HUIZHOU LCDIND TECHNOLOGY CO., LTD.

PRODUCT SPECIFICATION

10.1"MONO TFT IPS-LCD 15120*6230 DOTS

MODEL NAME:	DBM101LCDM16K01
DOC VERSION:	1.0
TOTAL PAGES:	17
DATE:	2024.5.30

FOR CUSTOMER	
CUSTOMER APPROVED	

NOTE: THE CONTENT OF THIS SPECIFICATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

ALL RIGHTS STRICTLY RESERVED. ANY PORTION OF THIS PATER SHALL NOT BE REPRODUCED, COPIED, OR TRANSFORMED TO ANY OTHER FORMS WITHOUT PERMISSION FROM Huizhou LCDind Technology Co., Ltd.

Document revision history

DOCUMENT REVISION	DATE	DESCRIPTION	PREPARED BY	APPROVED BY
A	2024.3.29	First Release.		

LCDind.com

1. GENERAL SPECIFICATIONS 4
1.1 DESCRIPTION 4
2. PIN ASSIGNMENT 5
3. ABSOLUTE MAXIMUM RATINGS 6
3.1 ELECTRICAL ABSOLUTE RATINGS 6
4. ELECTRICAL CHARACTERISTICS 7
4.1 LCD PARAMETER 7
4.2 POWER SEQUENCE 7
4.3 DISPLAY TIMING SPECIFICATIONS 9
5. OPTICAL CHARACTERISTICS 10
5.1 DEFINITION OF OPTICAL CHARACTERISTICS 10
6. MECHANICAL DRAWING 13
7. HANDLING PRECAUTIONS 14
8. RELIABILITY TEST 15
9. PACKING DRAWING 16

LCDind.com

1 . GENERAL SPECIFICATIONS

1.1 Description

DBM101LCDM16K01 is a trans-missive type mono active matrix liquid crystal display (LCD), which uses LTPS TFT as switching devices. This panel has a 10.1 inches diagonally measured active display area with 15120 X 6230 mono resolution. This product is composed of a TFT LCD panel, Polarizers, driver IC, Panel link and PCBa. The following describes the features of this product.

General SPEC	
Size	10.1"
Resolution	15120 x 6230
Dot Pitch(um)	14 x 19
Color Pixel Arrangement	Mono
Shipment Type	FOG
Technology	LTPS
Display Mode	Normal Black
Mechanical	
AA (mm)	211.68 x 118.37
CF Outline Dimension (mm)	227.43 x 133.50
Panel Outline Dimension (mm)	227.43 x 139.50
Border Dimension (mm) (U/D/L/R)	5.13/16/7.875/7.875
Weight (g)	TBD
Optical	
Contrast Ratio	300 (min) @ INX 23.8" 405nm BLU
Panel Transmittance (w/i POL)	4.1% (Typ) @ INX 23.8" 405nm BLU
Electrical	
Frame Rate	Typ. 20Hz
Interface	MIPI
Reliability	
Operation Temperature	0℃~ 70℃
Storage Temperature	-10℃~ 80℃

LCDind.com

2. PIN ASSIGNMENT

XDYT 0-51162217-5 Connector is used for the module electronics interface. The recommended model is Compatible with STM FFSKL05011N51C and FCN FF01-42T-5131. Below is the pin assignment of INX suggestion:

Pin No.	Name	Type	Note
1	GND	P	Ground
2	GND	P	Ground
3	NC	-	NC
4	AVDD	I	Power input
5	AVDD	I	Power input
6	NC	-	NC
7	AVEE	I	Power input
8	AVEE	I	Power input
9	NC	-	NC
10	VDDIO	I	Power input
11	VDDIO	I	Power input
12	NC	-	NC
13	GND	P	Ground
14	GND	P	Ground
15	GND	P	Ground
16	MIPI_B_D3P	I	MIPI port B lane 3 positive
17	MIPI_B_D3N	I	MIPI port B lane 3 negative
18	GND	P	Ground
19	MIPI_B_D2P	I	MIPI port B lane 2 positive
20	MIPI_B_D2N	I	MIPI port B lane 2 negative
21	GND	P	Ground
22	MIPI_B_CLKP	I	MIPI port B clock positive
23	MIPI_B_CLKN	I	MIPI port B clock negative
24	GND	P	Ground
25	MIPI_B_D1P	I	MIPI port B lane 1 positive
26	MIPI_B_D1N	I	MIPI port B lane 1 negative
27	GND	P	Ground
28	MIPI_B_D0P	I	MIPI port B lane 0 positive
29	MIPI_B_D0N	I	MIPI port B lane 0 negative
30	GND	P	Ground
31	GND	P	Ground
32	MIPI_A_D3P	I	MIPI portA lane 3 positive
33	MIPI_A_D3N	I	MIPI portA lane 3 negative
34	GND	P	Ground
35	MIPI_A_D2P	I	MIPI portA lane 2 positive
36	MIPI_A_D2N	I	MIPI portA lane 2 negative
37	GND	P	Ground
38	MIPI_A_CLKP	I	MIPI portA clock positive
39	MIPI_A_CLKN	I	MIPI portA clock negative
40	GND	P	Ground
41	MIPI_A_D1P	I	MIPI portA lane 1 positive
42	MIPI_A_D1N	I	MIPI portA lane 1 negative
43	GND	P	Ground
44	MIPI_A_D0P	I	MIPI portA lane 0 positive
45	MIPI_A_D0N	I	MIPI portA lane 0 negative
46	GND	P	Ground
47	GND	P	Ground
48	RESETB	I	Reset pin
49	TE	I	Tearing effect
50	BIST	I	BIST control pin
51	GND	P	Ground

LCDind.com

3 . ABSOLUTE MAXIMUM RATINGS

3.1 Electrical Absolute Ratings

3.1.1 TFT LCD MODULE

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Power Supply Voltage	VDDIO	1.65	1.95	V	IC SPEC
Power Supply Voltage	AVDD	4.5	6.5	V	IC SPEC
Power Supply Voltage	AVEE	-6.5	-4.5	V	IC SPEC

LCDind.com

4. ELECTRICAL CHARACTERISTICS

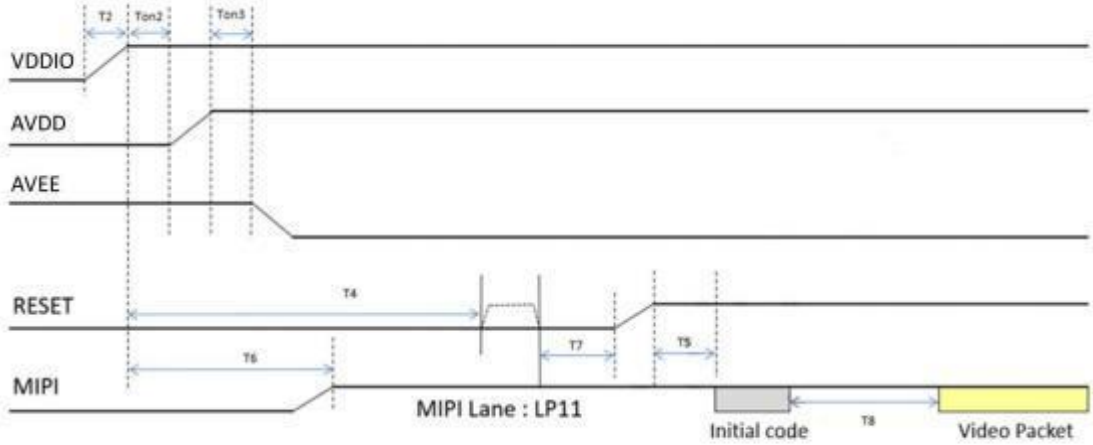
4.1 LCD Parameter

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Power Supply Voltage	VDDIO	1.7	1.8	1.9	V	
Power Supply Voltage	AVDD	6.1	6.2	6.3	V	
Power Supply Voltage	AVEE	-6.3	-6.2	-6.1	V	
Full White	I_VDDIO		242		mA	VDDIO= 1 .8V at 20Hz, all White Pattern
	I_AVDD		44		mA	
	I_AVEE		-44		mA	

(GND=0V, TA=25 °C)

4.2 Power Sequence

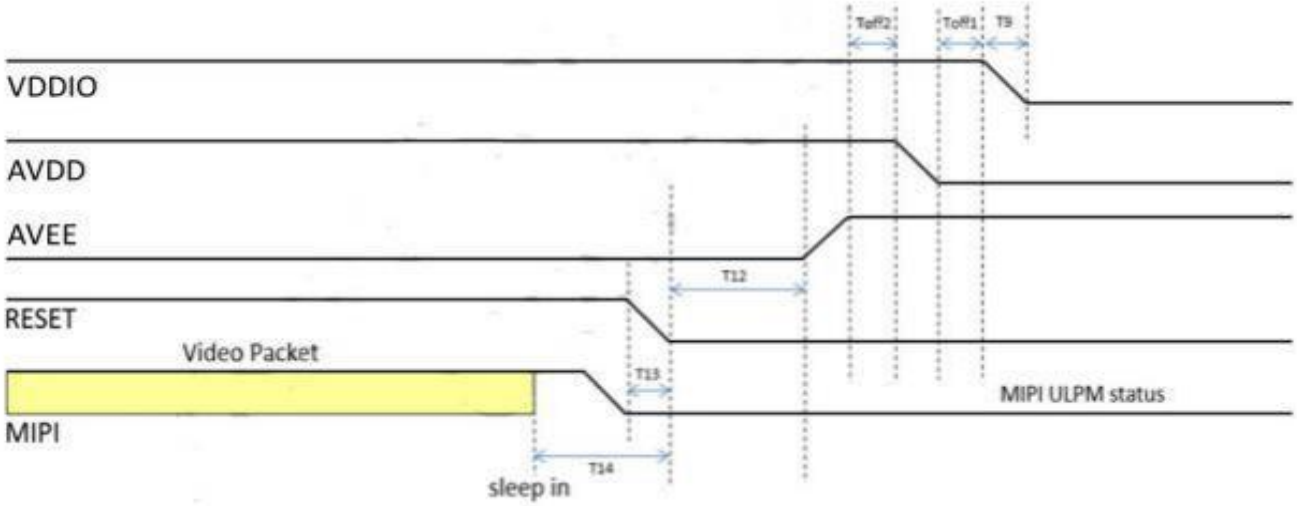
The power sequence specifications are shown as the following table and diagram.



Note: Recommend before sending initial code to IC, sending 8 High Speed CLK for Power or GND noise rejection

Symbol	Value			Unit	Remark
	Min	Typ.	Max		
Ton2	0	-	-	ms	
Ton3	0	-	-	ms	
Ton4	2	-	-	ms	
T2	-	200	-	ms	
T4	10	-	-	ms	
T5	20	-	-	ms	
T6	0	-	T4	ms	
T7	10	-	-	ms	
T8	120	-	-	ms	

LCDind.com



Symbol	Value			Unit	Remark
	Min	Typ.	Max		
Toff1	0	-	-	ms	
Toff2	0	-	-	ms	
Toff3	0	-	-	ms	
T9	150	-	-	ms	
T12	0	-	-	ms	
T13	0	-	-	ms	
T14	100	-	-	ms	

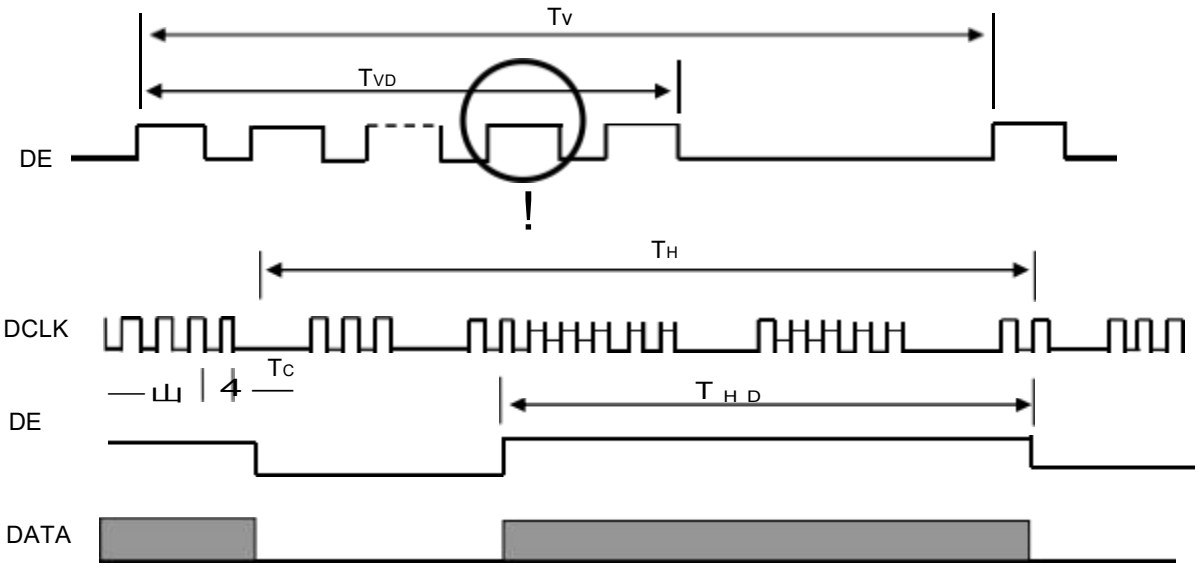
LCDind.com

4.3 Display Timing Specifications

The input signal timing specifications are shown as the following table and timing diagram.

Item	Symbol	Typical (@20Hz)	Unit	Note
PCLK Frequency	1/Tc	TBD	MHz	-
Vertical Total Time	TV	TBD	TH	-
Vertical Active Display Period	TVD	TBD	TH	-
Vertical Active Blanking Period	TVB	TBD	TH	VFP: VBP: VSW:
Horizontal Total Time	TH	TBD	Tc	-
Horizontal Active Display Period	THD	TBD	Tc	-
Horizontal Active Blanking Period	THB	TBD	Tc	HFP: HBP: HSW:

INPUT SIGNAL TIMING DIAGRAM



LCDind.com

5. OPTICAL CHARACTERISTICS

Item	Symbol	Condition	Values			Remark
			Min.	Typ.	Max.	
Contrast Ratio	CR	Normal θ=Φ=0° Center	300		-	Note 1、2、3、6
Transmittance	T%		3.85%	4.1%	-	Note 1、2、4、6
Transmittance Uniformity	U%		80%			Note 1、2、5、6

Condition: w/o polarizer protection film (Ta=25℃)

5.1 Definition of Optical Characteristics

Note 1 : Definition of viewing angle range

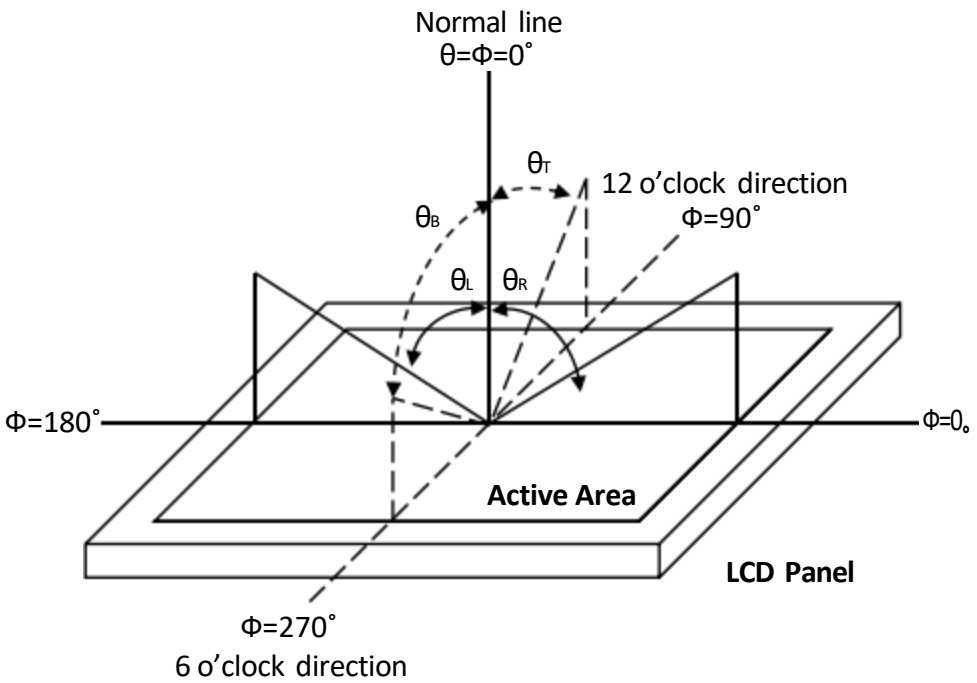


Fig. 1 Definition of viewing angle

Note 2 : Definition of optical measurement system

The optical characteristics should be measured in a dark room with ambient temperature Ta=+25℃. The optical properties are measured at the center point of the LCD screen after 1 minutes operation (LCD&UV BLU). The light on method and tooling is based on INX instruction. (Equipment: UV Light Meter)

Note 3 : Definition of contrast ratio

LCDind.com

Note 4 ： Definition of Transmittance

$$\text{Transmittance (T\%)} = \frac{\text{P data measured when LCD on the " White" state}}{\text{P data of 405nm BLU}}$$

Note 5 ： Definition of transmittance uniformity

To test for uniformity, the tested area is divided into 3 rows and 3 columns. The measurement spot is placed at the center of each circle as below. The optical properties are measured after 1 minutes operation (LCD&UV BLU).

$$\text{Transmittance Uniformity} = \frac{\text{Transmittance}_{min}}{\text{Transmittance}_{max}}$$

Transmittance $_{max}$: The measured maximum Transmittance of all measurement position.

Transmittance $_{min}$: The measured minimum Transmittance of all measurement position.

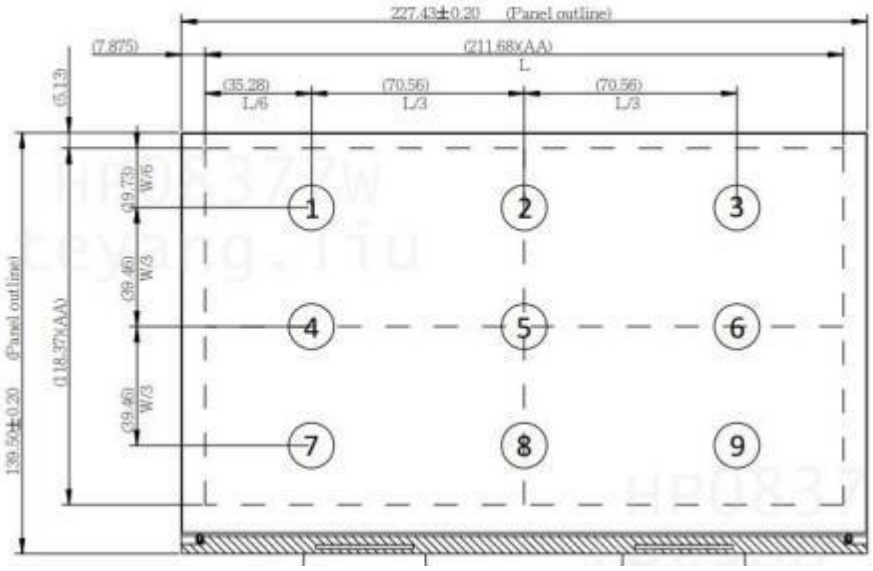


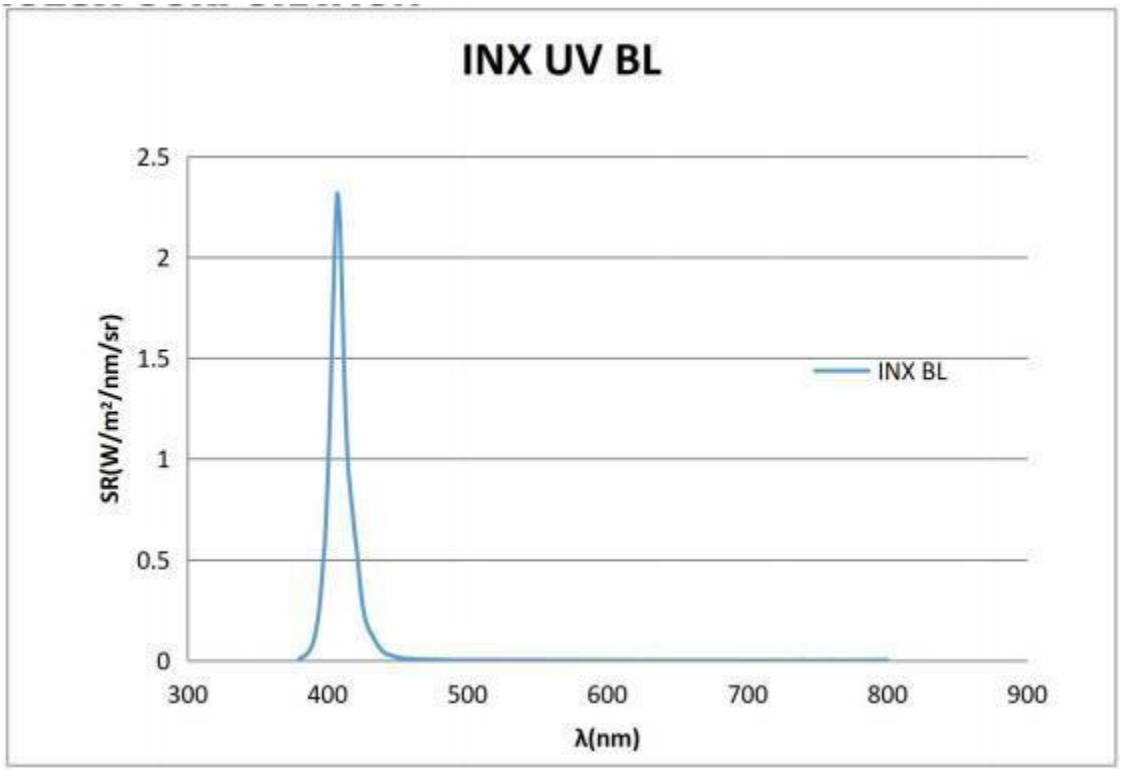
Fig. 2 Definition of luminance uniformity

L : Active area length
W : Active area width

Note 6 ： Definition of 405nm INX UV BLU spectrum

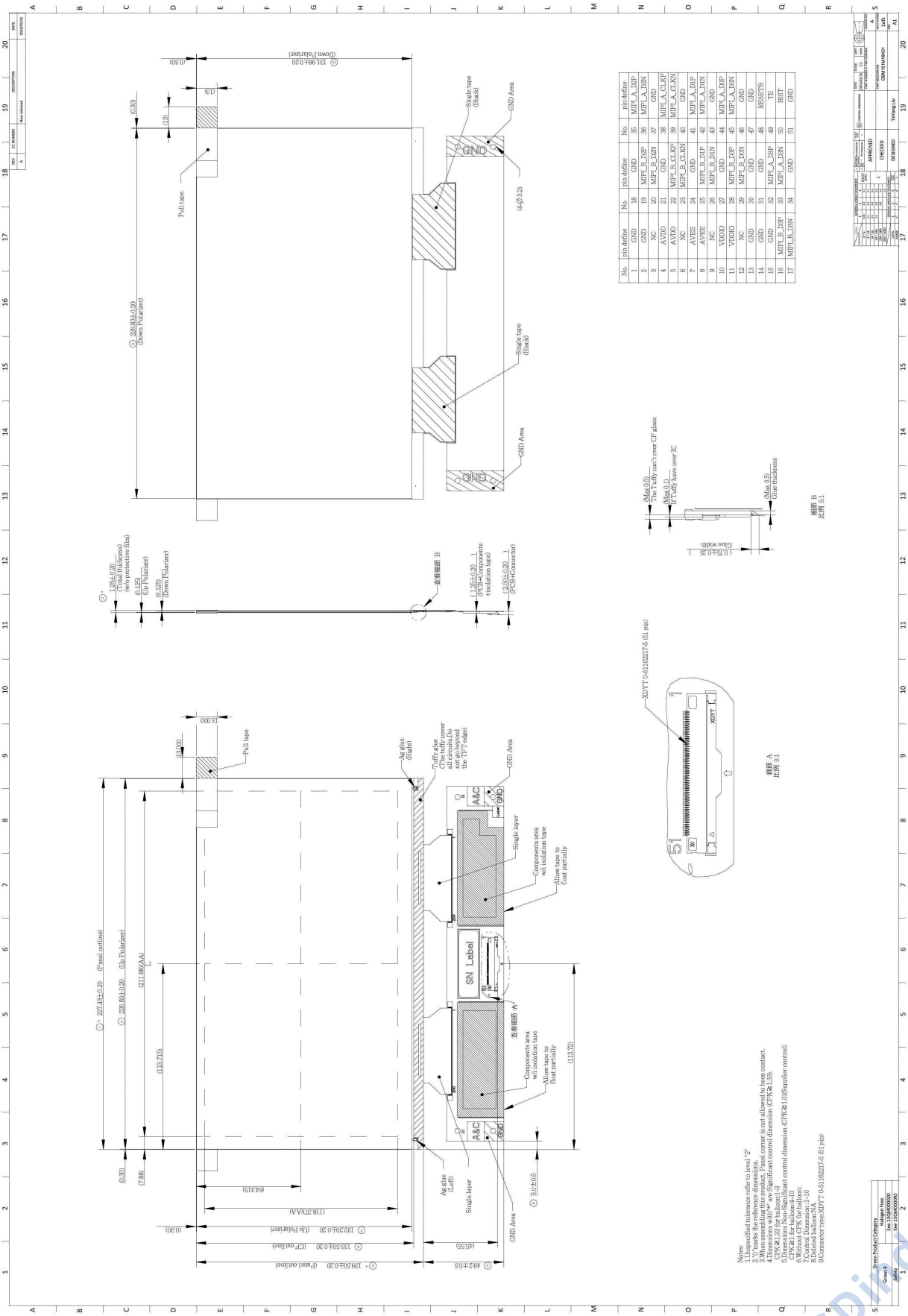
Contrast Ratio and Transmittance and Transmittance Uniformity Spec. is based on 405nm INX UV BLU

LCDind.com


INX UV BL
2.5
2
1.5
1
0.5
0
SR(W/m²/nm/sr)
INX BL
300
400
500
600
700
800
900
λ(nm)

LCDind.com

6. MECHANICAL DRAWING



7. HANDLING PRECAUTIONS

7.1 Safety

i. The liquid crystal in the LCD is poisonous. DO NOT put it in your mouth. If the liquid crystal touches your skin or clothes, wash it off immediately using soap and water.

7.2 Handling

i. The LCD and touch panel is made of plate glass. DO NOT subject the panel to mechanical shock or to excessive force on its surface.
ii. Do not handle the product by holding the flexible pattern portion in order to assure the reliability.
iii. Transparency is an important factor for the touch panel. Please wear clear finger sacks, gloves and mask to protect the touch panel from finger print or stain and also hold the portion outside the view area when handling the touch panel.
iv. Provide a space so that the panel does not come into contact with other components.
v. To protect the product from external force, put a covering lens (acrylic board or similar board) and keep an appropriate gap between them.
vi. Transparent electrodes may be disconnected if the panel is used under environmental conditions where dew condensation occurs.
vii. Property of semiconductor devices may be affected when they are exposed to light, possibly resulting in IC malfunctions.
viii. To prevent such IC malfunctions, your design and mounting layout shall be done in the way that the IC is not exposed to light in actual use.

7.3 Static Electricity

i. Ground soldering iron tips, tools and testers when they are in operation.
ii. Ground your body when handling the products.
iii. Power on the LCD module BEFORE applying the voltage to the input terminals.
iv. DO NOT apply voltage which exceeds the absolute maximum rating.
v. Store the products in an anti-electrostatic bag or container.

7.4 Storage

i. Store the products in a dark place at +25℃±10℃ with low humidity (65%RH or less).
ii. DO NOT store the products in an atmosphere containing organic solvents or corrosive gas.

7.5 Cleaning

i. DO NOT wipe the touch panel with dry cloth, as it may cause scratch.
ii. Wipe off the stain on the product by using soft cloth moistened with ethanol. DO Not allow ethanol to get in between the upper film and the bottom glass. It may cause peeling issue or defective operation. Do not use any organic solvent or detergent other than ethanol.

7.6 Warning

i. Do NOT have extra impacted force on panel during printing process or replacing parts mechanism of 3D printer.

ii. The panel temperature does not exceed 50℃ during UV light printing operation, and the LCD has good display quality.

LCDind.com

8. RELIABILITY TEST

Test Items	Test Conditions	Remark
High Temperature Storage	80℃ , 240 hours	Note(1)(2)(3)(4)
Low Temperature Storage	-10℃ , 240 hours	Note(1)(2)(3)(4)
High Temperature Operation	70℃ , 240 hours	Note(1)(2)(3)(4)
Low Temperature Operation	0℃ , 240 hours	Note(1)(2)(3)(4)
Operate at High Temperature and Humidity	60℃, 90%RH , 240 hours	Note(1)(2)(3)(4)

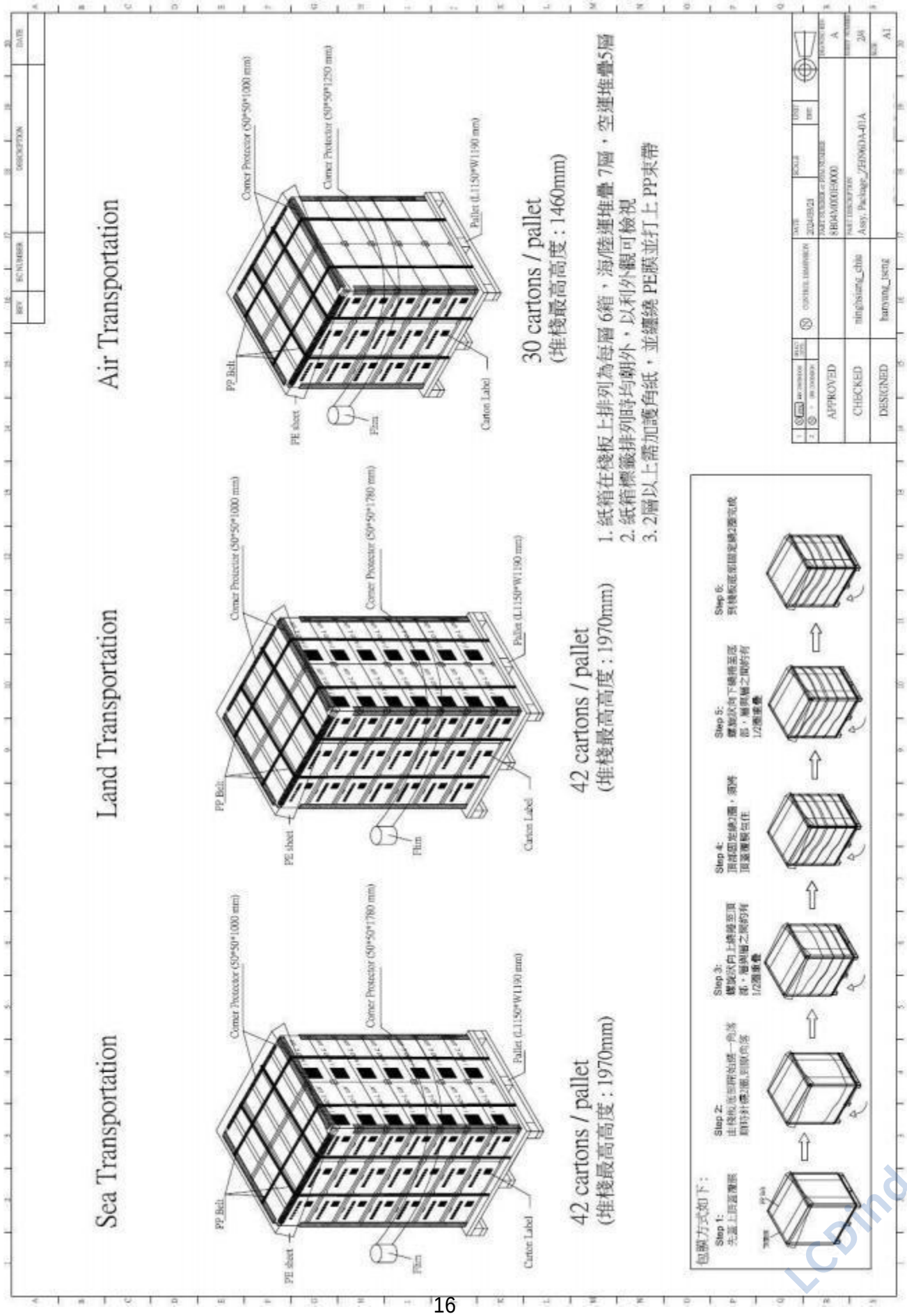
Note:

1. The test samples have recovery time need more than 2 hours at room temperature before the function check. In the standard conditions, there is no abnormal display function occurred.

2. After the reliability test, the product only guarantees operational function, but don't guarantee all of the cosmetic specification.

3. Under no condensation of dew.

4. It is based on BLU which is defined by INX's white BLU.

LCDind.com

9. PACKING DRAWING