Gaming Display Specification

32 Inch monitor with LED Deco.

Model No. : **WTD320F**

Suffix : **CTLXX0**

Customer Approval
Please return 1 copy for your confirmation with your signature and date.

Approved by	Reviewed by	Prepared by
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Revision History

Date	Document Revision	Page	Summary
2025. 09. 16.	Rev 1.0	All	First Draft

1 General Description

The LCD display can receive standard DVI-D and DP (Display Port) signals from any video controller. An OSD logic is embedded to provide the convenient function to adjust the screen and picture quality. The main features are follows;

- Support 8 Bit LVDS interface
- High quality scaling engine to enlarge or shrink the image
- Plug & Play VESA DDC 2B Ver. 1.3
- Embedded On-screen Display Control
- Support resolution from VGA to FHD
- Support DVI-D and DP input signal.
- Recommended resolution : 1920 x 1080@60Hz (FHD)
- A variety of image adjustment such as brightness, contrast, color temp. and etc.
- Support Image Reverse(180 Degree) and Rotate OSD function
- Narrow Black Bezel Design and Glare Tempered Glass
- Support advanced LED Deco for eye catching effect

2 General Specifications

2.1 The detail of suffix on P/N

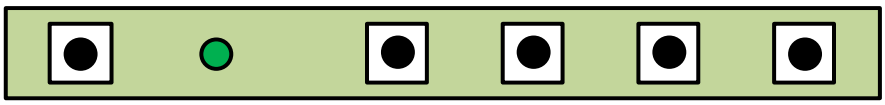
WTD320F- CTLXX0

Additional specification	Suffix
Enclosed Frame model	C
Touch Glass	T
LED deco	L
XX	Customer undecided
0	Revision No.

2.2 Summary of specifications

Item		Unit	Value
LCD Module	Screen Size		32 inches Diagonal
	LCD Module		BOE QV320FHM-NN0
	Pixel Pitch	[um]	121.25 x 363.75
	Response Time	[ms]	8 typ.(G to G)
	Brightness	[cd/m^2]	Without Glass : 350 min, 400 typ.
			With Glass(88%) : 350 min
	Contrast Ratio		1,200 typ.
	Active Area	[mm]	698.4(H) x 392.85 (V)
	Max. Colors	[colors]	16.7 millions
	Viewable Angles	[degree]	89/89 (Left/Right) 89/89 (Up/Down)
	Resolution	[pixel]	1920 (H) x 1080(V)
LED Deco	LED Type		SMD5050, LED Strip
	Input Voltage	[V]	12VDC
	LED Quantity		139ea
	LED Current	[mA]	R/G/B : 9mA/LED
	Color Temp.	[K]	6500 +/- 500K
Recommended Resolution		[pixel]	1920 x 1080 (FHD) @ 60Hz
Frequency Range	Horizontal	[KHz]	29~85
	Vertical	[Hz]	55~76
I/O Connector	Signal #1	DVI-D	Single Link DVI-D Connector
	Signal #2	DP	20pin DP connector
	Power-in	DC 24V	Adaptor
Plug & Play			VESA DDC 2B Ver. 1.3
Power supply		[V]	Display - DC24V ± 10%
Power consumption		[W]	Display - 40 Watt (typ.) LED Deco – 22Watt (typ.)
Power management			No Support
OSD Keys	5 keys		Power, Menu/Select, Up, Down, Select/Exit
Physical Considerations		[mm]	744.4(H) x 447.8(V)
		[Kg]	12Kg (typ.)
Environmental Conditions	Operation	[°C]	0 ~ +40
	Storage	[°C]	-20 ~ + 60
	Operation	[%RH]	10 ~ 80 (Non-Condensing)
	Storage	[%RH]	10 ~ 90 (Non-Condensing)
Certification			UL, FCC, CSA compliance

2.3 OSD Keys



Power LED Menu/Select Up Down Select / Exit

A. Summary of the key functions

Button	Function	Hot Key
LED	Input signal – GREEN LED No Signal – YELLOW LED Soft Power Off – LED off	
POWER	Power On/Off	
MENU/ SELECT	Access to OSD menu or sub item selection **Save changed value after adjust OSD value.**	
UP	Move cursor to the right, Increase selected value.	Show up Input Source and select input source
DOWN	Move cursor to the left, Decrease selected value	
SOURCE / EXIT	and exit to the previous menu level	

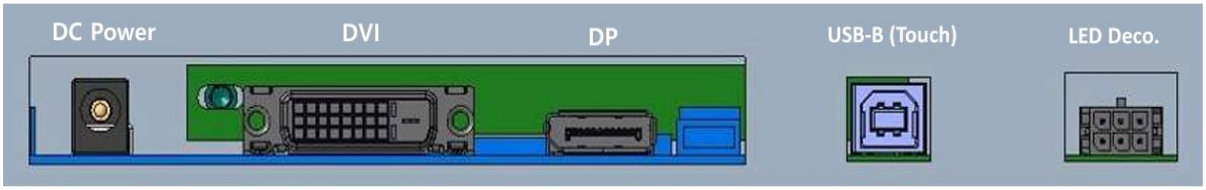
2.4 AD Board Electrical specs

Symbol	Description	Min	Typ	Max	Unit
VDD	+24 V DC Power Supply	21.6	24	26.4	V
VIH	Digital input Voltage, High	2.5			VPP
VIL	Digital input Voltage, Low			0.8	VPP
FHS	Horizontal Sync. Frequency	29		86	KHz
FVS	Vertical Sync Frequency	55		76	Hz
VSIH	Sync Input High Level		5		VDC
VSIL	Sync Input Low Level		GND		VDC

2.5 Signal timing table

Resolution	Refresh Rate (Hz)	Resolution	Refresh Rate (Hz)
720 x 400	70	1280 x 720	60
640 x 480	60	1280 x 768	60
640 x 480	72	1280 x 960	60
640 x 480	75	1280 x 1024	60
800 x 600	56	1280 x 1024	75
800 x 600	60	1360 x 760	60
800 x 600	75	1400x1050	60
1024 x 768	60	1440x900	60
1024 x 768	70	1600x900	60
1024 x 768	75	1920x1080	60

2.6 Input Port



3. Individual specification

3.1 LCD module (QV320FHM-NN0)

Item	Specification	Remark
Active Screen Size	698.4mm X 392.85mm	BOE
Pixel Pitch	121.25um X 363.75um	
Screen Resolution	1920 X 1080	FHD
Color Depth	16.7M Colors	8bit
Luminance	400 cd/m2 - Typ.	Without Touch Glass,
Viewing Angle	89/89/89/89	Degree, Wide Viewing Angle
Contrast	1200 : 1	AHVA
Uniformity	72 (min)	%
Pixel Response Time	8msec - Typ.	G to G
Color Coordinate	x = 0.280, y = 0.290	+/- 0.03
BLU Life Time	30K	hours (typ.)

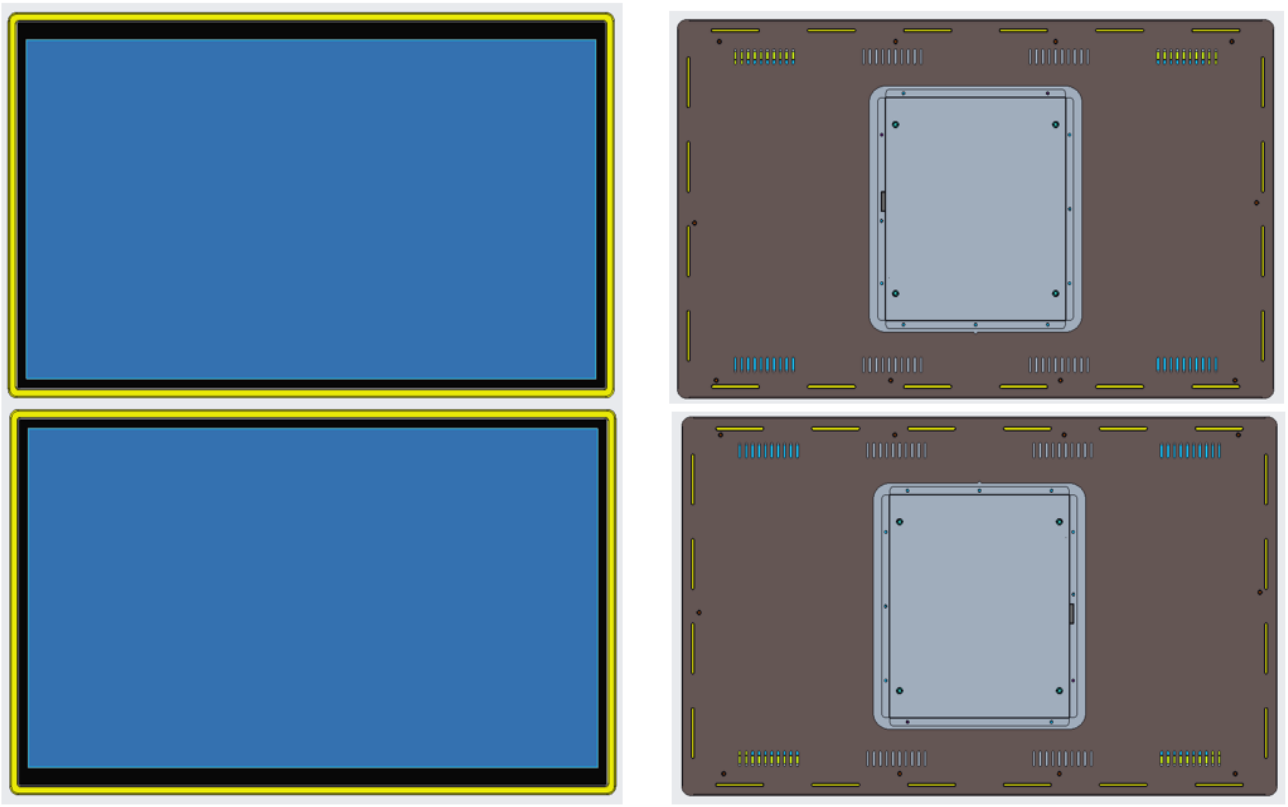
3.2 Backlight Unit

Item	Symbol	Condition	Min	Typ	Max	Unit
Input Voltage	Vin		22.0	24.0	26.0	Vdc
Input Current			-	1.57	1.84	A mean
Backlight	ON		2.5	-	5.0	Vdc
ON/OFF	OFF		0	-	0.8	Vdc
Bright Adjust	DIM-adj		0 (bright)	-	5 (dark)	Vdc

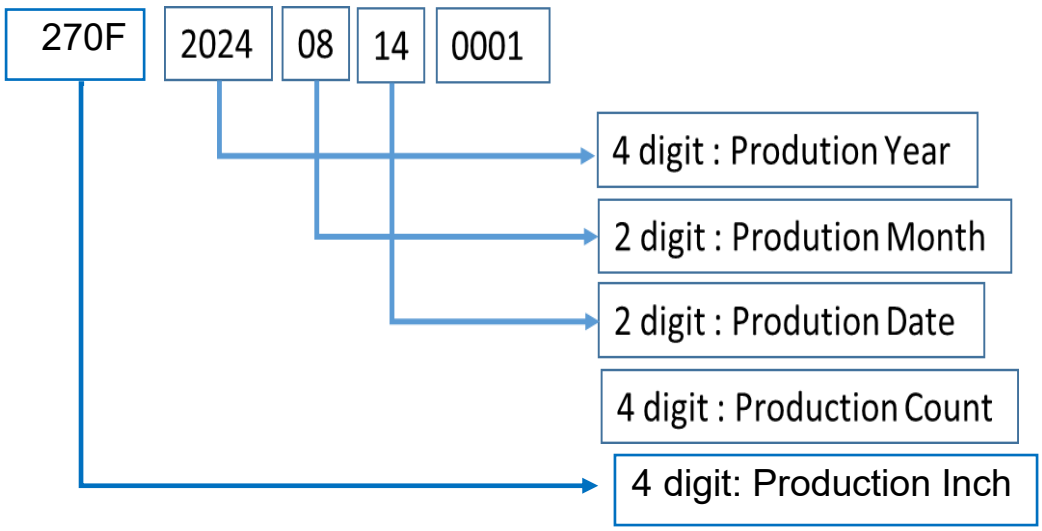
3.3 Mechanical Specification

Item	Description	Typ
Dimension	744.4 X 447.8	mm
Visual Area	698.4 X 392.85	mm
Tempered Glass	Heat Strengthening Treatment	
Transparency	TBD	
Surface Treatment	Clear	

4. Product design



5. Product Label



6. Reliability Test

NO.	시험항목	Test Condition	시험 시간
1	High Temperature & High Humidity Storage Test	Power Off, 60℃ / Rh 80% / 36hrs / Packing	36hrs
2	Low Temprature Storage Test	Power Off,-20℃ / Rh 0% / 16hrs / Packing	16hrs
3	Low Temprature Operating	Power On, 0℃ / Rh 0% / 240hrs / Operating	240hrs
4	High Temprature Operating	Power On,40℃ / Rh 0% / 240hrs / Operating	240hrs
5	High Temprature & Humidity Operting Test	Power On,50℃ / Rh 60% / 48hrs / Operating	48hrs
6	Packing Vibration Test	3 axis(x,y,z) Vibration Frequency : 10-300hz Grms : 1.5 grms Time : 30 min* 3 axis = 90 min	외부 진행
7	Packing Drop Test	4능1면(400mm), 전도시험	외부 진행
8	Power On/Off Test	30sec On/30sec Off, 3000times @ Aging room	50hrs
9	Power DIP Test	- 100% Dip (0V) for 16.7ms (20ms : 50Hz 전원) - 60% Dip for 100ms 각 10분동안 테스트를 실시	4hrs
10	Electrostatic Discharge	US 向 : Air ±27kV, ±20kv / Contact ±10kV, ±7.5kv EU 向: Air ±15KV, Contact ±8KV 화면의 전면부와 Metal Frame에 실시한다.	4hrs