



SPECIFICATION

FOR

LCD Module

XY832B-24 A6

MODULE:	XY832B-24 A6
CUSTOMER:	

XY	INITIAL	DATE
PREPARED BY	Jo Lee	2024-01-09
CHECKED BY		
APPROVED BY		

CUSTOMER	INITIAL	DATE
APPROVED BY		



REVISION STATUS

Version	Revise Date	Page	Content	Modified by
V1.0	2024-01-09	-	First Issued.	



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1. General Description

* DESCRIPTION

XY832B-24 A6 is a color active matrix TFT (Thin Film Transistor) LCD (liquid crystal display) that uses amorphous silicon TFT as a switching device. This model is composed of a Transmissive type TFT-LCD Panel, driver circuit, back-light unit. The resolution of a 8.0" TFT-LCD contains 800 x 1280 pixels, and can display up to 16.7M colors.

* Features

- Low Input Voltage: IOVCC: 1.65~3.3V;VCC: 2.5~3.3V -Display Colors of TFT LCD: 16.7M colors
- Interface: MIPI

-Internal Power Supply Circuit.

General Information Items	Specification	Unit	Note
	Main Panel		
Display area(AA)	107.64(H) x 172.22(V)	mm	-
Driver element	a-Si TFT active matrix	-	-
Display colors	16.7M	colors	-
Number of pixels	1200(RGB) *1920	dots	-
Pixel arrangement	RGB vertical stripe	-	-
Pixel pitch	0.1506(H) ×0.1432(V)	mm	-
Viewing angle	FREE	o'clock	-
Drive IC	OTA7290B-C DOUBLE	-	-
Display mode	Normally Black	-	-
Operating temperature	-10 ~ +60	°C	-
Storage temperature	-20 ~ +70	°C	-

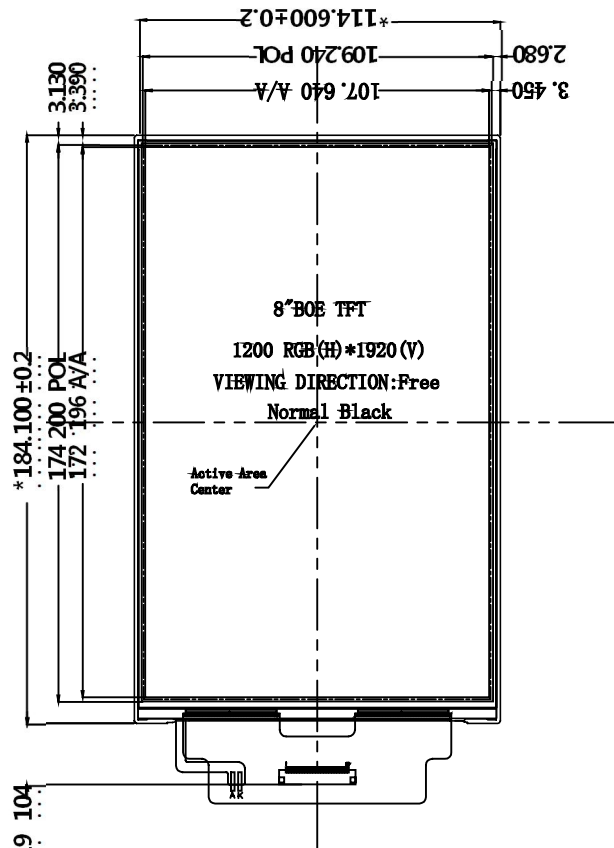
Mechanical Information

Item		Min.	Typ.	Max.	Unit	Note
Module size	Horizontal(H)	-	114.6	-	mm	±0.2
	Vertical(V)	-	184.1	-	mm	±0.2
	Depth(D)	-	2.6	-	mm	±0.2
Weight		-	TBD	-	g	-

2. MECHANICAL SPECIFICATION

RoHS

D



Notes:

1. Unit:mm
2. Do not scale drawing.
3. n Modification rev.number.
4. Genral Tolerance:±0.2
5. "*" For important dimension;() for reference dimention
6. RoHs must be complied. (Use Lead-free process)

A

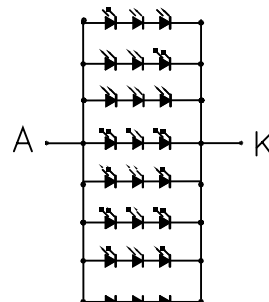
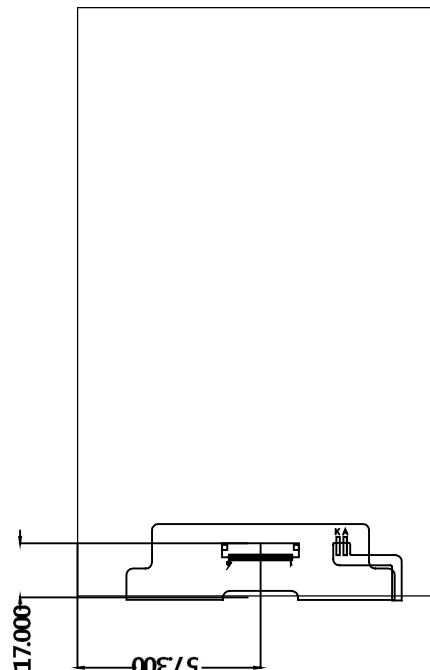
ITEM	SYMBOL	MIN	TYP	MAX	UNIT	T=25℃ 所有測試 誤差為 5%
Luminous (Without PET)	IV	200	230		cd/m²	
Chromaticity Coordinatses Without PET	X	(0.260)		(0.360)		
	Y	(0.280)		(0.380)		
Uniformity		70			%	
Backlight voltage	VF	8	9.0	9.6	V	
Backlight current	IF		160		mA	



深圳显昶光电科技有限公司

Shenzhen Xianyang Optoelectronic Technology Co., Ltd

2.430±0.2



LED电路图

BOE N44 8.0" 1200*1920 IPS

REV. : △

TYPE 类型	模组成品图	MATERIAL 材料	PAGE 页次	1/1	APPROVED 承认	Jo Lee
MODEL NO. 模组号	XY832B-24 A6	EDITION 版本号	01	第三视角	CHECK 核对	Jo Lee
PART NO. 料号		DATE 日期	2021.12.12		DESIGNED 设计者	Jo Lee

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1	NC
2	VDD
3	VDD
4	GND
5	RESET
6	NC
7	GND
8	MIPI_D0-
9	MIPI_D0+
10	GND
11	MIPI_D1-
12	MIPI_D1+
13	GND
14	MIPI_CLK-
15	MIPI_CLK+
16	GND
17	MIPI_D2-
18	MIPI_D2+
19	GND
20	MIPI_D3-
21	MIPI_D3+
22	GND
23	NC
24	NC
25	GND
26	NC
27	LED_PWM
28	NC
29	NC
30	GND
31	LED-
32	LED-
33	NC
34	NC
35	NC
36	NC
37	NC
38	NC
39	LED+
40	LED+

1

2

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[illegible]

4. ELECTRICAL CHARACTERISTICS

4.1 ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Values		Unit	Remark
		Min	Max.		
Supply Voltage for Logic circuit	VDDIO	1.7	3.0	V	
Supply Voltage for analog circuit	Vcc	3.0	3.6	V	

4.2 DC ELECTRICAL CHARACTERISTICS

4.2.1 POWER SPECIFICATION

INPUT POWER SPECIFICATIONS ARE AS FOLLOWS:

THE POWER SPECIFICATION ARE MEASURED UNDER 25°C AND FRAME FREQUENCY UNDER 60Hz

Typical Operating Conditions (Ta=25°C)

Item	Parameter	Values			Unit	Remark
		Min	Typ	Max.		
VCI	Vcc	3.0	3.3	3.6	V	
VDD3	Iovcc	1.7	1.8	2.0	V	
TFT Gate ON Voltage	Pixel turn on voltage	8.7	15	18	V	
TFT Gate OFF Voltage	Pixel turn off voltage	-16	-11	-6.7	V	
VSP	Negative AVEE voltage	4.9	5.8	6.0	V	
VSN	Postive AVDD voltage	-6	-5.8	-4.9	V	

4.2.2 BACKLIGHT UNIT (GND=0V)

Item	Symbol	Values			Unit	Remark
		Min	Typ	Max.		
Forward supply Voltage	V _f	8.4	9.6	9.9	V	
Forward supply Current	I _f	-	140	-	mA	
LCM Luminance	L _v	200	230	-	cd/m ²	I _b =140mA
Uniformity	/	75	80		%	-

5. OPTICAL CHARACTERISTICS

<Table 1. LCD Module Specifications>

Parameter	Specification	Unit	Remarks
Active Area	107.64(H)*172.224(V)	mm	
Number Of Pixels	1200(H)×1920(V)	pixels	
Pixel Pitch	0.0299(H)×RGB×0.0897(V)	mm	
Pixel Arrangement	Pixels RGB stripe arrangement		
Display Mode	Normally Black		
Display Colors	16.7M(8bits)	colors	
Surface Treatment	HC		
Contrast Ratio	1200(typ.) , 900(min.)		
Viewing Angle(CR>10)	85/85/85/85(typ.)	deg.	
Response Time	30(typ.)	ms	
Color Gamut	NTSC 87%(typ.)		@RG LED

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

The contrast ratio can be calculated by the following expression.

$$\text{Contrast Ratio (CR)} = L_{63} / L_0$$

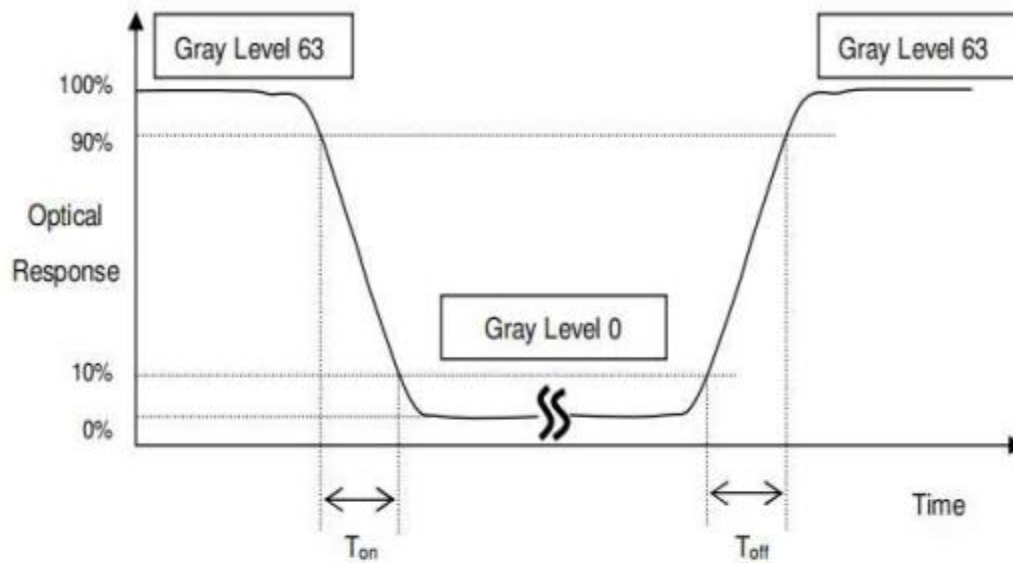
L63: Luminance of gray level 63

L 0: Luminance of gray level 0

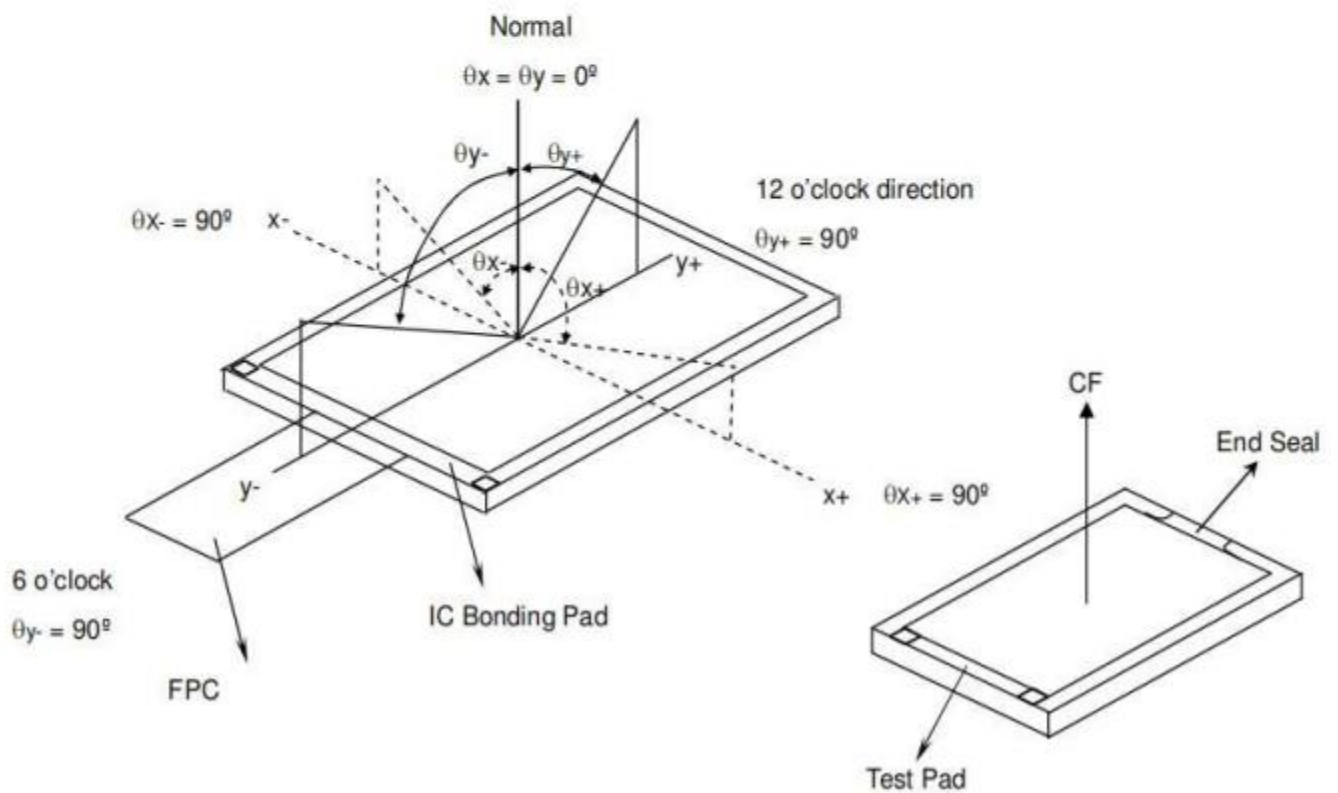
$$CR = CR (5)$$

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

*Note (2) Definition of Response Time (T_{on} , T_{off}):

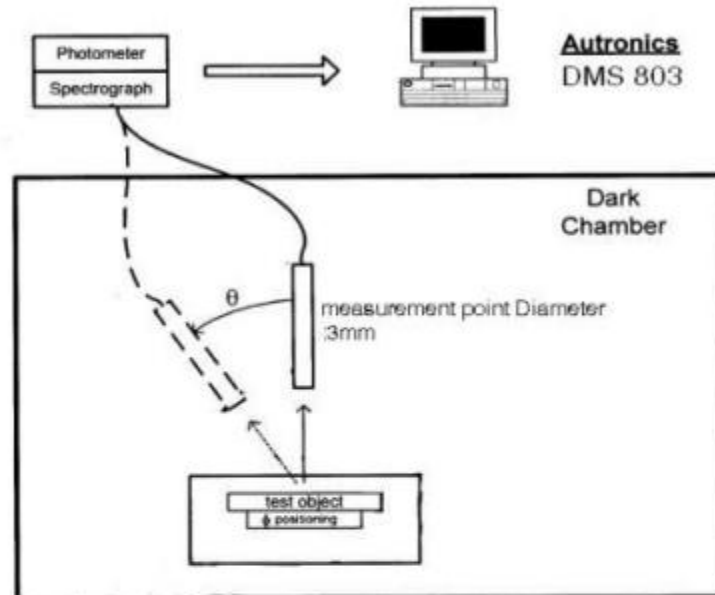


*Note (3) Definition of Viewing Angle

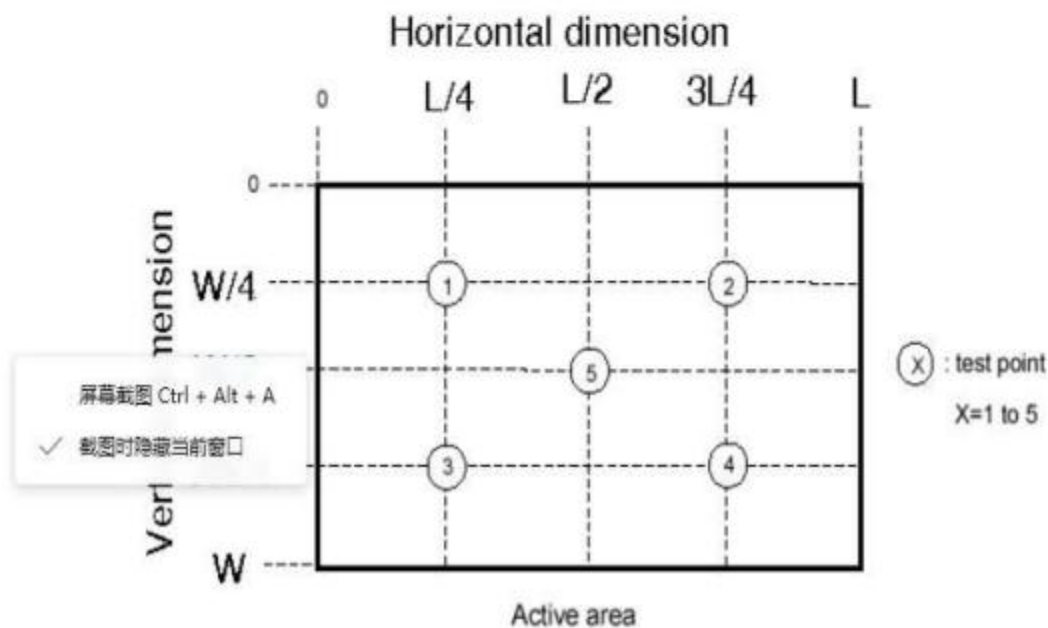


***Note (4) Measurement Set-Up:**

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.



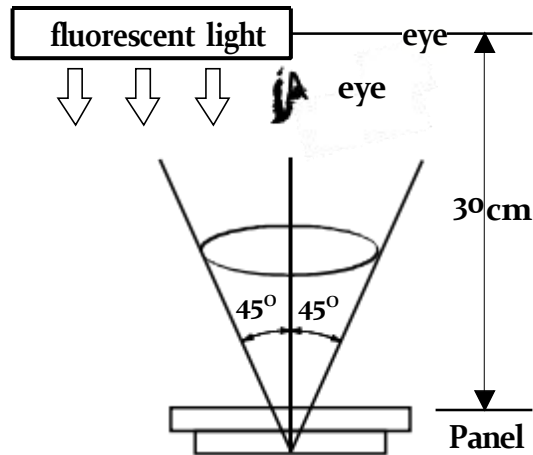
***Note (5)**



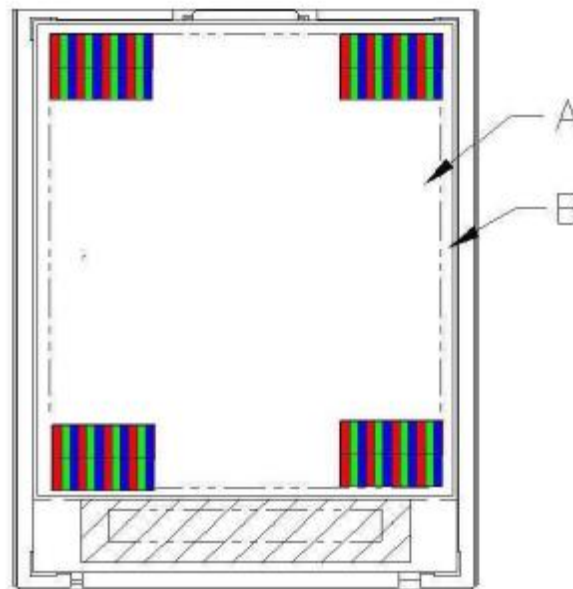
6. QUALITY SPECIFICATIONS

6.1 INSPECTION CONDITION

- (1) Inspect under 300~500Lux fluorescent light, leaving 30~35cm between panels and eyes, and between panels and lights.
- (2) Inspection condition is $23\pm 5^{\circ}\text{C}$, $50\pm 20\%\text{RH}$ maximum.



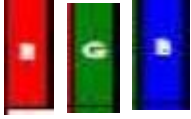
6.2 DEFINITION OF AREA

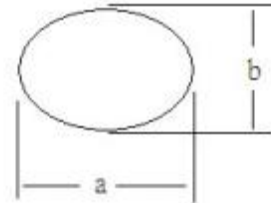


A Area : Viewing area.

B Area : Out of viewing.(outside viewing area)

6.3 INSPECTION SPECIFICATION

NO	Item	Acceptable specification	Judgment Criterion
1	Electrical Testing	1-1 sub pixel classification - Sub Pixel: Number of sub pixel doesn't exceed one dot.  Sub Pixel (Dot) a> Dark dot ----one Allowed b> Bright dot ---- one Allowed - Pixel : Three dots link together doesn't exceed ones  Pixel 1-2Leakage to light - Leakage to light be not allowed. 1-3Picture to shake - Picture had shake, twinkle and noise etc. instable of defect that be not allowed. 1-4 Function - No display or No function. - Source Line, Gate Line. - Contrast Ratio - Current consumption exceeds product specifications. - Display malfunction.	$N \leq 1$ $N \leq 0$ $N=0$ $N=0$ $N=0$
2	Mechanical Dimension	2-1 Mechanical Dimension exceeds product specifications. 2-2 Out of frame and boss of plastic changed shape that be not allowed.	$N=0$

NO	Item	Acceptable specification	Judgment Criterion																		
3	Cosmetic Inspection	3-1 Blemish: Line shapes of defect																			
		<table><tr><th>Length</th><th>Width</th><th>Acceptable number</th><th>Mini. space</th></tr><tr><td>---</td><td>WⅧ0.03</td><td>Ignore</td><td rowspan="3">5 m m</td></tr><tr><td>LⅦ2.5</td><td>0.03<WⅦ0.05</td><td>3</td></tr><tr><td>LⅦ2.5</td><td>0.05<WⅦ0.1</td><td>2</td></tr><tr><td>--</td><td>W ∧ 0.1</td><td>Not allowed</td><td>---</td></tr></table>	Length	Width	Acceptable number	Mini. space	---	WⅧ0.03	Ignore	5 m m	LⅦ2.5	0.03<WⅦ0.05	3	LⅦ2.5	0.05<WⅦ0.1	2	--	W ∧ 0.1	Not allowed	---	
		Length	Width	Acceptable number	Mini. space																
		---	WⅧ0.03	Ignore	5 m m																
		LⅦ2.5	0.03<WⅦ0.05	3																	
		LⅦ2.5	0.05<WⅦ0.1	2																	
		--	W ∧ 0.1	Not allowed	---																
		L: length(mm) W: width(mm)																			
																					
		3-2 Blemish: dot shapes of defect.																			
<table><tr><th>Dimension</th><th>Acceptable number</th><th>Mini. Space</th></tr><tr><td>ΦⅦ0.10</td><td>Ignore</td><td>---</td></tr><tr><td>0.10∨ΦⅦ0.25</td><td>2</td><td rowspan="2">10 m m</td></tr><tr><td>0.25∨ΦⅦ0.3</td><td>1</td></tr><tr><td>Φ ∧ 0.3</td><td>0</td><td>---</td></tr></table>	Dimension	Acceptable number	Mini. Space	ΦⅦ0.10	Ignore	---	0.10∨ΦⅦ0.25	2	10 m m	0.25∨ΦⅦ0.3	1	Φ ∧ 0.3	0	---							
Dimension	Acceptable number	Mini. Space																			
ΦⅦ0.10	Ignore	---																			
0.10∨ΦⅦ0.25	2	10 m m																			
0.25∨ΦⅦ0.3	1																				
Φ ∧ 0.3	0	---																			
3-3 Polarizer Bubble																					
<table><tr><th>Dimension</th><th>Acceptable number</th><th>Mini. Space</th></tr><tr><td>ΦⅦ0.20</td><td>Ignore</td><td>---</td></tr><tr><td>0.20∨ΦⅦ0.30</td><td>2</td><td>15 m m</td></tr><tr><td>Φ ∧ 0.30</td><td>0</td><td>---</td></tr></table>	Dimension	Acceptable number	Mini. Space	ΦⅦ0.20	Ignore	---	0.20∨ΦⅦ0.30	2	15 m m	Φ ∧ 0.30	0	---									
Dimension	Acceptable number	Mini. Space																			
ΦⅦ0.20	Ignore	---																			
0.20∨ΦⅦ0.30	2	15 m m																			
Φ ∧ 0.30	0	---																			
Foreign Substances																					
																					
Φ=(a+b)/2																					



NO	Item	Acceptable specification				Judgment Criterion
3	Cosmetic Inspection	3-4 Scratch - Sensate scratch not allowed. - Impassive scratch as below. Unit:mm				
		Length	Width	Acceptable number	Mini. space	
		-----	$W \leq 0.03$	Ignore	5 m m	
		$L \leq 2.5$	$0.03 < W \leq 0.05$	3		
		$L \leq 2.5$	$0.05 < W \leq 0.1$	2		
		----	$0.1 < W$	Not allowed	---	
		$L > 2.5$	----	Not allowed		
4	Package	4-1 Mixed product types 4-2 Shipping q'ty should be the same as “shipping notice form” q'ty. 4-3 Outer box can't broken.				N=0

7. RELIABILITY

Test Item	Test Condition
High Temperature Operation	60℃ for 24 hours
Low Temperature Operation	-10℃ for 24 hours
High Temperature Storage	70℃ for 24 hours
Low Temperature Storage	-20℃ for 24 hours
High Temperature Operation Humidity Operation	60℃, 90%RH for 48 hours
Thermal Shock	-10° storage one hour, rise to 60° within 15s, high temperature one hour, drop to 30° within 15s, circulate 10 repeatedly
Vibration Test (No Operation)	Frequency: 10~55Hz Amplitude: 1.0mm Sweep Time: 11min Test Period: 6 Cycles for each direction of X, Y, Z
Static electricity test	Touch 6KV, air touch 8KV



8. HANDLING PRECAUTION

8.1 SAFETY

- (1) Do not swallow any liquid crystal, even if there is no proof that liquid crystal is poisonous.
- (2) If the LCD panel breaks, be careful not to get liquid crystal to touch your skin.
- (3) If skin is exposed to liquid crystal, wash the area thoroughly with alcohol or soap.

8.2 STORAGE CONDITIONS

- (1) Store the panel or module in a dark place where the temperature is $23\pm5^{\circ}\text{C}$ and the humidity is below $50\pm20\%\text{RH}$.
- (2) Store in anti-static electricity container.
- (3) Store in clean environment, free from dust, active gas, and solvent.
- (4) Do not place the module near organics solvents or corrosive gases.
- (5) Do not crush, shake, or jolt the module.

8.3 HANDLING PRECAUTIONS

- (1) Avoid static electricity which can damage the CMOS LSI.
- (2) The polarizing plate of the display is very fragile. So, please handle it very carefully.
- (3) Do not give external shock.
- (4) Do not apply excessive force on the surface.
- (5) Do not wipe the polarizing plate with a dry cloth, as it may easily scratch the surface of plate.
- (6) Do not use ketonic solvent & Aromatic solvent, use with a soft cloth soaked with a cleaning naphtha solvent.
- (7) Do not operate it above the absolute maximum rating.
- (8) Do not remove the panel or frame from the module.

8.4 WARRANTY

The period is within twelve months since the date of shipping out under normal using and storage conditions.