MITSUBISHI ELECTRIC

Changes for the Better

for a greener tomorrow eco Changes

Highways England, South Mimms

LED Video Wall

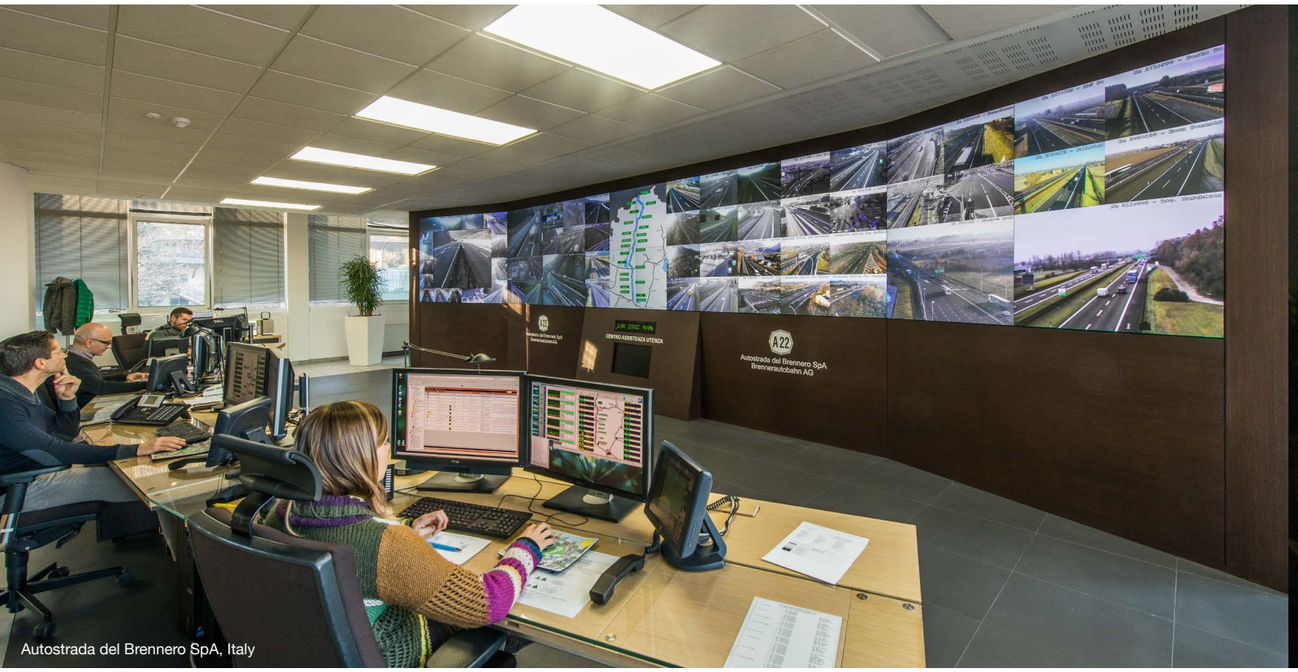
Model: 120 Series

Redundant

LED Light Source

New Wide-format LED Display Wall Cubes Guarantee High Performance and Quality

Introducing the latest addition to our 120 Series line of display wall cubes, furthering our commitment and enhancing our ability to offer custom solutions to suit your mission-critical control center applications. Combining long-life LED light source and DLP™ imaging technology designed to realize reliable and durable visual display for true 24/7 continuous use.

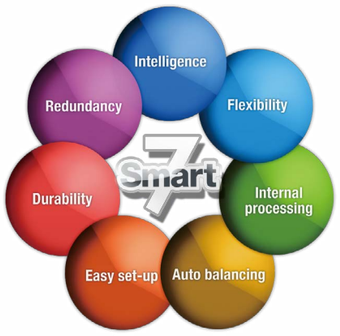


Autostrada del Brennero SpA, Italy


Control room waste incineration plant, The Netherlands

Smart 7 ~ Cutting-edge Features for High-performance, High-quality Large Display Wall Systems

The key to visual communications can be found in Mitsubishi Electric's Smart 7 technologies, the core concept behind display wall design at Mitsubishi Electric. These advanced cutting-edge technologies are incorporated in all 120 Series products, ensuring innovative display solutions for command and control room applications.



New 62" and 72" cubes in 16:10 wide-format broaden our wide-screen cube lineup to meet your critical applications

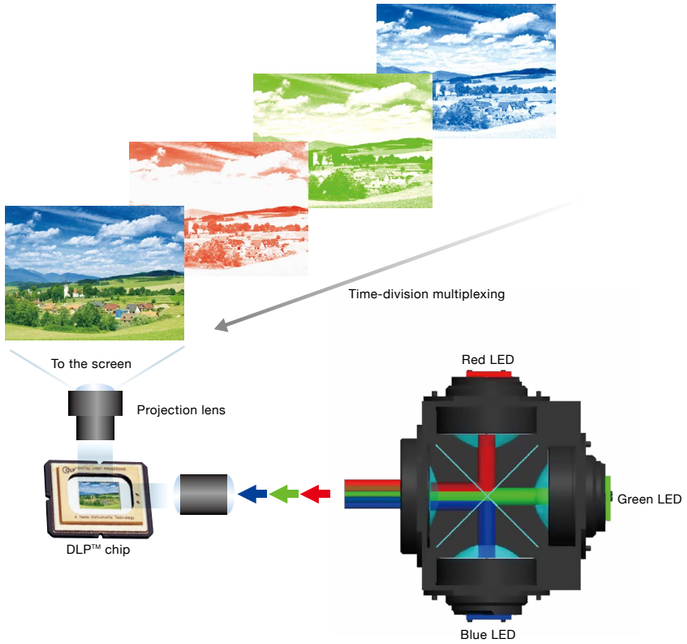
Our current lineup now offers 16:9 aspect cubes available in 60- or 70-inch displays in full HD resolution, as well as 16:10 aspect cubes available in 62- or 72-inch displays in new WUXGA resolution, allowing you to easily build the system that best matches your application needs and requirements.Two screen options are offered as well, Black Stripe (standard) and Cross-lenticular, which vary in brightness and viewing angle capabilities. This expanded range of choices gives users more flexibility in creating the optimal system to match the application and installation environment.

*All Mitsubishi Electric display wall cubes are manufactured using seismic simulation which was performed at the product design stage.

■16:10 wide-format cubes

■16:9 wide-format cubes

DLP™ Imaging Technology for the Ultimate in High-quality Digital Displays



At the core of Mitsubishi Electric projection technology is the DLP™ digital micro-mirror imaging chip built with minute mirrors arranged at multiple points on a silicon base using the most advanced semiconductor fabrication technology available. Each micro-mirror corresponds to a single pixel or element of the picture. Images are produced by maneuvering these micro-mirrors electronically.

*DLP and the DLP medallion logo are registered trademarks of Texas Instruments in the United States of America.

Consistent High-quality Images

Full digital control of color and gradation at every micro-mirror results in images with consistently high picture quality and uniform color and brightness throughout the display wall, from the center point to the edges of each display.

Higher Reliability

The DLP™ chip is a reflective device with a very high light reflection ratio, thus the chip itself retains very little to no heat. This characteristic allows still images, text data and other fixed patterns to be displayed for long periods of time without image retention or burn-in that tends to occur with other display technologies or image processing methods.

LED Light Source Advantages

Virtually Maintenance Free

An LED light source has an average service life that is approximately 10 to 15 times longer than that of conventional ultrahigh-pressure mercury lamps. Combined with up to a 130,000hr, ultra-long service life of our engine, the average service life of Mitsubishi Electric LED display wall cubes is up to 15 years, even when operated continuously on a 24/7 basis.

Choice of Four Brightness Modes

Equipped with an original LED power control circuit, each display wall cube can be set to operate in one of four modes. As a result, command and control room operators can select the brightness level appropriate for their environment and user, avoiding user eye-fatigue over long periods of viewing time.

* With the new WE120 Series models, the LED light source lasts for 130,000 hours in all modes, including the Bright mode. Mitsubishi Electric LED display wall cubes can thus be used 24/7 for more than 11 years virtually maintenance free.

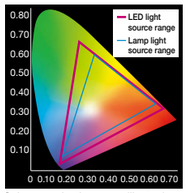
Proven Performance

Over 78,000 Mitsubishi Electric display wall products have been installed in mission-critical command and control rooms around the world. Our LED projection engines and display wall cubes are designed and developed with the deep understanding and experience we gained from market feedback and from market feedback and closely listening to the diversified needs of our customers.

*As of March 2016 in-house research.

Wider Color Reproduction Range

The LED light source offers a much wider range of color reproduction, allowing a larger array of vivid colors to be used for the icons and symbols frequently used in command and control rooms. This ultimately makes it easier for command and control room operators to share information.



Color reproduction range illustration

Multiple Picture Settings

Mitsubishi Electric LED display wall cubes have multiple picture settings, giving customers the freedom to choose the best setting suitable for the application and content being displayed. Optimized Color is best for reproducing natural looking colors, Vivid Color realizes more striking colors in icons/symbols, and Low Color Temperature is ideal for backdrop applications in broadcasting studios.

Eco-conscious

The LED light source eliminated the use of mercury lamps, helping us keep the environment cleaner. At the same time, the Eco mode setting lets users consume less power, reducing CO_2 emissions, leaving a smaller, eco-conscious carbon footprint than conventional lamp-based systems.

Durability

Air Cooling System for LED Light Source Enhances Engine Longevity

Liquid Cooling System

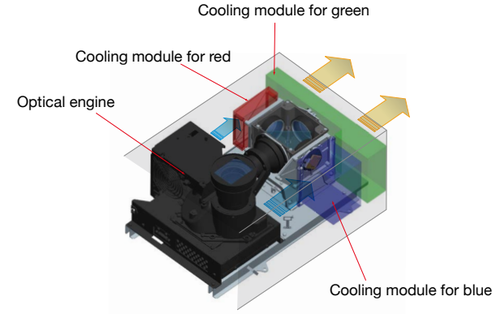
- Pump/Drive parts are required to circulate the liquid
- Complex system requiring liquid reservoir and tube
- Coolant must be replaced frequently due to deterioration and loss
  Pump has a short service life (approx. 50,000hr)

Air Cooling System

- Highly efficient, compact cooling module
- No moving parts that require frequent replacement
- Long service life

Efficient Air Cooling System Realizes Higher Reliability

The system has an optimal airflow path and cooling module design that are perfectly matched to the characteristics of the LED light source.



*The cooling module consists of a highly efficient cooling tube and aluminum plate.

Redundancy

Built-In Features that Ensure Reliable, Consistent, Continuous Operation of Mission-critical Systems

Redundant Power Supply

A redundant power supply system can be configured by adding a second (optional) power source. Even if one power supply fails, power will continue to be supplied from the other power supply, so displays continue to be operational with no downtime.

* Option only available for the WE120 Series.

Redundant LED

Mitsubishi Electric's original LED light source utilizes the ideal combination of fully redundant RGB LEDs and an air cooling system, creating perfect display solutions for 24hr operations. Each RGB LED maintains high image quality even if a light element malfunctions, thereby enhancing reliability for various mission-critical environments.

Smart Switch

A "Smart Switch" function has been added to Mitsubishi Electric display wall cubes to deliver the signal redundancy necessary for mission-critical applications that require round-the-clock operation. If a signal is unexpectedly lost, the display wall automatically switches to the alternative signal source from port-to-port within seconds after the 'no signal' status is detected.
This function makes it possible for users to minimize downtime in the event of a signal source failure.

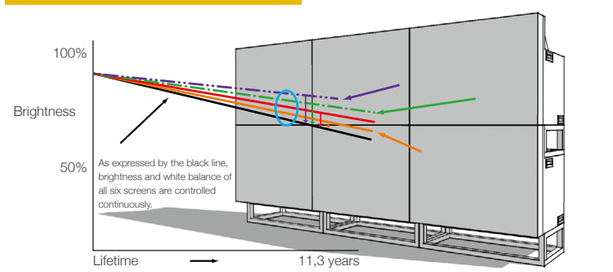
Auto-balancing

Brightness and Color Uniformity is Evenly Maintained Across Multiple Screens, Making the Entire Display Visually Seamless

Dynamic Color & Brightness Balancing

Each display wall cube is equipped with three built-in sensors (one for each primary color) that use a color and brightness maintenance algorithm. The sensors continually monitor the individual red, green and blue output of each display wall cube, share the data with adjacent cubes, and adjust performance automatically to produce extremely accurate colors and brightness balance over the entire display. These features makes it possible to maintain image uniformity on multi-screen configurations over long periods of operation without using external software or third-party calibration computers. Furthermore, the newly developed XYZ color sensor allows multiple screens to be adjusted precisely and easily to a desired color tone. Time-based color changes in multi-screen configurations are also minimized so that image quality is maintained over a long period of time.

Multi-image example



Easy Set-up

Available Full Front Access for Simpler Maintenance and Space Savings

Mitsubishi Electric offers a wide lineup of display cubes that are accessible from the front, including 60, 62, 70, and 72-inch models. The specially designed slide-and-lift screen and air-ventilation system allow all installation and maintenance work to be completed from the front. As a result, no maintenance space is needed behind the display wall cubes even if they are tiled as a display wall installation.

No space is needed behind a display wall

Intelligence

High-resolution Images Created with Mitsubishi Electric's New Optical Engine and Optimal Image-quality Circuit Design

Color Space Control Circuit

To compensate for the color and brightness inconsistencies on display wall cubes, Mitsubishi Electric has developed an original Color Space Control Circuit that balances and blends colors.The ratios of each primary color (red/green/blue) and other color mixtures are adjusted to provide consistent color blending and superior uniformity on multi-screen configurations.

without Color Space Control

with Color Space Control

Digital Gradation Circuit

Loss of brightness at the screen edges is no longer a problem owing to Mitsubishi Electric's innovative digital gradation circuit. Brightness is distributed evenly across the screen, ensuring the reproduction of sharp, vivid images from edge to edge on multi-screen configurations.

without digital gradation

with digital gradation

Flexibility

Equipped with Intel® OPS Slot for On-board Computer and Other Peripheral Equipment Installation

120 Series display wall cubes are equipped with an open pluggable specification (OPS) slot. Simply install the optional computer board* to expand the scope of applications.
A variety of peripheral equipment can be connected quickly and easily for future system expansion.

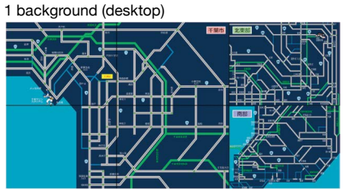
* The new WE120 Series models are also compatible with ultra-HD, the super-high-resolution 4K signal (3840 × 2160 pixels), and can display 4K ultrahigh-definition images when using DisplayPort™ cables in a daisy chain configuration.

Internal Processing

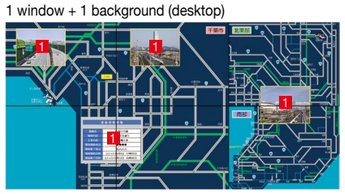
Built-in Processor

The 120 Series display wall cubes are equipped with an internal image data processing function. In addition to the background image (desktop), a window can be of any size or displayed across the entire wall without using an external computer.
Used in combination with Mitsubishi Electric's D-WALL Control Software Suite, the entire imaging system can be controlled intuitively from a user-friendly graphical user interface.

1 background (desktop)



1 window + 1 background (desktop)



Model name		60HE120	60HEF120	70HE120	70HEF120	60WE120	60WEF120
Screen size		60"		70"		60"	
Resolution		Full HD (1920 x 1080 pixels)					
Accessibility		Rear	Front	Rear	Front	Rear	Front
Technology		DLP™ technology (0.65" DLP™ 1 chip) / Dark Chip3™ / Brilliant Color™ (*1)				DLP™ technology (0.96" DLP™ 1 chip) / Dark Chip3™ / Brilliant Color™ (*1)	
Brightness	Bright mode	780cd/m² (Typ.)		580cd/m² (Typ.)		1160cd/m² (Typ.)	
	Normal mode	620cd/m² (Typ.)		460cd/m² (Typ.)		820cd/m² (Typ.)	
	Eco mode	460cd/m² (Typ.)		340cd/m² (Typ.)		550cd/m² (Typ.)	
	Advanced Eco mode	190cd/m² (Typ.)		140cd/m² (Typ.)		210cd/m² (Typ.)	
Viewing angle	Horizontal	1/2 gain: ±35deg, 1/10 gain: ±57deg					
	Vertical	1/2 gain: ±10deg, 1/10 gain: ±28deg					
Contrast ratio		1500:1 (Typ.)				1500:1 (Typ) Up to 3800:1 (*5)	
Screen-to-screen gap	Horizontal	0.2 - 1.5mm (*2)	1.0 - 2.5mm (*2)	0.2 - 2.0mm (*2)	1.0 - 3.0mm (*2)	0.2 - 1.5mm (*2)	1.0 - 2.5mm (*2)
	Vertical	0.2 - 1.0mm (*2)	1.0 - 2.0mm (*2)	0.2 - 1.5mm (*2)	1.0 - 2.5mm (*2)	0.2 - 1.0mm (*2)	1.0 - 2.0mm (*2)
Light source		Redundant LED (RGB)					
	Expected lifetime	100,000hr (Advanced Eco mode) 80,000hr (Normal mode,Eco mode),60,000hr (Bright mode)				130,000hr (Advanced Eco mode,Eco mode,Normal mode)	
Key components lifetime (average)	DLP™ chip	100,000hr (MTBF 650,000hr)					
	Cooling fan	100,000hr					
Control signal input		RS-232C: Dsub9					
		LAN: RJ45 (10BASE-T/100BASE-TX)					
		Mitsubishi Electric Original Control Link: Dsub9 x 2 (IN/OUT)					
		Wire remote: F3.5 jack					
		IR receiver					
Signal input terminal		DVI-I (digital with HDCP, analog) x1 DVI-D (digital with HDCP) x1 DisplayPort™ (DP1.1a) x1 (*3)				DVI-I (digital with HDCP, analog) x1 DVI-D (digital with HDCP) x1 DisplayPort™ (DP1.2a) x 2 (IN/OUT) (*3)	
Optional input board slot		Intel OPS slot x1					
Power consumption (w/o input board)	Bright mode	172W (Typ.)				225W (Typ.)	
	Normal mode	131W (Typ.)				137W (Typ.)	
	Eco mode	95W (Typ.)				97W (Typ.)	
	Advanced Eco mode	80W (Typ.)				77W (Typ.)	
Voltage range		100-240VAC±10%,50/60Hz±1Hz					
Operating current (100/240V)		2.5/1.2amp.				Single power mode (Main or Exit.)3.3 / 1.4amp. Redundant power mode (Main or Exit.)3.4 / 1.7amp.	
Operating conditions	Temperature	10-35°C (50-95°F)	10-30°C (50-86°F)	10-35°C (50-95°F)	10-30°C (50-86°F)	10-35°C (50-95°F)	10-30°C (50-86°F)
	Humidity	20-80% non-condensing					
Weight		85kg/188lb	91kg/201lb	101kg/223lb	106kg/234lb	86kg	92kg
Model no.	Projection engine	VS-HE120U				VS-WE120U	
	Cabinet	S-60HE75CA	S-60HE75CAF	S-70HE75CA	S-70HE75CAF	S-60HE75CA	S-60HE75CAF
	Screen unit	SC-60HE75U	SC-60HE75UF	SC-70HE75U	SC-70HE75UF	SC-60HE75U	SC-60HE75UF

Model name		70WE120	70WEF120	62WE120	62WEF120	72WE120	72WEF120
Screen size		70"		62"		72"	
Resolution		Full HD (1920 x 1080 pixels)		WUXGA (1920×1200 pixels)			
Accessibility		Rear	Front	Rear	Front	Rear	Front
Technology		DLP™ technology (0.96" DLP™ 1 chip) / Dark Chip3™ / Brilliant Color™ (*1)					
Brightness	Bright mode	860cd/m² (Typ.)		1160cd/m² (Typ.)		860cd/m² (Typ.)	
	Normal mode	610cd/m² (Typ.)		820cd/m² (Typ.)		610cd/m² (Typ.)	
	Eco mode	410cd/m² (Typ.)		550cd/m² (Typ.)		410cd/m² (Typ.)	
	Advanced Eco mode	150cd/m² (Typ.)		210cd/m² (Typ.)		150cd/m² (Typ.)	
Viewing angle	Horizontal	1/2 gain: ±35deg, 1/10 gain: ±57deg					
	Vertical	1/2 gain: ±10deg, 1/10 gain: ±28deg					
Contrast ratio		1500:1 (Typ) Up to 3800:1 (*5)					
Screen-to-screen gap	Horizontal	0.2 - 2.0mm (*2)	1.0 - 3.0mm (*2)	0.2 - 1.5mm (*2)	1.0 - 2.5mm (*2)	0.2 - 2.0mm (*2)	1.0 - 3.0mm (*2)
	Vertical	0.2 - 1.5mm (*2)	1.0 - 2.5mm (*2)	0.2 - 1.0mm (*2)	1.0 - 2.0mm (*2)	0.2 - 1.5mm (*2)	1.0 - 2.5mm (*2)
Light source		Redundant LED (RGB)					
	Expected lifetime (*3)	130,000hr (Advanced Eco mode,Eco mode,Normal mode)					
Key components lifetime (average)	DLP™ chip	100,000hr (MTBF 650,000hr)					
	Cooling fan	100,000hr					
Control signal input		RS-232C: Dsub9					
		LAN: RJ45 (10BASE-T/100BASE-TX)					
		Mitsubishi Electric Original Control Link: Dsub9 x 2 (IN/OUT)					
		Wire remote: F3.5 jack					
		IR receiver					
Signal input terminal		DVI-I (digital with HDCP, analog) x1 DVI-D (digital with HDCP) x1 DisplayPort™ (DP1.2a) x 2 (IN/OUT) (*3)					
Optional input board slot		Intel OPS slot x1					
Power consumption (w/o input board)	Bright mode	225W (Typ.)					
	Normal mode	137W (Typ.)					
	Eco mode	97W (Typ.)					
	Advanced Eco mode	77W (Typ.)					
Voltage range		100-240VAC±10%,50/60Hz±1Hz					
Operating current (100/240V)		Single power mode (Main or Exit.)3.3/1.4amp.Redundant power mode (Main or Exit.)3.4/1.7amp.					
Operating conditions	Temperature	10-35°C (50-95°F)	10-30°C (50-86°F)	10-35°C (50-95°F)	10-30°C (50-86°F)	10-35°C (50-95°F)	10-30°C (50-86°F)
	Humidity	20-80% non-condensing					
Weight		102kg	107kg	89kg	96kg	107kg	111kg
Model no.	Projection engine	VS-WE120U					
	Cabinet	S-70HE75CA	S-70HE75CAF	S-62WE75CA	S-62WE75CAF	S-72WE75CA	S-72WE75CAF
	Screen unit	SC-70HE75U	SC-70HE75UF	SC-62WE75U	SC-62WE75UF	SC-72WE75U	SC-72WE75UF

(*1) DLP™, DarkChip3™ and BrilliantColor™ are trademarks of Texas Instruments.
(*2) Depending on configuration and environment. The maximum screen-to-screen gap size is recommended for large display walls to allow for screen expansion due to heat and humidity.
(*3) DisplayPort™ is a trademark of the Video Electronics Standards Association.
(*4) The above figures are when using Black Stripe screen.
(*5) @full on /off contrast ratio

Optional Cross-lenticular screen upon special request

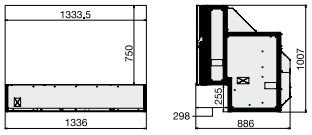
Model Name (w/Cross-lenticular screen)		60HE120L2	60HEF120L	70HE120L2	70HEF120L	60WE120L2	60WEF120L
Model No. (projection engine)		VS-HE120U				VS-WE120U	
Model No. (Cross-lenticular screen)		SC-60HE120L	SC-60HE75LF	SC-70HE120L	SC-70HE75LF	SC-60HE120L	SC-60HE75LF
Brightness with cross-lecticular screen	Bright mode	400		290		590	
	Normal mode	320		230		420	
	Eco mode	230		170		280	
	Advanced Eco mode	90		70		100	
Viewing angle with Cross-lenticular screen	Horizontal	1/2 gain:±35deg,1/10gain:±57deg					
	Vertical	1/2 gain:±33deg,1/10gain:±55deg					
Screen-to-screen gap	Horizontal	0.2 - 1.0mm(*2)	1.0 - 2.5mm(*2)	0.2 - 1.0mm(*2)	1.0 - 3.0mm(*2)	0.2 - 1.0mm(*2)	1.0 - 2.5mm(*2)
	Vertical	0.2 - 0.5mm(*2)	1.0 - 2.0mm(*2)	0.2 - 0.5mm(*2)	1.0 - 2.5mm(*2)	0.2 - 0.5mm(*2)	1.0 - 2.0mm(*2)

Model Name (w/Cross-lenticular screen)		70WE120L2	70WEF120L	62WE120L2	62WEF120L	72WE120L2	72WEF120L
Model No. (projection engine)		VS-WE120U					
Model No. (Cross-lenticular screen)		SC-70HE120L	SC-70HE75LF	SC-62WE120L	SC-62WE75LF	SC-72WE120L	SC-72WE75LF
Brightness with Cross-lecticular screen	Bright mode	440		590		440	
	Normal mode	310		420		310	
	Eco mode	210		280		210	
	Advanced Eco mode	70		100		70	
Viewing angle with Cross-lenticular screen	Horizontal	1/2 gain:±35deg,1/10gain:±57deg					
	Vertical	1/2 gain:±33deg,1/10gain:±55deg					
Screen-to-screen gap	Horizontal	0.2 - 1.0mm(*2)	1.0 - 3.0mm(*2)	0.2 - 1.0mm(*2)	1.0 - 2.5mm(*2)	0.2 - 1.0mm(*2)	1.0 - 3.0mm(*2)
	Vertical	0.2 - 0.5mm(*2)	1.0 - 2.5mm(*2)	0.2 - 0.5mm(*2)	1.0 - 2.0mm(*2)	0.2 - 0.5mm(*2)	1.0 - 2.5mm(*2)

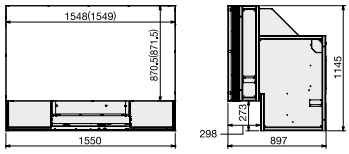
16:9 wide format * Figures in ( ) are for 120 Series.

60HE120/60WE120

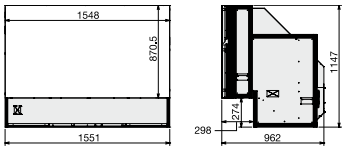
60HEF120/60WEF120



70HE120/70WE120



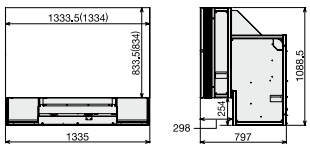
70HEF120/70WEF120



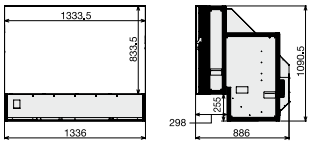
(unit:mm)

16:10 wide format * Figures in ( ) are for 120 Series.

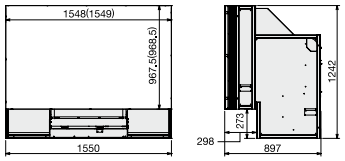
62WE120



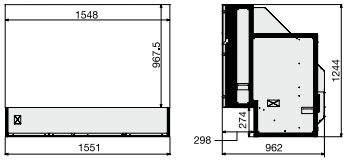
62WEF120



72WE120



72WEF120



(unit:mm)

*The design and measurements are subject to change without notice.
*All pictures shown are for illustrative purposes only.
*When Cross-Lenticular Screens are used,each screen size will be approximately 0.5mm wider and higher than the dimensions of the standard Black Stripe Screen.
*Operating temperature range is 20-30°C.

eco Changes

for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

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Specifications are subject to change without notice.