

65-inch Class FULL HD LCD Display

TH-65EF1E

● Product specification (design and specification subject to change without notice)

■ DISPLAY PANEL

Screen Size (Diagonal)	65-inch (1638 mm)
Panel type / Backlight	VA / Direct-LED
Aspect ratio	16:9
Effective Display Area (W x H)	1428 x 803 mm
Resolution (H x V)	1920 x 1080
Brightness	350 cd/m ² (Typ)
Contrast Ratio	4000:1 (Typ)
Max. Display Colors	approx. 1.06 Billion
Response Time	8 ms (Typ) (G to G)
Viewing Angle (Horizontal / Vertical)	178° / 178° (CR ≥ 20)
Panel Life Time*1	approx. 50000 hours (Typ)
Panel Surface Treatment	Anti glare type (Haze 2%)

*1 When the panel lifetime is at 50% of the brightness under the condition of 25 degrees Celsius (+/- 2 degrees Celsius).

■ CONNECTION TERMINAL

VIDEO IN	4-Pole Mini Jack (M3) x 1	Video : 1.0 V [p-p] (75 Ω) Audio : 0.5 V [rms]
HDMI IN	HDMI Type A Connector x 2	Linear PCM (Sampling frequency : 48 kHz/44.1 kHz/32 kHz)
DVI-D IN	DVI-D 24-pin x 1	Compliance with DVI Revision 1.0 Compatible with HDCP 1.1
PC IN	Mini D-Sub 15-pin x 1 (Female)	Y/G : with sync 1.0 V [p-p] (75 Ω) : without sync 0.7 V [p-p] (75 Ω) P _B /C _B /B : 0.7 V [p-p] (75 Ω) P _R /C _R /R : 0.7 V [p-p] (75 Ω) HD/VD : 1.0 - 5.0 V [p-p] (high impedance)
SERIAL IN	D-sub 9pin x 1, RS-232C Compatible	
LAN	RJ45 x 1, 10BASE-T/100BASE-TX, Compatible with PLink	
IR IN / OUT	Mini Jack (M3) x 1 / x 1	
AUDIO IN	Stereo Mini Jack (M3) x 1 (Shared with DVI-D IN and PC IN)	0.5 V [rms]
AUDIO OUT	Stereo Mini Jack (M3) x 1 Variable (- ∞ - 0 dB) (1 kHz 0 dB Input, 10 kΩ Load)	0.5 V [rms]
USB	USB Type A connector x 1, DC 5 V/1A (USB 3.0 is not supported.)	

■ AUDIO

Built in Speaker	20 W [10 W + 10 W] @1 kHz, @10%THD
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■ ELECTRICAL

Power Requirements	AC 220 - 240 V 50 Hz / 60 Hz
Power Consumption	175 W
On Mode Average Power Consumption*	145 W
Power Off Condition	approx. 0.3 W
Stand-by Condition	approx. 0.5 W
Apparent power	191 VA

*Based on IEC 62087 Ed.2 measurement method

■ MECHANICAL

Dimension (W x H x D)	1459 x 835 x 82 mm
Weight	approx. 24 kg
Bezel Color	Black
Bezel Width	T/R/L 13.9 mm B 14.9 mm
Carton Dimensions (W x H x D)	1655 x 1078 x 280 mm
Gross Weight	approx. 35 kg
Cabinet Material	Plastic
Pitch for Wall-Hanging	VESA Compliant 400 x 400 mm (Installed by: M6 screws / Screw hole depth 14 mm)

■ INSTALLATION

Orientation	Landscape / Portrait
Tilting Angle	0 - 20 degrees forward (Landscape setting)

*Please contact your sales representative with regard to the tilt angle before installation.

■ ENVIRONMENTAL

Operating Environment	Temperature	: 0°C to 40°C *1
	Humidity	: 20% to 80% (No condensation) 0°C to 35°C *2
	Altitude	: 0 to 2800 m *3
Storage Environment	Temperature	: -20°C to 60°C
	Humidity	: 20% to 80% (No condensation)

*1 : for up to 1400 m altitude *2 : for between 1400 m and 2800 m altitude

Depending on the temperature or humidity conditions, uneven brightness may be observed. This is not a malfunction.

MAIN FEATURE

Digital Zoom	Yes
Power ON Screen Delay	Yes
1:1 Pixel mode	Yes
Auto setup	Yes
Screen Saver	Yes
PC Power Management	Yes
DVI-D Power Management	Yes
HDMI Power Management	Yes
Input Lock	Yes
Button Lock	Yes
Remote-control User Level	Yes
Input Search	Yes
Input Detection	Yes
USB Media Player* ¹	Yes
Data Cloning	Yes
Early Warning Software compatible	Yes
Multi Monitoring & Control Software compatible	Yes
Operating Time* ²	16h / day

*1 USB input has some restrictions. Please refer to operating instructions for more information.

*2 In case of running for a long time, the moving image is recommended to be displayed. If you display a still picture for an extended period, the image retention might remain on the screen. However, image retention can gradually disappear by displaying movie images.

STANDARD (CERTIFICATIONS)

SAFETY REGULATIONS	IEC60065:2014 (8th Edition) EU Deviation:EN60065:2014, BEAB approval
RADIATION REGULATIONS	EN55032:2012 Class A EN55024:2010 EN61000-3-2:2014 EN61000-3-3:2013 EN55013:2013 EN55020:2007+A11:2011

REMOTE CONTROL TRANSMITTER

Power Requirements	DC 3 V (2 x AAA Size batteries)
Operating distance	approx. 7 m*
Weight	approx. 63 g including batteries
Dimensions (W x H x D)	44 x 105 x 20.5 mm

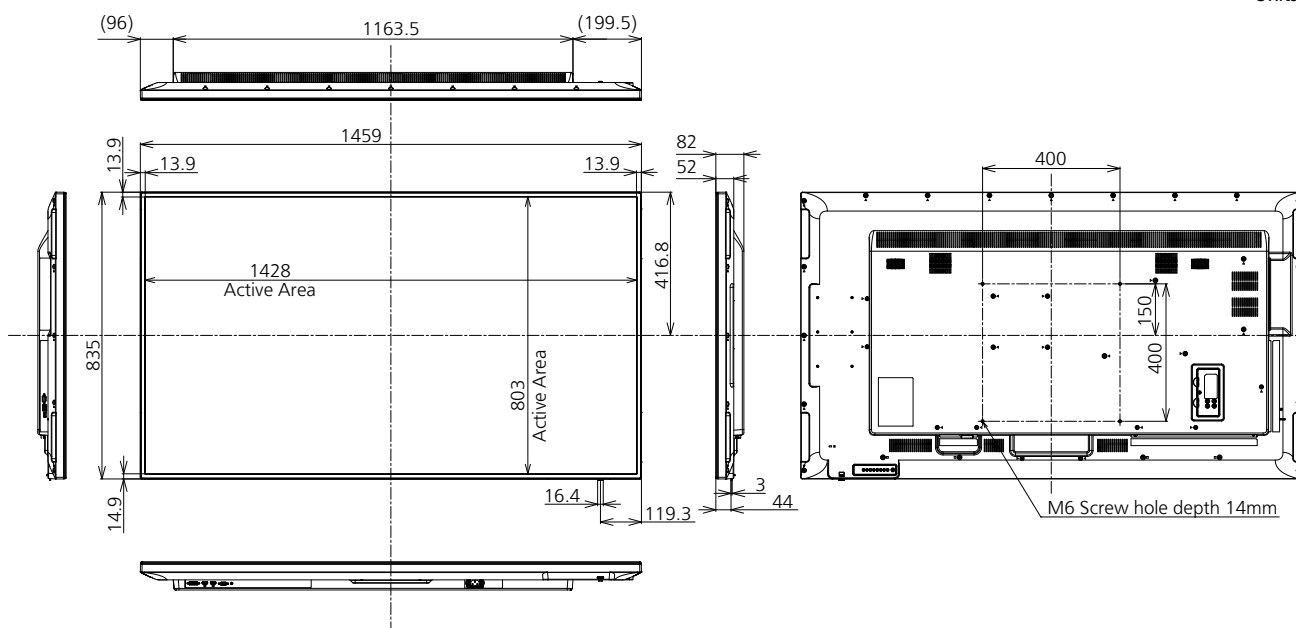
*When operated directly in front of receptor.

INCLUDED ACCESSORIES

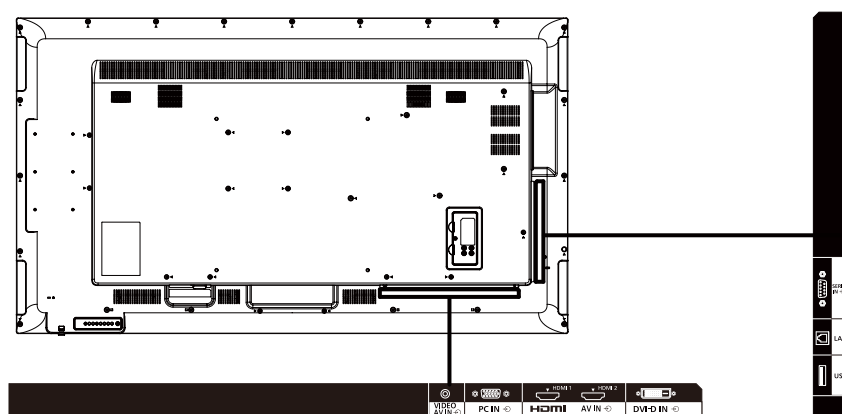
- AC cord (2.0 m)	- Remote Control	- Batteries (AAA size) x 2
- Clamp x 3	- CD-ROM/User manual	- Operating instruction book

DIMENSIONS

Cautions: This drawing is not a scale
Units : mm



CONNECTION TERMINAL



* Specifications and appearance are subject to change without notice.

List of correspondence signals

V : VIDEO
R : D-sub RGB
Y : YC_BCR/YP_BPR

D : DVI-D
H : HDMI

The picture signal which can indicate a this machine is as it is the following table.

Correspondence signal	Resolution (dot)	Scan rate		Dot clock rate (MHz)	Format
		Horizontal(kHz)	Vertical(Hz)		
NTSC/NTSC4.43/ PAL-M/PAL60	720 x 480i	15.73	59.94	-	V
PAL/PAL-N/SECAM	720 x 576i	15.63	50.00	-	V
525i (480i)	720 x 480	15.73	59.94	13.50	R/Y
625i (576i)	720 x 576i	15.63	50.00	13.50	R/Y
525i (480i)	720 (1440) x 480 ^{*2}	15.73	59.94	27.00	D/H
625i (576i)	720 (1440) x 576 ^{*2}	15.63	50.00	27.00	D/H
525p (480p)	720 x 483	31.47	59.94	27.00	R/Y/D/H
625p (576p)	720 x 576	31.25	50.00	27.00	R/Y/D/H
750 (720) /60p	1280 x 720	45.00	60.00	74.25	R/Y/D/H
750 (720) /50p	1280 x 720	37.50	50.00	74.25	R/Y/D/H
1125 (1080) /60i ^{*1}	1920 x 1080i	33.75	60.00	74.25	R/Y/D/H
1125 (1080) /50i	1920 x 1080i	28.13	50.00	74.25	R/Y/D/H
1125 (1080) /24p	1920 x 1080	27.00	24.00	74.25	R/Y/D/H
1125 (1080) /24PsF	1920 x 1080i	27.00	48.00	74.25	R/Y
1125 (1080) /25p	1920 x 1080	28.13	25.00	74.25	R/Y/D/H
1125 (1080) /30p	1920 x 1080	33.75	30.00	74.25	R/Y/D/H
1125 (1080) /60p	1920 x 1080	67.50	60.00	148.50	R/Y/D/H
1125 (1080) /50p	1920 x 1080	56.25	50.00	148.50	R/Y/D/H
640 x 400	640 x 400	31.47	70.09	25.18	R/Y/D/H
	640 x 400	37.86	85.08	31.50	R/Y/D/H
640 x 480	640 x 480	31.47	59.94	25.18	R/Y/D/H
	640 x 480	35.00	66.67	30.24	R/Y/D/H
	640 x 480	37.86	72.81	31.50	R/Y/D/H
	640 x 480	37.50	75.00	31.50	R/Y/D/H
	640 x 480	43.27	85.01	36.00	R/Y/D/H
800 x 600	800 x 600	35.16	56.25	36.00	R/Y/D/H
	800 x 600	37.88	60.32	40.00	R/Y/D/H
	800 x 600	48.08	72.19	50.00	R/Y/D/H
	800 x 600	46.88	75.00	49.50	R/Y/D/H
	800 x 600	53.67	85.06	56.25	R/Y/D/H
832 x 624	832 x 624	49.72	74.55	57.28	R/Y/D/H
852 x 480	852 x 480	31.47	59.94	34.24	D/H
1024 x 768	1024 x 768	39.55	50.00	51.89	D/H
	1024 x 768	48.36	60.00	65.00	R/Y/D/H
	1024 x 768	56.48	70.07	75.00	R/Y/D/H
	1024 x 768	60.02	75.03	78.75	R/Y/D/H
	1024 x 768	65.55	81.63	86.00	R/Y/D/H
	1024 x 768	68.68	85.00	94.50	R/Y/D/H
1066 x 600	1066 x 600	37.64	59.94	53.00	D/H
1152 x 864	1152 x 864	53.70	60.00	81.62	D/H
	1152 x 864	63.99	70.02	94.20	R/Y/D/H
	1152 x 864	67.50	75.00	108.00	R/Y/D/H
	1152 x 864	77.09	85.00	119.65	R/Y/D/H
1152 x 870	1152 x 870	68.68	75.06	100.00	R/Y/D/H
1280 x 720	1280 x 720	44.76	60.00	74.48	R/Y/D/H
1280 x 768	1280 x 768	39.55	49.94	65.18	R/Y/D/H
	1280 x 768	47.70	60.00	80.14	R/Y/D/H
	1280 x 768	47.78	59.87	79.50	R/Y/D/H
1280 x 800	1280 x 800	41.20	50.00	68.56	R/Y/D/H
	1280 x 800	49.31	59.91	71.00	R/Y/D/H
	1280 x 800	49.70	59.81	83.50	R/Y/D/H
1280 x 960	1280 x 960	60.00	60.00	108.00	R/Y/D/H
	1280 x 960	85.94	85.00	148.50	R/Y
1280 x 1024	1280 x 1024	63.98	60.02	108.00	R/Y/D/H
	1280 x 1024	79.98	75.02	135.00	R/Y/D/H
	1280 x 1024	91.15	85.02	157.50	R/Y/D/H
1360 x 768	1360 x 768	47.71	60.02	85.50	D/H
	1360 x 768	47.70	60.00	84.72	D/H
	1360 x 768	47.72	59.80	84.75	D/H
1366 x 768	1366 x 768	39.55	50.00	69.92	D/H
	1366 x 768	48.39	60.03	86.71	R/Y/D/H
	1366 x 768	48.00	60.00	72.00	R/Y/D/H
	1366 x 768	39.56	49.89	69.00	R/Y/D/H
	1366 x 768	47.71	59.79	85.50	R/Y/D/H
1400 x 1050	1400 x 1050	65.22	60.00	122.61	D/H
	1400 x 1050	82.20	75.00	155.85	R/Y/D/H
1440 x 900	1440 x 900	55.47	59.90	88.75	R/Y/D/H
	1440 x 900	55.92	60.00	106.47	R/Y/D/H
1600 x 900	1600 x 900	46.30	50.00	97.05	D/H
	1600 x 900	60.00	60.00	108.00	D/H
	1600 x 900	55.99	59.95	118.25	D/H
	1600 x 900	55.92	60.00	119.00	D/H
1680 x 1050	1680 x 1050	65.29	59.95	146.25	R/Y/D/H
1600 x 1200	1600 x 1200 ^{*3}	75.00	60.00	162.00	R/Y/D/H
1920 x 1080	1920 x 1080 ^{*4}	66.59	59.93	138.50	R/Y/D/H
	1920 x 1080	67.50	60.00	148.50	R/Y/D/H
1920 x 1200	1920 x 1200 ^{*3}	74.04	59.95	154.00	R/Y/D/H

● The signal format distinguished automatically will be sometimes indication different from an actual input signal.

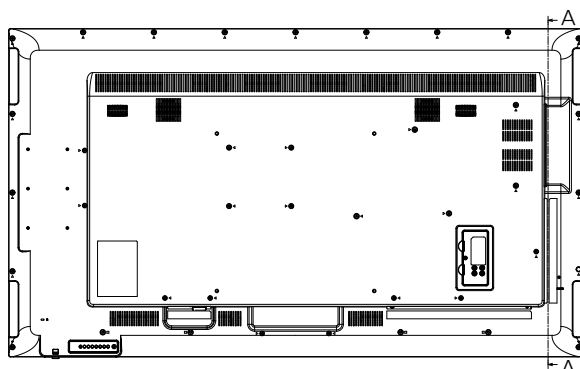
*1: When 1125 (1035) /60i signal is input, it is displayed as 1125 (1080) /60i signal. *3: Displayed with image elements thinned out in the image processing circuit.

*2: Pixel-Repetition signal (dot clock frequency 27.0 MHz) only

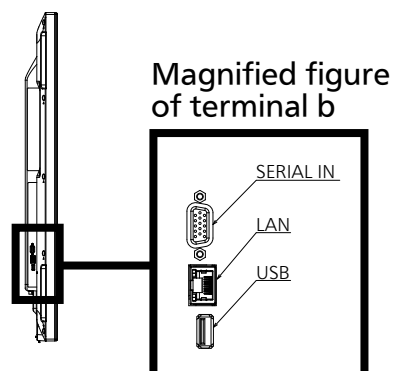
*4: Based on VESA CVT-RB (Reduced Blanking) standard

● Drawing of terminals

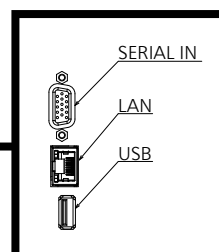
View from back



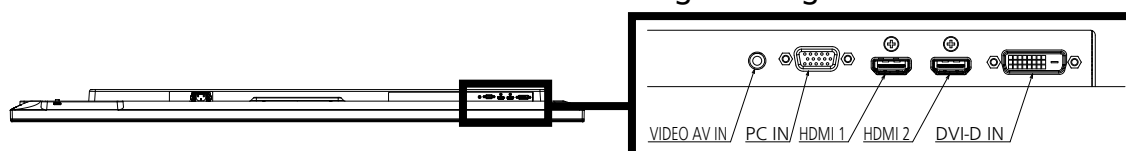
Sectional view of A-A



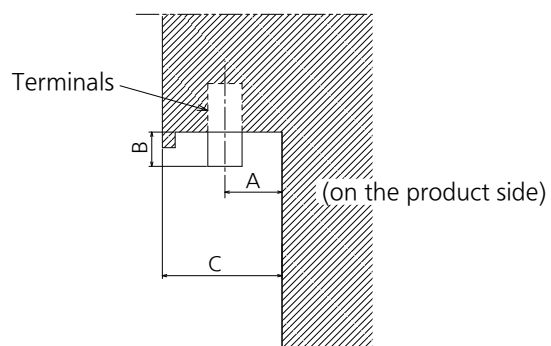
Magnified figure of terminal b



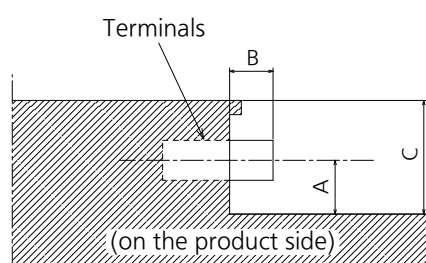
Magnified figure of terminal a



Sectional view of terminal a (VIDEO IN / PC IN / HDMI / DVI-D IN)



Sectional view of terminal b (SERIAL / LAN / USB)



65EF1

Units : mm

	VIDEO AV IN	PC IN	HDMI	DVI-D IN	SERIAL IN	LAN	USB
A	10.4	11.1	8.3	9.8	11.1	9.1	8.9
B	1.7	5.1	-	5.6	5.1	-	-
C	29.4						

*Due to the construction of terminal, some types of connecting cable or USB memory device cannot be used.
Be sure to use connecting cable or USB memory device after confirmation in this drawing.