TFT DISPLAY SPECIFICATION



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SPECIFICATION

CUSTOMER : _____

MODULE NO.: WF35-320480UD#0P0-FC

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

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
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ISSUED DATE: 2025/07/02			

General Specifications

Item	Dimension	Unit
Size	3.5	inch
Dot Matrix	320 x RGBx 480(TFT)	dots
Module dimension	54.5 (W) x83.0 (H) x 2.46(D)	mm
Active area	48.96 x 73.44	mm
Pixel pitch	0.153 × 0.153	mm
LCD type	TFT, Normally Black, Transmissive	
View Direction	80/80/80/80	
Aspect Ratio	Portrait	
TFT Driver IC	ILI9488 or Equivalent	
TFT Interface	MCU 8/16/18-bit, 3-SPI ,RGB interface+3-SPI	
\Backlight Type	LED,Normally White	
With /Without TP	Without TP	
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	-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. 40℃, 90% RH MAX. Temp.＞40℃, Absolute humidity shall be less than 90% RH at 40℃

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Electrical Characteristics

Operating conditions:

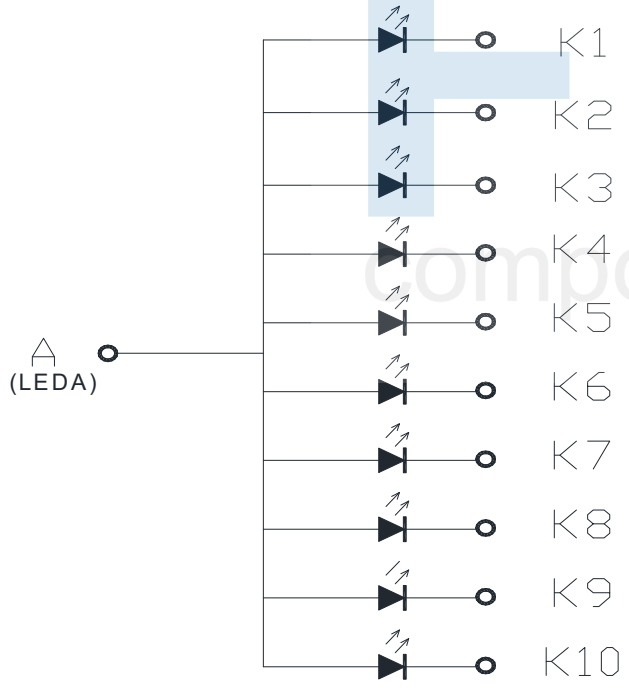
Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage for digital	IOVCC	–	1.8	3.0	3.3	V
Supply Voltage for analog	VCI	–	2.8	3.0	3.3	V
Power Supply for Current	ICC	IOVCC=VCI =VCC=3.3V	–	13.5	20.5	mA

LED driving conditions

Parameter	Symbol	Min	Typ	Max	Unit	Remark
LED current	–	–	160	–	mA	–
LED voltage	LEDA	2.7	3.2	3.4	V	Note 1
LED Life Time	–	–	50000	–	Hr	Note 2,3

Note 1 : There are 1 Groups LED

Note 2 : Ta = 25°C



(K1~K10 conector to LEDK)

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

Optical Characteristics

Item		Symbol	Condition.	Min	Typ.	Max.	Unit	Remark
Response time		Tr	θ=0°、Φ=0°	-	30	-	.ms	Note 3
		Tf						
Contrast ratio		CR	At optimized viewing angle	-	700	-	-	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	-	-	%	Note5

Ta=25±2℃ (I_{LED}=160mA)

Note 1: Definition of viewing angle range

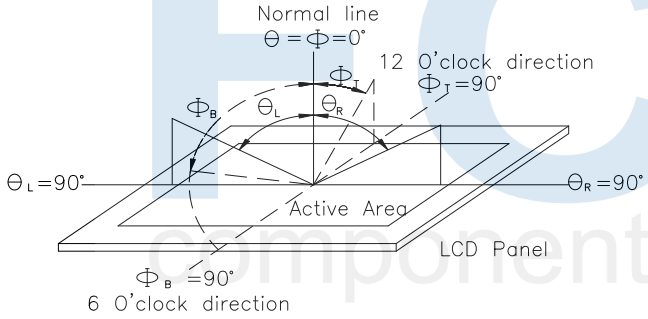


Fig 1. Definition of viewing angle

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.

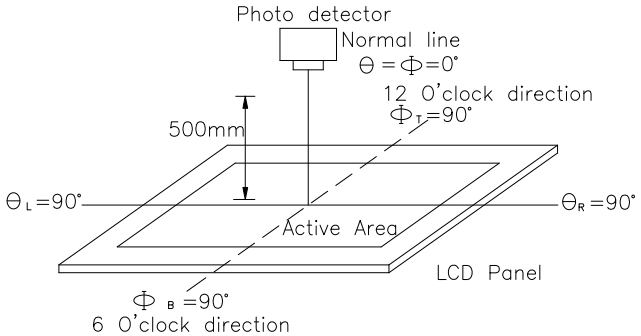


Fig 2. Optical measurement system setup

Note 3: Definition of Response time:

Interface

LCM PIN Definition

NO	Symbol	Function	I/O
1	LEDK	Cathode of LED backlight	P
2	LEDA	Anode of LED backlight.	P
3	IM0	Note 1	I
4	IM1	Note 1	I
5	IM2	Note 1	I
6	RESET	System reset pin.	I
7	NC(VS)	No Connection (Vrtical Sync signal) Note 2)	I
8	NC(HS)	No Connection (Horizontal Sync signal ; Note 2)	I
9	NC(DCLK)	No Connection (Pixel clock signal; Note 2)	I
10	NC(DE)	No Connection (Data Enable; Note 2)	I
11-16	DB17-12	Data bus (R5~R0; RGB-18bit Pixel; Note 2)	I
17-22	DB11-6	Data bus (G5~G0; RGB-18bit Pixel; Note 2)	I
23-28	DB5-0	Data bus (B5~B0; RGB-18bit Pixel; Note 2)	I
29	NC (SDA)	Connection (serial data input/output pin)	I
30	RD	Read strobe signal. Read out data when RDX is Low.	I
31	WR (SCL)	Write data when WRX is Low.(serial clock input pin)	I
32	D/C	register select	I
33	CS (NCS)	Chip select signal (serial chip select input pin)	I
34	IOVCC	Power supply (TYP:1.8V/2.8V).	P
35	VCI	Power supply(TYP:2.8V).	P
36	GND	Ground	P
37	NC	No connection	
38	NC	No connection	
39	NC	No connection	
40	NC	No connection	

Note 1:

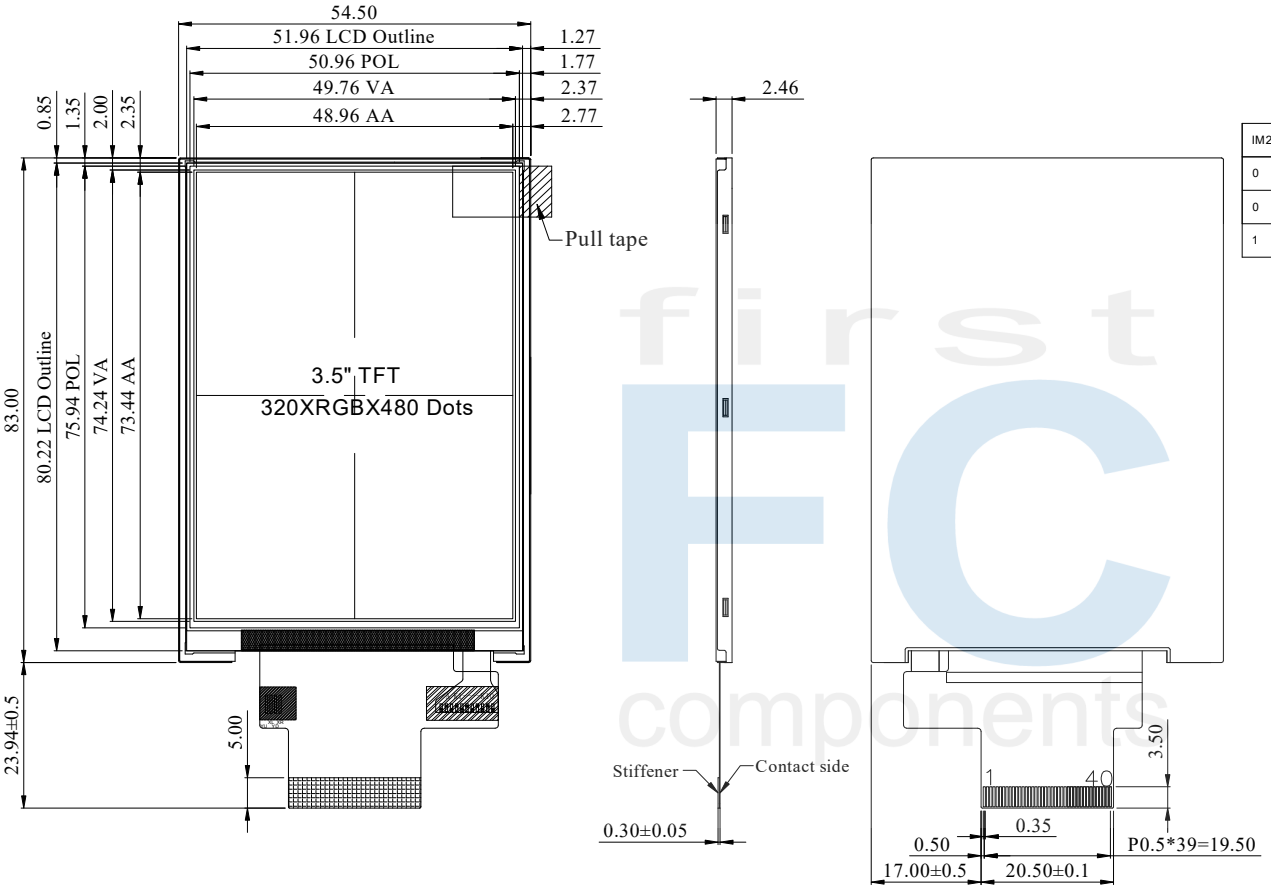
IM2	IM1	IM0	MPU Interface	GRAM
0	0	0	8080 MCU 18-bit bus	D[17:0]
0	1	0	8080 MCU 16-bit bus	D[15:0]
0	1	1	8080 MCU 8-bit bus	D[7:0]
1	0	1	3-Line SPI	SDA,SCL,NCS
1	0	1	RGB interface+3-SPI	D[17:0] (RGB-18bit/Pixel) D[15:0] (RGB-16bit/Pixel)

Note 2:

This module suggests function is for 8080 MCU mode, if this module wants change to use RGB Interface mode, please setting external pin IM [2:0] as 101 (3-SPI Initial code setting RGB-18bit/Pixel or RGB-16bit/Pixel),and reference the **7.5. RGB Interface Selection**

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Contour Drawing



IM2	IM1	IM0	MPU Interface	GRAM
0	1	0	8080 MCU 16-bit bus	D[15:0]
0	1	1	8080 MCU 8-bit bus	D[7:0]
1	0	1	3-Line SPI	(SDA, SCL, NCS)

PIN DESCRIPTION

NO.	SYMBOL
1	LEDK
2	LEDA
3	IM0
4	IM1
5	IM2
6	RESET
7	NC (VSYNC)
8	NC (HSYNC)
9	NC (DOTCLK)
10	NC (DE)
11	DB17
12	DB16
13	DB15
14	DB14
15	DB13
16	DB12
17	DB11
18	DB10
19	DB9
20	DB8
21	DB7
22	DB6
23	DB5
24	DB4
25	DB3
26	DB2
27	DB1
28	DB0
29	NC (SDA)
30	RD
31	WR (SCL)
32	D/C
33	CS (NCS)
34	IOVCC
35	VCI
36	GND
37	NC
38	NC
39	NC
40	NC

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

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