

CUSTOMER

JAMES

SPECIFICATION FOR APPROVAL

AC/DC ADAPTOR

CUSTOMER SPEC: INPUT: 100-240V AC 50/60Hz OUTPUT: 12VDC 2000mA

CUSTOMER DWG./PART NO.

PART NO. **KSA-24W-120200VU(ROHS)**

SAMPLE NO: S91936 **REV.:** A **ISSUE** **DATE:** 2020-10-29

PRODUCT NO: KS200019

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

Von Development Ltd. 旺怡發展有限公司

1A, Fook Ying Bldg, 379 Kings Road, North Point, Hong Kong

TEL: 852-2187-2875

FAX: 852-3012-1881

info@vonhk.com

	KUANTECH P/N:	PRODUCT NO.:
	KSA-24W-120200VU	KS200019

Project Modify List

TITLE:		REVISION: A	DRAWING NO.:	
PREPARED: 廖小艳	CHECKED: 冯小山 林英青	APPROVED: 贺洪明	DATE: 2020-10-27	PAGE: 2 OF 11

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1 GENERAL

1.1 Description

This specification defines the performance characteristics for a class II adapter, single-phase 24 watts. Single output level power supply.

- Simple design philosophy.
- Reliability level of 50K hours MTBF @ 25° C(rated input voltage, and using the BELLCORE SR-332 method).
- DC output voltage must be Safe Extra Low Voltage (SELV) & Limited Power as defined by IEC60950-1

The maximum room ambient temperature (T_{mra}), as mentioned in clause 1.4.12 of IEC60950-1, for the external power supply is 40°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	0.6A max.
Power consumption (no-loading)	0.1W max.
Primary current protection	An adequate internal fuse on the AC input line is provided.
Configuration	<u>2</u> 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	+ 12V
3.2	Minimum load current	0.0A
3.3	Rating load current	2.0A
3.4	Peak load current	/
3.5	Rating output power	24W
3.6	Line regulation	The line regulation is less than <u>±5%</u> while measuring at rated load and +/-10% of input voltage changing.
3.7	Load regulation	The load regulation for <u>+12V</u> is less than <u>±5%</u> , at measured output load from 10% to 100% rated load.

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3.8	Ripple and noise	150 mVp-p Add 0.1uF/50V ceramic capacitor and 10uF/50V aluminum electrolytic capacitor across the output terminal. Measured with 20MHz Bandwidth Oscilloscope.
3.9	Switching efficiency	<u>86.2%</u> minimum 115V/60Hz and 230V/50Hz, output current from 100%, 75%, 50%, 25%
3.10	Turn on delay time	<u>4000mS</u> max at rated input AC voltage and full load
3.11	Rise time	The supply shall have a start-up rise time of less than <u>50 mS</u> to rise to within regulation limits for all DC outputs.
3.12	Hold up time	<u>8 mS</u> minimum at nominal input 100Vac minimum voltage and full load
3.13	Output over-shoot	Less than <u>7%</u> of nominal voltage value
3.14	LED indication function	/
3.15	Protection function	
	Over-voltage protection	The output voltage shall be clamped by internal protection.
	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 power supply will be protection when output power at <u>110-200%</u> of all rated DC output.

4 MECHANICAL

4.1 Enclosure and Layout

Plastic case: UL94V-0
 Weight: / g (max)
 Dimensions: 89x33x44.5mm
 Colour : 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: 1.22M(4FT) VW-1 80°C 300V 2468 22AWG 2C BLACK+WHITE (RoHS)

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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: $\pm 8\text{kV}$

- Contact Discharge: $\pm 4\text{kV}$

- 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 55024, EN 61000-4-3

- Frequency Range: 80-1000MHz

- Field Strength: 3 V/m with 80% amplitude modulation of 1kHz

- 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 usec Open Circuit voltage

- 8/20 usec 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.

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5.3 Safety Requirements and Certification

5.3.1 Regulatory Standard

The power supply shall comply the following international regulatory standards

for short	Country	Certified Status	Standard
UL	USA	Meet	UL 60950-1
CUL	Canada	Meet	CSA C22.2 NO.60950-1

5.3.2 Additional Safety Requirements

- ① Dielectric Withstand Voltage, Primary(input AC short)-to-Secondary(output DC short): 3000Vac, 5mA, 1 minute.
- ① Insulation Resistance, Input to output: 20MΩ(MIN.) at 500VDC.
- ① Reinforced insulation system, Primary-to-Ground and Primary-to-Secondary.
- ① The leakage current shall not exceed 0.25mA.

6 ENVIRONMENTAL REQUIREMENTS

6.1 Temperature

- ① Operating: 0 °C +40 °C
- ① Non-Operating: -20 °C +80 °C

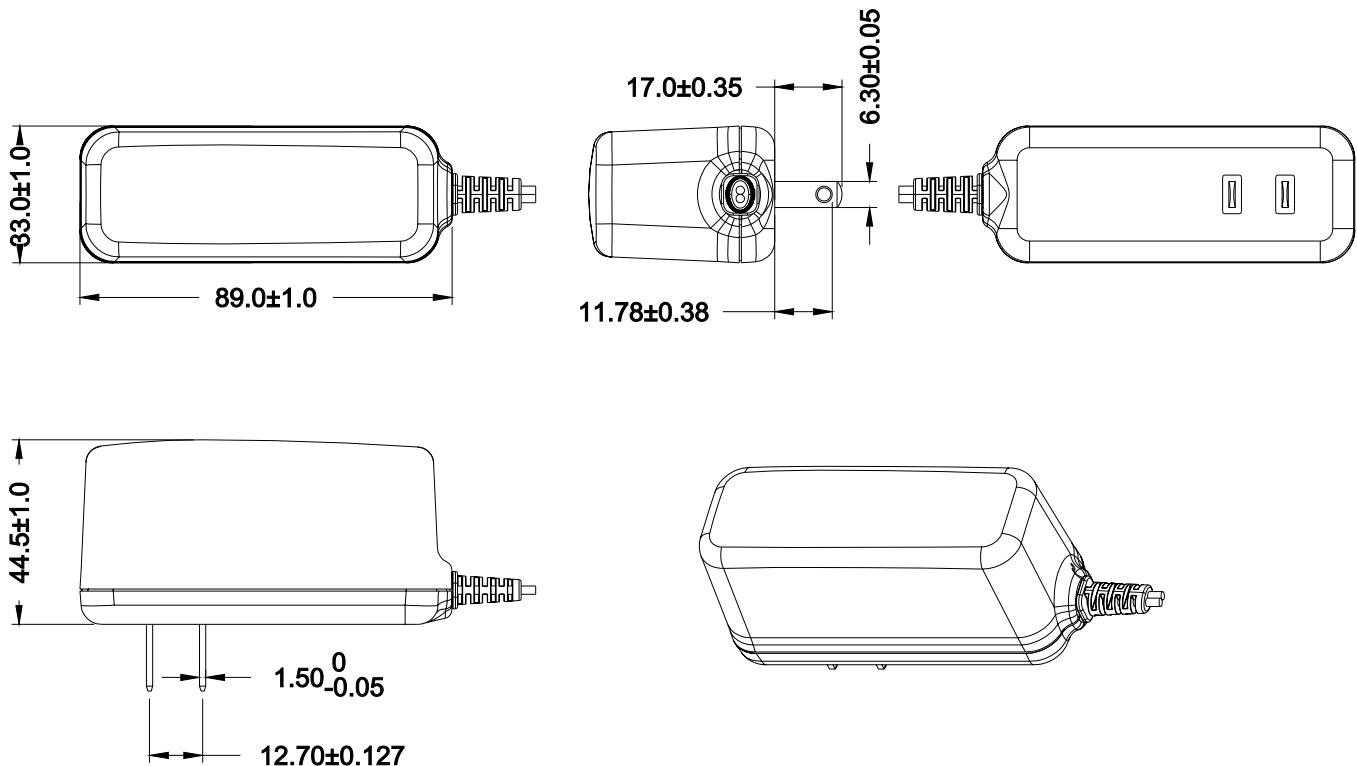
6.2 Humidity

- ① Operating: 10%~90% (Non Condensing)
- ① Non-Operating: 10%~90% (Non Condensing)

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7 APPEARANCE DRAWING: (Unit: mm)



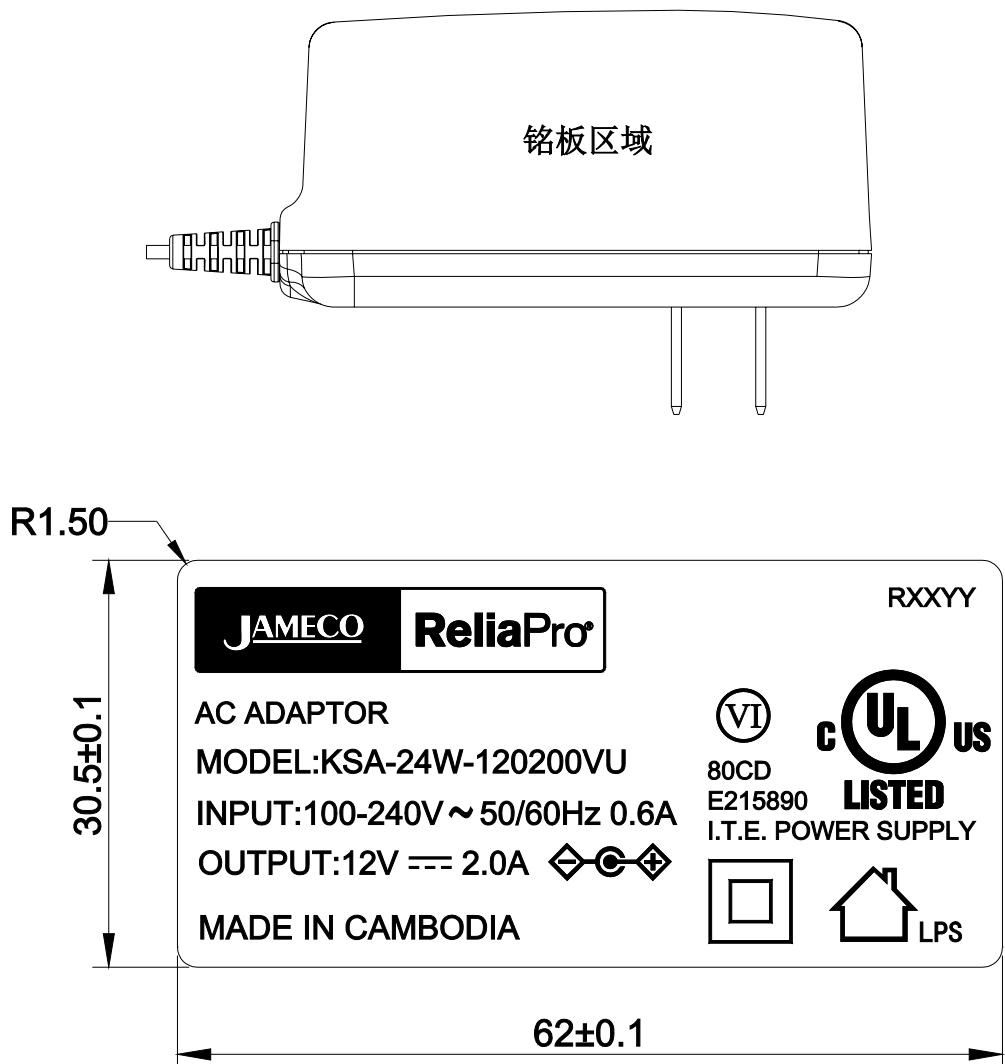
NOTE: 1. Case cover & chassis material:

- PC BLACK(NO KTEC)
- 2. AC PIN MATERIAL: BRASS (NI PLATED)
- 3. RoHS
- 4. Satin Finish 雾面

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8 NAME PLATE:



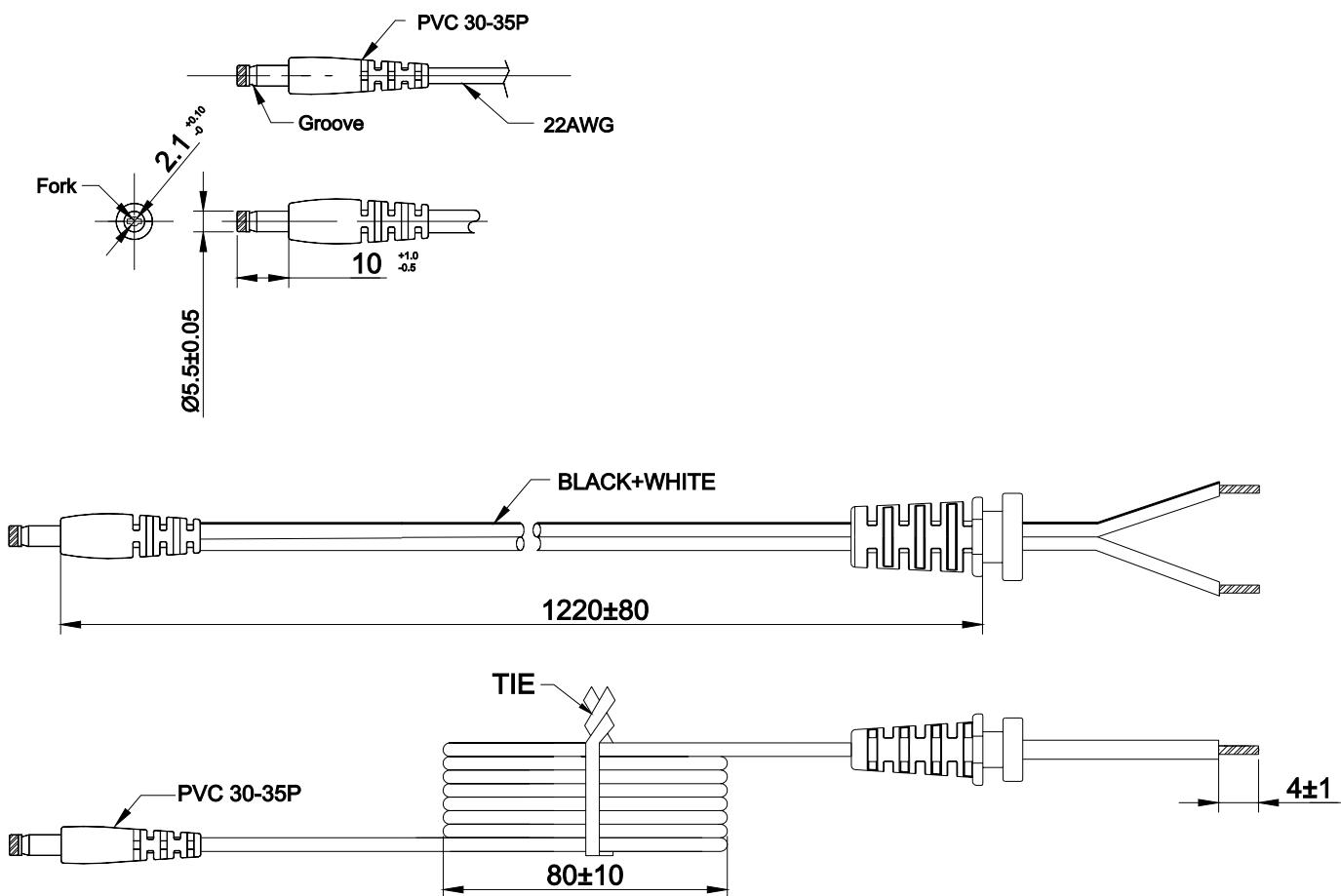
Note: Laser 镭射

Date code (RXXXX: R=RoHS, XX=WEEK, YY=YEAR), 按实际生产日期

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



NOTE: (unit:mm)

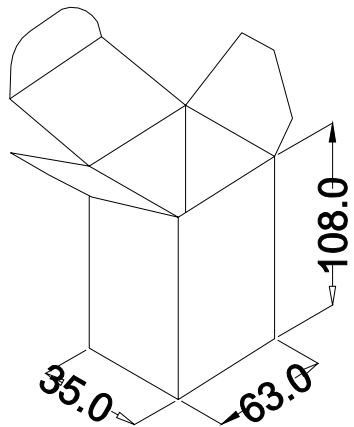
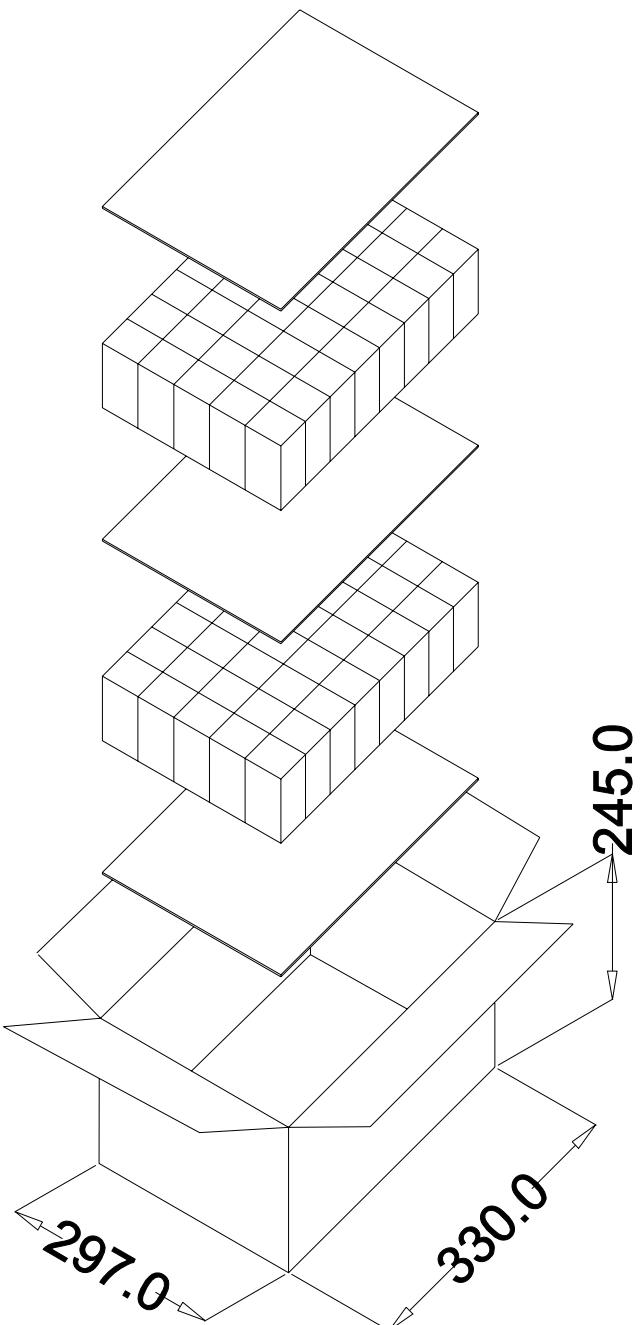
- 1).WIRE TYPE:2468 VW-1 80°C 300V L=4FT(1220mm) 2C 22AWG BLACK+WHITE
BLACK and WHITE----Positive BLACK----Negative
- 2).THE POLARITY:
- 3).RoHS

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10 PACKING (Unit: mm)



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NOTICE OF COMPLETION
AND
AUTHORIZATION TO APPLY THE UL MARK



2016-10-12

MR. Qingang Wang
KUANTECH CO LTD
10TH FL
116 BAUGUAU RD
SHINDIAN DISTRICT
NEW TAIPEI, 231, TW

CO: GUANGZHOU ITL CO LTD

Our Reference: File E215890, Vol X7

Order: 11388882

Project: 4787554598

Your Reference:

Project Scope: USL/CNL – Investigation of AC Adaptor, Models KSA-24W-XXXYYYHU, KSA-24W-XXXYYYVU, KSA-24W-XXXYYYD5 (where XXX=090-240, shows the rated output voltage is 9.0-24V; YYY=000-250, shows the rated output current is 0-2500mA; H means horizontal AC plug type; V means vertical AC plug type; U indicates the American type AC Plug; D5 shows detachable AC plug) under report reference E215890-A133

Dear MR. Qingang Wang:

Congratulations! UL's investigation of your product(s) has been completed under the above Reference Number and the product was determined to comply with the applicable requirements. This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Mark at authorized factories under UL's Follow-Up Service Program. To provide your manufacturer(s) with the intended authorization to use the UL Mark, you must send a copy of this notice to each manufacturing location currently authorized under File E215890, Vol X7.

Records in the Follow-Up Services Procedure covering the product are now being prepared and will be sent in the near future. Until then, this letter authorizes application of the UL Mark for 90 days from the date indicated above.

Additional requirements related to your responsibilities as the Applicant can be found in the document "Applicant responsibilities related to Early Authorizations" that can be found at the following web-site: <http://www.ul.com/EAResponsibilities>

Any information and documentation provided to you involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

We are excited you are now able to apply the UL Mark to your products and appreciate your business. Feel free to contact me or any of our Customer Service representatives if you have any questions.

Very truly yours,

Reviewed by:

Suki Kwong
Project Engineer
Suki.Kwong@ul.com

Bruce A. Mahrenholz
CPO Director
Bruce.A.Mahrenholz@ul.com

CC: GUANGZHOU ITL CO LTD

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