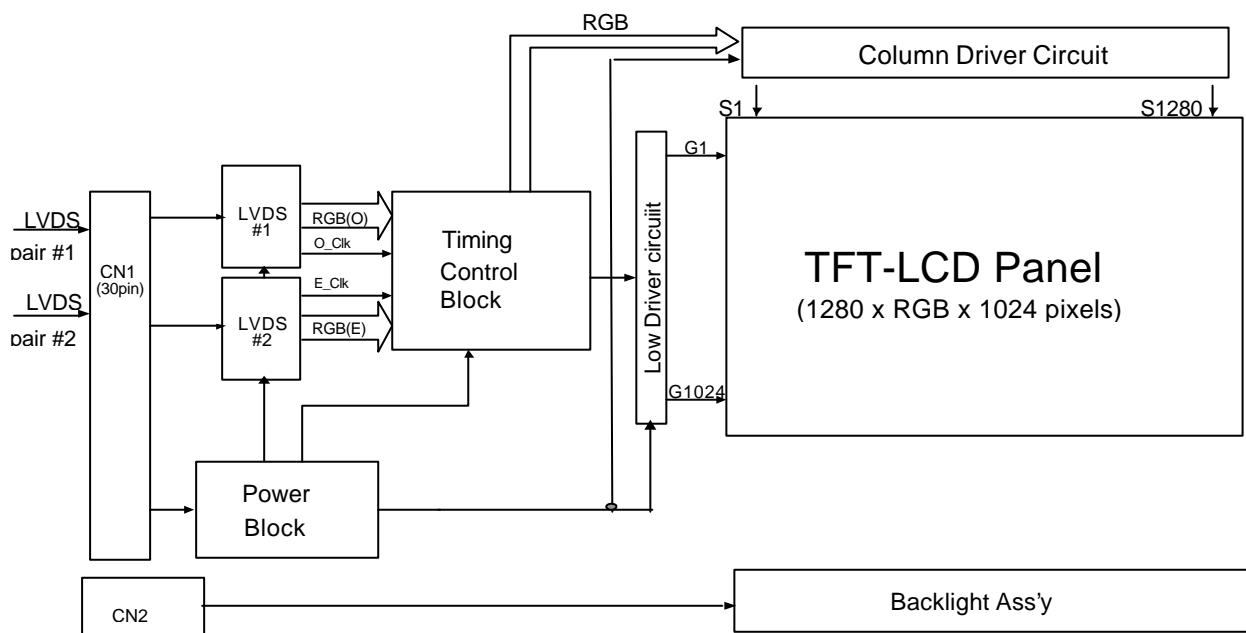


## 1. General Description

The LP157E1 is a Color Active Matrix Liquid Crystal Display with an integral Cold Cathode Fluorescent Tube(CCFT) back light system. The matrix employs a-Si Thin Film Transistor as the active element. It is a transmissive type display operating in the normally white mode. This TFT-LCD has a 15.7 inch diagonally measured active display area with SXGA resolution (1024 vertical by 1280 horizontal pixel array). Each pixel is divided into red, green and blue sub-pixels or dots that are arranged in vertical stripes. Gray scale or the brightness of the sub-pixel color is determined with 8-bit gray scale signal for each dot, thus, presenting a palette of more than 16,777,216 colors.

The LP157E1 has been designed to apply the interface method that enables low power, high speed low EMI. Flat Link must be used for LVDS(Low Voltage Differential Signaling).

The LP157E1 is intended to support applications where thin thickness and low power consumption are critical factors and graphic displays are important. In combination with the vertical arrangement of the sub-pixels, the LP157E1 characteristics provide an excellent flat panel display for office automation products such as Notebook PC.



### General Features

The following are general feature of the model LP157E1 LCD;

Active screen size	15.7 inches(39.83cm) diagonal
Outline dimensions	326(H) × 265(V) × 7.4(D) mm (typ)
Pixel pitch	0.243 mm × 0.243 mm
Pixel format	1280 x 1024 pixels
Color depth	8bit, 16,777,216 colors
Luminance,White	150 cd/m <sup>2</sup> (typ)
Power Consumption	Total 6.9Watt,typ (2.4Watt @Vcc, 4.5Watt @150 cd/m <sup>2</sup> ,Lamp)
Weight	865g (typ)
Display operating mode	Transmissive mode, normally white
Surface treatments	Hard coating(3H), Anti-glare treatment of the front polarizer

## 2. Electrical Specifications

### 2-1. Electrical Characteristics

The LP157E1 requires two power inputs. One is employed to power the LCD electronics and to drive the TFT array and liquid crystal. The second input that power the CCFL is typically generated by an inverter. The inverter is an external unit to the LCD.

**Table 1 ELECTRICAL CHARACTERISTICS**

Parameter	Symbol	Values			Units	Notes
		Min.	Typ.	Max.		
<b>MODULE:</b>						
Power Supply Input Voltage	$V_{CC}$	3.0	3.3	3.6	Vdc	
Power Supply Input Current	$I_{CC}$	-	720	840	mA	1
Differential Impedance	$Z_m$	90	100	110	ohm	
Power Consumption	$P_c$	-	2.37	2.8	Watt	1
Rush current	$I_{RUSH}$		1.5		A	2
<b>LAMP:</b>						
Operating Voltage	$V_{BL}$	625	650	825	$V_{RMS}$	3
Operating Current	$I_{BL}$	3	7	8	mA	
Established Starting Voltage						4
<b>at 25</b>				1080	$V_{RMS}$	
<b>at 0</b>				1500	$V_{RMS}$	
Operating Frequency	$f_{BL}$	40	55	80	kHz	
Power Consumption	$P_{BL}$	2.48	4.5	5.0	Watt	5
Life Time(lamp only)		10,000			Hrs	6

Notes: 1. The current draw and power consumption specified is for 3.3 Vdc at 25 and fv at 60Hz.  
(at 256 Gray pattern displayed)

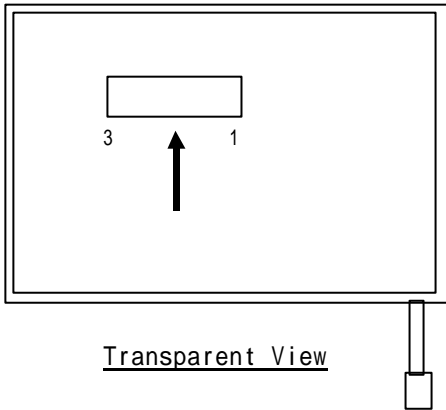
2. The duration of rush current is about 25ms
3. The variance of the voltage is  $\pm 10\%$ .
4. The output voltage at the transformer in the inverter must be high considering to the loss of the ballast capacitor in the inverter.
5. The lamp power consumption shown above does not include loss of external inverter.
6. The life time is determined as the time at which brightness of lamp is 50% compare to that of initial value at the typical lamp current and room temperature.

## 2-2. Interface Connections

Interface IC must be LVDS compatible, part No. THC63LVDF83A made by Thine, or use the compatible interface ICs made by either TI or NS. This LCD employs two interface connections, a 30-pin connector is used for the module electronics and the other connector is used for the integral backlight system.

The electronics interface connector is a model 55177-3091 manufactured by MOLEX. The pin configuration for the connector is shown in the table below.

**Table 2 MODULE CONNECTOR PIN CONFIGURATION (CN1)**

Pin	Symbol	Description	Notes
1	GND	Ground	1. Interface ICs 1.1 LCD : <b>THC63LVDF84A</b> 1.2 System : <b>THC63LVDF83A</b> * Pin to pin compatible with TI, NS LVDS  2. Connector 2.1 LCD : 55177-3091(MOLEX) 2.2 System : 1) Wire Type : 51146-3000 2) FPC Type : 54281-3010 2.3 Connector pin arrangement   <p style="text-align: center;"><u>Transparent View</u></p>
2	GND	Ground	
3	ORx3+	Plus Signal of Odd Channel 3	
4	ORx3-	Minus Signal of Odd Channel 3	
5	ORxC+	Plus Signal of Odd Clock Channel	
6	ORxC-	Minus Signal of Odd Clock Channel	
7	ORx2+	Plus Signal of Odd Channel 2	
8	ORx2-	Minus Signal of Odd Channel 2	
9	ORx1+	Plus Signal of Odd Channel 1	
10	ORx1-	Minus Signal of Odd Channel 1	
11	ORx0+	Plus Signal of Odd Channel 0	
12	ORx0-	Minus Signal of Odd Channel 0	
13	GND	Ground	
14	GND	Ground	
15	ERx3+	Plus Signal of Even Channel 3	
16	ERx3-	Minus Signal of Even Channel 3	
17	ERxC+	Plus Signal of Even Clock Channel	
18	ERxC-	Minus Signal of Even Clock Channel	
19	ERx2+	Plus Signal of Even Channel 2	
20	ERx2-	Minus Signal of Even Channel 2	
21	ERx1+	Plus Signal of Even Channel 1	
22	ERx1-	Minus Signal of Even Channel 1	
23	ERx0+	Plus Signal of Even Channel 0	
24	ERx0-	Minus Signal of Even Channel 0	
25	GND	Ground	
26	GND	Ground	
27	Vcc	Supply Voltage(+3.3V)	
28	Vcc	Supply Voltage(+3.3V)	
29	Vcc	Supply Voltage(+3.3V)	
30	Vcc	Supply Voltage(+3.3V)	

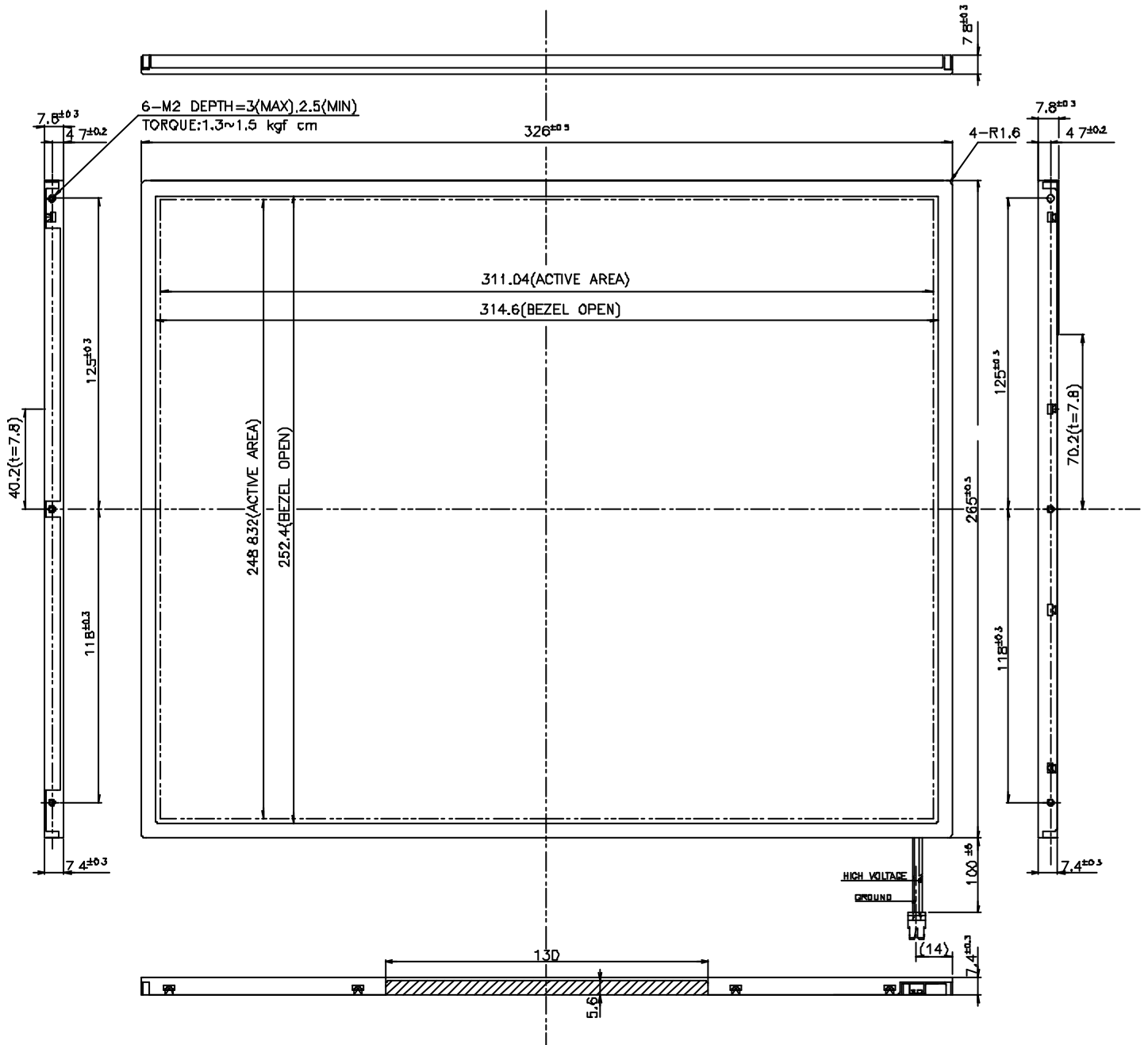
The backlight interface connector is a model BHSR-02VS-1, manufactured by JST. The mating connector part number is SM02B-BHSS-1 or equivalent. The pin configuration for the connector is shown in the table below.

**Table 3 BACKLIGHT CONNECTOR PIN CONFIGURATION (CN2)**

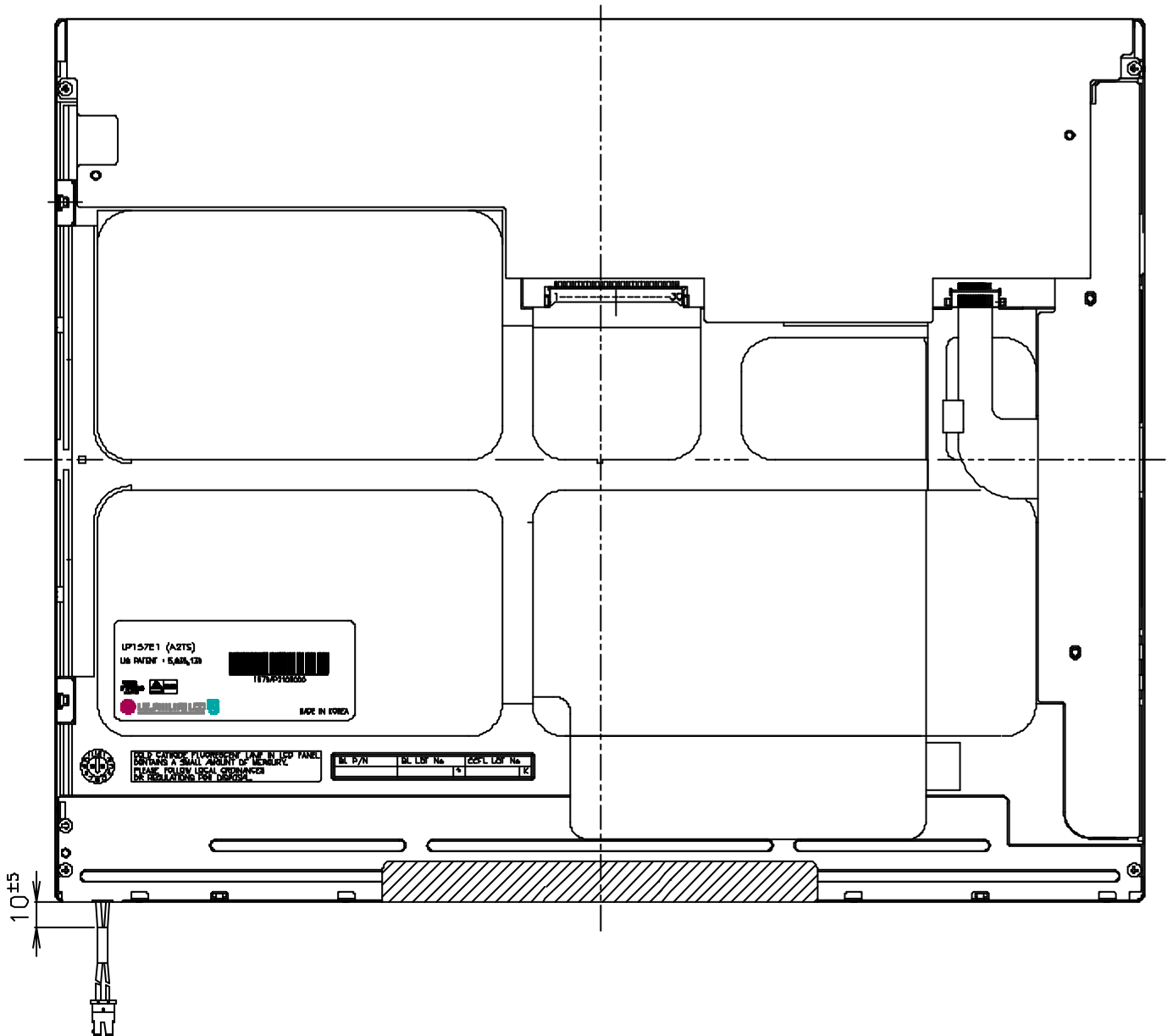
Pin	Symbol	Description	Notes
1	HV	Lamp power input	1
2	LV	Ground	2

Notes: 1. The input power wire is colored pink. Ground wire color is black.  
2. The lamp ground should be common with GND.

< FRONT VIEW >



< REAR VIEW >



### **3.PRECAUTIONS**

The LCD Products listed on this documents are not suitable for use of Military,Industry,Medical etc. system.

If customers intend to use these LCD products for above application, Please contact ours sales people in advance.