PRODUCT SPECIFICATION	Date:08.01.2017

TO65DS

65” DOUBLE SIDED TOTEM

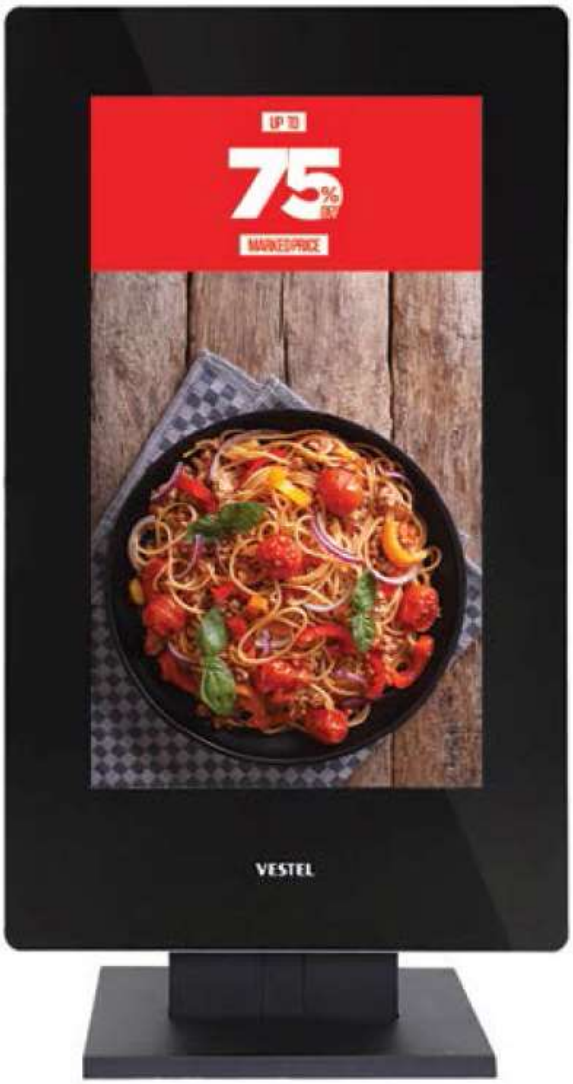
VERTICAL DIGITAL SIGNAGE DISPLAY

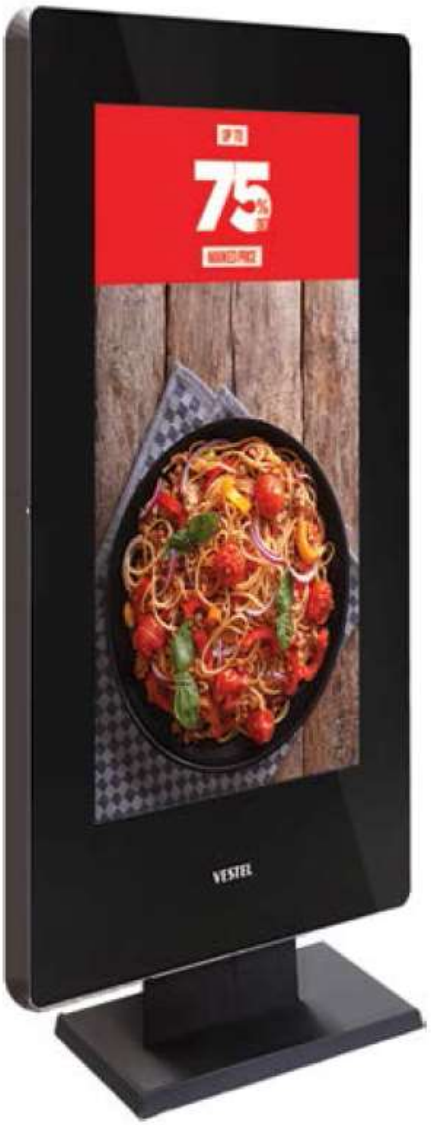
SPECIFICATIONS

	TO65DS
Panel	
H-Freq	67.5 kHz
Max. Pixel Freq.	74.25 MHz
V-Freq	60 Hz
Cabinet	T05
Backlight Type	EDGE TYPE LED (DUAL STRING)
Panel Type	a-Si TFT Tv Panel
Panel Front Type	Hard Coating
Orientation	Portrait
Resolution	1920 x 1080 (16:9)
Active Area	1435.5 (mm) x 810.5 (mm)
Brightness (Typ.)	900 cd/m2
Contrast Ratio	4000:1
Panel life time (Min. / Typ.)	30,000 hr / 50,000 Hr
Viewing Angle	178°
Response Time	8 ms
White Uniformity	≤ 25%
Color Value	10 bit, 1.06B
Areas of Usage	Indoor
Monitor Connectivity	
External Control	RS232 (D-Sub 9P)
Mechanical Features	
Size w/foot	1028x488x1948(mm)
Size wo/foot	1028x77.5x1718(mm)
Product Weight	95 kg
Total Weight (with Package)	150 kg
Vesa Mounting Size	600 mm x 400 mm
Working Conditions	
Temperature Conditions	0°C / +40°C
Humidity (Test Condition)	90%
Storage Conditions	
Temperature Conditions	-15°C / +40°C
General Features	
Main Features	Pluggable PC (VPS) compliance
Mechanical Features	Vertical Sleek Design with Stand, Antireflective Clear Glass
Optional Features	Vsign - Content Management Software
Power	
Power Supply	220 - 240 VAC / 50 - 60Hz
Power Consumption(Deep StandBy)-Intel OPS	< 3W
Power Consumption(On Full Load)-Intel OPS	616 W
PC Features	**VPS**
CPU	Intel i3 4000M
Chipset	4th Generation Intel HM86 Chipset
GPU	Intel® HD Graphics 4600

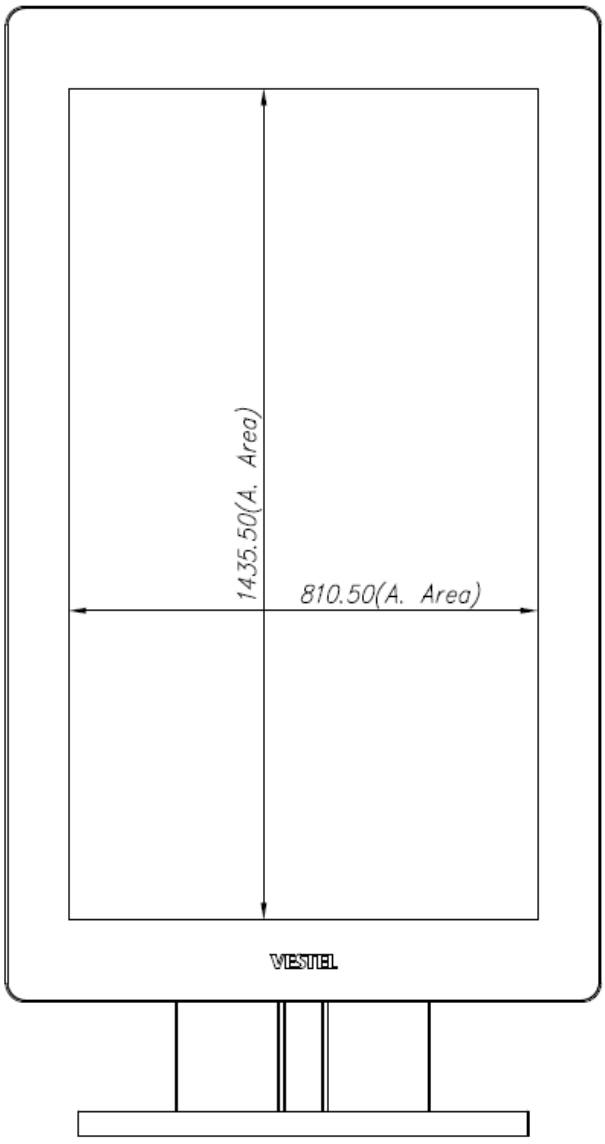
Memory	4GB (up to 16 GB) 1333/1600 Mhz DDR3 RAM
Network	LAN: 10/100/1000 Mbps Ethernet WLAN: 802.11 b/g/n (802.11a/b/g/n optional) Bluetooth 4.0 (optional) 3G: N/A
Storage	SSD 256 GB HDD 500 GB
I/O Ports	1 x RJ45, 10/100/1000 Mbps Ethernet 2 x USB 3.0 Ports 2 x USB 2.0 Ports 1 x Headphone 3.5 mm jack 1 x Microphone 3.5 mm jack 2 x Wifi Antenna Connector
Operating System	Windows 10
Accessory	
Standard	IB, Power Cord
Optional	VPS
Certification	
Safety Approval	☑
CB	☑
S-MARK	☑
EMC Approval	☑
CE	☑

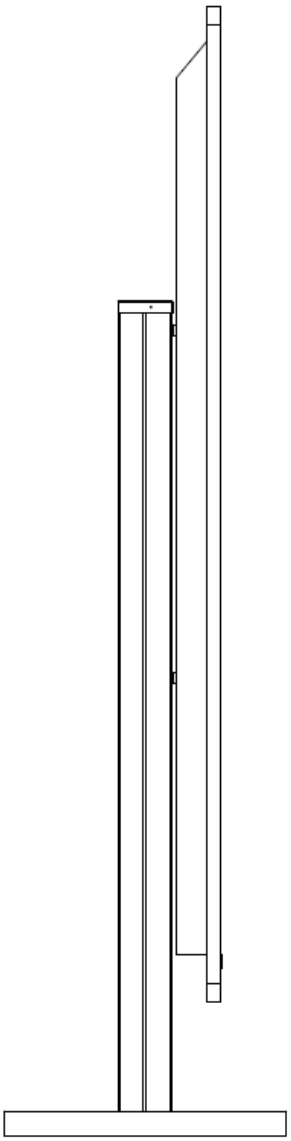
VIEW

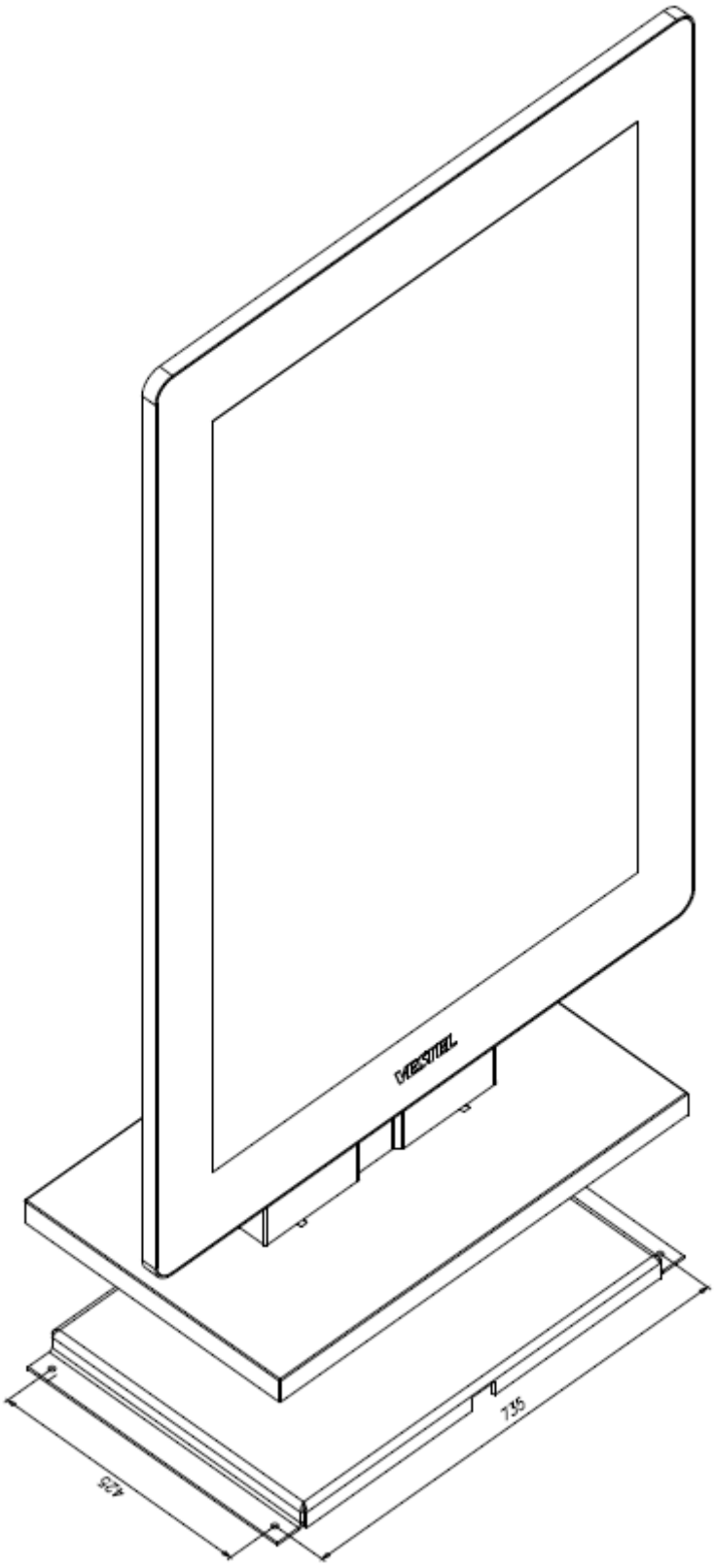


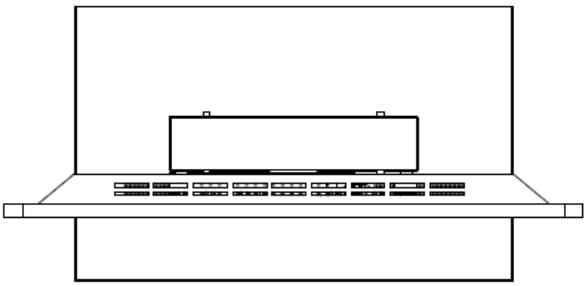


DESIGN



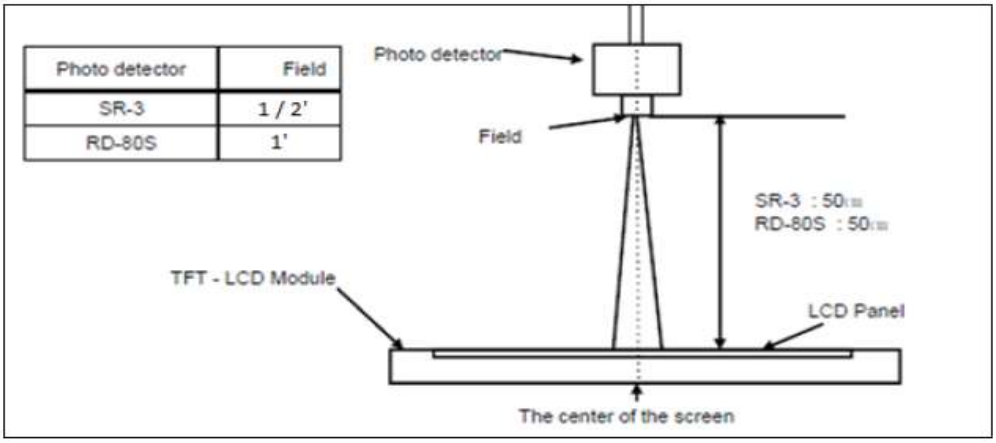




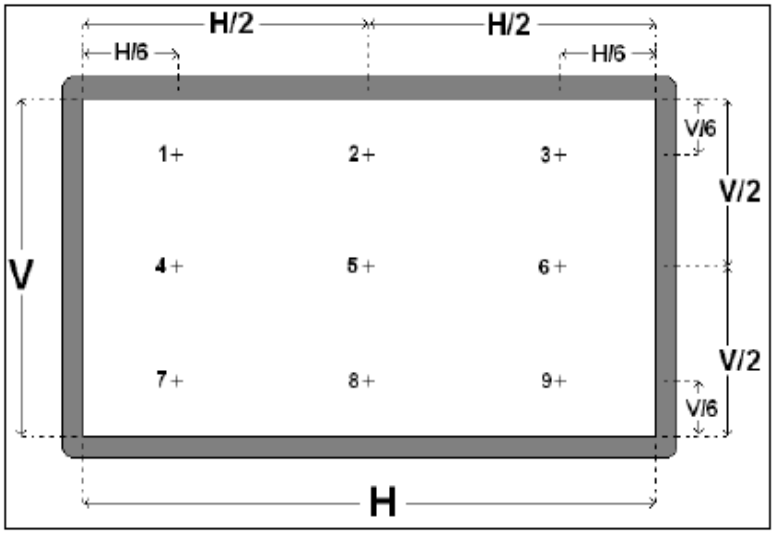


TESTING STANDARDS

The measurement should be executed in a stable, windless and dark room 60min after lighting the back light at the given temperature for stabilization of the back light. This should be measured in the center of screen. Environment condition: Ta = 25 ± 2 °C.



Definition of Test Points:



Note (1) Definition of Contrast Ratio (C/R):

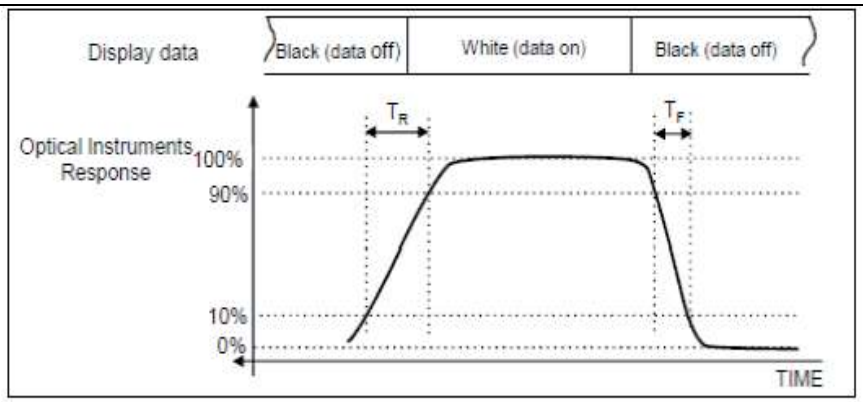
Ratio of gray max (Gmax) & gray min (Gmin) at the center point (5) the panel

$$\frac{C}{R} = \frac{Gmax}{Gmin}$$

Gmax: Luminance with all pixels white

Gmin: Luminance with all pixels black

Note (2) Definition of Response Time: $T_R + T_F$



Note (3) Definition of 9 points brightness uniformity:

$$Buni = 100 * \frac{(Bmax - Bmin)}{Bmax}$$

(Test pattern: Full White)

Bmax: Maximum brightness

Bmin: Minimum brightness

Note (4) Definition of Luminance of White:

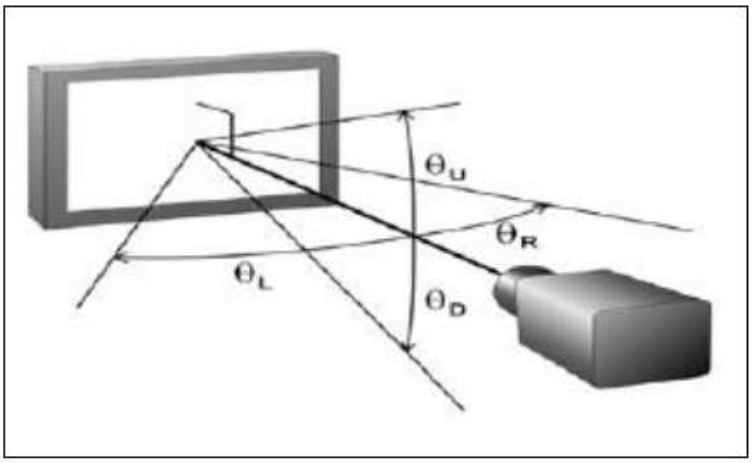
Luminance of white at center point 5

Note (5) Definition of White Color Chromaticity:

Color coordinates of White at center point 5

Note (6) Definition of Viewing Angle

Viewing angle range (C/R > 10)



Safety **IEC 60950-1: 2005+A1:2009**
EN 60950-1: 2006+A11: 2009+A12:2011

EMC

Immunity Tests	
Specification	**Description**
EN 55024:2010	Immunity
EN 61000-4-2:2009	Electrostatic Discharge (ESD)
EN 61000-4-3:2006+A2:2010	Radiated, radio-frequency, electromagnetic field immunity
EN 61000-4-4:2004+A1:2010	Electrical Fast Transient/Burst Immunity
EN 61000-4-5:2006	Surge
EN 61000-4-6:2009	Conducted Disturbances Induced by Radio-Frequency Fields
EN 61000-4-11:2004	Voltage Dips and Short Interruptions

Emission Test	
Specification	**Description**
EN 55022:2010/AC:2011 – Class B	Disturbance Voltage at the Mains Terminals (Conducted Emission)
EN 55022:2010/AC:2011 – Class B	Disturbance Voltage at the Telecommunication Terminals (Conducted Emission)
EN 55022:2010/AC:2011 – Class B	Field Strength (Radiated Emission) (1GHz-6GHz)
EN 55022:2010/AC:2011 – Class B	Field Strength (Radiated Emission) (30MHz-1GHz)
EN 61000-3-2:2006+A1:2009+A2:2009	Harmonics
EN 61000-3-3:2008	Flicker

Note EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN61000-4-8 and EN 61000-4-11 are basic standards referred from EN 55024.

According to EN 55024, EN 61000-4-8 Power Frequency Magnetic Field test is not performed since the EUT is not sensitive power frequency magnetic field.

EN 301489 – 1 V1.9.2	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
EN 301489 – 17 V2.2.1	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for Broadband Data Transmission Systems

Reliability Test Standards

Low Temperature Test

Products must be boot up without any delay more than one minute. No abnormality on operation. There mustn’t come out any electrical and functional problems.

Test Condition :

Temperature: -15 °C , Humidity: 50% , Duration: 24 hours , Mode of Operation: Power Off

High Temperature Test

After the test, product should work properly as electrical and mechanically.
No software crash, No hang up, No lock up.

Test Condition :

Temperature: 50 °C , Humidity: 90% , Duration: 72 hours , Mode of Operation: 3D Mark 2011

Life Test

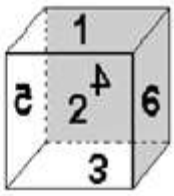
After the test Product should work properly as electrically and mechanically.
No software crash, No hang up, No lock up.

Test Condition :

Temperature: 35 °C , Humidity: 50% , Duration: 150 hours , Mode of Operation: 3D Mark 2011

Drop Test

Product should work properly and there mustn't be any crack at the cabin or any cosmetic problem. In addition, there mustn't be any major problem at the product packaging and snow boxes.



The test is performed on the packed digital products sample under following conditions;

Drop Order :
1- Face 3of the package
2- 2-3-5 corner of package
3- 2-5 edge of package
4- 3-5 edge of package
5- 2-3 edge of package
6- Face 1 of the package
7- Face 5 of the package
8- Face 6 of the package
9- Face 2 of the package
10- Face 4 of the package

Total: 10 drops

Test Condition :

Dropping height: Face 3 (Bottom surface): 55cm, Other surfaces: 40cm
Temperature: 25 ± 2 °C , Humidity: 45% ± 10

Vibration Test

Product should work properly and there mustn't be any crack at the cabin, at the solder points of chassis, at the pins of components. In addition, there mustn't be any major problem at the product packaging and snow boxes.

Direction of Vibration	Frequency of Vibration	Power Spectral Density	Sweep Time	Total Duration	Acceleration
Z	10Hz – 500Hz	$0.002G^2/Hz$	10min	60min	$1Grms(9.81m/s^2)$