TFT DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

Represented by:

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SPECIFICATION

CUSTOMER : _____

MODULE NO.: WF70-800480B6L#0SPW1-FC

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

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
			葉虹蘭
ISSUED DATE: 2022/04/27			

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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	2022/01/21		First issue
A	2022/03/16		Remove AC Characteristics Add LVDS interface
B	2022/04/27		Modify Static electricity test

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Summary

The WF70 is a 7-inch LCD Cell with thin film transistors as active elements and contains 800 (H) X 480 (V) pixels. Each pixel is divided into red, green and blue dot, which are arranged in vertical stripe. The cell is normally black mode, and can be applied to the transmission type display. Backlight unit (BLU) and circuit board for the cell are not built in.

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General Specifications

Item	Dimension	Unit
Size	7.0	inch
Dot Matrix	800 x RGB x 480(TFT)	dots
Module dimension	169.8 (W) x 109.7 (H) x 11.8 (D)	mm
Active area	152.40 x 91.44	mm
Pixel pitch	0.1905 x 0.1905	mm
LCD type	TFT, Normally Black, Transmissive	
View Direction	80/80/80/80	
TFT Interface	LVDS	
TFT Driver IC	HX8249-A + HX8678-C or Equivalent	
Aspect Ratio	15:9	
Backlight Type	LED, Normally White	
With /Without TP	With RTP	
Surface	Anti-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	—	+80	℃
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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Electrical Characteristics

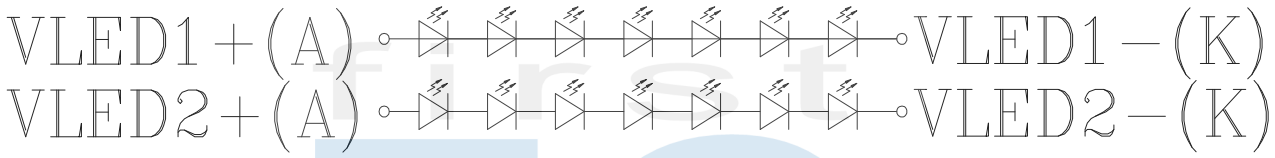
Operating conditions

Item	Symbol	Min	Typ	Max	Unit	Note
Supply Voltage	VDD	2.7	3.3	3.6	V	
Current of power supply	IDD	–	133	200	mA	VDD =3.3V

LED driving conditions

Parameter	Symbol	Min	Typ	Max	Unit	Remark
LED current	–	–	2*110	–	mA	
LED voltage	VLED+	18.9	21.0	23.8	V	Note 1
LED Life Time	–	–	100,000	–	Hr	Note 2,3,4

Note 1 : There are 1 Groups LED



Note 2 : Ta = 25 ℃

Note 3 : Brightness to be decreased to 50% of the initial value

Note 4 : The single LED lamp case

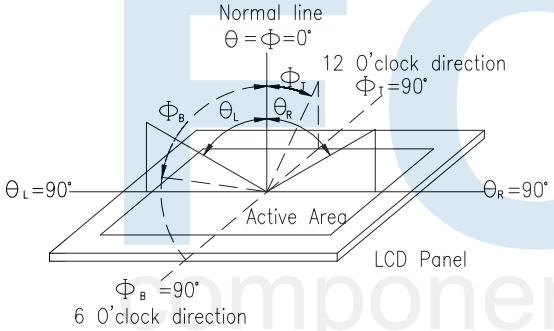
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Optical Characteristics

Item		Symbol	Condition.	Min	Typ.	Max.	Unit	Remark
Response time		Tr+ Tf	θ=0°、Φ=0°	-	25	35	ms	Note 3
Contrast ratio		CR	At the center point of AA	800	1000	-	-	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	70	80	-	Deg.	Note 1
		ΘL		70	80	-		
	Ver.	ΦT		70	80	-		
		ΦB		70	80	-		
Brightness		-	-	700	800	-	cd/m^2	Center of display
Uniformity		(U)		75	-	-	%	Note5

Ta=25±2℃ , IL=2*110mA

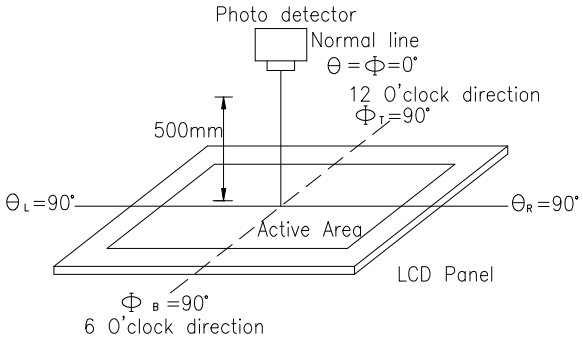
Note 1: Definition of viewing angle range



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.



Optical measurement system setup

Interface

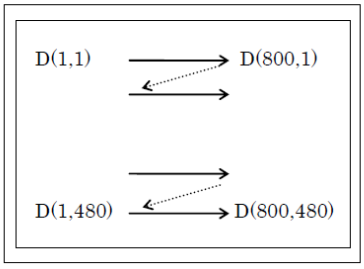
LCM PIN Definition(CN1)

<table>
<tr><th>Pin</th><th>Symbol</th><th>Function</th><th>Remark</th></tr>
<tr><td>1</td><td>VDD</td><td>Power voltage</td><td></td></tr>
<tr><td>2</td><td>VDD</td><td>Power voltage</td><td></td></tr>
<tr><td>3</td><td>GND(DISP)</td><td>Power Ground</td><td></td></tr>
<tr><td>4</td><td>GND</td><td>Power Ground</td><td></td></tr>
<tr><td>5</td><td>LINK0-</td><td rowspan="2">Input pins without termination resistor for LVDS mode.
Keep these pins floating or connect to VSS1 if not used.</td><td></td></tr>
<tr><td>6</td><td>LINK0+</td><td></td></tr>
<tr><td>7</td><td>GND</td><td>Power Ground</td><td></td></tr>
<tr><td>8</td><td>LINK1-</td><td rowspan="2">Input pins without termination resistor for LVDS mode.
Keep these pins floating or connect to VSS1 if not used.</td><td></td></tr>
<tr><td>9</td><td>LINK1+</td><td></td></tr>
<tr><td>10</td><td>GND</td><td>Power Ground</td><td></td></tr>
<tr><td>11</td><td>LINK2-</td><td rowspan="2">Input pins without termination resistor for LVDS mode.
Keep these pins floating or connect to VSS1 if not used.</td><td></td></tr>
<tr><td>12</td><td>LINK2+</td><td></td></tr>
<tr><td>13</td><td>GND</td><td>Power Ground</td><td></td></tr>
<tr><td>14</td><td>CLKIN-</td><td rowspan="2">Input pins without termination resistor for LVDS mode.
Keep these pins floating or connect to VSS1 if not used.</td><td></td></tr>
<tr><td>15</td><td>CLKIN+</td><td></td></tr>
<tr><td>16</td><td>GND</td><td>Power Ground</td><td></td></tr>
<tr><td>17</td><td>LINK3-</td><td rowspan="2">Input pins without termination resistor for LVDS mode.
Keep these pins floating or connect to VSS1 if not used.</td><td></td></tr>
<tr><td>18</td><td>LINK3+</td><td></td></tr>
<tr><td>19</td><td>MODE</td><td>Input data format selection. Effective when FCS=1.
<table>
<tr><th>MODE</th><th>Function</th><th>Note</th></tr>
<tr><td>1</td><td>8-bit</td><td>Default</td></tr>
<tr><td>0</td><td>6-bit</td><td>-</td></tr>
</table>
</td><td></td></tr>
<tr><td>20</td><td>SC</td><td>Scan direction selector (Low: Normal ;High: Reverse)</td><td></td></tr>
</table>

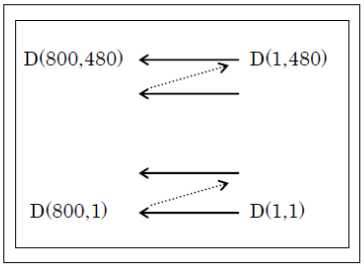
(1) Display Position and Scan Direction

D(X,Y) shows the data number of input signal

SC: Low



SC: High



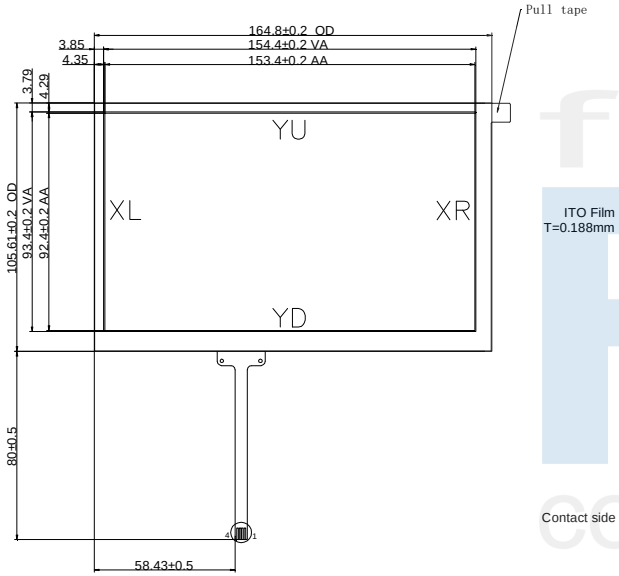
Backlight PIN Definition(CN2)

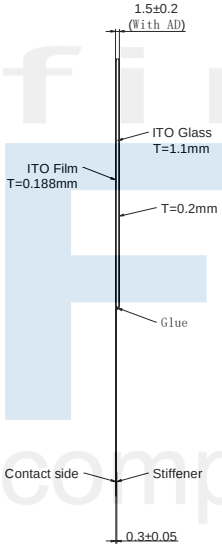
Pin	Symbol	Description
1-2	NC	No connection
3	VLED1-	VLED1_ Cathode
4	VLED1+	VLED1_ Anode
5	VLED2+	VLED2_ Anode
6	VLED2-	VLED2_ Cathode

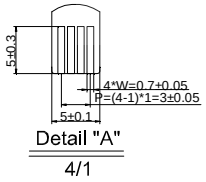
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Touch Panel Information

FRONT VIEW



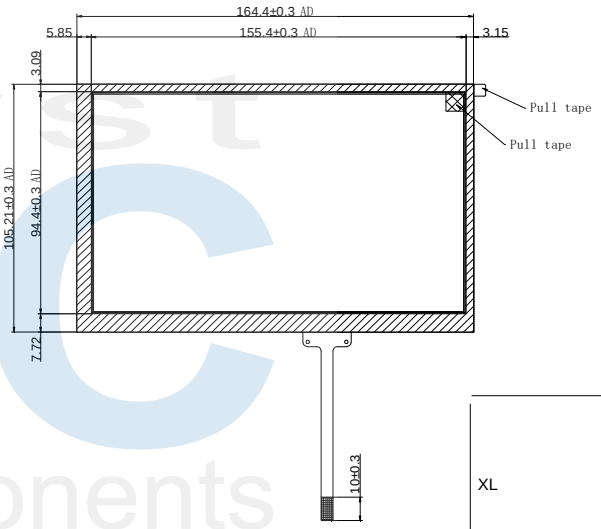


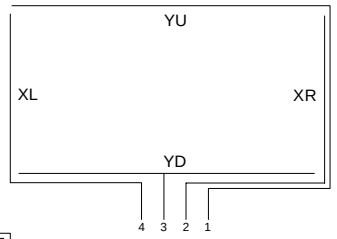


Detail "A"

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BACK VIEW





1. TOUCH PANEL PIN ASSIGNMENT

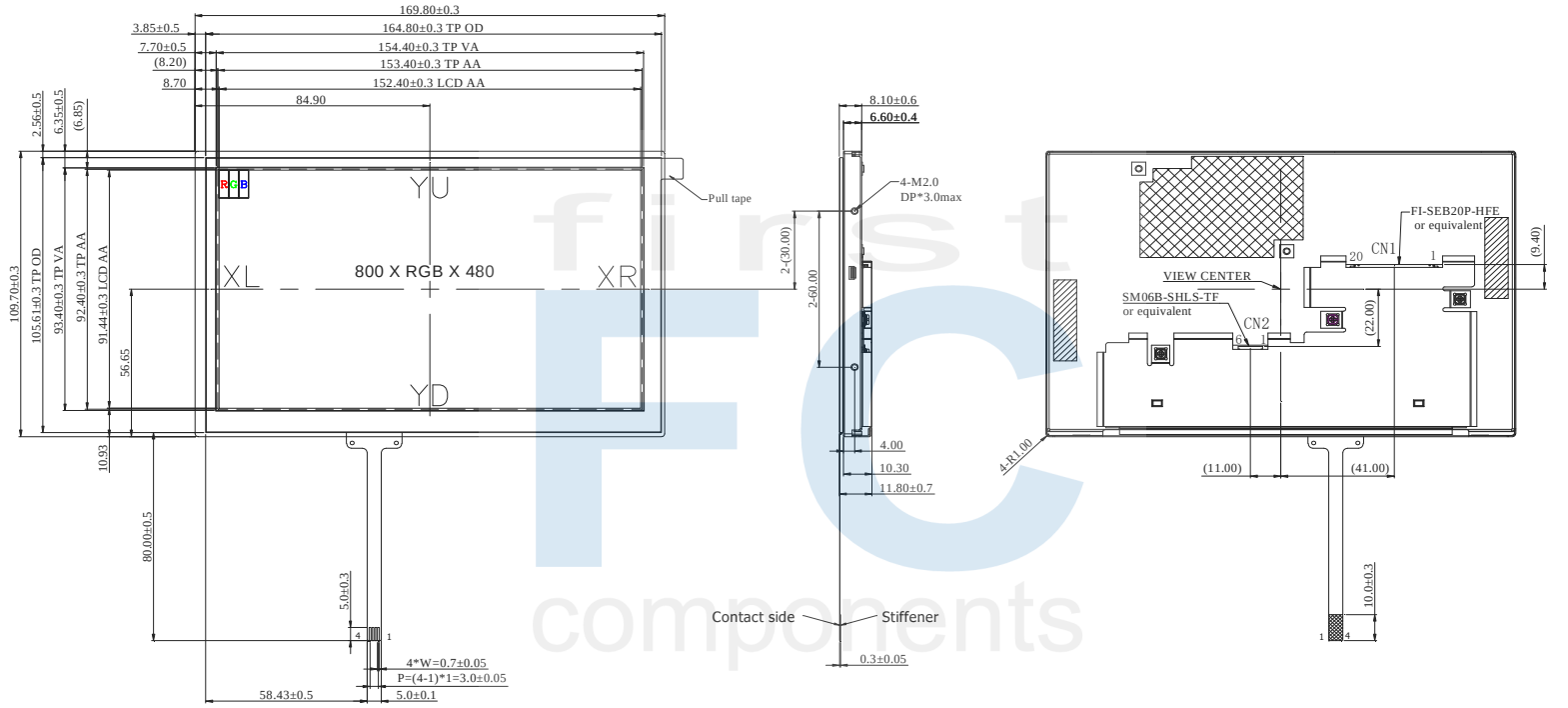
1	YU	Bottom ITO Glass Terminal
2	XR	Top ITO Film Terminal
3	YD	Bottom ITO Glass Terminal
4	XL	Top ITO Film Terminal

REVISED DESCRIPTIONS

2.TOLERANCE NO SPECIFIED: ±0.3mm

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Contour Drawing



CN1

PIN NO.	SYMBOL
1	VDD
2	VDD
3	GND (DISP)
4	GND
5	LINK0-
6	LINK0+
7	GND
8	LINK1-
9	LINK1+
10	GND
11	LINK2-
12	LINK2+
13	GND
14	CLKIN-
15	CLKIN+
16	GND
17	LINK3-
18	LINK3+
19	MODE
20	SC

CN2

PIN NO.	SYMBOL
1	NC
2	NC
3	VLED1−
4	VLED1+
5	VLED2+
6	VLED2−

RTP FPC

PIN NO.	SYMBOL
1	YU
2	XR
3	YD
4	XL

The non-specified tolerance of dimension is ±0.5 mm .

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