TFT DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.

華凌光電股份有限公司

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SPECIFICATION

CUSTOMER : _____

MODULE NO.: WF35-320240YD#BPW0-FC

APPROVED BY: **(FOR CUSTOMER USE ONLY)**	**PCB VERSION:** **DATA:**

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
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ISSUED DATE: 2024/10/21			

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Summary

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

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General Specifications

Item	Dimension	Unit
Size	3.5	inch
Dot Matrix	320 x RGBx240(TFT)	dots
Module dimension	76.84(W) x 63.84(H) x 3.27(D)	mm
Active area	70.08 x 52.56	mm
Dot pitch	0.073 x 0.219	mm
LCD type	TFT, Normally black, Transmissive	
View Direction	Wide View	
Driver IC	ST7272A or equivalent	
Interface	24-bit RGB	
Aspect Ratio	4:3	
Backlight Type	LED,Normally White	
With /Without TP	Without TP	
Surface	Glare	

*Color tone slight changed by temperature and driving voltage.

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Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-30	—	+85	℃
Storage Temperature	TST	-40	—	+85	℃

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

1. Temp. □60℃, 90% RH MAX. Temp.＞60℃, Absolute humidity shall be less than 90% RH at 60℃

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Electrical Characteristics

Operating conditions:

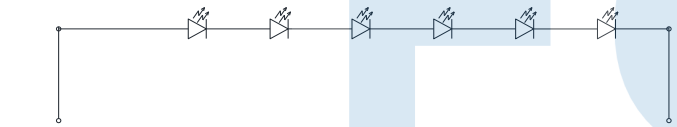
Item	Symbol	Min	Typ	Max	Unit	Remark
Supply Voltage For LCM	VCC	3.0	3.3	3.6	V	
Supply Current For LCM	ICC	—	20	30	mA	Note 1

Note 1 : This value is test for VCC =3.3V , Ta=25 ℃ only

LED driving conditions

Item	Symbol	Min	Typ	Max	Unit	Remark
LED current		-	20	-	mA	
Power Consumption		324	384	408	mW	
LED voltage	VLED+	16.2	19.2	20.4	V	Note 1
LED Life Time		50,000	-	-	Hr	Note 2,3,4

Note 1 : There are 1 Groups LED



CIRCUIT DIAGRAM

Note 2 : Ta = 25 ℃
Note 3 : Brightness to be decreased to 50% of the initial value
Note 4 : The single LED lamp case

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Optical Characteristics

Item		Symbol	Condition.	Min	Typ.	Max.	Unit	Remark
Response time		Tr+ Tf	θ=0°、Φ=0°	-	30	40	ms	Note 3
Contrast ratio		CR	At optimized viewing angle	640	800	-	-	Note 4
Color Chromaticity	White	Wx	θ=0°、Φ=0	0.267	0.317	0.367	-	Note 2,6,7
		Wy		0.289	0.339	0.389	-	
Viewing angle	Hor.	ΘR	CR≧10	70	80	-	Deg.	Note 1
		ΘL		70	80	-		
	Ver.	ΦT		70	80	-		
		ΦB		70	80	-		
Brightness		-	-	400	500	-	cd/m^2	Center of display
Uniformity		(U)	-	75	-	-	%	Note 5

Ta=25±2℃, IL=20mA

Note 1: Definition of viewing angle range

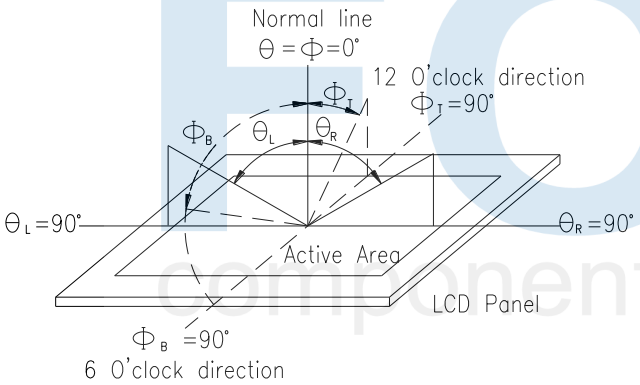


Fig. 8.1. Definition of viewing angle

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.

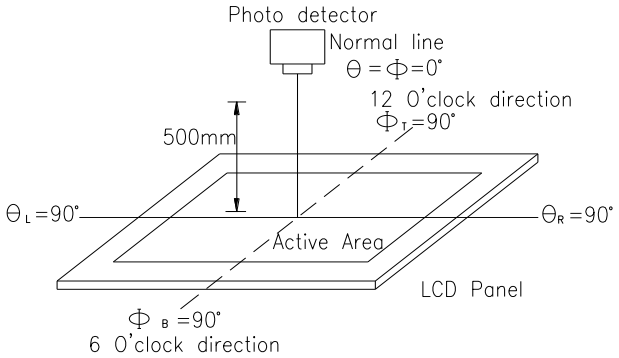


Fig. 8.2. Optical measurement system setup

Interface

LCM PIN Definition

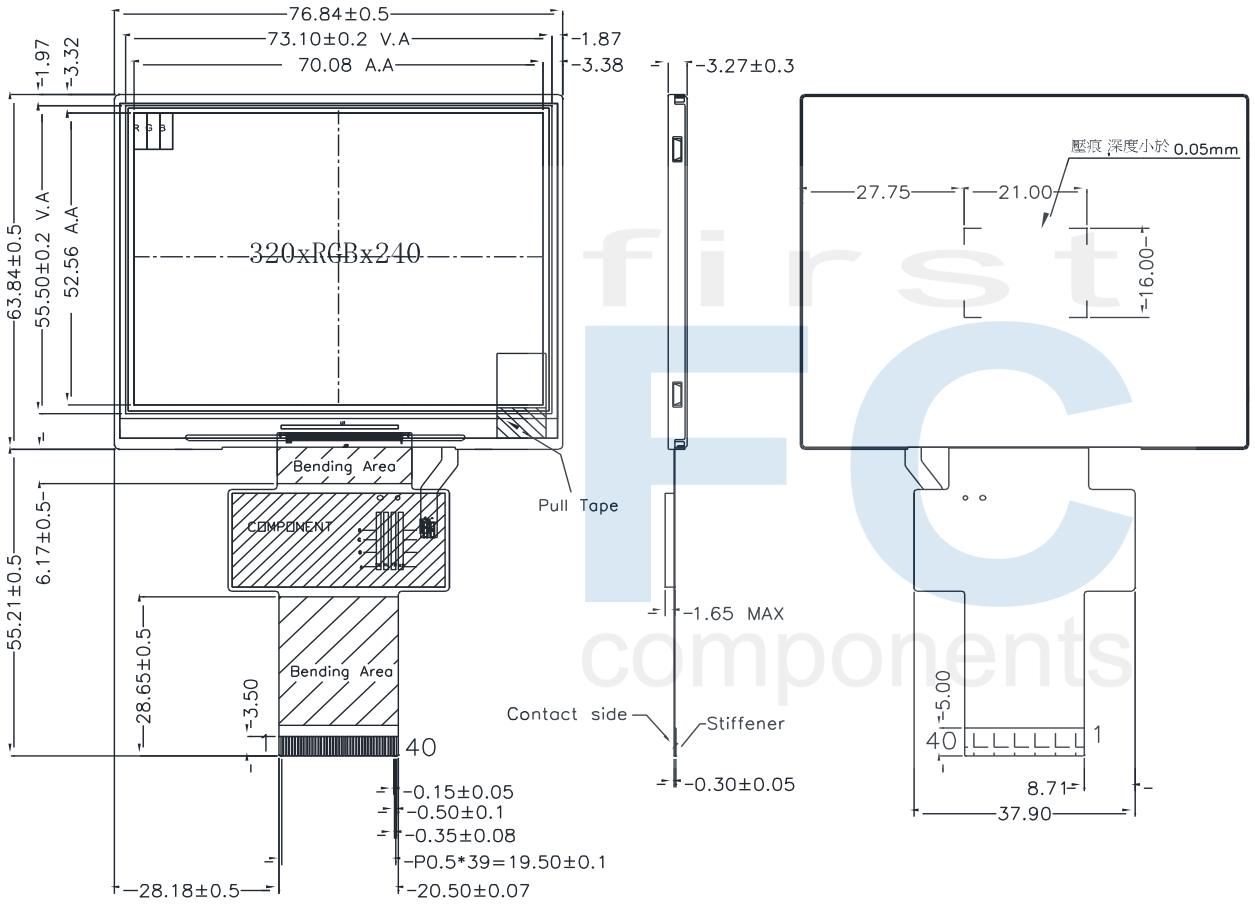
Pin No.	Symbol	Function	Remark
1	VLED-	Power for LED backlight cathode	
2	VLED+	Power for LED backlight anode	
3	GND	Ground	
4	VCC	Power Supply	
5	R0	Data bus	
6	R1	Data bus	
7	R2	Data bus	
8	R3	Data bus	
9	R4	Data bus	
10	R5	Data bus	
11	R6	Data bus	
12	R7	Data bus	
13	G0	Data bus	
14	G1	Data bus	
15	G2	Data bus	
16	G3	Data bus	
17	G4	Data bus	
18	G5	Data bus	
19	G6	Data bus	
20	G7	Data bus	
21	B0	Data bus	
22	B1	Data bus	
23	B2	Data bus	

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24	B3	Data bus	
25	B4	Data bus	
26	B5	Data bus	
27	B6	Data bus	
28	B7	Data bus	
29	GND	Ground	
30	DCLK	Dot-clock signal and oscillator source	
31	NC	No connect	
32	HSYNC	Horizontal sync signal, default is negative polarity.	
33	VSYNC	Vertical sync signal, default is negative polarity.	
34	DE	Data input enable. Display access is enabled when DE is “H”.	
35	NC	No connect	
36	/RESET	Hardware reset	
37-40	NC	No connect	

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Contour Drawing



PIN NO	SYMBOL	PIN NO	SYMBOL
1	VLED-	21	B0
2	VLED+	22	B1
3	GND	23	B2
4	VCC	24	B3
5	R0	25	B4
6	R1	26	B5
7	R2	27	B6
8	R3	28	B7
9	R4	29	GND
10	R5	30	DCLK
11	R6	31	NC
12	R7	32	Hsync
13	G0	33	Vsync
14	G1	34	DE
15	G2	35	NC
16	G3	36	/RESET
17	G4	37	NC
18	G5	38	NC
19	G6	39	NC
20	G7	40	NC

The non-specified tolerance of dimension is ±0.3mm.

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