MITSUBISHI ELECTRIC
Changes for the Better

for a greener tomorrow  eco Changes

# 120 SERIES
# REAR PROJECTION CUBES

## High Performance LED Display Walls

▶ Best operational lifetime in the industry

▶ Industry lowest power consumption

▶ Exclusive proprietary imaging technology

▶ Low TCO (minimal maintenance and adjustments)

▶ Rear or front serviceable options

▶ TAA compliant



## RELIABLE. FLEXIBLE. SCALABLE.

# PURPOSE BUILT TO ADDRESS 24/7 DATA MONITORING CONTROL ROOM ENVIRONMENTS



Mitsubishi Electric's rear projection cubes are the preferred choice for system integrator, consultants and end-users for their performance, longevity, reliability and ease of maintenance in mission-critical applications like utility control rooms, power stations, traffic control centers and crisis management suites. Designed for 24×7 mission-critical operation, Mitsubishi Electric rear projection cube solutions deliver uninterrupted operation, stable colors and low power consumption. Mitsubishi Electric offers a diverse line-up of highly reliable rear and front access rear projection cubes, perfect for continuous operation and 24/7 large scale visualization and collaboration environments. The DLP rear projection cubes are designed to deliver outstanding performance and image quality with long-life operation.

# 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.

# 62″ and 72″ 16:10 Wide-Format DLP Rear-projection LED Cubes

Mitsubishi Electric's expansive line-up of 120 Series cubes includes: 62 and 72-inch 16:10 wide models in WUXGA resolutions, and 60 and 70-inch 16:9 full HD resolutions. Two screen options are offered as well, in 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. Like all Mitsubishi Electric displays are designed and built in Japan, making it TAA compliant and ensuring superb performance, quality and reliability.

**16:10 wide-format cubes**



**16:9 full HD cubes**



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

# DLP™ Technology for the Ultimate in High Quality and Digital Control

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.

## 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 reflection ratio, thus very little energy remains on the chip itself. 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 occurs with other image processing methods.
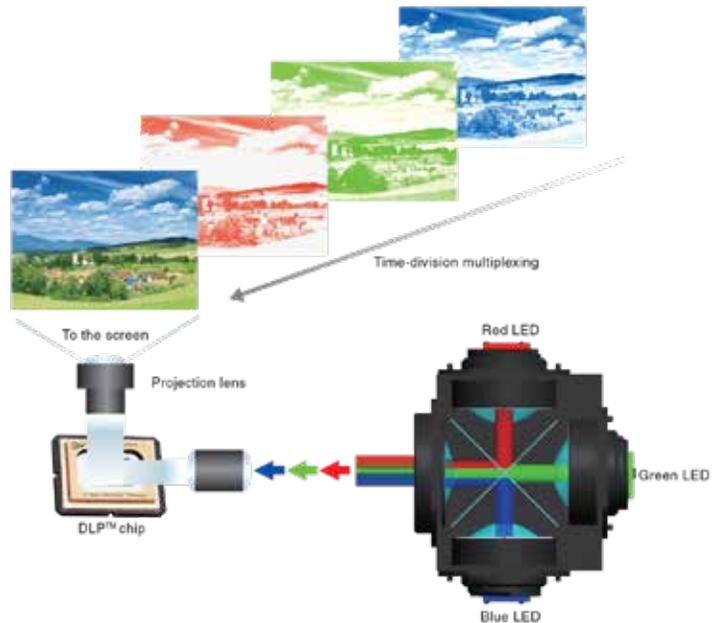
# LED Light Source Advantages

## Virtually Maintenance Free

An LED light source has an average service life that is approximately 10 times longer than that of conventional ultrahigh-pressure mercury lamps. Combined with the 100,000hr, ultra-long service life of our engine fans, the average service life of Mitsubishi Electric LED display wall cubes is more than 10 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.

* The LED light source for WE120 Series models lasts for 130,000 hrs. in Normal, ECO and Advanced ECO modes and rated for 100,000 hrs. in Bright Mode.

## Proven Performance

With over 89,000 screens installed in mission critical video walls worldwide, Mitsubishi Electric is the brand of choice for 24/7 command and control centers. 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.

## Wider Color Reproduction Range

The LED light source offers a much wider range of color reproduction (exceeding 100% EBU color space), 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.
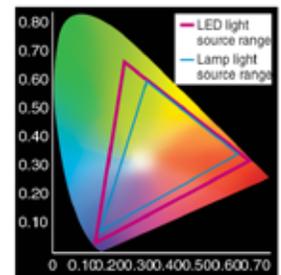
Color reproduction range

## Multiple Picture Settings

Mitsubishi Electric LED display wall cubes have multiple picture settings, giving customers the freedom to choose the best setting according to 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.
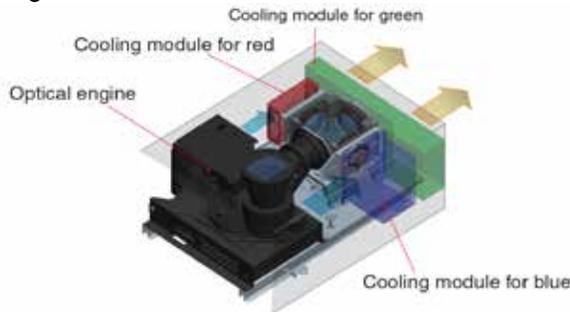
## Eco-conscious

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.
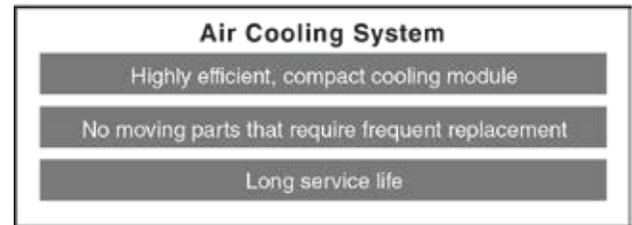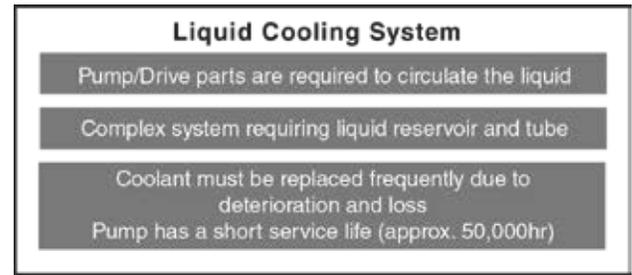
## Durability
### Air Cooling System for LED Light Source

### 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.



**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

## 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.
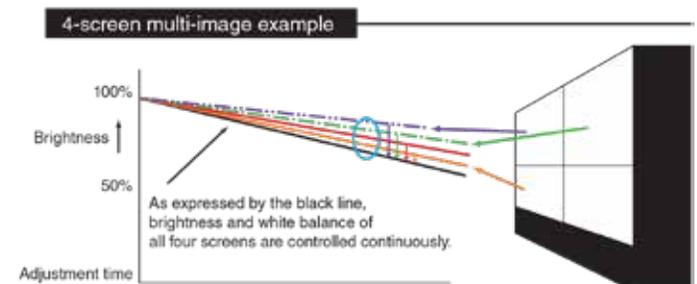
## Easy Set-up
### Full Front Access for Simple Maintenance

Mitsubishi Electric offers a wide line-up of front-access products: front access is available for 60" [Full HD (1080P)] and 70" [Full HD (1080P)], 62" (WUXGA) and 72" (WUXGA) models, as well as 4:3 models (50", 60" and 67", both XGA and SXGA+). 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 Proprietary Optical Engine and 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.
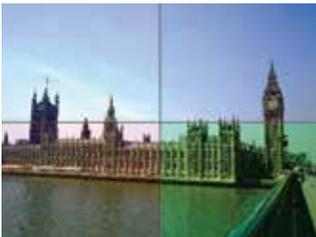
without Color Space Control          with Color Space Control

#### 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.

## 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)

# SPECIFICATIONS

| 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 | 60,000hr (Bright Mode) / 80,000hr (Normal Mode,ECO Mode), 100,000hr (Advanced ECO mode) | | | | 100,000hr (Bright Mode) / 130,000hr (Normal Mode,ECO Mode, Advanced ECO 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) | | | | | |
| | | Dsub9 x 2 (IN/OUT) | | | | | |
| | | Mitsubishi Electric Original Control Link | | | | | |
| | | 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) x1 (*3) | |
| Optional input board slot | | Intel OPS slotx1 | | | | | |
| 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-60HE75CA | S-60HE75CAF | S-60HE75CA | S-60HE75CAF |
| | Screen unit | SC-60HE75U | SC-60HE75UF | SC-70HE75U | SC-70HE75UF | SC-60HE75U | SC-60HE75UF |

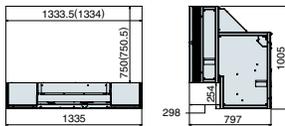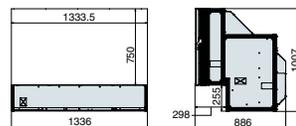| Model name | | 70WE120 | 70WEF120 | 62WE120 | 62WEF120 | 72WE120 | 72WEF120 |
|---|---|---|---|---|---|---|---|
| Screen size | | 70" | | 62" | | 72" | |
| Resolution | | Full HD (1920 x 1080 pixels) | | WUXGA (1920×1200 pixels) | | | |
| Accessibility | | Rear | Front | Rear | Front | Rear | Front |
| 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) | 100,000hr (Bright Mode) / 130,000hr (Normal Mode,ECO Mode, Advanced ECO 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) | | | | | |
| | | Dsub9 x 2 (IN/OUT) | | | | | |
| | | Mitsubishi Electric Original Control Link | | | | | |
| | | 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) x1 (*3) | | | | | |
| Optional input board slot | | Intel OPS slotx1 | | | | | |
| 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 |

# Specifications

## 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 | C-60HE75LF |
| Brightness with cross-lecticular scree n | 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 scree n | Horizontal | 1/2 gain: ±35deg ,1/10gain: ±57deg | | | | | |
| | Vertical | 1/2 gain: ±33deg,1/10gain: ±55deg | | | | | |
| Screen-to-screen ga p | 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) |

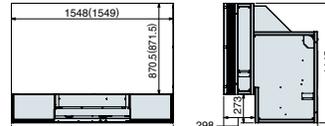| Model Name (w/Cross-lenticular screen) | | 70WE120L2 | 70WEF120L | 62WE120L2 | 62WEF120L | 72WE120L2 | 72WEF120L |
|---|---|---|---|---|---|---|---|
| Model No. (projection engine) | | VS-WE120U | | | | | |
| Model No. (Cross-lenticular screen) | | SC-70HE120L | SC-70HE75LF | SC-62WE120L | SC-62WE75LF | SC-72WE120L | SC-72WE75LF |
| Brightness with Cross-lecticular scree n | 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 scree n | Horizontal | 1/2 gain: ±35deg ,1/10gain: ±57deg | | | | | |
| | Vertical | 1/2 gain: ±33deg,1/10gain: ±55deg | | | | | |
| Screen-to-screen ga p | 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) |

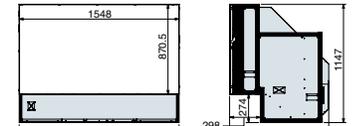### 16:9 full HD cubes

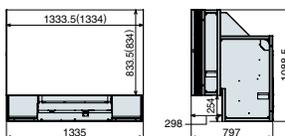60HE120/ 60WE120     60HEF120/ 60WEF120     70HE120 / 70WE120     70HEF120/ 70WEF120

(unit:mm)

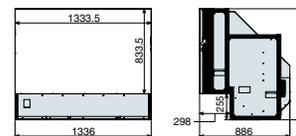* Figures in ( ) are for Cross-Lenticular Screens

### 16:10 wide-format cubes
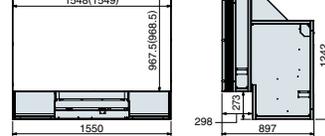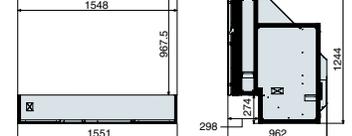
62WE120     62WEF120     72WE120     72WEF120

(unit:mm)

* Figures in ( ) are for Cross-Lenticular Screens

* 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

## MITSUBISHI ELECTRIC CORPORATION