TFT DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.

華凌光電股份有限公司

Represented by:

first FC components

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

SPECIFICATION

CUSTOMER : _____

MODULE NO.: WF43-480272WS#BSP3-FC

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

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
first FC components			
ISSUED DATE: 2025/04/02			

General Specifications

Item	Dimension	Unit
Size	4.3	inch
Dot Matrix	480 x RGBx272(TFT)	dots
Module dimension	105.5(W) x 67.2(H) x 4.65(D)	mm
Active area	95.04 x 53.856	mm
Pixel pitch	0.198 x 0.198	mm
LCD type	TFT, Normally Black, Transmissive	
Viewing Angle	80/80/80/80	
Aspect Ratio	16:9	
TFT Driver IC	NV3041A-01 or equivalent	
TFT Interface	4 Line data QSPI	
Backlight Type	LED,Normally White	
CTP FW Version	0X01	
CTP Driver IC	ST1624 or equivalent	
CTP Interface	I2C	
CTP Resolution	480*272	
With /Without TP	With CTP	
Surface	Glare	

*Color tone slight changed by temperature and driving voltage.

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℃

first FC components

Electrical Characteristics

Operating conditions:

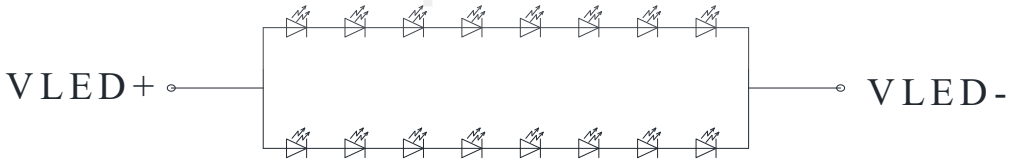
Item	Symbol	Min	Typ	Max	Unit	Remark
Power supply for analog circuit	VCI	3.0	3.3	3.6	V	
Power supply for logic circuit	IOVCC	1.65	1.8	3.3	V	VCI= 3.3V
Current for Driver	I_{VCI}	-	30	45	mA	VCI= 3.3V
	I_{IOVCC}	-	20	30	mA	IOVCC=1.8V
Supply CTP	VDDT	-	3.3	-	V	
	I_{CTP}	-	15	25	mA	

Note 1 : This value is test for VCI=3.3V , Ta=25 ℃ only, to avoid power supply noise, please avoid using driving conditions close to min, or max value

LED driving conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
LED current	-	-	40	-	mA	-
Power Consumption	-	864	1024	1088	mW	-
LED voltage	VLED+	21.6	25.6	27.2	V	Note 1
LED Life Time	-	50,000	-	-	Hr	Note 2,3,4

Note 1 : There are 1 Groups LED



CIRCUIT DIAGRAM(8*2)

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

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	0.27	0.32	0.37	-	Note 2,6,7
		Wy		0.295	0.345	0.395	-	
Viewing angle	Hor.	ΘR	CR≧10	70	80	-	Deg.	Note 1
		ΘL		70	80	-		
	Ver.	ΦT		70	80	-		
		ΦB		70	80	-		
Brightness		-	-	650	800	-	cd/m2	Center of display
Uniformity		(U)	-	75	-	-	%	Note 5

Ta=25±2℃, IL=40mA

Note 1: Definition of viewing angle range

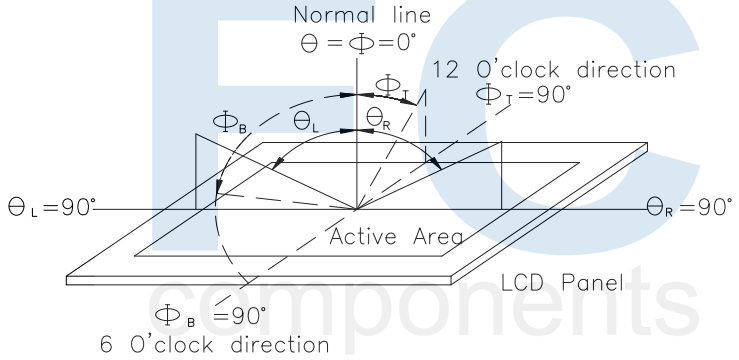


Fig. 8.1. Definition of viewing angle

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.

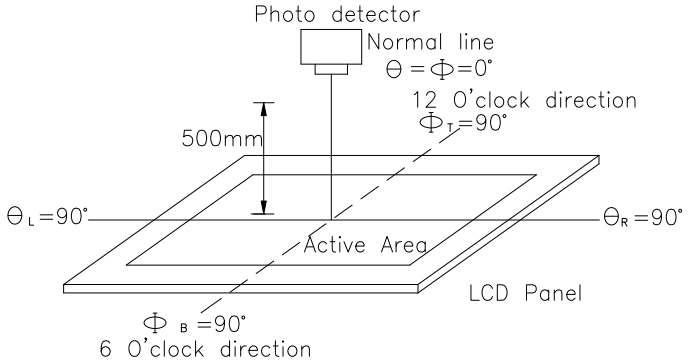


Fig. 8.2. Optical measurement system setup

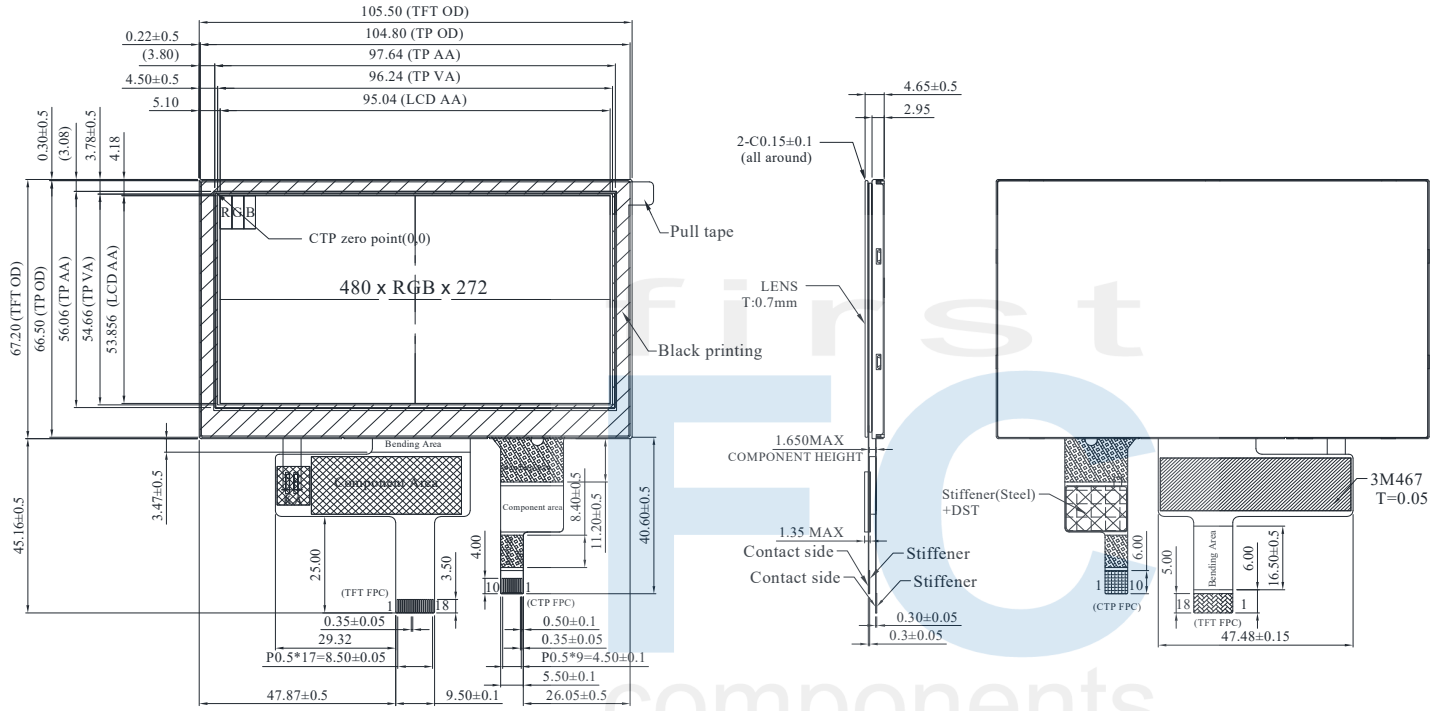
Note 3: Definition of Response time:

Interface

LCM PIN Definition

Pin	Symbol	Function	Remark
1	VLED-	Power for LED backlight cathode	
2	VLED+	Power for LED backlight anode	
3	NC	No connection	
4	VCI	Power supply for analog circuit	
5	IOVCC	Power supply for digital interface I/O pins	
6	GND	Ground	
7	RESET	Reset.	
8	GND	Ground	
9	CS	Chip select, internal pull high. (CSX)	
10	SCL	This pin is used serial interface clock	
11	GND	Ground	
12	SDO1	SPI bi-direction data pin (SDA)	
13	SDO2	Std-SPI(4 wire): command or parameter select. Quard-SPI: the second data pin (DCX)	
14	SDO3	The third pin of Quard-SPI (DB[2])	
15	SDO4	The fourth pin of Quard-SPI (DB[3])	
16	GND	Ground	
17	TE	Tearing effect output pin is used to synchronize MCU frame writing, activated by S/W command. When this pin is not activated (TE function OFF), this pin is GND level.	
18	GND	Ground	

Contour Drawing



CTP FPC

PIN NO.	SYMBOL
1	VSS
2	VDDT
3	SCL
4	NC
5	SDA
6	NC
7	RST
8	NC
9	INT
10	VSS

TFT FPC

PIN NO.	SYMBOL
1	VLED-
2	VLED+
3	NC
4	VCI
5	IOVCC
6	GND
7	RESET
8	GND
9	CS
10	SCL
11	GND
12	SDO1
13	SDO2
14	SDO3
15	SDO4
16	GND
17	TE
18	GND

Note.

380nm transmittance(UV Cut at 380nm)<1.0%

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

first components