

LCOS Laser 4K Projector 4K600STZ



1. Main Features

1-1 Compact, lightweight, high luminance 6000 lm

A compact AISYS optical system that provides both brightness and contrast, an original high-performance image processor that achieves enhanced color reproduction, a high-definition projection lens that is a compilation of optical design technologies for unleashing the full potential of 4K resolution, and a 4K LCOS panel that can project smooth, high-quality images were integrated together for a 6000 lumen high-luminance 4K & LASER light source model with industry leading compactness and lightweight.

1-2 Native 4K optical performance

- 1) This product employs 3 sets of the world smallest class LCOS panel (pixel size 4096x2400) which employs high speed and high gradation controls.
- 2) The projection lens of this product is designed for high resolution and a throw ratio between 1.0 and 1.3 for a so-called wide zoom lens to fulfill customer needs for situations such as simulations.
- 3) The f-number is 2.6 over the entire zoom range. Consequently, the variation in brightness due to zoom adjustments is minimized.
- 4) The depth of field is deep due to the F2.6. Adjusting the variable aperture inside the illumination optical system allows the f-number to be increased. This feature produces excellent performance for curved surface projection.
- 5) Marginal focus function provides excellent focus performance from center to corner over an entire dome screen.
- 6) Low TV distortion (less than 0.15%) helps display precise edge-blending.

1-3 Laser light source

- 1) A laser diode light source with a higher durability than typical lamps achieves a service life (*1) that lasts longer than 20,000 hours.
*1 Varies depending on operating conditions and is not guaranteed.
- 2) The flexibility of projection style and angle is dramatically improved to include projection methods such as portrait (*2)
*2 There is no cover on the vent hole (incoming/outgoing). Set up the projector in a stable, safe manner.
- 3) Fast boot function enables the projector to start up and reach image brightness within 1.5 seconds.
- 4) The sRGB coverage is 99% (design value).
- 5) The light output can be adjusted in smaller steps.
- 6) Dynamic contrast provides clear, bright displays within dark images.
- 7) A function is included to keep brightness and color controls.
- 8) The laser diode can emit light instantaneously at any time in case the light source off function is active.
- 9) A menu rotation function is available for portrait display.

1-4 HDMI (HDCP 2.2 compliance)

The product is equipped with HDMI high bandwidth (18Gbps), which makes it possible to input a 4K/60p image from a UHD Blu-ray player through a single HDMI cable. In addition, HDR (High Dynamic Range) contents can be processed. Consequently, a rich and real visual experience is provided when images such as shining metal, clear blue skies and details in a dark image are displayed.

In addition, contents supported by HDCP2.2, the latest encryption technology for copyright protection, can be displayed.

1-5 Movie performance recommended for simulation purposes

1) Low-delay playback that suppresses the delay from input to display to approximately 1.0 frames (at 60 Hz) (*3)

2) Smoother display without motion blurring as a result of movie visibility improvement (MB reduction)

*3: When Keystone and other scaling functions are off, and image input is DVI 1x4 or HDMI 1x2.

1-6 Advanced RGB misalignment correction

This feature electronically corrects color displacement in units of 0.1 pixels in a specific area of the screen (9x6 dots).

This provides advanced correction in combination with conventional functions used to correct color displacement at the pixel level.

1-7 Wi-Fi function

With the addition of a Wi-Fi function, management and control of the projector, which used to be performed through a wired LAN, can now be performed wirelessly.

1-8 Trigger output

A terminal that supplies voltage for activating external equipment has been included.

For example, this can be used to lower the screen when the projector is started.

1-9 Real-Time Clock (called "RTC" below)

A scheduler function that can be configured to perform actions, such as starting or shutting down the projector at specified times, is available.

This is achieved through implementing RTC. This function operates based on the RTC's time.

2. Specifications

2-1 Basic specifications

Model		4K600STZ
Type	Product type	Projector
	Imaging device, number	Reflective LCD panel (LCOS) ×3
LCOS panel	Number of pixels	4096×2400
	Size, Aspect ratio	0.76 inch, 128:75 (about 17:10)
	Driving system	Active Matrix
Light source	Type	Blue laser diode, yellow phosphor
Images	Optical system	Dichroic mirror and PBS color separation-combination system
	Brightness (*1)(*2)	6000/4560/2400 lm
	Marginal lumination ratio	80%
	Contrast ratio (*3)	4000:1 (All white : all black, native)
	Image size (4096 x 2400)	40 – 600 inches
	Amount of lens shift	V: ± 60%, H: ±10% (powered)
	Electronic zoom (for length)	Not provided
	Keystone correction	V ±20°, H ±20°
Terminals	DVI-D x4	Digital PC input
	HDMI x2	Digital PC/Digital video input
	Mini jack x2	Audio input x1, Audio output x1
	Mini jack x1	Wired remote control connection
	Dsub9	RS-232 connection
	USB Type A	USB connection
	RJ-45	Network connection (1000BASE-T / 100BASE-TX / 10BASE-T)
Image signals	DVI (single)	640x480, 800x600, 1280x720, 1024x768, 1366x768, 1440x900, 1280x1024, 1920x1080, 2048x1080, 2560x1080, 1920x1200, 2048x1200, 2560x1440, 3840x2160(*4), 4096x2160(*4)(*5)
	DVI 1x2	2560x1080, 2560x1440, 2560x1600, 3840x2160(*4), 4096x2160(*4)
	DVI 2x2	3840x2160, 4096x2160, 4096x2304(*6), 3200x2400(*6), 3840x2400(*6), 4096x2400(*6)
	DVI 1x4	3840x2160, 4096x2160, 4096x2304(*6), 3840x2400(*6), 4096x2400(*6)
	HDMI (single)	640x480, 720x480, 720x576, 800x600, 1280x720, 1024x768, 1366x768, 1440x900, 1280x1024, 1920x1080, 2048x1080, 2560x1080, 1920x1200, 2048x1200, 2560x1440, 2560x1600, 3840x2160, 4096x2160
	HDMI 1x2	1280x480, 1440x480, 1440x576, 2560x720, 3840x1080, 2560x1600, 3840x2160, 4096x2160, 3200x2400(*6), 3840x2400(*5)(*6)
Mechanics	Adjustable feet	Four locations on the bottom, Extension length: 15 mm
	Built-in speaker	5 W 、 Monaural
	Dimensions	W: 559 mm, H: 201 mm, D: 624 mm
	Weight	26 kg
	Noise level (*2)	37/32/29 dB
Others	Power supply	AC100 - 240 V : 50/60 Hz
	Power consumption	665 W
	Stand-by power consumption (*6)	0.8/0.4 W
	Operation environment	0 – 45 , 20%RH – 85%RH
	Storage environment	-20 - 60

*1: Image mode is set to "Presentation."

*2: The light source modes are Normal/Quiet-1/Quiet-2.

The brightness except Normal mode is the calculated value and cannot be guaranteed as a specification.

*3: When iris function is set to "Close 3"

*4: Only low frequencies (24 to 30 Hz) are supported.

*5: EDID is not supported.

*6: Supported when "Panel drive mode" is set to "4096x2400"

*7: Network "ON", Stand-by power setting "Low-power" / Network "OFF"

2-2 Projection specifications

<p>1. Projection lens Lens configuration F number Focal length Zoom magnification Operation</p>	<p>12 groups 16 elements F2.6 - F2.6 17.2 - 22.3 mm 1.3x Zoom, focus, marginal focus: powered</p>																																																																																					
<p>2. Projection performance Image size Projection distance Distance for 100 " image Throw ratio for 70" image</p>	<p>40 - 600 inches Wide: 0.9 – 13.6 m, Tele: 1.1 – 17.7 m Wide: 2.2 m, Tele: 2.9 m Wide: 1.0, Tele: 1.3</p>																																																																																					
<p>3. Image size and projection distance</p>	<p>The same size image is displayed at the projection distance ranging from L(W) to L(T) by controlling the optical zoom.</p> <p>L(W):Distance at the Wide end L(T) :Distance at the Tele end</p> <p>The following table shows the projection distance when projecting 16:10 images that matches the aspect ratio of the image device.</p> <table border="1" data-bbox="671 891 1339 1527"> <thead> <tr> <th colspan="3">Image size (4096x2400)</th> <th colspan="2">Distance[m]</th> </tr> <tr> <th>[inches]</th> <th>Width [m]</th> <th>Height [m]</th> <th>L(W)</th> <th>L(T)</th> </tr> </thead> <tbody> <tr><td>40</td><td>0.9</td><td>0.5</td><td>0.9</td><td>1.1</td></tr> <tr><td>60</td><td>1.3</td><td>0.8</td><td>1.3</td><td>1.7</td></tr> <tr><td>80</td><td>1.8</td><td>1.0</td><td>1.8</td><td>2.3</td></tr> <tr><td>100</td><td>2.2</td><td>1.3</td><td>2.2</td><td>2.9</td></tr> <tr><td>120</td><td>2.6</td><td>1.5</td><td>2.7</td><td>3.5</td></tr> <tr><td>140</td><td>3.1</td><td>1.8</td><td>3.1</td><td>4.1</td></tr> <tr><td>160</td><td>3.5</td><td>2.1</td><td>3.6</td><td>4.7</td></tr> <tr><td>180</td><td>3.9</td><td>2.3</td><td>4.0</td><td>5.3</td></tr> <tr><td>200</td><td>4.4</td><td>2.6</td><td>4.5</td><td>5.8</td></tr> <tr><td>250</td><td>5.5</td><td>3.2</td><td>5.6</td><td>7.3</td></tr> <tr><td>300</td><td>6.6</td><td>3.9</td><td>6.8</td><td>8.8</td></tr> <tr><td>350</td><td>7.7</td><td>4.5</td><td>7.9</td><td>10.3</td></tr> <tr><td>400</td><td>8.8</td><td>5.1</td><td>9.0</td><td>11.8</td></tr> <tr><td>500</td><td>11.0</td><td>6.4</td><td>11.3</td><td>14.7</td></tr> <tr><td>600</td><td>13.2</td><td>7.7</td><td>13.6</td><td>17.7</td></tr> </tbody> </table> <p>The distances listed on the table have been rounded off and are therefore approximate values.</p>	Image size (4096x2400)			Distance[m]		[inches]	Width [m]	Height [m]	L(W)	L(T)	40	0.9	0.5	0.9	1.1	60	1.3	0.8	1.3	1.7	80	1.8	1.0	1.8	2.3	100	2.2	1.3	2.2	2.9	120	2.6	1.5	2.7	3.5	140	3.1	1.8	3.1	4.1	160	3.5	2.1	3.6	4.7	180	3.9	2.3	4.0	5.3	200	4.4	2.6	4.5	5.8	250	5.5	3.2	5.6	7.3	300	6.6	3.9	6.8	8.8	350	7.7	4.5	7.9	10.3	400	8.8	5.1	9.0	11.8	500	11.0	6.4	11.3	14.7	600	13.2	7.7	13.6	17.7
Image size (4096x2400)			Distance[m]																																																																																			
[inches]	Width [m]	Height [m]	L(W)	L(T)																																																																																		
40	0.9	0.5	0.9	1.1																																																																																		
60	1.3	0.8	1.3	1.7																																																																																		
80	1.8	1.0	1.8	2.3																																																																																		
100	2.2	1.3	2.2	2.9																																																																																		
120	2.6	1.5	2.7	3.5																																																																																		
140	3.1	1.8	3.1	4.1																																																																																		
160	3.5	2.1	3.6	4.7																																																																																		
180	3.9	2.3	4.0	5.3																																																																																		
200	4.4	2.6	4.5	5.8																																																																																		
250	5.5	3.2	5.6	7.3																																																																																		
300	6.6	3.9	6.8	8.8																																																																																		
350	7.7	4.5	7.9	10.3																																																																																		
400	8.8	5.1	9.0	11.8																																																																																		
500	11.0	6.4	11.3	14.7																																																																																		
600	13.2	7.7	13.6	17.7																																																																																		

2-3 Lens shift system

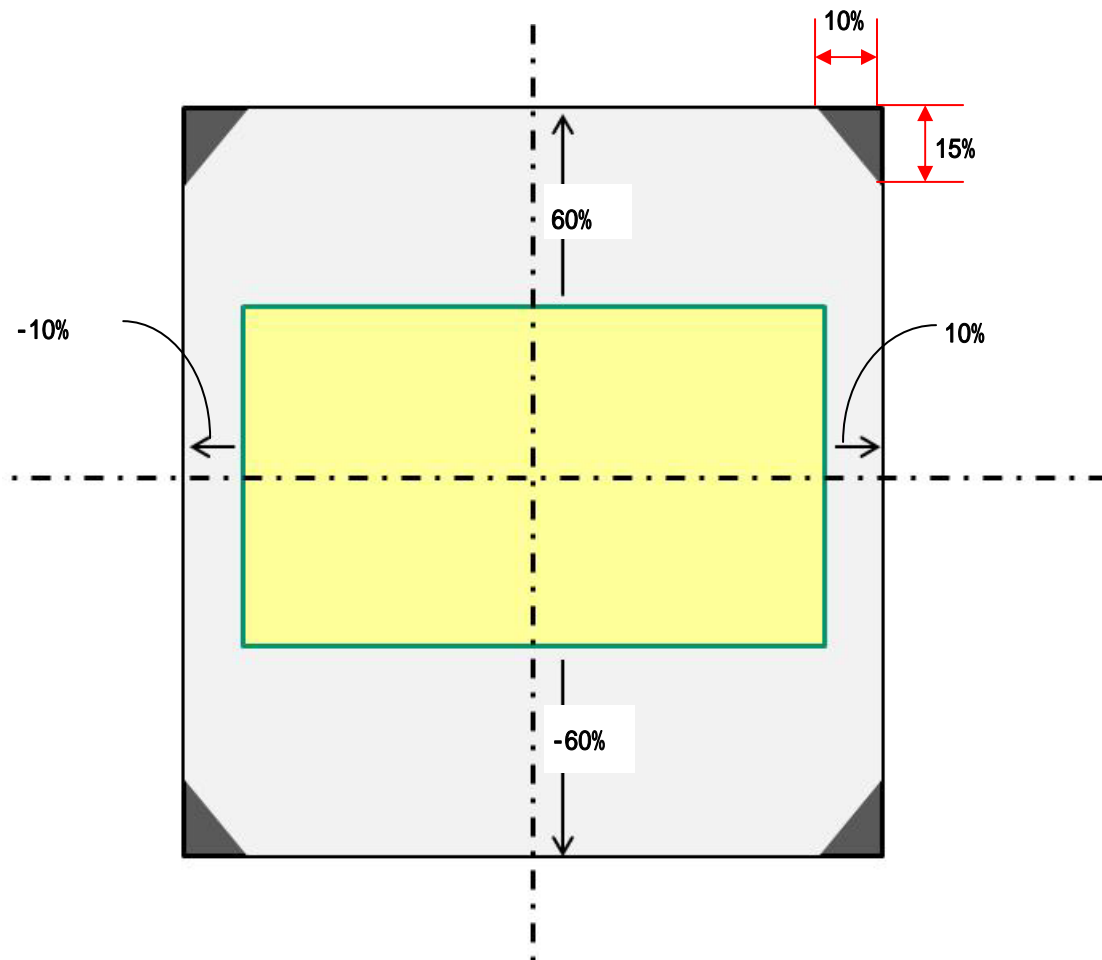
This product has a lens shift system that can move the image position vertically and horizontally. It is electrically driven through buttons on the projector or remote. The lens shift range is as follows:

Amount of Lens shift	(V) -60% ~ 60%
	(H) -10% ~ 10%
Lens shift ratio	(V) -1:11 ~ 11:-1
	(H) 4:6 ~ 6:4

The following figure shows the area in which the image can be moved and the guaranteed optical performance range of this product.

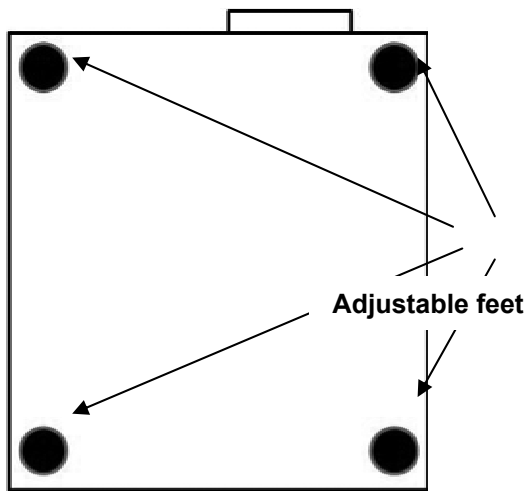
The center of the crosshair is the optical axis of the lens.

The octagonal area excluding the four corners (light gray) is the guaranteed optical performance range. Note that the sizes of the four corners that are outside the guaranteed range are the same.



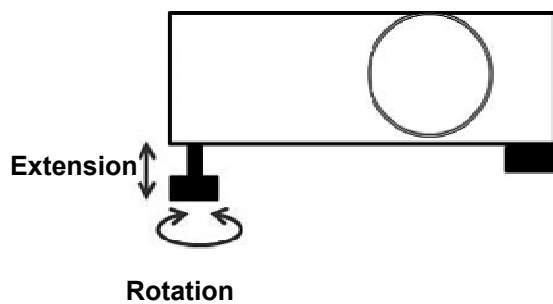
Moving the image outside the guaranteed optical performance range may cause shade to appear in the corner area of the image.
 (e.g., 60% vertical, 10% horizontal → the upper right corner of the image becomes dark)
 We recommend that you do not use the product in this manner but rather adjust the installation position so that the image is within the guaranteed range.

2-4 Adjustable feet



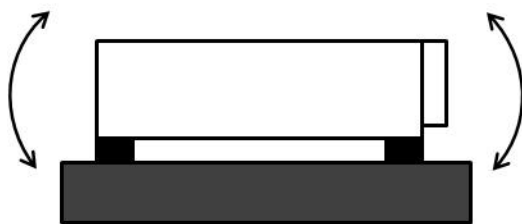
Four adjustable feet are provided on the bottom of the product.

The length of these feet can be adjusted to minimize the horizontal tilt of the image projected on the screen.



Rotate the adjustable legs to adjust their lengths.

The maximum extension length of each leg is 15 mm.



The front-to-back angle of this product can be adjusted in the range of ± 1.6 relative to the surface that the product is placed on.

* The figure is for explanation only and different from the actual product shape.

2-5 Notes on installation

Because this product adopts a wide angle lens, the following phenomenon may arise. These are not failures, and there is no problem with this product.

3. Image signals

3-1 Number of terminals used for image input

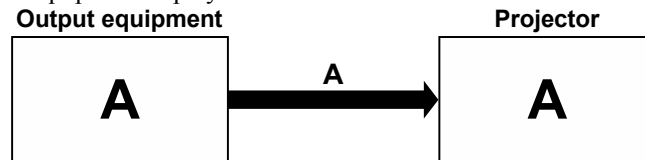
This product is equipped with a system that transmits image signals through several transmission cables to display high resolution image signals that could not be transmitted previously with a single transmission cable (DVI, HDMI).

The different combinations of image input terminals that the product uses are shown below.

Single terminal input (DVI1, DVI2, DVI3, DVI4, HDMI1, HDMI2)

The conventional method of transmitting image signals using a single transmission cable.

The screen of the output equipment is played back as is.

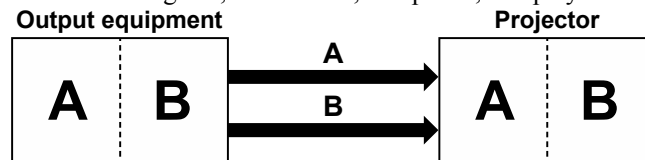


Two terminal input (DVI1+DVI3, HDMI1+HDMI2)

A method of transmitting image signals using two transmission cables.

For example, when transmitting a 3840x2160 image, each cable carries a 1920x2160 signal.

Image signals are divided into two signals, transmitted, composed, and played back.



For DVI, signal A is received through DVI1 and signal B through DVI3.

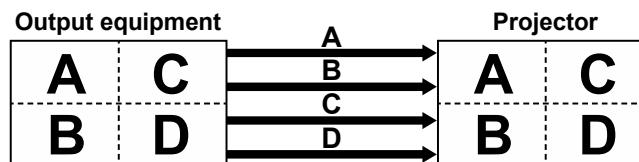
For HDMI, signal A is received through HDMI1 and signal B through HDMI2.

Four terminal input, quadrant (DVI 2x2)

One of the methods of transmitting image signals using four transmission cables.

For example, when transmitting a 3840x2160 image, each cable carries a 1920x1080 signal.

Image signals are divided into quadrants, transmitted, composed, and played back.



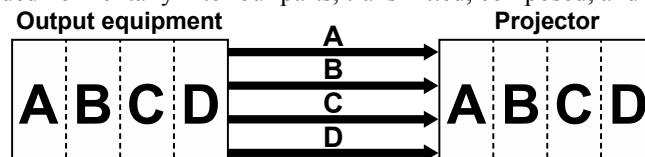
Signal A is received through DVI1, signal B through DVI2, signal C through DVI3, and signal D through DVI4.

Four terminal input, side by side (DVI 1x4)

One of the methods of transmitting image signals using four transmission cables.

For example, when transmitting a 3840x2160 image, each cable carries a 960x2160 signal.

Image signals are divided horizontally into four parts, transmitted, composed, and played back.



Signal A is received through DVI1, signal B through DVI2, signal C through DVI3, and signal D through DVI4.

Notes for receiving signals through multiple terminals

In order to reproduce images correctly when an image signal is divided and received through multiple terminals, the following items must at least be the same for each of the divided image signals.

- Period
- Resolution, frequency
- Color format

These are typically the same because it is assumed that images from a single output device will be divided and output. However, this may not be true depending on the specifications of the output device.

3-2 About Multi input mode select

For the input signal in this product, the optimal EDID is selected using the “Multi input mode select” function.

(The EDID is selected separately for DVI and HDMI.) (*1)

*1: EDID are different between panel drive mode settings

3-3 Supported image signal type

Image signals that the product can display are listed below.

The description of blanking information is provided later.

Interlace signals are denoted with (I).

For DVI input, a signal whose dot clock is less than 165 MHz is a single link signal, and that whose dot clock is 165 MHz or higher is a dual link signal.

●DVI (single)

Resolution	Frequency			Setting (*1)		Blanking information	
	Horizontal [kHz]	Vertical [Hz]	Dot clock [MHz]	Normal	Single	Horizontal FP, SW, BP	Vertical FP, SW, BP
640x480	31.469	59.940	25.175			16, 96, 48	10, 2, 33
800x600	37.879	60.317	40.000			40, 128, 88	1, 4, 23
1280x720	45.000	60.000	74.250			110, 40, 220	5, 5, 20
1024x768	48.363	60.004	65.000			24, 136, 160	3, 6, 29
1366x768	47.712	59.790	85.500	-		70, 143, 213	3, 3, 24
	48.000	60.000	72.000	(*2)		14, 56, 64	1, 3, 28
1440x900	55.935	59.887	106.500			80, 152, 232	3, 6, 25
	55.469	59.901	88.750			48, 32, 80	3, 6, 17
1280x1024	63.981	60.020	108.000			48, 112, 248	1, 3, 38
1920x1080	27.000	24.000	74.250			638, 44, 148	4, 5, 36
	67.500	60.000	148.500			88, 44, 148	4, 5, 36
2048x1080	66.576	59.924	147.000	(*2)		48, 32, 80	3, 10, 18
	67.500	60.000	148.500			44, 44, 64	4, 5, 36
2560x1080	66.636	59.978	181.250	(*2)		48, 32, 80	3, 10, 18
	66.000	60.000	198.000	-		248, 44, 148	4, 5, 11
1920x1200	74.556	59.885	193.250			136, 200, 336	3, 6, 36
	74.038	59.950	154.000			48, 32, 80	3, 6, 26
2048x1200	74.049	59.959	163.500			48, 32, 80	3, 10, 22
2560x1440	88.787	59.951	241.500	-		48, 32, 80	3, 5, 33
3840x2160	52.438	23.999	209.750	-		48, 32, 80	3, 5, 17
4096x2160	52.397	23.980	223.000	(*2)		48, 32, 80	3, 10, 12

●DVI 1x2

Resolution		Frequency			Setting (*1)		Blanking information	
Composed	Divided	Horizontal [kHz]	Vertical [Hz]	Dot clock [MHz]	Normal	1x2	Horizontal FP, SW, BP	Vertical FP, SW, BP
2560x1080	1280x1080	66.493	59.850	95.750	-		48, 32, 80	3, 10, 18
2560x1440	1280x1440	88.715	59.902	127.750	-		48, 32, 80	3, 10, 28
2560x1600	1280x1600	98.611	59.910	142.000			48, 32, 80	3, 10, 33
3840x2160	1920x2160	52.512	23.956	132.750	(*2)		104, 200, 304	3, 10, 19
		52.404	23.983	109.000	(*2)		48, 32, 80	3, 10, 12
		54.000	24.000	148.500	(*3)		638, 44, 148	8, 10, 72
		67.500	30.000	148.500	(*2)		88, 44, 148	8, 10, 72
4096x2160	2048x2160	52.515	23.957	142.000	(*2)		112, 216, 328	3, 10, 19
		52.423	23.992	115.750	(*2)		48, 32, 80	3, 10, 12
		54.000	24.000	148.500	(*3)		510, 44, 148	8, 10, 72
		67.500	30.000	148.500	(*2)		44, 44, 64	8, 10, 72

*1: Indicates multi input mode settings that allow image signal to be used

*2: Since EDID is not supported, the setting has no effect (Normal recommended).

*3: Only when the "Panel drive mode" is set to "4096x2160"

•DVI 2x2

Resolution		Frequency			Setting (*1)		Blanking information	
Composed	Divided	Horizontal [kHz]	Vertical [Hz]	Dot clock [MHz]	Normal	2x2	Horizontal FP, SW, BP	Vertical FP, SW, BP
3840x2160	1920x1080	27.000	24.000	74.250			638, 44, 148	4, 5, 36
		33.750	30.000	74.250			88, 44, 148	4, 5, 36
		66.587	59.934	138.500			48, 32, 80	3, 5, 23
		67.158	59.963	173.000			128, 200, 328	3, 5, 32
		67.500	60.000	148.500			88, 44, 148	4, 5, 36
4096x2160	2048x1080	27.000	24.000	74.250	-	(*3)	594, 44, 64	4, 5, 36
		33.750	30.000	74.250	-	(*3)	44, 44, 64	4, 5, 36
		66.576	59.924	147.000	-		48, 32, 80	3, 10, 18
		67.160	59.964	183.750		(*2)	128, 216, 344	3, 10, 27
		67.500	60.000	148.500			44, 44, 64	4, 5, 36
4096x2304 (*5)	2048x1152	71.584	59.903	197.000		(*4)	136, 216, 352	3, 5, 35
		70.992	59.909	156.750		(*4)	48, 32, 80	3, 5, 25
		72.000	60.000	162.000		(*4)	26, 80, 96	1, 3, 44
3200x2400 (*5)	1600x1200	74.006	59.924	130.250	-	(*4)	48, 32, 80	3, 4, 28
		75.000	60.000	162.000	-	(*4)	64, 192, 304	1, 3, 46
		74.556	59.885	193.250		(*4)	136, 200, 336	3, 6, 36
		74.038	59.950	154.000		(*4)	48, 32, 80	3, 6, 26
4096x2400 (*5)	2048x1200	74.582	59.905	205.250		(*2)	136, 216, 352	3, 10, 32
		74.049	59.959	163.500		(*4)	48, 32, 80	3, 10, 22

•DVI 1x4

Resolution		Frequency			Setting (*1)		Blanking information	
Composed	Divided	Horizontal [kHz]	Vertical [Hz]	Dot clock [MHz]	Normal	1x4	Horizontal FP, SW, BP	Vertical FP, SW, BP
3840x2160	960x2160	134.036	59.918	178.000		(*2)	80, 104, 184	3, 10, 64
		133.259	59.973	149.250	-	(*3)	48, 32, 80	3, 10, 49
		133.319	60.000	138.652		(*2)	8, 32, 40	48, 8, 6
		135.000	60.000	148.500			44, 22, 74	8, 10, 72
4096x2160	1024x2160	134.055	59.926	188.750		(*2)	80, 112, 192	3, 10, 64
		133.235	59.962	157.750	-	(*3)	48, 32, 80	3, 10, 49
		133.320	60.000	147.185		(*2)	8, 32, 40	48, 8, 6
		135.000	60.000	148.500			22, 22, 32	8, 10, 72
4096x2304 (*5)	1024x2304	142.103	59.959	168.250	-	(*4)	48, 32, 80	3, 10, 53
		143.111	59.979	201.500		(*2)	80, 112, 192	3, 10, 69
		142.199	60.000	156.988	-	(*4)	8, 32, 40	52, 8, 6
3840x2400 (*5)	960x2400	147.991	59.940	165.750	-	(*4)	48, 32, 80	3, 10, 56
		149.096	59.974	198.000		(*2)	80, 104, 184	3, 10, 73
		148.139	60.000	154.065		(*4)	8, 32, 40	55, 8, 6
4096x2400 (*5)	1024x2400	148.970	59.924	209.750		(*2)	80, 112, 192	3, 10, 73
		148.015	59.949	175.250	-	(*4)	48, 32, 80	3, 10, 56
		148.139	60.000	163.546		(*4)	8, 32, 40	55, 8, 6

*1: Indicates multi input mode settings that allow image signal to be used

*2: Since EDID is not supported, the setting has no effect (Normal recommended).

*3: Only when the "Panel drive mode" is set to "4096x2160"

*4: Only when the "Panel drive mode" is set to "4096x2400"

*5: In the case of an image signal whose vertical resolution exceeds 2160, if the panel drive mode is set to "4096x2160", it will be processed as "no signal." Therefore, set the mode to "4096x2400."

●HDMI (single)

Resolution	Frequency			Setting (*1)		Blanking information	
	Horizontal [kHz]	Vertical [Hz]	Dot clock [MHz]	Normal	Single	Horizontal FP, SW, BP	Vertical FP, SW, BP
640x480	31.469	59.940	25.175			16, 96, 48	10, 2, 33
720x480	31.469	59.940	27.000			16, 62, 60	9, 6, 30
720x576	31.250	50.000	27.000			12, 64, 68	5, 5, 39
800x600	37.879	60.317	40.000			40, 128, 88	1, 4, 23
1280x720	18.000	24.000	59.400			1760, 40, 220	5, 5, 20
	37.500	50.000	74.250			440, 40, 220	5, 5, 20
	45.000	60.000	74.250			110, 40, 220	5, 5, 20
1024x768	48.363	60.004	65.000			24, 136, 160	3, 6, 29
1366x768	47.712	59.790	85.500	-		70, 143, 213	3, 3, 24
	48.000	60.000	72.000	(*2)		14, 56, 64	1, 3, 28
1440x900	55.935	59.887	106.500			80, 152, 232	3, 6, 25
	55.469	59.901	88.750			48, 32, 80	3, 6, 17
1280x1024	63.981	60.020	108.000			48, 112, 248	1, 3, 38
1920x1080(1)	28.125	50.000	74.250			528, 44, 148	4.5, 10, 30.5
	31.250	50.000	72.000	(*2)		32, 168, 184	45.5, 10, 114.5
	33.750	60.000	74.250			88, 44, 148	4.5, 10, 30.5
1920x1080	27.000	24.000	74.250			638, 44, 148	4, 5, 36
	56.250	50.000	148.500			528, 44, 148	4, 5, 36
	67.500	60.000	148.500			88, 44, 148	4, 5, 36
2048x1080	66.576	59.924	147.000			48, 32, 80	3, 10, 18
	67.500	60.000	148.500			44, 44, 64	4, 5, 36
2560x1080	26.400	24.000	99.000			998, 44, 148	4, 5, 11
	56.250	50.000	185.625			548, 44, 148	4, 5, 36
	66.636	59.978	181.250	(*2)		48, 32, 80	3, 10, 18
	66.000	60.000	198.000			248, 44, 148	4, 5, 11
1920x1200	74.556	59.885	193.250			136, 200, 336	3, 6, 36
	74.038	59.950	154.000			48, 32, 80	3, 6, 26
2048x1200	74.582	59.905	205.250			136, 216, 352	3, 10, 32
	74.100	60.000	157.684	(*2)		8, 32, 40	21, 8, 6
2560x1440	88.787	59.951	241.500	-		48, 32, 80	3, 5, 33
	98.713	59.972	268.500			48, 32, 80	3, 6, 37
3840x2160	52.593	23.993	266.750	(*2)		216, 400, 616	3, 5, 24
	52.438	23.999	209.750	(*2)		48, 32, 80	3, 5, 17
	54.000	24.000	297.000			1276, 88, 296	8, 10, 72
	56.250	25.000	297.000			1056, 88, 296	8, 10, 72
	67.500	30.000	297.000			176, 88, 296	8, 10, 72
	112.500	50.000	594.000	(*6)		1056, 88, 296	8, 10, 72
	135.000	60.000	594.000	(*6)		176, 88, 296	8, 10, 72
4096x2160	52.561	23.979	284.250	(*2)		224, 432, 656	3, 10, 19
	52.397	23.980	223.000	(*2)		48, 32, 80	3, 10, 12
	54.000	24.000	297.000			1020, 88, 296	8, 10, 72
	56.250	25.000	297.000			968, 88, 128	8, 10, 72
	67.500	30.000	297.000			88, 88, 128	8, 10, 72
	112.500	50.000	594.000	(*6)		968, 88, 128	8, 10, 72
	135.000	60.000	594.000	(*6)		88, 88, 128	8, 10, 72

*1: Indicates multi input mode settings that allow image signal to be used

*2: Since EDID is not supported, the setting has no effect (Normal recommended).

*3: Only when the "Panel drive mode" is set to "4096x2160"

*4: Only when the "Panel drive mode" is set to "4096x2400"

*6: If HDMI-1/HDMI-2 EDID is set to 9Gbps, only YCbCr420 can be displayed.

●HDMI 1x2

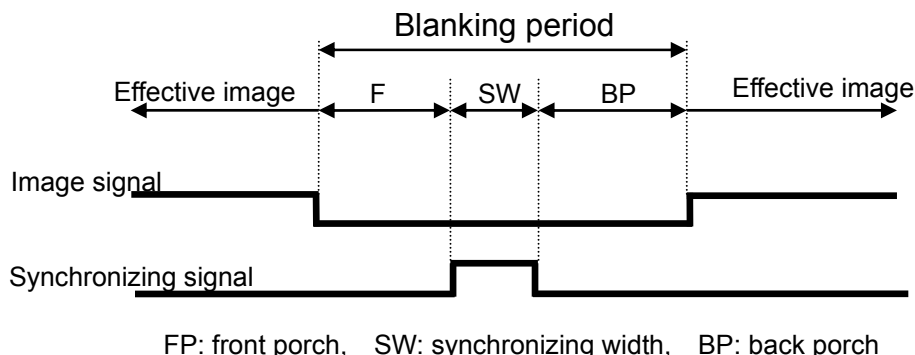
** Follow HDMI-1.4 standards when you input with two HDMI terminals.

Resolution		Frequency			Setting (*1)		Blanking information	
Composed	Divided	Horizontal [kHz]	Vertical [Hz]	Dot clock [MHz]	Normal	1x2	Horizontal FP, SW, BP	Vertical FP, SW, BP
1280x480	640x480	31.469	59.940	25.175			16, 96, 48	10, 2, 33
1440x480	720x480	31.469	59.940	27.000			16, 62, 60	9, 6, 30
1440x576	720x576	31.250	50.000	27.000			12, 64, 68	5, 5, 39
2560x720	1280x720	37.500	50.000	74.250			440, 40, 220	5, 5, 20
		45.000	60.000	74.250			110, 40, 220	5, 5, 20
3840x1080 (1)	1920x1080 (1)	28.125	50.000	74.250			528, 44, 148	4.5, 10, 30.5
		33.750	60.000	74.250			88, 44, 148	4.5, 10, 30.5
3840x1080	1920x1080	67.500	60.000	148.500			88, 44, 148	4, 5, 36
2560x1600	1280x1600	98.611	59.910	142.000	-		48, 32, 80	3, 10, 33
3840x2160	1920x2160	52.404	23.983	109.000	(*2)		48, 32, 80	3, 10, 12
		54.000	24.000	148.500	-	(*3)	638, 44, 148	8, 10, 72
		112.500	50.000	297.000	-		528, 44, 148	8, 10, 72
		133.293	59.988	277.250	(*2)		48, 32, 80	3, 10, 49
		135.000	60.000	297.000			88, 44, 148	8, 10, 72
		133.320	60.000	266.640	(*2)		8, 32, 40	48, 8, 6
4096x2160	2048x2160	52.515	23.957	142.000	(*2)		112, 216, 328	3, 10, 19
		52.423	23.992	115.750	(*2)		48, 32, 80	3, 10, 12
		54.000	24.000	148.500	-		510, 44, 148	8, 10, 72
		112.500	50.000	297.000	-		484, 44, 64	8, 10, 72
		133.265	59.975	294.250	(*2)		48, 32, 80	3, 10, 49
		133.320	60.000	283.704	(*2)		8, 32, 40	48, 8, 6
		135.000	60.000	297.000			44, 44, 64	8, 10, 72
3200x2400 (*5)	1600x2400	148.011	59.948	260.500	-	(*4)	48, 32, 80	3, 10, 56
3840x2400 (*5)	1920x2400	148.140	60.000	296.280	(*2)		8, 32, 40	55, 8, 6

- *1: Indicates multi input mode settings that allow image signal to be used
- *2: Since EDID is not supported, the setting has no effect (Normal recommended).
- *3: Only when the "Panel drive mode" is set to "4096x2160"
- *4: Only when the "Panel drive mode" is set to "4096x2400"
- *5: In the case of an image signal whose vertical resolution exceeds 2160, if the panel drive mode is set to "4096x2160", it will be processed as "no signal." Therefore, set the mode to "4096x2400."

●About blanking information

The following figure shows the structure of the blanking period that is inserted between image signal frames.



3-4 HDMI deep color compatibility table

●RGB444 and YCbCr444

Resolution (single terminal)	Frequency			8bit support	10bit support	12bit support
	Horizontal [kHz]	Vertical [Hz]	Dot clock [MHz]			
640x480	31.469	59.940	25.175			
720x480	31.469	59.940	27.000			
720x576	31.250	50.000	27.000			
1280x720	18.000	24.000	59.400			
	37.500	50.000	74.250			
	45.000	60.000	74.250			
1920x1080(1)	28.125	50.000	74.250			
	31.250	50.000	72.000			
	33.750	60.000	74.250			
1920x1080	27.000	24.000	74.250			
	56.250	50.000	148.500			
	67.500	60.000	148.500			
2560x1080	26.400	24.000	99.000			
	56.250	50.000	185.625		-	-
	66.000	60.000	198.000		-	-
3840x2160	54.000	24.000	297.000		(*7)	(*7)
	56.250	25.000	297.000		(*7)	(*7)
	67.500	30.000	297.000		(*7)	(*7)
	112.500	50.000	594.000	(*7)	-	-
	135.000	60.000	594.000	(*7)	-	-
4096x2160	54.000	24.000	297.000		(*7)	(*7)
	56.250	25.000	297.000		(*7)	(*7)
	67.500	30.000	297.000		(*7)	(*7)
	112.500	50.000	594.000	(*7)	-	-
	135.000	60.000	594.000	(*7)	-	-

●YCbCr420

Resolution (single terminal)	Frequency			8bit support	10bit support	12bit support
	Horizontal [kHz]	Vertical [Hz]	Dot clock [MHz]			
3840x2160	112.500	50.000	594.000		(*7)	(*7)
	135.000	60.000	594.000		(*7)	(*7)
4096x2160	112.500	50.000	594.000		(*7)	(*7)
	135.000	60.000	594.000		(*7)	(*7)

*7: Supported only when HDMI-1/HDMI-2 EDID mode is set to Wide bandwidth.

4. States of this product

4-1 States

This product is in one of six states.

State (*1)	Outline
No Power	No power is being supplied from outside. The projector does not operate at all.
Off (Standby)	Power is being supplied from outside. However, the circuit is only partially live and the projector itself is not active. Depending on the some functions settings, this status can be categorized into 4 modes.
Projection (On)	A status where the projector is used normally. Power is being supplied to the entire circuit. The light source is lit, and image is projected.
Light Off	Power is supplied to the entire circuit except panel circuit. The light source is unlit and the cooling fan is operating. Some action changes the projector to the projection state. However, the light source on time is the same as actual activation.
Error	Power is being from outside but the projector cannot be activated. To use the projector, action should be taken according to the contents of the error type.
Pre-warning High temperature	If the temperature becomes almost abnormal, the projector displays the warning of high temperature. .This state is cleared when the temperature goes down.
Pre-warning Air filter	When a given time elapses, a filter replacement warning is displayed. This state is cleared when the air filter counter is reset.

4-2 Type of Error

Each error state is defined as below.

Error name	Outline
Temperature abnormality	<ul style="list-style-type: none">• The internal temperature is abnormally high.• The outside air temperature is higher than specified.• Malfunction of thermal sensor
Faulty light source	<ul style="list-style-type: none">• Light source unit failure• Fluorescent material wheel error
Faulty air filter unit	<ul style="list-style-type: none">• The air filter cover is not closed.
Faulty cooling fan	<ul style="list-style-type: none">• The cooling fan does not operate normally.
Faulty power supply	<ul style="list-style-type: none">• The supply voltage is abnormal.• Rear exterior is not mounted properly.• Other abnormal is occurred.
Faulty lens shift connector	<ul style="list-style-type: none">• Lens shift connector is not connected (It is necessary to detect the lens shift position)

** Each error state may be caused by a fault other than the above.

5. Wireless specification

5-1 States

Transmission standards	IEEE 802.11b IEEE 802.11g IEEE 802.11n
Transmission distance	About 25 m When no electric wave interference from the perimeter and when clear viewing to the access point
Wi-Fi certification	Acquired
WPS	Support: Push button method (PBC), PIN code method (PIN)
Encryption	Open WEP WPA-PSK TKIP WPA-PSK AES WPA2-PSK TKIP WPA2-PSK AES
Connection mode	Infrastructure mode PjAP mode

5-2 Connection modes and Functions

Mode	Infrastructure	PjAP
Connection method	WPS (PBC, PIN)/ manual	Manual
Usable	User command (*1) Control with the browser Mail	User command (*1) Control with the browser
Not usable	SNMP PJLink / AMX / Crestron RoomView Firmware update	Mail SNMP PJLink/AMX/Crestron RoomView Firmware update

*1: The power-on command cannot be used over a wireless connection.

5-2 Auto Search

This product automatically searches for connection destinations and establishes connection under the following conditions.

- When the wireless network function is turned on.
- When the projector is started with the wireless network function turned on.

Mode	Infrastructure	PjAP
connection destinations	The last connection destination and earlier destinations (*2)	The last connection destination

*2: This document omits the details of the search scope and procedure.

6. Accessories

Main Supplied Accessories	Remote Control RS-RC05	Power supply: DC 3.0V (with two AA battery) Communication range: approx. 8 m within ± 25 degrees of the receiver Allows for wireline connection (*1)
	Power code	Connects the unit to a power source.
Optional Parts	Ceiling Attachment RS-CL15 (*2)	This is used for ceiling mount.
	Ceiling Attachment Arm RS-CL17 (*3)	This is used for ceiling mount.
	Ceiling Pipe 400-600mm RS-CL08	The RS-CL08 is used in combination with the RS-CL15 to suspend the projector at a distance below the ceiling.
	Ceiling Pipe 600-1000mm RS-CL09	The RS-CL09 is used in combination with the RS-CL15 to suspend the projector at a distance below the ceiling.
	Remote Control RS-RC04	Power supply: DC 3.0V (with two AAA battery) Communication range: approx. 8 m within ± 25 degrees of the receiver
	Remote Control RS-RC05	Same as the supplied remote.
Replacement Parts	Replacement air filter RS-FL04	This filter is installed at the air intake to prevent dust from entering.

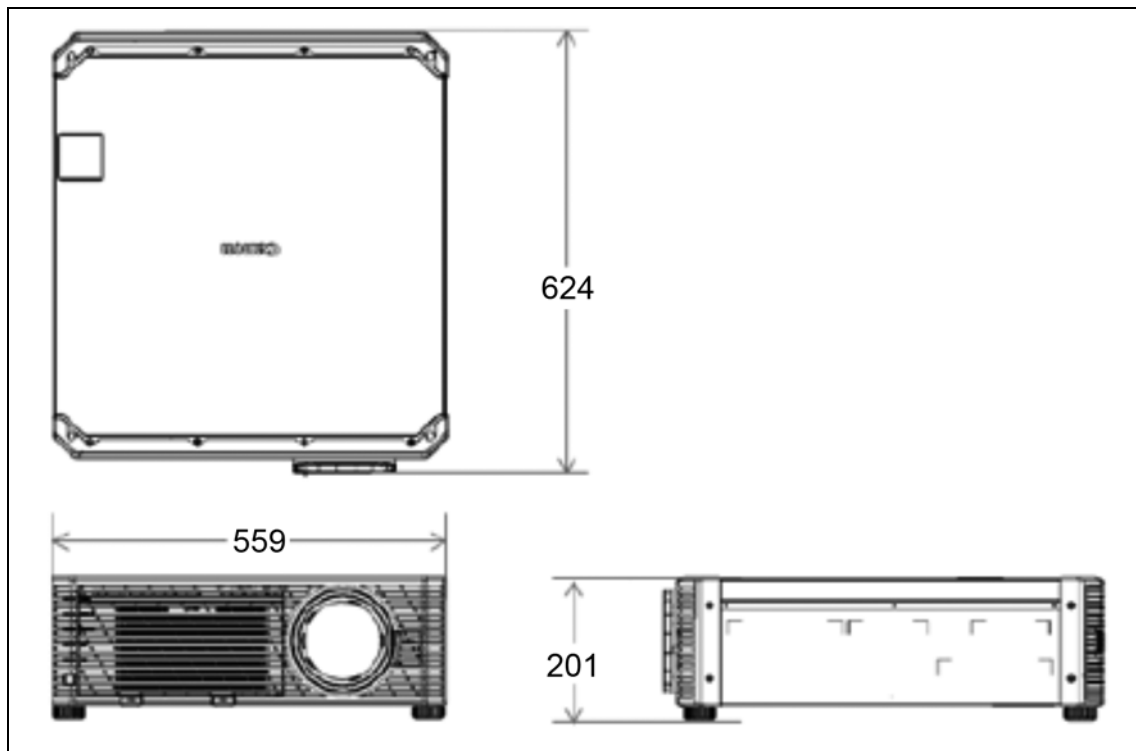
*1: Uses a commercially available audio cable (3.5Φ stereo mini-plug) for cable connection.

*2: Do not attach a different model's attachment. The size and the weight of a product are different from other modes. Consult a building professional before attempting to mount the projector to a ceiling.

*3: RS-CL15 and RS-CL17 are used together to mount the 4K600STZ on a ceiling.

7. Product Appearance

7-1 Outline Drawings



- Dimensions:

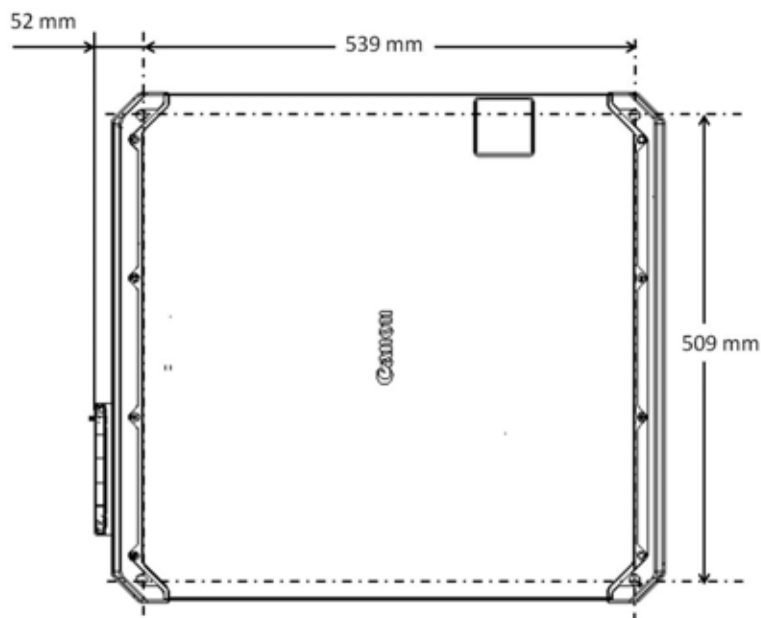
W: 559.0 mm, H: 201.0 mm, D: 624.0 mm (22.0 x 7.9 x 24.6 inch)

(Not including protrusion --- W: 555.0 mm, H: 177.0 mm, D: 605.0 mm (21.9 x 7.0 x 23.8 inch))

Lens center: 146.5 mm from the left side ('front' is the side where lens is attached.)

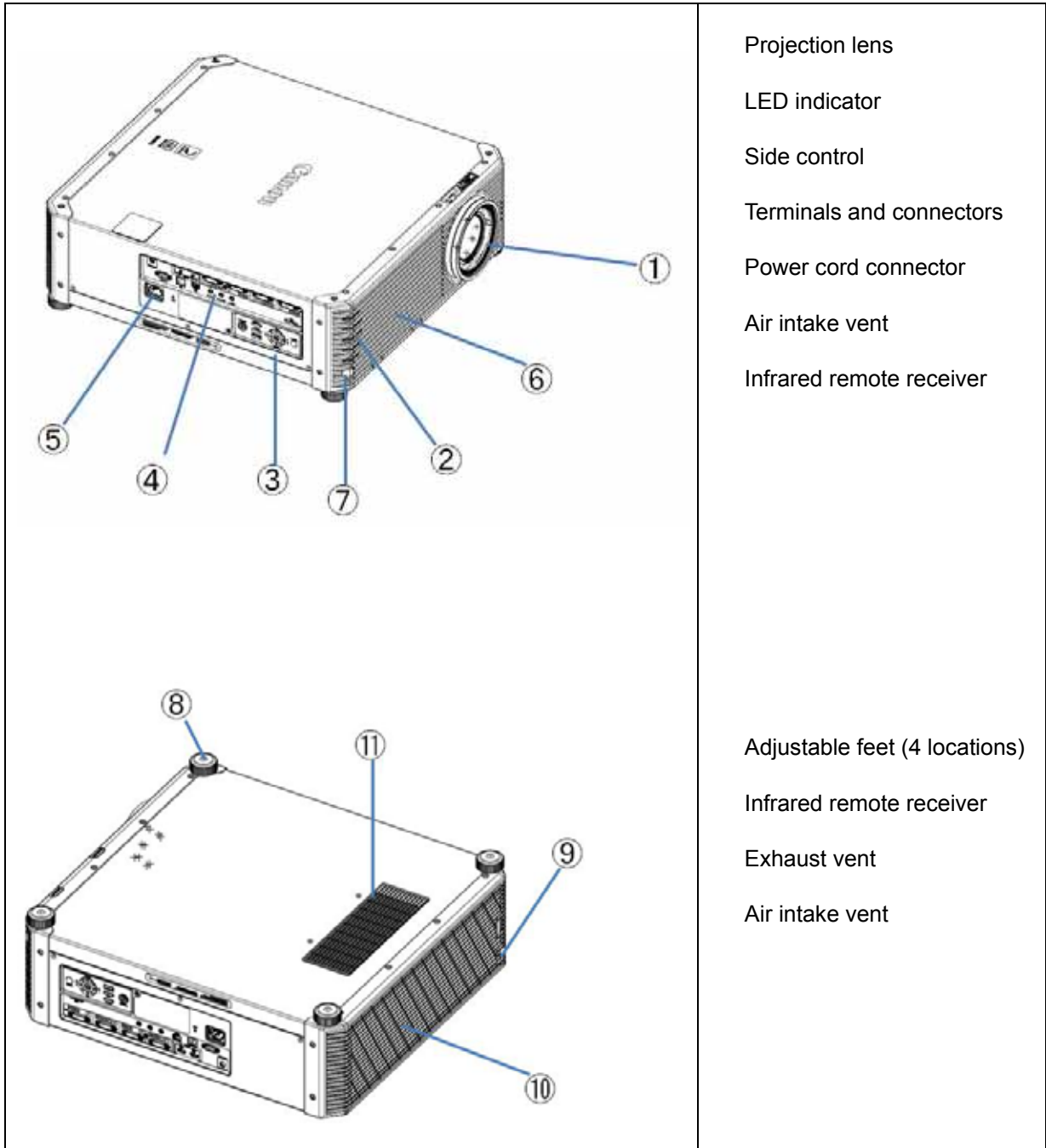
111.0 mm from the installed surface

- Weight: 26 kg (57 lbs)

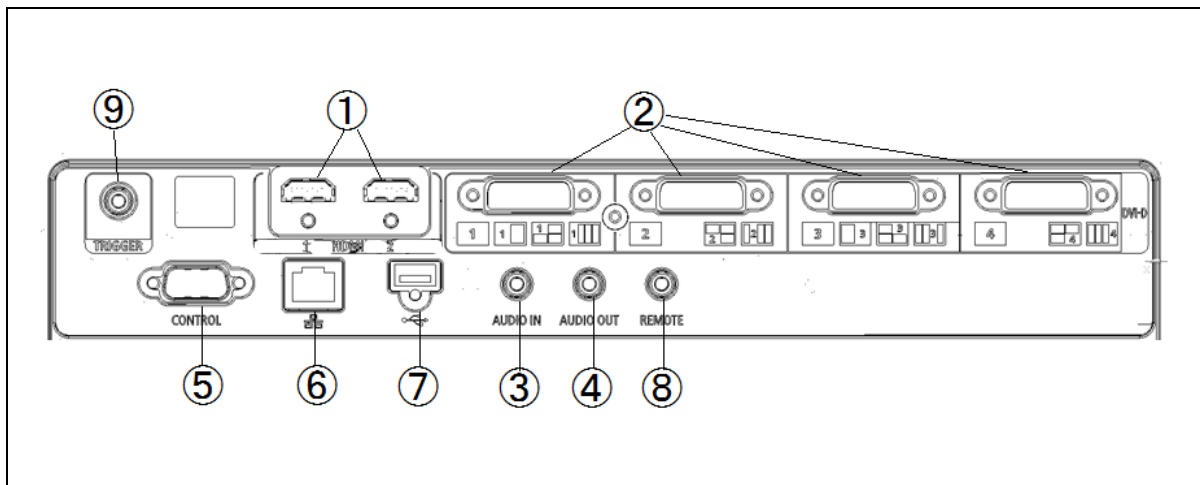


- Screw holes for ceiling mount. 4 (M6)

7-2 Part Names



7-3 Terminals



Type	Terminal	Signal
Image input	HDMI (1)	Digital PC/Digital video
	HDMI (2)	Digital PC/Digital video
	DVI-D (1)	Digital PC
	DVI-D (2)	Digital PC
	DVI-D (3)	Digital PC
Audio input	Mini jack	Stereo audio
	Mini jack	Stereo audio
Control	Dsub9	RS-232C connection
	RJ-45	1000BASE-T/100BASE-TX/10BASE-T
	USB type A	USB connection
	Mini jack	Wired remote control connection
	Mini jack	Trigger output

Wireline connection for the remote

The unit can be operated by a wired remote RS-RC05 (option).

When a cable is connected to the unit's remote terminal, the unit switches to a mode in which no infrared signal is accepted, so that the unit would not respond to other remote.

In addition, when a cable is connected to the wireline connection terminal on the remote, the remote also switches to a mode in which no infrared signal is transmitted.

When the remote is wired, the user does not have to make the channel settings on the unit or the remote.

**Note:

If the cable connecting the unit and the remote breaks, the unit will become inoperable from any remote.

Trigger output






This terminal supplies 12 VDC for driving switches on external equipment.

The supply timing is selected using the following menu.

System settings menu > Other settings > Trigger out

7-4 Indicators and Control buttons

Illuminate to indicate the projector state.

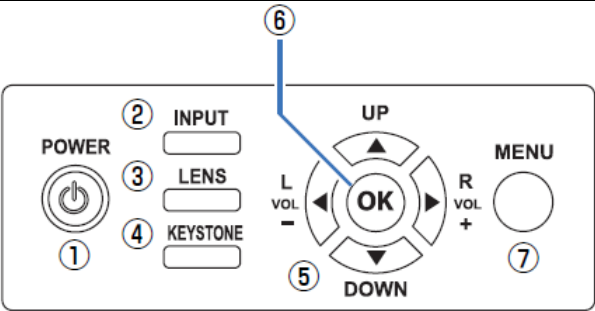
 POWER	POWER ON (Green)	Lit	Projection state
		Blinking	Initializing (Off → On), Light off state
		Off	Other than above
 STAND BY	STAND BY (Red)	Lit	Off state
		Blinking	Shutting down (On → Off) , Light off state
		Off	Other than above
 WARNING	WARNING (Red)	Lit	Error state
		Blinking	Error state
		Off	No error state
 LIGHT	LIGHT (Orange)	Lit	Light source error (*1)
		Blinking	(Unavailable)
		Off	No error state
 TEMP	TEMP (Red)	Lit	Temperature error
		Blinking	When a temperature error condition is imminent
		Off	Other than above

By the combination of indicator states, various other states are indicated.

For details, refer to the user's manual.

*1: [Warning] lights together.

Control the projector by button operation.

	
POWER	Turns the power supply on or off.
INPUT	Displays a select screen of input signal for projection.
LENS	Changes the display to the focus, marginal focus (when activated), zoom, or lens shift adjustment screen each time the button is pressed.
KEYSTONE	Displays the adjustment screen of H-V keystone or Corner adjustment
Direction / VOL	Adjust the volume. (Right and left only) Move the pointer vertically or horizontally on a menu screen or other
OK	Confirms a state selected on a menu screen or other.
MENU	Displays a menu screen.

7-5 Remote Control

The supplied remote RS-RC05 can be used either through wired or wireless (infrared signal) connection.



Same operations as the unit operations

[POWER]	Power (On/Off)
[INPUT]	Changing of input signal
[KEystone]	H-V keystone/Corner adjustment
[MENU]	Menu
[←] [→] [↑] [↓]	Direction (Moving)
[VOL (+ -)]	Volume adjustment
[OK]	OK

Operations also available from the menu screen on the unit

[ASPECT]	Aspect selection
[TEST PATTERN]	Test pattern
[IMAGE]	Image mode selection

Operations available only on the remote

[DIGITAL]	Changing of DVI input
[HDMI]	Changing of HDMI input
[EXIT]	Clears a temporary condition Closes menu screen
[FOCUS]	Focus/Marginal focus
[ZOOM]	Zoom adjustment
[SHIFT]	Lens shift adjustment
[FREEZE]	Freeze
[BLANK]	Blank
[MUTE]	Mute
[1] ~ [9]	Input numbers
[Ch]	Channel setting of remote

Not used

[AUTO PC]	(for analog PC input)
[ANALOG]	(Unavailable function)
[COMPONENT]	(Unused signal)
[D.ZOOM]	(Unavailable function)
[Fn]	(Unavailable function)

Channel settings on the remote

Ch1	Press and hold [Ch] and [1] buttons for 3 seconds at the same time
Ch2	Press and hold [Ch] and [2] buttons for 3 seconds at the same time
Ch3	Press and hold [Ch] and [3] buttons for 3 seconds at the same time
Ch4	Press and hold [Ch] and [4] buttons for 3 seconds at the same time
Independent	Press and hold [Ch] and [0] buttons for 3 seconds at the same time

A remote set to "Independent" can control any projector ignoring the projectors' channel settings.

8. Precautions For Use

Do not look into the projection lens while it is projecting.

The projector emits very bright light, which may damage your vision.

Do not place objects in front of the lens while projecting.

Objects may heat up and burn if exposed to the concentrated light of the projector for long periods.

Do not block the vent (intake air & exhaust) while the projector is running.

Allowing heat to build up inside the unit may lead to malfunctions or risk of fire.

In highlands with low atmospheric pressure (*1), use with the following setting.

To prevent internal overheat, set the “High altitude” function “On”.

*1: 2300m or more above sea level

In addition to the precautions to be taken during normal usage, be careful not to accidentally expose yourself directly to the laser beam.

Safety measures are taken to prevent laser oscillations from occurring due to parts exchange in this product. However, in addition to consulting your retailer when exchanging parts, avoid direct projection from the laser (*2) when in use.

*2: The following table shows the Japanese standard that the product complies with and the international standard that the Japanese standard is based on.

Japan	JIS C6802	Safety of laser products	Class 1 laser product
international	IEC60825-1	Safety of laser products	Class 1 laser product