# TFT DISPLAY SPECIFICATION




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Represented by:

first FC components

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# SPECIFICATION

**CUSTOMER : WF43-480272WS#0SPW1-FC**

**MODULE NO.:**

| | |
|---|---|
| **APPROVED BY:**<br>**( FOR CUSTOMER USE ONLY )** | **PCB VERSION:** **DATA:** |

| SALES BY | APPROVED BY | CHECKED BY | PREPARED BY |
|---|---|---|---|
| | | | |
| **ISSUED DATE:** 2025/04/02 | | | |

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# 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 4.05(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 | |
| 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:**

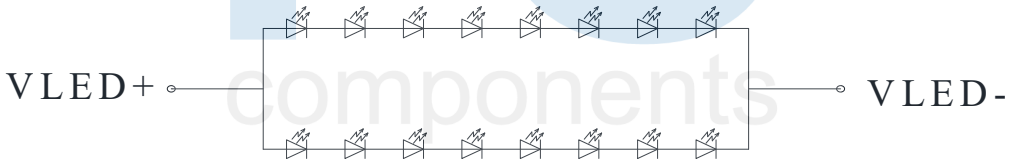
| Item | Symbol | Min | Typ | Max | Unit | Remark |
|---|---|---|---|---|---|---|
| Power supply for analog circuit | VCI | 3.0 | 3.3 | 3.6 | V | |
| Power supply for logic circuit | IOVCC | 1.65 | 1.8 | 3.3 | V | VCI= 3.3V |
| Current for Driver | $I_{VCI}$ | - | 30 | 45 | mA | VCI= 3.3V |
| | $I_{IOVCC}$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

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 | | - | - | 550 | 700 | - | cd/m2 | Center of display |
| Uniformity | | (U) | - | 75 | - | - | % | Note 5 |

Ta=25±2℃, IL=40mA

Note 1: Definition of viewing angle range

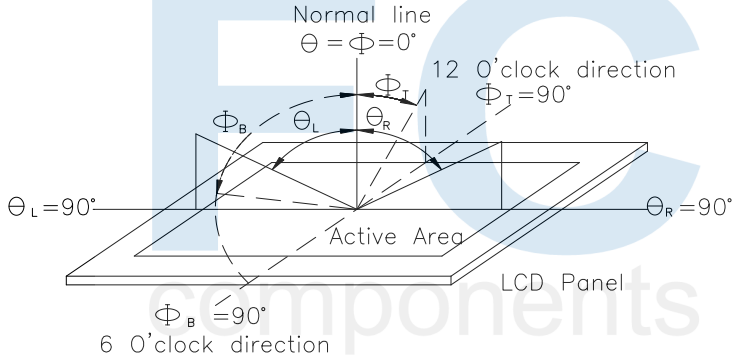



Fig. 8.1. Definition of viewing angle

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.

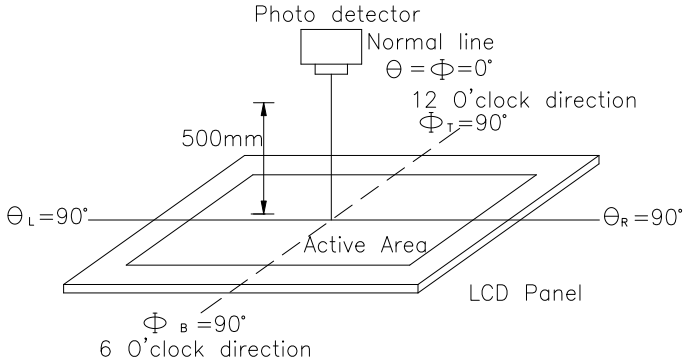



Fig. 8.2. Optical measurement system setup

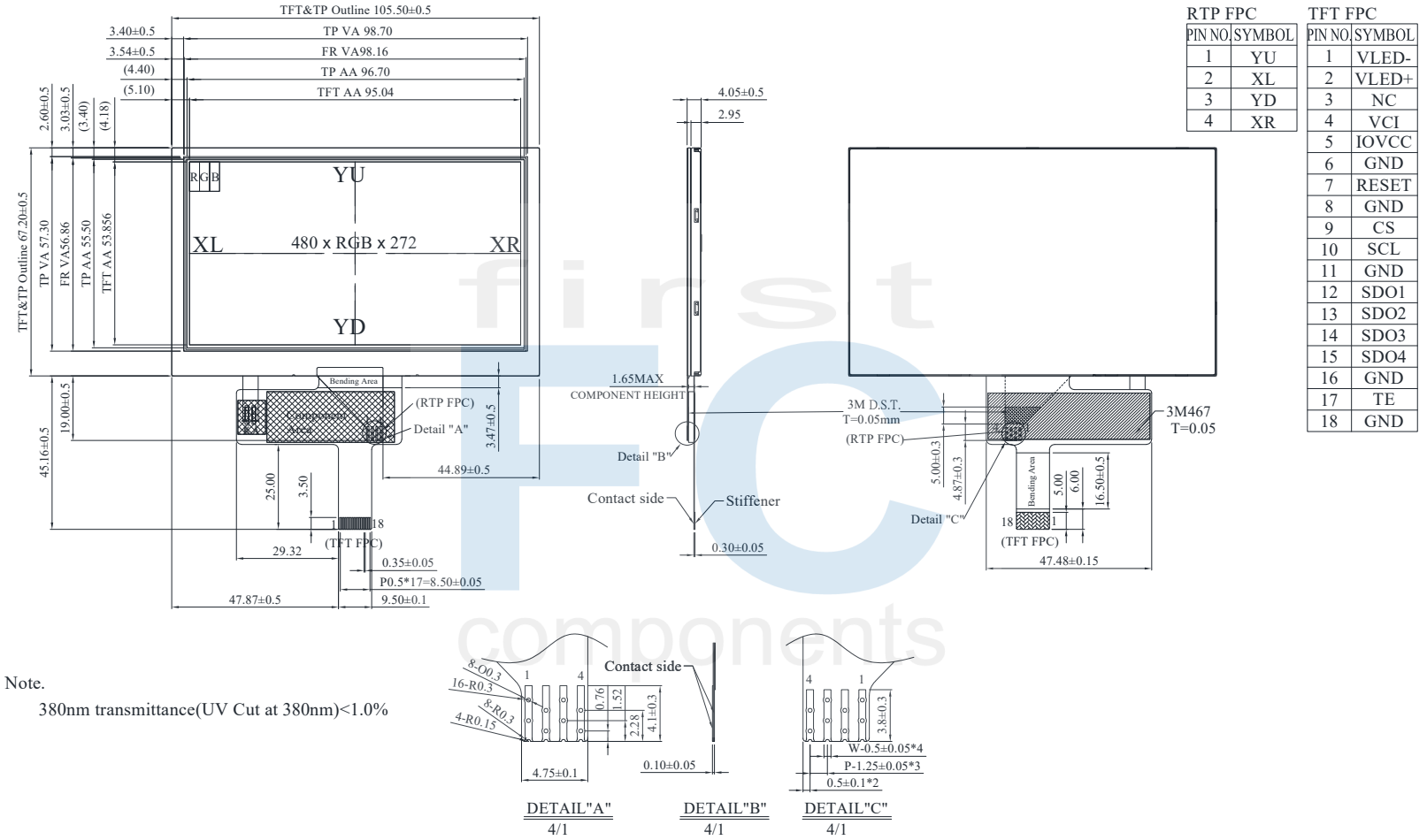
Note 3: Definition of Response time:

# 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




RTP FPC

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

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 .

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