

MAXEN ELECTRONICS LIMITED

Email: sales@maxen-electronics.com [Http:// www.maxen-electronics.com](http://www.maxen-electronics.com)

SPECIFICATION

MX-A80FM39-IS04

For Customer's Acceptance:

Approved By	Comment		
PREPARED	CHECKED	VERIFIED BY QA DEPT	VERIFIED BY R&D DEPT

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1. GENERAL DESCRIPTION

The display model MX-A80FM39-IS04 is a IPS TFT-LCD (Thin Film Transistor Liquid Crystal Display) module. This model is Composed of a TFT LCD panel , a driving circuit and a back light, and also has a 8.0 inch diagonally measured active display area with 1200 horizontal by 1920 vertical pixel resolution in a stripe arrangement. Display 16M colors by 24 bit R.G.B signal input.

1.1 General information

Item	Specification	Unit
Outline Dimension	114.6×184.1×2.60 (Type.)	mm
Display area	107.64(H)×172.22(V)	mm
Number of Pixel	1200RGB(H)×1920(V)	pixels
Pixel pitch	0.0897(H)×0.0897(V)	mm
Pixel arrangement	RGB Vertical stripe	
Display mode	Normally black	
Surface treatment	AG	
Back-light	White LED	
System interface	4 lane mipi	
NTSC	53 (type)	%
Viewing Direction	all	
Power Consumption	TBD	mW

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2. ABSOLUTE MAXIMUM RATINGS

2.1 Electrical Absolute Rating:

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Supply Voltage	VDD	2.6	3.3	3.5	V	
	VDDIO	1.6	1.8/2.8	3.5	V	
	VGH		15.0		V	
	VGL		- 10.0		V	
VCOM	VCOM	- 4.0V			V	
Input signal voltage	V _{IH}	0.7 VCC		V _{CC}		
	V _{IL}	0		0.3V _{CC}		

2.2 Environment Absolute Rating

Item	Symbol	Min	Max	Unit	Note
Operating Temperature	T _{OPA}	-10	50	°C	
Storage Temperature	T _{STG}	-20	60	°C	

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3. OPTICAL CHARACTERISTICS

3.1 Optical specification

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit
Brightness		B	Viewing Normal Angle		440		cd/m2
Contrast Ratio		CR		800	1000		
Response Time		Tr			10	7	msec
		Tf			27	35	msec
CIE color coordinate	White	XW	Viewing Normal Angle		0.312		
		YW			0.313		
	Red	XR			0.611		
		YR			0.339		
	Green	XG			0.334		
		YG			0.576		
	Blue	XB			0.139		
		YB			0.092		
Viewing Angle	Hor.	Left	Center CR>=10		85		deg.
		Right			85		
	Ver.	Up			85		
		Down			85		
Uniformity		lv-m			80		

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3.2 Measuring Condition

A Measuring surrounding: dark room

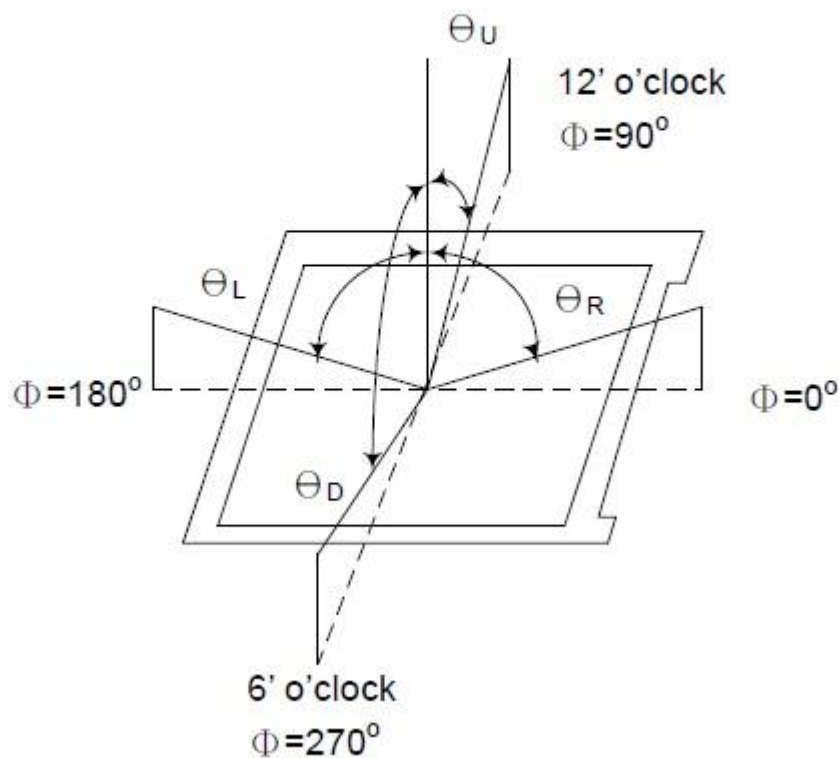
B Ambient temperature: 25+/-2 °C

3.3 Measuring Equipment

A FPM520 of Westar Display technologies, INC., which utilized Sr-3 for Chromaticity and BM-5A for other optical characteristics.

B Measuring spot size: 20-21 mm

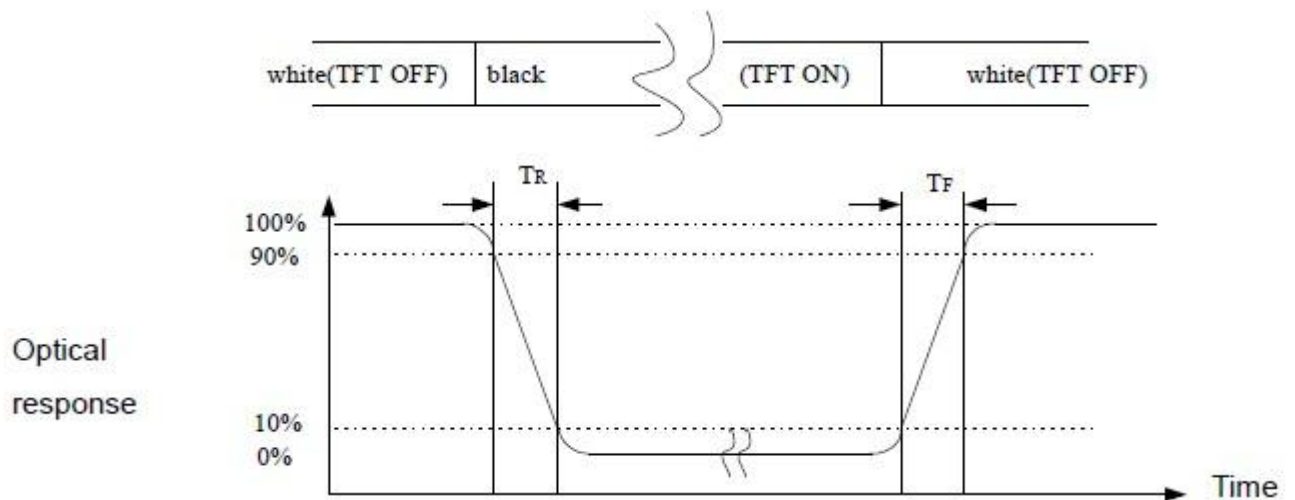
Note (1) Definition of Viewing Angle :



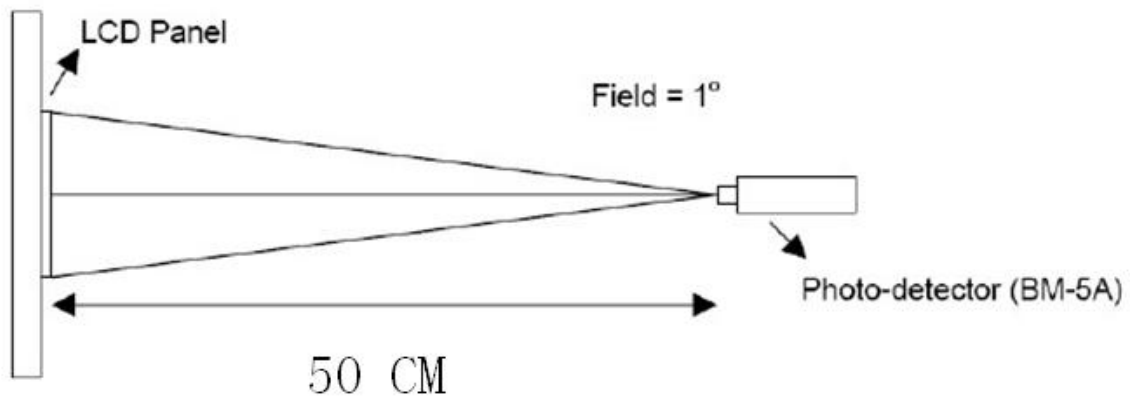
Note (2) Definition of Contrast Ratio (CR):
Measured at the center point of panel

$$CR = \frac{\text{Luminance with all pixels white}}{\text{Luminance with all pixels black}}$$

Note (3) Definition of Response Time: Sum of T_R and T_F



Note (4) Definition of optical measurement setup



Note (5) Rubbing Direction (The different Rubbing Direction will cause the different optimal view direction.)

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4. INTERFACE PIN CONNECTION

Pin No.	Symbol	I/O	Description
1	VDD	P	Power Supply, 3.3V
2	VDD	P	Power Supply, 3.3V
3	VDD	P	Power Supply, 3.3V
4	VDD	P	Power Supply, 3.3V
5	NC(BIST)	I	No connection (Please let it floating for INX test only)
6	NC(MTP)	I	No connection (Please let it floating for INX test only)
7	LED_PWM_IN	I	LED PWM signal input.
8	LED_PWM_OUT	O	PWM control signal for LED driver (CABC)
9	NC(SCL)	O	No connection
10	NC(SDA)	O	No connection
11	GND	P	Ground
12	D0+	I	MIPI Input Data Pair
13	D0-	I	MIPI Input Data Pair
14	GND	P	Ground
15	D1+	I	MIPI Input Data Pair
16	D1-	I	MIPI Input Data Pair
17	GND	P	Ground
18	CLK+	I	MIPI Input Clock Pair
19	CLK-	I	MIPI Input Clock Pair
20	GND	P	Ground
21	D2+	I	MIPI Input Data Pair
22	D2-	I	MIPI Input Data Pair
23	GND	P	Ground
24	D3+	I	MIPI Input Data Pair
25	D3-	I	MIPI Input Data Pair
26	GND	P	Ground
27	GND	P	Ground
28	ID	I	ID pin
29	STBYB	I	Standby mode, Normally pull high. STBYB = "L", timing controller, and source driver will turn off, all output are High-Z STBYB = "H"(3.3V), normal operation. (Default)
30	LED1	P	Cathode for light bar
31	LED2	P	Cathode for light bar
32	LED3	P	Cathode for light bar
33	NC	I	NC
34	NC	I	NC
35	NC	I	NC
36	NC(WPN)	I	No connection
37	NC	I	NC
38	VLED	P	Anode for light bar
39	VLED	P	Anode for light bar

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5. BACK LIGHT

5.1 The Characteristic Of The Back Light

The back-light system is an edge-lighting type with 21 LEDS. The characteristic of the LED is shown in the following tables.

Item	Symbol	Min.	Typ.	Max.	Unit
LED current	IF		70	75	mA
LED voltage	V		28.8		V
Coordinates	X	0.26		0.31	
	Y	0.27		0.32	
Brightness Uniformity	lv-m		80		
Backlight Life time	T		30000		hrs

5.2 Back Light Circuit

