

## **WVGA-TFT-PCAP-Modul Datenblatt**

Modell OT070KGDDLT-03

### **Kurzdaten**

Hersteller	ONation
Diagonale	7,0" / 17,8 cm
Format	wide
Auflösung	800 x 480
Backlight	LED / 1000 cd/m <sup>2</sup>
Interface	LVDS
Touchscreen	PCAP
Temperatur	-20... +70°C (Betrieb)

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# ONation Corporation

## CUSTOMER'S APPROVAL SPECIFICATIONS

**MODEL: OT070KGDDLT-03**  
**(Complied with RoHS)**

CUSTOMER: \_\_\_\_\_

Version:P0.1

### C O N T E N T S

**ISSUE:JUN.24.2013**

**Spec Condition: preliminary**

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CUSTOMER	ONATION		
APPROVAL	APPROVAL	CHECKER	PREPARE
	<i>Joly</i>	<i>lan</i>	<i>cloud</i>



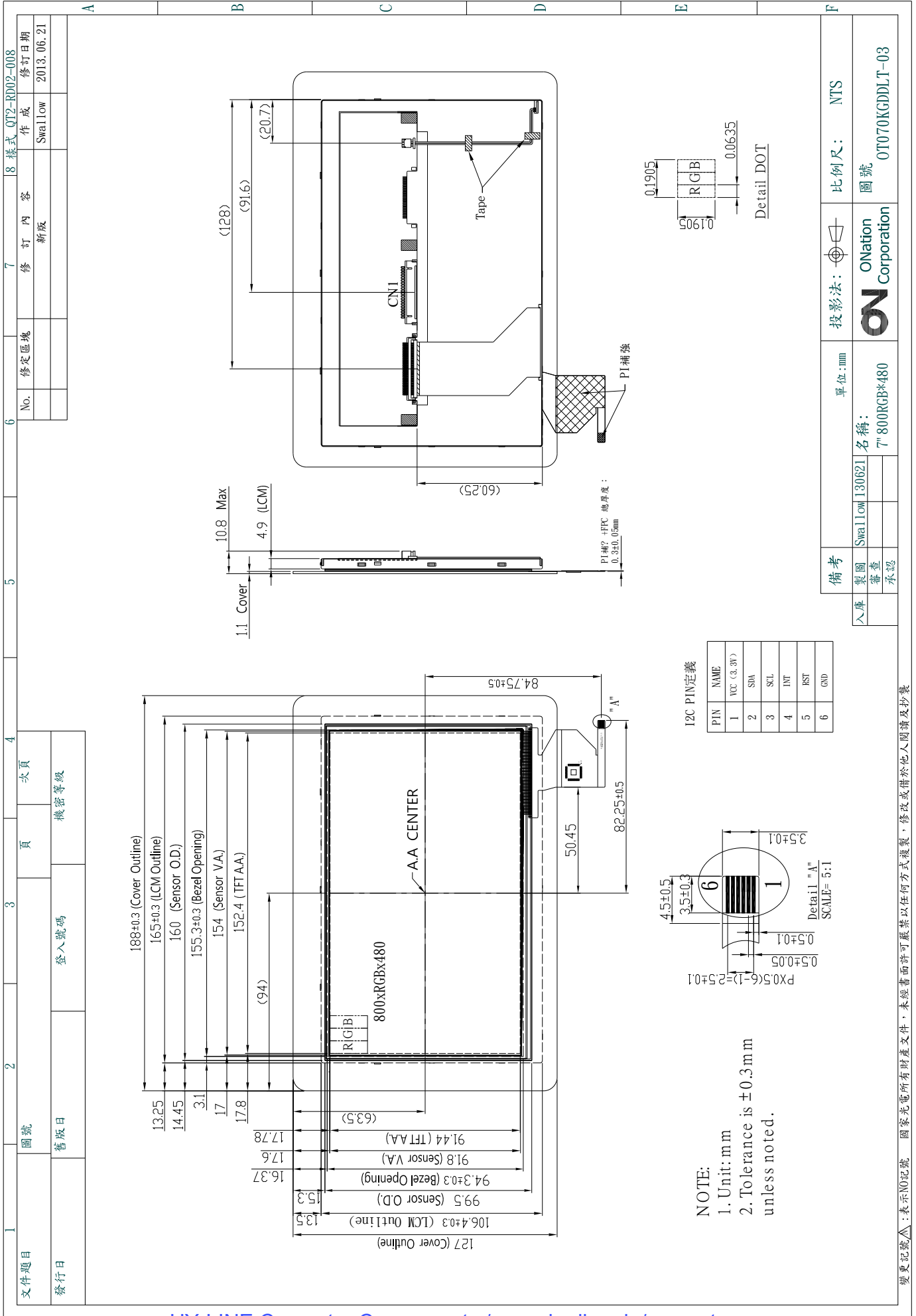
### 3.MECHANICAL SPECIFICATIONS

(1)	Number Of Dots (Dots)	800(R.G.B) X 480
(2)	Module Size(mm)	188(W) X 127(H) X 10.8(D)
(3)	Active Area(mm)	152.4(H) X 91.44(V)
(4)	Pixel Pitch(mm)	0.1905(H) X 0.1905(V)
(5)	LCD Model	TFT , Transmissive, Normally/White
(6)	Polarizer Model	Anti-glare
(7)	LED Backlight Color	White
(8)	Viewing Direction	12 O'clock
(9)	Gray Scale Inversion Direction	6 O'clock
(10)	Color Configuration	R.G.B Stripe
(11)	Module Weight(g)	TBD

\* Without DVI board.

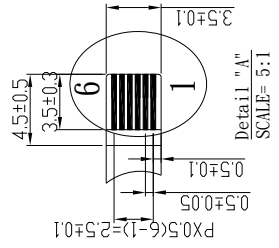
\*\*Viewing direction for best image quality is different from TFT definition, there is the 180 degrees shift.

# 4. OUTLINE DIMENSIONS



12C PIN定義

PIN	NAME
1	VCC (3.3V)
2	SDA
3	SCL
4	INT
5	RST
6	GND



NOTE:  
 1. Unit: mm  
 2. Tolerance is ±0.3 mm unless noted.

1	文件題目	圖號	2	3	4	5	6	7	8
	發行日	舊版日	登入號碼	機密等級	頁	次頁	No.	修訂內容	樣式 QT2-RD02-008
								修訂日期	作成
								2013.06.21	Swallow

備考	單位: mm	投影法:	比例尺:
入庫	製圖 Swallow 130621	ON Corporation	NTS
審查	名稱: 7" 800RGBx480	圖號	OT070KGDDLT-03
承認			

變更記號: 表示N0記號 國家光電所有財產文件, 未經書面許可嚴禁以任何方式複製, 修改或借於他人閱讀及抄襲

## 5. INTERFACE PIN CONNECTION

### 5.1 LCM PANEL DRIVING SECTION

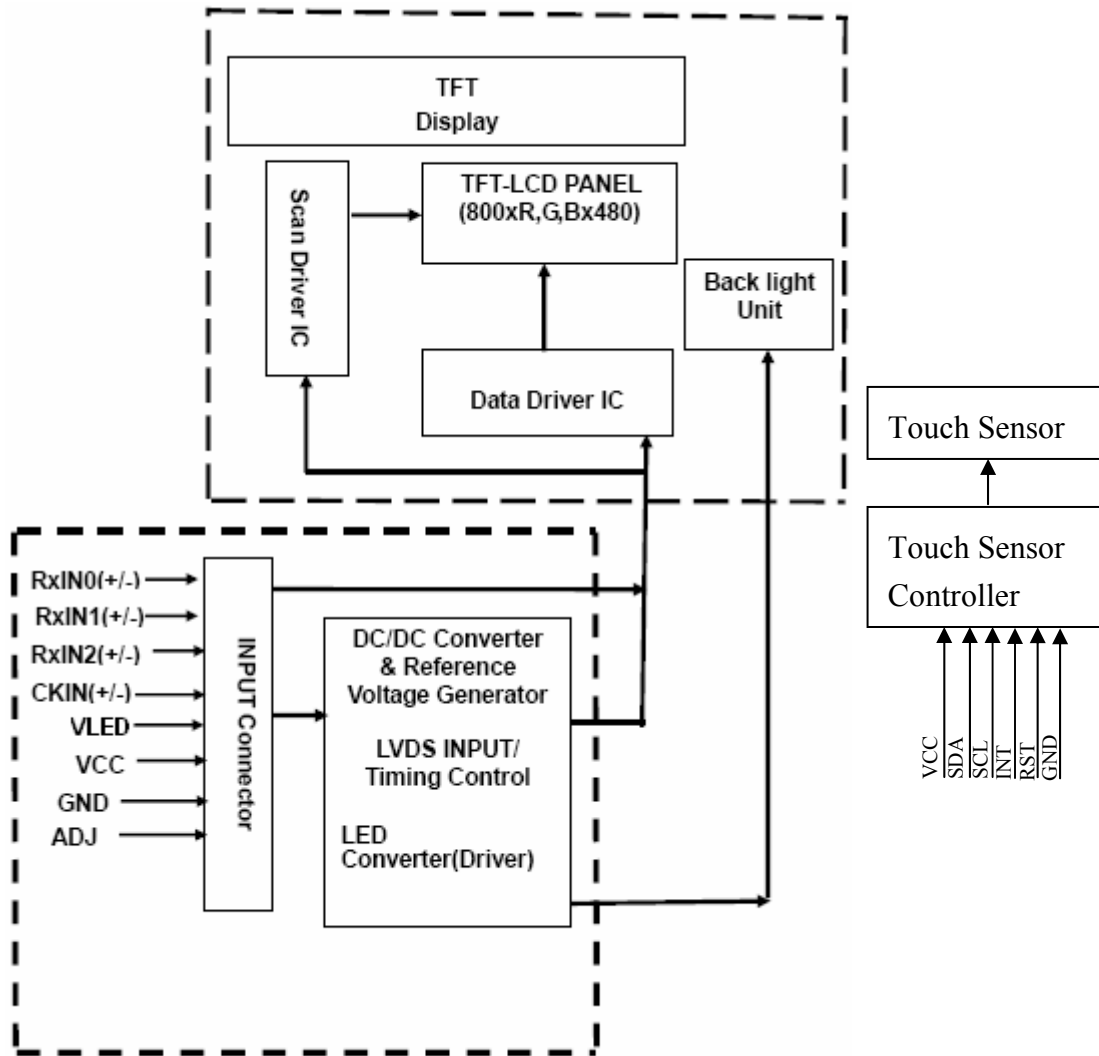
CN1 Connector: MS240420 G or Equivalent

PIN No.	SIGNAL	FUNCTION
1	VCC	Power Supply For Digital Circuit
2	VCC	Power Supply For Digital Circuit
3	GND	Ground
4	GND	Ground
5	RxIN0-	Differential Data Input, CH0(G0,R5~R0)
6	RxIN0+	Differential Data Input, CH0(G0,R5~R0)
7	GND	Ground
8	RxIN1-	Differential Data Input, CH1(B1,B0,G5~G1)
9	RxIN1+	Differential Data Input, CH1(B1,B0,G5~G1)
10	GND	Ground
11	RxIN2-	Differential Data Input, CH2(DE,B5~B2)
12	RxIN2+	Differential Data Input, CH2(DE,B5~B2)
13	GND	Ground
14	CKIN-	Differential Clock Input
15	CKIN+	Differential Clock Input
16	GND	Ground
17	VLED	Power Supply For LED Driver Circuit
18	VLED	Power Supply For LED Driver Circuit
19	GND	Ground
20	ADJ	Brightness Control For LED B/L

### 5.2 CAPACITIVE TOUCH PANEL SCREEN

PIN NO	SYMBOL
1	VCC(3.3V)
2	SDA
3	SCL
4	INT
5	RST
6	GND

## 6. BLOCK DIAGRAM



## 7. ABSOLUTE MAXIMUM RATINGS

### 7.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	MIN.	MAX.	UNIT	COMMENT
Power Supply Voltage	VCC	-0.3	+7.0	V	
Logic Output Voltage	V <sub>I</sub>	-0.3	VCC+0.3	V	

### 7.2 ENVIRONMENTAL ABSOLUTE MAXIMUM RATINGS

ITEM	OPERATING		STORAGE		COMMENT
	MIN	MAX	MIN	MAX	
Ambient Temperature(°C)	-20	70	-30	80	Note 1,2,3
Humidity(% RH)	-	90	-	90	Note 4

Note 1 : The response time will become lower when operated at low temperature.

Note 2 : Background color changes slightly depending on ambient temperature.

Note 3 : Operation Ta=70°C & -20°C ≤ 240Hrs.

Note 4 : Storage Ta=60°C & H=90% ≤ 240Hrs.

## 8. ELECTRICAL CHARACTERISTICS

### 8.1 ELECTRICAL CHARACTERISTICS OF LCD

Ta=25°C

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT
Power Voltage for LCD	VCC	3.0	3.3	3.6	V
	ICC	-	(175)	(262)	mA
Input High Voltage	V <sub>IH</sub>	0.7*VCC	-	VCC	V
Input Low Voltage	V <sub>IL</sub>	GND	-	0.3*VCC	V
Output High Voltage	V <sub>OH</sub>	0.8VCC	-	VCC	V
Output Low Voltage	V <sub>OL</sub>	GND	-	0.2VCC	V

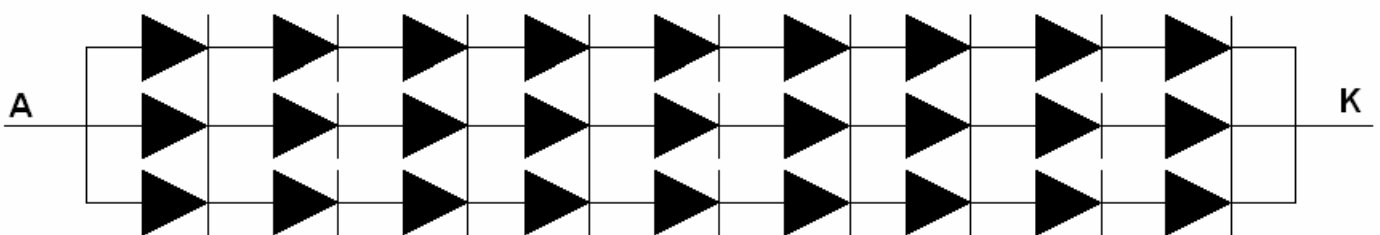
### 8.2 BACKLIGHT UNITS

Ta=25°C

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	REMARK	
LED Driving Voltage	VLED	4.5	5	12	V		
LED Driving Current	ILED	-	TBD	-	mA	(VLED=5V)	
		-	TBD	-	mA	(VLED=12V)	
Brightness control	Analog dimming	ADJ	0.7	-	1.4	V <sub>DC</sub>	Note 3
	PWM dimming		1.4	-	5.0	V <sub>P-P</sub>	Note 4
ADJ Frequency	-	100	-	1000	Hz		
LED Life Time	-	20000	-	-	Hr		

Note 1: If the module is driven at high ambient temperature & humidity condition. The operating life will be reduced.

Note 2: Operating life means brightness goes down to 50% initial brightness. Typical operating life time is estimated data.





# 9. OPTICAL CHARACTERISTICS

Ta=25°C

ITEM	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT	REMARK	
Contrast Ratio	CR	Viewing	300	400	-	-	Note (1)	
Response Time	TR	Normal	-	5	10	ms	Note (2)	
	TF	Angle	-	15	20	ms		
Chromaticity	White	x	(0.26)	(0.31)	(0.36)	-	Note (4)	
		y	(0.28)	(0.33)	(0.38)	-		
Viewing Angle	Hor.	Θ <sub>X+</sub>	Viewing	60	70	-	Deg.	Note (3)
		Θ <sub>X-</sub>	Angle	60	70	-		
	Ver.	Θ <sub>Y+</sub>	Θ <sub>X</sub> =Θ <sub>Y</sub> =0°	40	50	-		
		Θ <sub>Y-</sub>	CR ≥ 10	50	60	-		
Luminance	L		(900)	(1000)	-	cd/m <sup>2</sup>		
Luminance uniformity	YU	PWM=100%	70	75	-	%	Note (5)	

\*Note (1) Definition of Contrast Ratio (CR):

The contrast ratio can be calculated by the following expression.

$$\text{Contrast Ratio (CR)} = L63 / L0$$

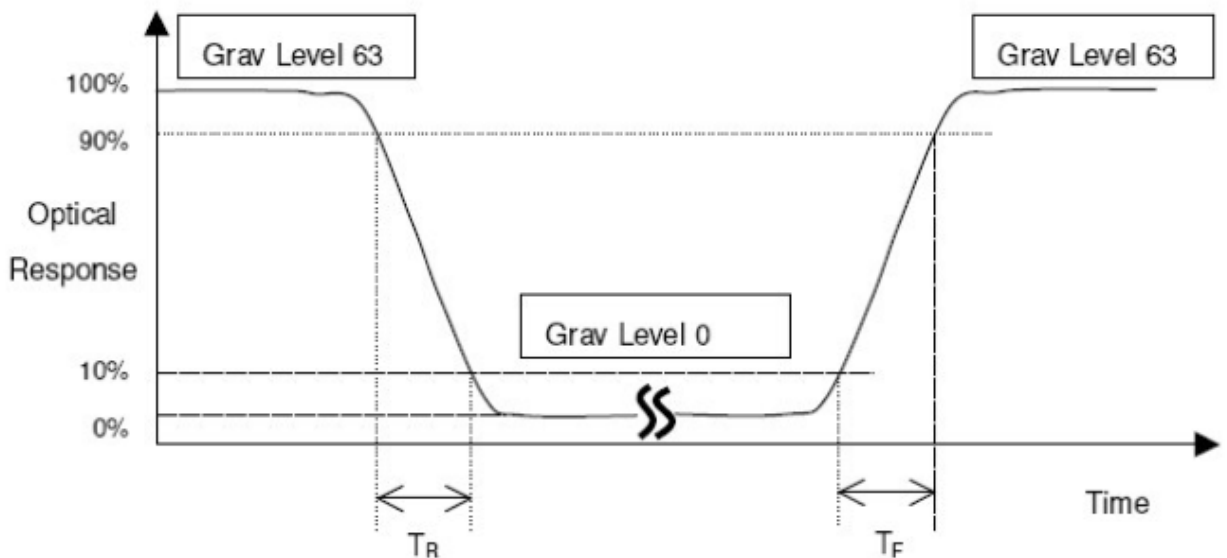
L63: Luminance of gray level 63

L 0: Luminance of gray level 0

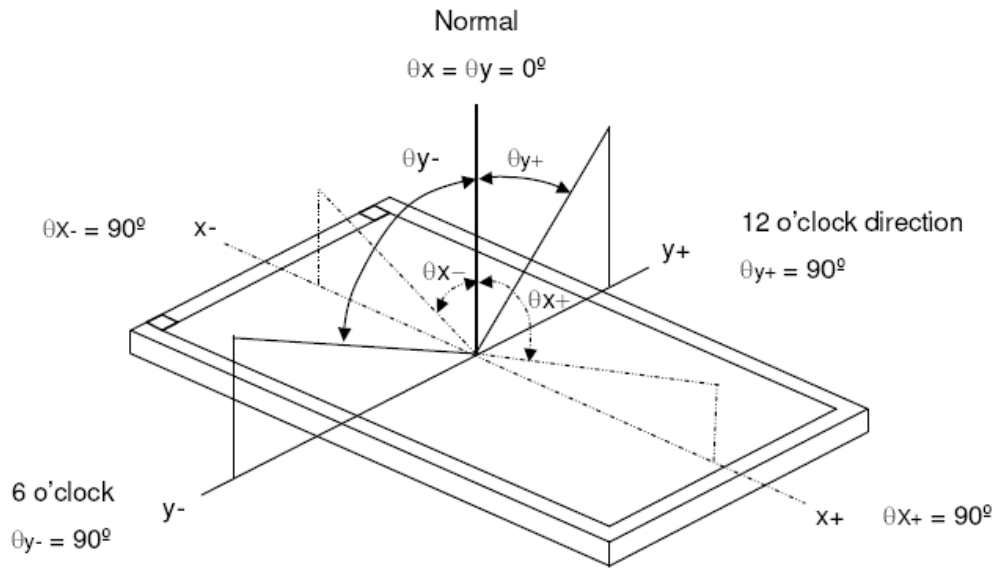
$$\text{CR} = \text{CR (5)}$$

CR (X) is corresponding to the Contrast Ratio of the point X at Figure in Note (5).

\*Note (2) Definition of Response Time (T<sub>R</sub>, T<sub>F</sub>):

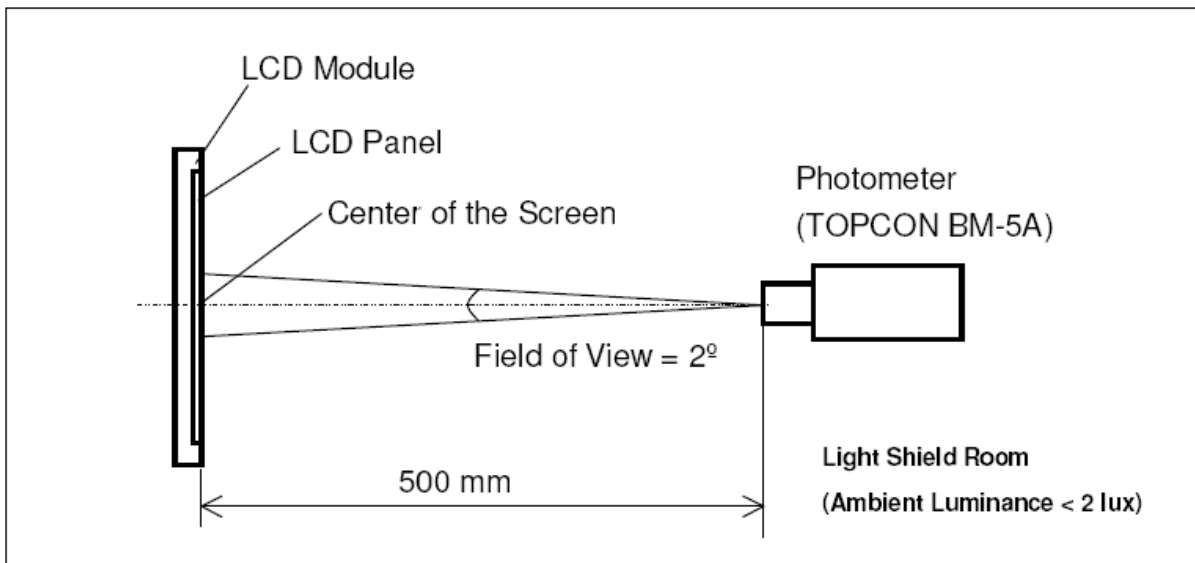


\*Note(3) Definition of Viewing Angle

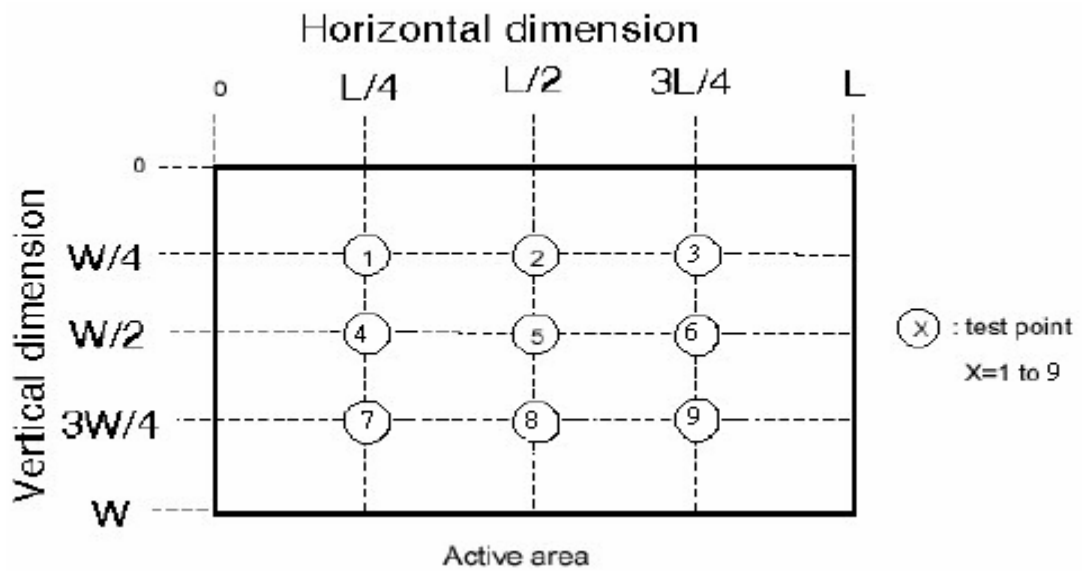


\*Note (4) Measurement Set-Up:

The LCD module should be stabilized at a given temperature for 20 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting Backlight for 20 minutes in a windless room.



\*Note (5)



$$\left( 1 - \frac{\text{MAX Luminance} - \text{Average Luminance}}{\text{Average Luminance}} \right) \times 100\% > 70\%$$

## 10. RELIABILITY TEST

Ta = 25°C

Environmental Test				
NO.	ITEM	CONDITIONS	TIME PERIOD	REMARK
1	High Temperature Storage	80°C	240HRS	
2	Low Temperature Storage	-30±3°C	240HRS	
3	High Temperature Humidity Storage	60°C 90%RH	240HRS	NOTE(2)
4	High Temperature Operation	70°C	240HRS	NOTE(2)
5	Low Temperature Operation	-20°C	240HRS	NOTE(2)
6	Temperature Cycle	-30°C ← 25°C → 80°C (30min) (5min) (30min)	10CYCLE	NOTE(2)

NOTE (1): a. THE MODULE SHOULD WORK PROPERLY.

b. BEFORE AND AFTER FUNCTION TEST, THE DIFFERENCE OF CONSUMPTIVE CURRENT SHOULD BE WITHIN 10%

NOTE (2): a. THE MODULE SHOULD WORK PROPERLY.

b. THE MODULE WON'T BE DEFORMATIVE, COLOR CHANGEABLE OR BROKEN.

c. THE MODULES CAN'T BE APART.

NOTE (3): BEFORE COSMETIC AND FUNCTION TEST, THE PRODUCT MUST HAVE ENOUGH RECOVERY TIME, AT LEAST 2 HOURS AT ROOM TEMPERATURE.

## 11. PACKAGE METHOD

TBD