

Product Specifications

DLP™ LED Display Cube



Combination model name:

Model: 60HEF78

Information in this document is subject to change without notice.

**Mitsubishi Electric Corporation
Kyoto Works**

Date: November 14, 2014

60HEF78 models Specifications

(1) Combination model name

Combination model name	Unit model name			Features
	Engine	Cabinet	Screen	
60HEF78UA	VS-WE78UA	S-60HE75CAF	SC-60HE75UF	Redundant LED light source Front maintenance Black stripe screen
60HEF78LA	VS-WE78UA	S-60HE75CAF	SC-60HE75LF	Redundant LED light source Front maintenance Fine cross screen

(2) Image panel and light source

Type	DLP™ technology (0.96" DLP™ 1 chip) DarkChip3™ , BrilliantColor™
Resolution	1920 x 1080 pixels
Light source	Redundant LED (RGB)
Light source average lifetime	100,000hours @ ADV.ECO mode 80,000hours @ Other modes

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(3) Electric specification

Power consumption Thermal dissipation (with 1 input board typ.)	Mode	Power consumption	Thermal dissipation
	BRIGHT	258W	221.9kcal/h (881BTU/h)
	NORMAL	174W	149.6kcal/h (594BTU/h)
	ECO	124W	106.6kcal/h (423BTU/h)
	ADV.ECO	96W	82.6kcal/h (328BTU/h)
Voltage range		AC 100 – 240V +/-10% , 50/ 60Hz +/-1Hz	
Operating current (100/240V)		3.7/1.6 Amp.	
Inrush current (100/240V)		30/60 Amp.	
Control signal input		RS-232C: D-Sub 9 pins	
		LAN: RJ45 x1 (10BASE-T/100BASE-TX)	
		D-Sub 9 pins x 2 (input, output) Mitsubishi original control link	
		Wire remote: F3.5Jack	
		IR Receiver	
Input board slot		Input board slot for optional input board x 3	
Input signal specification		Refer to (10) Optional input board specification	
Overlay function		Up to 6 windows per each screen (with VC-B70V2,VC-B70DA2). Up to 3 windows per each screen (with other boards).	

(4) Optical specification (Typical value)

Screen model name		SC-60HE75UF	SC-60HE75LF
Brightness	BRIGHT mode	1160cd/m ²	590cd/m ²
	NORMAL mode	810cd/m ²	410cd/m ²
	ECO mode	550cd/m ²	280cd/m ²
	ADV.ECO mode	170 cd/m ²	90 cd/m ²
Viewing angle	Horizontal	1/2 gain: +/- 35° 1/10 gain: +/- 57°	1/2 gain: +/- 35° 1/10 gain: +/- 57°
	Vertical	1/2 gain +/- 10° 1/10 gain: +/- 28°	1/2 gain: +/- 33° 1/10 gain: +/- 55°
Screen size		60" Diagonal size (1333.5mm x 750mm)	
Light output		1080ANSI Lumen @BRIGHT mode	
Contrast ratio		1500:1	
Brightness uniformity		95% at 90% image height	
Geometry distortion		0.2%	
Mullion size (*)		Horizontal: 1.0mm – 2.5mm Vertical: 1.0mm – 2.0mm	
Lateral color shift Red – Green Blue – Green		0.5pixel	

(*) Depending on configuration and environment.

2.5mm (Horizontal), 2.0mm (Vertical) recommended for large walls to allow for expansion due to heat and humidity.

(5) Mechanical specification (Approximate value)

Dimensions	Width	1336mm / 52.6"		
	Height	1007mm / 39.7"		
	Depth	886mm / 34.9"		
Weight		97kg / 214lbs		
Audio noise		32dBA (typ.) (at 1m distance from screen center)		
Packing dimensions		Engine unit	Cabinet unit	Screen unit
	Width	910mm / 35.8"	1400mm / 55.1"	1490mm / 58.7"
	Height	500mm / 19.7"	1185mm / 46.7"	932mm / 36.7"
	Depth	530mm / 20.9"	940mm / 37.0"	180mm / 7.1"
Packing Weight		37kg / 82lbs	77kg / 170lbs	23kg / 51lbs
Accessories		Engine unit: User's manual, Control cable Cabinet unit: User's manual Parts for connecting cubes Brackets for engine fixation Bolts for engine fixation, Joint hole seal		

(6) Environment

Temperature and humidity Condition at operation	10°C – 30°C (50°F – 86°F), 20% – 80% non condensing
Temperature and humidity Condition at storage	-20°C – 50°C (-4°F – 122°F), 20% – 80% non condensing

(7) Safety approval

Safety approval	UL60950-1, CSAC22.2No.60950-1, EN60950-1 K60950-1, AS/NZS60950.1, GB4943.1
EMC	FCC part15 Subpart B Class A ICES-003 Issue No.5 Class A EN55022 Class A, EN55024 EN61000-3-2, EN61000-3-3 KN22 Class A, KN24 AS/NZS CISPR 22 Class A GB9254 Class A, GB17625.1 VCCI Class A, JIS C 61000-3-2

(8) Parts reliability (Average lifetime)

Cooling fan	100,000hours
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(9) Options

Remote control unit	R-XL50TX / R-XL51TX
Analog RGB input board	VC-B70G2
Digital RGB input board	VC-B70D2
Video input board	VC-B70V2
Daisy chain board	VC-B70DC
SDI input board	VC-B70SD1
Digital/Analog RGB input board	VC-B70DA2
LED unit	S-78LEA
Power cord (North America)	JC-PC3MA
Power cord (Europe)	JC-PC3ME
Power cord (China)	JC-PC3MC
Power cord (Japan)	JC-PC3MJ
Motorized adjustment tool	S-A70E
Motor units for screen/mirror	S-MA70E

(10) Optional input board specification

Analog RGB input board: VC-B70G2

Signal input terminal (Analog RGB)		5BNC x1 HD Dsub15 x1
RGB Input scanning frequency	Signal resolution	VGA (640 x 480) – WUXGA (1920 x 1200) (Refer to attached “Supported signals list”)
	Horizontal	31.5kHz – 92kHz
	Vertical	49Hz – 85Hz
Pixel clock rate		25MHz – 162MHz
Functions		Scaling: shrink and zoom. Frame rate conversion.

Digital RGB input board: VC-B70D2

Signal input terminal (Digital RGB)		DVI-D (with HDCP) x2
RGB Input scanning frequency	Signal resolution	VGA (640 x 480) – WUXGA (1920 x 1200) (Refer to attached “Supported signals list”)
	Horizontal	31.5kHz – 92kHz
	Vertical	49Hz – 85Hz
Pixel clock rate		25MHz – 162MHz
Signal format		TMDS
Functions		Scaling: shrink and zoom. Frame rate conversion.

Video input board: VC-B70V2

Signal input terminal (Analog Video)		3BNC x2
Video input signals		NTSC, NTSC4.43 PAL, PAL-M, PAL-N, PAL-60, SECAM
Functions		Scaling: shrink and zoom. Frame rate conversion.

Daisy chain board: VC-B70DC

Signal input terminal		Analog RGB: HD Dsub15 x1 Digital RGB: DVI-D (with HDCP) x1 Analog Video: 3BNC x1
Signal output terminal		Digital RGB: DVI-D x1 (Daisy chain use only. Can not output HDCP signals.)
RGB Input scanning frequency	Signal resolution	VGA (640 x 480) – WUXGA (1920 x 1200) (Refer to attached “Supported signals list”)
	Horizontal	31.5kHz – 92kHz
	Vertical	49Hz – 85Hz
Video input signals		NTSC, NTSC4.43 PAL, PAL-M, PAL-N, PAL-60, SECAM
Pixel clock rate		25MHz – 162MHz
Functions		Scaling: shrink and zoom. Frame rate conversion. Daisy chain function (Up to 16 cubes)

SDI input board: VC-B70SD1

Signal input terminal		BNC x 1
Signal output terminal		BNC x 1 (for through output)
Input signals		3G-SDI (SMPTE424M): 1080p@50/59.94/60Hz HD-SDI (SMPTE292M): 1080i@50/59.94/60Hz 720p@50/59.94/60Hz SD-SDI (SMPTE259M-C): 480i@59.94Hz, 576i@50Hz
Gen lock input		Terminal: BNC x 1 Format: NTSC/PAL Black burst
Functions		Scaling: shrink and zoom. Frame rate conversion. Through output: (Up to 16 cubes @ HD-SDI, SD-SDI Up to 9 cubes @ 3G-SDI)

Digital/Analog RGB input board: VC-B70DA2

Signal input terminal		DVI-I (Digital with HDCP, Analog) x2
RGB Input scanning frequency	Signal resolution	VGA (640 x 480) – WUXGA (1920 x 1200) (Refer to attached “Supported signals list”)
	Horizontal	31.5kHz – 92kHz
	Vertical	49Hz – 85Hz
Pixel clock rate		25MHz – 162MHz
Signal format		TMDS
Functions		Scaling: shrink and zoom. Frame rate conversion. Digital cable equalizer function (Maximum 50m depending on the qualities of equipment and cable)

Supported signals list

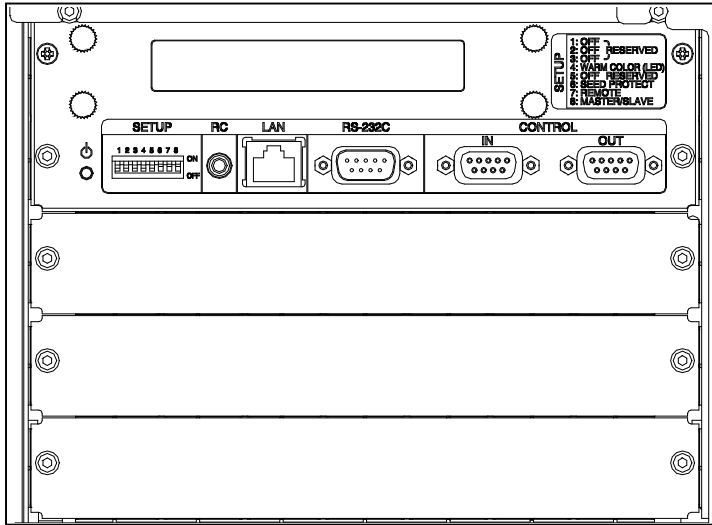
RGB signals

Signal	Resolution	Refresh rate (Hz)	Line rate (kHz)
VESA	1920 x 1200	60.0	74.0
	1920 x 1080	60.0	67.5
	1680 x 1050	60.0	65.3
	1600 x 1200	60.0	75.0
	1440 x 900	59.9	55.9
	1400 x 1050	59.9	64.7
		60.0	65.3
		74.9	82.3
	1366 x 768	59.8	47.7
	1360 x 768	60.0	47.7
	1280 x 1024	60.0	64.0
		75.0	80.0
		85.0	91.1
	1280 x 960	60.0	60.0
	1280 x 800	59.8	49.7
	1280 x 768	59.9	47.8
	1280 x 720	60.0	45.0
	1152 x 864	75.0	67.5
	1024 x 768	60.0	48.4
		70.1	56.5
		75.0	60.0
		85.0	68.7
	848 x 480	60.0	31.0
	800 x 600	56.3	35.2
		60.3	37.9
		72.2	48.1
		75.0	46.9
		85.1	53.7
	720 x 400	85.0	37.9
	640 x 480	59.9	31.5
		72.8	37.9
		75.0	37.5
85.0		43.3	
640 x 400	85.1	37.9	
640 x 350	85.1	37.9	
PC	1400 x 1050	60.0	64.0
	1280 x 1024	60.0	63.4
	1280 x 960	75.0	75.0
	1152 x 864	70.0	63.9
		85.1	77.5
640 x 400	70.1	31.5	
	84.1	37.9	
Mac	1152 x 870	75.0	68.6
	1024 x 768	74.9	60.2
	832 x 624	74.5	49.7
	640 x 480	66.7	35.0
Unix	1280 x 1024	59.9	64.6
		71.2	75.1
		72.0	78.1
		76.1	81.1
HDTV	1920 x 1080	50.0	28.1
		59.9	33.7
	1280 x 720	50.0	37.5
		59.9	45.0

Y/Cb/Cr (Y/Pb/Pr) signals

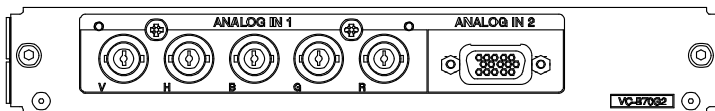
Signal	Resolution	Refresh rate (Hz)	Line rate (kHz)
1125p/1080p	1920 x 1080	50.0	56.3
		59.9	67.4
1125i/1080i	1920 x 1080	50.0	28.1
		59.9	33.7
750p/720p	1280 x 720	50.0	37.5
		59.9	45.0
625p/576p	720 x 576	50.0	31.3
525p/480p	720 x 480	59.9	31.5

Terminal panel

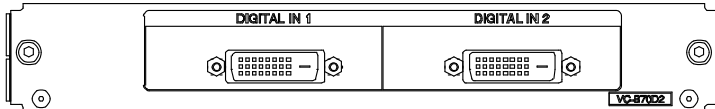


Optional input board appearance

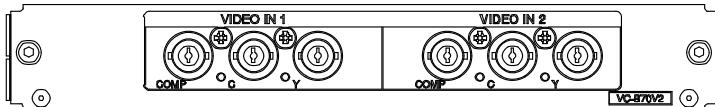
VC-B70G2



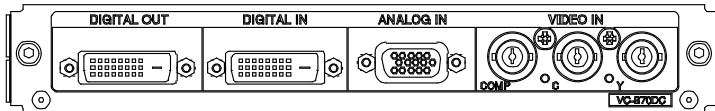
VC-B70D2



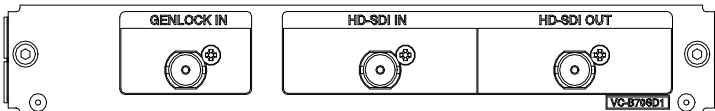
VC-B70V2



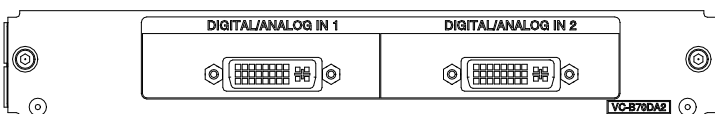
VC-B70DC



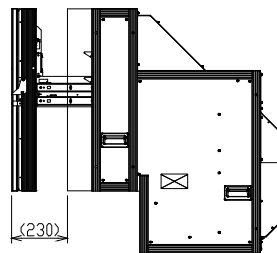
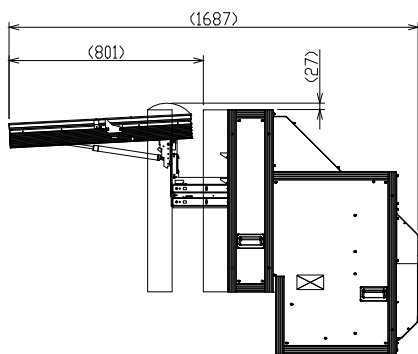
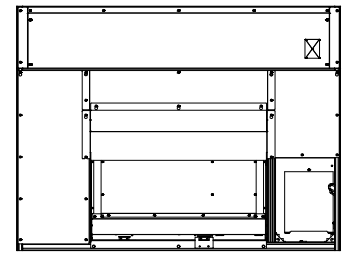
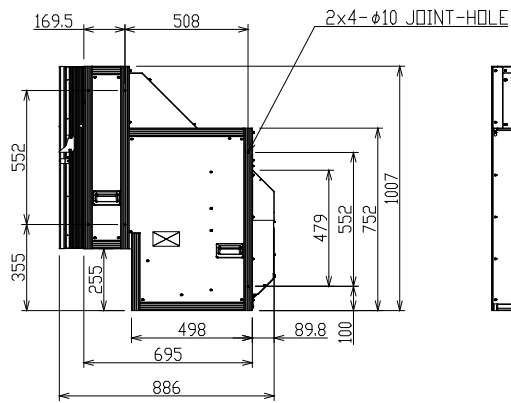
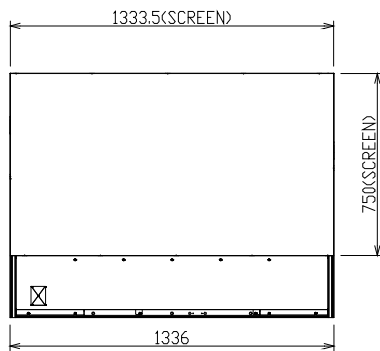
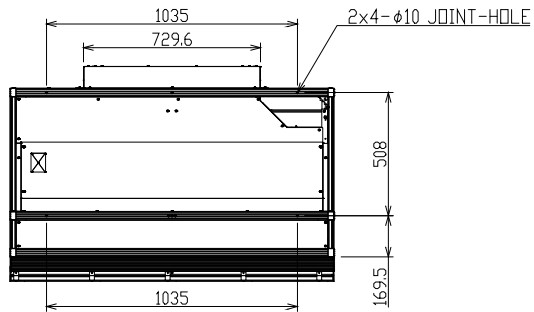
VC-B70SD1



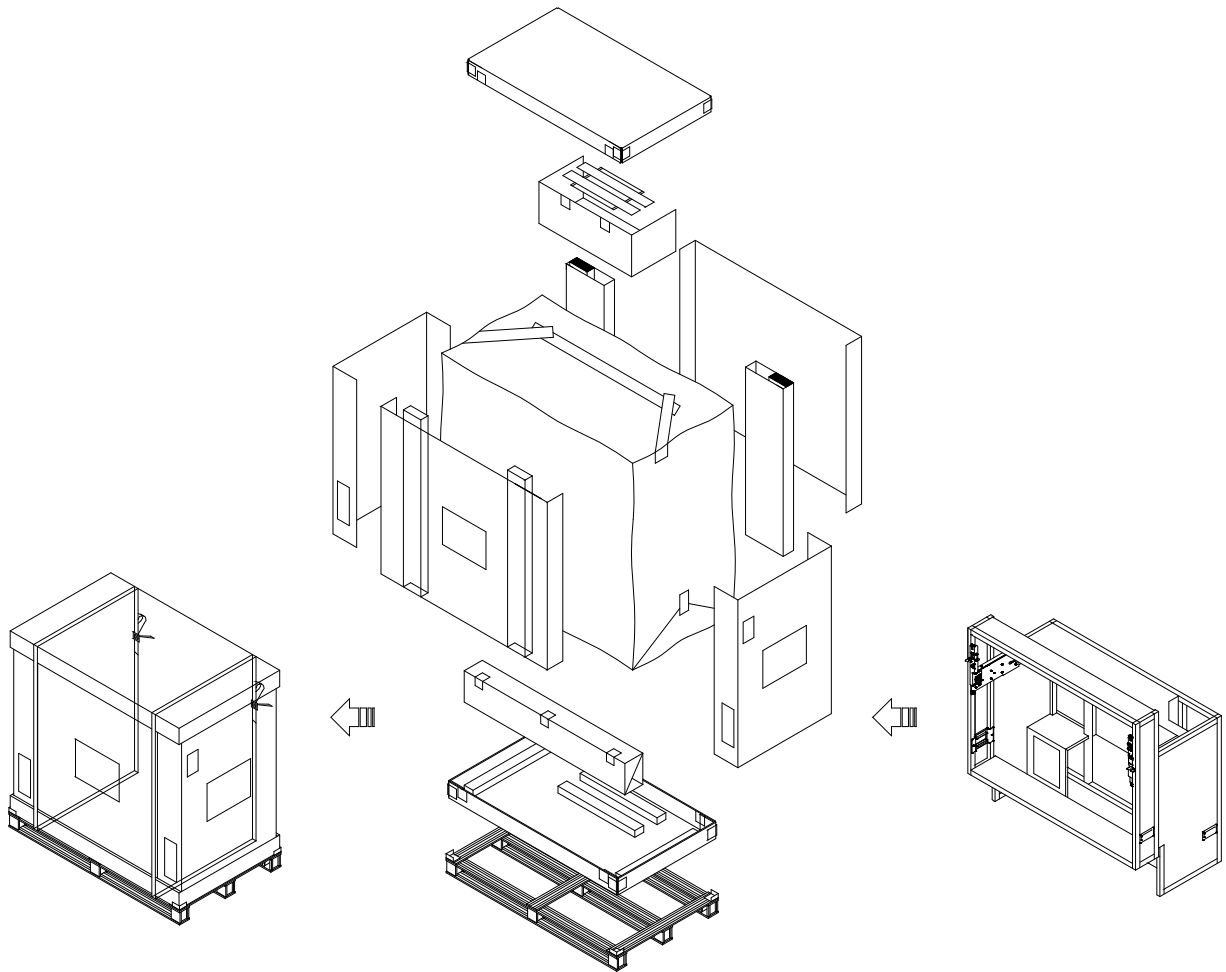
VC-B70DA2



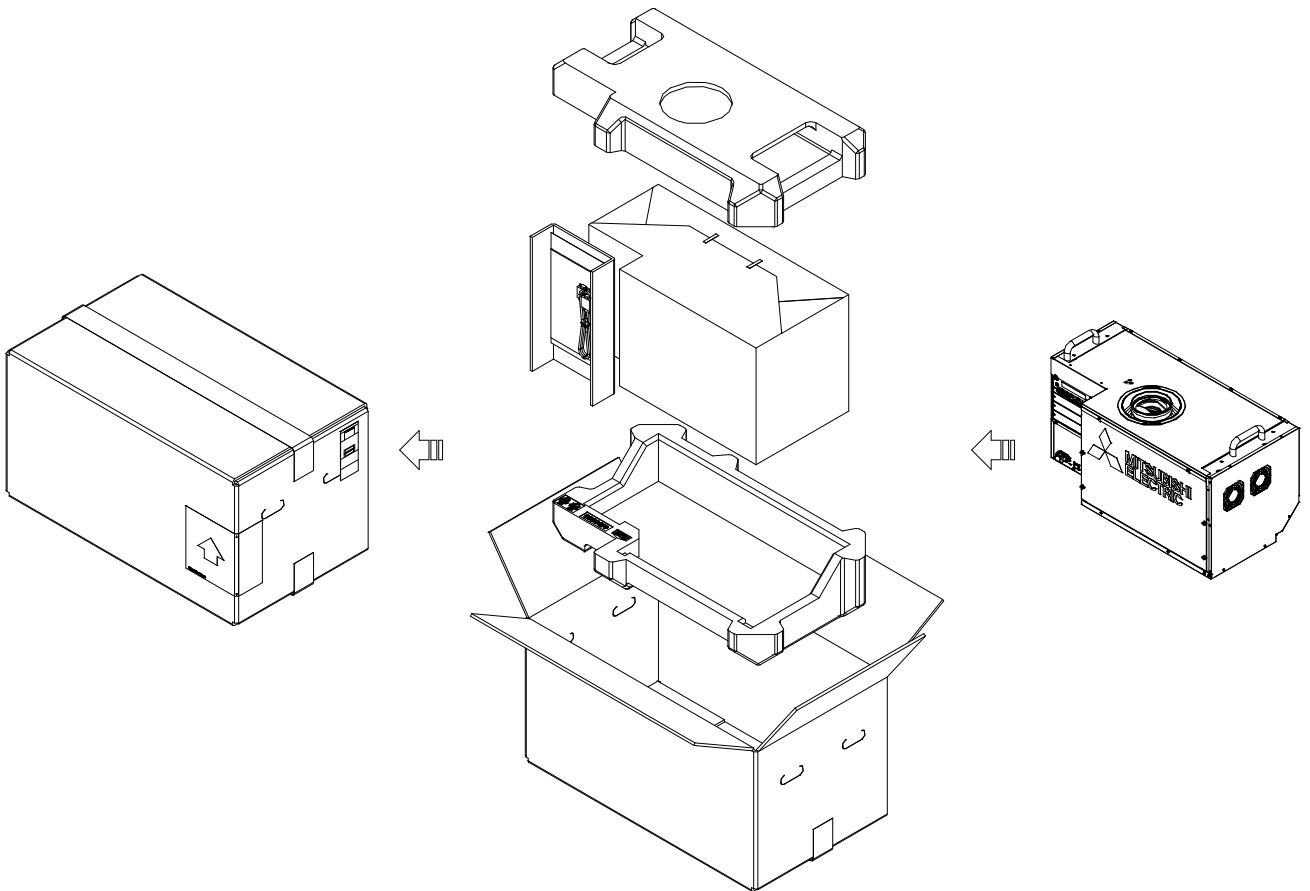
External dimensions



Packing specification
[Cabinet unit: S-60HE75CAF]



[Engine unit: VS-WE78UA]



[Screen unit: SC-60HE75UF/LF]

