CHIMEI INNOLUX DISPLAY CORPORATION

LCD MODULE

SPECIFICATION

Customer: _____

Model Name: AT050TN43

SPEC NO.: _____

Date: 2012/11/28

Version: 01

■Preliminary Specification

□Final Specification

Option
■ LCD Panel Only

For Customer's Acceptance

Approved by	Comment

Approved by	Reviewed by	Prepared by
Jay	Tommy	

Record of Revision

Version	Revise Date	Page	Content
Pre-spec. 01	2012/11/28		Initial release.

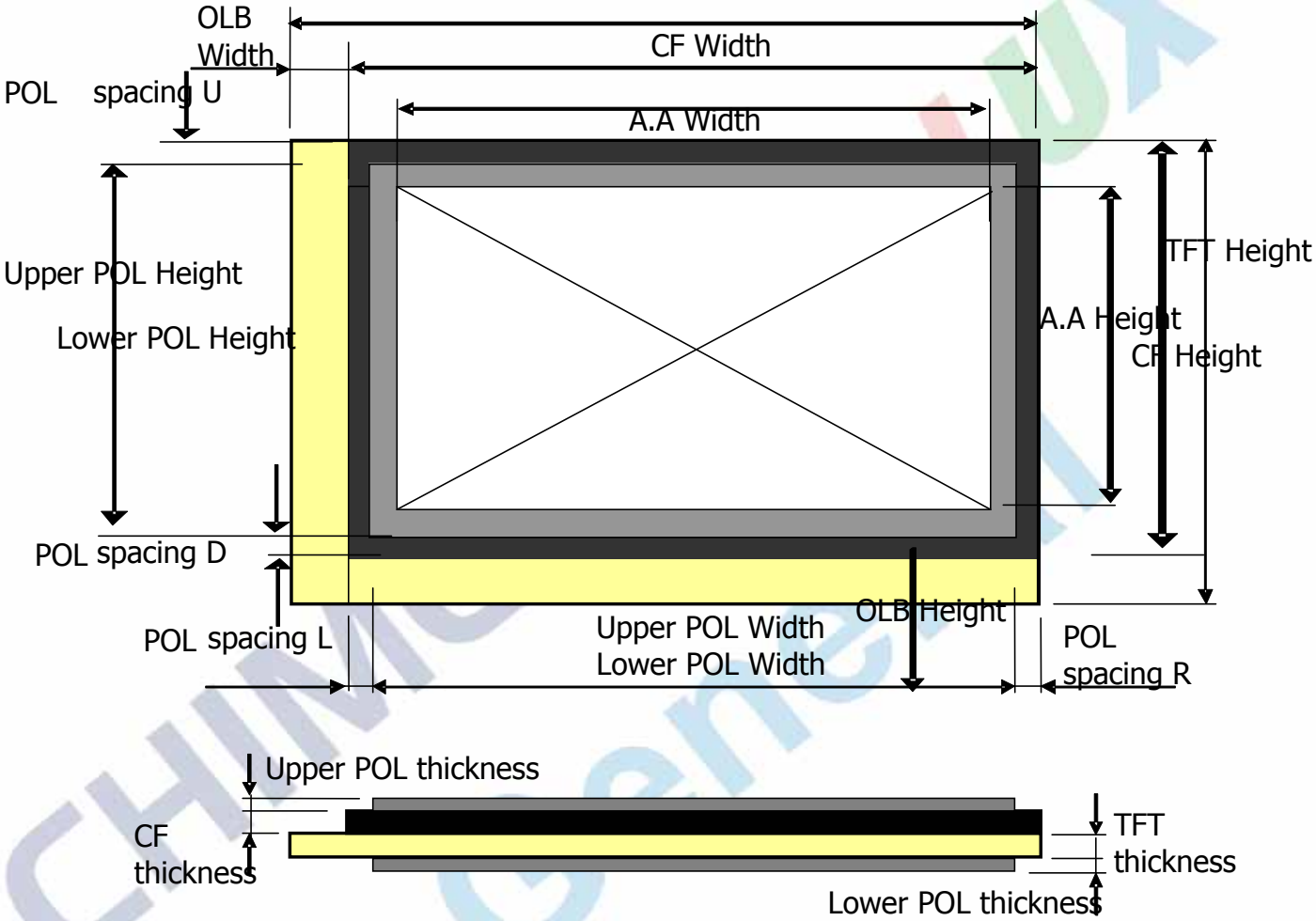
Contents

1. General Specifications

No.	Item	Specification		Remark
1	Glass thickness	TFT	0.5	mm
		CF	0.5	
2	Shipping Mode	Cut		
3	Shipping size	359.8 X 297.52 / 359.8 X 371.9		mm
4	Active screen size	5.0 inch(Diagonal)		
5	Driver element	a-Si TFT active matrix		
6	Resolution	800X3(RGB) X 480		pixel
7	Display mode	Normally white, Transmissive		
8	Panel outline dimension	115.6(W) X 74.38(H)		mm
9	Active area	108(W) X 64.8(H)		mm
10	Dot pitch	0.045(W) X 0.135(H)		mm
11	Color arrangement	RGB-stripe		
12	View direction(Gray inversion)	6 o'clock		
13	Cell gap	4.0±0.3		um

2. Dimension

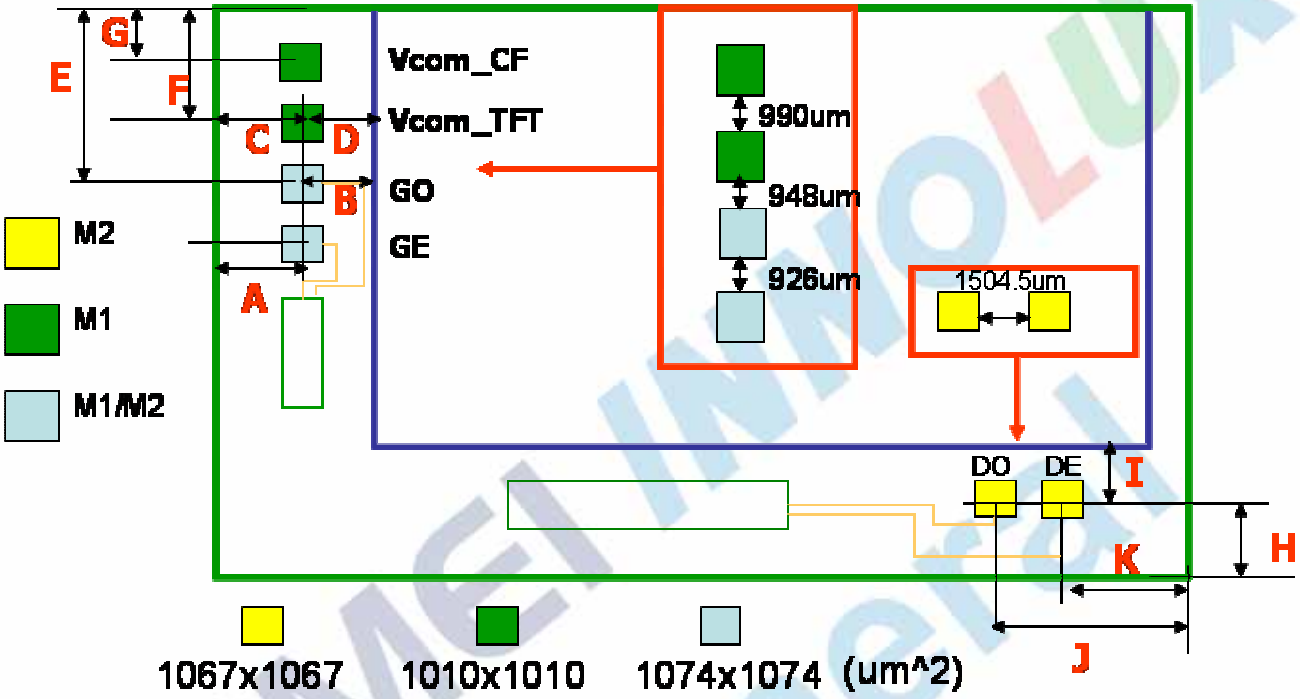
2.1. Panel size dimension



ITEM	Spec.	ITEM	Spec.	ITEM	Spec.
TFT Width	115600	Upper POL Width	109800	Lower POL Width	109800
TFT Height	74380	Upper POL Height	66800	Lower POL Height	67000
CF Width	112710	U POL spacing R	1410	L POL spacing R	1410
CF Height	70080	U POL spacing L	1500	L POL spacing L	1500
A.A Width	108000	U POL spacing U	1580	L POL spacing U	1580
A.A Height	64800	U POL spacing D	1700	L POL spacing D	1500
U Glass thickness	500	U POL thickness	215	L POL thickness	215
D Glass thickness	500	OLB Height	4300	OLB Width	2890

3. Cell Test

3.1. Cell test



No.	Width (um)	No.	Width (um)	No.	Width (um)
A	1014.5	B	1875.5	C	1014.8
D	1875.2	E	12509.42	F	10509.7
G	8509.7	H	2223.7	I	2076.3
J	7739.3	K	5168.1		

Recipe Name			AT050TN43		
Pattern	P/G Output	Panel Input	Cycle time (μSec)	Maz (V)	Min(V)
(B)	CH-1	DO	16667	9.70	0.00
	CH-2	DE		9.70	0.00
	CH-3	TFT com		4.00	4.00
	CH-4	CF com		4.00	4.00
	CH-5	GO		15.00	-5.00
	CH-6	GE		15.00	-5.00
(G)	CH-1	DO	16667	6.70	1.30
	CH-2	DE		6.70	1.30
	CH-3	TFT com		4.00	4.00
	CH-4	CF com		4.00	4.00
	CH-5	GO		15.00	-5.00
	CH-6	GE		15.00	-5.00
(W)	CH-1	DO	16667	4.20	3.80
	CH-2	DE		4.20	3.80
	CH-3	TFT com		4.00	4.00
	CH-4	CF com		4.00	4.00
	CH-5	GO		15.00	-5.00
	CH-6	GE		15.00	-5.00
(DS)	CH-1	DO	16667	4.20	3.80
	CH-2	DE		9.70	0.00
	CH-3	TFT com		4.00	4.00
	CH-4	CF com		4.00	4.00
	CH-5	GO		15.00	-5.00
	CH-6	GE		15.00	-5.00

4. Operation Specifications

Item	Symbol	Specification	Unit
		Typical	
TFT gate on voltage	V_{GH}	16	V
TFT gate off voltage	V_{GL}	-10	V
TFT common Electrode voltage	T_{COMDC}	4.2	V

Note : (1) Vcom must be adjusted to optimize display quality. (Flicker, Crosstalk and etc.)
(2) Vgh / Vgl is TFT operation voltage.

5. Optical Specifications

Item	Symbol	Condition	Values			Unit	Remark
			Min.	Typ.	Max.		
Transmittance	$T_{\%}$	-	-	4.48	-	percent	C-light
Color chromaticity	W_X	Normal θ=Φ=0°	0.26	0.31	0.36	-	Note 1 Note 2 Note 3 (Without Touch Screen)
	W_Y		0.28	0.33	0.38	-	

Test Conditions:

1. V_{CC}=3.3V, V_{LED}=5.0V.The ambient temperature is 25℃.
2. The test systems refer to Note 2.

Note 1: Definition of optical measurement system.
The optical characteristics should be measured in dark room. After 30 minutes operation, the optical properties are measured at the center point of the LCD screen. (Response time is measured by Photo detector TOPCON BM-7, other items are measured by BM-5A/Field of view: 1° /Height: 500mm.)

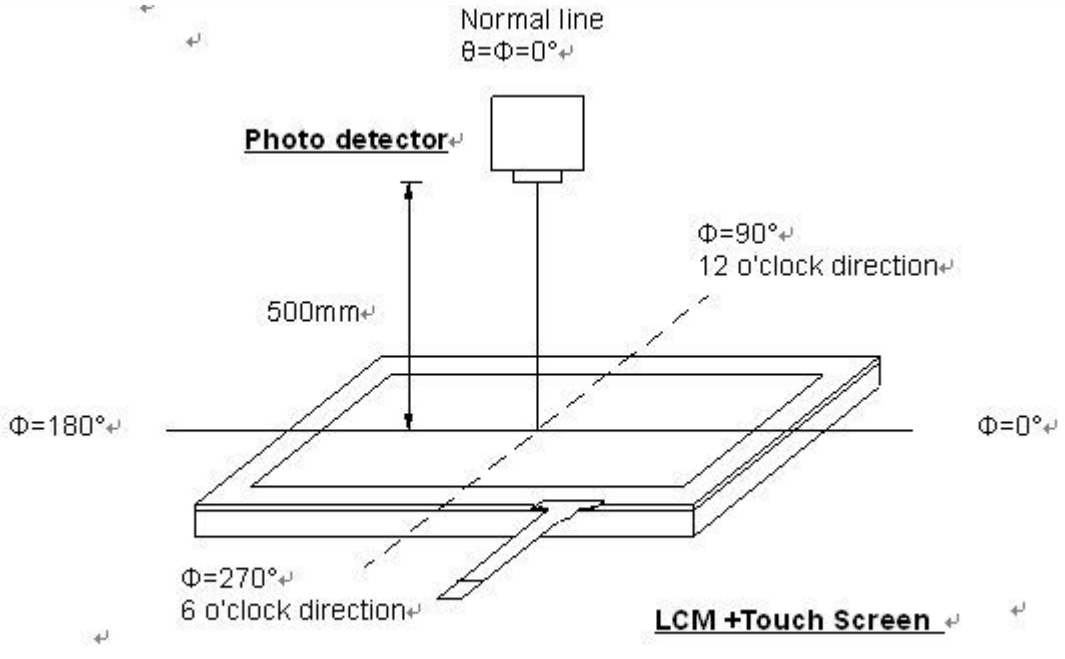


Fig. 4-2 Optical measurement system setup

Fig. Optical measurement system setup

Note 2: Definition of color chromaticity (CIE1931)
Color coordinates measured at center point of LCD.

Note 3: All input terminals LCD panel must be ground while measuring the center area of the panel. The LED driving condition is V_{LED}=5.0V.

6. Reliability Test Items

Item	Test Conditions		Remark
High Temperature Storage	Ta = 80℃	240 hrs	Note 1,Note 4
Low Temperature Storage	Ta = -30℃	240hrs	Note 1,Note 4
High Temperature Operation	Ts = 70℃	240hrs	Note 2,Note 4
Low Temperature Operation	Ta = -20℃	240hrs	Note 1,Note 4
Operate at High Temperature and Humidity	+60℃, 90%RH	240 hrs	Note 5
Thermal Shock	-30℃/30 min ~ +80℃/30 min for a total 100 cycles, Start with cold temperature and end with high temperature		Note 4

Note 1: Ta is the ambient temperature of samples.
Note 2: Ts is the temperature of panel's surface.
Note 3: In the standard condition, there shall be no practical problem that may affect the display function. After the reliability test, the product only guarantees operation, but doesn't guarantee all the cosmetic specification.
Note 4: Before cosmetic and function test, the product must have enough recovery time, at least 2 hours at room temperature.
Note 5: Before cosmetic and function test , the product must have enough recovery time, at least 24 hours at room temperature.