



ELECTRONICS

Product Information

SAMSUNG TFT-LCD

MODEL NO. : LTM190U1-L01

SAMSUNG ELECTRONICS CO. LTD.

GENERAL DESCRIPTION

DESCRIPTION

LTM190U1-L01 is a color active matrix TFT (Thin Film Transistor) liquid crystal display (LCD) that uses amorphous silicon TFT as a switching devices. This model is composed of a TFT LCD panel, a driver circuit and a backlight system. The resolution of a 19.0" contains 1600 x 1200 pixels and can display up to 16.7 million colors with wide viewing angle of 85 degrees or higher in all directions. (Vertical viewing angle : 170 degrees , Horizontal viewing angle : 170 degrees)

FEATURES

- High contrast ratio, high aperture structure
- APVA (Advanced Patterned Vertical Alignment) mode
- Wide viewing angle
- High speed response
- UXGA ((1600x1200) pixels) resolution
- Low power consumption
- 2 dual CCFT (Cold Cathode Fluorescent Tube)
- DE (Data enable) only mode.
- LVDS (Low Voltage Differential Signaling) Interface (2 pixel / clock)

APPLICATIONS

- Workstation & desktop monitors
- Display terminals for AV application products
- Monitors for Industrial machine

GENERAL INFORMATION

ITEM	SPECIFICATION	UNIT	NOTE
Display area	386.4(H)X289.8(V)	mm	
Driver element	a-Si TFT active matrix		
Display colors	16.7M (true)	colors	
Number of pixels	1600 x 1200	pixel	
Pixel arrangement	RGB vertical stripe		
Pixel pitch	0.2415(H) x 0.2415(W)	mm	
Display Mode	Normally Black		
Surface treatment	HAZE 25%, HARD-COATING (3H)		

Mechanical Information

ITEM		MIN.	TYP.	MAX.	NOTE
Module size	Horizontal (H)	414.5	415.0	415.5	mm
	Vertical (V)	325.5	326.0	326.5	mm
	Depth (D)	-	-	26.5	mm
Weight		-	-	3,000	g

INPUT Interface Connection

Connector : JAE FI-WE31P-HF

PIN NO	SYMBOL	FUNCTION
1	GND	Ground
2		
3	A0M	Negative LVDS differential data output
4	A0P	Positive LVDS differential data output
5	A1M	Negative LVDS differential data output
6	A1P	Positive LVDS differential data output
7	A2M	Negative LVDS differential data output
8	A2P	Positive LVDS differential data output
9	GND	Ground
10		
11	CLKM	Negative LVDS differential clock output
12	CLKP	Positive LVDS differential clock output
13	A3M	Negative LVDS differential data output
14	A3P	Positive LVDS differential data output
15	GND	Ground
16		
17	A4M	Negative LVDS differential data output
18	A4P	Positive LVDS differential data output
19	A5M	Negative LVDS differential data output
20	A5P	Positive LVDS differential data output
21	A6M	Negative LVDS differential data output
22	A6P	Positive LVDS differential data output
23	GND	Ground
24		
25	A7M	Negative LVDS differential data output
26	A7P	Positive LVDS differential data output
27	NC	Reserved
28	NC	Reserved
29	NC	Reserved
30	NC	Reserved
31	NC	Reserved

BACK-LIGHT UNIT

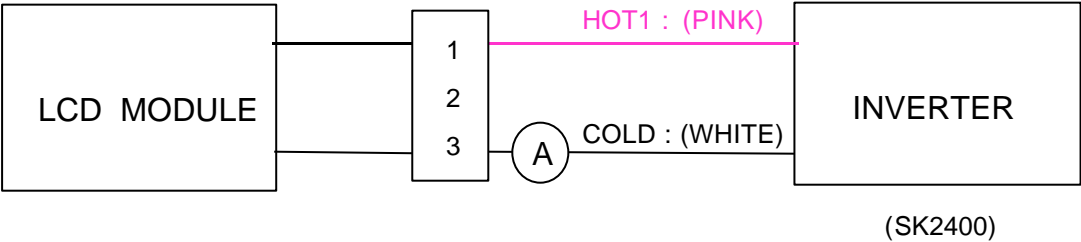
The backlight system is an edge - lighting type with 2 dual CCFTs.

Ta = 25 ± 2 °C

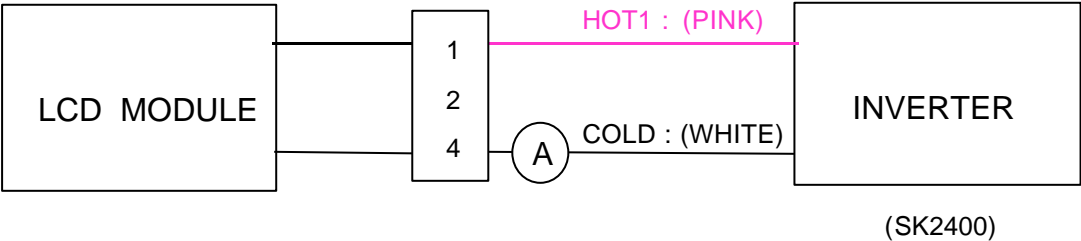
ITEM	SYMBOL	MIN.	MAX.	UNIT	NOTE
Lamp Current	IL	4.5	5.5	mArms	(1)
Lamp frequency	FL	30	60	kHz	(1)

Note 1) Permanent damage to the device may occur if maximum values are exceeded
Functional operation should be restricted to the conditions described under normal operating condition

• side lamps



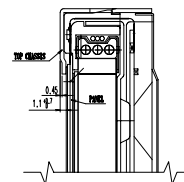
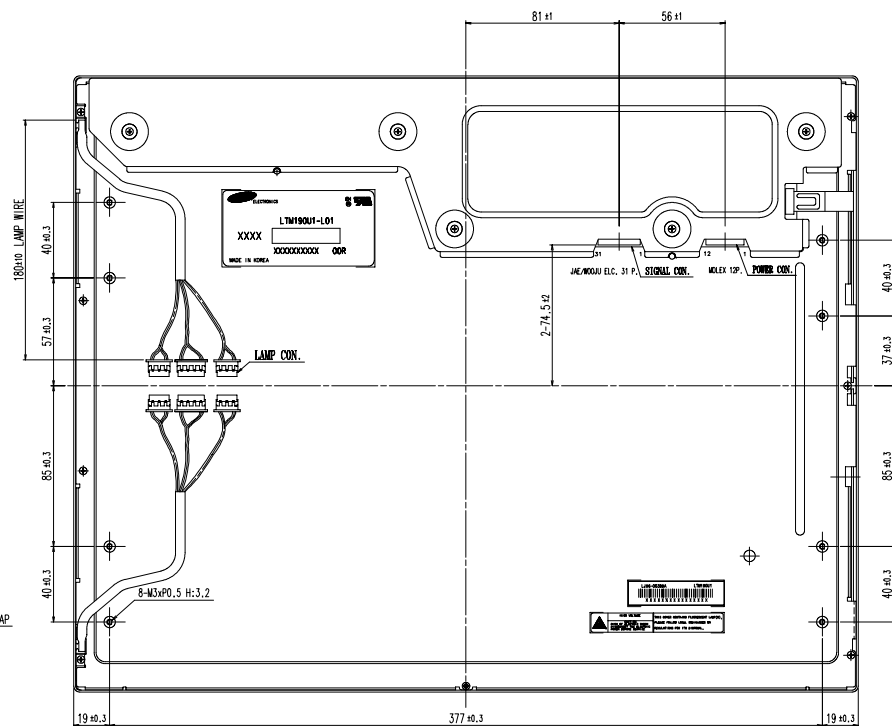
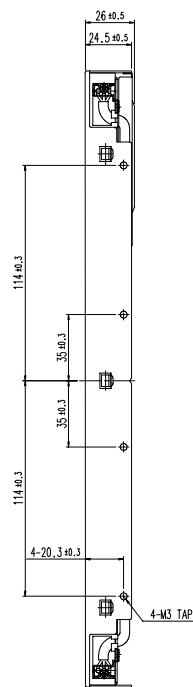
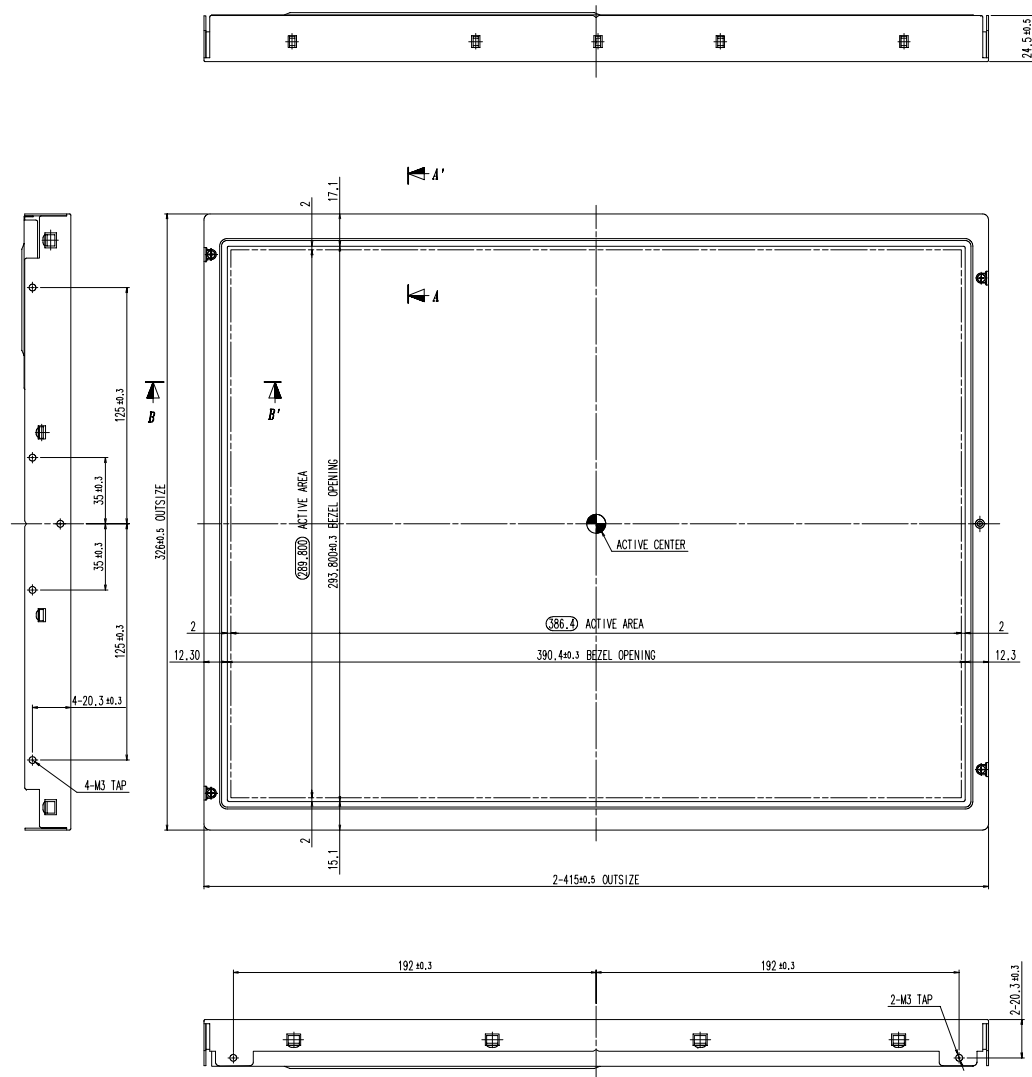
• center lamps



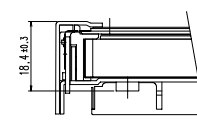
Connector : JST BHR - 03VS -1, JST BHR - 04VS -1

BACKLIGHT CONNECTOR PIN CONFIGURATION

Pin NO.	Input [ch1], [ch2]	Color	Function
3-1-1	HOT	Pink	High Voltage
3-1-2	N.C.	-	-
3-1-3	COLD	White	Ground
3-2-1	HOT	Pink	High Voltage
3-2-2	N.C.	-	-
3-2-3	COLD	White	Ground
3-3-1	HOT	Pink	High Voltage
3-3-2	N.C.	-	-
3-3-3			
3-3-4	COLD	White	Ground
4-1-1	HOT	Pink	High Voltage
4-1-2	N.C.	-	-
4-1-3	COLD	White	Ground
4-2-1	HOT	Pink	High Voltage
4-2-2	N.C.	-	-
4-2-3	COLD	White	Ground
4-3-1	HOT	Pink	High Voltage
4-3-2	N.C.	-	-
4-3-3			
4-3-4	COLD	White	Ground



SECTION A-A' (S=2/1)



SECTION B-B' (S=2/1)

PRELIMINARY

* NOTES

1. BACKLIGHT : 6 COLD CATHODE FLUORESCENT LAMPS.
2. I/F CONNECTOR SPECIFICATION.
 - MAKER : HIROSE(SIGNAL CON), MOLEX(POWER CON)
3. LAMP CONNECTOR/WIRE SPECIFICATION.
 - MAKER :
 - PART NO :

GENERAL TOLERANCE										REV. DATE		DESCRIPTION OF REVISION		REASON		CHG'D BY	
STEP	LEVEL 1	LEVEL 2	LEVEL 3	UNIT	mm	DRAWN BY	DES'D BY	CHK'D BY	APP'D BY	MODEL NAME	LTM190U1						
0 < X ≤ 4	±0.05	±0.1	±0.2	SCALE	1												
4 < X ≤ 16	±0.08	±0.15	±0.3	TOLERANCE	1		Y.S. CHN										
16 < X ≤ 64	±0.12	±0.25	±0.5	SAMSUNG ELECTRONICS													
64 < X ≤ 256	±0.25	±0.4	±0.8														
										SPEC. NO.			CODE NO.			VER.	