

SPECIFICATION FOR APPROVAL

承 認 書

Description : Micro Dynamic Speaker

Singatron Part No. : SES092208-05C

Customer's Model No. : _____

Specification No. : DRO-7504

Number Of The Edition : 1.2

CUSTOMER'S APPROVED SIGNATURE		

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Approved by	Checked by	Issued by

A. SCOPE 範疇

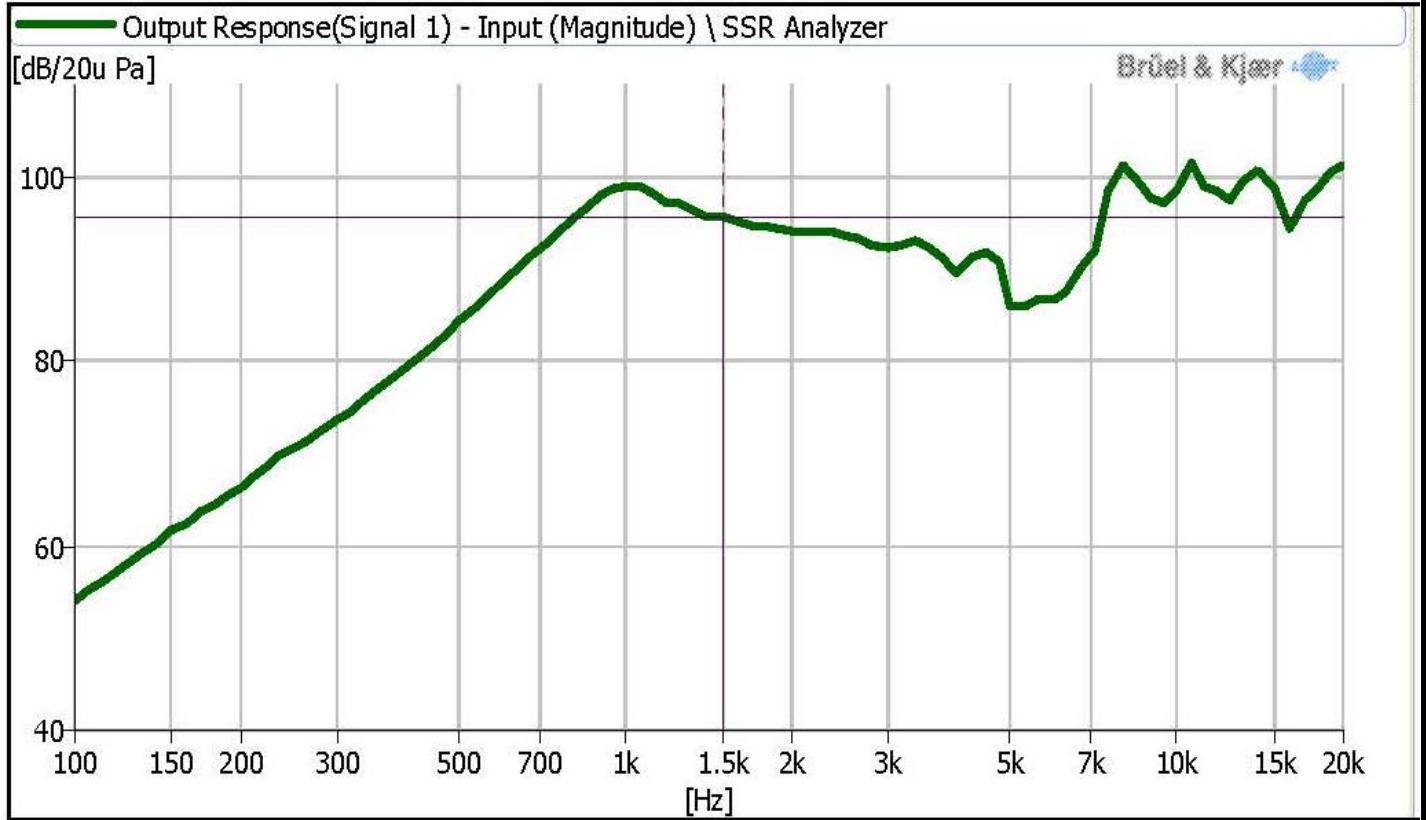
This specification applies speaker, **SES092208-05C**

此規格書適用於喇叭, **SES092208-05C**

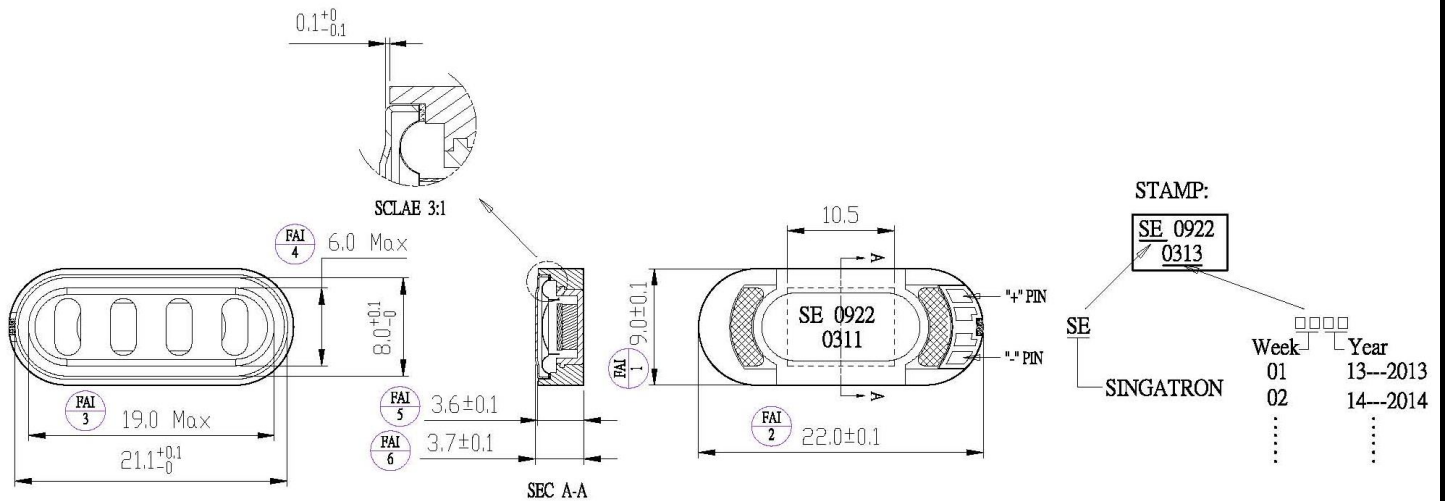
B. SPECIFICATION 規格

No.	Item	Symbol	Unit	Specification	Condition
1	Dimension 尺寸		mm	22.0 x 9.0 x 3.7	
2	Power Rating 功率		W	Rated. 0.5/ MAX. 1.0	Maximum Power:IEC-60268-5 Filter 60s On/120s Off 10 Cycles (Room TEMP.)
3	Impedance 阻抗	Ω	ohm	$8 \pm 15\%$	At 1.5KHz 1.0V
4	Resonance Frequency 低音諧振	Fo	Hz	$850 \pm 20\%$	At 1.0V
5	Output S.P.L. 音壓位準		dB	$97 \pm 3\text{dB}(0.5\text{w}/5\text{cm})$	At 1.0K,1.2K,1.5K,2.0KHz
6	Frequency Range 有效頻寬		Hz	Fo---20K	Output S.P.L. $\pm 10\text{dB}$
7	Distortion 失真		%	10% Max.	At 1.0kHz , 0.5W
8	Voice Coil 音圈		mm		
9	Magnet 磁石		mm		Nd-Fe-B (鈷鐵鋁)
10	Flux Density 磁通密度		Gauss		
11	Operating temp. 操作溫度		$^{\circ}\text{C}$	-20 ~ +70	
12	Buzze & Rattle 異常音				Not be audible at 2.0V sine wave between 300Hz ~ 20KHz 輸入 2.0V 正弦波從 300Hz 到 20KHz 之間無異常音
13	Polarity 極性				The diaphragm is to be moved outward when a positive DC voltage is applied to the speaker terminal marked "+".
14	Weight 重量		g	1.4	
15	Material 材質			PBT (Black)	
16	Environmental Protection Regulation 環保法規			RoHS 2.0	

C. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線

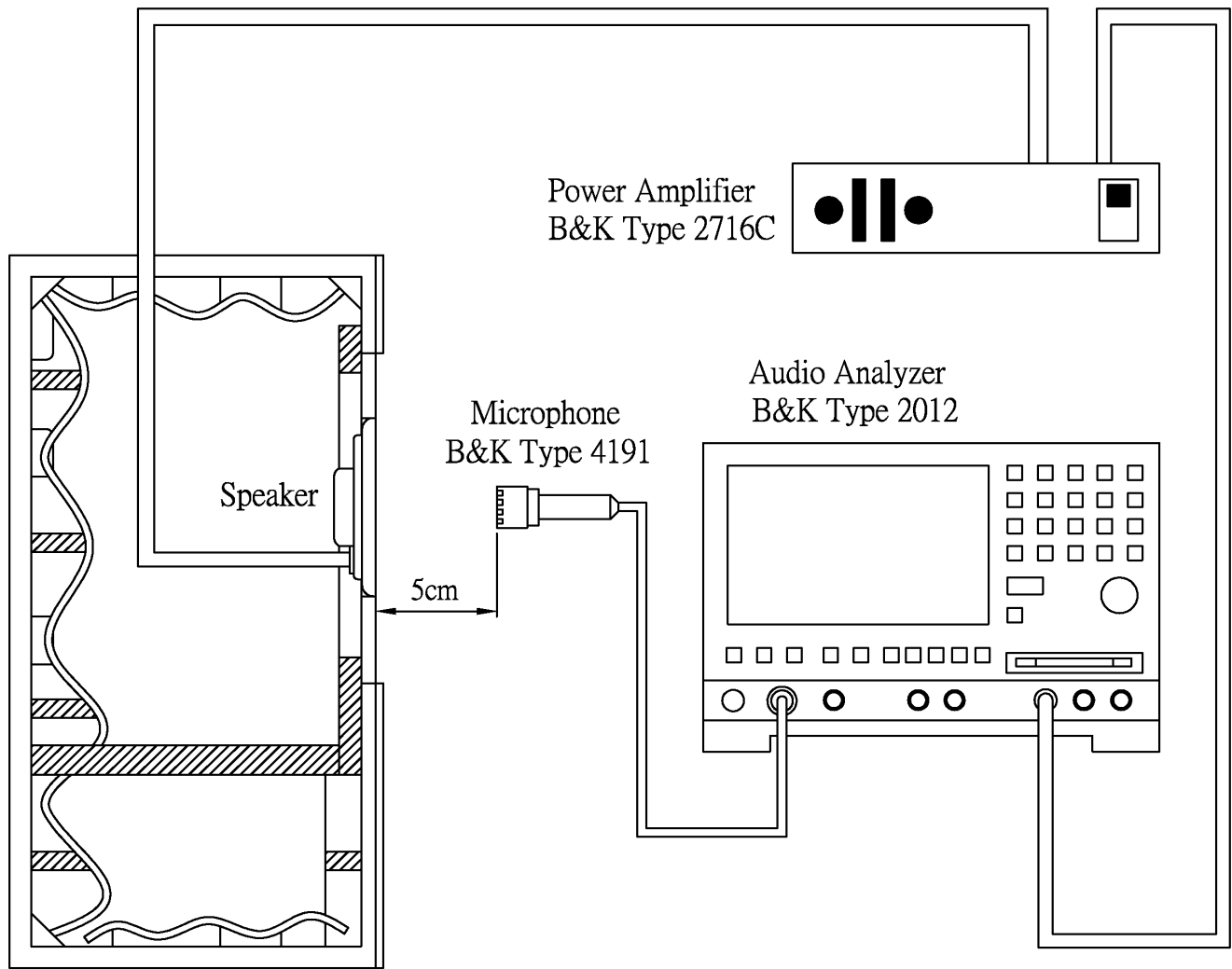


D. APPEARANCE DRAWING 外觀尺寸圖



Tol: ± 0.2
Unit: mm

E. MEASUREMENT CIRCUIT 測量線路



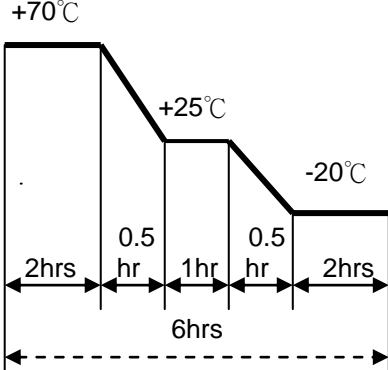
JIS C5531

940mm x 640mm x 1240mm

F. MECHANICAL CHARACTERISTICS 機械特性

No.	Item	Test condition	Evaluation standard
1	PCB Wire Pull Strength PCB 線材拉力	Each wire can withstand the pulling force at X, Y,Z three directions as minimum 8.9N. 每根線材分別在 X, Y, Z 三個方向需承受施以 8.9N 的力量.	No cutting off. 不脫落.
2	Vibration Test 振動測試	Speaker shall be measured after being applied vibration of amplitude of 1.5mm with 10 to 55Hz band of vibration frequency to each of 3 per-pendicular directions for 2 hours. 振動週波數 10~55Hz、全振幅 1.5mm 於 X, Y, Z 3 個方向, 各 2 小時	No obstacle to be harmful to normal operation; damages, cracks, rusts and distortions. Should not be audible at 2.0V sine wave between 300Hz ~ 20KHz
3	Drop Test 落下測試	Drop the speakers contained in normal box onto the board 40mm thick 10 times from the height of 75cm 將揚聲器置於盒中, 自 75 公分高度落在 40mm 木板上共 10 次	測試後無任何障礙防礙正常操作. 且在輸入 2.0V 正弦波從 300Hz 到 20KHz 之間無異常音

G. ENVIRONMENTAL TEST 環境試驗

No.	Item	Test conditions	Evaluation standard
1	High temp. Test 高溫測試	After being placed in a chamber at +70°C for 96 hours 置於+70°C環境中 96 小時	Being placed for 6 hours at +25°C, speaker shall be measured. No obstacle to be harmful to normal operation; damages, cracks, rusts, etc. Should not be audible at 2.0V sine wave between 300Hz ~ 20KHz. Fo should meet initial one. S.P.L. deviation of unit should be within ±3dB 經測試後，靜置於+25°C (室溫)環境中 6 小時後，測試後無任何障礙防礙正常操作。且在輸入 2.0V 正弦波從 300Hz 到 20KHz 之間無異常音。Fo 與原規格值相同，輸出音壓變化量在±3dB 內。
2	Low temp. Test 低溫測試	After being placed in a chamber at -20°C for 96 hours. 置於-20°C環境中 96 小時	
3	Humidity test 相對濕度測試	After being placed in a chamber at +40°C and 90±5% RH relative humidity for 96 hours. 置於+40°C，相對濕度 90±5%環境中 96 小時	
4	Temp. cycle test 溫度循環測試	The part shall be subjected to 5 cycles. One cycle shall consist of: 單體承受溫度循環測試 5 次，其循環內容如圖示： 	

H. Recommended Temperature Profile For Hand Soldering 建議手焊溫度

Hand Soldering
370±10°C / 3±1 Sec

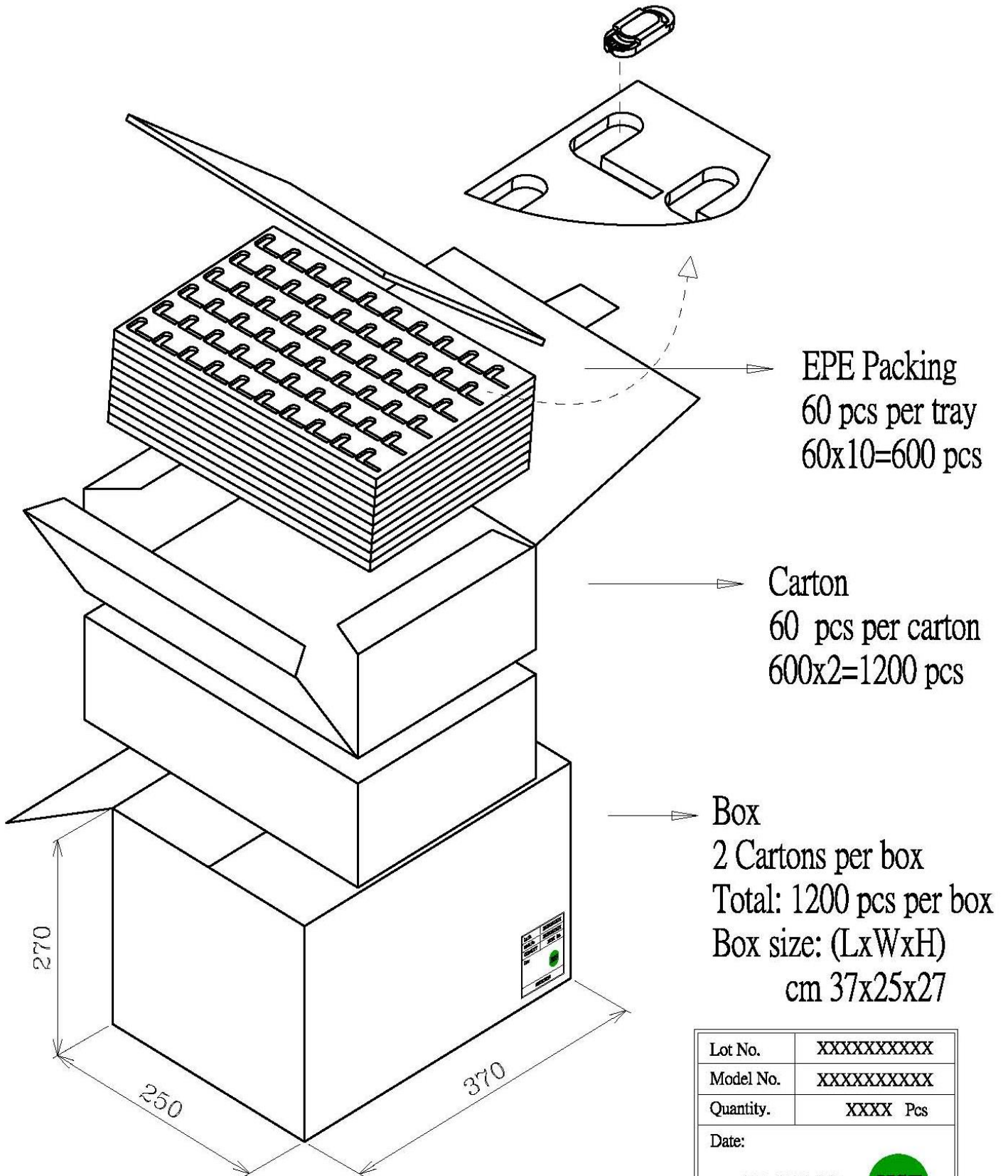
I. RELIABILITY TEST 信賴性試驗

No.	Item	Test conditions	Evaluation standard
1	Load test 連續負荷	0.5W pink noise is applied for 96 hours at room temp 在室溫下，輸入功率 0.5W，粉紅雜音連續操作 96 小時。	Being placed for 1 hours at +25°C, speaker shall be measured. No obstacle to be harmful to normal operation; damages, cracks, rusts, etc. Should not be audible at 2.0V sine wave between 300Hz ~ 20KHz. Fo should meet initial one. S.P.L. deviation of unit should be within ±3dB 經測試後，靜置於+25°C (室溫)環境中 1 小時後，測試後無任何障礙防礙正常操作。且在輸入 2.0V 正弦波從 300Hz 到 20KHz 之間無異常音。Fo 與原規格值相同，輸出音壓變化量在±3dB 內。

TEST CONDITION.

Standard Test Condition :	a) Temperature : +5 ~ +35°C	b) Humidity : 45-85%	c) Pressure : 860-1060mbar
一般測試條件 :	a) 溫度 : +5 ~ +35°C	b) 濕度 : 45-85%	c) 氣壓 : 860-1060mbar
Judgement Test Condition	a) Temperature : +25 ± 2°C	b) Humidity : 60-70%	c) Pressure : 860-1060mbar
爭議時測試條件:	a) 溫度 : +25 ± 2°C	b) 濕度 : 60-70%	c) 氣壓 : 860-1060mbar

J. PACKING STANDARD 包裝規格



EPE Packing
60 pcs per tray
60x10=600 pcs

Carton
60 pcs per carton
600x2=1200 pcs

Box
2 Cartons per box
Total: 1200 pcs per box
Box size: (LxWxH)
cm 37x25x27

270

250

370

Tray	330mmx230mmx11mm	1x60PCS=60PCS
Little BOX		10x60PCS=600PCS
Carton Box	370mmx250mmx270mm	600PCSx2=1200PCS

Lot No.	XXXXXXXXXX
Model No.	XXXXXXXXXX
Quantity.	XXXX Pcs
Date:	DD MM YY
	
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* The label stuck on inner boxes and outer of carton