

# SPECIFICATION FOR APPROVAL

## 承認書

Description : **Speaker**

Kingstate Part No. : **KDMG20008C-10T158**

Customer's Model No. : \_\_\_\_\_

Specification No. : **DOD-U198**

Number Of The Edition : **2.3**

| CUSTOMER'S APPROVED SIGNATURE |  |  |
|-------------------------------|--|--|
|                               |  |  |

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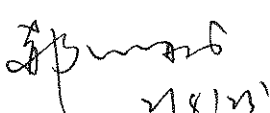
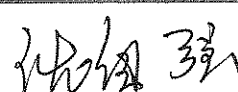


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| Approved by                                                                                   | Checked by                                                                                        | Issued by         |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------|
| <br>2/8/23 | <br>2023.02.08 | 談永濤<br>2023/02/01 |

## RELEASE HISTORY 發行歷史

| Version | Date     | Description                   | Remark |
|---------|----------|-------------------------------|--------|
| 1.1     | 02/09/22 | Creation                      |        |
| 1.2     | 03/02/22 | 更新端子                          |        |
| 1.3     | 03/07/22 | 修改线长                          |        |
| 1.4     | 03/25/22 | 增加双面背胶                        |        |
| 1.5     | 09/22/22 | 去除双面背胶；线型 30#改为 28#, 线长改 60mm |        |
| 1.6     | 09/30/22 | 更新端子排位                        |        |
| 2.1     | 11/02/22 | 更正 F0                         |        |
| 2.2     | 11/03/22 | 改为 1W 测试                      |        |
| 2.3     | 02/01/23 | 更新膜片和网布                       |        |
|         |          |                               |        |
|         |          |                               |        |

Preliminary

## A. SCOPE 範疇

This specification applies speaker, **KDMG20008C-10T158**

此規格書適用於喇叭, **KDMG20008C-10T158**

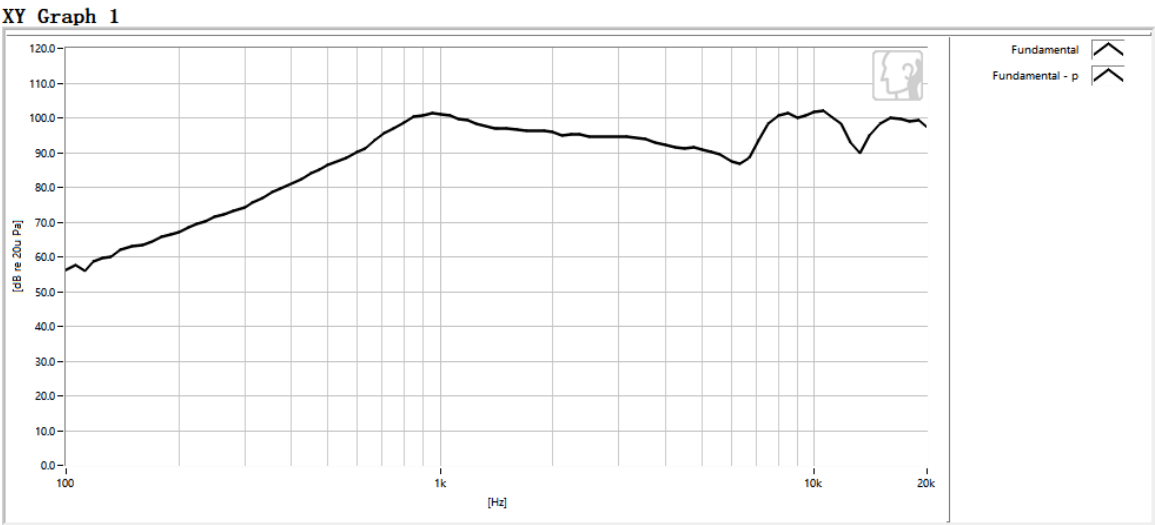
## B. SPECIFICATION 規格(非车規)

| No. | Item                                        | Symbol   | Unit               | Specification                                                             | Condition                                                                            |
|-----|---------------------------------------------|----------|--------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 1   | Dimension<br>尺寸                             |          | mm                 | 20*3.2                                                                    |                                                                                      |
| 2   | Power Rating<br>功率                          |          | W                  | Rated. 1.0/ MAX.1.5                                                       | Maximum Power:IEC-60268-5<br>Filter 60s ON/120s Off 10 Cycles(Room Temp)             |
| 3   | Impedance<br>阻抗                             | $\Omega$ | ohm                | $\odot 8 \pm 15\%$                                                        | At 2.0KHz                                                                            |
| 4   | Resonance Frequency<br>低音諧振                 | Fo       | Hz                 | $\odot 850 \pm 20\% \text{ Hz}$                                           | At 1.0V                                                                              |
| 5   | Output S.P.L.<br>音壓位準                       |          | dB                 | $\odot 98 \pm 3\text{dB}(1\text{W}/10\text{cm})$                          | At 0.8K,1.0K 1.2K,1.5KHz<br>(Average figures)                                        |
| 6   | Frequency Rang<br>有效頻寬                      |          | Hz                 | F0--20K                                                                   | Average SPL -10db                                                                    |
| 7   | Distortion<br>失真                            |          | %                  | $\odot 10\% \text{ Max.}$                                                 | at 2.0KHz ,1W                                                                        |
| 8   | Diaphragm<br>振膜                             |          |                    | N/A                                                                       | PEI                                                                                  |
| 9   | Magnet<br>磁石                                |          | mm                 | $\Phi 8.0*1.0$                                                            | Nd-Fe-B                                                                              |
| 10  | Flux Density<br>磁通密度                        |          | Gauss              | N/A                                                                       |                                                                                      |
| 11  | Operating temp.<br>操作溫度                     |          | $^{\circ}\text{C}$ | -20 ~ +60                                                                 |                                                                                      |
| 12  | Storage temp.<br>儲存溫度                       |          | $^{\circ}\text{C}$ | -30 ~ +70                                                                 |                                                                                      |
| 13  | Buzze & Rattle<br>異常音                       |          |                    |                                                                           | Not be audible at 2.83V sine wave between From Fo~5K<br>輸入 2.83V 正弦波從 Fo 到 5K 之間無異常音 |
| 14  | Piece weight/Out Box weight<br>單重 / 箱重      |          | g                  | 2.3/NA                                                                    |                                                                                      |
| 15  | Material<br>材質                              |          |                    | SPCC                                                                      |                                                                                      |
| 16  | Polarity<br>極性                              |          |                    | Diaphragm shall move Forward when Apply a Positive DC. Current to the “+” |                                                                                      |
| 17  | Environmental Protection Regulation<br>環保法規 |          |                    | RoHS2.0                                                                   |                                                                                      |
| 18  | Waterproof Grade<br>防水等級                    |          |                    | IP65                                                                      | Diaphragm is waterproof<br>音膜面防水                                                     |

C. SPEAKER CHARACTERISTICS 頻率響應曲線

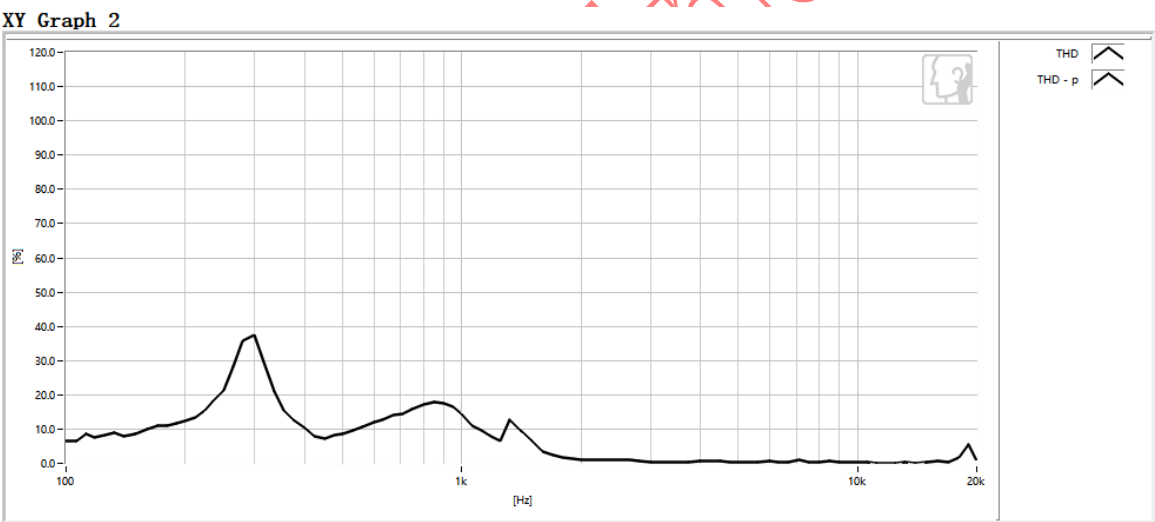
Frequency Response Curve

Test condition: 1W/0.1M,

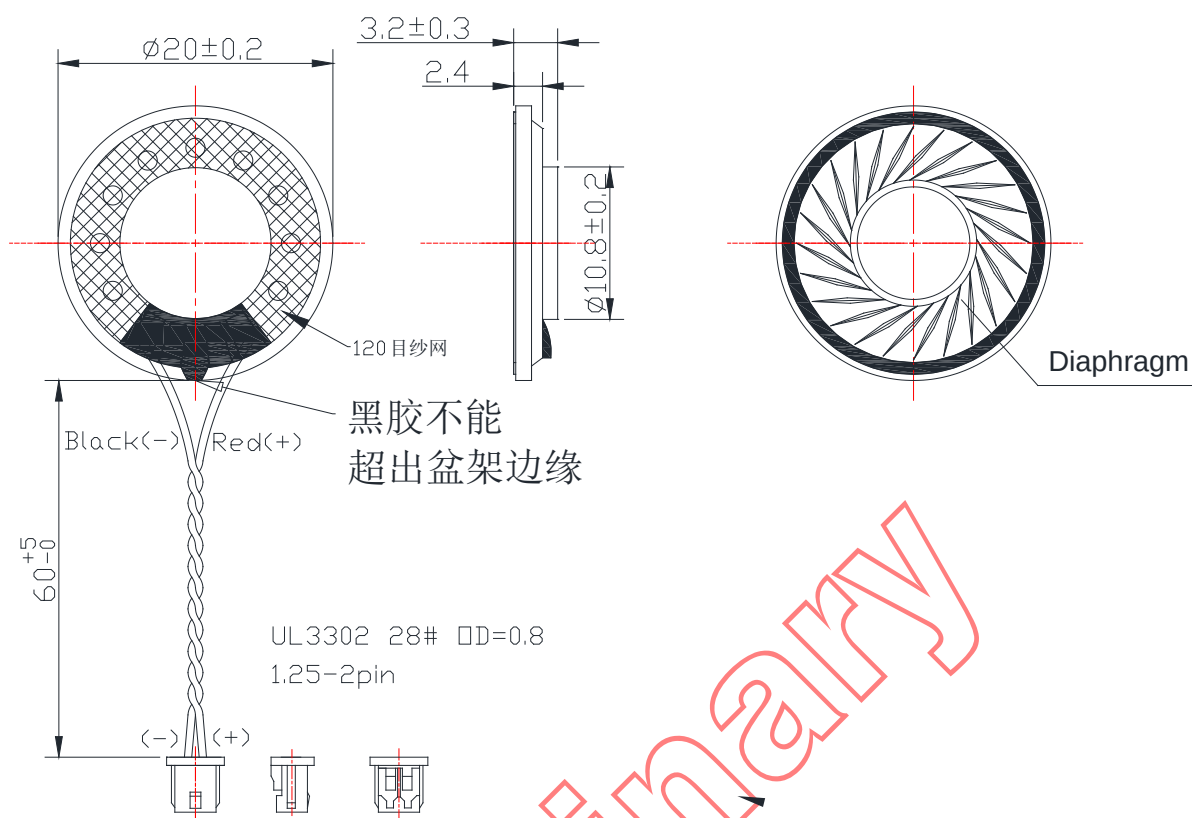


Total Harmonic Distortion Curve

Test condition: 1W/0.1M,



D. APPEARANCE DRAWING 外觀尺寸圖



Tol:  $\pm 0.5$

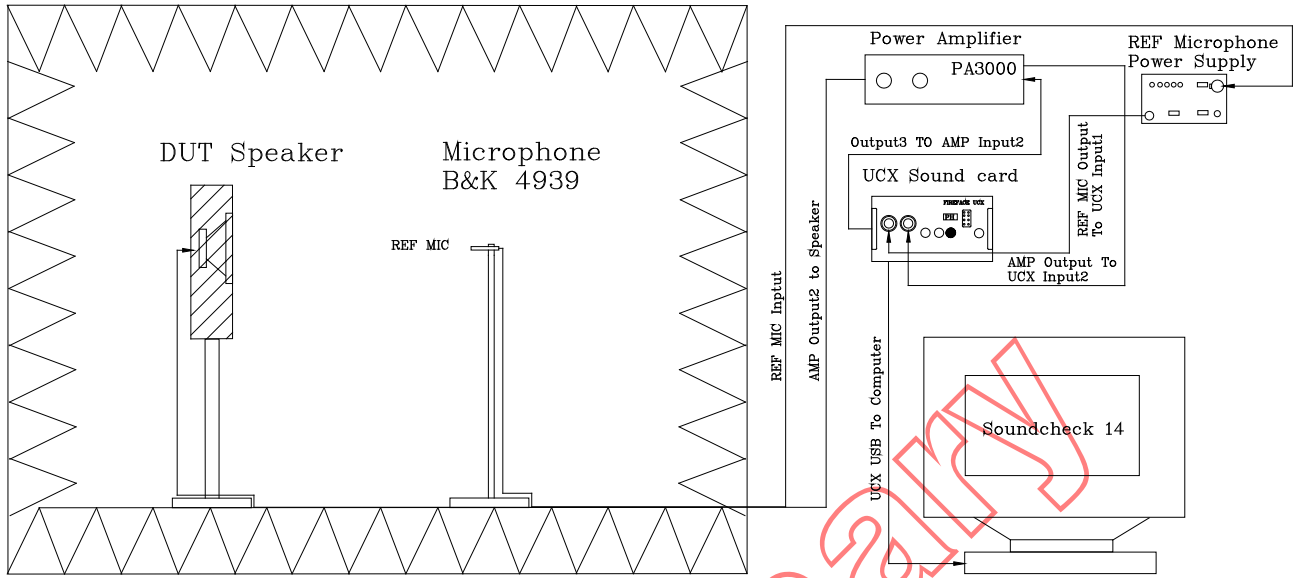
Unit: mm

CONSTRUCTION DETAIL

| PART NO. | PART NAME    | Q'TY | MATERIAL | REMARK |
|----------|--------------|------|----------|--------|
| 1        | Gasket       | 1    | ABS      |        |
| 2        | Diaphragm    | 1    | PEI      |        |
| 3        | VOICE COIL   | 1    | Cu       |        |
| 4        | Plate        | 1    | SPCC     |        |
| 5        | Magnet       | 1    | NdFeB    |        |
| 6        | PCB Terminal | 1    | FR4      |        |
| 7        | Frame        | 1    | SPCC     |        |

E. MEASUREMENT CIRCUIT 測量線路

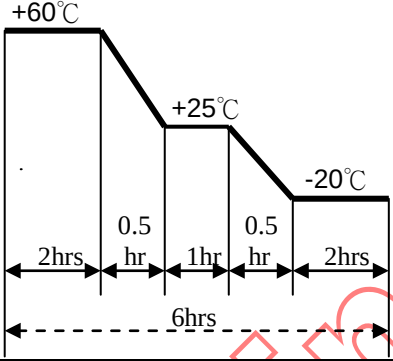
Speaker Testing framework diagram



F. MECHANICAL CHARACTERISTICS 機械特性

| No. | Item                                                       | Test condition                                                                                                                                                                                                                 | Evaluation standard                                                                                                                        |
|-----|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Solderability<br>焊錫附著性<br>(Connector excepted)<br>端子類不適用此項 | Stripped wires of lead wires are immersed in rosin for 5 seconds and then immersed in solder bath of +270±5℃ for 3±0.5 seconds.<br>裸線部份浸入松香溶液 5 秒後,再浸入+270±5℃溶融焊錫槽 3±0.5 秒.                                                    | 90% min. stripped wires shall be wet with solder.(Except the edge of terminal)<br>浸入裸線部份附著焊錫 90% 以上.(末端斷面不算).                              |
| 2   | Lead Wire Pull Strength<br>線材拉力                            | The pull force shall be applied to double lead wire :<br>Horizontal 3.0N (0.306kg) for 30 seconds.<br>Vertical 2.0N (0.204kg) for 30 seconds.<br>雙線材水平方向施以 3.0N(0.306kg)的力量,垂直方向施以 2.0N(0.204kg)的力量,各 30 秒.                    | No damage and cutting off<br>線材不鬆動,不脫落.                                                                                                    |
| 3   | Vibration Test<br>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.<br>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.<br>Should not be audible at 2.83V sine wave between |
| 4   | Drop Test<br>落下測試                                          | Drop the speakers contained in normal box onto the board 40mm thick 10 times from the height of 75cm<br>將揚聲器置於盒中,自 75 公分高度落在 40mm 木板上共 10 次.                                                                                   | Fo ~20KHz.<br>測試後無任何障礙防礙正常操作.輸入 2.83V 正弦波從 Fo 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<br>高溫測試    | After being placed in a chamber at +70°C for 96hours<br>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.<br>Should not be audible at 2.83V sine wave between Fo to 20K. Fo should meet initial one. S.P.L. deviation of unit should be within ±3dB<br>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。輸入 2.83V 正弦波從 Fo 到 20K 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<br>低溫測試     | After being placed in a chamber at -30°C for 96hours.<br>置於-30°C環境中 96 小時                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                           |
| 3   | Humidity test<br>相對濕度測試    | After being placed in a chamber at +30°C and 90~95% RH relative humidity for 96hours.<br>置於+30°C，相對濕度 90~95%環境中 96 小時                                                                         |                                                                                                                                                                                                                                                                                                                                                                                           |
| 4   | Temp. cycle test<br>溫度循環測試 | <p>The part shall be subjected to 5 cycles. One cycle shall be consist of:<br/>單體承受溫度循環測試 5 次，其循環內容如圖示：</p>  |                                                                                                                                                                                                                                                                                                                                                                                           |

## H. RELIABILITY TEST 信賴性試驗

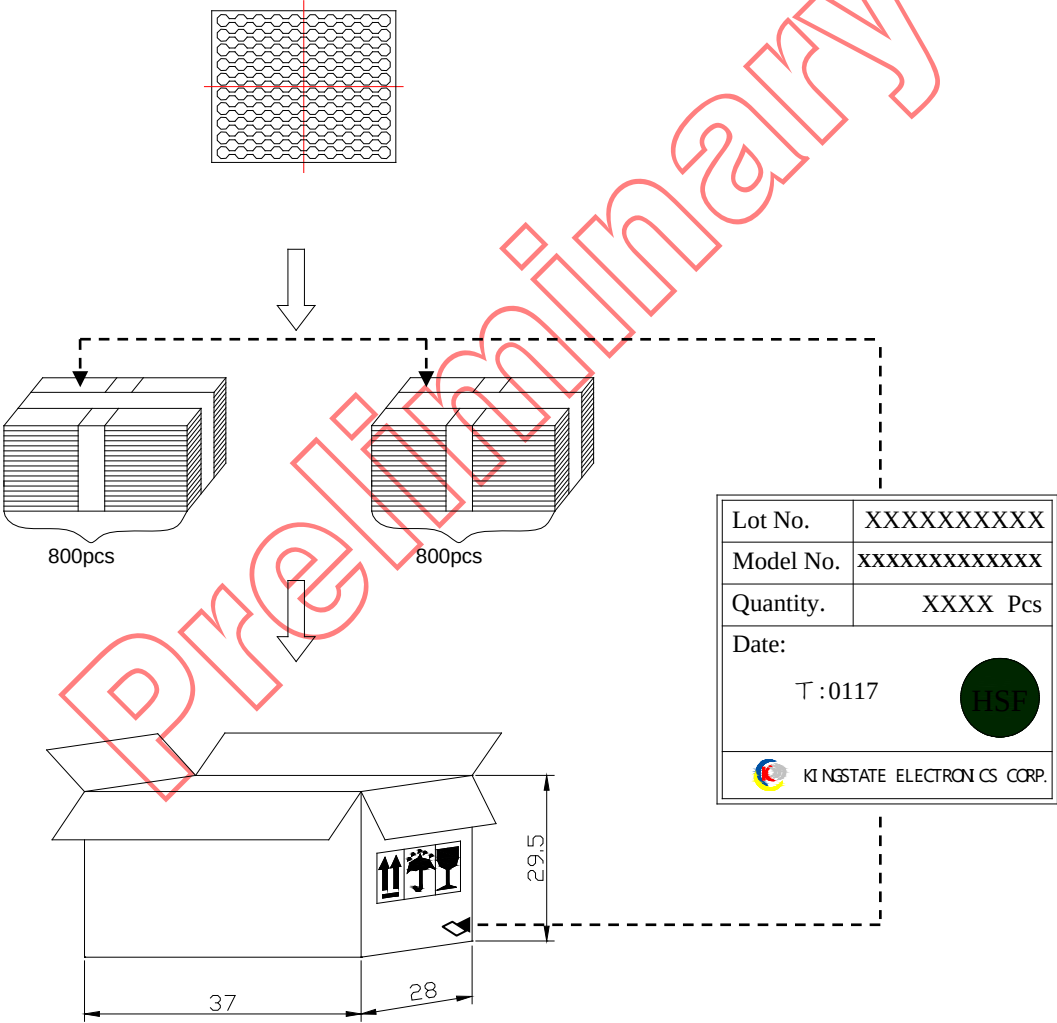
| No. | Item              | Test conditions                                                                         | Evaluation standard                                                                                                                                                                                                                                                                                                                                                                    |
|-----|-------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Load test<br>連續負荷 | 1.0W White noise is applied for 96hours, at room temp.<br>在室溫下，輸入功率 1.0W，白雜音連續操作 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 2.83V sine wave between Fo to 20K. Fo should meet initial one. S.P.L. deviation of unit should be within ±3dB<br>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。輸入 2.83V 正弦波從 Fo 到 20K 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 : +15 ~ +35°C | b) Humidity : 45-85% | c) Pressure : 860-1060mbar |
| 一般測試條件 :                  | a) 溫度 : +15 ~ +35°C          | b) 濕度 : 45-85%       | c) 氣壓 : 860-1060mbar       |
| Judgement Test Condition  | a) Temperature : +20 ± 3°C   | b) Humidity : 60-70% | c) Pressure : 860-1060mbar |
| 爭議時測試條件:                  | a) 溫度 : +20 ± 3°C            | b) 濕度 : 60-70%       | c) 氣壓 : 860-1060mbar       |

I. PACKING STANDARD 包裝規格

|  |                                                                                                                           |  |                                                                                                                             |
|--|---------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------|
|  |                                                                                                                           |  |                                                                                                                             |
|  | <br>G W<br>N W<br>VCL:<br>KG<br>KG<br>CM |  | <br>G W<br>N W<br>VCL:<br>KG<br>KG<br>CM |
|  |                                                                                                                           |  |                                                                                                                             |



units: cm

Remark:

100pcs per tray

8 trays for unit, 2 units per carton

Total:1600 pcs per box

Size:37\*28\*29.5cm