TFT DISPLAY SPECIFICATION



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Summary

WF1560-19201080AE#0PW0-FC is a 15.6” TFT Liquid Crystal Display module with WLED Backlight unit and 30 pins eDP interface (The original TFT panel is 2ch-LVDS). This module supports 1920 x 1080 FHD AAS mode and can display 16,194,277 colors.

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General Specifications

Item	Dimension	Unit
Size	15.6	inch
Dot Matrix	1920 x RGB x 1080	dots
Module dimension	363.8(W) x 215.9(H)x 20.8 (D)	mm
Active area	344.16 x 193.59	mm
Pixel pitch	0.17925 (H) x 0.17925 (V)	mm
LCD type	TFT, Normally Black, Transmissive	
Viewing Angle	89/89/89/89	
Backlight Type	LED,Normally White	
Controller IC	CH7513A-BFI	
TFT Interface	eDP	
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	-30	—	+85	℃
Storage Temperature	TST	-40	—	+90	℃

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
Supply Voltage For LCM	P1 VDD	4.7	5	5.3	V	-
Supply Current For LCM	P1 IDD	—	900	1350	mA	Note 1,2

Backlight conditions:

Item	Symbol	Min	Typ	Max	Unit	Remark
Supply Voltage For Back Light	P2 VDD	11.5	12	12.5	V	-
Supply Current For Back Light	P2 IDD	—	1000	1500	mA	Note 1,2
LED life time	—	—	50,000	—	Hr	Note 3

Note 1 : This value is test for P1 VDD=5.0V , P2 VDD =12.0V , Ta=25℃ only

Note 2 : Please make sure to support enough current.

Note 3: The "LED life time" is defined as the module brightness decrease to 50% original brightness at Ta=25℃

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Optical Characteristics

Item		Symbol	Condition.	Min	Typ.	Max.	Unit	Remark
Response time		Tr+ Tf	θ=0°、Φ=0°	-	25	35	.ms	Note 3
Contrast ratio		CR	At optimized viewing angle	600	800	-	-	Note 4,
Color Chromaticity	White	Wx	θ=0°、Φ=0	0.263	0.313	0.363		Note 2,6,7
		Wy		0.279	0.329	0.379		
Viewing angle	Hor.	ΘR	CR≧10	85	89	-	Deg.	Note 1
		ΘL		85	89	-		
	Ver.	ΦT		85	89	-		
		ΦB		85	89	-		
Brightness		-	-	360	450	-	cd/m^2	Center of display
Uniformity		(U)	-	70	-	-	%	Note 5

Ta=25±2℃

Note 1: Definition of viewing angle range

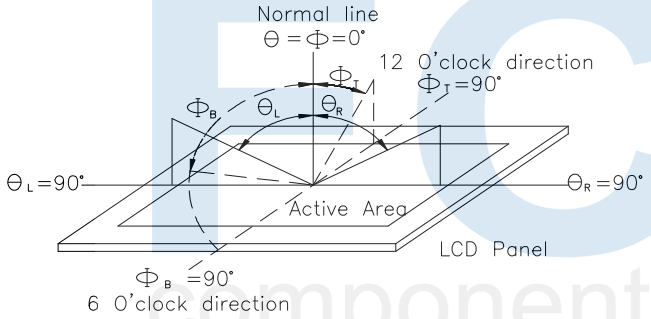


Fig 9.1. Definition of viewing angle

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.

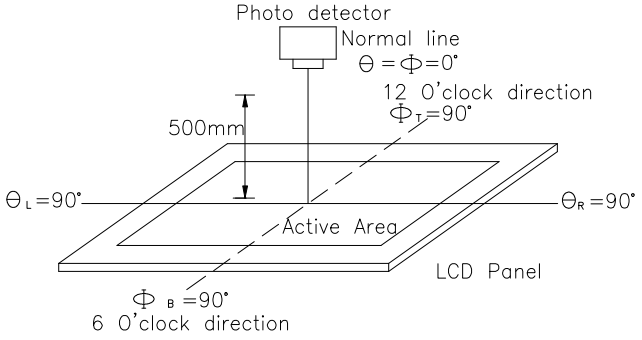


Fig 9.2. Optical measurement system setup

Note 3: Definition of Response time:

The response time is defined as the LCD optical switching time interval between “White” state and “Black” state. Rise time, Tr, is the time between photo detector output intensity changed

Interface

CON2：LCM PIN Definition

Pin No.	Signal Name	Description	Remarks
1	NC	Not connection	
2	GND	Ground	
3	DP1-	Complement Signal Link Lane 1	
4	DP1+	True Signal Line 1	
5	GND	Ground	
6	DP0-	Complement Signal Link Lane 0	
7	DP0+	True Signal Line 0	
8	GND	Ground	
9	AUX+	True Signal Auxiliary Ch.	
10	AUX-	Complement Signal Auxiliary Ch.	
11	GND	Ground	
12-14	NC	Not connection (If Pin 12 and Pin 13 have voltage input, it will not affect the use)	
15-16	GND	Ground	
17	HPD	HPD Signal Pin	
18-21	GND	Ground	
22	NC(BL_EN)	Not connection	
23	NC(BL_PWM)	Not connection	
24-30	NC	Not connection(If Pin 26~Pin 29 have voltage input, it will not affect the use)	

Note: All input signals shall be low or Hi-Z state when P1 VDD is off

CON3 ：Back light PIN Definition

Pin No.	Signal Name	Description	Remarks
1	GND	Ground	
2	BL_EN	Back light Enable	
3	BL_UP	Back light Increment Backlight Brightness	
4	BL_DN	Back light Decrement Backlight Brightness	

Note:
1. An on-screen display (OSD) ,the internal control of brightness will need to switch CON3 to Pin3~Pin4.
2. 100% brightness is preset and the adjustable range will be 0~100%(16 steps)
3. After adjusting the brightness, the brightness will be automatically memorized after 10 seconds.

P1：Supply Voltage For LCM

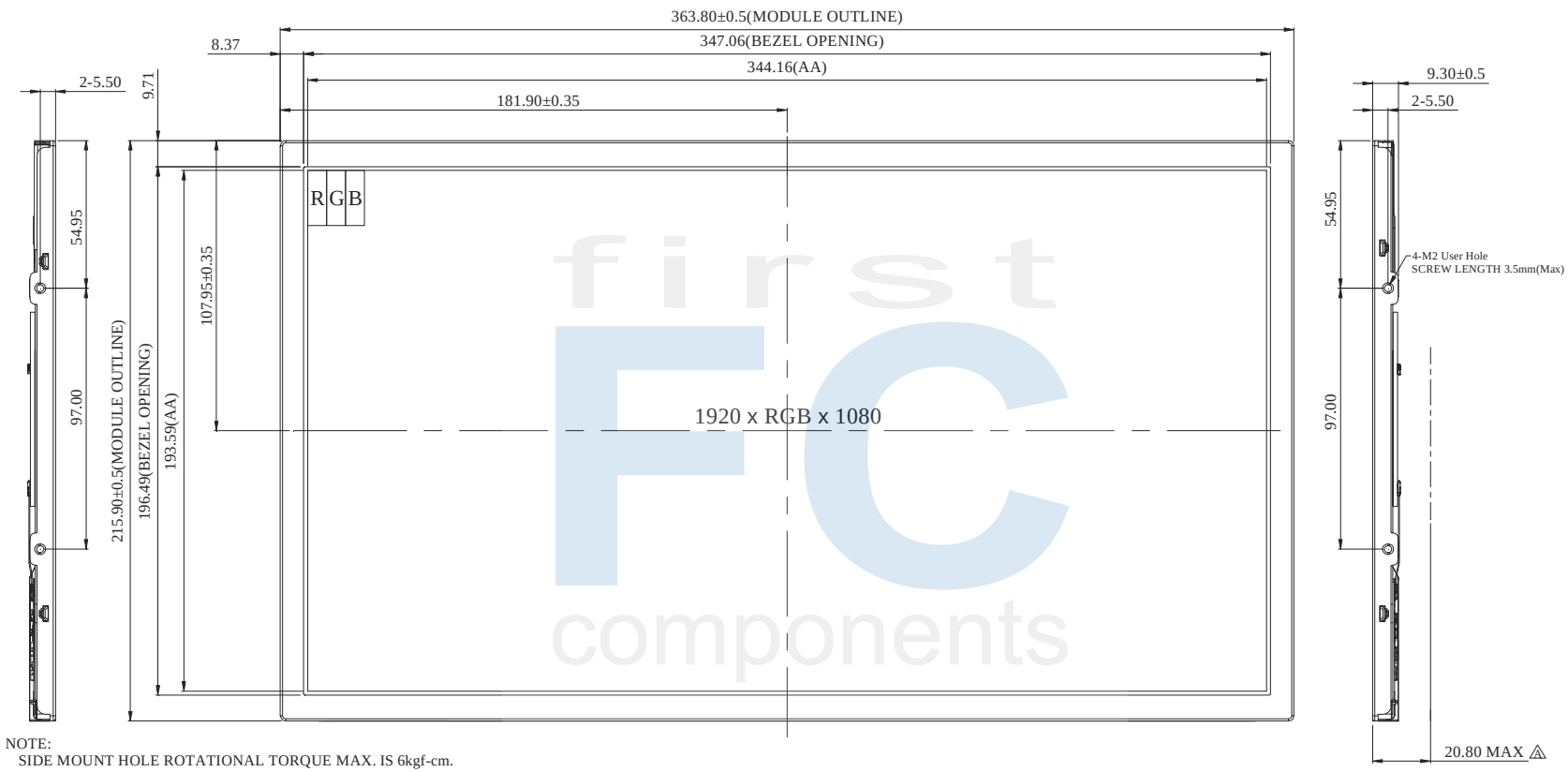
Pin No.	Signal Name	Description	Remarks
1	5V	Power supply +5V	
2	GND	Ground	
3	NC	Not connection	

P2：Supply Voltage For Back Light

Pin No.	Signal Name	Description	Remarks
1	12V	Power supply +12V	
2	GND	Ground	
3	NC	Not connection	

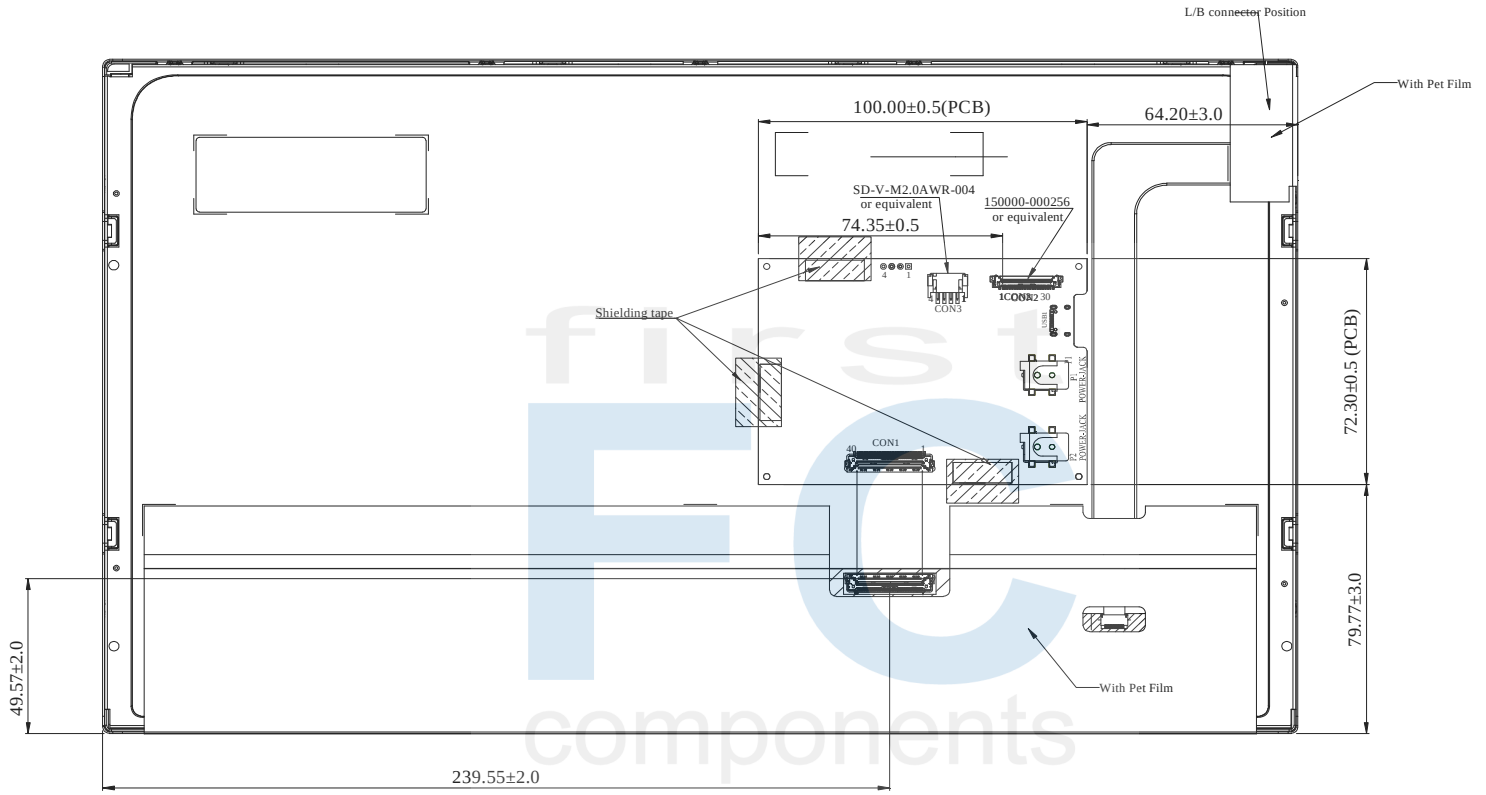
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Contour Drawing



NOTE:
SIDE MOUNT HOLE ROTATIONAL TORQUE MAX. IS 6kgf-cm.

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



CON3

PIN NO.	SYMBOL
1	GND
2	BL_EN
3	BL_UP
4	BL_DN

P1

PIN NO.	SYMBOL
1	5V
2	GND
3	NC

2 — 1
(GND) (5V)

P2

PIN NO.	SYMBOL
1	12V
2	GND
3	NC

2 — 1
(GND) (12V)

CON2

PIN NO.	SYMBOL	PIN NO.	SYMBOL	PIN NO.	SYMBOL	PIN NO.	SYMBOL	PIN NO.	SYMBOL	PIN NO.	SYMBOL
1	NC	6	DP0-	11	GND	16	GND	21	GND	26	NC
2	GND	7	DP0+	12	NC	17	HPD	22	NC(BL_EN)	27	NC
3	DP1-	8	GND	13	NC	18	GND	23	NC(BL_PWM)	28	NC
4	DP1+	9	AUX+	14	NC	19	GND	24	NC	29	NC
5	GND	10	AUX-	15	GND	20	GND	25	NC	30	NC

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