



**RAYSTAR**

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## RFC350P-EIW-DBN

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### SPECIFICATION

CUSTOMER:

|             |  |
|-------------|--|
| APPROVED BY |  |
| PCB VERSION |  |
| DATE        |  |

FOR CUSTOMER USE ONLY

| SALES BY | APPROVED BY | CHECKED BY | PREPARED BY |
|----------|-------------|------------|-------------|
|          |             |            |             |

Release DATE:

## Revision History

| VERSION | DATE       | REVISED PAGE NO. | Note                           |
|---------|------------|------------------|--------------------------------|
| 0       | 2015/01/08 |                  | First issue                    |
| A       | 2015/07/29 |                  | Modify Reliability.            |
| B       | 2016/01/21 |                  | Modify Static electricity test |
| C       | 2016/08/11 |                  | Modify Vibration test          |
| D       | 2016/10/17 |                  | Modify Summary                 |
| E       | 2017/03/31 |                  | Add Aspect Ratio               |
| F       | 2017/07/20 |                  | Modify Contour Drawing         |

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# 1.Module Classification Information

| <b>R</b> | <b>F</b> | <b>C</b> | <b>35</b> | <b>0P</b> | <b>-</b> | <b>E</b> | <b>I</b> | <b>W</b> | <b>-</b> | <b>D</b> | <b>B</b> | <b>N</b> |
|----------|----------|----------|-----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1        | 2        | 3        | 4         | 5         | -        | 6        | 7        | 8        | -        | 9        | 10       | 11       |

| <b>Item</b> | <b>Description</b>                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1           | R : Raystar Optonics Inc.                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                        |
| 2           | Display Type : F→TFT Type, J→ Custom TFT                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                        |
| 3           | Solution: A: 128x160    B:320x234    C:320x240    D:480x234    E:480x272<br>F:800x480    G:640x480    H:1024x600    I:320x480    J:240x320<br>K:1280x800    L:240x400    M:1024x768    N:128x128    O:480x800<br>P:640x320    Q:800x600    S:480x128    T:800x320 |                                                                                                                                                                                                                                                                                                                                                                        |
| 4           | Display Size : 3.5" TFT                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                        |
| 5           | Version Code.                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                        |
| 6           | Model Type:<br>A : TFT LCD<br>E : TFT+FR+CONTROL BOARD<br>J : TFT+FR+A/D BOARD<br>N : TFT+FR+A/D BOARD+CONTROL BOARD<br>S : TFT+FR+POWER BOARD (DC TO DC)<br>1 : TFT+CONTROL BOARD                                                                                | 6 : TFT+FR<br>H : TFT+D/V BOARD<br>I : TFT+FR+D/V BOARD<br>B : TFT+POWER BD                                                                                                                                                                                                                                                                                            |
| 7           | Polarizer Type,<br>Temperature range,<br>View direction                                                                                                                                                                                                           | I→Transmissive, W. T, 6:00 ;    C→Transmissive, N. T, 6:00<br>L→Transmissive, W.T,12:00 ;    F→Transmissive, N.T,12:00<br>Y→Transmissive,W.T, IPS TFT ;<br>A→Transmissive, N.T, IPS TFT<br>Z→Transmissive, W.T, O-TFT<br>R→Transmissive, Super W.T, O-TFT<br>N→Transmissive, Super W.T, 6:00;<br>Q→Transmissive, Super W.T, 12:00<br>V→Transmissive, Super W.T, VA TFT |
| 8           | Backlight                                                                                                                                                                                                                                                         | W : LED, White                      H : LED, High Light White<br>F : CCFL, White                                                                                                                                                                                                                                                                                       |
| 9           | Driver Method                                                                                                                                                                                                                                                     | D: Digital    A: Analog    L : LVDS    M:MIPI                                                                                                                                                                                                                                                                                                                          |
| 10          | Interface                                                                                                                                                                                                                                                         | N : without control board    A : 8Bit    B : 16Bit<br>S:SPI Interface    R: RS232    U:USB    I: I2C                                                                                                                                                                                                                                                                   |
| 11          | TS                                                                                                                                                                                                                                                                | N : Without TS    S : resistive touch panel<br>C : capacitive touch panel capacitive touch panel (G-F-F)<br>G : capacitive touch panel(G-G)                                                                                                                                                                                                                            |

## 2.Summary

TFT 3.5" is a TN transmissive type color active matrix TFT liquid crystal display that use amorphous silicon TFT as switching devices. This module is composed of a TFT\_LCD module, It is usually designed for industrial application and this module follows RoHs,

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### 3.General Specifications

- Size: 3.5 inch
- Dot Matrix: 320 x RGB x 240 dots
- Module dimension: 93.5 x 66.44 x 8.6 mm
- Active area: 70.08 x 52.56 mm
- Dot pitch: 0.073 x 0.219 mm
- LCD type: TFT, Normally White, Transmissive
- View Direction: 12 o'clock
- Gray Scale Inversion Direction: 6 o'clock
- Aspect Ratio: 4:3
- Backlight Type: LED ,Normally White
- Controller IC: RA8875
- Interface: Digital 8080 family MPU
- With /Without TP: Without TP
- Surface: Anti-Glare

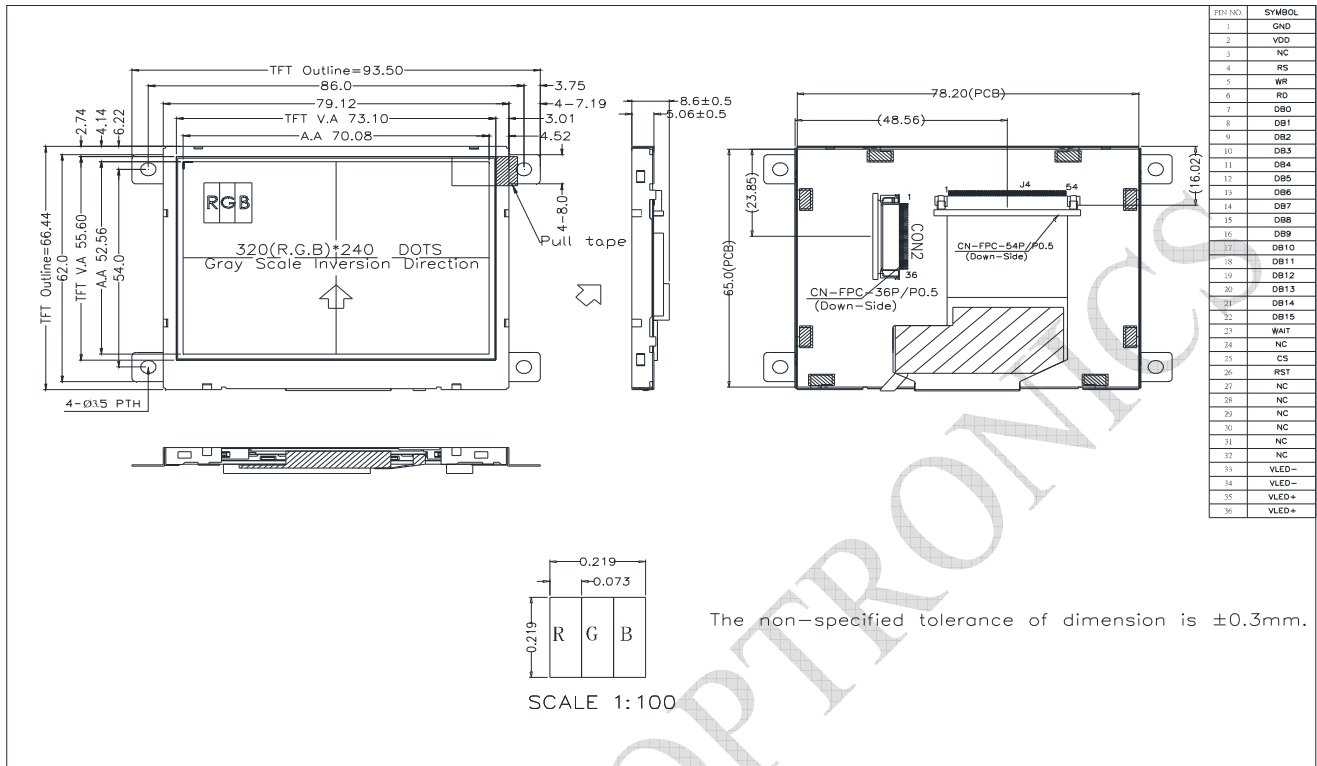
\*Color tone slight changed by temperature and driving voltage.

## 4.Interface

### 4.1. LCM PIN Definition (CON2)

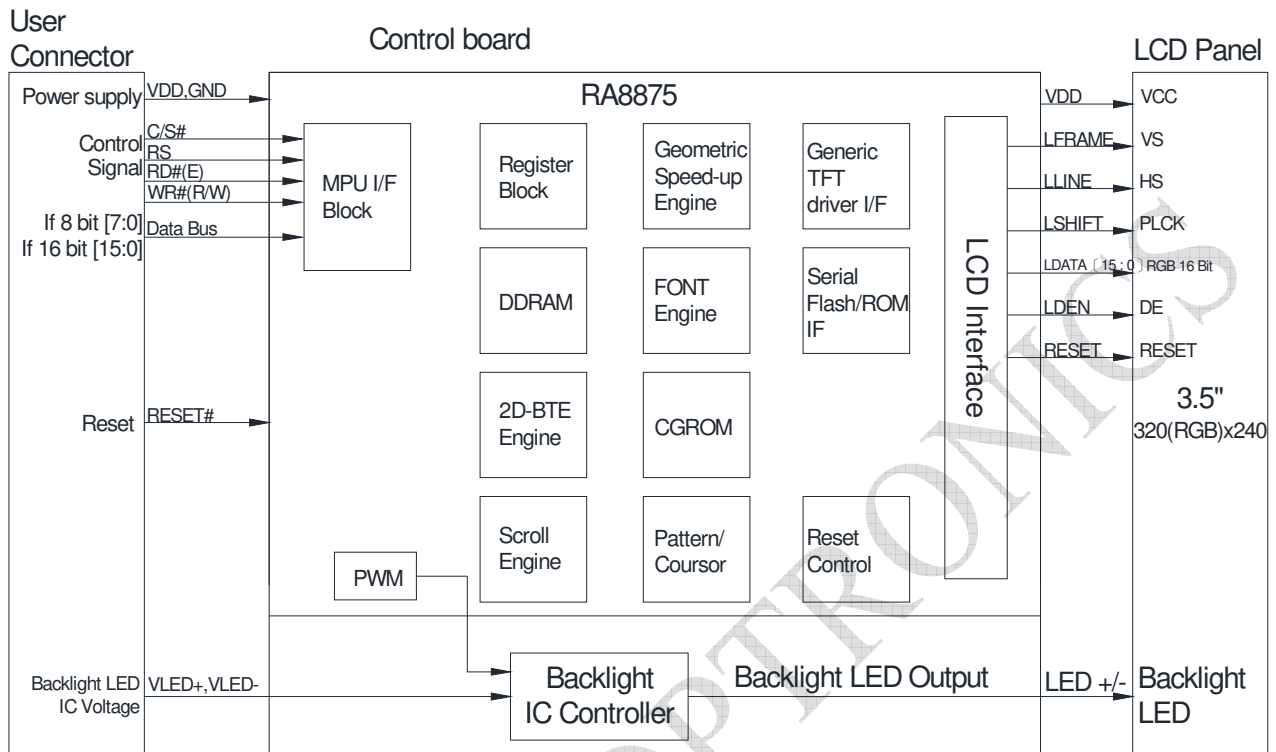
| Pin   | Symbol   | Function                        | Remark |
|-------|----------|---------------------------------|--------|
| 1     | GND      | System ground                   |        |
| 2     | VDD      | Power Supply : +3.3V            |        |
| 3     | NC       | No connect                      |        |
| 4     | RS       | Data/Command select             |        |
| 5     | WR       | Write strobe signal             |        |
| 6     | RD       | Read strobe signal              |        |
| 7~22  | DB0~DB15 | Data bus                        |        |
| 23    | WAIT     | Wait Signal Output(H:active)    |        |
| 24    | NC       | No connect                      |        |
| 25    | CS       | Chip select                     |        |
| 26    | RST      | Hardware reset                  |        |
| 27~32 | NC       | No connect                      |        |
| 33~34 | VLED-    | Power for LED backlight cathode |        |
| 35~36 | VLED+    | Power for LED backlight anode   |        |

## 5. Contour Drawing





## 6. Block Diagram



## 7. Absolute Maximum Ratings

| Item                  | Symbol | Min | Typ | Max | Unit |
|-----------------------|--------|-----|-----|-----|------|
| Operating Temperature | TOP    | -20 | —   | +70 | °C   |
| Storage Temperature   | TST    | -30 | —   | +80 | °C   |

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above

1. Temp.  $\leq 60^{\circ}\text{C}$ , 90% RH MAX. Temp.  $> 60^{\circ}\text{C}$ , Absolute humidity shall be less than 90% RH at  $60^{\circ}\text{C}$

## 8. Electrical Characteristics

8.1. Operating conditions: (CON2.Pin1=GND, Pin2=VDD)

| Item                   | Symbol | Condition | Min | Typ | Max | Unit | Remark |
|------------------------|--------|-----------|-----|-----|-----|------|--------|
| Supply Voltage For LCM | VDD    | -         | 3.0 | 3.3 | 3.6 | V    | -      |
| Supply Current For LCM | IDD    | -         | -   | 50  | 75  | mA   | Note1  |
| Power Consumption      |        | -         | -   | 165 | 270 | mW   | -      |

Note 1 : This value is test for VDD only Ta = 25 °C

8.2. LED driving conditions (CON2. Pin33,34=VLED-, Pin35,36=VLED+)

| Parameter                        | Symbol | Min. | Typ.   | Max. | Unit | Remark     |
|----------------------------------|--------|------|--------|------|------|------------|
| Operation Current For LED Driver | IVLED  | -    | -      | 75   | mA   | Note 1     |
| Power Consumption                | -      | -    | -      | 375  | mW   | VLED=5V    |
| Supply Voltage For LED Driver    | VLED+  | 3.3  | -      | 5    | V    | Note 1     |
| LED Life Time                    | -      | -    | 50,000 | -    | Hr   | Note 2,3,4 |

Note 1 : Power supply the back light IC specification

Note 2 : Ta = 25 °C

Note 3 : Brightness to be decreased to 50% of the initial value

Note 4 : The single LED lamp case

## 9.DC CHARATERISTICS

| Parameter                | Symbol | Rating  |     |         | Unit | Condition |
|--------------------------|--------|---------|-----|---------|------|-----------|
|                          |        | Min     | Typ | Max     |      |           |
| Low level input voltage  | VIL    | GND     | -   | 0.2 VDD | V    |           |
| High level input voltage | VIH    | 0.8 VDD | -   | VDD     | V    |           |

## 10.AC Characteristics

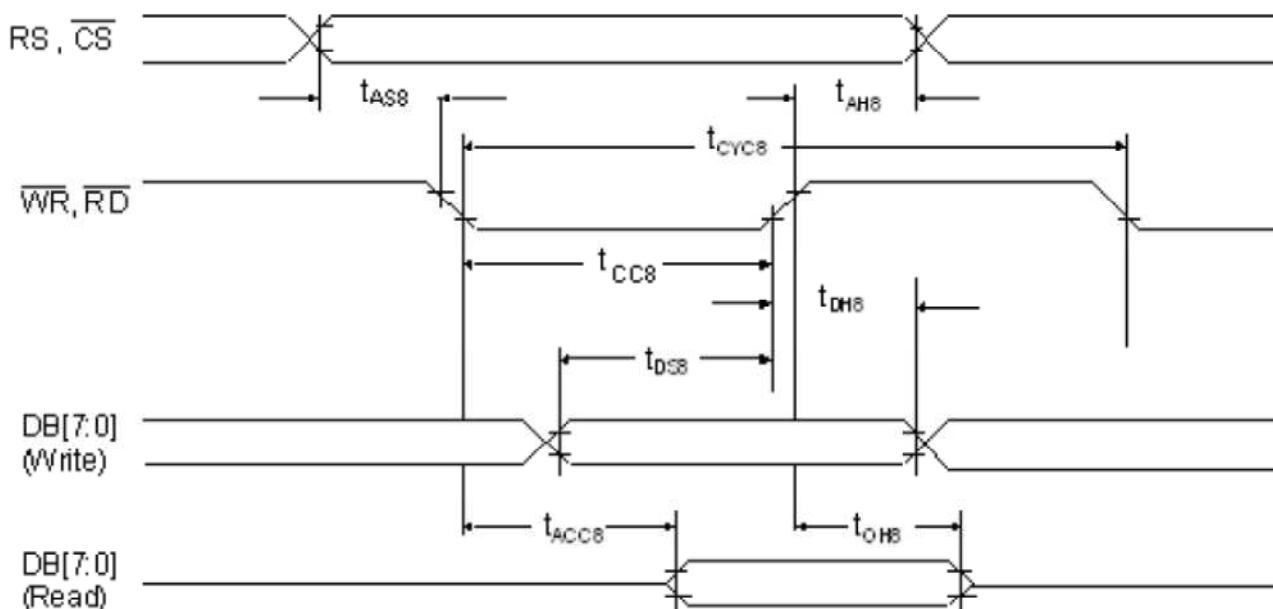
### 10.1. 8080 Mode

The following timing charts are used to describe the timing specification of the standard 8080 interfaces.

### 10.2. 8080 Mode Write Cycle

| Symbol | Parameter               | Rating |      | Unit | Symbol                                           |
|--------|-------------------------|--------|------|------|--------------------------------------------------|
|        |                         | Min.   | Max. |      |                                                  |
| tCYC8  | Cycle time              | 50     | -    | ns   | tc is one system clock period:<br>tc = 1/SYS_CLK |
| tCC8   | Strobe Pulse width      | 20     | -    | ns   |                                                  |
| tAS8   | Address setup time      | 0      | -    | ns   |                                                  |
| tAH8   | Address hold time       | 10     | -    | ns   |                                                  |
| tDS8   | Data setup time         | 20     | -    | ns   |                                                  |
| tDH8   | Data hold time          | 10     | -    | ns   |                                                  |
| tACC8  | Data output access time | 0      | 20   | ns   |                                                  |
| tOH8   | Data output hold time   | 0      | 20   | ns   |                                                  |

8080 – 8/16-bit interface



The data bus width of RA8875 can be selected to 8-bit/16-bit by setting the Bit [1:0] of SYSR. When Bit [1:0] of SYSR is cleared to "00", then the data bus is 8-bit. If Bit [1:0] of SYSR is set to "11", then the data transition is set as 16-bit.

### 10.3. Pixel Data Format

#### 16-bit mode color



65K colors 16-bit

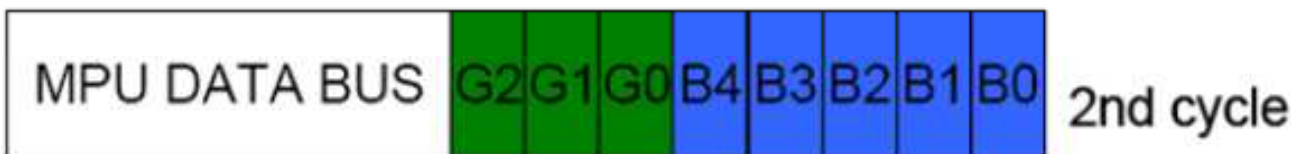


256 colors 16-bit

#### 8-bit mode color



1st cycle



2nd cycle

65K colors 8-bit



256 colors 8-bit

## 11.Optical Characteristics

| Item                                              | Symbol | Condition.                        | Min  | Typ. | Max. | Unit                  | Remark            |
|---------------------------------------------------|--------|-----------------------------------|------|------|------|-----------------------|-------------------|
| Response time                                     | Tr     | $\theta=0^\circ$ 、 $\Phi=0^\circ$ | -    | 10   | -    | ms                    | Note 3,5          |
|                                                   | Tf     |                                   | -    | 15   | -    | ms                    |                   |
| Contrast ratio                                    | CR     | At optimized viewing angle        | 300  | 350  | -    | -                     | Note 4,5          |
| Color Chromaticity                                | White  | $\theta=0^\circ$ 、 $\Phi=0$       | 0.26 | 0.31 | 0.36 | -                     | Note 2,6,7        |
|                                                   | Wy     |                                   | 0.28 | 0.33 | 0.38 | -                     |                   |
| Viewing angle<br>(Gray Scale Inversion Direction) | Hor.   | $\Theta_R$                        | -    | 55   | -    | Deg.                  | Note 1            |
|                                                   |        | $\Theta_L$                        | -    | 55   | -    |                       |                   |
|                                                   | Ver.   | $\Phi_T$                          | -    | 45   | -    |                       |                   |
|                                                   |        | $\Phi_B$                          | -    | 50   | -    |                       |                   |
| Brightness                                        | -      | -                                 | 350  | 420  | -    | cd/<br>m <sup>2</sup> | Center of display |

Ta=25±2℃, VLED=3.3V

Note 1: Definition of viewing angle range

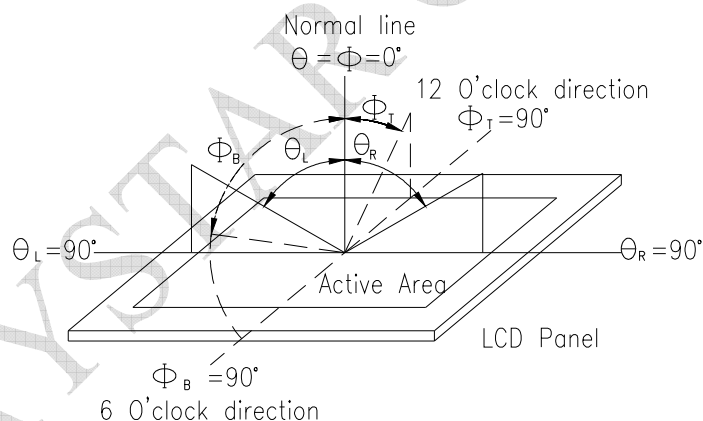


Fig. 11.1. Definition of viewing angle

Note 2: Test equipment setup:

After stabilizing and leaving the panel alone at a driven temperature for 10 minutes, the measurement should be executed. Measurement should be executed in a stable, windless, and dark room. Optical specifications are measured by Topcon BM-7orBM-5 luminance meter 1.0° field of view at a distance of 50cm and normal direction.

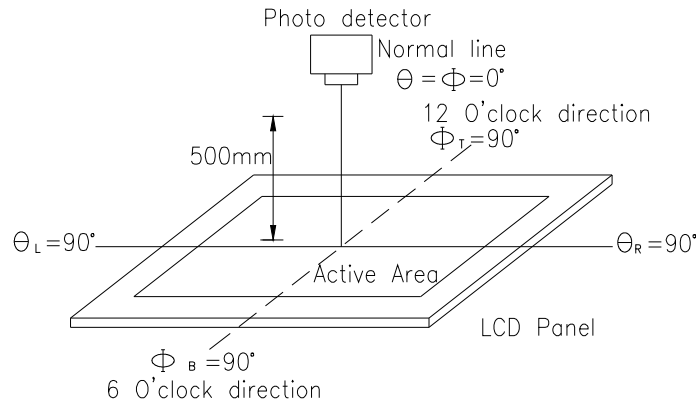
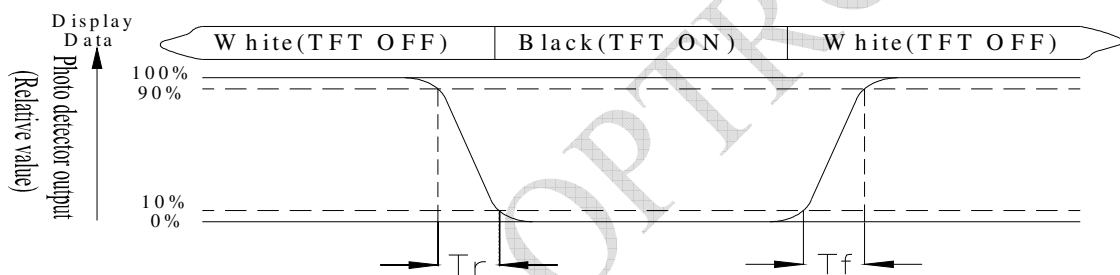


Fig. 11.2. Optical measurement system setup

Note 3: Definition of Response time:

The response time is defined as the LCD optical switching time interval between "White" state and "Black" state. Rise time,  $T_r$ , is the time between photo detector output intensity changed from 90% to 10%. And fall time,  $T_f$ , is the time between photo detector output intensity changed from 10% to 90%.



Note 4: Definition of contrast ratio:

The contrast ratio is defined as the following expression.

$$\text{Contrast ratio (CR)} = \frac{\text{Luminance measured when LCD on the "White" state}}{\text{Luminance measured when LCD on the "Black" state}}$$

Note 5: White  $V_i = V_{i50} \pm 1.5V$

Black  $V_i = V_{i50} \pm 2.0V$

" $\pm$ " means that the analog input signal swings in phase with VCOM signal.

" $\pm$ " means that the analog input signal swings out of phase with VCOM signal.

The 100% transmission is defined as the transmission of LCD panel when all the input terminals of module are electrically opened.

Note 6: Definition of color chromaticity (CIE 1931)

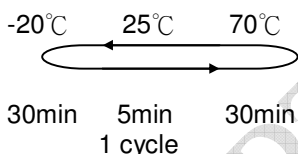
Color coordinates measured at the center point of LCD

Note 7: Measured at the center area of the panel when all the input terminals of LCD panel are electrically opened.



## 12. Reliability

Content of Reliability Test (Wide temperature, -20°C~70°C)

| Environmental Test                   |                                                                                                                                                                                                                                                                       |                                                                                                                                                      |      |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Test Item                            | Content of Test                                                                                                                                                                                                                                                       | Test Condition                                                                                                                                       | Note |
| High Temperature storage             | Endurance test applying the high storage temperature for a long time.                                                                                                                                                                                                 | 80°C<br>200hrs                                                                                                                                       | 2    |
| Low Temperature storage              | Endurance test applying the low storage temperature for a long time.                                                                                                                                                                                                  | -30°C<br>200hrs                                                                                                                                      | 1,2  |
| High Temperature Operation           | Endurance test applying the electric stress (Voltage & Current) and the thermal stress to the element for a long time.                                                                                                                                                | 70°C<br>200hrs                                                                                                                                       | —    |
| Low Temperature Operation            | Endurance test applying the electric stress under low temperature for a long time.                                                                                                                                                                                    | -20°C<br>200hrs                                                                                                                                      | 1    |
| High Temperature/ Humidity Operation | The module should be allowed to stand at 60°C,90%RH max                                                                                                                                                                                                               | 60°C,90%RH<br>96hrs                                                                                                                                  | 1,2  |
| Thermal shock resistance             | <p>The sample should be allowed stand the following 10 cycles of operation</p>  <p style="text-align: center;">-20°C      25°C      70°C<br/>30min    5min    30min<br/>1 cycle</p> | -20°C/70°C<br>10 cycles                                                                                                                              | —    |
| Vibration test                       | Endurance test applying the vibration during transportation and using.                                                                                                                                                                                                | Total fixed amplitude : 3<br>1.5mm<br>Vibration Frequency :<br>10~55Hz<br>One cycle 60<br>seconds to 3<br>directions of X,Y,Z for<br>Each 15 minutes | 3    |
| Static electricity test              | Endurance test applying the electric stress to the terminal.                                                                                                                                                                                                          | VS=±600V(contact)<br>,±800v(air),<br>RS=330Ω<br>CS=150pF<br>10 times                                                                                 | —    |

Note1: No dew condensation to be observed.

Note2: The function test shall be conducted after 4 hours storage at the normal Temperature and humidity after remove from the test chamber.

Note3: The packing have to including into the vibration testing.

## 13.PACKAGE SPECIFICATION

|                                                                                                                                                                                                                      |                 |                 |             |  |                                                          |                                                                                                                                                                                                                                                                                                                                                                  |         |       |         |  |  |  |      |    |        |           |           |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|-------------|--|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|---------|--|--|--|------|----|--------|-----------|-----------|---|
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">LCM Model</td> <td style="width: 50%;">RFC350P-EIW-DBN</td> </tr> <tr> <td>Drawing NO.</td> <td></td> </tr> </table> | LCM Model       | RFC350P-EIW-DBN | Drawing NO. |  | <h3>LCM 包裝規格書</h3> <h4>LCM Packaging Specifications</h4> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Approve</td> <td style="width: 33%;">Check</td> <td style="width: 33%;">Contact</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td>DATE</td> <td>初版</td> <td>版次 Ver</td> </tr> <tr> <td>02/05/14'</td> <td>02/05/14'</td> <td>0</td> </tr> </table> | Approve | Check | Contact |  |  |  | DATE | 初版 | 版次 Ver | 02/05/14' | 02/05/14' | 0 |
| LCM Model                                                                                                                                                                                                            | RFC350P-EIW-DBN |                 |             |  |                                                          |                                                                                                                                                                                                                                                                                                                                                                  |         |       |         |  |  |  |      |    |        |           |           |   |
| Drawing NO.                                                                                                                                                                                                          |                 |                 |             |  |                                                          |                                                                                                                                                                                                                                                                                                                                                                  |         |       |         |  |  |  |      |    |        |           |           |   |
| Approve                                                                                                                                                                                                              | Check           | Contact         |             |  |                                                          |                                                                                                                                                                                                                                                                                                                                                                  |         |       |         |  |  |  |      |    |        |           |           |   |
|                                                                                                                                                                                                                      |                 |                 |             |  |                                                          |                                                                                                                                                                                                                                                                                                                                                                  |         |       |         |  |  |  |      |    |        |           |           |   |
| DATE                                                                                                                                                                                                                 | 初版              | 版次 Ver          |             |  |                                                          |                                                                                                                                                                                                                                                                                                                                                                  |         |       |         |  |  |  |      |    |        |           |           |   |
| 02/05/14'                                                                                                                                                                                                            | 02/05/14'       | 0               |             |  |                                                          |                                                                                                                                                                                                                                                                                                                                                                  |         |       |         |  |  |  |      |    |        |           |           |   |

**1.包裝材料規格表 (Packaging Material) :(per carton)**

| NO. | Item                  | Model                 | Dimensions    | Quantity |
|-----|-----------------------|-----------------------|---------------|----------|
| 1   | 成品 (LCM)              | RFC350P-EIW-DBN       |               | 216      |
| 2   | TRAY 盤 (2)            | PKCA1XXXXXXXXXXXX0355 | 315*265mm     | 36       |
| 3   | BP01 內盒(3)Product Box | PK3Y1XXXXXXXXXXXX0001 | 332*280*100mm | 6        |
| 4   | 泡棉(4)Foam             | -----                 | -             | 6        |
| 5   | 外紙箱(5)Carton          | PK4X1XXXXXXXXXXXX0000 | 565*340*320mm | 1        |
| 6   |                       |                       |               |          |
| 7   |                       |                       |               |          |
| 8   |                       |                       |               |          |
| 9   |                       |                       |               |          |

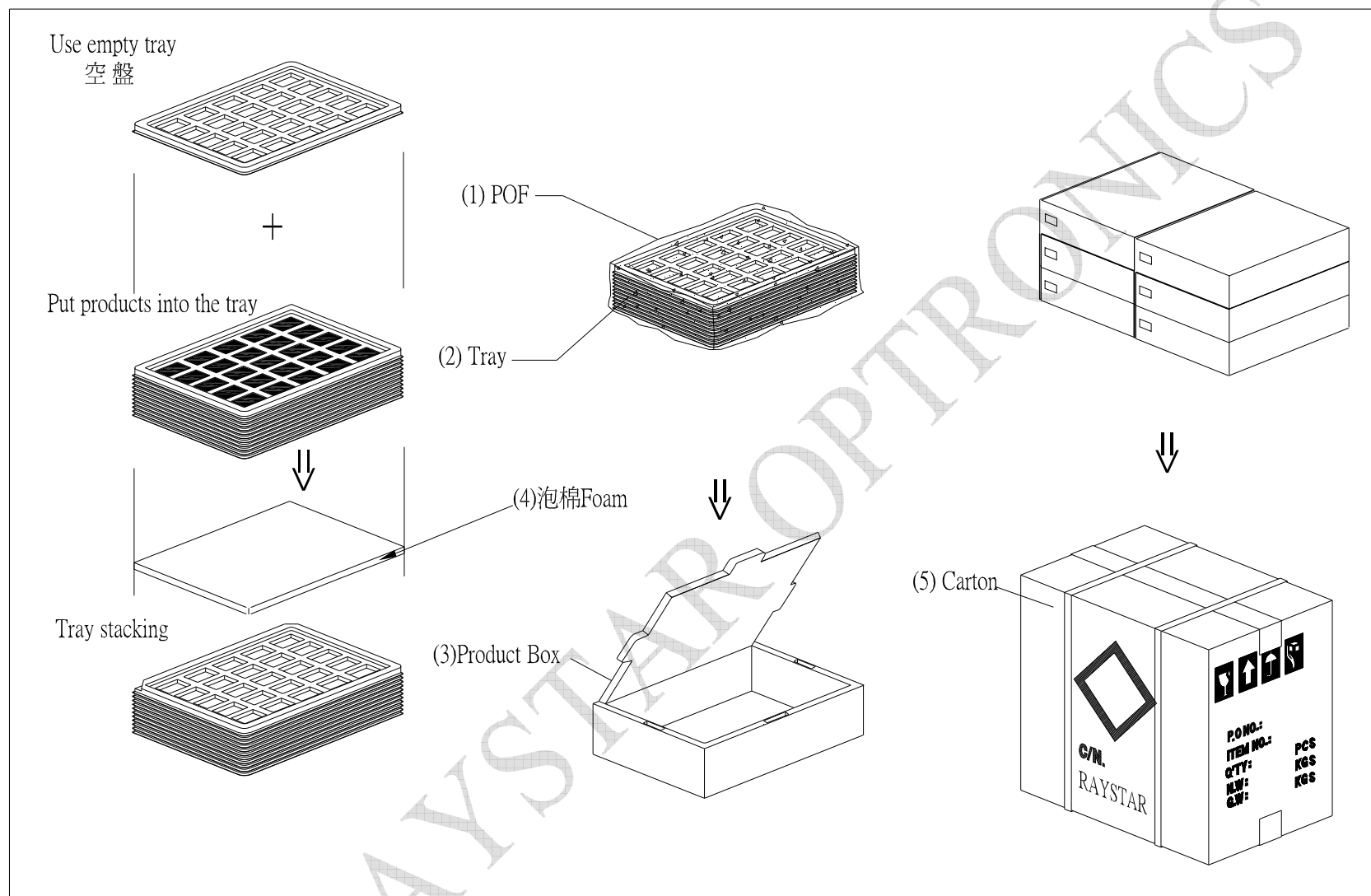
**2.單箱數量規格表(Packaging Specifications and Quantity) :**

|                                                    |    |               |   |   |     |
|----------------------------------------------------|----|---------------|---|---|-----|
| (1)LCM quantity per box : no per tray              | 6  | x no of tray  | 6 | = | 36  |
| (2)Total LCM quantity in carton : quantity per box | 36 | x no of boxes | 6 | = | 216 |

**特 記 事 項 (REMARK)**

|                                                                                                                                                                  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>1. Label Specifications :</b><br><div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> MOOEL:<br/> LOT NO :<br/> QUANTITY:<br/> CHECK: </div> |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|



## 14.Initial Code For Reference

```
void Initial_RA8875()
```

```
{  
    RES = 1;  
    Delay1ms (10);  
    RES = 0;  
    Delay1ms (50);  
    RES = 1;  
    Delay1ms (100);  
  
    LCD_CmdWrite(0x88);  
    LCD_DataWrite(0x0a);  
    Delay1ms(1);  
    LCD_CmdWrite(0x89);  
    LCD_DataWrite(0x02);  
    Delay1ms(1);  
  
    LCD_CmdWrite(0x10);  
    LCD_DataWrite(0x0c);  
  
    LCD_CmdWrite(0x04);  
    LCD_DataWrite(0x03);  
    Delay1ms(1);  
  
    //Horizontal set  
    LCD_CmdWrite(0x14);  
    LCD_DataWrite(0x27);  
    LCD_CmdWrite(0x15);  
    LCD_DataWrite(0x80);  
    LCD_CmdWrite(0x16);  
    LCD_DataWrite(0x03);  
    LCD_CmdWrite(0x17);  
    LCD_DataWrite(0x02);  
    LCD_CmdWrite(0x18);  
    LCD_DataWrite(0x03);  
  
    LCD_CmdWrite(0x19);  
    LCD_DataWrite(0xef);  
    LCD_CmdWrite(0x1A);  
    LCD_DataWrite(0x00);  
    LCD_CmdWrite(0x1B);  
    LCD_DataWrite(0x0f);  
    LCD_CmdWrite(0x1C);  
    LCD_DataWrite(0x00);  
    LCD_CmdWrite(0x1D);  
    LCD_DataWrite(0x0e);  
    LCD_CmdWrite(0x1E);  
    LCD_DataWrite(0x06);  
}
```

```
LCD_CmdWrite(0x1F);  
LCD_DataWrite(0x01);
```

```
LCD_CmdWrite(0x30);  
LCD_DataWrite(0x00);  
LCD_CmdWrite(0x31);  
LCD_DataWrite(0x00);  
LCD_CmdWrite(0x34);  
LCD_DataWrite(0x3F);  
LCD_CmdWrite(0x35);  
LCD_DataWrite(0x01);
```

```
LCD_CmdWrite(0x32);  
LCD_DataWrite(0x00);  
LCD_CmdWrite(0x33);  
LCD_DataWrite(0x00);  
LCD_CmdWrite(0x36);  
LCD_DataWrite(0xef);  
LCD_CmdWrite(0x37);  
LCD_DataWrite(0x00);
```

```
}
```

| <b>LCM Sample Estimate Feedback Sheet</b>                                                                           |                               |                                     |
|---------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------|
| <b>Module Number :</b> _____                                                                                        |                               |                                     |
| <b>1 、 <u>Panel Specification</u> :</b>                                                                             |                               |                                     |
| 1. Panel Type :                                                                                                     | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 2. View Direction :                                                                                                 | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 3. Numbers of Dots :                                                                                                | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 4. View Area :                                                                                                      | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 5. Active Area :                                                                                                    | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 6. Operating Temperature :                                                                                          | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 7. Storage Temperature :                                                                                            | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 8. Others : _____                                                                                                   |                               |                                     |
| <b>2 、 <u>Mechanical Specification</u> :</b>                                                                        |                               |                                     |
| 1. PCB Size :                                                                                                       | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 2. Frame Size :                                                                                                     | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 3. Material of Frame :                                                                                              | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 4. Connector Position :                                                                                             | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 5. Fix Hole Position :                                                                                              | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 6. Backlight Position :                                                                                             | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 7. Thickness of PCB :                                                                                               | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 8. Height of Frame to PCB :                                                                                         | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 9. Height of Module :                                                                                               | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 10. Others :                                                                                                        | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| <b>3 、 <u>Relative Hole Size</u> :</b>                                                                              |                               |                                     |
| 1. Pitch of Connector :                                                                                             | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 2. Hole size of Connector :                                                                                         | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 3. Mounting Hole size :                                                                                             | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 4. Mounting Hole Type :                                                                                             | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 5. Others :                                                                                                         | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| <b>4 、 <u>Backlight Specification</u> :</b>                                                                         |                               |                                     |
| 1. B/L Type :                                                                                                       | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 2. B/L Color :                                                                                                      | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 3. B/L Driving Voltage (Reference for LED Type) : <input type="checkbox"/> Pass <input type="checkbox"/> NG , _____ |                               |                                     |
| 4. B/L Driving Current :                                                                                            | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 5. Brightness of B/L :                                                                                              | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 6. B/L Solder Method :                                                                                              | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 7. Others :                                                                                                         | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |

&gt;&gt; Go to page 2 &lt;&lt;

**Module Number :** \_\_\_\_\_

**5 、 Electronic Characteristics of Module :**

|                             |                               |                                     |
|-----------------------------|-------------------------------|-------------------------------------|
| 1.Input Voltage :           | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 2.Supply Current :          | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 3.Driving Voltage for LCD : | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 4.Contrast for LCD :        | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 5.B/L Driving Method :      | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 6.Negative Voltage Output : | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 7.Interface Function :      | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 8.LCD Uniformity :          | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 9.ESD test :                | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 10.Others :                 | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |

**6 、 Summary :**
**Sales signature :** \_\_\_\_\_

**Customer Signature :** \_\_\_\_\_

**Date :**    /    /