

CUSTOMER APPROVE

SPECIFICATION
FOR
CEJZ TFT-LCD MODULE

LED43E

Edition : Preliminary spec 1.0

Date of issue : 2017-06-19

Product No. : LC430DUY-SHA1

APPROVED	CHECKED	PREPARED

Revision History

Date	Rev.	Page	Old Description	New Description	Remark
2017-06-19	1.0	All	The specification was first issued		

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1.Scope

This specifications is applicable to double lin digital technology LTD. 's 43" diagonal module : "43E "designed for TFT-LCD TV.

1.1 Features

- Super Wide viewing angle
- Super High contrast ratio
- Super Fast response time
- High color saturation
- DE(Data Enable) only mode
- LVDS Interface
- RoHS compliance

1.2 Application

TFT-LCD TV
Multi-Media Display

1.3 General Specifications

Item	Specifications	Unit	Note
Driving Method	a-Si TFT active matrix		Note 1
Active Area	42.51	inches	
Bezel opening area	953.0(H) x 543.0 (V) x 1.4 mm(D) (Typ.)	mm	
Number of Pixels	1920 × 1080	pixel	
Pixel Pitch	0.4902 mm x 0.4902	mm	
Pixel Arrangement	RGB Vertical Stripe		
Transmissive Mode	Normally Black		
Surface Treatment	Anti-Glare coating Hardness (3H)		Haze=1%
Display mode	Normally black		

1.4 Mechanical Specification

Item		Min	Typ	Max	Unit	Note
Weight		-	TDB	-	g	-
Module Size	Horizontal(H)	(TYP)-0.5	963.2	(TYP)+0.5	mm	
	Vertical (V)		356.8		mm	
	Depth(D)		27.0		mm	

Note 1: Please refer to the "outline dimension" for more information of back and front outline dimensions.

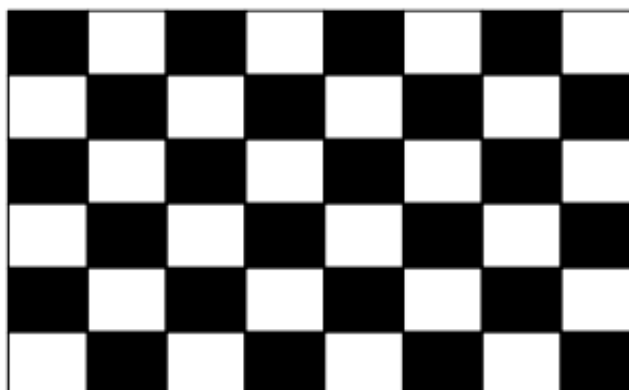
2. Electrical Specifications

2.1. Electrical Characteristics

Parameter	Symbol	Value			Unit	Note	
		Min	Typ	Max			
Circuit :							
Power Input Voltage	VLCD	10.8	12.0	13.2	VDC		
Power Input Current	ILCD	-	1300	1690	mA	1	
		-	2000	2600	mA	2	
T-CON Option Selection Voltage	Input High Voltage	V_{IH}	2.7	-	3.6	VDC	
	Input Low Voltage	V_{IL}	0	-	0.7	VDC	
Power Consumption	PLCD	-	15.6	20.28	Watt	1	
Rush current	IRUSH	-	-	10	A	3	

- Note
1. The specified current and power consumption are under the $V_{LCD}=12.0V$, $T_a=25 \pm 2^\circ C$, $f_v=60Hz$ condition, and mosaic pattern(8 x 6) is displayed and f_v is the frame frequency.
 2. The current is specified at the maximum current pattern.
 3. The duration of rush current is about 2ms and rising time of power input is 0.5ms (min.).
 4. Ripple voltage level is recommended under $\pm 5\%$ of typical voltage

White : 1023 Gray
 Black : 0 Gray



2.2 Backlight Unit

Backlight system

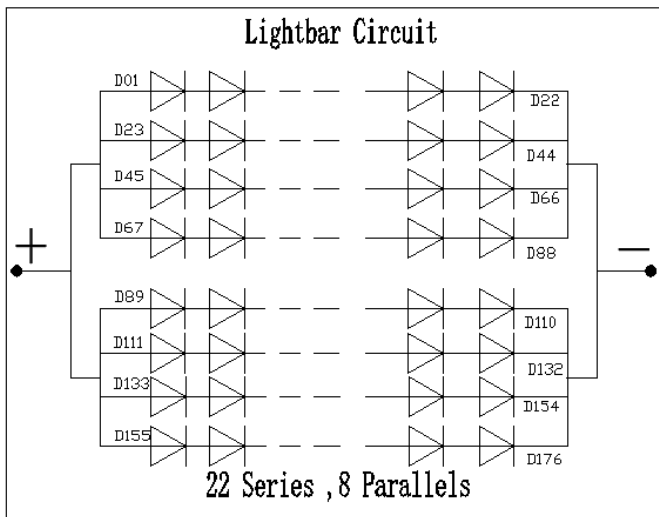
ITEM	SYMBOL	MIN	TYP	MAX	UNIT	Remark
LightBar Voltage	V_L	63.8	—	74.8	V	Note 1
LightBar Current	I_L	—	720	792	mA	
Power Consumption	P_{BL}	—	50	—	W	LightBar
LED Life Time	L_{BL}	30000	—	—		

Note 1 The LED LightBar connector part No: PHR-6 (JST) or equivalent, as shown next page.

Note 2: $P_{BL} = I_L \times V_L$, The LED LightBar circuit is 22 Series,8 Parallel.

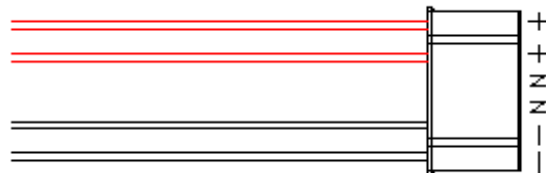
Note 3: The lifetime of LED is defined as the time when LED packages continue to operate under the conditions at $T_a = 25 \pm 2 \text{ }^\circ\text{C}$ and $I = (720)\text{mA}$ (per chip) until the brightness becomes $\cong 50\%$ of its original value.

2.3 Backlight Unit

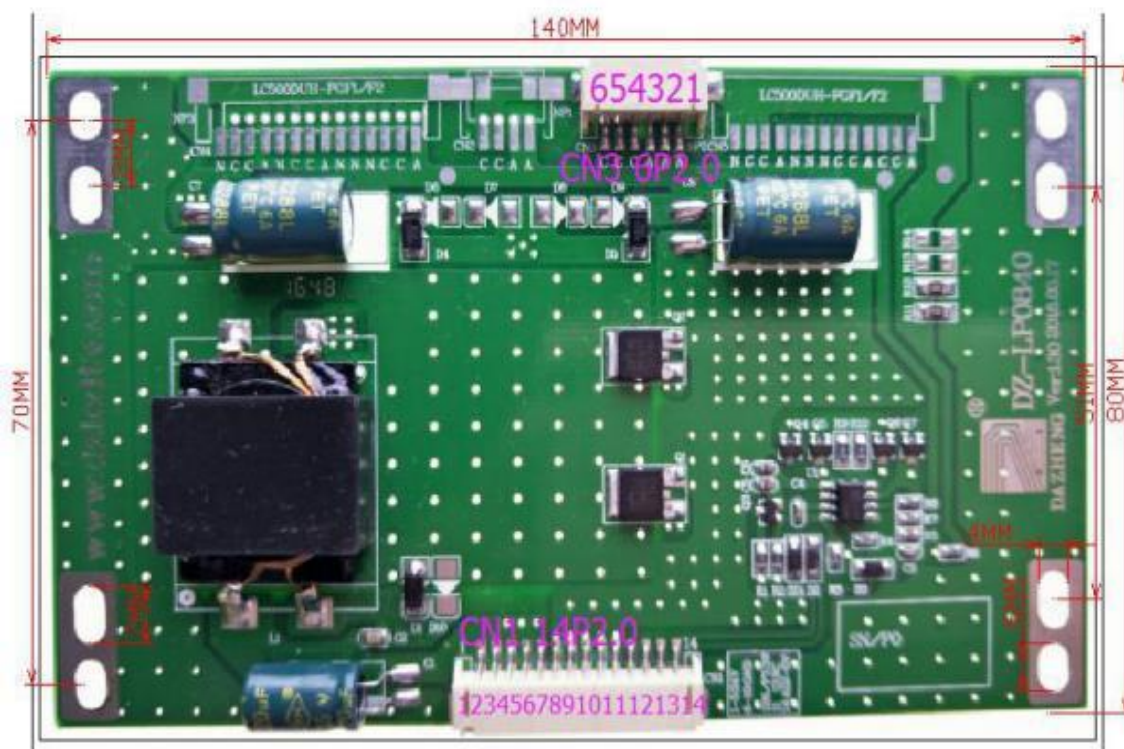


2.4 Backlight wire

Backlight Input connector model: PHR-2(JST) PITCH2.0mm (一路 PH2.0 6pin 插头)



2.5 Mechanical Dimension / 结构示意图



CN1 14P2.0: 电源输入口

1~5 脚为电源输入 +24V

6~10 脚为电源输入 -24V (GND)

11 脚 NC 空、13 脚为空

12 脚为 开关 (NO/OFF) +3.3V

14 脚为 ADJ (0V) 亮度调节

CN3 6P2.0: 灯条输出接口

1、2 脚为 LED 输出正极, 3、4 脚为 NC 空的

5、6 脚为 LED 负极

3. Electrical Specifications

3.1 LCD Module

- LCD Connector(CN1): FI-RXE51S-HF(manufactured by JAE) or GT05S-51S-H38(manufactured by LSM) or IS050-C51B-C39-C(manufactured by UJU)
- Mating Connector : FI-R51HL(JAE) or compatible

Table 3. MODULE CONNECTOR(CN1) PIN CONFIGURATION

No	Symbol	Description	No	Symbol	Description
1	NC	No Connection (Note 4)	27	NC	No connection
2	NC	No Connection (Note 4)	28	R2AN	SECOND LVDS Receiver Signal (A-)
3	NC	No Connection (Note 4)	29	R2AP	SECOND LVDS Receiver Signal (A+)
4	NC	No Connection (Note 4)	30	R2BN	SECOND LVDS Receiver Signal (B-)
5	NC	No Connection (Note 4)	31	R2BP	SECOND LVDS Receiver Signal (B+)
6	NC	No Connection (Note 4)	32	R2CN	SECOND LVDS Receiver Signal (C-)
7	LVDS Select	'H' = JEIDA, 'L' or NC = VESA	33	R2CP	SECOND LVDS Receiver Signal (C+)
8	NC	No Connection (Note 4)	34	GND	Ground
9	NC	No Connection (Note 4)	35	R2CLKN	SECOND LVDS Receiver Clock Signal(-)
10	NC	No Connection (Note 4)	36	R2CLKP	SECOND LVDS Receiver Clock Signal(+)
11	GND	Ground	37	GND	Ground
12	R1AN	FRST LVDS Receiver Signal (A-)	38	R2DN	SECOND LVDS Receiver Signal (D-)
13	R1AP	FRST LVDS Receiver Signal (A+)	39	R2DP	SECOND LVDS Receiver Signal (D+)
14	R1BN	FRST LVDS Receiver Signal (B-)	40	NC	No connection
15	R1BP	FRST LVDS Receiver Signal (B+)	41	NC	No connection
16	R1CN	FRST LVDS Receiver Signal (C-)	42	NC or GND	No Connection or Ground
17	R1CP	FRST LVDS Receiver Signal (C+)	43	NC or GND	No Connection or Ground
18	GND	Ground	44	GND	Ground (Note 6)
19	R1CLKN	FRST LVDS Receiver Clock Signal(-)	45	GND	Ground
20	R1CLKP	FRST LVDS Receiver Clock Signal(+)	46	GND	Ground
21	GND	Ground	47	NC	No connection
22	R1DN	FRST LVDS Receiver Signal (D-)	48	VLCD	Power Supply +12.0V
23	R1DP	FRST LVDS Receiver Signal (D+)	49	VLCD	Power Supply +12.0V
24	NC	No connection	50	VLCD	Power Supply +12.0V
25	NC	No connection	51	VLCD	Power Supply +12.0V
26	NC or GND	No Connection or Ground	.	.	.

- Note
1. All GND(ground) pins should be connected together to the LCD module's metal frame.
 2. All V_{CC} (power input) pins should be connected together.
 3. All Input levels of LVDS signals are based on the EIA 644 Standard.
 4. #1~#6 & #8~#9 NC (No Connection): These pins are used only for LGD (Do not connect)
 5. LVDS pin (pin No. #24,25,40,41) are used for 10Bit(D) of the LCD module.
If used for 8Bit(R), these pins are no connection.
 6. Specific pin No. #44 is used for "No signal detection" of system signal interface.
It should be GND for NSB(No Signal Black) during the system interface signal is not.
If this pin is "H", LCD Module displays AGP(Auto Generation Pattern).

4、 Optical Characteristics

4.1 Test Condition

Item	Symbol	Value	Unit
Ambient Temperature	Ta	25 ±2	°C
Ambient Humidity	Ha	50 ±10	%RH
Supply Voltage	Vcc	12	V
Input Signal	According to typical value in "3. Electrical characteristics		
LED LightBar Current	I _L	720	mA

4.2 Optical Characteristics

The relative measurement methods of optical characteristics are shown in the 7.2. The following items should be measured under the test condition in 7.1 and the stable environment shown in the in 7.1.

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Note	
Contrast Ratio	CR	T	1000	1200	—	—	—	
Response Time	Gray to gray average		—	8	12	ms	Note 3	
Brightness uniformity	BU		—	1.33	1.42	—	Note 2	
Center Luminance of White	Lc		300	350	—	cd/m ²	—	
The color chromaticity	Red		Rx	-0.03	0.659	+0.03	—	Note 0
			Ry		0.324		—	
	Green		Gx		0.267		—	
			Gy		0.585		—	
	Blue		Bx		0.133		—	
			By		0.107		—	
	White	Wx	0.285		—			
		Wy	0.295		—			
Viewing Angle	Horizontal	θ _{x+}	CR ≥ 10	80	89	—	Deg	Note 1、 2
		θ _{x-}		80	89	—		
	Vertical	θ _{y+}		80	89	—		
		θ _{y-}		80	89	—		

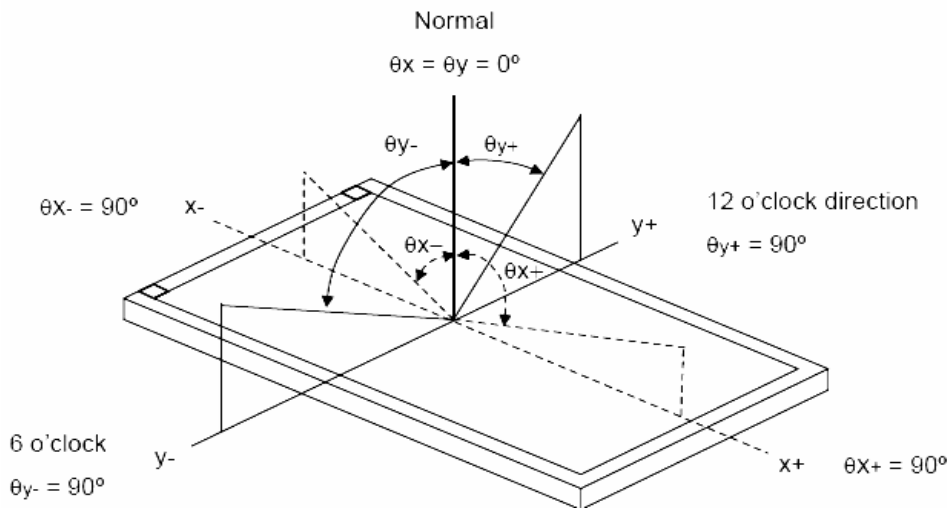
Note 0: Light source is the standard light source "C" which is defined by CIE and driving voltage are based on suitable gamma voltages. The calculating method is as following:

1. Measure Module's and BLU's spectrum at center point. White and R,G,B are with signal input. BLU (for V546HK3-LS5) is supplied by CMI.
2. Calculate cell's spectrum.
3. Calculate cell's chromaticity by using the spectrum of standard light source "C".

Note 1: Light source is the BLU which supplied by CMI and driving voltage are based on suitable gamma voltages.

Note 2: Definition of Viewing Angle (\bar{x} , \bar{y}):

Viewing angles are measured by Autronic Conoscope Cono-80



Note 3: Definition of Contrast Ratio (CR):

The contrast ratio can be calculated by the following expression.

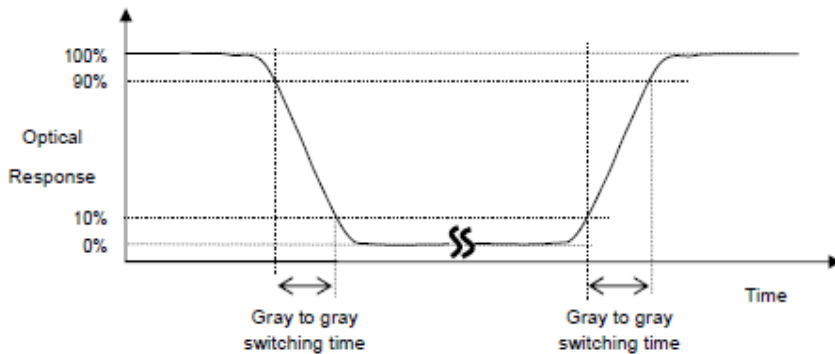
$$\text{Contrast Ratio (CR)} = \frac{\text{Surface Luminance of L255}}{\text{Surface Luminance of L0}}$$

L255: Luminance of gray level 255

L 0: Luminance of gray level 0

CR = CR (5), where CR (X) is corresponding to the Contrast Ratio of the point X at the figure in Note (5).

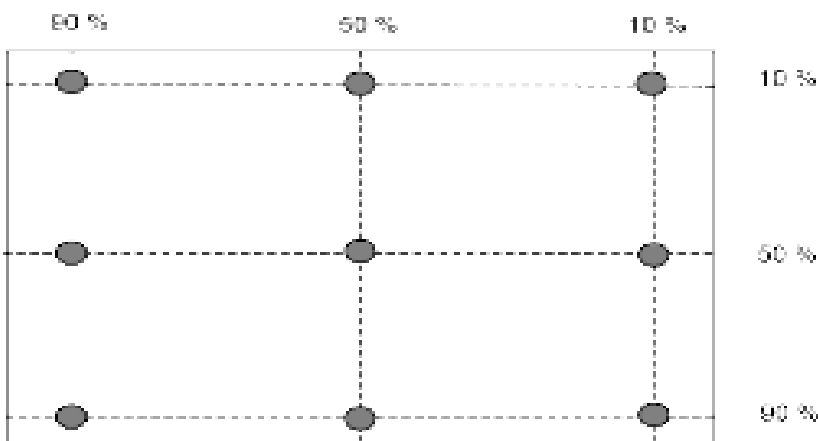
Note 4: Definition of Gray-to-Gray Switching Time:



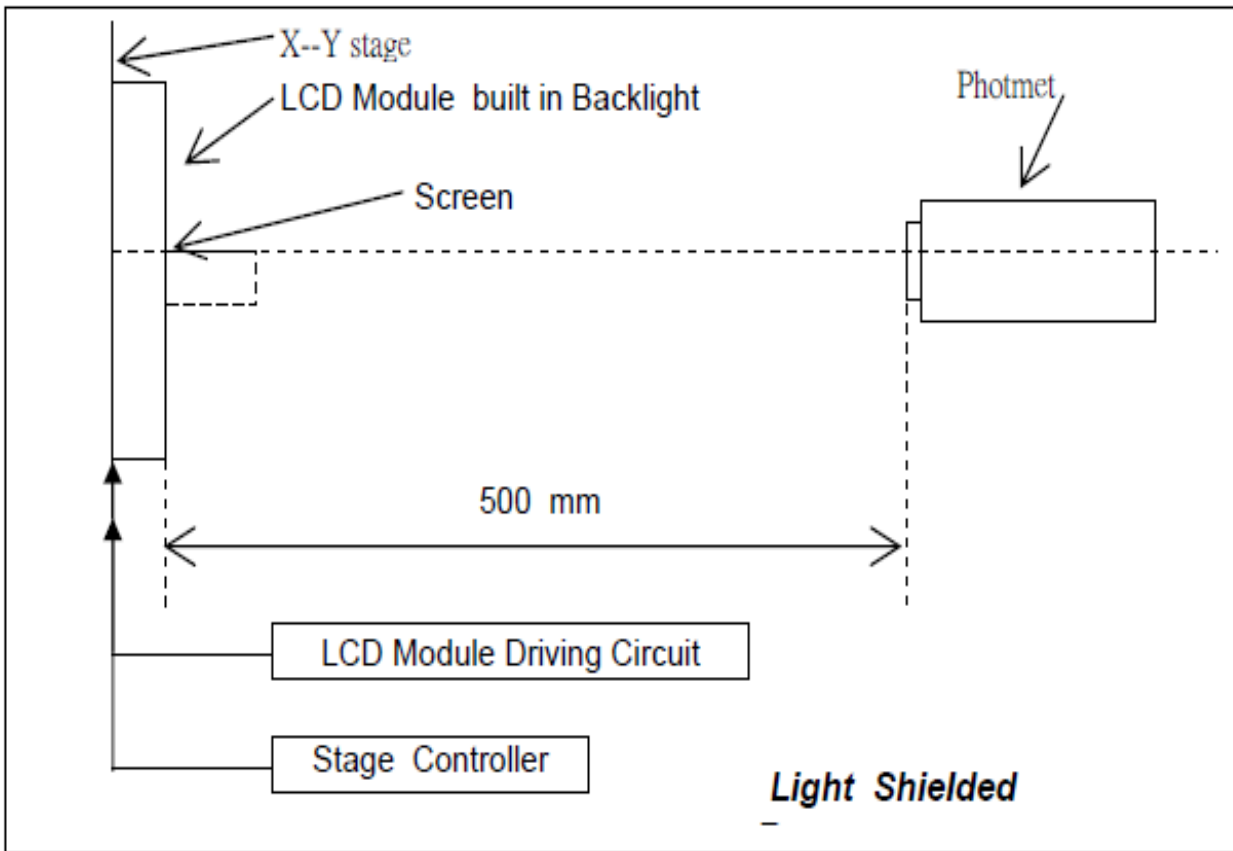
The driving signal means the signal of gray level 0, 124, 252, 380, 508, 636, 764, 892 and 1023.

Gray to gray average time means the average switching time of gray level 0, 124, 252, 380, 508, 636, 764, 892 and 1023 to each other.

Note 5: Definition of White Variation :



Note6: The measure method



Note(1): The measurement point is the center of the active area except for the measurement of Luminance Uniformity

Note (2): Photometer :BM-7 TOPCON (Aperture 2deg.)

5. Labels

5.1 Panel Label:

- 1 Model No:
- 2 Product Code
 - A----Open cell Manufacturer (Y--AUO, Q--CMO, C--CPT, J--BOE, R--IPS) B-
 - Backlight Type (D--DLED, E--LED)
 - C----Brightness Code (H--High Brightness, N--Normal Brightness, L--Low Brightness) DEF----
 - Product Size (430--43")
 - GH----Year (11--2011)
 - I---Months (1,2,3.....9,A-11,B-12) Line1)
 - JK----Days (01,02,03.....12...31 Iline 1
 - L----Line (作业流水线别)
 - MNOP----Serial Code (000000---999999)
- 3 Open cell Model:
- 4 MADE IN CHINA
- 5 INPut: current voltage [

CEJZ430LL6E1



ABCDEFGHIJKLMNPO

CELL:XXXXXXXXXXXX

MADE IN CHINA

IN PUT: XXXX MA XXXX V

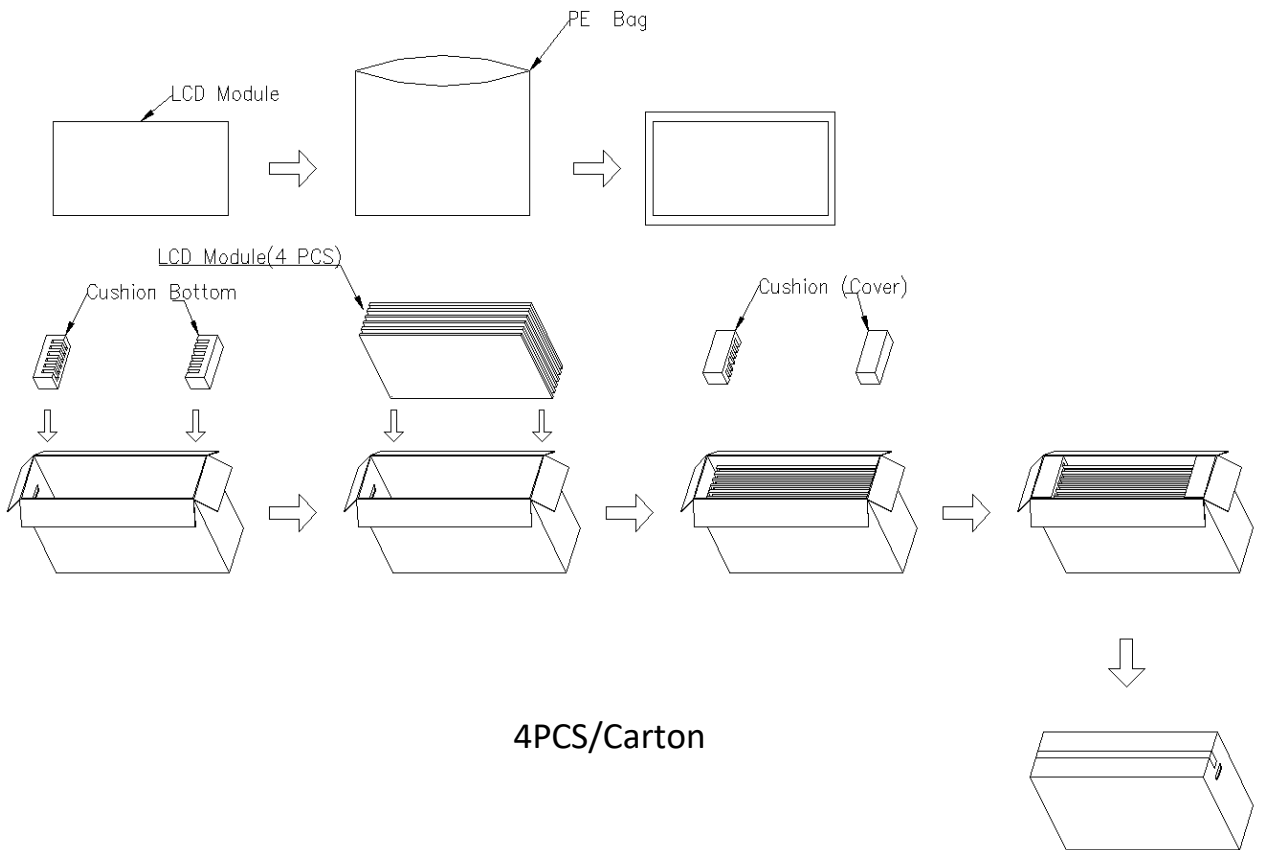
8.2 Caution Label:

	<p>CAUTION HIGH VOLTAGE RISK OF ELECTRIC SHOCK. DISCONNECT THE ELECTRIC POWER BEFORE SERVICING</p>
<p>COLD CATHODE FLUORESCENT LAMP IN LCD PANEL CONTAINS A SMALL AMOUNT OF MERCURY. PLEASE FOLLOW LOCAL ORDINANCES OR REGULATIONS FOR DISPOSAL</p>	

6. Packaging

6.1 Carton(internal package)

(TWO pcs product in the box)



6.2 Pakaging Mark



7. PRECAUTION

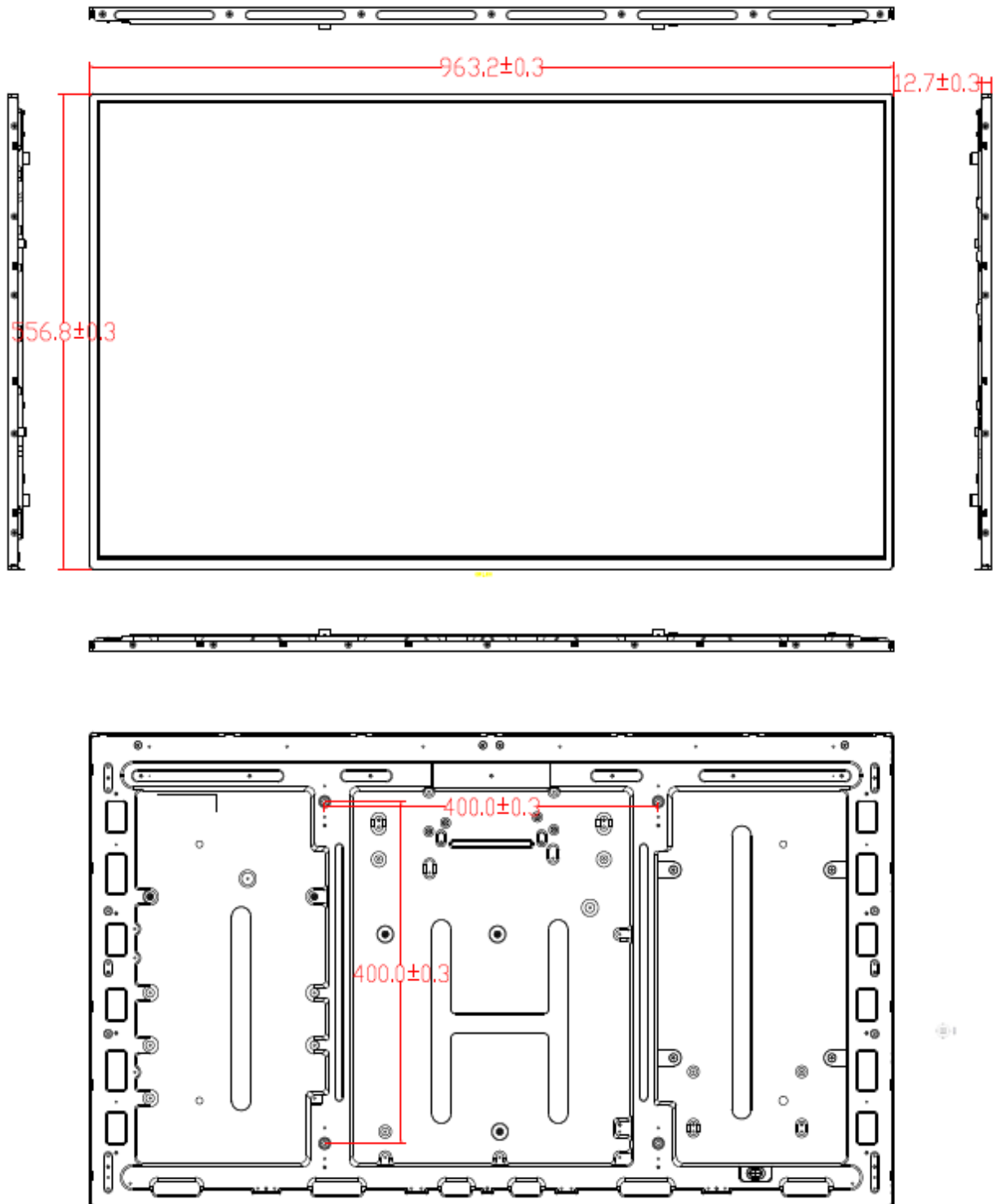
7.1 ASSEMBLY AND HANDLING PRECAUTIONS

- 1 Do not apply rough force such as bending or twisting to the module during assembly.
- 2 To assemble or install module into user's system can be in clean working areas. The dust and oil may cause electrical short or worsen the polarizer.
- 3 It's not permitted to have pressure or impulse on the module because the LCD panel and Backlight will be damaged.
- 4 Always follow the correct power sequence when LCD module is connecting and operating. This can prevent damage to the CMOS LSI chips during latch-up.
- 5 Do not pull the I/F connector in or out while the module is operating .
- 6 Do not disassemble the module.
- 7 Use a soft dry cloth without chemicals for cleaning, because the surface of polarizer is very soft and easily scratched.
- 8 It is dangerous that moisture come into or contacted the LCD module, because moisture may damage LCD module when it is operating.
- 9 High temperature or humidity may reduce the performance of module. Please store LCD module within the specified stored conditions.
- 10 When ambient temperature is lower than 10 °C may reduce the display quality. For example, the response time will become slowly, and the starting voltage of CCFL will be higher than room temperature.

7.2 SAFETY PRECAUTIONS

- 1 The startup voltage of Backlight is approximately 2000 Volts. It may cause electrical shock while assembling with inverter. Do not disassemble the module or insert anything into the Backlight unit.
- 2 If the liquid crystal material leaks from the panel, it should be kept away from the eyes or mouth, in case of contact with hands, skin or clothes, it has to be washed away thoroughly with soap.
- 3 After the module's end of life, it is not harmful in case of normal operation and storage.

8 Outline dimension



9 Impression Drawing

