

SPECIFICATION FOR APPROVAL

CUSTOMER: 公司中性產品

MODEL NO. : QI2QT-6128C1

PART NO. : ILMQI2QT-6128C1C1-XW-1/ILMQI2QT-6128C1C1-XB-1

MODEL NAME: 15W MPP wireless charger module

REVISION: A0

DATE: 2025-05-12

APPROVED SIGNATURES

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Model No.	QI2QT-6128C1	Model Name	15W MPP wireless charger module
Part No.	ILMQI2QT-6128C1C1-XW-1 ILMQI2QT-6128C1C1-XB-1	Size	$\varnothing 57.98^{\pm 0.3} \times 7.57^{\pm 0.25}$ mm

Product Specification

產品規格書

Product name/產品名稱: 15W MPP wireless charger module

Model No/ 產品型號: QI2QT-6128C1

File number /文件編號:

Revision/版本號: A0

Date/日期: 2025-05-12

ILMQI2QT-6128C1C1-XW-1	ILMQI2QT-6128C1C1-XB-1
	

APPROVED BY 批准	CHECKED BY 審核	DESIGNED BY 製作

Model No.	QI2QT-6128C1	Model Name	15W MPP wireless charger module
Part No.	ILMQI2QT-6128C1C1-XW-1 ILMQI2QT-6128C1C1-XB-1	Size	Ø57.98 ^{±0.3} *7.57 ^{±0.25} mm

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Model No.	QI2QT-6128C1	Model Name	15W MPP wireless charger module
Part No.	ILMQI2QT-6128C1C1-XW-1 ILMQI2QT-6128C1C1-XB-1	Size	Ø57.98 ^{±0.3} *7.57 ^{±0.25} mm

Reversion History/更新記錄

Revision	Date	Changes
A0	2025. 5. 12	New release

Model No.	QI2QT-6128C1	Model Name	15W MPP wireless charger module
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1. Product Description/產品描述

QI2QT-6128C1 comply with MPP protocol of 15W magnetic wireless module. The product input supports USB PD 9V/2.22A; 5V/3A and DC power supply 9V/2.22A. The output functions support APPLE iPhone up to 15W wireless charging. The MPP module also meets Qi2.0 certification standard.

QI2QT-6128C1 MPP TX module with 9-11N magnetic force.

This product is only suitable for general consumer product application installation and is not suitable for any automotive or aviation product application.

QI2QT-6128C1 是一款符合 MPP 協議 15W 帶有磁吸式無線充電模組，該產品輸入端支援 USB PD 9V/2.22A; 5V/3A 以及 DC 電源輸入 9V/2.22A，無線充電輸出功能支援蘋果手機 15W，符合 Qi2.0 認證標準。

QI2QT-6128C1 MPP TX 模組具有 9-11N 磁力。

本產品僅適用於一般消費性產品應用安裝，不適用於任何汽車或航空產品應用。

2. Product Characteristic/產品特點

- ◆ Comply with original Apple module C223 standard.
符合原廠蘋果模組 C223 標準尺寸
- ◆ Comply with Qi2.0 certification standard.
符合 Qi2.0 認證標準

Model No.	QI2QT-6128C1	Model Name	15W MPP wireless charger module
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3. Performance Parameter/性能參數

Item	Parameter
Input Power/輸入功率	USB-C Mode: 9V-2.22A / 5V-3A DC Mode: 9V≥2.22A / 5V≥2.4A
Input Protocol/輸入協定	BC1.2/QC/PD protocol function
Output Power/輸出功率	15W Max
Standby power/待機功率	<350mW
Efficiency/效率	78±5%
Output Protocol/輸出協定	MPP 15W / BPP 5W / 7.5W apple fast charge
Frequency/頻率	BPP:128KHz MPP:360KHz
Coil Type/線圈	MPP, 8.4uH@360KHz
Protection/保護	OVP / UVP / OCP / OTP
FOD/異物檢測	Q test (pre-power transfer)/Power Transfer FOD
Interface Power/介面電源	V+, V-, D+, D-, CC1
Other/其他	SDA, SCL, LED1, LED2/CC2
Audio noise/噪聲規格	The test distance is 15 cm < 30dB (noise spec)
Check sum/軟件版本	0.26

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4. Input power supply and wireless charger output power comparison table/輸入電源與無線充輸出對照表

Input power supply	Output wireless charger power
BC1.2, 5V $\pm$ 5% (1.5A<I _{in} <2.1A)	BPP 5W
BC1.2, 5V $\pm$ 5% (2.1A<I _{in} <2.4A)	BPP 5W/ AFC 7.5W/ MPP 7.5W
DC 5V $\pm$ 5% (I _{in} >2.4A)	BPP 5W/ AFC 7.5W/ MPP 7.5W
DC 9V $\pm$ 5% (I _{in} >2.22A)	BPP 5W/ AFC 7.5W/ MPP 15W
QC 9V $\pm$ 5% (I _{in} =1.67A)	BPP 5W/ AFC 7.5W/ MPP 10W
QC 9V $\pm$ 5% (I _{in} =2A)	BPP 5W/ AFC 7.5W/ MPP 12W
PD 5V $\pm$ 5% (I _{in} =3A)	BPP 5W/ AFC 7.5W/ MPP 7.5W
PD 9V $\pm$ 5% (I _{in} =2A)	BPP 5W/ AFC 7.5W/ MPP 10W
PD 9V $\pm$ 5% (2A<I _{in} <2.22A)	BPP 5W/ AFC 7.5W/ MPP 12W
PD 9V $\pm$ 5% (2.22A<I _{in} <3A)	BPP 5W/ AFC 7.5W/ MPP 15W
Noted: 1. AFC for Samsung phone charging	

5. OVP and UVP protection condition/過電壓及欠電壓保護條件

Input OVP Threshold	Input 9V	Trigger:10V ; Recover:9.5V
	Input 5V	Trigger:5.6V ; Recover:5.4V
Input UVP Threshold	Input 9V	Trigger:7.5V ; Recover:8.5V
	Input 5V	Trigger:4.2V ; Recover:4.5V

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6. Environmental characteristic/環境特性

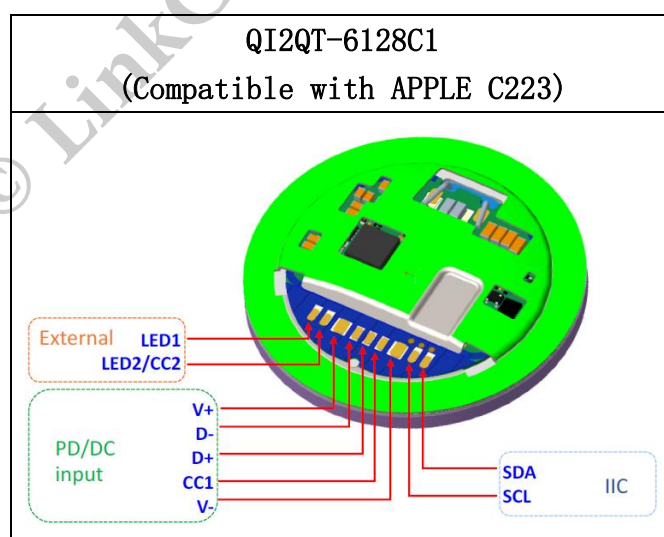
6.1. Operating Temperature and Humidity/工作溫度和濕度

Item	Requirements			
	MIN	TYP.	MAX	Units
Operating Temperature	-10	-	+40	°C
Operating Humidity	10	-	90	%RH

6.2. Storage Temperature and Humidity/儲存溫度和濕度

Item	Requirements			
	MIN	TYP.	MAX	Units
Storage Temperature	-20	-	+70	°C
Storage Humidity	5	-	95	%RH

7. PCBA function/PCBA 功能



Model No.	QI2QT-6128C1	Model Name	15W MPP wireless charger module
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8. LED light function/LED 功能說明

User can connect a LED anode to the LED 1 pad There is a 1K Ω resistor connect LED1 pad in TX module, and the high Voltage of this pad is 5V, and the low Voltage of this pad is 0V. The LED indicate as below

States	Operation
Start-up(Power on)	on then off
Standby	off
Charging	on
Fully charged	on
Error	Blink-1Hz

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9. Temperature and output power/溫度和輸出功率

There is a NTC resistor inside the module to provide OTP for the module. The module can adjust output power according to the different temperature. It starts to decrease output power when the temperature exceeds 55°C, the output power decreases 1W for every 1°C increases. The module stops running when the temperature exceeds 72°C. It resumes operate when the temperature drops below 55°C.

PCB NTC Temperature (°C)	RX Prect(W)
≤55	15
56	14
57	13
58	12
59	11
60	10
61	9
62	8
63	7
64	6
65	5
66	4
67	3
68	2
69	1or Cloak
70	
71	
72	TX stop

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10. Execution Standards/執行標準

10.1. EMI Standards/電磁相容標準

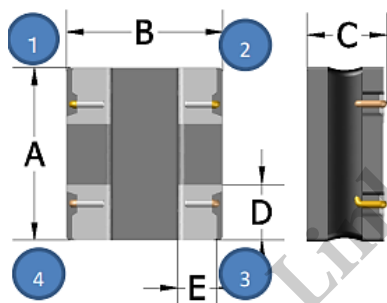
EN55032

Note: The EMI test should include the actual testing of the enclosure and RX equipment.
備註: EMI 測試需包含外殼與 RX 設備實際測試。

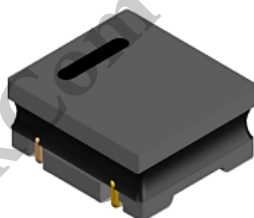
10.2. In order to pass the EMI test, it is recommended to add a common-mode inductor to the power source before connecting it to the module PCBA. The recommended specifications of common mode inductors are as follows, which can be adjusted according to actual conditions:

為了通過EMI測試，電源來源建議外加共模電感再連接至模組PCBA上。共模電感建議規格如下，可依實際狀況做調整：

PACKING DIMENSIONS (mm)



Marking



5045	Dimensions
A	5.0 ± 0.3
B	4.5 ± 0.3
C	2.5 Max.
D	1.6 ± 0.3
E	1.4 ± 0.3

■ Electrical Characteristics

P/N	Z(Ω) Common Mode	DCR (Ω)	IDC (A)	Rated Voltage	Insulation Resistance	Withstand Voltage
	Impedance at 100MHz	±40%	Max.	Vdc (V)Typ.	IR (MΩ) Min.	Vdc (V)Typ.
PCN5045A-102	1000 Typ.	0.024	3.0	50	10	125

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11. I2C interface/I2C 介面

User can get the Module status or send Power supply capacity of the adapter to the module through I2C.

The Module is configured to be a slave, and the maximum communication frequency is up to 400KHz. The pull-up voltage can use 3.3V or 5V.

SCL, SDA

V _{IH}	GPIO Logic input high threshold	1.3	V
V _{IL}	GPIO Logic input low threshold	0.6	V
I _{LKG}	Leakage Current	-1	uA
F _{SCL}	Clock Frequency	100	400 kHz

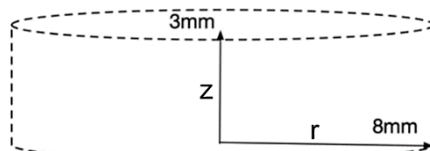
I2C information as below/I2C 資訊如下

Slave Device Addr: 0x71(7bit)													
Read Addr: 0xE3													
Write Addr: 0xE2													
Info Addr (HEX)	Info Name	R/W	D7	D6	D5	D4	D3	D2	D1	D0	Default Value (HEX)	Descriptions	
00	TX_FW_VERSION	R	FW_VERSION								XX	Firmware version of TX, 0x14 means v1.4	
01	TX_CHIP_ID	R	CHIP_ID								XX	Hardware version of TX, 0x50 means v5.0	
02	TX_STATUS	R	TX_ERR	OTP	OVP	FOD	RESERVED			STATUS	00	STATUS=1, device present; *STATUS=0*, no device; TX_ERR=1, an error occurred at Tx side, such as FOD, OTP, ...; TX_ERR=0, no error;	
03	RESERVED_0	R	RESERVED										
04	TX_REQUIRED_VOLT_L	R	REQUIRED_VOLT[7:0]								88	unit: mV	
05	TX_REQUIRED_VOLT_H	R	REQUIRED_VOLT[15:8]								13	The master should set the voltage to 9V/5V directly.	
06	TX_WORKING_VOLT_L	R	WORKING_VOLT[7:0]								88		
07	TX_WORKING_VOLT_H	R	WORKING_VOLT[15:8]								13	unit: mV	
08	TX_WORKING_CURRENT_L	R	WORKING_CURRENT[7:0]								00		
09	TX_WORKING_CURRENT_H	R	WORKING_CURRENT[15:8]								00	unit: mA	
0A	TX_NTC_TEMPERATURE	R	NTC_TEMPERATURE[7:0]								15		
0B	TX_NTC_TEMPERATURE	R	NTC_TEMPERATURE[15:8]								00	unit: °C	
0C	MASTER_MSG	R/W	READY	RESERVED				ADP_TYPE			00	*READY=1*, master ready; *READY=0*, master not ready; *ADP_TPVE=0b000*, DCP; *ADP_TPVE=0b001*, QC2.0(can support 5V/9V output adapter, but the current capacity is not clear); *ADP_TPVE=0b010*, PD2.0(can support 5V/9V output adapter, and the current capacity is clear); *ADP_TPVE=0b011*, QC3.0_12V/QC3.0_20V; *ADP_TPVE=others*, DCP;	
0D	TX_Q_VALUE	R	Q_VALUE								00	TX QDT value	
0E	TX_F_VALUE_L	R	F_VALUE[7:0]								00		
0F	TX_F_VALUE_H	R	F_VALUE[15:8]								00	unit: 0.1KHz	
10	MASTER_SEL_ADP_VOLT_L	R/W	MASTER_SEL_ADP_VOLT[7:0]								00	unit: mV	
11	MASTER_SEL_ADP_VOLT_H	R/W	MASTER_SEL_ADP_VOLT[15:8]								00	*MASTER_SEL_ADP_VOLT* is the selected voltage value of adapter. The master should send this value before setting the "READY" to 1.	
12	MASTER_SEL_ADP_CURRENT_L	R/W	MASTER_SEL_ADP_CURRENT[7:0]								00	unit: mA	
13	MASTER_SEL_ADP_CURRENT_H	R/W	MASTER_SEL_ADP_CURRENT[15:8]								00	*MASTER_SEL_ADP_CURRENT* is the selected current value of adapter. The master should send this value before setting the "READY" to 1.	

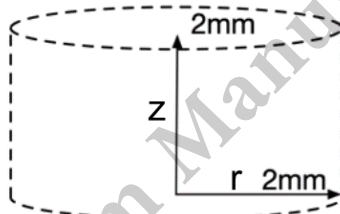
Model No.	QI2QT-6128C1	Model Name	15W MPP wireless charger module
Part No.	ILMQI2QT-6128C1C1-XW-1 ILMQI2QT-6128C1C1-XB-1	Size	Ø57.98 ^{±0.3} *7.57 ^{±0.25} mm

12. Attentions-Power Delivery/注意事項-功率分配

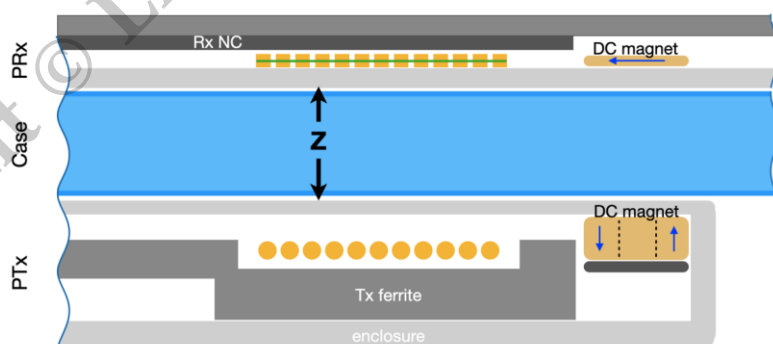
- 12.1. The PTx shall provide a BPP PRx with at least 5W of rectified power for $0\text{mm} \leq z \leq 3\text{mm}$, $0\text{mm} \leq r \leq 8\text{mm}$, see below figure.



- 12.2. The PTx shall provide a MPP PRx with at least 15W of rectified power inside the 2x2 cylinder ($0\text{mm} \leq z \leq 2\text{mm}$, $0\text{mm} \leq r \leq 2\text{mm}$), see below figure.



- 12.3. The PTx shall provide a MPP PRx with at least 5W of rectified power for $0 \leq z \leq 3\text{mm}$, $0\text{mm} \leq r \leq 4\text{mm}$.



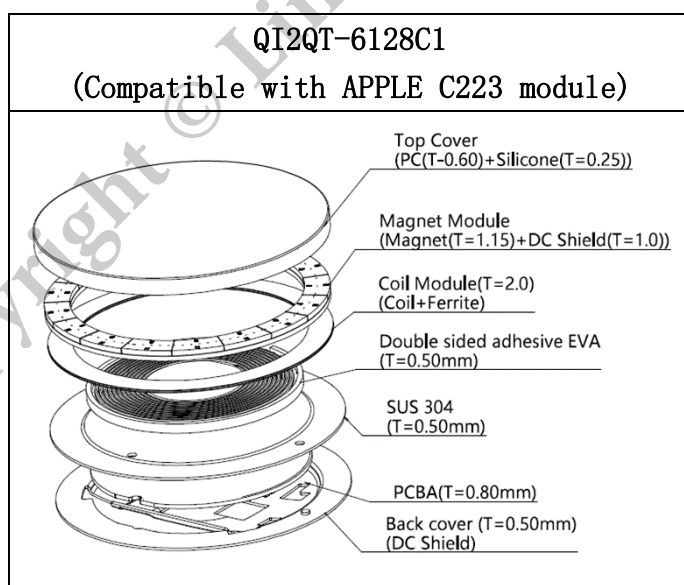
z: distance from transmitter surface to receiver surface
Coil-to-coil distance is larger than z.

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13. Module Product Center/模組產品內部描述

Item	QI2QT-6128C1 (Comply with APPLE C223 module)
Top cover Color	Black/White
OD	57.98mm
Thickness of module	7.57mm
Thickness of magnet	1.15mm
Thickness of DC shield	1.0mm
Magnet Qty.	17PCS
Magnet Mode	N48H
Gaussian value	3800 $\pm$ 100Gs
Magnet Dimension	$\varnothing 56.10\text{mm} \times \varnothing 46.00\text{mm}$ (Width : 5.05mm)
Nominal force value	900~1100gf

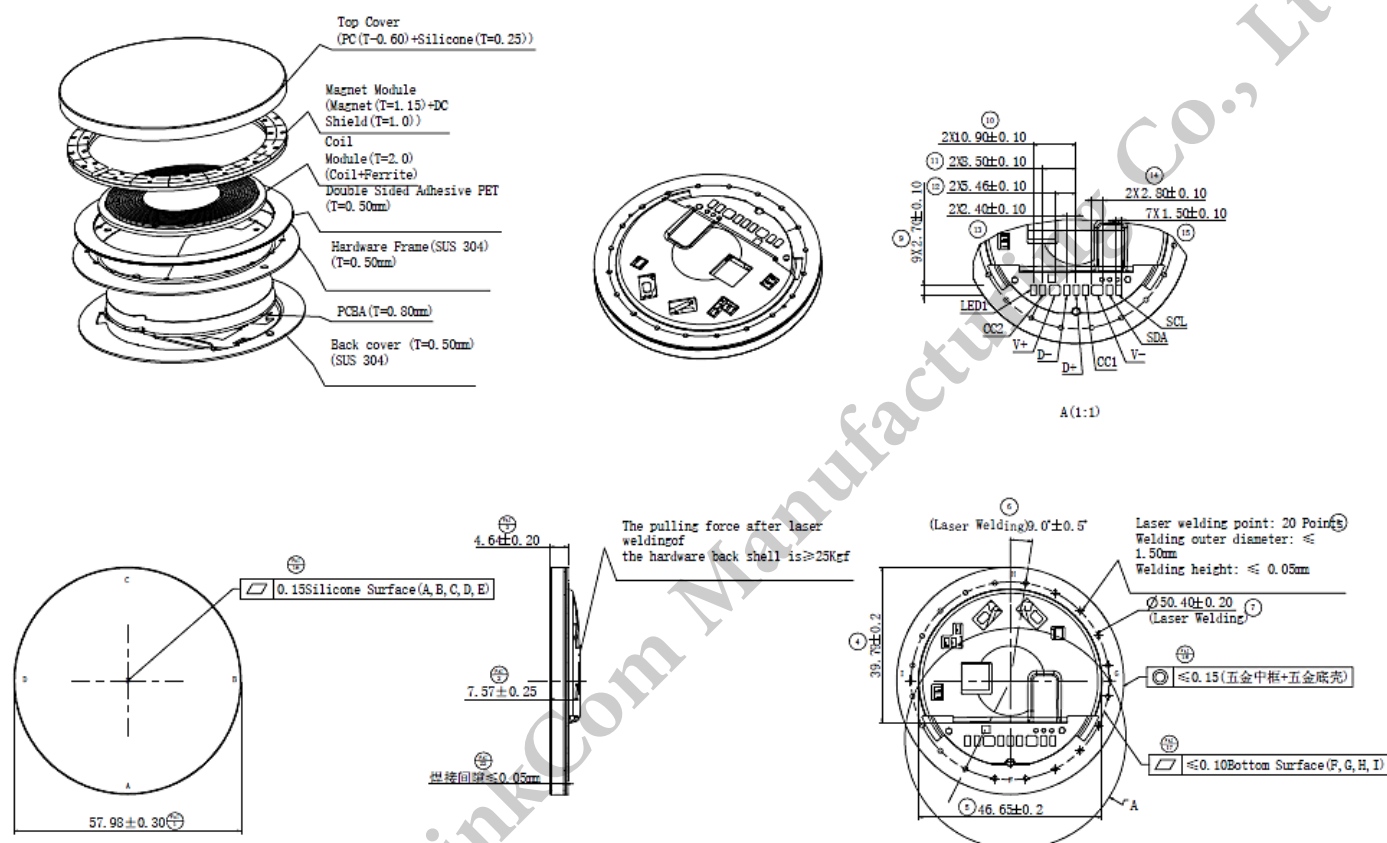
14. Module Assembly/模組內部結構



Model No.	QI2QT-6128C1	Model Name	15W MPP wireless charger module
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15. Module dimension/模組尺寸

QI2QT-6128C1



16. Weight/重量

1 piece: 52.5±2g

1 Carton/1 箱: 200pcs; Net Weight/淨重: about 10.5kg; Gross Weight/毛重: about 12.4kg

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17. Packaging/包裝

Carton Packing Method

2025.04.24

Outer Carton : 200 pcs size : W 422 x D 312 x H 146mm

(boxes) NW : kg GW : kg

Inner Carton : pcs size : W x D x H mm

(boxes) NW : kg GW : kg

天地盖: 407x207mm(2PCS/内箱)

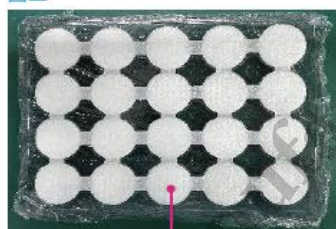
PRODUCT

图一



模组

图二



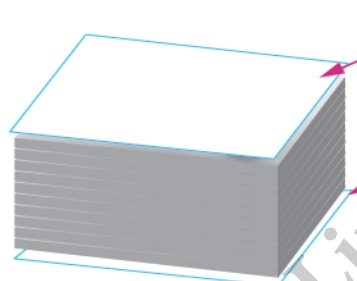
垫棉

weight:

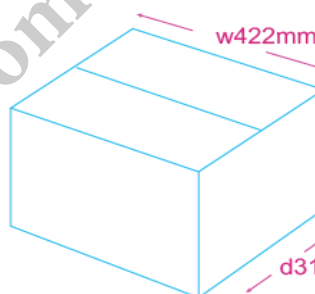
将产品盖面朝上放入托盘卡槽中，
1托盘装20pcs,放好产品之后用缠绕膜
把托盘顶部盖住，不用360度缠绕，
只需盖住所有产品即可，如图一；
盖好缠绕膜后再放一块垫棉，如图二；
一箱10个托盘共200pcs产品。（托盘、
垫棉客供复用）

OUTER

叠放10层共200PCS



407x207mm



w422mm

h146mm

d312mm

shipping mark: 4 faces

line:

pcs: 200

INNER

shipping mark: faces

line:

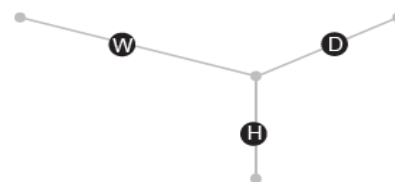
pcs:

Inner Material:

Outer Material: A=A

Designer: Bruce

Coordinate:



Please make sure to get our approval of following issues before you start mass production of the cartons:

- printing of the shipping mark (ink color, printing date etc.)
- weight and size of the carton
- fitting between product & Inner carton, Inner carton & outer carton



LinkCom Manufacturing Co., Ltd.

聯寶電子股份有限公司

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18. Statement/聲明

All rights reserved by LinkCom Manufacturing Co., Ltd. for all this specification for approval. About warranty, please refer to LinkCom company warranty policy.