TFT DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

Represented by:

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FIRST Components s.r.l.
www.first-components.com
sales@first-components.com
+39 0332 1888005

Winstar Display Co., LTD
華凌光電股份有限公司

SPECIFICATION

CUSTOMER : _____

MODULE NO.: WF50-7201280DM#BP0-FC

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

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
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ISSUED DATE: 2024/05/22			

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Winstar Display Co., LTD 華凌光電股份有限公司	MODLE NO：
RECORDS OF REVISION	**DOC. FIRST ISSUE**

VERSION	DATE	REVISED PAGE NO.	**SUMMARY**
0	2024/05/22		First issue

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2.General Specifications

Item	Dimension	Unit
Size	5.0	inch
Dot Matrix	720× 3(RGB) ×1280	dots
Module dimension	68.4 (W) × 122.7 (H) ×4.6	mm
Active area	62.1 (W) × 110.4 (H)	mm
Pixel pitch	0.08625(W) ×0.08625(H)	mm
LCD type	TFT, Normally Black, Transmissive	
Viewing angle	80/80/80/80	
TFT Drive IC	ILI9881C or Equivalent	
TFT Interface	4-Lanes MIPI	
Aspect Ratio	16:9	
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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3.Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-20	—	+70	℃
Storage Temperature	TST	-30	—	+80	℃

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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4.Electrical Characteristics

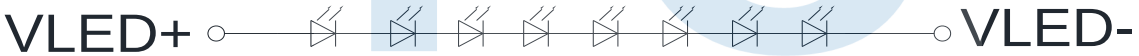
5.1. Typical Operation Conditions

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Power supply for analog circuit	VCI	2.5	3.3	3.6	V	
Power supply for logic circuit	IOVCC	1.65	1.8	3.6	V	
Current for Driver	IDD	-	44	-	mA	VDD=3.3V

5.2. Backlight Driving Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
LED current	ILED	-	40	-	mA	
LED voltage	VLED+	20.8	22.4	23.2	V	Note 1
LED Life Time		50,000	-	-	Hr	Note 2,3,4

Note 1 : There are 1 Groups LED



Back Light Circuit

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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5.Optical Characteristics

Item		Symbol	Condition.	Min	Typ.	Max.	Unit	Remark
Response time		Tr	θ=0°、Φ=0°	-	10	15	.ms	Note 3
		Tf		-	20	25	.ms	
Contrast ratio		CR	At optimized viewing angle	640	800	-	-	Note 4
Color Chromaticity	White	Wx	θ=0°、Φ=0	0.26	0.31	0.36		Note 2,6,7
		Wy		0.28	0.33	0.38		
Viewing angle	Hor.	ΘR	CR□10	-	80	-	Deg.	Note 1
		ΘL		-	80	-		
	Ver.	ΦT		-	80	-		
		ΦB		-	80	-		
Brightness		-	-	500	600	-	cd/m2	Center of display
Uniformity		(U)	-	75	-	-	%	Note 5

Ta=25±2℃

Note 1: Definition of viewing angle range

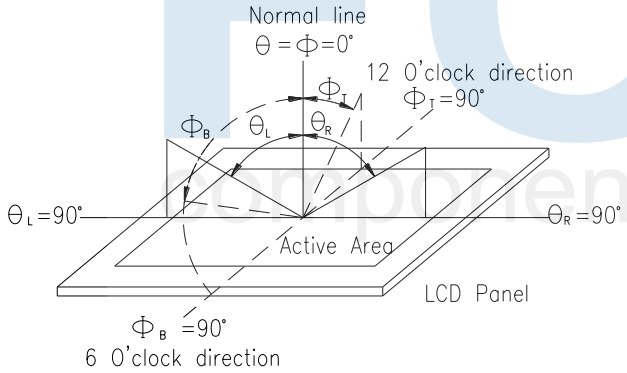


Fig. 9.1. Definition of viewing angle

Note 2: Test equipment setup:

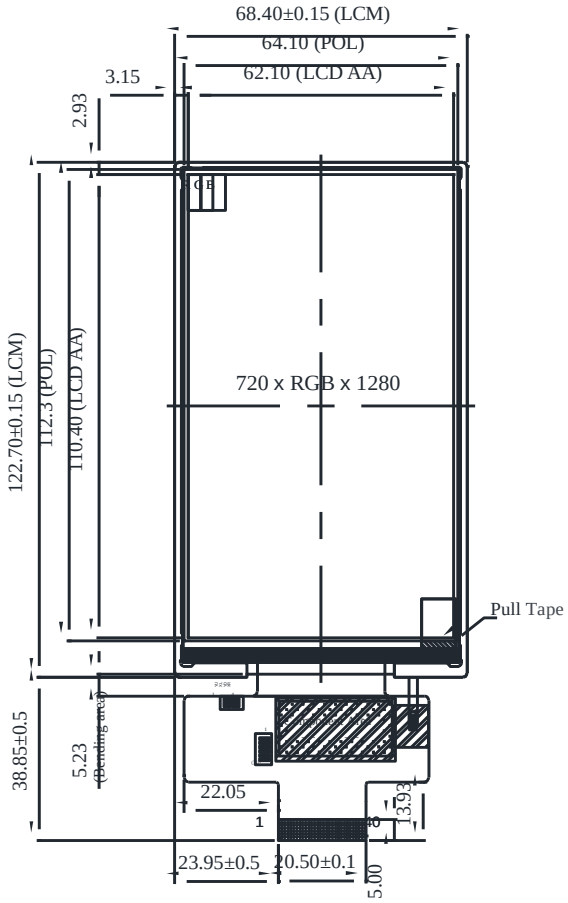
After stabilizing and leaving the panel alone at a driven temperature for 10 minutes, the measurement should be executed. Measurement should be executed in a stable, windless, and dark room. Optical specifications are measured by Topcon BM-7or BM-5 luminance meter 1.0° field of view at a distance of 50cm and normal direction.

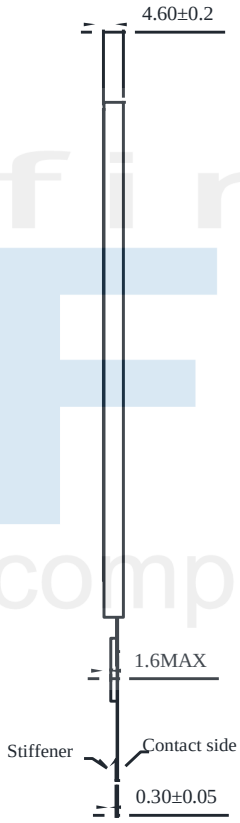
6. Interface

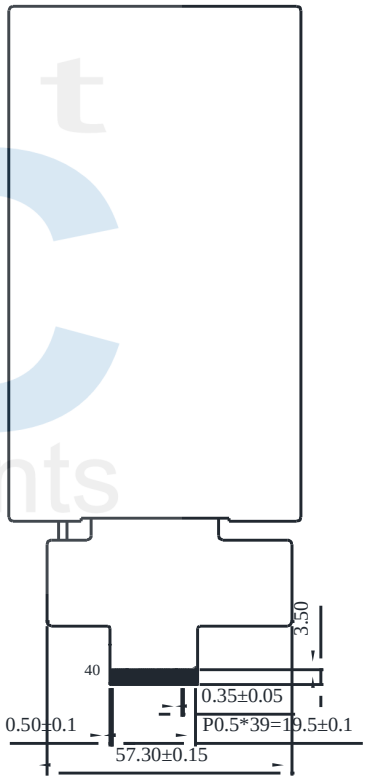
10.1. LCM PIN Definition

Pin	Symbol	Function	Remark
1-9	NC	No connection	
10-11	VCI	Power supply for analog circuits. Connect to an external power supply of 2.5V to 3.6V	
12-13	NC	No connection	
14	RESET	The external reset input Initializes the chip with a low input. Be sure to execute a power-on reset after supplying power. Fix to VDDI level when not in use.	
15	TE	Tearing effect output pin. Leave the pin open when not in use.	
16	NC	No connection	
17-18	GND	Power ground	
19-20	IOVCC	Power supply for analog circuits. Connect to an external power supply of 1.65V to 3.6V	
21	GND	Power ground	
22	D3P	MIPI DSI differential data pair. (Data lane 3)	
23	D3N		
24	GND	Power ground	
25	D2P	MIPI DSI differential data pair. (Data lane 2)	
26	D2N		
27	GND	Power ground	
28	CLKP	MIPI DSI differential clock pair	
29	CLKN		
30	GND	Power ground	
31	D1P	MIPI DSI differential data pair. (Data lane 1)	
32	D1N		
33	GND	Power ground	
34	D0P	MIPI DSI differential data pair. (Data lane 0)	
35	D0N		
36-37	GND	Power ground	
38	VLED+	Power for LED backlight anode	
39	VLED-	Power for LED backlight cathode	
40	NC	No connection	

7. Contour Drawing







PIN No.	SYMBOL
1	NC
2	NC
3	NC
4	NC
5	NC
6	NC
7	NC
8	NC
9	NC
10	VCI
11	VCI
12	NC
13	NC
14	RESET
15	TE
16	NC
17	GND
18	GND
19	IOVCC
20	IOVCC
21	GND
22	D3P
23	D3N
24	GND
25	D2P
26	D2N
27	GND
28	CLKP
29	CLKN
30	GND
31	D1P
32	D1N
33	GND
34	D0P
35	D0N
36	GND
37	GND
38	VLED+
39	VLED-
40	NC

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

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