Winstar Display Co., LTD
華凌光電股份有限公司
WEB: https://www.winstar.com.tw E-mail: sales@winstar.com.tw

SPECIFICATION

CUSTOMER : _____

MODULE NO.: WF39-480128DH#004-FC

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

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
			葉虹蘭
ISSUED DATE: 2022/07/07			

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General Specifications

Item	Dimension	Unit
Size	3.9	inch
Dot Matrix	480x128 x RGB	dots
Module dimension	105.5 x 42.25 x 12.45 (Max)	mm
Active area	95.04 x 25.34	mm
Pixel pitch	0.198(H) x 0.198(V) mm	mm
LCD type	TFT, Normally White, Transmissive	
View Direction	6 o'clock	
Gray Scale Inversion Direction	12 o'clock	
Aspect Ratio	Bar Type	
Backlight Type	LED, Normally White	
Controller IC	TFP401	
Interface	HDMI(only for DVI)	
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. ≦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	Condition	Min	Typ	Max	Unit	Remark
Supply Voltage For LCM	VDD	–	–	5	–	V	–
Supply Current For LCM	IDD	–	–	250	400	mA	Note 1
LED life time	–	–	–	50,000	–	Hr	Note 2

Note 1 : This value is test for VDD =5.0V , Ta=25℃ only

Note 2 : Display with Raspberry pi the driver power is over USB , first make sure you have a 2A power supply, with a good quality USB cable, a thin wire power cable is no good. Make sure its 24AWG or smaller, shorter USB cables are better too.

Note3: The “LED life time” is defined as the module brightness decrease to 50% original brightness at Ta=25℃ and IL =40mA. The LED lifetime could be decreased if operating IL is lager than 40mA

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Optical Characteristics

Item		Symbol	Condition.	Min	Typ.	Max.	Unit	Remark
Response time		Tr	θ=0°、Φ=0°	-	10	-	ms	Note 3
		Tf		-	15	-		
Contrast ratio		CR	At optimized viewing angle	-	500	-	-	Note 4
Color Chromaticity	White	Wx	θ=0°、Φ=0	0.269	0.319	0.369	-	Note 2,6,7
		Wy		0.273	0.323	0.373	-	
Viewing angle (Gray Scale Inversion Direction)	Hor.	ΘR	CR≧10	-	65	-	Deg.	Note 1
		ΘL		-	65	-		
	Ver.	ΦT		-	65	-		
		ΦB		-	50	-		
Brightness		-	-	400	500	-	cd/m^2	Center of display
Uniformity		(U)	-	75	-	-	%	Note 5

Ta=25±2℃, ILED=40mA

Note 1: Definition of viewing angle range

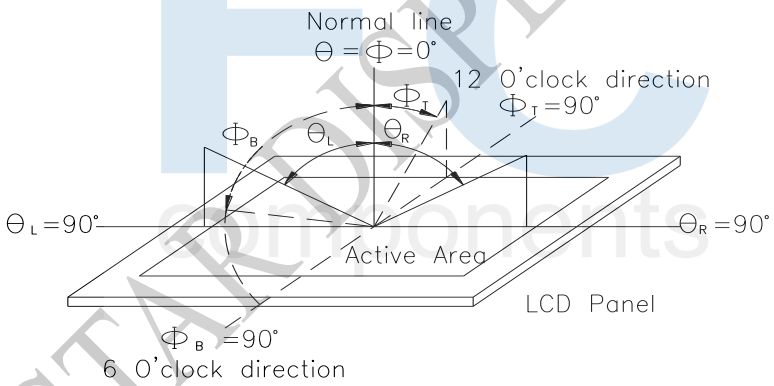
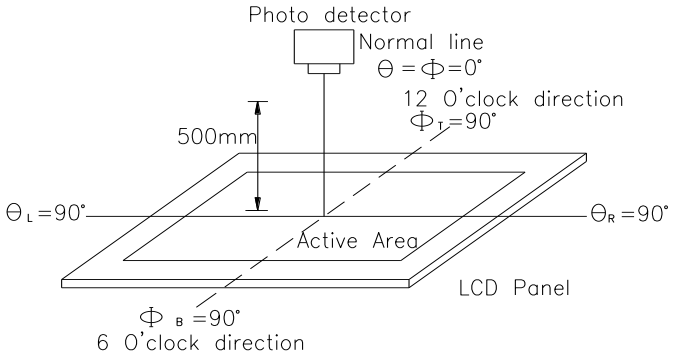


Fig. 7.1. Definition of viewing angle

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.



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Interface

LCM PIN Definition

HDMI (only for DVI)

Pin No.	Symbol	I/O	Function	Remark
1	Rx2+	I	Channel-2 positive receiver input; low-voltage signal differential- input pair.	
2	GND	P	Ground	
3	Rx2-	I	Channel-2 negative receiver input; low-voltage signal differential- input pair.	
4	Rx1+	I	Channel-1 positive receiver input; low-voltage signal differential- input pair.	
5	GND	P	Ground	
6	Rx1-	I	Channel-1 negative receiver input; low-voltage signal differential- input pair.	
7	Rx0+	I	Channel-0 positive receiver input; low-voltage signal differential- input pair.	
8	GND	P	Ground	
9	Rx0-	I	Channel-0 negative receiver input; low-voltage signal differential- input pair.	
10	RxC+	I	Clock positive receiver input; low-voltage signal differential- input pair.	
11	GND	P	Ground	
12	RxC-	I	Clock negative receiver input; low-voltage signal differential- input pair.	
13-16	NC	-	No connection	
17	GND	P	Ground	
18	NC	-	No connection	
19	NC	-	No connection	

I: input, O: output, P: Power

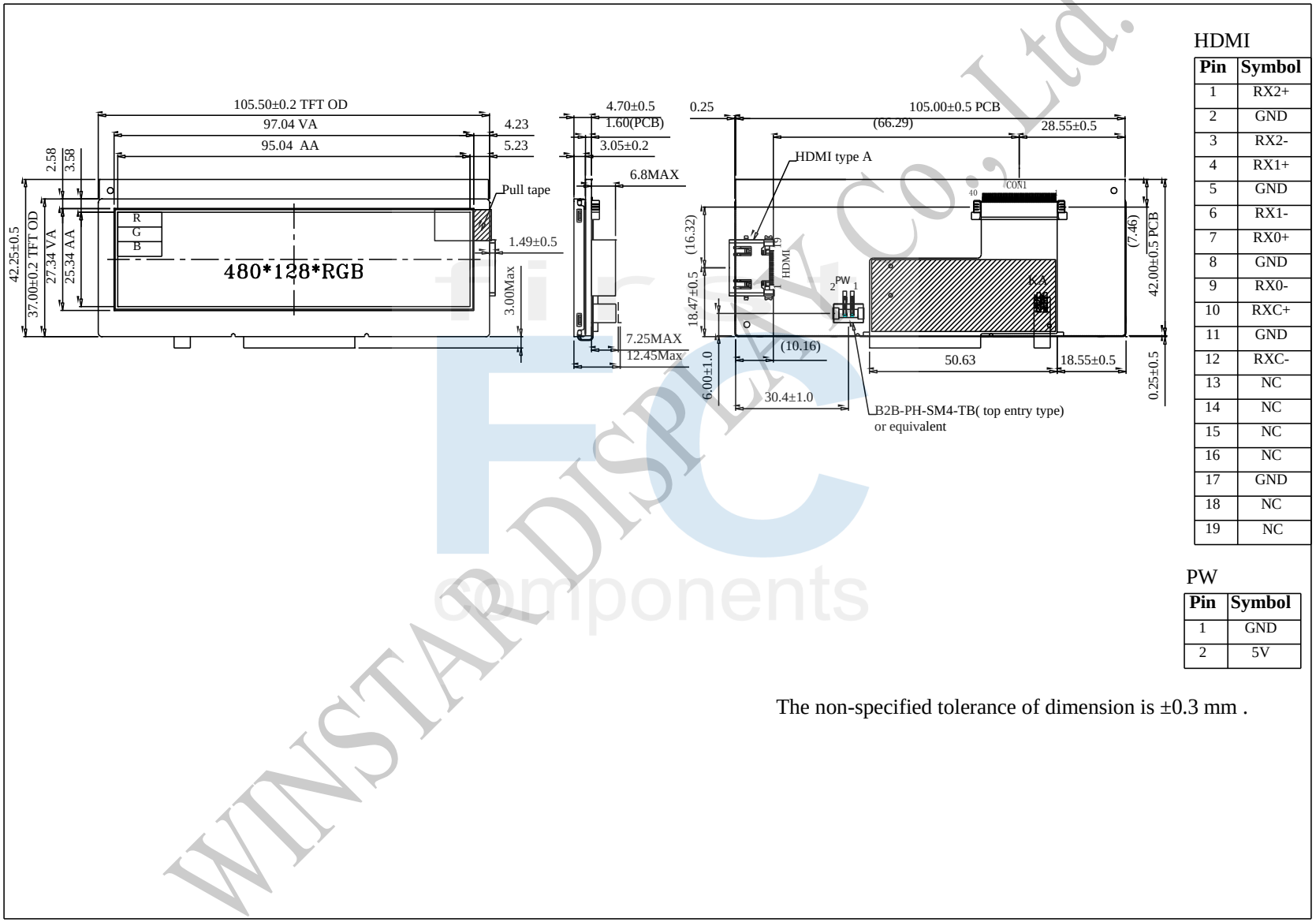
Note 1: Only supports Raspberry Pi series

8.2. PW

Pin No.	Symbol	I/O	Function	Remark
1	GND	P	Ground	
2	5V	P	Power Supply	

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Contour Drawing



HDMI

Pin	Symbol
1	RX2+
2	GND
3	RX2-
4	RX1+
5	GND
6	RX1-
7	RX0+
8	GND
9	RX0-
10	RXC+
11	GND
12	RXC-
13	NC
14	NC
15	NC
16	NC
17	GND
18	NC
19	NC

PW

Pin	Symbol
1	GND
2	5V

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

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components