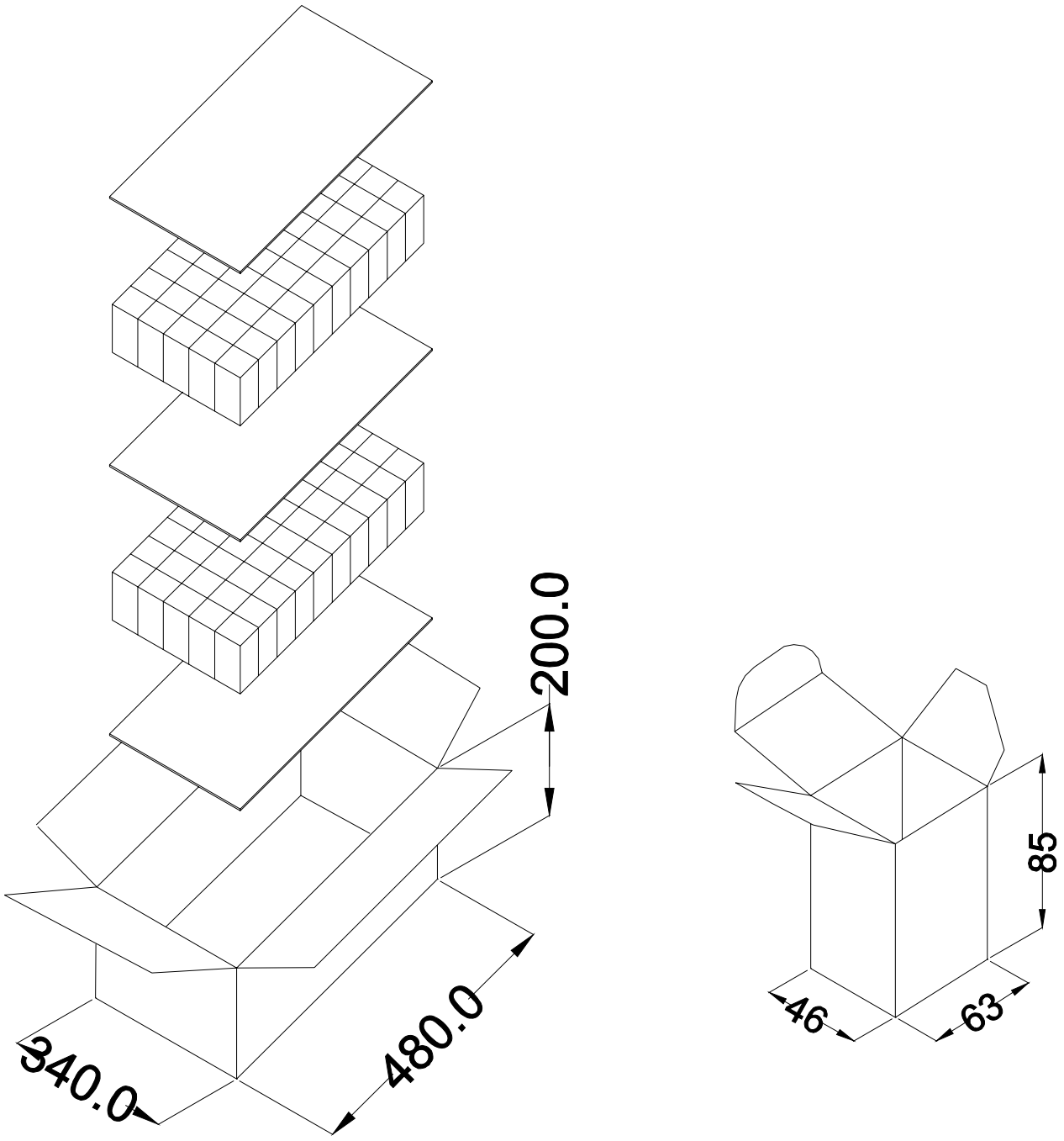
NOTE: (unit:mm)

1). WIRE TYPE:2468 VW-1 80°C 300V L=6FT(1830mm) 2C 24AWG BLACK+WHITE
BLACK AND WHITE ----POSITIVE BLACK----NEGATIVE

2). THE POLARITY:

3). ROHS

10 PACKING: (Unit: mm)



NOTICE OF COMPLETION
AND
AUTHORIZATION TO APPLY THE UL MARK

2021-04-29

MR. Dietsch Lan
KUANTECH CO LTD
11th Fl 868-3 Zhongzheng Rd
Zhonghe District
New Taipei, 235, TW

Your Reference:	E215890	
Our Reference:	File E215890, Volume X9	Order: 13751224 Project: 4789869229
Project Scope:	UL/CUL (62368-1) 3rd ed.. investigation on AC Adapter, Models KSAS005xxxyyyyzzm covered under File E215890-A6013	

Dear Mr. Dietsch Lan:

UL has completed the investigation under the above project and confirmed compliance of your product(s) with UL requirements. We appreciate that you have a choice of certification providers and thank you for choosing UL.

This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Mark at the factory location(s) identified on the Authorization Page of UL File E215890, Volume X9. You are required to send a copy of this letter to all manufacturing locations authorized under UL File E215890, Volume X9.

The Follow-Up Services Procedure covering your product(s) will typically be provided by UL within 10 business days. Any information and documentation provided to you involving the UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Products that bear the UL Mark must be identical to those submitted to UL for evaluation and certification and must comply with the Follow-Up Services Procedure covering your product(s). Additional requirements related to the responsibilities of the Applicant and Manufacturer can be found under **Additional Resources** at https://www.ul.com/fus.

A UL certification is a valuable marketing tool meaning your product or company has successfully met stringent requirements. We encourage you to use your UL Mark and certification in your marketing activities. You can find information on how to accurately promote your UL certification at https://www.ul.com/marketing.

If you have any questions, please contact me or any of our customer service representatives. And, congratulations again on your achievement!

Sincerely,

Kin-Sang Tang
Project Engineer
UL International Ltd
KinSang.Tang@ul.com

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Director, Conformity Assessment Programs (CPO)
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