



宇华国际科技有限公司
YuHua INT,L Technology Co., LIMITED

**SPECIFICATION
FOR
LCD MODULE**

Customer : _____

Product Model: YH065MD5001

Sample code: _____

Designed by	Checked by	Approved by

Final Approval by Customer

<input type="checkbox"/> LCM Machinery OK Checked By _____ <input type="checkbox"/> LCM Display OK Checked By _____	<input type="checkbox"/> LCM OK <input type="checkbox"/> NG , Problem survey: Approved By _____
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※The specification of "TBD" should refer to the measured value of sample . If there is difference between the design specification and measured value, we naturally shall negotiate and agree to solution with customer.

2. General Specifications

	Feature	Spec
Characteristics	Size	6.5 inch
	Resolution	800(horizontal)*320(Vertical)
	Interface	RGB-24bit
	Connect type	Connector
	Display Colors	262K
	Technology type	a-Si
	Pixel pitch (mm)	0.192*0.1805
	Pixel Configuration	R.G.B.Vertical Stripe
	Display Mode	Normally White
	Driver IC	ILI5960 ,ILI 6122
	Viewing Direction	12 O'clock
Mechanical	LCM (W x H x D) (mm)	165*72.86*3.5
	Active Area(mm)	154.08 x 57.28
	Weight (g)	TBD
	LED Numbers	21 LEDs

Note 1: Requirements on Environmental Protection: RoHs

Note 2: LCM weight tolerance: +/- 5%

3. Input/Output Terminals

FPC Connector is used for the module electronics interface. The recommended model is FH12A-50S-0.5SH manufactured by Hirose.

Pin No.	Symbol	I/O	Function	Remark
1	V _{LED+}	P	Power for LED backlight (Anode)	
2	V _{LED+}	P	Power for LED backlight (Anode)	
3	V _{LED-}	P	Power for LED backlight (Cathode)	
4	V _{LED-}	P	Power for LED backlight (Cathode)	
5	GND	P	Power ground	
6	V _{COM}	I	Common voltage	
7	DV _{DD}	P	Power for Digital Circuit	
8	MODE	I	DE/SYNC mode select	Note 1
9	DE	I	Data Input Enable	
10	VS	I	Vertical Sync Input	
11	HS	I	Horizontal Sync Input	
12	B7	I	Blue data(MSB)	
13	B6	I	Blue data	
14	B5	I	Blue data	
15	B4	I	Blue data	
16	B3	I	Blue data	
17	B2	I	Blue data	
18	B1	I	Blue data	Note 2
19	B0	I	Blue data(LSB)	Note 2
20	G7	I	Green data(MSB)	
21	G6	I	Green data	
22	G5	I	Green data	
23	G4	I	Green data	
24	G3	I	Green data	
25	G2	I	Green data	
26	G1	I	Green data	Note 2

27	G0	I	Green data(LSB)	Note 2
28	R7	I	Red data(MSB)	
29	R6	I	Red data	
30	R5	I	Red data	
31	R4	I	Red data	
32	R3	I	Red data	
33	R2	I	Red data	
34	R1	I	Red data	Note 2
35	R0	I	Red data(LSB)	Note 2
36	GND	P	Power Ground	
37	DCLK	I	Sample clock	Note 3
38	GND	P	Power Ground	
39	L/R	I	Left / right selection	Note 4,5
40	U/D	I	Up/down selection	Note 4,5
41	V _{GH}	P	Gate ON Voltage	
42	V _{GL}	P	Gate OFF Voltage	
43	AV _{DD}	P	Power for Analog Circuit	
44	RESET	I	Global reset pin.	Note 6
45	NC	-	No connection	
46	V _{COM}	I	Common Voltage	
47	DITHB	I	Dithering function	Note 7
48	GND	P	Power Ground	
49	NC	-	No connection	
50	NC	-	No connection	

I: input, O: output, P: Power

Note 1: DE/SYNC mode select. Normally pull high.

When select DE mode, MODE="1", VS and HS must pull high.

When select SYNC mode, MODE= "0", DE must be grounded.

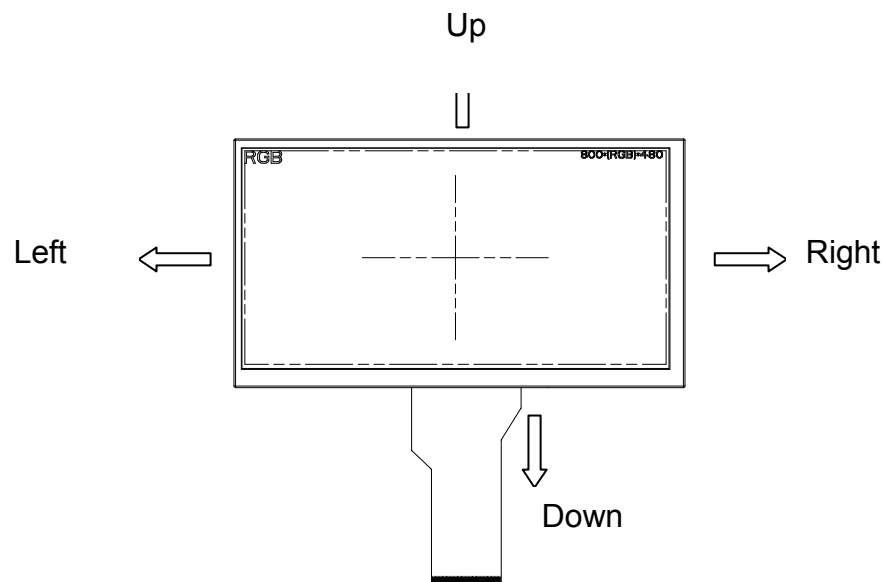
Note 2: When input 18 bits RGB data, the two low bits of R,G and B data must be grounded.

Note 3: Data shall be latched at the falling edge of DCLK.

Note 4: Selection of scanning mode

Setting of scan control input		Scanning direction
U/D	L/R	
GND	DV _{DD}	Up to down, left to right
DV _{DD}	GND	Down to up, right to left
GND	GND	Up to down, right to left
DV _{DD}	DV _{DD}	Down to up, left to right

Note 5: Definition of scanning direction.
Refer to the figure as below:



Note 6: Global reset pin. Active low to enter reset state. Suggest to connect with an RC reset circuit for stability. Normally pull high.

Note 7: Dithering function enable control, normally pull high.
When DITHB="1", Disable internal dithering function,
When DITHB="0", Enable internal dithering function,

3. Operation Specifications

3.1. Absolute Maximum Ratings

(Note 1)

Item	Symbol	Values		Unit	Remark
		Min.	Max.		
Power voltage	DV_{DD}	-0.3	5.0	V	
	AV_{DD}	6.5	13.5	V	
	V_{GH}	-0.3	40.0	V	
	V_{GL}	-20.0	0.3	V	
	$V_{GH}-V_{GL}$	-	40.0	V	
Operation Temperature	T_{OP}	-30	85	°C	
Storage Temperature	T_{ST}	-30	85	°C	
LED Reverse Voltage	V_R	-	1.2	V	Each LED Note 2
LED Forward Current	I_F	-	25	mA	Each LED

Note 1: The absolute maximum rating values of this product are not allowed to be exceeded at any times. Should a module be used with any of the absolute maximum ratings exceeded, the characteristics of the module may not be recovered, or in an extreme case, the module may be permanently destroyed.

Note 2: V_R Conditions: Zener Diode 20mA

3.1.1. Typical Operation Conditions

(Note 1)

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Power voltage	DV_{DD}	3.0	3.3	3.6	V	Note 2
	AV_{DD}	10.2	10.4	10.6	V	
	V_{GH}	15.3	16.0	16.7	V	
	V_{GL}	-7.7	-7.0	-6.3	V	
Input signal voltage	V_{COM}	3.6	3.8	4.0	V	
Input logic high voltage	V_{IH}	0.7 DV_{DD}	-	DV_{DD}	V	Note 3
Input logic low voltage	V_{IL}	0	-	0.3 DV_{DD}	V	

Note 1: Be sure to apply DV_{DD} and V_{GL} to the LCD first, and then apply V_{GH} .

Note 2: DV_{DD} setting should match the signals output voltage (refer to Note 3) of customer's system board.

Note 3: DCLK, HS, VS, RESET, U/D, L/R, DE, R0~R7, G0~G7, B0~B7, MODE, DITHB.

3.1.2. Current Consumption

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Current for Driver	I_{GH}	-	0.2	1.0	mA	$V_{GH} = 16.0V$
	I_{GL}	-	0.2	1.0	mA	$V_{GL} = -7.0V$
	IDV_{DD}	-	4.0	10	mA	$DV_{DD} = 3.3V$
	IAV_{DD}	-	20	50	mA	$AV_{DD} = 10.4V$

3.13 Driving Backlight

Item	Symbol	MIN	TYP	MAX	Unit	Remark
Forward Current	I_F	105	140	175	mA	
Forward Voltage	V_F	9.3	9.6	9.9	V	
Backlight Power consumption	W_{BL}	-	1.344	-	W	
LED Lifetime		30000			Hrs	

Note 1: Each LED: $I_F = 20\text{ mA}$, $V_F = 3.2 \pm 0.2V$.

Note 2: Optical performance should be evaluated at $T_a = 25^\circ\text{C}$ only.

Note 3: If LED is driven by high current, high ambient temperature & humidity condition. The life Time of LED will be reduced. Operating life means brightness goes down to 50% initial brightness. Typical operating life time is estimated data.

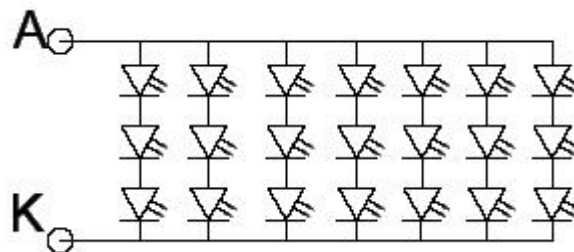
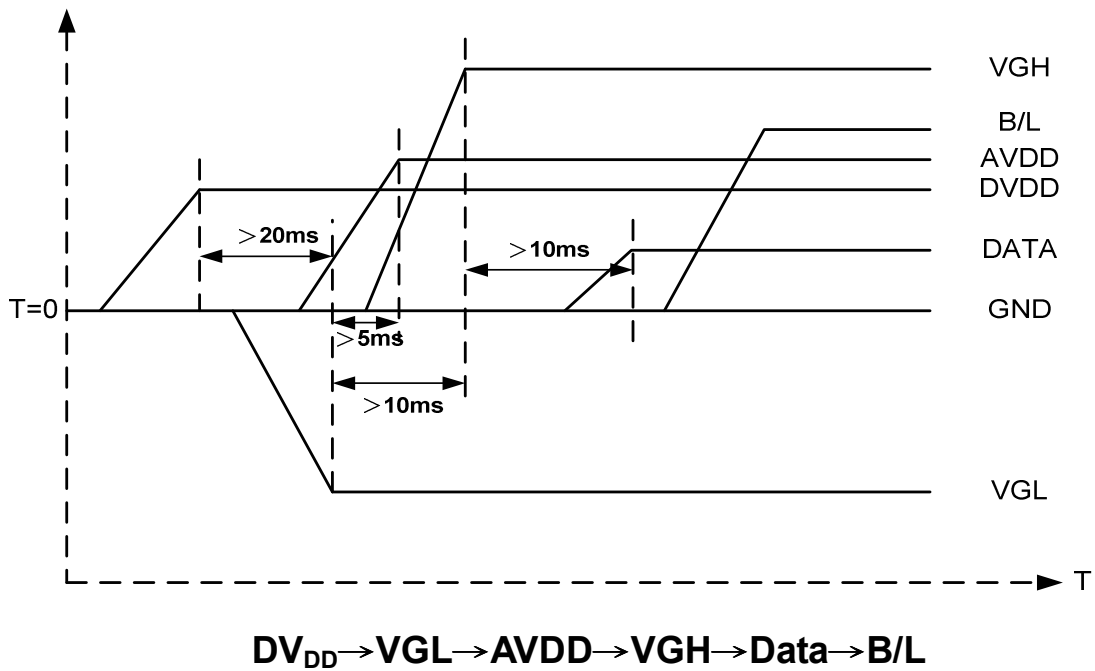


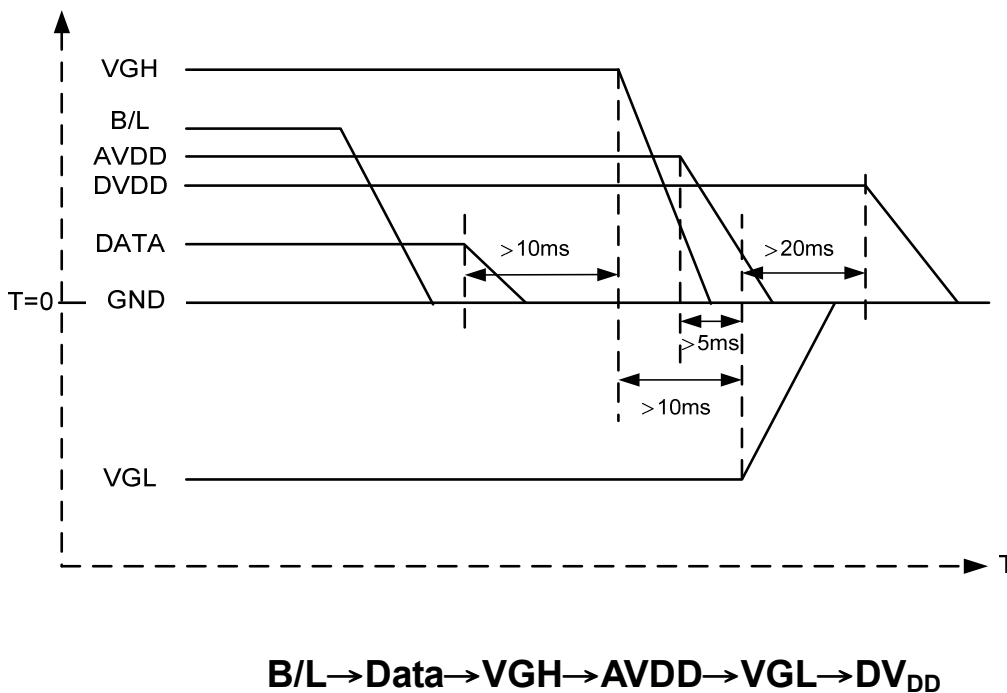
Figure: LED connection of backlight(Constant Current)

3.2. Power Sequence

a. Power on:



b. Power off:



Note: Data include R0~R7, B0~B7, GO~G7, U/D, L/R, DCLK, HS,VS,DE.

4. Absolute Maximum Rating

Item	Symbol	MIN	MAX	Unit	Remark
Supply Voltage	V _{CC}	-0.3	5	V	
Operating Temperature	T _{OPR}	-20	70	°C	
Storage Temperature	T _{STG}	-30	80	°C	

5. Electrical Characteristics

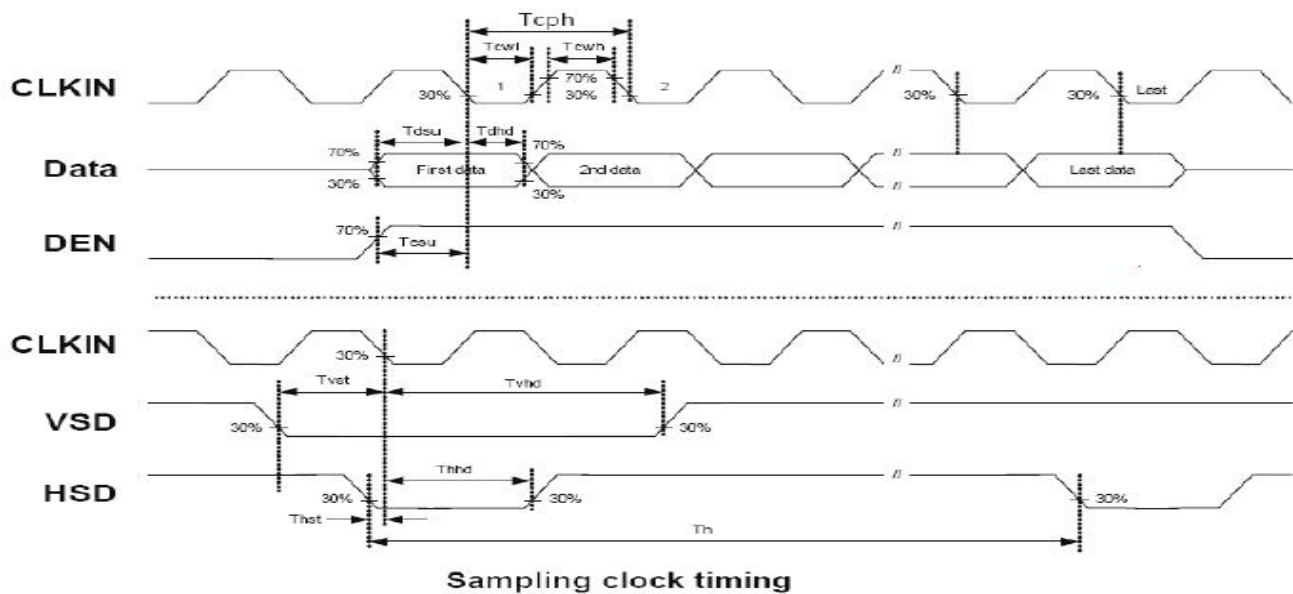
5.1 Operating Characteristics

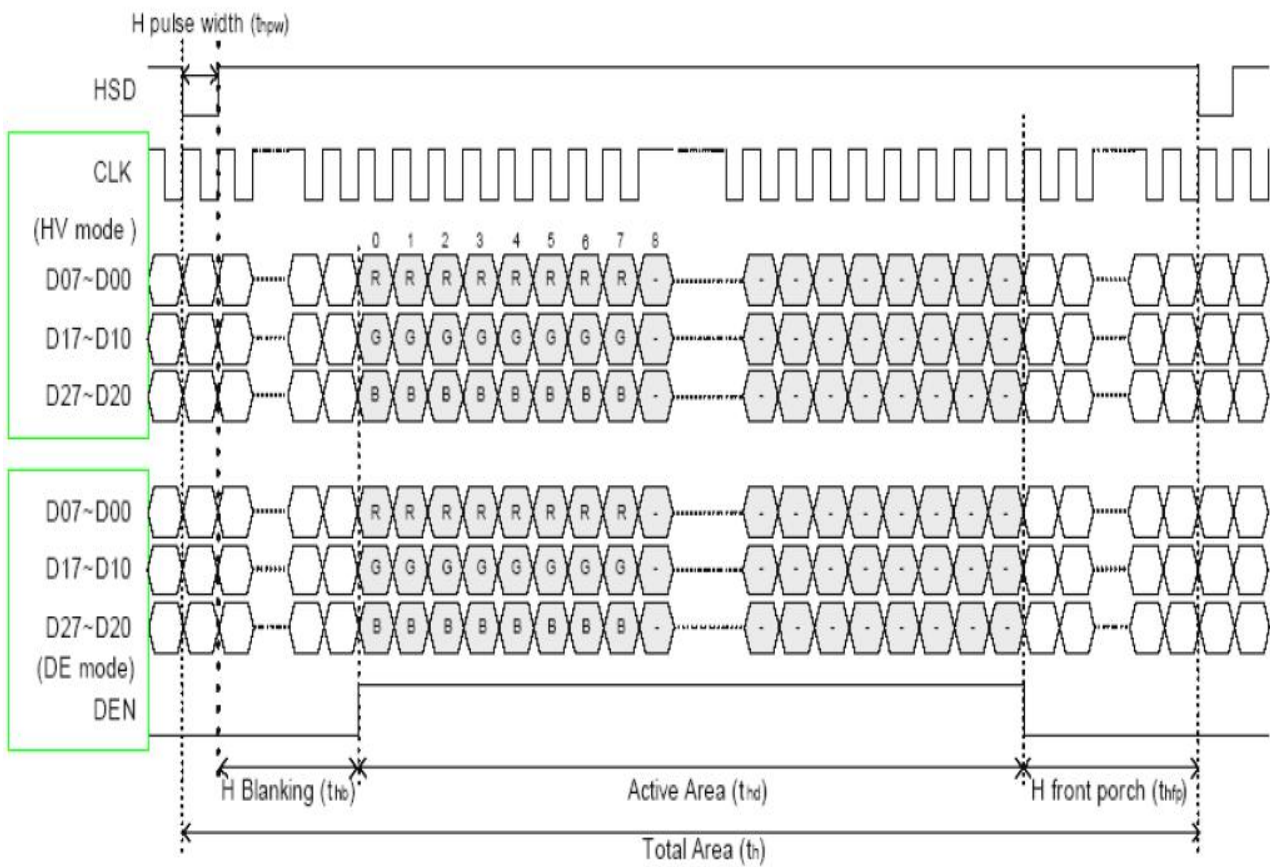
Item		Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	Digital	V _{DD}	2.8	-	3.3	V
	Analog	AV _{DD}	2.8	-	3.3	V
Input Signal Voltage	Low Level	V _{IL}	0.8*V _{DD}	-	V _{DD}	V
	High Level	V _{IH}	-0.3	-	0.2*V _{DD}	V
Output Signal Voltage	Low Level	V _{OL}	0.8*V _{DD}	-	-	V
	High Level	V _{OH}	-	-	0.2*V _{DD}	V

5.2 Interface Timing

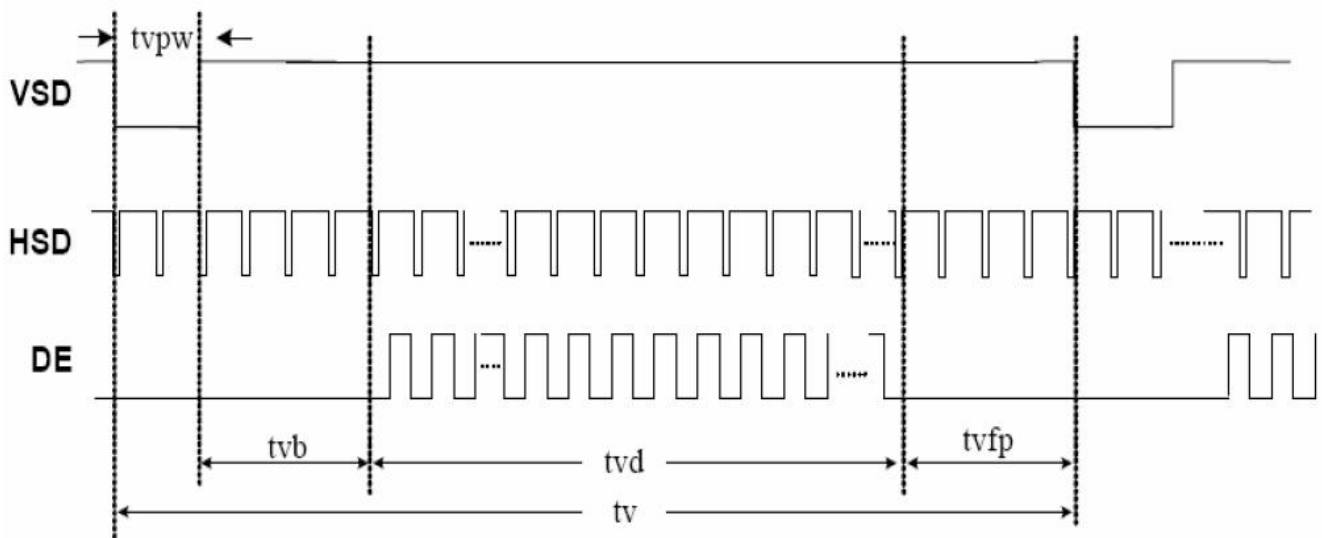
Item	Symbol	Min.	Typ.	Max.	Unit	Note
DCLK cycle time	Tcph	25			ns	
DCLK frequency	fcik		30	40	MHz	
DCLK pulse duty	Tcwh	40	50	60	%	
VSD setup time	Tvst	8			ns	
VSD hold time	Tvhd	8			ns	
HSD setup time	Thst	8			ns	
HSD hold time	Thhd	8			ns	
Data setup time	Tdsu	8			ns	
Data hold time	Tdhd	8			ns	
DE setup time	Tesu	8			ns	
DE hold time	Tehd	8			ns	
Horizontal display area	thd		800		Tcph	
HSD period time	th		928		Tcph	
HSD pulse width	thpw	1	48		Tcph	
HSD back porch	thb		40		Tcph	
HSD front porch	thfp		40		Tcph	
Vertical display area	tvd		480		th	
VSD period time	tv		525		th	
VSD pulse width	tvpw		3		th	
VSD back porch	tvb		29		th	
VSD front porch	tvfp		13		th	

Timing Diagram of Interface Signal





Horizontal display timing range



Vertical timing

6. Optical Characteristics

Items		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark	Note
Response time		Tr+Tf	-	-	25	35	ms	FIG.1	Note4
Contrast Ratio		CR		400	500	-	-	FIG.2	Note1
Surface luminance		LV	$\theta = 0^\circ$	-	450	-	cd/m2	FIG.2	Note2
Luminance uniformity		Yu	$\theta = 0^\circ$	-	70	-	%	FIG.2	Note3
NTSC		-	$\theta = 0^\circ$	-	50	-	%	FIG.2	Note5
Viewing angle		θ_T	Center CR \geq 10	40	50	-	deg	FIG.3	Note6
		θ_B		60	70	-	deg	FIG.3	
		θ_L		60	70	-	deg	FIG.3	
		θ_R		60	70	-	deg	FIG.3	
Chromaticity	Red	R _X	$\theta = 0^\circ$ $\phi = 0^\circ$ Ta=25°	0.26	0.31	0.36	-	FIG.2 CIE1931	Note5
		R _Y		0.28	0.33	0.38	-		
	Green	G _X		0.531	0.581	0.631	-		
		G _Y		0.298	0.348	0.398	-		
	Blue	B _X		0.255	0.305	0.355	-		
		B _Y		0.577	0.627	0.677	-		
	White	W _X		0.099	0.149	0.199	-		
		W _Y		0.101	0.151	0.201	-		

Note1. Definition of contrast ratio

Contrast ratio(Cr) is defined mathematically by the following formula.
For more information see FIG.2.

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

For contrast ratio, Surface Luminance, Luminance uniformity and CIE,the testing data is base on TOPCON's BM-5 or BM-7 photo detector or compatible.

Note2. Definition of surface luminance

Surface luminance is the luminance with all pixels displaying white. For more information see FIG.2.

Lv = Average Surface Luminance with all white pixels(P1,P2,P3,Pn)

Note3. Definition of luminance uniformity

The luminance uniformity in surface luminance is determined by measuring luminance at each test position 1 through n, and then dividing the maximum luminance of n points luminance by minimum luminance of n points luminance.For more information see FIG.2.

$$Y_u = \frac{\text{Minimum surface luminance with all white pixels (P1,P2,P3,.....,Pn)}}{\text{Maximum surface luminance with all white pixels (P1,P2,P3,.....,Pn)}}$$

Note4. Definition of response time

The response time is defined as the LCD optical switching time interval between "White" state and "Black"state.Rise time (Tr) is the time between photo detector output intensity changed from 90% to 10%. And fall time (Tf) is the time between photo detector output intensity changed from 10% to 90%.

For additional information see FIG1.

Note5. Definition of color chromaticity (CIE1931)

CIE (x,y) chromaticity,The x,y value is determined by screen active area center position P5.For more information see FIG.2.

Note6. Definition of viewing angle

Viewing angle is the angle at which the contrast ratio is greater than 10. Angles are determined for the horizontal or x axis and the vertical or y axis with respect to the z axis which is normal to the LCD surface.

For more information see FIG.3.

For viewing angle and response time testing, the testing data is base on Autronic-Melchers's ConoScope or DMS series Instruments or compatible.

FIG.1. The definition of response Time

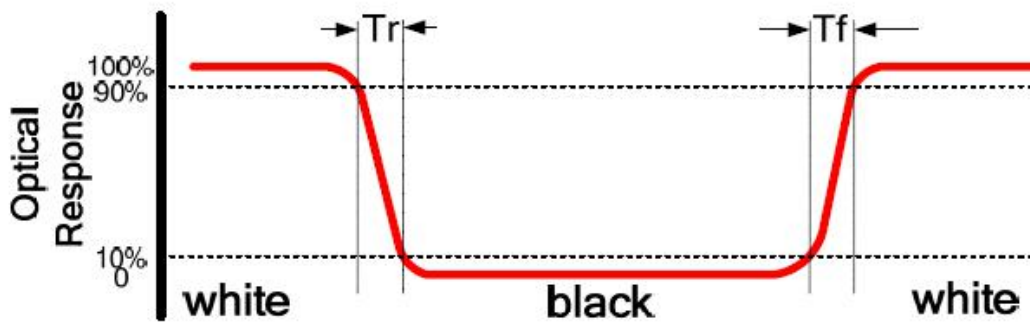


FIG.2. Measuring method for contrast ratio, surface luminance, luminance uniformity, CIE (x,y) chromaticity

Size : $S \leq 5"$ (see Figure a)

A : 5 mm B : 5 mm

H, V : Active area

Light spot size $\varnothing = 5\text{mm}$ (BM-5) or $\varnothing = 7.7\text{mm}$ (BM-7) 50cm distance or compatible distance from the LCD surface to detector lens.

test spot position : see Figure a.

measurement instrument : TOPCON's luminance meter BM-5 or BM-7 or compatible (see Figure c).

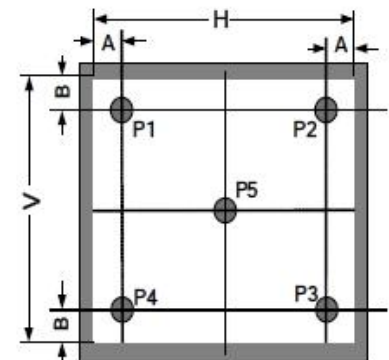


Figure a

Size : $5" < S \leq 12.3"$ (see Figure b)

H, V : Active area

Light spot size $\varnothing = 5\text{mm}$ (BM-5) or $\varnothing = 7.7\text{mm}$ (BM-7) 50cm distance or compatible distance from the LCD surface to detector lens.

test spot position : see Figure b.

measurement instrument : TOPCON's luminance meter BM-5 or BM-7 or compatible (see Figure c).

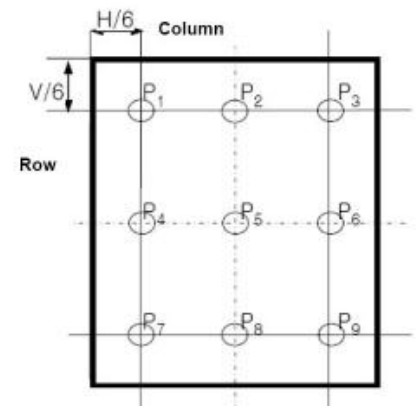


Figure b

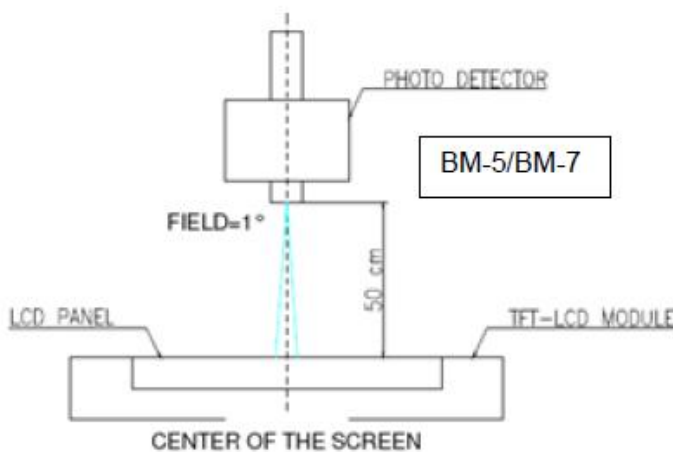
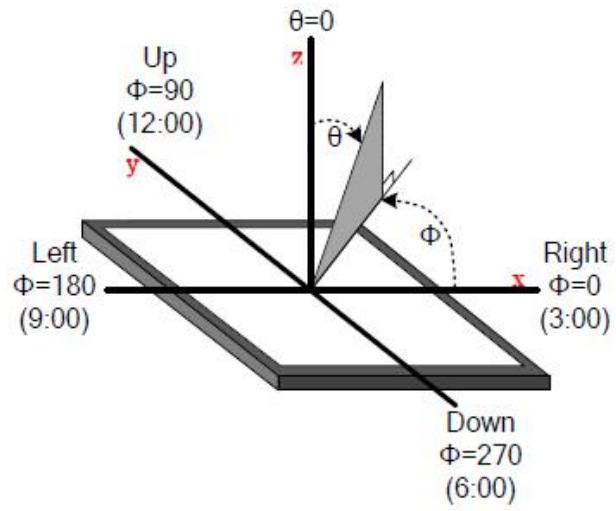


Figure c

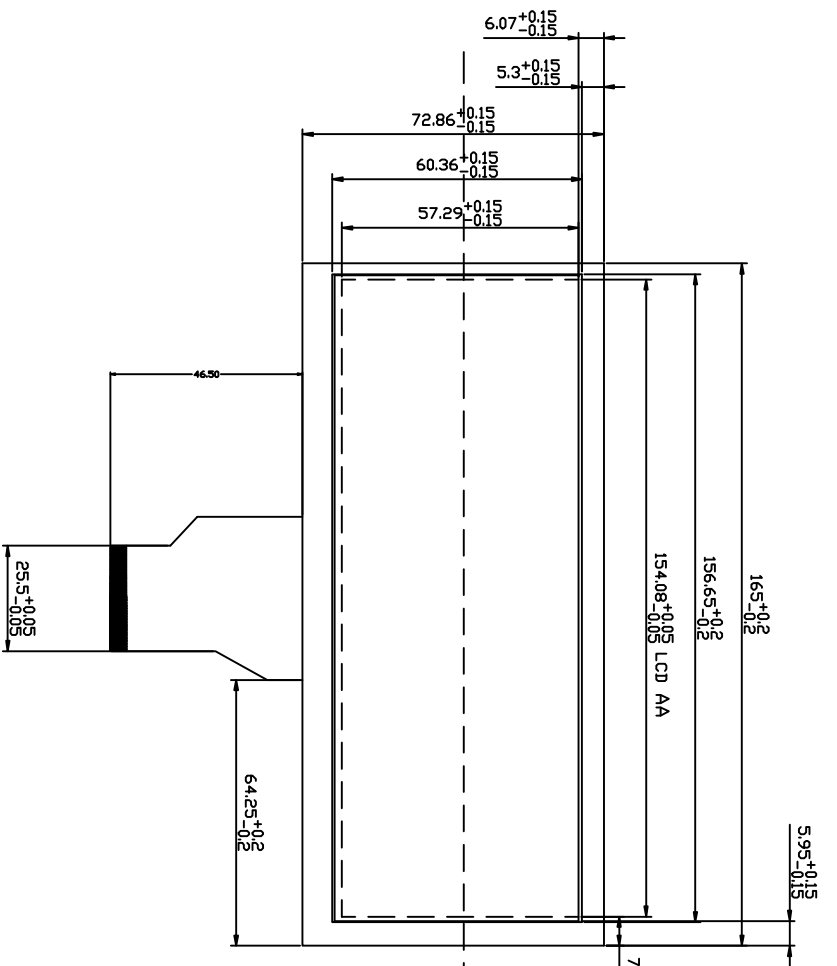
FIG.3. The definition of viewing angle



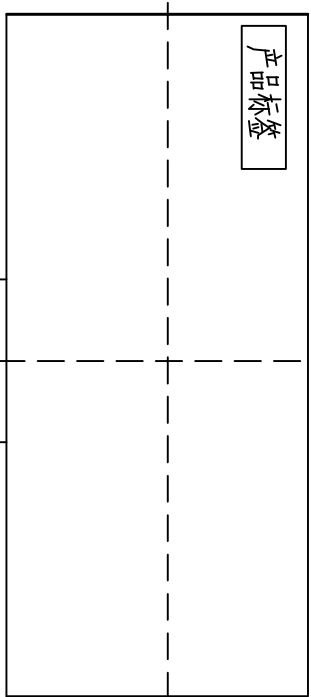
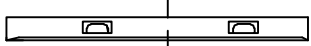
7. Environmental / Reliability Tests

No	Test Item	Condition	Remarks
1	High Temperature Operation	T _s = +70°C, 96hrs	Note 1 IEC60068-2-2, GB2423. 2-89
2	Low Temperature Operation	T _a = -20°C, 96hrs	Note 2 IEC60068-2-1 GB2423.1-89
3	High Temperature Storage	T _a = +80°C, 120hrs	IEC60068-2-2 GB2423. 2-89
4	Low Temperature Storage	T _a = -30°C, 120hrs	IEC60068-2-1 GB/T2423.1-89
5	High Temperature & Humidity Storage	T _a = +60°C, 90% RH max, 120 hours	IEC60068-2-3 GB/T2423.3-2006
6	Thermal Shock (Non-operation)	-20°C 30 min ~ +60°C 30 min Change time: 5min, 30 Cycle	Start with cold temperature, end with high temperature IEC60068-2-14, GB2423.22-87
7	Electro Discharge (Operation)	Static C=150pF, R=330 Ω, 5 points/panel Air:±8KV, 5 times; Contact: ±4KV, 5 times; (Environment: 15°C ~ 35°C, 30% ~ 60%, 86Kpa ~ 106Kpa)	IEC61000-4-2 GB/T17626.2-1998
8	Vibration (Non-operation)	Frequency range: 10~55Hz, Stroke: 1.mm Sweep: 10Hz~55Hz~10Hz 2 hours for each direction of X .Y. Z. (package condition)	IEC60068-2-6 GB/T2423.5-1995
9	Shock (Non-operation)	60G 6ms, ± X, ±Y , ± Z 3 times for each direction	IEC60068-2-27 GB/T2423.5-1995
10	Package Drop Test	Height: 80 cm, 1 corner, 3 edges, 6 surfaces	IEC60068-2-32 GB/T2423.8-1995

- Note: 1. T_s is the temperature of panel's surface.
 2. T_a is the ambient temperature of sample.
 3. The size of sample is 5pcs.



1. DISPLAY TYPE: 6.5,
 2. STOPAGE: -30~+80°
 3. OPERATING TEMP: -20~+70°
- ALCD IC: ILI6122 ILI5960



深圳市宇华微科技有限公司
YUHUA INTELLINOLOGY CO., LIMITED

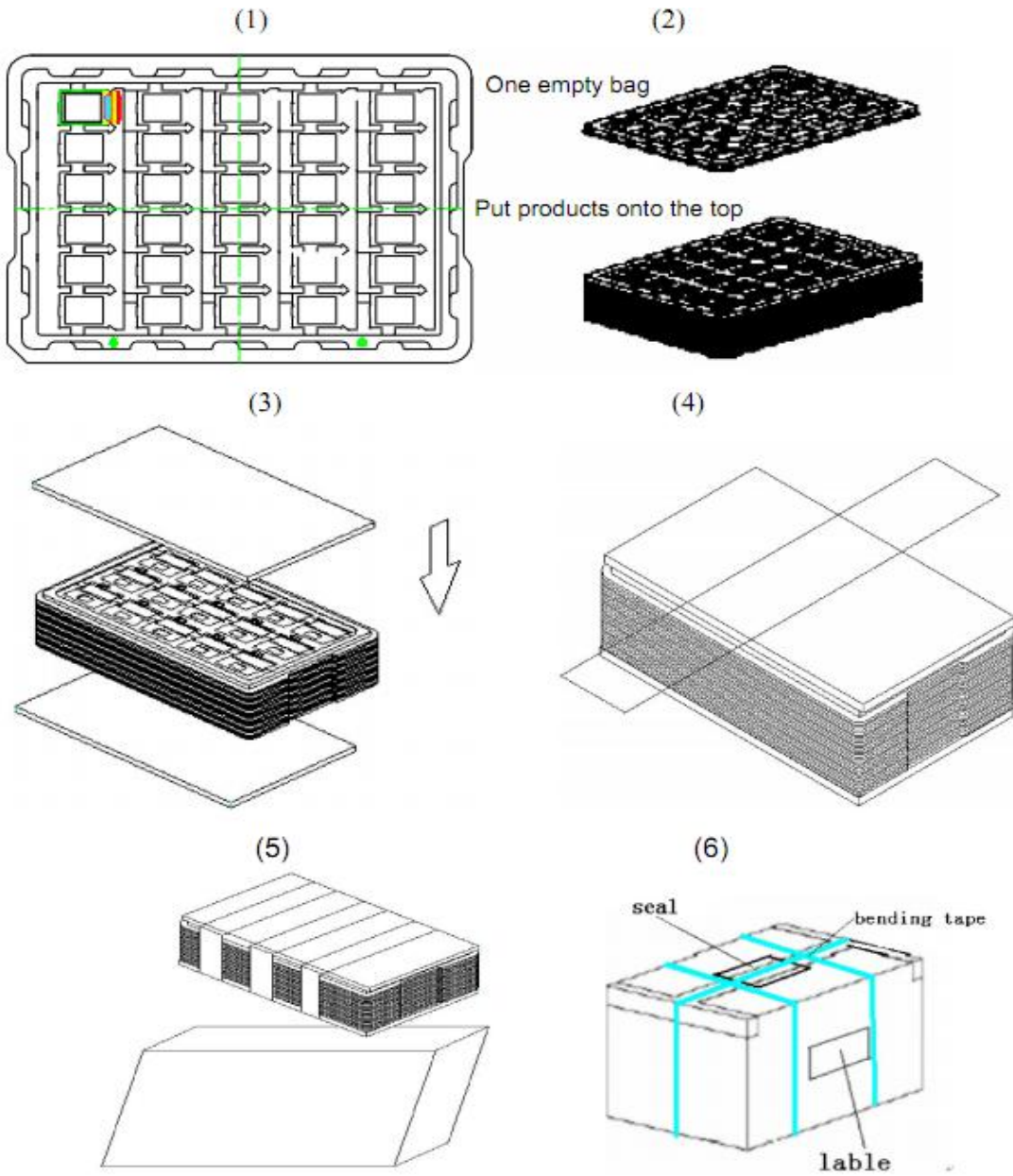
MODEL NUMBER :
YH065MDS001

CUSTOMER NO.:
DATE: 2017-05-11

Item(项目)	Standard(规格)	Spec(规格)	Unit	Condition
Main screen (主屏)	Resolution (分辨率)	400	dot	IF=180mA (背光亮度) 实际输出分辨率未确定
	Color (颜色)	75	dot	
	Coordinate (坐标)	80	dot	
	Contrast (对比度)	0.310	dot	
	Response Time (响应时间)	0.380	dot	
	Viewing Angle (视角)	8.6	dot	
	Operating Temperature (工作温度)	-20~+70° C		
	Storage Temperature (存储温度)	-20~+80° C		

背光成品图 (Design by: ATEON) (审核) Approval By: (日期) 2016.11.14 (页码) 1/1

9. Packing



1. Put module into tray cavity:
2. Tray stacking
3. Put 1 cardboard under the tray stack and 1 cardboard above:
4. Fix the cardboard to the tray stack with adhesive tape:
5. put the tray stack into carton.
6. Carton sealing with adhesive tape.

10. TFT-LCD Module Inspection Criteria

10.1 Scope

10.2 Incoming Inspection

The customer shall inspect the modules within twenty calendar days of the delivery date (the “inspection period”) at its own cost. The result of the inspection (acceptance or rejection) shall be recorded in writing, and a copy of this writing will be promptly sent to The seller, If the results of the inspecting from buyer does not send to the seller within twenty Calendar days of the delivery date. The modules shall be regards as acceptance. Should the customer fail to notify the seller within the inspection period, the buyers Right to reject the modules shall be lapsed and the modules shall be deemed to have Been accepted by the buyer

10.3 Inspection Sampling

- 3.1. Lot size: Quantity per shipment lot per model
- 3.2. Sampling type: Normal inspection, Single sampling
- 3.3. Inspection level: II
- 3.4. Sampling table: MIL-STD-105E
- 3.5. Acceptable quality level (AQL)
Major defect: AQL=0.65 Minor defect: AQL=1.50

10.4 Inspection Conditions

4.1 Ambient conditions:

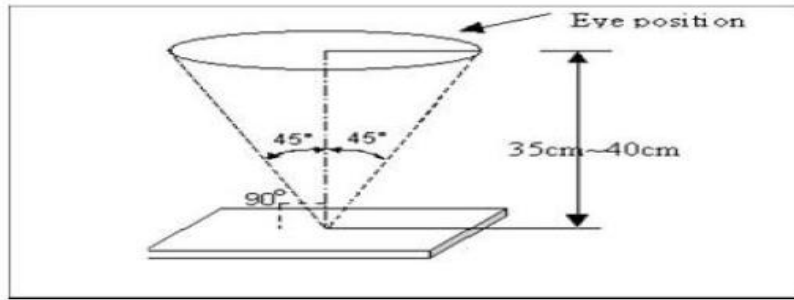
- a. Temperature: Room temperature $25 \pm 5^{\circ}\text{C}$
- b. Humidity: $(60 \pm 10) \% \text{RH}$
- c. Illumination: Single fluorescent lamp non-directive (300 to 700 Lux)

4.2 Viewing distance

The distance between the LCD and the inspector’ s eyes shall be at least 35 ± 5 cm.

4.3 Viewing Angle

U/D: $45^{\circ} / 45^{\circ}$, L/R: $45^{\circ} / 45^{\circ}$



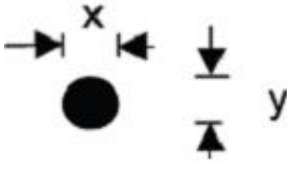
10.5 Inspection Criteria

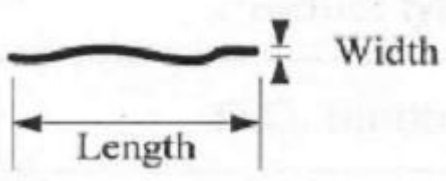
Defects are classified as major defects and minor defects according to the degree of Defectiveness defined herein.

10.5.1 Major defect

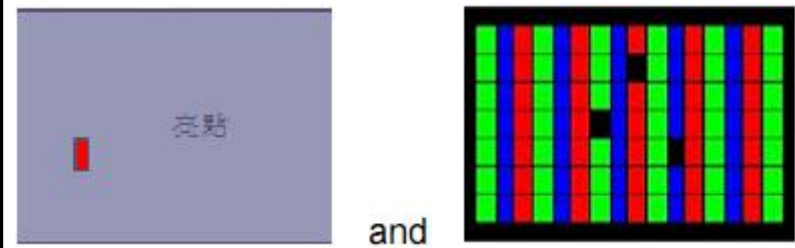
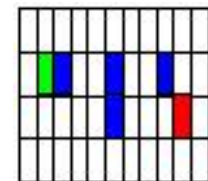
Item No	Items to be inspected	Inspection Standard
5.1.1	All functional defects	1) No display 2) Display abnormally 3) Short circuit 4) line defect
5.1.2	Missing	Missing function component
5.1.3	Crack	Glass Crack

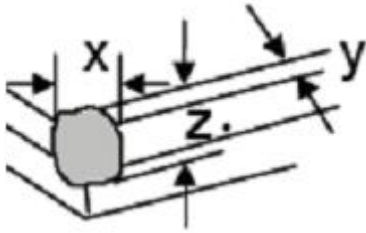
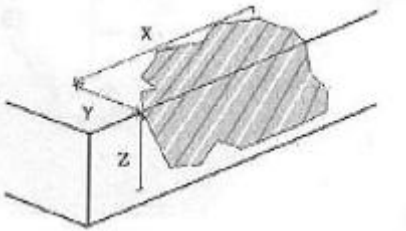
10.5.2 Minor defect

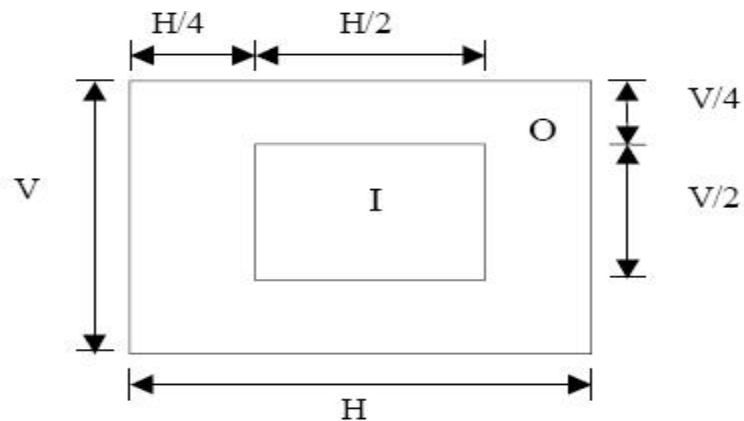
Item No	Items to be inspected	Inspection standard	
5.2.1	Spot Defect Including Black spot White spot Pinhole Foreign particle Polarizer dirt	For dark/white spot is defined $\varphi = (x+y) / 2$ 	
		Size φ (mm)	Acceptable Quantity
		$\varphi \leq 0.1$	Ignore
		$0.1 < \varphi \leq 0.2$	N \leq 3
		$0.2 < \varphi \leq 0.3$	N \leq 2
		$0.3 < \varphi$	Not allowed

5.2.2	Line Defect Including Black line White line Scratch	Define:	
			
		Width(mm) Length(mm)	Acceptable Quantity
		$W \leq 0.03$	Ignore
		$0.03 < W \leq 0.05, L \leq 3.0$	$N \leq 2$
		$0.05 < W \leq 0.08, L \leq 3.0$	$N \leq 1$
$0.08 < W$	Not allowed		

5.2.3	Polarizer Dent/Bubble	Size φ (mm)	Acceptable Quantity
		$\varphi \leq 0.1$	Ignore
		$0.1 < \varphi \leq 0.2$	$N \leq 3$
		$0.2 < \varphi \leq 0.3$	$N \leq 2$
		$0.3 < \varphi$	Not allowed

5.2.4	Electrical Dot Defect	Bright and Black dot define:		
				
		and		
				
		Two Adjacent Dot		
		Inspection pattern: Full white , Full black , Red , green and blue screens		
		Item	Acceptable Quantity	
	I	O	Total	
Black dot defect	2	4	5	
Bright dot defect	1	3	3	
Total Dot	2	5	6	
3% Bright Dot is allowed				

5.2.5	Glass defect	 <p>1. Corner Fragment:</p>	
		Size(mm)	Acceptable Quantity
		$X \leq 3\text{mm}$ $Y \leq 1\text{mm}$ $Z \leq T$	Ignore T: Glass thickness X: Length Y: Width Z: thickness
		<p>2. Side Fragment:</p> 	
		Size(mm)	Acceptable Quantity
$X \leq 5.0\text{mm}$ $Y \leq 1\text{mm}$ $Z \leq T$	T: Glass thickness X: Length Y: Width Z: thickness		



I area & O area

- Note:
- 1). Dot defect is defined as the defective area of the dot area is larger than 50% of the dot area.
 - 2). The distance between two bright dot defects (red, green, blue, and white) should be larger than 15mm.
 - 3). The distance between black dot defects or black and bright dot defects should be more than 5mm apart.
 - 4). Polarizer bubble is defined as the bubble appears on active display area. The defect of polarizer bubble shall be ignored if the polarizer bubble appears on the outside of active display area.

10.6 Mechanics specification

As for the outside dimension, weight of the modules, please refer to product specification
 For more details

11. Precautions for Use of LCD modules

11.1 Handling Precautions

11.1.1. The display panel is made of glass. Do not subject it to a mechanical shock by dropping it from a high place, etc.

11.1.2. If the display panel is damaged and the liquid crystal substance inside it leaks out, be sure not to get any in your mouth, if the substance comes into contact with your skin or clothes, promptly wash it off using soap and water.

11.1.3. Do not apply excessive force to the display surface or the adjoining areas since this may cause the color tone to vary.

11.1.4. The polarizer covering the display surface of the LCD module is soft and easily scratched. Handle this polarizer carefully.

11.1.5. If the display surface is contaminated, breathe on the surface and gently wipe it with a soft dry cloth. If still not completely clear, moisten cloth with one of the following solvents:

- Isopropyl alcohol
- Ethyl alcohol

Solvents other than those mentioned above may damage the polarizer. Especially, do not use the following:

- Water
- Ketene
- Aromatic solvents

11.1.6. Do not attempt to disassemble the LCD Module.

11.1.7. If the logic circuit power is off, do not apply the input signals.

11.1.8. To prevent destruction of the elements by static electricity, be careful to maintain an optimum work environment.

11.1.8.1. Be sure to ground the body when handling the LCD Modules.

11.1.8.2. Tools required for assembly, such as soldering irons, must be properly ground.

11.1.8.3. To reduce the amount of static electricity generated, do not conduct assembly and other work under dry conditions.

11.1.8.4. The LCD Module is coated with a film to protect the display surface. Be care when peeling off this protective film since static electricity may be generated.

11.2 Storage Precautions

12.2.1. When storing the LCD modules, avoid exposure to direct sunlight or to the light of fluorescent lamps.

12.2.2. The LCD modules should be stored under the storage temperature range. If the LCD modules will be stored for a long time, the recommend condition is:

Temperature : 0°C ~ 40°C Relatively humidity: ≤80%

12.2.3. The LCD modules should be stored in the room without acid, alkali and harmful gas.

11.3 Transportation Precautions

The LCD modules should be no falling and violent shocking during transportation, and also should avoid excessive press, water, damp and sunshine.