

**PRODUCT SPECIFICATION****TFT-LCD MODULE****Module No: 312329-01**☒ Preliminary Specification☐ Approval Specification

Designed by	Checked by	Approved by

Final Approval by Customer

Approved by	Comment

For more information, contact us:

WWW.DCLTEK.COM | 1-800-407-8917 | SALES@DCLTEK.COM

※The specification of "TBD" should refer to the measured value of sample . If there is difference between the design specification and measured value, we naturally shall negotiate and agree to solution with customer.

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1.Document Revision History

Version	Contents	Date	Note
V0	Initial version	2025.06.12	

2. General Description

NO	Item	Specification	Unit
1	LCD Size	TFT"8.0	inch
2	Panel Type	IPS	mm
3	Display Resolution	1200×(RGB)×1920	pixel
4	Display Mode	Normally Black	-
5	Number of Colors	16.7M	-
6	Viewing Direction	ALL	-
7	CTP+LCM Module size	132.60 (H) x 202.60(V) x4.98(T)	mm
8	Active Area	108.00 (H) x172.80 (V)	mm
9	Pixel Pitch	0.09(H)×0.09(V)	mm
10	LCM Weight	-	g
11	LCM Driver	-	-
12	Light Source	White LED	-
13	LCM Interface	MIPI 4lane	-

Note : Please refer to the mechanical drawing

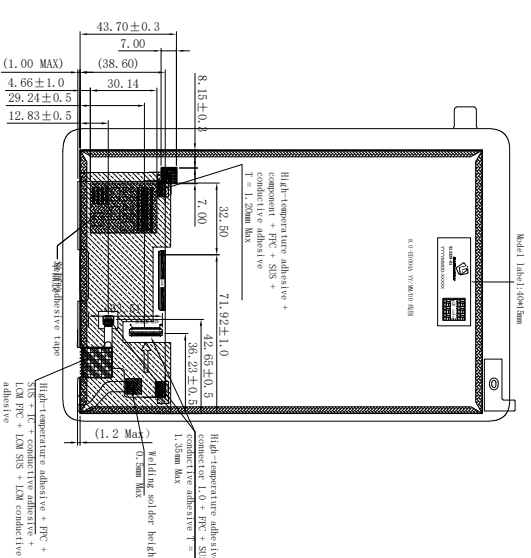
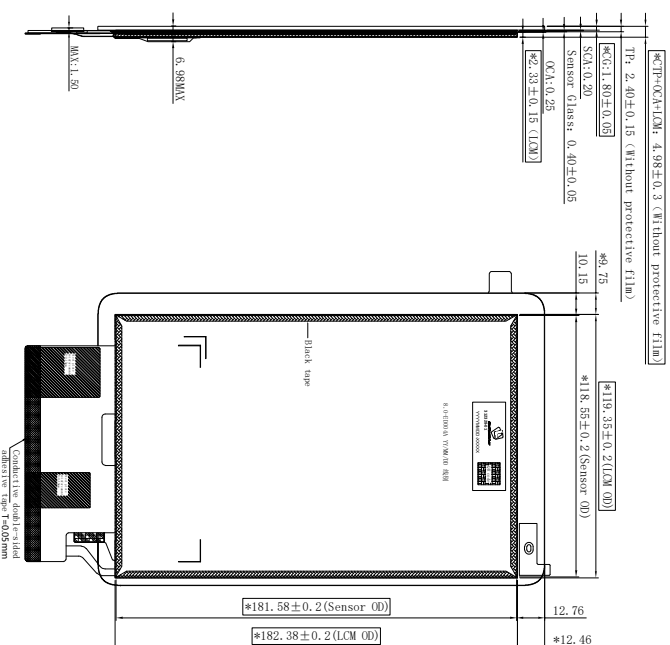
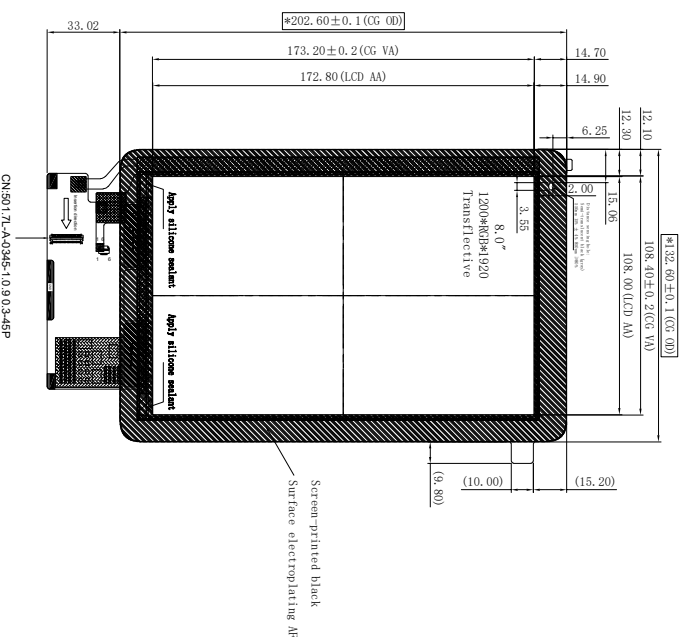
3. Mechanical Drawing

Front View

Side View

Back View

Back View



IF I = 23*5 = 115mA
V = 2.8*9 = 25.2V

PIN定义	
1	TP_VDD
2	TP_RST
3	TP_INT
4	TP_SDA
5	TP_SCL
6	GND

No.	Signal
1	SH
2	LENS
3	LEBX
4	LEBX
5	IE
6	YD
7	YD
8	YD
9	MCW (5.0V)
10	OPV Y00
11	OPV Y01
12	OPV Y02
13	OPV Y03
14	OPV Y04
15	OPV Y05
16	MCAPP
17	MCW (4.0V)
18	V00 3.3V
19	V00 3.3V
20	V00 3.3V
21	SH
22	OP
23	OP
24	SH
25	OP
26	OP
27	OP
28	OP
29	OP
30	OP
31	OP
32	OP
33	OP
34	OP
35	OP
36	OP
37	OP
38	OP (5.0V)
39	OP (5.0V)
40	OP (5.0V)
41	OP
42	OP
43	OP
44	OP
45	OP

Note:
1. Product structure: 6-6;

2. Touch chip: FT7411, 10-point touch;
3. Glass material: high-purity-aluminum-silicon pantha (IKO7), surface hardness $\geq 7H$; stress value: CS: ≥ 750 MPa, DLI: ≥ 30 um;
4. 500K ball drop test at a height of 12 cm on 5 points; 4 corners (visible area distance from edge: 10 mm) and the center position, no breakage;
5. PFC uses non-pure electrolytic copper, no obvious warping or deformation, the edge of the reinforcing plate has no burrs, PFC cannot be dead-folded;
6. Warpage ≤ 0.3 , the transmittance of the finished product in the VA area: $\geq 85\%$;
7. Cover plate on screen printing ink: UV-resistant ink; UV ultraviolet light: UV aging test, 0.55 W/m², 500 hours;
8. Support wet-hand operation (raindrops do not report points), support glove touch (glove ≤ 2 mm thickness), double-click to wake up! Support custom passive pen;
9. No tolerance marked ± 0.3 control;
10. Working environment: -20°C to +70°C
11. Storage environment: -40°C to +80°C

Notes:

1. Display : 8.0", TFT
2. Resolution: 1200xRGBx1920
3. LCD Viewing Direction: Transflective
4. Display Mode: Normally Black
5. LCM+CTP Brightness: 369 cd/m² (TYP)
6. Unmarked tolerance: ± 0.3
7. Operating temperature: -20°C~+70°C
8. Storage temperature: -40°C~+80°C
9. Requirements on Environmental Protection: ROHS

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SCALE: 1/1	UNIT: mm	PAGE: 1/1			
Part No:	312329-01		Approve	Check	Drawn
Customer No:		VER: V0			

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4. I/O CONNECTION

Pin No.	Symbol	Description
1	GND	Ground
2	FB3	LED Current FB3
3	FB2	LED Current FB2
4	FB1	LED Current FB1
5	NC	NC
6	VLED	LED Power
7	VLED	LED Power
8	VLED	LED Power
9	NC	NO CONNECT
10	CTP_VDD 2.8V	TP Power supply
11	CTP_RST 1.8V	Reset signal for TP
12	CTP_INT 1.8V	Interrupt signal for TP
13	CTP_SDA 1.8V	I2C date signal for TP
14	CTP_SCL 1.8V	I2C Clk signal for TP
15	CTP_GND	Ground
16	NC/VPP	NC
17	NC	NO CONNECT
18	VDD (3.3V)	Logic , interface ,power IC power supply. 2.5V to 3.3V
19	VDD (3.3V)	Logic , interface ,power IC power supply. 2.5V to 3.3V
20	VDD (3.3V)	Logic , interface ,power IC power supply. 2.5V to 3.3V
21	GND	Ground
22	D0_P	MIPI Positive data signal (+)

23	D0_N	MIPI Negative data signal (-)
24	GND	Ground
25	D1_P	MIPI Positive data signal (+)
26	D1_N	MIPI Negative data signal (-)
27	GND	Ground
28	CLK_P	MIPI Positive data signal (+)
29	CLK_N	MIPI Negative data signal (-)
30	GND	Ground
31	D2_P	MIPI Positive data signal (+)
32	D2_N	MIPI Negative data signal (-)
33	GND	Ground
34	D3_P	MIPI Positive data signal (+)
35	D3_N	MIPI Negative data signal (-)
36	GND	Ground
37	NC	NC
38	LCD_RESET 3.3V	Reset signal for LCM
39	LCD_ID0	ID PIN
40	LCD_ID1	ID PIN
41	NC	NC
42	NC	NC
43	NC	NC
44	PWMOUT	PWM OUT
45	GND	Ground

5. ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Min.	Max.	Unit	Remark
Power supply voltage	VDD	-0.3	6	V	Note1
LED forward current	I _F	-0.001	115	mA	For Total
LED Reverse Voltage	V _R	-	26.1	V	For Total
Operating temperature	T _{op}	-20	70	°C	Note1,2
Storage temperature	T _{st}	-30	80	°C	Note1,2
Humidity	H _{st}	10	90	%RH	Note1,3

(Ta=+25°C,GND=0V)

Note1:If the module exceeds the absolute maximum ratings, it may be damaged permanently. Also

if the module operates with the absolute maximum ratings for a long time, the reliability may drop.

Note2: In case of temperature below 0°C ,the response time of liquid crystal (LC) becomes slower

and the color of panel darker than normal one.

Note3: Temp. ≤ 60°C , 90% RH MAX.

Temp. > 60°C , Absolute humidity shall be less than 90% RH.

6.0. ELECTRICAL CHARACTERISTICS

6.1 TFT-LCD Panel Driving Section

Item	Symbol	Min.	Typ.	Max.	Unit	Remark
Power Supply Voltage	VDD	2.5	3.3	3.3	V	-
Power Supply Current	IVDD	-	113	-	mA	Note1
Logic Input High Voltage	VIH	0.7VDD	-	VDD	V	-
Logic Input Low Voltage	VIL	0	-	0.3VDD	V	-
Panel Power Consumption	PVDD	-	0.372	-	Watt	Note1
Module Power Consumption	PLCM	-	3.27	-	Watt	Note1,2

(Ta=+25°C,GND=0V)

Note1: Measurement Conditions (Video Mode): Full Screen Red Pattern, VDD=3.3V, 60Hz Refresh. Note2: $P_{LCM} = P_{VDD} + P_{BL}$, About P_{BL} information, inference to 5.2 Back Light Driving Section.

6.2 Back Light Driving Section

Item	Symbol	Min.	Typ.	Max.	Unit	Remark
Forward Voltage	VF	-	25.2	-	V	Note1
Forward Current	IF	-	115	-	mA	Note1
Backlight Power consumption	PBL	-	2.898	-	Watt	Note1
LED Quantity		45			PCS	

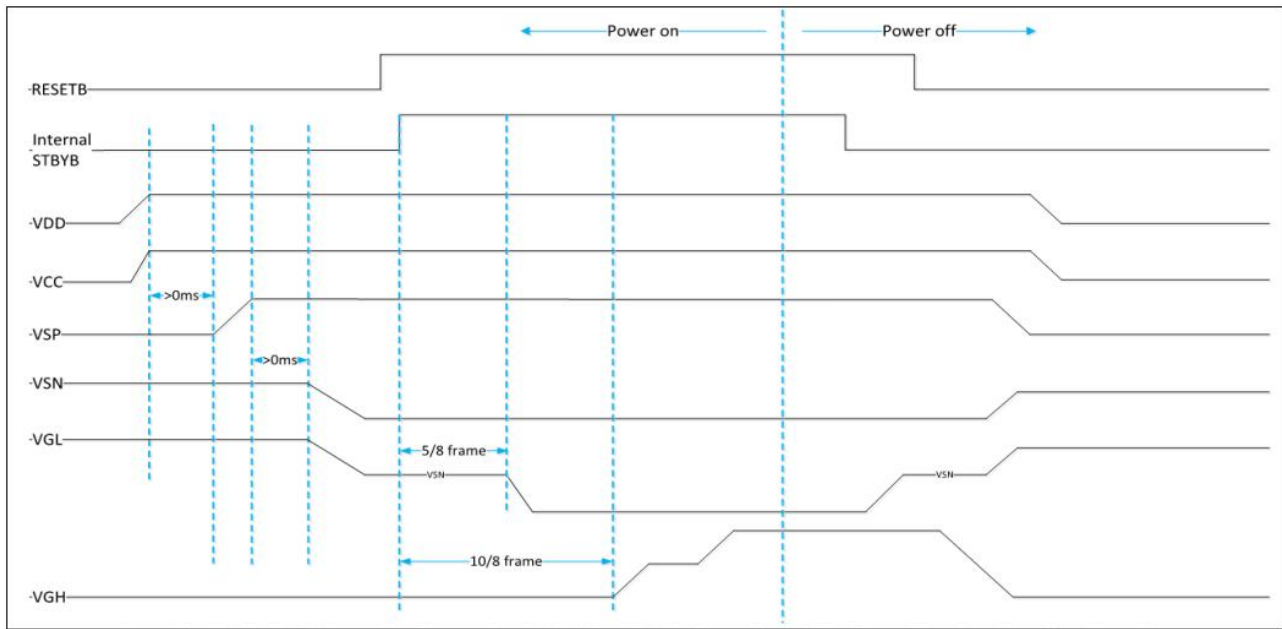
(Ta=+25°C,GND=0V)

Note1: The LED driving condition is defined for each LED module.

For each LED : IF=20mA, VF=3V(Typ.)/3.3V(Max.), Ta=25°C.

Note2: The "LED life time" is defined as the module brightness decrease to 50% of original brightness at $I_{LED}=20mA$ (Per Led). The LED life time could be decreased if operating I_{LED} is larger than 20mA

6.3 Power On/Off Sequence

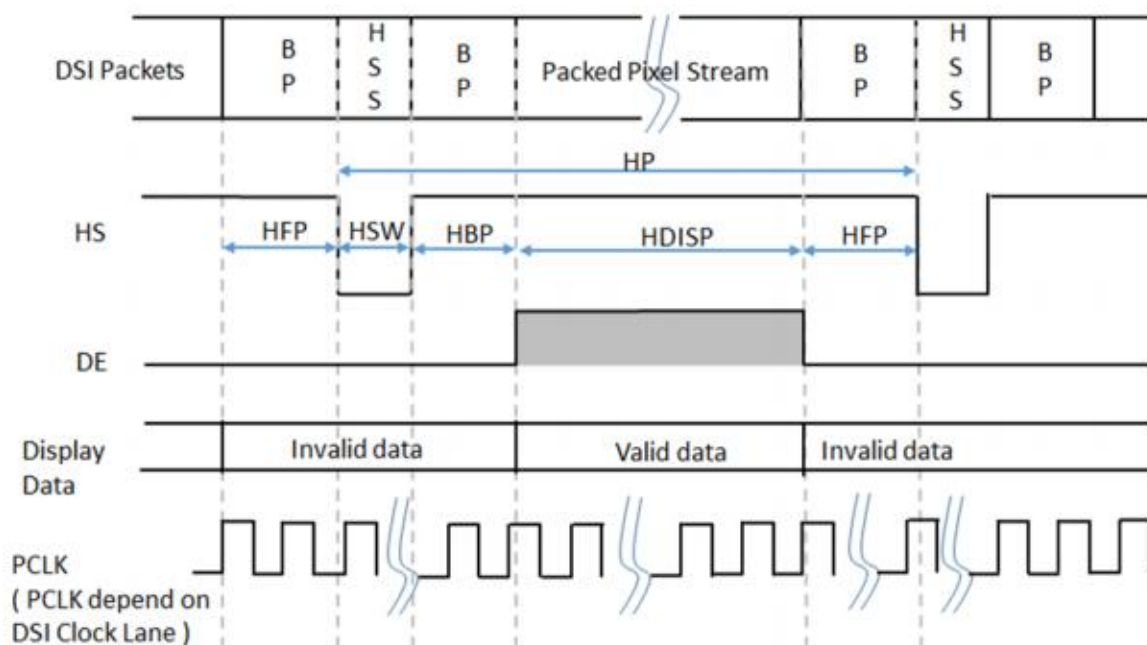


6.4 Timing Characteristics

(Ta=+25°C, GND=0V)

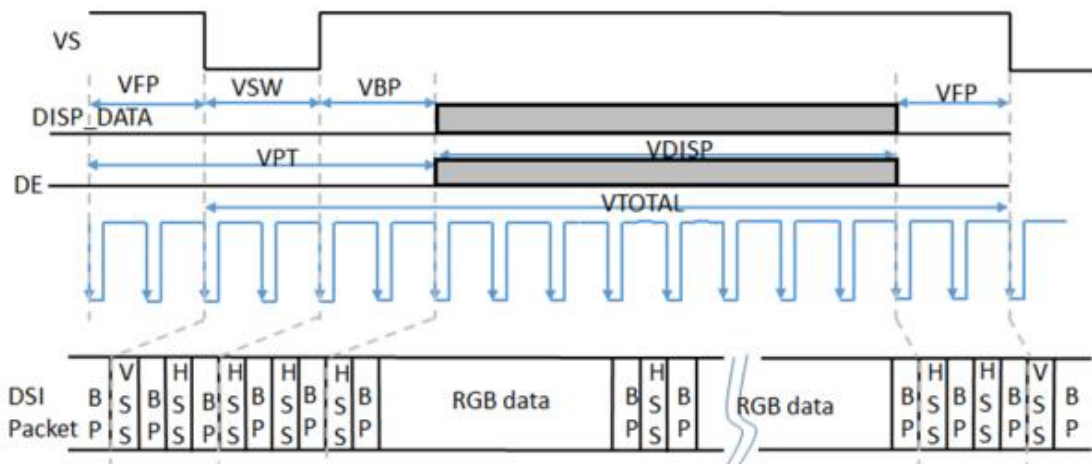
Condition: Ta =25°C, Resolution = 1200(RGB)*1920

Parameter	Symbol	Conditions	Specification			Unit	Notes
			Min.	Typ.	Max.		
Horizontal total	Htotal		1264		2047	DCK	
HS low pulse width	HSW		2			DCK	
Horizontal back porch	HBP		30			DCK	
Horizontal front porch	HFP		32			DCK	
Horizontal data start point		HSW+HBP	32			DCK	
Horizontal blanking period	HBLK	HSW+HBP+HFP	64			DCK	
Horizontal active area	HDISP			1200		DCK	



Condition: Ta=25°C, Resolution= 1200(RGB)*1920

Parameter	Symbol	Conditions	Specification			Unit	Notes
			Min.	Typ.	Max.		
Vertical Total	V _{TOTAL}		1952		2047	Line	
Vertical low pulse width	VSW		2			Line	1
Vertical front porch	VFP		16			Line	
Vertical back porch	VBP		14			Line	1
Vertical data start point		VSW+VBP	2			Line	1
Vertical blanking period	VPT	VSW+VBP+VFP	32			Line	
Vertical active area		VDISP		1920		Line	
Vertical Frame rate	VFR			60		Hz	

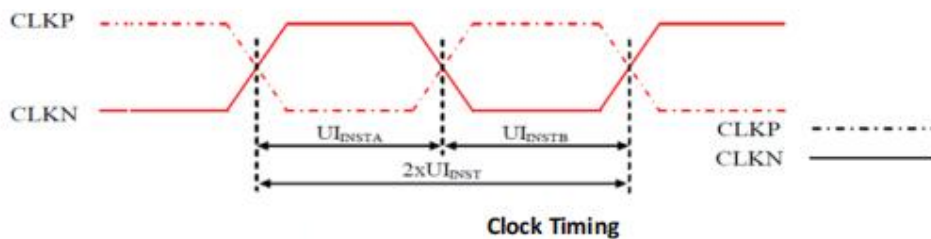


6.5 Timing Diagram

High Speed Mode - Clock Timings

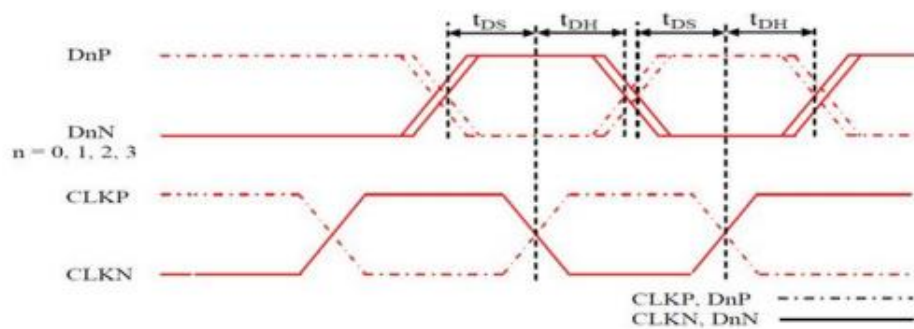
Signal	Symbol	Parameter	Specification			Unit	Notes
			Min.	Typ.	Max.		
CLK P/N	$2 \times UI_{INST}$	Double UI instantaneous	2		25	nS	
CLK P/N	UI_{INSTA}, UI_{INSTB}	UI instantaneous Half	1		12.5	nS	1

Note 1 : $UI = UI_{INSTA} = UI_{INSTB}$



High Speed Mode - Clock / Data Timings

Signal	Symbol	Parameter	Specification			Unit	Notes
			Min.	Typ.	Max.		
Dn P/N (n=0,1,2 and 3)	tDS	Data to Clock Setup time	$0.3 \times UI$			UI	
	tDH	Clock to Data Hold time	$0.3 \times UI$			UI	



7. OPTICAL CHARACTERISTICS

7.1 Optical Specification (Reflective mode)

Parameter 参数	Symbol 符号	Condi on 条件	Min. 最小值	Typ. 典型值	Max. 最大值	Unit 单位	Remark 备注
White Reflectance (with Polarizer)	Rw (%)	$\theta = 0$	2	2.5	-	%	
Contrast Ratio	C/R	$= 0^\circ \theta$	12	15	-	-	
NTSC Ratio	S	$= 0^\circ \theta$	15	20	-	%	
Response Time	TR+ TF	25 ° C	-	25	35	ms	设备: DMS Tr+Tf W90%/ B10%
Viewing Angle	θL	C/R>2	-	60	-	Degree	设备: DMS Source pad Down CR>2
	θR		-	60	-		
	θU		-	60	-		
	θD		-	60	-		

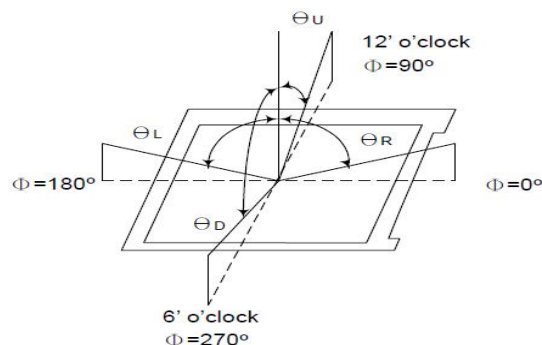
7.2 Optical Specification (Transmittance mode)

Parameter 参数	Symbol 符号	Condition 条件	Min. 最小值	Typ. 典型值	Max. 最大值	Unit 单位	Remark 备注
Contrast Ratio	C/R	= °0 θ	250	300	-	-	SR-UL1 R
Color Gamut (NTSC)	S	= °0 θ	35	40		%	
Luminance	L	= °0 θ	329	369	-	cd/m2	
Luminance uniformity	UW	= °0 θ	80	-	-	%	Note(1)
Response Time	TR+ TF	25 ° C	-	25	35	ms	Note(2)
White Color Coordination	WX	= °0 θ	-+0.04	0.310	+0.04	(x,y)	Note(3)
	WY			0.327			
Viewing Angle CR>2	θL	-	-	60	-	Degree	设备: DMS source pad down
	θR		-	60	-		
	θU		-	60	-		
	θD		-	60	-		

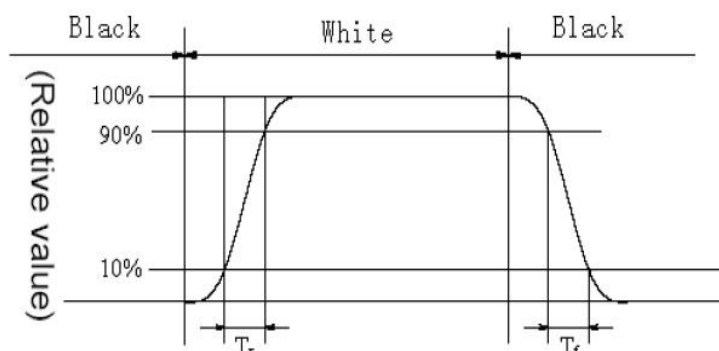
Test Conditions:

1. VDD=3.3V, I_F=20mA (Backlight current), the ambient temperature is +25°C.
2. The test systems refer to Note 8.

Note1: Definition of Viewing Angle: The viewing angle range that the CR>10

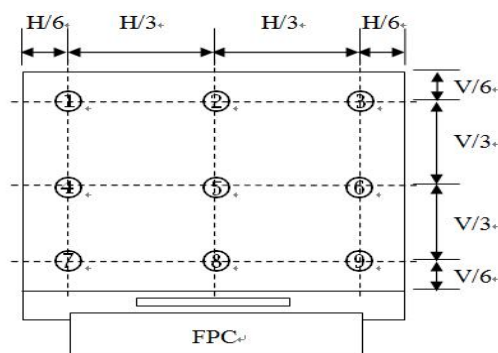


Note2: Definition of Response time: Sum of T_R and T_F



Note 3: Definition of Luminance Uniformity: Active area is divided into 9 measuring areas, every measuring point is placed at the center of each measuring area.

$$\text{Luminance Uniformity} = \frac{\text{Min Luminance of white among 9-points}}{\text{Max Luminance of white among 9-points}} \times 100\%$$



Note4: Definition of Contrast Ratio (CR): measured at the center point of panel

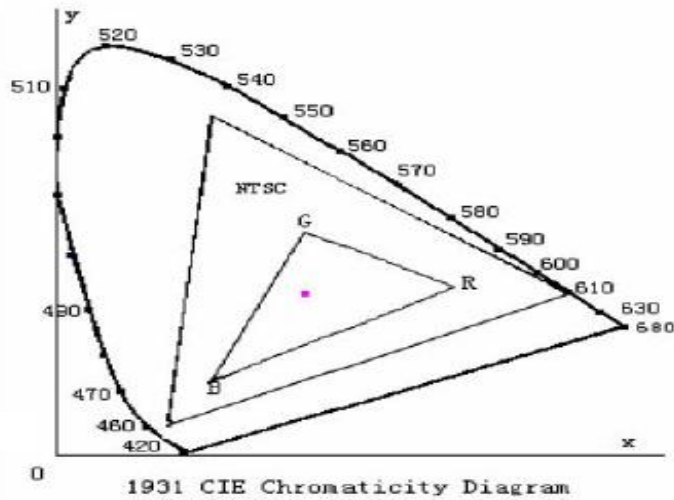
Note 5: Definition of Luminance: Center Luminance of white is defined as luminance values of 1point average across the LCD surface.

Note 6: Definition of Color Chromaticity (CIE 1931)

Color coordinates of white & red, green, blue measured at center point of LCD.

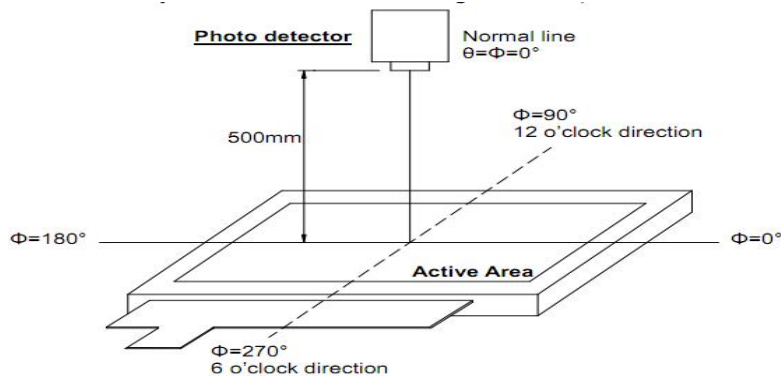
Note 7: Definition of NTSC ratio:

$$\text{NTSC ratio} = \frac{\text{Area of RGB triangle}}{\text{Area of NTSC triangle}}$$



Note 8: Definition of optical measurement system.

The optical characteristics should be measured in dark room. After 5 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, Field of view: 1° /Height: 500mm.)



8. Reliability test items

No.	Test Item	Test Condition	Notes
1	High Temp. Storage	+80°C / 48H	1. Functional test is OK. Missing Segment, short, unclear segment non-display, display abnormally and liquid crystal leakage un-allowed. 2. No low temperature bubbles, end seal loose and fall, frame rainbow.
2	Low Temp. Storage	-40°C / 48H	
3	High Temp. Operating	+70°C / 48H	
4	Low Temp. Operating	-20°C / 48H	
5	High Temperature / Humidity storage	50°C x 90%RH / 48H	
6	Thermal and cold shock	Static state, -20°C (30min) ~60°C (30min), 50 cycles	
7	ESD test	±4KV, Human Body Mode, 150pF/330Ω; ±8KV, Air Mode, 150pF/330Ω;	

9.0 General Precaution

9.1 Use Restriction

This product is not authorized for use in life supporting systems, aircraft navigation control systems, military systems and any other application where performance failure could be life-threatening or otherwise catastrophic.

9.2 Assembly Precaution

- 1、 Please use the mounting hole on the module side in installing and do not bending or wrenching LCD in assembling. And please do not drop, bend or twist LCD module in handling.
- 2、 Please design display housing in accordance with the following guide lines.
- 3、 Housing case must be destined carefully so as not to put stresses on LCD all sides and not to wrench module. The stresses may cause non-uniformity even if there is no non-uniformity statically.
- 4、 Keep sufficient clearance between LCD module back surface and housing when the LCD module is mounted. The clearance in the design is recommended taking into account the tolerance of LCD module thickness and mounting structure height on the housing.
- 5、 Please do not push or scratch LCD panel surface with any-thing hard. And do not soil LCD panel surface by touching with bare hands. (Polarizer film, surface of LCD panel is easy to be flawed.)
- 6、 Please do not press any parts on the rear side such as source IC, gate IC, and FPC during handling LCD module. If pressing rear part is unavoidable, handle the LCD module with care not to damage them.
- 7、 Please wipe out LCD panel surface with absorbent cotton or soft cloth in case of it being soiled.
- 8、 Please wipe out drops of adhesives like saliva and water on LCD panel surface immediately. They might damage to cause panel surface variation and color change.
- 9、 Please do not take a LCD module to pieces and reconstruct it. Resolving and reconstructing modules may cause them not to work well.

9.3 Disassembling or Modification

- 1、 Do not disassemble or modify the module. It may damage sensitive parts inside LCD module, and may cause scratches or dust on the display. does not warrant the module, if customers disassemble or modify the module.

9.4 Breakage of LCD Panel

- 1、 If LCD panel is broken and liquid crystal spills out, do not ingest or inhale liquid crystal, and do not contact liquid crystal with skin.
- 2、 If liquid crystal contacts mouth or eyes, rinse out with water immediately.
- 3、 If liquid crystal contacts skin or cloths, wash it off immediately with alcohol and rinse thoroughly with water.
- 4、 Handle carefully with chips of glass that may cause injury, when the glass is broken.

9.5 Absolute Maximum Ratings and Power Protection Circuit

- 1、 Do not exceed the absolute maximum rating values, such as the supply voltage variation, input voltage variation, variation in parts' parameters, environmental temperature, etc., otherwise LCD module may be damaged.
- 2、 Please do not leave LCD module in the environment of high humidity and high temperature for a long time.
- 3、 It's recommended employing protection circuit for power supply.

11.6 Operation

- 1 、 Do not touch, push or rub the polarizer with anything harder than HB pencil lead. Use fingerstalls of soft gloves in order to keep clean display quality, when persons handle the LCD module for incoming inspection or assembly.
- 2、 When the surface is dusty, please wipe gently with absorbent cotton or other soft material.
- 3 、 Wipe off saliva or water drops as soon as possible. If saliva or water drops contact with polarizer for a long time, they may causes deformation or color fading.
- 4 、 When cleaning the adhesives, please use absorbent cotton wetted with a little petroleum benzine or other adequate solvent.

9.6 Static Electricity

- 1 、 Protection film must remove very slowly from the surface of LCD module to prevent from electrostatic occurrence.
- 2、 Because LCD module uses CMOS-IC on TFT-LCD panel, it is very weak to electrostatic discharge. Please be careful with electrostatic discharge.
- 3 、 Persons who handle the module should be grounded through adequate methods.

9.7 Disposal

When disposing LCD module, obey the local environmental regulations.

9.8 OTHERS

- 1 、 A strong incident light into LCD panel might cause display characteristics' changing inferior because of polarizer film, color filter, and other materials becoming inferior. Please do not expose LCD module direct sunlight land strong UV rays.
- 2、 Please pay attention to a panel side of LCD module not to contact with other materials in preserving it alone.
- 3、 For the packaging box, please pay attention to the followings:
- 4、 Packaging box and inner case for LCD are designed to protect the LCDs from the damage or scratching during transportation. Please do not open except picking LCDs up from the box.
- 5、 Please handle packaging box with care not to give them sudden shock and vibrations. And also please do not throw them up.
- 6、 Packing box and inner case for LCDs are made of cardboard. So please pay attention not to get them wet. (Such like keeping them in high humidity or wet place can occur getting them wet.)

10. Packing form-TBD



Incoming Inspection Standard

品质允收标准

Model N0. /产品型号: Applicable to Touch Screen

Updated Date /生效日期: 2025.04.01

Version / 版本号: V0

Record of Revision /修订履历.

Version /版本号	Revision Record /修订内容	Reviser /修订人	Revision Date /修订日期
V0	首发 / Initial release		2025.04.01

1、Scope of application /适用范围.

Applicable to Touch Screen.

2、Inspection conditions and environment / 检验条件与环境.

2.1、Inspection Conditions / 检验条件:

2.1.1、Inspection Distance / 检测距离: 35cm $\pm$ 5cm.

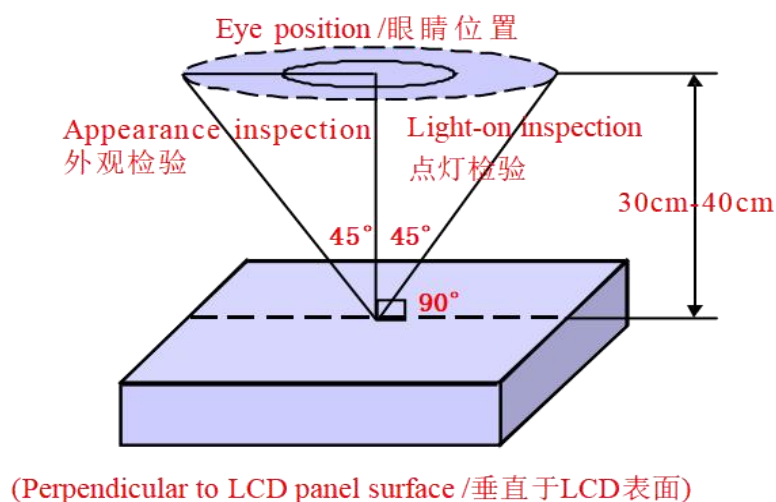
2.1.2、Inspection time /检验时间: Displays performance test /功能测试: 2~3S /Image, Appearance Inspection / 外观检验: 8~10S.

2.1.3、Inspection the viewing angle /检验视角:

Display Inspection Angle /显示检验角度: $\pm 45^\circ$.

Appearance Inspection Angle /外观检验角度: $\pm 45^\circ$.

Eye position /眼睛位置:



2.2、Inspection environment /检验环境:

Temperature / 温度		25 $\pm$ 5 $^\circ$ C
Humidity / 湿度		55 $\pm$ 5%RH
Brightness 亮度	Appearance Inspection / 外观检验	800~1000 Lux
	Display Inspection / 功能检验	200~300 Lux

2.3、Sampling conditions / 抽样方式.

Sampling Plan / 抽样计划		GB/T 2828.1- 2003
		Batch single sampling/批量单次抽样
		General inspection level: II/一般检验水平: 二级
AQL	Major Defect / 主要缺陷	0.25
	Minor Defect / 次要缺陷	0.65

3、Terms and definitions / 术语和定义.

3.1、Defect classification / 缺陷分类:

3.1.1、Major defects / 主要缺陷: Defects that cause the product to fail or reduce the usability of the product / 引起产品功能失效和减少产品的有效使用与操作的缺陷.

3.1.2、Minor defects / 次要缺陷: Defects that do not affect the functionality and effective use and operation of the product / 不影响产品功能和有效使用与操作的缺陷.

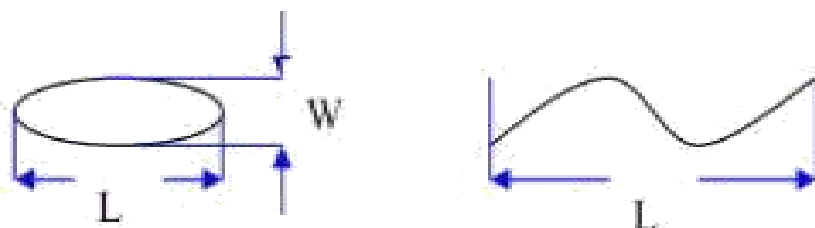
3.2、Point defects / 点状缺陷:

The size of a punctate defect is defined by the diameter D, and the average diameter of the defect is $D=1/2(W+L)$ / 点状缺陷由直径 D 定义大小, 缺陷的平均直径 $D=1/2(W+L)$.

3.3、line defects / 线状缺陷:

When defect size $L \geq 2W$, the defect count as liner type defect. Size of linear defect is defined by length (L) and the maximum width (W)

当缺陷尺寸 $L \geq 2W$ 时, 被视为线状缺陷, 线状缺陷是由长度 (L) 和最大宽度 (W) 定义的.



3.4、LCD sub-pixels / LCD 子像素点:

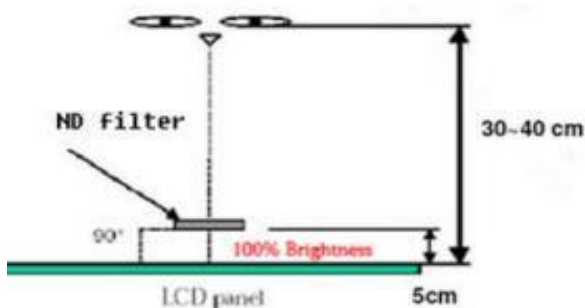
The sub-pixel defect area is greater than 50% of the LCD sub-pixel area, and is visible through ND5% masking

子像素点缺陷面积大于 50% LCD 子像素面积, 且透过 ND5%遮盖是可见的.

3.5、ND card test method / ND 卡检验方法:

Hold the ND card about 5cm above the display area, with your eyes 30-40cm away from the panel, and observe for 2~3 seconds

在显示区域上方大约 5cm 处握住 ND 卡, 眼睛距离面板 30-40cm, 观察 2~3 秒.



3.6、Surface substances that can be cleaned are not considered defects (e.g. finger prints on the protective film, dust particles)

可以被清洁干净的表面物质不视为缺陷 (如保护膜上的手指印, 尘粒) .

3.7、Defects that can be covered by the material and are not visible to the eye, and do not affect the function and use are not considered defects

能被物料覆盖目视不可见, 且不影响功能与使用的缺陷不视为缺陷.

3.8、AA shows that damage to the glass outside the area does not affect the effective line and does not expand the loss is acceptable

AA 显示区域以外的玻璃损伤, 不影响有效线路和不会在扩大损失的是可以接受的.

3.9、Issues not specified or defined in this document shall be dealt with through friendly negotiation between the parties / 本文件中未规定或定义的问题, 双方友好协商处理.

4.0、Inspection standards /检验标准:

4.1、Structural size standards / 结构尺寸标准:

Measurement items /测量项目		Specification /规格	Remark /备注
Name/名称	Unit /单位	Tolerance /公差	
Outside dimension: Length 尺寸: 长	mm /毫米	0.10mm~0.3mm	Please refer to the product specification for detailed dimensions and tolerances 详细的尺寸规格和公差请参考产品规格书
Outside dimension: Width 尺寸: 宽	mm /毫米	0.10mm~0.3mm	
Outside dimension: Thickness 尺寸: 厚	mm /毫米	0.20mm~0.50mm	

4.2、Appearance Inspection standards:

(D : diameter, W : width, L : length, N : quantity, DS : spacing)

Material 检验区域	Inspection items 检验项目	Product size 适用尺寸	Inspection standards 检验规格	Category 缺陷类别	
LCD	ITO	Full size 全尺寸	ITO can't open circuit, short circuit, ITO notch cannot exceed 70% of width. ITO 不能有开路和短路, ITO 缺口不能超过宽度的70%.	MA	
	Corners broken 崩边/崩角	Full size 全尺寸	1、It cannot affect the appearance of valid routes and functions; 不能影响有效线路和功能外观.	MA	
			2、There must be no extensible rips 不能有可延伸性裂纹.	MA	
Silicone 硅胶	Silicone coating 硅胶涂布	Full size 全尺寸	1、The height cannot exceed the LCD CF surface / 高度不能超过 LCD CF 面.		MI
			2、No overflow and lack of glue / 不能溢胶和缺胶.		MI
			3、Silicone cannot cover POL and FPC/ 硅胶不能覆盖到 POL 和 FPC.		MI

Material 检验区域	Inspection items 检验项目	Product size 适用尺寸	Inspection standards 检验规格	Category 缺陷类别	
PCBA FPC Connector 连接器	Appearance 表面外观	Full size 全尺寸	1.FPC is not allowed to have drape/bubble/fold / 不允许有披锋/气泡/褶皱.		MI
			2.Surface scratches do not allow copper leakage / 表面划伤不允许出现漏铜.	MA	
			3.Cracking is not allowed / 不允许破裂.	MA	
			4.Gold finger oxidation is not allowed 不允许金手指氧化.	MA	
			5.Chromatic aberration is not allowed 不允许出现色差.	MA	
	Components 元器件	Full size 全尺寸	1. Damage, missing parts, and incorrect models are not allowed 不允许损伤、缺件、型号错误.	MA	
			2.Components need to be insulated with high temperature adhesive (unless not required by the drawings) / 元器件需要有高温胶绝缘保护 (除非图纸无要求) .		MI
	Weld 焊接	Full size 全尺寸	1. False soldering, virtual soldering, and tinning are not allowed 不允许假焊、虚焊、连锡.	MA	
			2. No solder bead residue is allowed 不允许有锡珠残留.		MI
			3.The pads need to be glued with high temperature (unless not required by the drawings) / 焊盘需贴高温胶 (除非图纸无要求) .		MI
POL 偏光片	Scratches 划伤	Under 6 inches 6 寸以下	1. $W \leq 0.05\text{mm}$; $L \leq 5\text{mm}$, Ignore (忽略) . 2. $0.05\text{mm} < W \leq 0.10\text{mm}$; $L \leq 5\text{mm}$; $N \leq 2$; $DS \geq 10\text{mm}$. 3. $0.10\text{mm} < W$; $5\text{mm} < L$, Not allowable (不允许) .		MI
		6~10.0 inches 6 寸~10.0 寸	1. $W \leq 0.07\text{mm}$; $L \leq 5\text{mm}$, Ignore (忽略) . 2. $0.07\text{mm} < W \leq 0.12\text{mm}$; $L \leq 10\text{mm}$; $N \leq 3$; $DS \geq 10\text{mm}$. 3. $0.12\text{mm} < W$; $10\text{mm} < L$, Not allowable (不允许) .		MI
		More than 10 inches 10 寸以上	1. $W \leq 0.10\text{mm}$; $L \leq 5\text{mm}$, Ignore (忽略) . 2. $0.10\text{mm} < W \leq 0.15\text{mm}$; $L \leq 10\text{mm}$; $N \leq 4$; $DS \geq 10\text{mm}$. 3. $0.15\text{mm} < W$; $10\text{mm} < L$, Not allowable (不允许) .		MI

Material 检验区域	Inspection items 检验项目	Product size 适用尺寸	Inspection standards 检验规格	Category 缺陷类别	
POL 偏光片	Bubbles	Under 6 inches 6 寸以下	1.D≤0.15mm, Ignore (忽略) . 2.0.15mm < D≤0.30mm; N≤2; DS≥10mm. 3.D > 0.30mm, Not allowable (不允许) .		MI
		More than 6 inches 6 寸以上	1.D≤0.20mm, Ignore (忽略) . 2.0.20mm < D≤0.40mm; N≤3; DS≥10mm. 3.D > 0.40mm, Not allowable (不允许) .		MI
	Bubbles around the edges 边缘气泡	Full size 全尺寸	1.Within 1/2BM of the display area, it is not allowed 显示区往外 1/2BM 区域内, 不允许. 2.The display area is 1/2 outside the BM area, and it is not controlled 显示区往外 1/2BM 区域以外, 不管控.		MI
	Point defects Embossing	Under 6 inches 6 寸以下	1.D≤0.15mm, Ignore (忽略) . 2.0.15mm < D≤0.30mm; N≤2; DS≥10mm. 3.D > 0.30mm, Not allowable (不允许) .		MI
		6~10.0 inches 6 寸~10.0 寸	1.D≤0.20mm, Ignore (忽略) . 2.0.20mm < D≤0.40mm; N≤3; DS≥10mm. 3.D > 0.40mm, Not allowable (不允许) .		MI
		More than 10 inches 10 寸以上	1.D≤0.25mm, Ignore (忽略) . 2.0.25mm < D≤0.50mm; N≤4; DS≥10mm. 3.D > 0.50mm, Not allowable (不允许) .		MI
	Dirty 脏污	Full size 全尺寸	Dirt, finger prints, etc. are not allowed 不允许有脏污、手指印等.		MI
	Warping 起翘	Full size 全尺寸	Not allowed 不允许.		MI
	Paste offset 贴附偏位	Full size 全尺寸	It is not allowed to exceed the patch tolerance required by the drawing; After TP lamination, it is not allowed to leak the edges of the polarizer 不允许超出图纸要求的贴片公差; 在 TP 贴合后不允许漏偏光片边缘.		MI
	Angle mistake 角度错误	Full size 全尺寸	Not allowed 不允许.	MA	
	Mixture 混料	Full size 全尺寸	Not allowed 不允许.	MA	

Material 检验区域	Inspection items 检验项目	Product size 适用尺寸	Inspection standards 检验规格	Category 缺陷类别	
TP	Scratches 划伤	Under 6 inches 6 寸以下	1.W≤0.05mm; L≤5mm, Ignore (忽略) . 2.0.05mm < W≤0.10mm ; L≤5mm ; N≤2 ; DS≥10mm. 3.0.10mm < W; 5mm < L, Not allowable (不允许) . 4.There is a feeling scratch, Not allowable 有感划伤, 不允许.		MI
		6~10.0 inches 6 寸~10.0 寸	1.W≤0.07mm; L≤5mm, Ignore (忽略) . 2.0.07mm < W≤0.12mm ; L≤10mm ; N≤3 ; DS≥10mm. 3.0.12mm < W; 10mm < L, Not allowable (不允许) . 4.There is a feeling scratch, Not allowable 有感划伤, 不允许.		MI
		More than 10 inches 10 寸以上	1.W≤0.10mm; L≤5mm, Ignore (忽略) . 2.0.10mm < W≤0.15mm ; L≤10mm ; N≤4 ; DS≥10mm. 3.0.15mm < W; 10mm < L, Not allowable (不允许) . 4.There is a feeling scratch, Not allowable 有感划伤, 不允许.		MI
	Black dots white dots 黑点/白点	Under 6 inches 6 寸以下	1.D≤0.15mm, Ignore (忽略) . 2.0.15mm < D≤0.30mm; N≤2; DS≥10mm. 3.D > 0.30mm, Not allowable (不允许) .		MI
		6~10.0 inches 6 寸~10.0 寸	1.D≤0.20mm, Ignore (忽略) . 2.0.20mm < D≤0.40mm; N≤3; DS≥10mm. 3.D > 0.40mm, Not allowable (不允许) .		MI
		More than 10 inches 10 寸以上	1.D≤0.25mm, Ignore (忽略) . 2.0.25mm < D≤0.50mm; N≤4; DS≥10mm. 3.D > 0.50mm, Not allowable (不允许) .		MI
	OCA Bubbles 气泡	Full size 全尺寸	Not allowed 不允许.		MI
	Corners broken 崩边/崩角	Full size 全尺寸	1.Product front /产品正面: Edge and corner chipping is not allowed / 崩角、崩边不允许 2.Product back /产品背面: X≤0.5, Y≤0.5, Z≤1/2T; N≤4; DS≥10mm.	MA	
	Silk screen 丝印	Full size 全尺寸	The silk screen is clear, complete and correct 丝印清晰、完整、内容正确.		MI

Material 检验区域	Inspection items 检验项目	Product size 适用尺寸	Inspection standards 检验规格	Category 缺陷类别	
TP	Dirty 脏污	Full size 全尺寸	Uncleanable dirt, Not allowable. 不可擦拭的脏污, 不允许.		MI
	Broken 破损	Full size 全尺寸	Not allowable. 不允许.		MI
	Ink color aberration 油墨色差	Full size 全尺寸	$\Delta E > 1$, Not allowable (不允许) .		MI
	Cover pinholes 针孔	Full size 全尺寸	1.D $\leq$ 0.20mm, N $\leq$ 2, DS $\geq$ 10mm, allowable 2.D > 0.20mm, intensive pinholes (密集型针孔), Not allowable (不允许) .		MI
	Paint off 掉漆	Full size 全尺寸	Touch-up on the back of the cover is allowed, and the touch-up area cannot exceed 2.0mm in diameter / 允许在盖板背面补漆, 补漆面积不能超过直径 2.0mm.		MI
BL 背光	Backlight separation 背光分离	Full size 全尺寸	Not allowable 不允许.		MI
	Deformed 变形	Full size 全尺寸	Measured using a plug gauge, If the deformation exceeds 0.3mm, NG is judged 使用塞规测量, 形变超过 0.3mm, 判定 NG.		MI
	Iron frame Oxidation /abscission 铁框氧化/脱落	Full size 全尺寸	Not allowable 不允许.		MI
	Dirt/adhesive residue/solder beads 脏污/残胶/锡珠	Full size 全尺寸	Not allowable 不允许.		MI
	Inkjet/barcode/ QR code 喷码/条码/二维码	Full size 全尺寸	The inkjet code is clear and complete, the barcode and QR code can be scanned normally, and the content and format meet the requirement / 喷码清晰完整、条码和二维码可正常扫描, 内容和格式与要求相符.		MI
	Auxiliary materials 辅料	Full size 全尺寸	Accessories (vinyl, double-sided tape, insulating glue, etc.) are not allowed to be missed, misguided, defective, etc 辅料 (黑胶、双面胶、绝缘胶等) 不允许有漏贴、贴偏、残缺等.		MI

4.3、Functional inspection standards:

(D : diameter, W : width, L : length, N : quantity, DS : spacing)

Material 检验区域	Inspection items 检验项目	Product size 适用尺寸	Inspection standards 检验规格	Category 缺陷类别	
Display Screen 模组	Light leakage / Mura 漏光/ Mura	Full size 全尺寸	1.Use ND5% filter masking, visual invisibility is OK 使用 ND5%遮盖, 目视不可见即为 OK. 2.If necessary, sign off on the sample 必要时, 签限定样.		MI
	Brightness uniformity 亮度均匀性	Full size 全尺寸	Brightness uniformity < 85.0%, Not allowable 亮度均匀性 < 85.0%, 不允许.	MA	
	LCD bright spots/dark spots 玻璃亮点/暗点	Under 6 inches 6 寸以下	1.D≤0.10mm, Ignore (忽略) . 2.0.10mm < D≤0.20mm; N≤2; DS≥10mm. 3.D > 0.20mm, Not allowable (不允许) .		MI
		6~10.0 inches 6 寸~10.0 寸	1.D≤0.15mm, Ignore (忽略) . 2.0.15mm < D≤0.30mm; N≤3; DS≥10mm. 3.D > 0.30mm, Not allowable (不允许) .		MI
		More than 10 inches 10 寸以上	1.D≤0.20mm, Ignore (忽略) . 2.0.20mm < D≤0.40mm; N≤4; DS≥10mm. 3.D > 0.40mm, Not allowable (不允许) .		MI
	Backlight black dots/white dots 背光黑点/白点	Under 6 inches 6 寸以下	1.D≤0.15mm, Ignore (忽略) . 2.0.15mm < D≤0.30mm; N≤2; DS≥10mm. 3.D > 0.30mm, Not allowable (不允许) .		MI
		6~10.0 inches 6 寸~10.0 寸	1.D≤0.20mm, Ignore (忽略) . 2.0.20mm < D≤0.40mm; N≤3; DS≥10mm. 3.D > 0.40mm, Not allowable (不允许) .		MI
		More than 10 inches 10 寸以上	1.D≤0.25mm, Ignore (忽略) . 2.0.25mm < D≤0.50mm; N≤4; DS≥10mm. 3.D > 0.50mm, Not allowable (不允许) .		MI
	Linear foreign bodies 线状异物	Under 6 inches 6 寸以下	1.W≤0.05mm; L≤5mm, Ignore (忽略) . 2.0.05mm < W≤0.10mm ; L≤5mm ; N≤2; DS≥10mm. 3.0.10mm < W; 5mm < L, Not allowable (不允许) .		MI
		6~10.0 inches 6 寸~10.0 寸	1.W≤0.07mm; L≤5mm, Ignore (忽略) . 2.0.07mm < W≤0.12mm ; L≤10mm ; N≤3 ; DS≥10mm. 3.0.12mm < W; 10mm < L, Not allowable (不允许) .		MI
		More than 10 inches 10 寸以上	1.W≤0.10mm; L≤5mm, Ignore (忽略) . 2.0.10mm < W≤0.15mm ; L≤10mm ; N≤4 ; DS≥10mm. 3.0.15mm < W; 10mm < L, Not allowable (不允许) .		MI

Material 检验区域	Inspection items 检验项目	Product size 适用尺寸	Inspection standards 检验规格	Category 缺陷类别	
Display Screen 模组	White/Black print 白印/黑印	Full size 全尺寸	Use ND5% filter masking, visual invisibility is OK 使用 ND5%遮盖, 目视不可见即为 OK.		MI
	Interference pattern/Newton pattern 干涉纹/牛顿纹	Full size 全尺寸	Not allowable 不允许.		MI
	Membranes displacement 膜材移位	Full size 全尺寸	Not allowable 不允许.		MI
	Color blocks 色斑	Full size 全尺寸	Use ND5% filter masking, visual invisibility is OK /使用 ND5%遮盖, 目视不可见即为 OK.		MI
	Display abnormal 画异	Full size 全尺寸	Not allowable 不允许.	MA	
	No display 无显示	Full size 全尺寸	Not allowable 不允许.	MA	
	Line/Missing Drawing 线条/缺画	Full size 全尺寸	Not allowable 不允许.	MA	
	Splash screen 闪屏	Full size 全尺寸	Not allowable 不允许.	MA	
	LCD grid LCD 网格	Full size 全尺寸	Not allowable 不允许.	MA	
	Afterimage 残影	Full size 全尺寸	Not allowable 不允许.	MA	
	Wrong viewing angle 可视角错误	Full size 全尺寸	Not allowable 不允许.	MA	
TP	No touch 无触摸	Full size 全尺寸	Not allowable 不允许.	MA	
	Touch the jump point 触摸跳点	Full size 全尺寸	Not allowable 不允许.	MA	
	Touch not sensitive 触摸不灵敏	Full size 全尺寸	Not allowable 不允许.	MA	