NHD-5.7-320240WFB-ETXI#-T-1

TFT (Thin-Film-Transistor) Color Liquid Crystal Display Module

NHD-	Newhaven Display
5.7-	5.7” Diagonal
320240-	320xRGBx240 pixels
WFB-	Model
E-	Built-in driver + Controller (16-bit)
T-	White LED backlight
X-	TFT
I-	6:00 view, Wide Temp
#-	**RoHS Compliant**
-T-1	Touch Panel

Newhaven Display International, Inc.
2511 Technology Drive, Suite 101
Elgin IL, 60124
Ph: 847-844-8795 Fax: 847-844-8796

www.newhavendisplay.com
nhtech@newhavendisplay.com nhsales@newhavendisplay.com

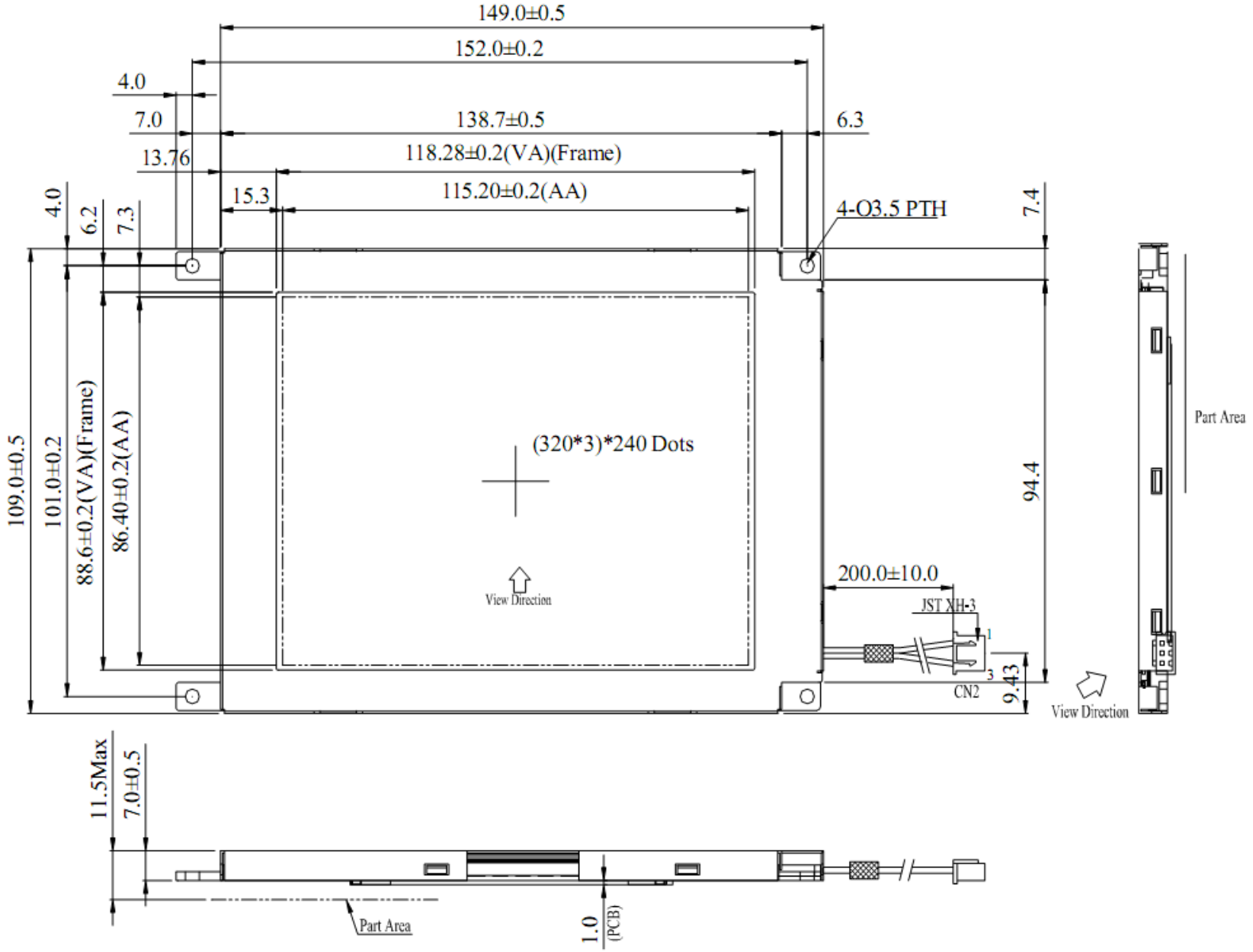
Document Revision History

Revision	Date	Description	Changed by
0	7/8/2009	Initial Release	CL
1	7/29/2009	MECHANICAL DRAWING UPDATE	CL
2	11/4/2009	Quality Information Update	BE
3	3/26/2010	Pin Description Update	MP
4	5/24/2011	Electrical characteristics updated	AK
5	1/6/2012	Pixel data format updated	AK
6	5/15/2012	Touch panel pin description updated	AK

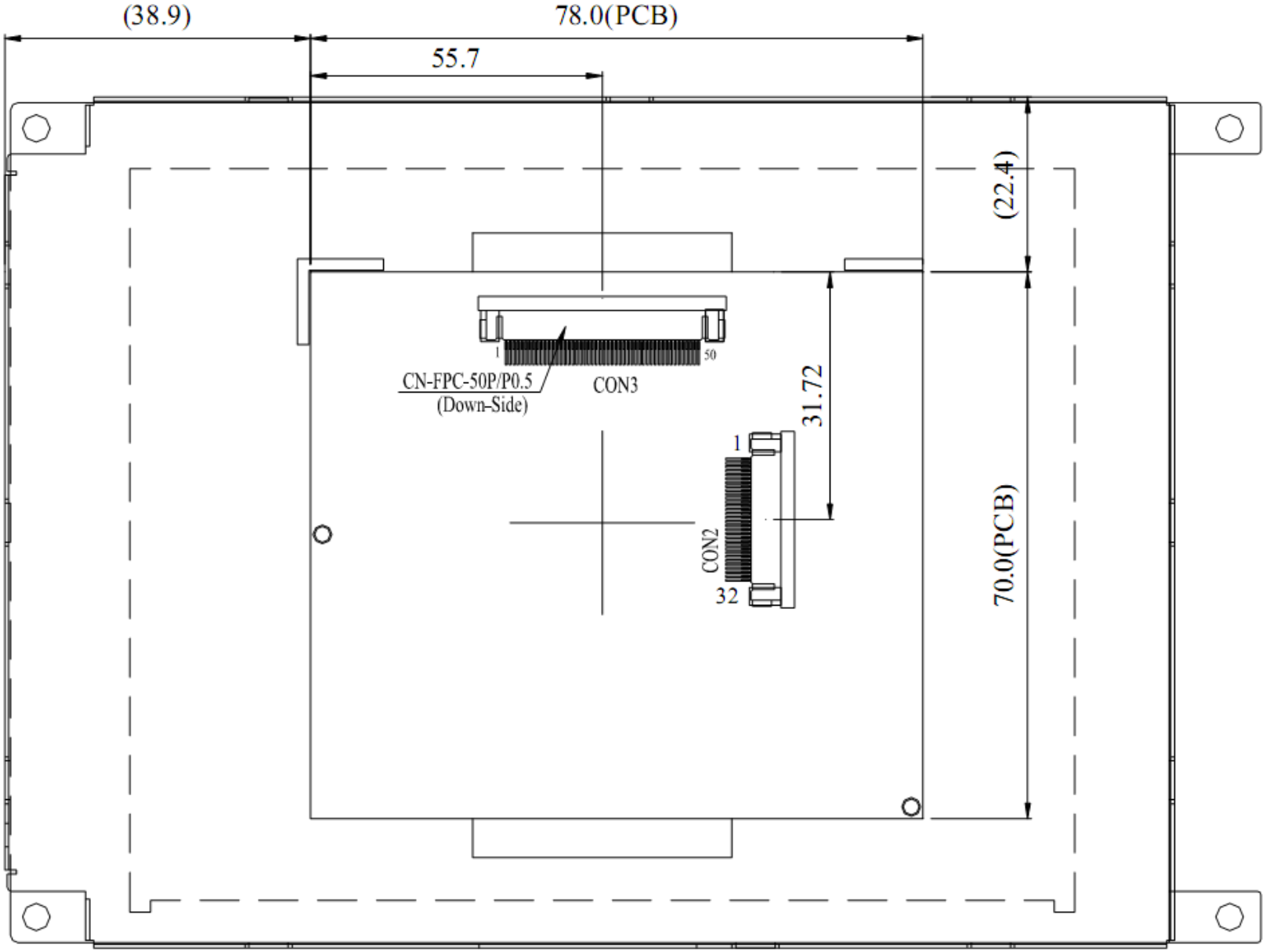
Functions and Features

- **320xRGBx240 resolution**
- **LED backlight**
- **16-bit parallel interface**
- **SSD1963 Controller**
- **4-Wire resistive Touch Panel**

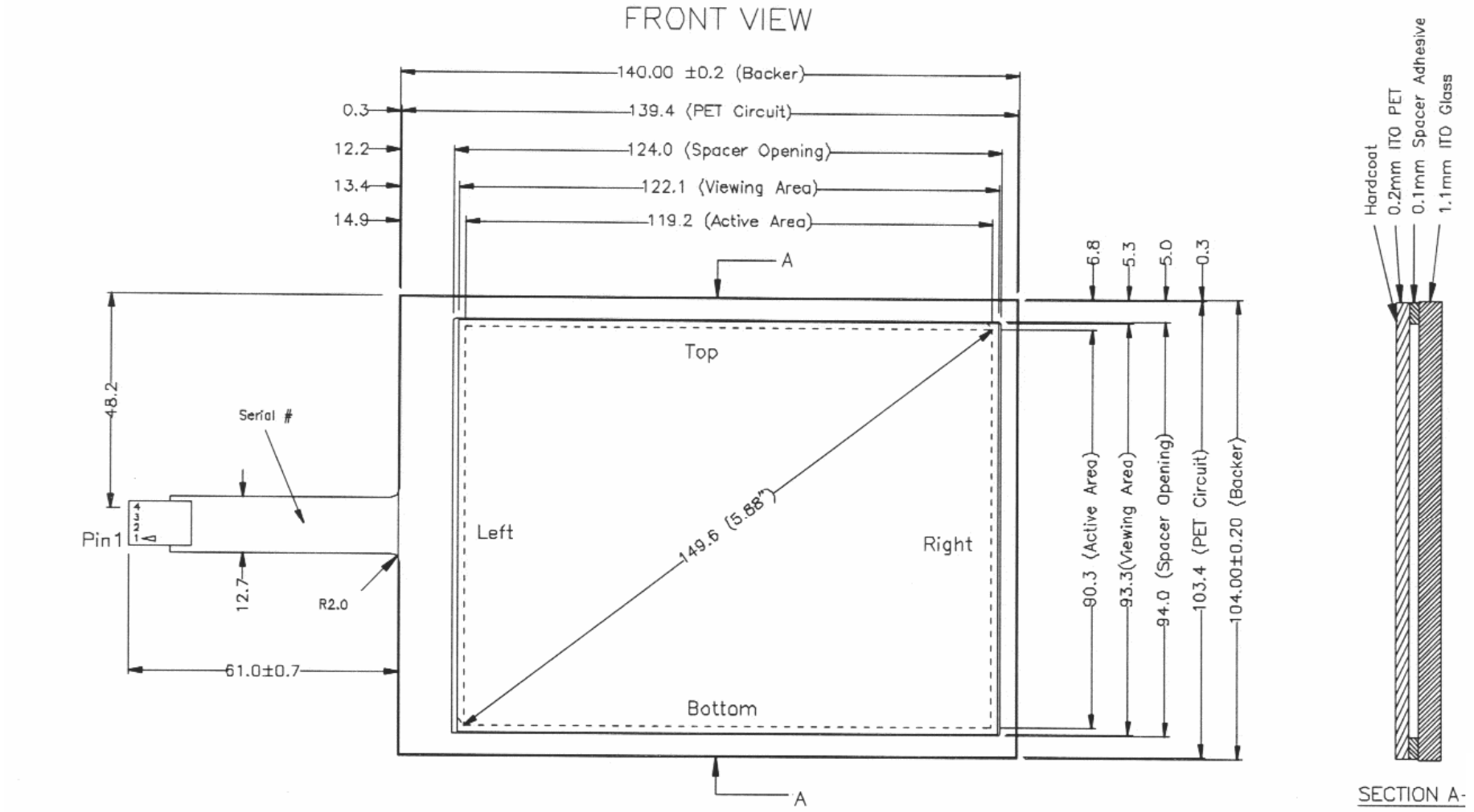
Mechanical Drawing NHD-5.7-320240WFB-ETXI#-T-1



Mechanical Drawing NHD-5.7-320240WFB-ETXI#-T-1



Touch Panel Mechanical Drawing



NOTES:

1. ITO GLASS THICKNESS : 1.1mm
2. ITO PET TOP CIRCUIT THICKNESS : 0.2mm
3. SPACER ADHESIVE : 0.1mm
4. OVERALL THICKNESS : 1.40mm ±0.07
5. CONNECTOR AND PINOUT AS INDICATED
6. FRONT SURFACE ANTIGLARE HARDCOAT
7. OPTICAL SPECIFICATION : A001
8. LAYER TO LAYER ASSEMBLY TOLERANCE: ±0.3mm

Pin #	Assignment
1	Right
2	Left
3	Bottom
4	Top

Pin Description

Pin No.	Symbol	External Connection	Function Description
1	GND	Power Supply	Ground
2	VCC	Power Supply	Power supply for LCD and logic (3.3V)
3	NC	-	No Connect
4	D/C#	MPU	Register Select signal: 1=Data, 0=Command
5	WR#	MPU	Active LOW Write signal, 8080 MPU interface
6	RD#	MPU	Active LOW Read signal, 8080 MPU interface
7-22	[DB0-DB15]	MPU	Bi-directional data bus lines
23	NC	-	No Connect
24	NC	-	No Connect
25	CS#	MPU	Active LOW Chip Select signal
26	RES#	MPU	Active LOW Reset signal
27	R/L	-	Scan direction 1: Right (Tied internally)
28	U/D	-	Scan direction 0: Down (Tied internally)
29-32	NC	-	No Connect

Recommended LCD connector: 0.5mm pitch 32-Conductor FFC. Hirose p/n FH12A-32S-0.5SH(55)
Backlight connector: JST p/n: XHP-3 **Mates with**: JST p/n: S3B-XH-SM3-TB

Touch Panel Pin Description

Pin No.	Symbol	External Connection	Function Description
1	X-	Touch Controller	RIGHT
2	X+	Touch Controller	LEFT
3	Y-	Touch Controller	BOTTOM
4	Y+	Touch Controller	TOP

Recommended Touch panel connector: 2.54mm pitch Standard Pin Headers

Controller Information

Built-in SSD1963 controller.

Please download specification at http://www.newhavendisplay.com/app_notes/SSD1963.pdf

8080 Mode Interface:

The 8080 mode MPU interface consists of CS#, D/C, RD#, WR#, and DB[15:0]. This interface uses WR# to define a write cycle and RD# to define a read cycle. If the WR# goes LOW when the CS# signal is LOW, the data or command will be latched into the system at the rising edge of WR#. Similarly, the read cycle will start when RD# goes LOW and end at the rising edge of RD#. See the SSD1963 datasheet for detailed timing diagrams.

Command Instructions:

See the SSD1963 datasheet for the Instruction Table and Command Descriptions.

Pixel Data Format: (2-options for 16-bit transfer)

Interface	Cycle	D[15]	D[14]	D[13]	D[12]	D[11]	D[10]	D[9]	D[8]	D[7]	D[6]	D[5]	D[4]	D[3]	D[2]	D[1]	D[0]
16 bits (565 format)	1st	R5	R4	R3	R2	R1	G5	G4	G3	G2	G1	G0	B5	B4	B3	B2	B1
16 bits	1st	R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0
	2nd	B7	B6	B5	B4	B3	B2	B1	B0	R7	R6	R5	R4	R3	R2	R1	R0
	3rd	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0

Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Temperature Range	Top	Absolute Max	-20	-	+70	°C
Storage Temperature Range	Tst	Absolute Max	-30	-	+80	°C
Supply Voltage	VCC		3.0	3.3	3.6	V
Supply Current	ICC	VCC=3.3		121		mA
Backlight Supply Current	IB			140	210	mA
Backlight Supply Voltage	VBL		9.0	9.4	9.8	V
Backlight Lifetime			10,000			Hr

Backlight is 7 Parallel groups of 3-Serial LEDs each.

Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Viewing Angle – Top		Cr ≥ 10	40	50		°
Viewing Angle – Bottom		Cr ≥ 10	45	55		°
Viewing Angle – Left		Cr ≥ 10	50	60		°
Viewing Angle – Right		Cr ≥ 10	50	60		°
Contrast Ratio	Cr		300	400		
Luminance	Y_L		200	250		cd/m^2
Response Time (rise)	Tr	-	-	10		ms
Response Time (fall)	Tf	-	-	15		ms

Touch Panel Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Linearity					1.5	%
Circuit Resistance – X-Axis			350		1000	Ω
Circuit Resistance – Y-Axis			200		650	Ω
Insulation Resistance			20			MΩ
Operating Voltage					5	V
Chattering					15	Ms
Transmittance			80			%
Activation Force					80	g
Pen Writing Durability			10,000			Characters
Pitting Durability			1,200,000			Touches
Surface Hardness			2			H
Haze				7		%

Quality Information

Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	+80°C , 240hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30°C , 240hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (voltage & current) and the high thermal stress for a long time.	+70°C 240hrs	2
Low Temperature Operation	Endurance test applying the electric stress (voltage & current) and the low thermal stress for a long time.	-20°C , 240hrs	1,2
High Temperature / Humidity Operation	Endurance test applying the electric stress (voltage & current) and the high thermal with high humidity stress for a long time.	+60°C , 90% RH , 240hrs	1,2
Thermal Shock resistance	Endurance test applying the electric stress (voltage & current) during a cycle of low and high thermal stress.	-20°C,30min -> 25°C,5min -> 70°C,30min = 1 cycle 10 cycles	
Vibration test	Endurance test applying vibration to simulate transportation and use.	10-55Hz , 15mm amplitude. 60 sec in each of 3 directions X,Y,Z For 15 minutes	3
Static electricity test	Endurance test applying electric static discharge.	VS=800V, RS=1.5kΩ, CS=100pF One time	

Note 1: No condensation to be observed.
Note 2: Conducted after 4 hours of storage at 25°C, 0%RH.
Note 3: Test performed on product itself, not inside a container.

Precautions for using LCDs/LCMs

See Precautions at www.newhavendisplay.com/specs/precautions.pdf

Warranty Information and Terms & Conditions

http://www.newhavendisplay.com/index.php?main_page=terms

LifeElectronics
Живое партнерство

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Тел: +7 (812) 336 43 04 (многоканальный)
Email: org@lifeelectronics.ru

www.lifeelectronics.ru