ANSHAN YES OPTOELECTRONICS DISPLAY CO.,LTD

YS-CJ-222

SPECIFICATIONS
FOR LIQUID CRYSTAL DISPLAY

Product NO: YDDC3240ABTRP

Customer: COMPEL

Checked	Approved	Department
XingQian	**LiCuixin**	

Customer Approval	☐ Accept ☐ Reject Comment: Approved by:

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Revision LIST

Version	Date	Description
1.0	2010-3-8	Initial version

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Ⅰ.Features

The features of LCD are as follows

Display mode:	TN Reflective Positive		Viewing Direction	6O'clock
Operation Voltage:	3.5		Connector	pin
Driving Method	DUTY	1/3	BAIS	1/3

Ⅱ. Mechanical Specifications

No.	Item	Specification	Unit
1	LCD Size	(70.0L)X(25.0W)X(2.85H)	mm
2	Viewing Area	(64.0L)X(14.5W)	mm
3	End Seal	(8.0L)*(1.0T)	mm
4	Remark Enclosed Drawing		

ⅢAbsolute maximum rating

NO.	Item	Rating	Unit	Conditions
1	Maximum AC applied voltage	10	V	1 hour
2	Maximum DC applied voltage	2.5	V	100 hours
3	Operating Temperature Range	-30~80	℃	No condensation
4	Storage Temperature Range	-40~85	℃	No condensation

Ⅳ. **Technical Specification**

1. Electro-Optical Characteristics

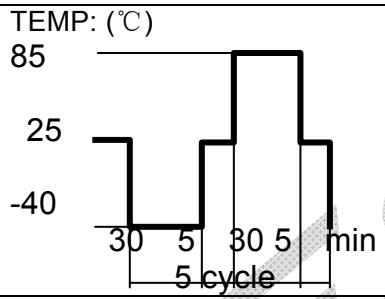
Measuring Condition: TEMP=(23±3)℃, HUM=(70±5)%RH

NO	Item		Symbol	Min	Type	Max	Unit
1	Operating Voltage		Vop	3.3	3.5	3.7	V
2	Operating Frequency		F		64		Hz
3	Current Consumption		Is				μA
4	Response Time	Rising Time	Tr		60		mS
		Decay Time	Td		48		
5	Contrast Ratio		CR	2	3		
6	Viewing Angle (CR≥2)	12H φ=90°	θ1		5		deg
		6H φ=270°	θ2		57		
		3H φ=0°	θ3		55		
		9H φ=180°	θ4		55		
7	Threshold Voltage		Vth		1.68		V

2. Life

Condition	Hour
Temperature:25℃ Humidity:65%RH	50,000Hours

3 .Reliability Test

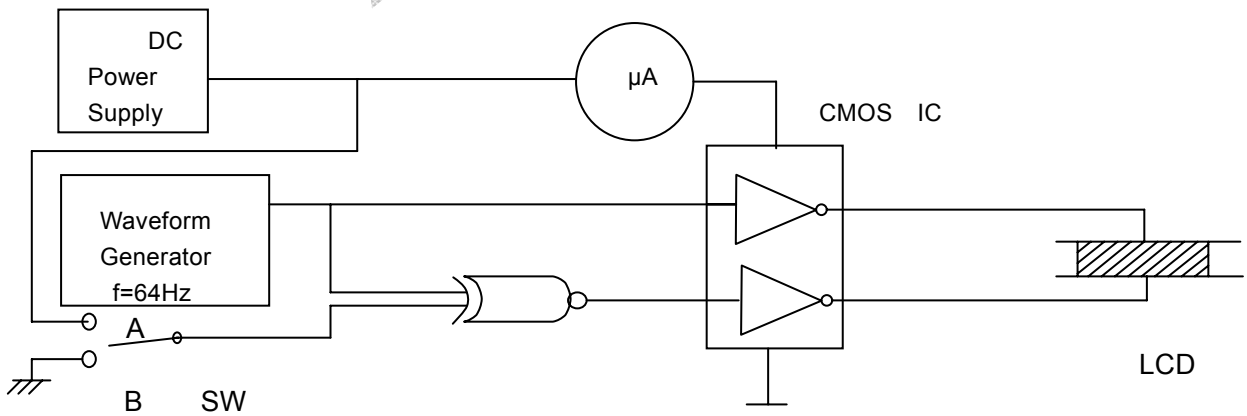
No.	Items	Test condition	Test result
1	Low temperature operating	Keep in -30±2℃/96hours Surrounding temperature, then storage at normal condition 24hours	Inspection after 24hours storage at room temperature, the sample shall be free from defects: 1: Background colour 2. bubble. 3. Lc leakage 4. mechanical disrepair/no good. 5. Current consumption 6. short / open 7 crosstalk
2	High temperature operating	Keep in 80±2℃/96hours Surrounding temperature, then storage at normal condition 24hours	
3	Low temperature storage	Keep in -40±2℃/96hours Surrounding temperature, then storage at normal condition 24hours	
4	High temperature storage	Keep in 85±2℃/96hours Surrounding temperature, then storage at normal condition 24hours	
5	High temperature high humidity storage	Keep in 40±2℃/90%RH duration for 96hours Surrounding temperature, then storage at normal condition 24hours	
6	Temperature cycling test		

Remark:
1. The test samples should be applied to only one test item.
2. Sample size for each item is3-10pcs.

Ⅴ. Measuring Method and Equipment

1. Current Consumption Measuring

(1) Equipment



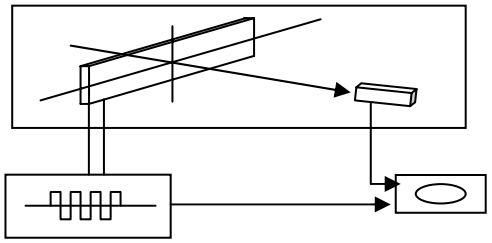
(2) Condition

Operating Frequency: 64Hz

Operating Voltage (rms): Selected Voltage

2. Threshold Voltage and Response Time Measuring

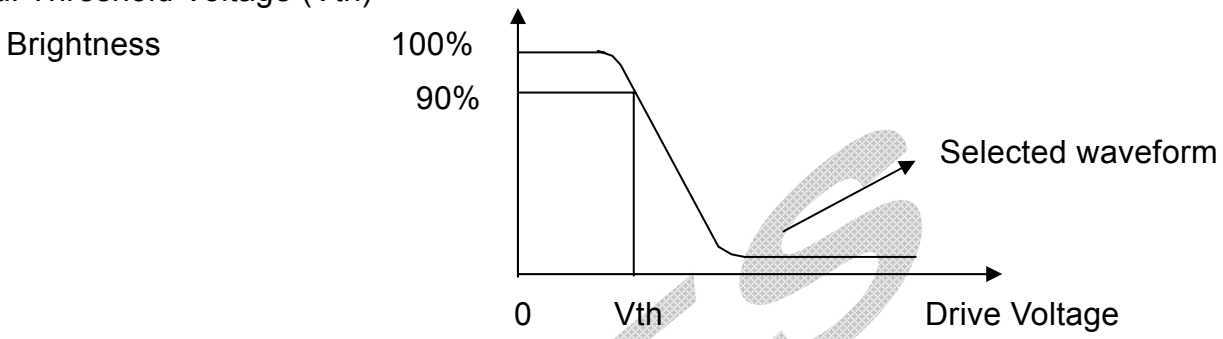
(1) Equipment



waveform Generator Oscilloscope

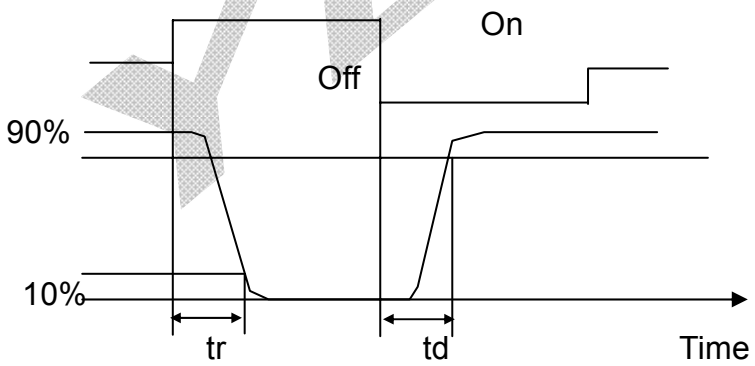
(2) Definition

a. Threshold Voltage (Vth)



Vth: the voltage (Vop) which the brightness of segment indicates 10%,of saturated value on conditions.

b. Response Time

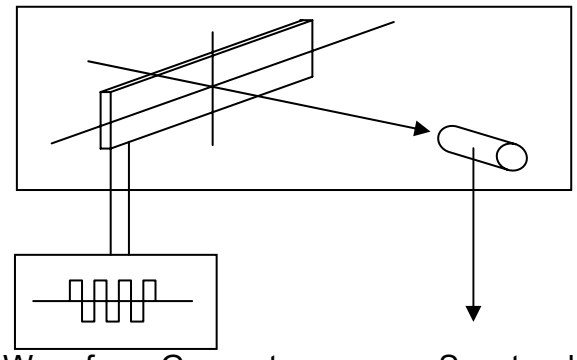


TR : THE TIME REQUIRED WHICH THE BRIGHTNESS OF SEGMENT BECOMES 90% FROM 0% WHEN WAVEFORM IS SWITCHED TO SELECTED ONE FROM NON-SELECTED ONE. : Θ = 0。, Φ = 0。, 64HZ, 0,25℃ VOP =3.5V

TD : THE TIME REQUIRED WHICH THE BRIGHTNESS OF SEGMENT BECOMES 10% FROM 100%WHEN WAVEFORM IS SWITCHED TO NON-SELECTED ONE FROM SELECTED ONE. : Θ = 0。, Φ = 0。, 64HZ, 0,25℃ VOP = 3.5V

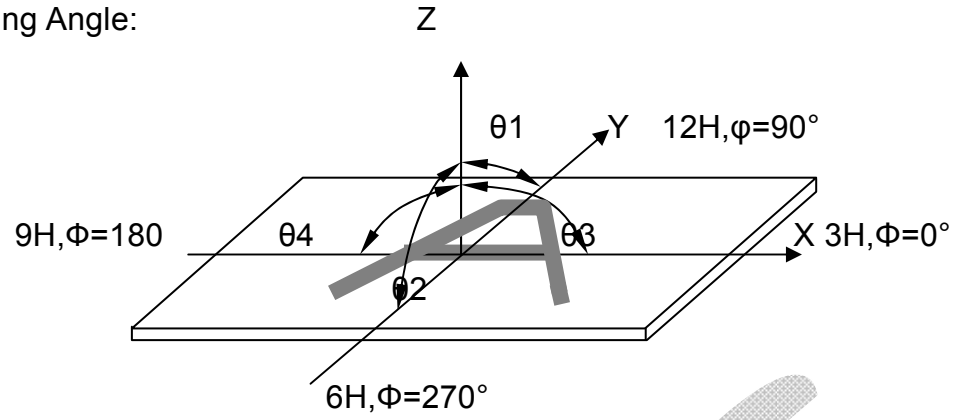
3. Contrast Measuring

(1) Equipment



(2) Definition:

a.Viewing Angle:



b. Contrast Ratio (positive)

$$CR = \frac{\text{Brightness of non-selected wave-form}}{\text{Brightness of selected wave-form}}$$

Ⅵ. Standard Specifications For Product Quality

1. Manner of test:

1.1 The test must be under 40W fluorescent light, and the distance of view must be at 30cm.

1.2 The test direction is based on around -10°- 30° of Vertical line.

2.Quality specification

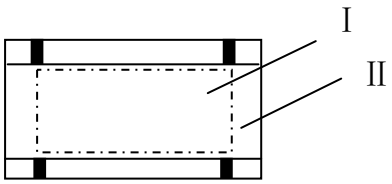
It shall be based on GB2828-87, Apply level II, Normal inspection by single sampling.

	IETM	CHECK LEVEL	AQL
MAJOR (MA)	1.LIQUID CRYSTAL LEAKAGE 2.WRONG POLARIZER 3.OUTSIDE DIMENSION 4.SEGMENT MISSING 5.SEGMENT SHORT	Ⅱ	0.25
MINOR (MI)	1.BLACK SPOTS OR WHITE SPOTS. 2.FOREIGN SUBSTANCE, 3.WHITE SPOTS, 4.PINHOLE,SEGMENT 5.DEFORMATION SCRATCHS(GLASS & POLARIZER), 6.SEGMENT DEFECT, 7.AIR BUBBLES BETWEEN GLASS & POLARIZER, 8.COLOR VARIATION,GLASS CHIPS, 9.OTHER VISUAL DEFECTS.	Ⅱ	0.65

3. Definition of area:

3.1 Ⅰ area: viewing area

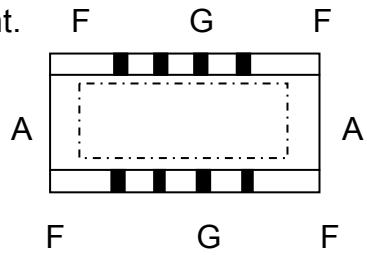
Ⅱ area: outside viewing area



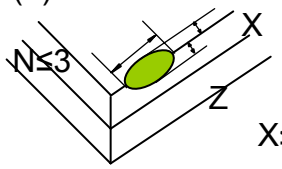
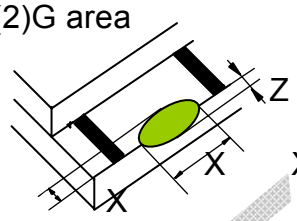
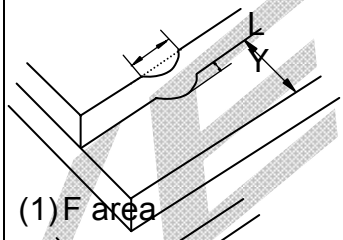
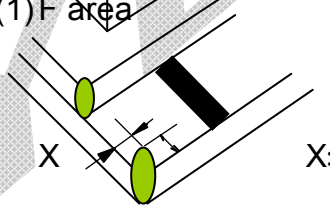
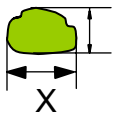
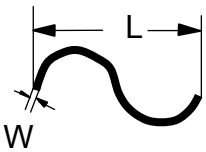
3.2 A area: The glass area outside sealant.

G area: Electrode pad area.

F area: Without electrode pad area.

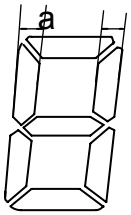


4.Standard of appearance test: (unit: mm)

№	Items	Criterion	Checking manner
1	Substrate crack X: defect Length Y: defect Width Z: defect Depth T: glass Thickness N: defect QTY L: Connector Width	(1) A area  X Y X≤2.0 Y≤0.5 Z≥T/2 N≤3 Z X≤2.0 Y≤1.0 Z≤T/2 N≤3 X≤0 .5 Y≤0.5 Z≤T/3 No check (2)G area  X≤2.0 Y≤0.5 Z≤T/2 N≤2 Y  X≤2.0 Y≤1/4 or X≤2.0 Y≤1.0 N≤2 (1) F area  X≤2.0 Y≤2 Z≤T N≤3	checking with eyes
2	Black spot white spot dust polarizer scratch, D=(X+Y)/2	(1)  0.15<D≤0.2 N≤1 0.1<D≤0.15 N≤2 D≤0.1 No check (2)  L≤2.0 W≤0.03 N≤1	Checking on the table with light and polarizer and checking with eyes directly.

№	Items	Criterion	Checking manner
3	Polarizer Bubble	D≤0.15 No check 0.15<D≤0.4 N≤2	Checking on the table with light and polarizer, and checking with eyes directly
4	Rainbow Color	Allow tiny rainbow Allow 5% color contrast	Checking on the table with light and polarizer, And checking with eyes directly
5	Sealant	1. Dimension accord design require 2. Immerge depth（d）：1/5D≤d≤D （D：seal design depth）	Checking with eyes
6	Polarizer or pad appearance	No dirty	Checking with eyes

5 Standard of display test

№	Items	Criterion	Checking manner
1	Pin hole D=(A+B)/2 W: segment width	 W≤0.4 D≤0.20 And D≤1/2W N≤1 W>0.4 D≤0.25 And D≤1/3W N≤2 D≤0.05 No check	Checking at the display state
2	Different width of segment	 |a-b|<0.25 or |a-b|≤1/4W No check	Checking at the display state

Ⅶ. Application Notes:

1. Safety Instructions

The liquid in the LCD should not be swallowed or touched. If it accidentally gets on your hands, wash them with water.

2. Handling Instructions

The LCD panel is a glass product developed through precision processing and special orientation treatment. If pressure is applied to the panel, therefore orientation may be disturbed, making it difficult to return to its original condition, it is apt to crack or break easily if it is dropped or hit to a external shock.

3. Mounting Instructions

a. When connecting a LCD panel to circuit board, it is recommended to use a rubber connector or flexible connector. Direct soldering or mechanical connection is not possible, the pin connected type LCD permits soldering of pins.

b. When connecting a LCD panel on a circuit, it must be taken care and not apply excessive force on the display surface of the panel with a fingertip, etc., otherwise, it may cause an operating failure or shorten the lifetime of the panel.

c. Voltage of driving voltage higher than the specified voltage will reduce the lifetime of the liquid crystal display panel.

d. LCD panels should be handled with care during shipment. If, however, the terminals are contaminated, wipe off with a alcohol.

e. The polarizer must be handled carefully, because it is soft and apt to suffer damage. The protective panel is attached to the polarizer to avoid damage and contamination, it should be removed just before use as possible.

f. Use a dry, soft cloth to clean the polarizer, if contamination persists, wipe it off with a small amount of petroleum benzine. Avoid using an organic solvent as much as possible.

g. When attaching with the heat seal or anisotropical conductive film wipe off with alcohol before use.

4 Storage Instructions

a. Avoid storage in high temperature and high humidity if long term storage is required keep the panels at a temperature off 10 to 35℃ and at a relative humidity of 65% or less.

b. The LCD unit should be stored in dark place, do not expose it to direct sunlight or fluorescent lamps.

c. Note that the presence of waterdrops or dew in the LCD panel may deteriorate the polarizer or corrode the electrode.

5. This product can match ROHS Requirements.

Ⅷ. Engineering Drawing

CUSTOMER'S APPROVED:	DATE:	PAGE: 1/2