

# TFT DISPLAY SPECIFICATION



**WINSTAR Display Co.,Ltd.**  
**華凌光電股份有限公司**



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### SPECIFICATION

**MODULE NO.: WFN0400A2T0YAMNA000**

### General Specifications

| Item             | Dimension                         | Unit |
|------------------|-----------------------------------|------|
| Size             | 4.0                               | inch |
| Dot Matrix       | 720 x RGB x 720 (TFT)             | dots |
| Module dimension | 125.0 x 125.0 x 3.86              | mm   |
| Active area      | 101.52 x 101.52                   | mm   |
| Pixel pitch      | 0.141 x 0.141                     | mm   |
| LCD type         | TFT, Normally Black, Transmissive |      |
| Viewing Angle    | 85/85/85/85                       |      |
| TFT Interface    | 4-Lanes MIPI                      |      |
| Backlight Type   | LED, Normally White               |      |
| TFT Driver IC    | FL7703 or Equivalent              |      |
| CTP Driver IC    | FT3269 or equivalent              |      |
| CTP Interface    | I2C                               |      |
| CTP FW Version   | 0x21                              |      |
| CTP Resolution   | 720*720                           |      |
| Touch Panel      | Projected Capacitive Touch Panel  |      |
| 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 | °C   |
| Storage Temperature   | TST    | -30 | —   | +80 | °C   |

# Electrical Characteristics

## 1. Operating conditions

VCI=3.3V , GND=0V , Ta = 25 °C

| Item                              |            | Symbol | Min.        | Typ. | Max.        | Unit |
|-----------------------------------|------------|--------|-------------|------|-------------|------|
| Digital supply Voltage            |            | IOVCC  | 1.65        | 1.8  | 3.3         | V    |
| Analog supply Voltage             |            | VCI    | 2.8         | 3.0  | 3.3         | V    |
| TP Power                          |            | TP_VCI | 2.8         | 3.0  | 3.3         | V    |
| Input Signal Voltage              | Low Level  | VIL    | 0           | -    | 0.3 x IOVCC | V    |
|                                   | High Level | VIH    | 0.7 x IOVCC | -    | IOVCC       | V    |
| Current of digital supply voltage |            | IIOVCC | -           | 15   | 20          | mA   |
| Current of analog supply voltage  |            | IVCI   | -           | 35   | 50          | mA   |

## 2. LED driving conditions

| Item                        | Symbol | Min.   | Typ. | Max. | Unit |
|-----------------------------|--------|--------|------|------|------|
| LED current                 | -      | -      | 40   | 45   | mA   |
| LED voltage                 | VLED+  |        | 15.5 | 16.0 | V    |
| Backlight Power Consumption | WBL    | -      | 600  | 720  | mW   |
| LED Life Time               | -      | 30,000 | -    | -    | Hr   |

# Interface

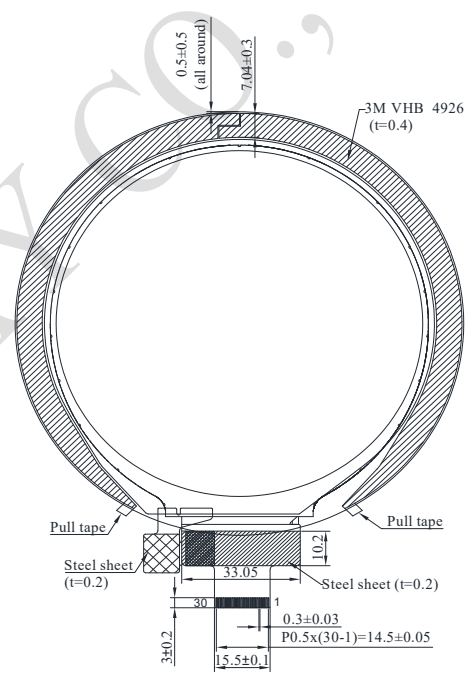
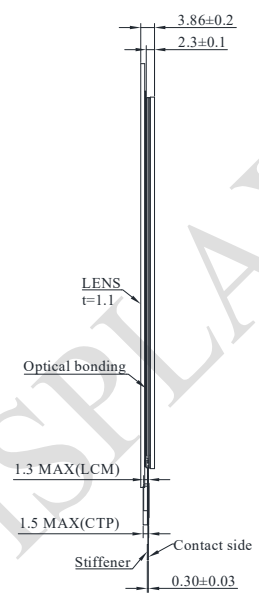
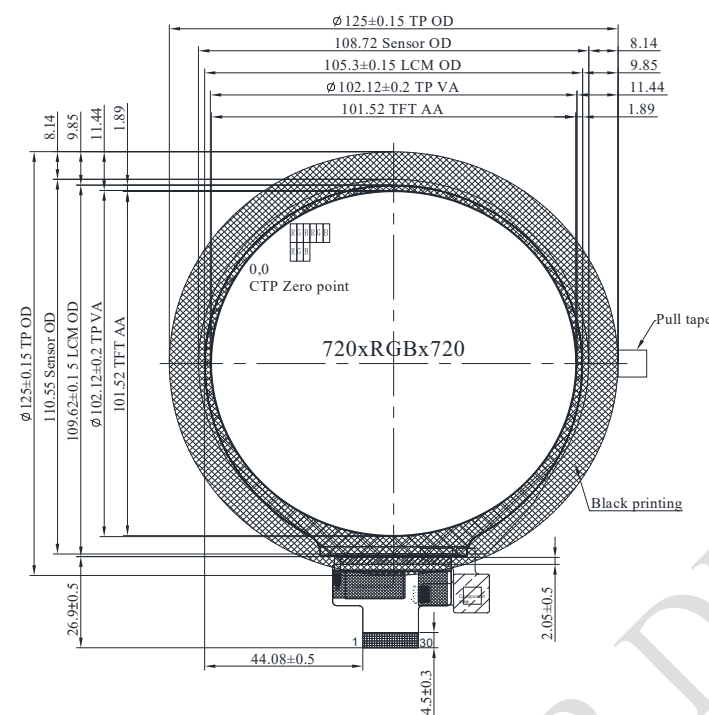
## 1. LCM PIN Definition

Match connector: XF2M-3015-1A ( OMRON ) or equivalent.

| Pin No | Symbol | Description                                   |
|--------|--------|-----------------------------------------------|
| 1      | VLED+  | LED Anode                                     |
| 2      | VLED-  | LED Cathode1                                  |
| 3      | VLED-  | LED Cathode2                                  |
| 4      | VCI    | Power Supply 2.8V                             |
| 5      | IOVCC  | LCD I/O power supply(1.8V)                    |
| 6      | RESET  | Reset pin                                     |
| 7      | TE     | Tearing effect(1.8V)                          |
| 8      | NC     | No connection.                                |
| 9      | GND    | Ground                                        |
| 10     | D0P    | MIPI DSI differential data pair (Data lane 0) |
| 11     | D0N    | MIPI DSI differential data pair (Data lane 0) |
| 12     | GND    | Ground                                        |
| 13     | D1P    | MIPI DSI differential data pair (Data lane 1) |
| 14     | D1N    | MIPI DSI differential data pair (Data lane 1) |
| 15     | GND    | Ground                                        |
| 16     | CLKP   | MIPI DSI differential clock pair              |
| 17     | CLKN   | MIPI DSI differential clock pair              |
| 18     | GND    | Ground                                        |
| 19     | D2P    | MIPI DSI differential data pair (Data lane 2) |
| 20     | D2N    | MIPI DSI differential data pair (Data lane 2) |
| 21     | GND    | Ground                                        |
| 22     | D3P    | MIPI DSI differential data pair (Data lane 3) |
| 23     | D3N    | MIPI DSI differential data pair (Data lane 3) |

|    |          |                        |
|----|----------|------------------------|
| 24 | GND      | Ground                 |
| 25 | TP_INT   | Touch Interrupt        |
| 26 | TP_SDA   | Touch IIC Data signal  |
| 27 | TP_SCL   | Touch IIC Clock signal |
| 28 | TP_RESET | Touch Reset Signal     |
| 29 | TP_VCI   | Touch Power supply     |
| 30 | NC       | No connection.         |

# Contour Drawing



| PIN | SYMBLE   |
|-----|----------|
| 1   | VLED+    |
| 2   | VLED-    |
| 3   | VLED-    |
| 4   | VCI      |
| 5   | IOVCC    |
| 6   | RESET    |
| 7   | TE       |
| 8   | NC       |
| 9   | GND      |
| 10  | D0P      |
| 11  | D0N      |
| 12  | GND      |
| 13  | D1P      |
| 14  | D1N      |
| 15  | GND      |
| 16  | CLKP     |
| 17  | CLKN     |
| 18  | GND      |
| 19  | D2P      |
| 20  | D2N      |
| 21  | GND      |
| 22  | D3P      |
| 23  | D3N      |
| 24  | GND      |
| 25  | TP_INT   |
| 26  | TP_SDA   |
| 27  | TP_SCL   |
| 28  | TP_RESET |
| 29  | TP_VCI   |
| 30  | NC       |

The non-specified tolerance of dimension is  $\pm 0.3$  mm .