CUSTOMER JAMES

SPECIFICATION FOR APPROVAL

AC/DC ADAPTOR

CUSTOMER SPEC:INPUT: 100-240V AC 50/60Hz OUTPUT:19VDC 9470mA

CUSTOMER DWG./PART NO.

PART NO. **KPM180K-VI**

SAMPLE NO: A220222-03 **REV.:** A **ISSUE DATE:** 2022-2-22

PRDUCT NO:

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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info@vonhk.com

	MODEL NO： KPM180K-VI 19.0V/9.47A **ENGINEERING SPECIFICATION SHEET**

SPEC. Revision History

Date	Revision No.	Change Information	
		Previous version	Current version
2022/02/22	A	新製作	Initial

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1 SCOPE

This document describes basic electrical characteristics and mechanical characteristic of 180W power adapters.

2 ELECTRI CAL SPECIFICATION

2.1 INPUT REQUIREMENT

2.1.1 INPUT VOLTAGE RANGE

Industrial power supply shall operat e w ithin input s pecification fr om 90Vac to 264V ac or pro vide automatic switching between high line and low line input ranges. The table below shows common input voltage range.

Input Range	Minimum N	ominal	Maximum	Unit
	90 V	100V- 240V	264V	Vac Rms

Table 1 - Input Voltage Range

2.1.2 INPUT FREQUENCY RANGE

The industrial power supply shall operate within specification from 47 to 63 Hz.

2.1.3 AC INRUSH CURRENT

At 240Vac, 50Hz, 25 d egrees C, co ld start. It sh ould not interrupt line fuse or cause damage to the industrial power supply either at cold or warm start.

At 100Vac, 60Hz, 25 d egrees C, co ld start. It sh ould not interrupt line fuse or cause damage to the industrial power supply either at cold or warm start.

The inrush current must be limited to the extent that no damage is done to the supply under any specified line, load, and temperature conditions. The inrush current shall not cause any external protection devices (i.e. fuses) to trip.

2.1.4 INPUT CURRENT

Maximum steady state input current shall not exceed 3.5 A for any line voltage specified in 2.1.1.

2.1.5 LEAKAGE CURRENT

3.5mA maximum at 240Vac 50Hz

2.1.6 POWER FACTOR

0.90Min at 100Vac/60HZ or 240Vac/50HZ full load

2.1.7 INSULATION RESISTANCE

Insulation resistance shall be more than 20M ohm between primary and secondary.

2.1.8 LOW POWER CONSUMPTION

Vin Loa	d	Power consumption
240Vac/50Hz 100Vac/60Hz	0A <	_ 0.15 W

2.2 INPUT PROTECTION

2.2.1 INPUT CURRENT PROTECTION

A fuse with rating of __4___A / __250__V (Time Lag type) shall be installed on the input line side near the input connector and no any electrical components before.

2.3 OUTP UT REQUIREMENT

2.3.1 OUTPUT POWER

The total output power, under steady state conditions, shall not exceed __180___W.

2.3.2 OUTPUT VOLTAGE AND CURRENT

Under any combination of line and load variation and environmental conditions, all outputs shall remain within tolerance as defined in Table 2. Output voltage(s) shall be measured at the load side of output connector.

Output Voltage	Voltage Range		Current Range		
	Lower Limit	Upper Limit	Minimum Load	Full rated load	PK Load
+19.0V 18.05V		19.95V 0.0A		9.47A	--

Table 2 - Output Voltage and Current

2.3.3 RIPPLE AND NOISE

Measurements shall be made with an oscilloscope with minimum of 20MHz bandwidth and 1:1 scope Probe, Output shall be bypassed at the connector with a 0.1μF ceramic disk capacitor and a 47μF electrolytic capacitor for general testing purpose.

Output Voltage	Maximum Ripple & Noise (Vp-p)
+19.0V 300mV	

Table 3 – Ripple and Noise

2.3.4 OVER VOLTAGE PROTECTION

The power supply shall provide with over voltage protection such that under any single component failure.

The power supply provides output over voltage protected in latch off by zener diode, and no damage to customer device.

2.3.5 OVER CURRENT PROTECTION

The power supply shall be protected when operating any output in overload condition. The power supply shall be shut down and no any damage when the over current condition occurs on the output, and It will be auto-recovered when the failure is removed.

Output Voltage	Over current protection		Test condition
	Lower Limit	Upper Limit	Input voltage:100Vac 60Hz or 240Vac 50Hz.
+19.0V	10.4A	15.2A	

Table 4 –Over current protection

2.3.6 OVERSHOOT

During turn on or turn off, the output overshoot shall not exceed nominal output voltage by more than 10%, and output shall not change its polarity with respect to its return line.

2.3.7 SHORT CIRCUIT POTECTION

Power supply shall have self-limiting protection to protect against short circuit or overload conditions. No damage to the power supply shall result from a continuous or intermittent short circuit condition. It will be auto-recovered when the failure is removed.

2.3.8 AUDIBLE NOISE

There is no audible noise canned been heard when it work with rated spec.

Test condition: The distance between microphone and the object should be 30cm spec ＜30 BA.

2.4 PERFORMANCE REQUIREMENT

2.4.1 EFFICIENCY

Active average mode Efficiency (watt out / watt in) shall be a minimum of 89.00 % at 230vac/50Hz.

Active average mode Efficiency (watt out / watt in) shall be a minimum of 89.00 % at 115vac/60Hz.

Complies to EPA DOE standard specification and EU CEC standard specification (Level VI).

calculate the model is single average active mode efficiency for each test voltage by testing at 100%,75%,50%,and 25% of rated current output and then computing the simple arithmetic average of these four values respectively at 115V/60HZ and 230V/50HZ test result for reference.

Efficiency (watt out / watt in) shall be a minimum of 79.00 % at 10% full load.

Note: when testing efficiency, adapter needs to electrify to perform after full load 60 minutes

Input voltage 115Vac 60Hz or 230Vac 50Hz

2.4.2 TURN ON DELAY TIME

Output shall reach steady state within 3 seconds of turn on at 100Vac or greater.

Output shall reach steady state within 2 seconds of turn on at 240Vac or greater.

2.4.3 HOLD-UP TIME

Hold-up time shall be a minimum of 8 mS at 100Vac / 60Hz input.

2.4.4 DYNAMIC LOAD

Power supply output voltage tolerance shall be complied with ± 10%.

Step load change: from 50% to100% Load on the output.

Dwell Time: 100Hz & 1 KHz 50% duty.

Slew rate: 0.5A/uses

3 ENVIRONMENTAL SPECIFICATION

3.1 TEMPERAT URE

Operation within specification: -10 to 40 d egrees C.

Storage: -20 to 85 d egrees C

3.2 HUMI DITY

Operation: 10% to 90% relative humidity, non-condensation.

Storage: 5% to 95% relative humidity, including condensation.

3.3 VIBRA TION AND SHOCK

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

3.4 ALTIT UDE

The power supply shall operate properly at any altitude between 0 ~ 16,40 4 feet (5000 meter) above sea level, and withstand storage at 50,000 feet.

3.5 CALCULATED MEAN TIME BETWEEN FAILURES (MTBF)

The MTBF for the power adapter shall equal or exceed 100,000 hours when operated at full rated load in an ambient temperature of 25 degree C.

3.6 BURN-IN

Burn-in test:

Test condition: 110Vac / 220Vac 50Hz, with 100% maximum load at 40 ±2℃ ambient temperature.

Test method: burn-in 110 minutes; and 30 seconds “ON”, 30 seconds “OFF” within 5 minutes, then 5 minutes "ON"

Test criteria: during this conditioning the power supply output normal and no damage or hazardous condition will occur.

ORT and life test:

Input condition: 110Vac / 220Vac 50Hz, "ON/OFF" 10 times within 5 minutes,45 minutes "ON" 45 minutes "OFF",

Test condition: cycle by cycle test 168 hours with 100% maximum load at 40 ±2℃ ambient temperature.

Test criteria: during this conditioning the power supply output normal and no damage or hazardous condition will occur.

4 RELATED SPECIFICATION

4.1.1 EMI

VCCI Class-B

FCC 15(Class-B, 115Vac operation)

CISPR 22 Class-B limits

EN55022 (1998+A1:2000+A2:2003 Class-B limits)

47 CFR Part 15, Subpart B, Class B limits

GB 9254 ITE Emissions Latest Edition

4.1.2 DIELECTRIC STRENGTH—(HI-POT)

Primary to secondary: 1500VAC.

Test time: 60 second

Cut-off current: 10mA max

Arcing current: 10mA max

4.1.3 SURGE

It is referring to EN61000-4-5 IEC61000-4-5:2001 Level 4.

Differential mode surge immunity: 1KV

Common-mode Surge Immunity: 2KV

＊Determination level: Criteria A (Product testing and testing before and after any change in function is not).

4.1.4 ELECTROSTATIC DISCHARGE ESD

It is referring to EN61000-4-2, IEC61000-4-2:2001, IEC801-2 Level 3.

Contact electrostatic discharge: + - 6KV.

Air electrostatic discharge: + - 8KV.

＊Determination level: Criteria A (Product testing and testing before and after any change in function is not).

4.1.5 RF IMMUNITY

It is referring to IEC61000-4-3 Class A 3V/m

4.1.6 ENVIRONMENT STANDARDS

RoHS Regulation

The RoHS compliance symbol will be included on the data plate.

4.1.7 E LECTRICAL FAST TRANSIENTS (EFT)

It is referring to IEC61000-4-4 Class B Test Voltage: 2KV

4.1.8 GRO UNDING

Adapter AC inlet FG pin to DC plug FG 0.1 ohm max at 25A/60second.

5 M ECHANICAL

5.1 INPUT CONNECTOR AND OUTPUT CABLE

5.1.1 INPUT CONNECTOR

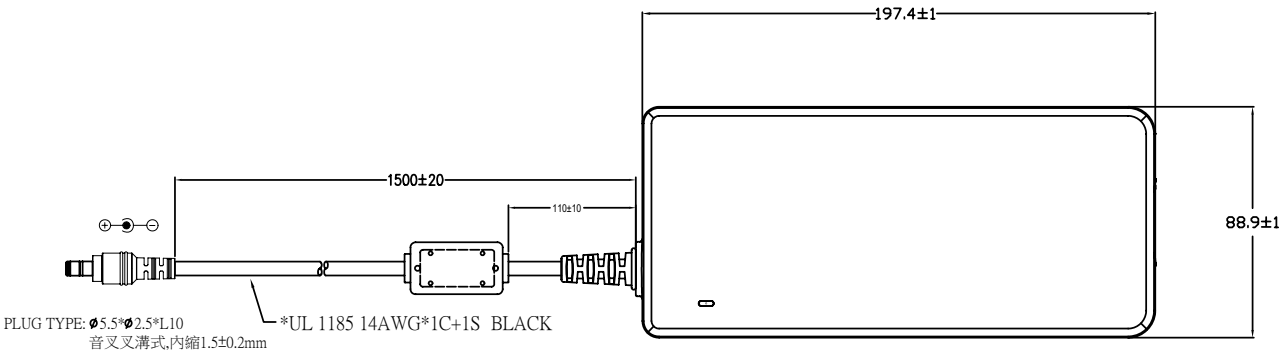
AC Input connector shall be IEC320 C14 or C6 power connector.

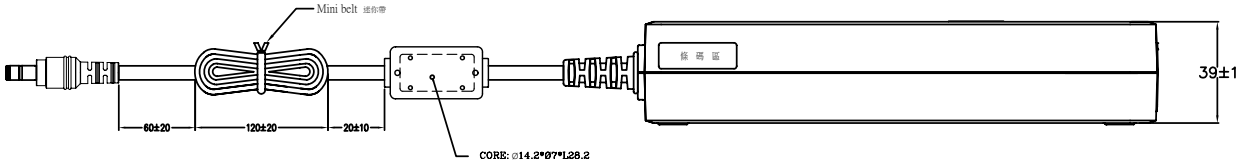
5.1.2 OUTPUT CABLE

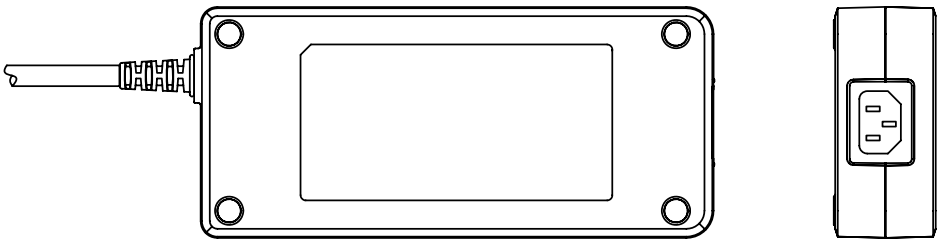
Please read the reference to FIG.

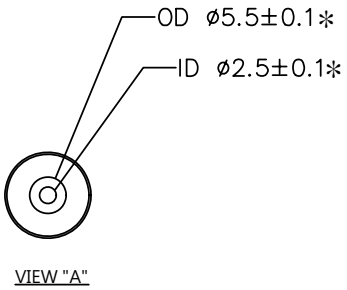
5.2 AC ADAPTER EXTERNAL DIMENSION

REV	DESCRIPTION OF CHANGE	DESIGNED	DATE
D01	新製	hl. Zhou	2022-01-24





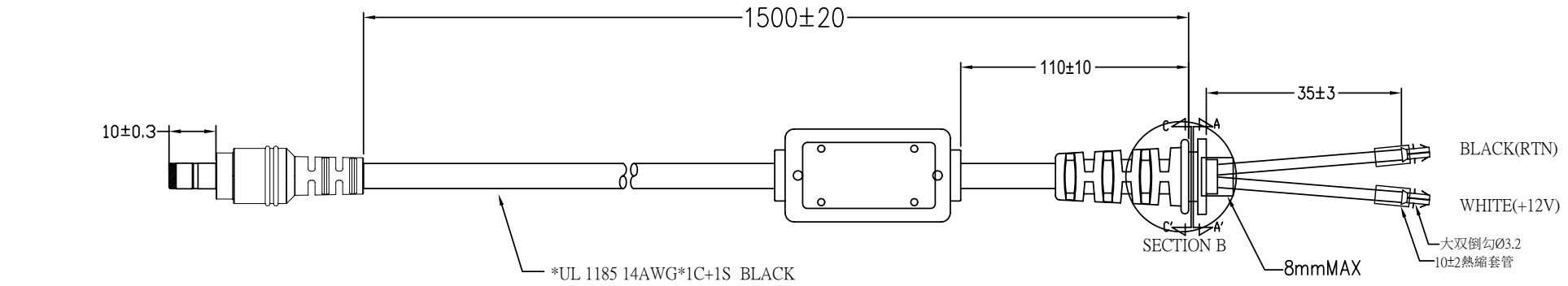


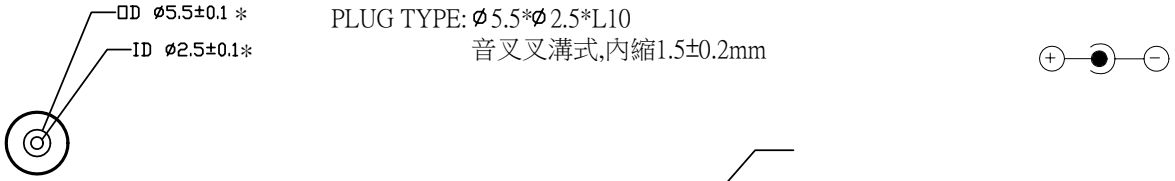


VIEW "A"
(SCALE 3:1)

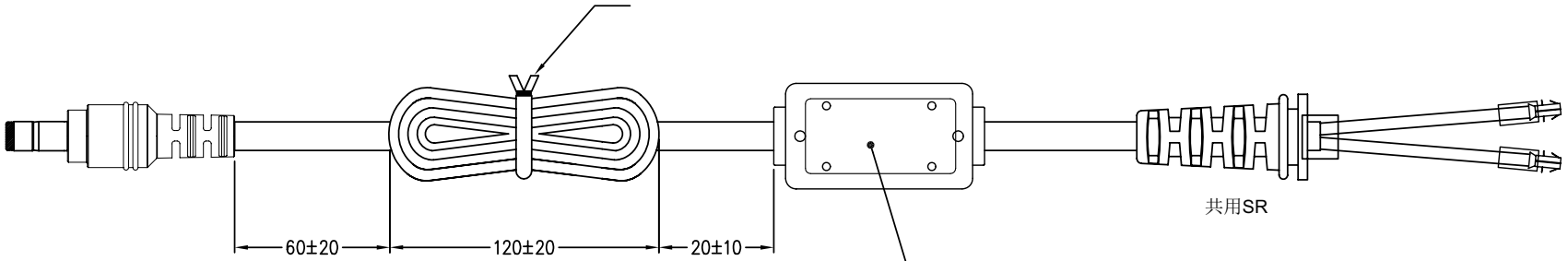
NOTES:
1. CASE & CABLE COLOR : BLACK
2. INLET: C14
3. CABLE SPEC.:*UL 1185 14AWG*1C+1S BLACK
4. MODEL:G99-KPM180K-NXXX
5. PART NO.:G18-B

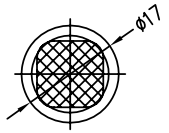
		DESIGNED	CHECKED	APPROVED	Sample Order No. :	
		hl. Zhou	Jason Deng	qun.Li	Reference material. :	KPM180K
TITLE	/	2022-01-24	2022-01-24	2022-01-24	UNIT:mm SCALE:1:1 THIRD ANGLE PROJECTION :	SHEET 1 OF 1 M/A3



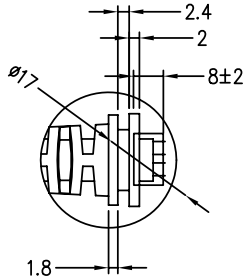


PLUG TYPE: Ø5.5*Ø2.5*L10
音叉叉溝式,內縮1.5±0.2mm

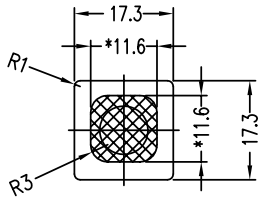




SECTION C-C'(TOL:±0.2)
DWG NO:---



SECTION B



SECTION A-A(TOL:±0.2)
DWG NO:---

註:
一.電性測試:
1.導通測試:無斷線、短路、極性反(芯線接內極).

二.拉力測試:電線與S/R間吊重 9Kg經過1分鐘
無斷線脫落等異常.

三. PLUG 需耐10A,深圳泰及電子有限公司 NUMBER
SF552250240-01 5.5X2.5X24音叉長叉溝,或同等級.

No	Hazardous substance name	Content standard
1	鎘 (Cd)	<75ppm
2	鉛 (Pb)	<800ppm
3	汞 (Hg)	<800ppm
4	六價鉻 (Cr) ⁺	<800ppm
5	多溴聯苯 (PBB)	<800ppm
6	多溴二苯醚 (PBDE)	<800ppm
7	Cd.Pb.Hg.Cr (Packaging Materials)	Total content<100ppm

SHEET METAL TOLERANCE (UNLESS OTHERWISE SPECIFIED)			
DIMENSION	PIERCING	BENDING	ANGULAR
X < 8	±0.1	±0.15	±0.3°
8 ≤ X < 25	±0.1	±0.2	±0.5°
25 ≤ X < 100	±0.15	±0.25	±0.5°
100 ≤ X < 300	±0.2	±0.3	±1°
300 < X < 800	±0.3	±0.5	±1.5°

REV.	DESCRIPTION
0.1	NEW DRAWING

		UNIT: mm	MODEL NO.: KPM
		MATERIAL	PART NO.: G18-B
		******	DRAWING NO.:
APPROVED	CHECKED	DESIGNED	
qun.Li	Jason Deng	hl.Zhou	SCALE: SHEET 1 OF 1 M/A4
DATE: 2022.01.24	DATE: 2022.01.24	DATE: 2022.01.24	THIRD ANGLE PROJECTION

NOTES:

1.MATERIAL:

Base on grid 50# Dumb white PET(網格底50#啞白PET)
WITH ADHESIVE ON THE BACK.
THE BACK ADHESIVE MUST CONFORM TO THE UL REQUIREMENT.
THE LABEL IS NOT ALLOWED TO CURL UPWARDS OR WINKLE
AL 80° C FOR 2 HOURS.

2.PRINTED:

BLACK BACKGROUND WITH WHITE CHARACTERS.

3.SURFACE TREATMENT(表面處理):DUMB FILM(啞膜/霧P).

Material standard of environmental protection:

No	Hazardous Substances	Content Standards
1	鎘 (Cd)	< 56 ppm
2	鉛 (Pb)	< 700 ppm
3	汞 (Hg)	< 700 ppm
4	六價鉻 (Cr^{6})	< 700 ppm
5	多溴聯苯 (PBB)	< 700 ppm
6	多溴二苯醚 (PBDE)	< 700 ppm
7	鄰苯二甲酸二(DEHP)	< 700 ppm
8	鄰苯二甲酸丁苄酯(BBP)	< 700 ppm
9	鄰苯二甲酸二丁酯(DIBP)	< 700 ppm
10	鄰苯二甲酸二異丁酯(DBP)	< 700 ppm
11	包裝材料(Packaging matenals)	總含量 < 100 ppm
12	多環芳香族化合物(PAHs)	NA

GENERAL TOLERANCE ± (UNLESS OTHERWISE SPECIFIED)

LEVEL / DIMENSION	SELECT LEVEL: A	B	C	ANGULAR TOLERANCE
X < 8	± 0.1	± 0.15	± 0.2	± 0.3°
8 ≦ X < 20	± 0.1	± 0.2	± 0.3	± 0.5°
25 ≦ X < 100	± 0.15	± 0.25	± 0.4	± 0.5°
100 ≦ X < 300	± 0.2	± 0.3	± 0.5	± 1°
300 ≦ X < 800	± 0.3	± 0.5	± 0.8	± 1.5°

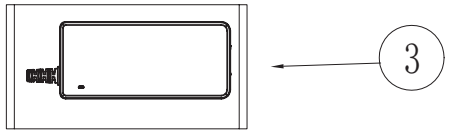
REV.	DESCRIPTION
D01	NEW

				UNIT: mm	MODEL NO.: KPM180K
				MATERIAL	PART NO.: G35-DF
					DRAWING NO.:
APPROVED	SAFETY	CHECKED	DESIGNED		
qun,li	ken,hu	qun,li	qy,he		SCALE:
DATE: 2022.01.21	DATE: 2022.01.21	DATE: 2022.01.21	DATE: 2022.01.21	THIRD ANGLE PROJECTION	SHEET 1 OF 1

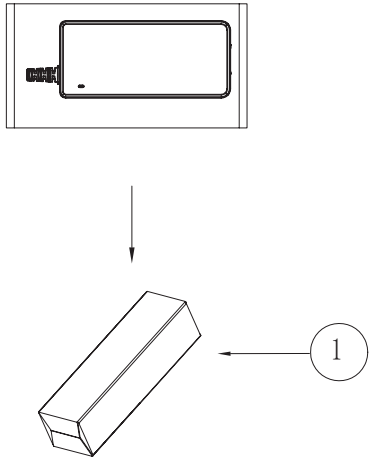
M / A4 L

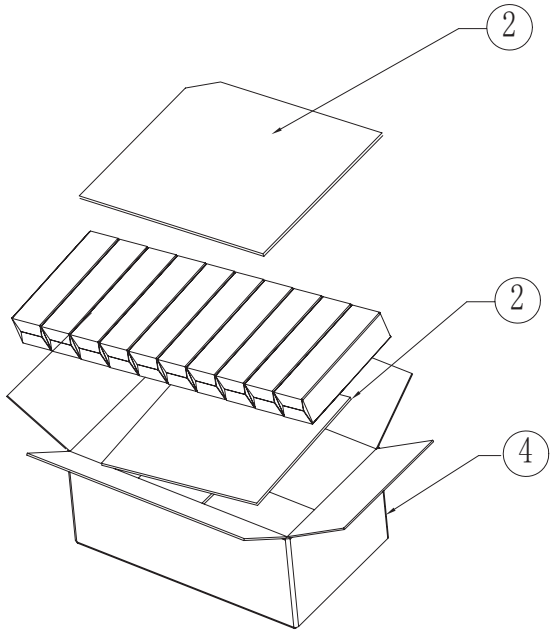
STEP1:將成品及線材整理如下圖

STEP2:將成品如圖般放入PE袋內



STEP3:將成品如圖般放入小白盒內





1.組件:

1.1.:白盒: 238*130*48mm

用量:10PCS

1.2.:平卡：480*245mm

用量:2PCS

1.3:PE袋:200*370mm T=0.06mm

用量:10PCS

1.4.:外箱:

用量:1PCS

外箱尺寸：500*265*155mm

Q'TY.: 10 PCS

REV.		DESCRIPTION	
		UNIT: mm	MODEL NO.: KPM
		MATERIAL	PART NO.: 500-265-155-01
		******	DRAWING NO.:
APPROVED	CHECKED	DESIGNED	
ym.xie	cb.deng	q.liu	SCALE: / SHEET 1 OF 1
DATE: 2020.06.08	DATE: 2020.06.08	DATE: 2020.06.08	THIRD ANGLE PROJECTION