

Product Information Letter

Data Projector

VPL-SX535 / SW535

No. PJ-313

Visual Presentation Solutions Business Div.
Professional Solutions Group
Professional, Device & Solutions Group
Sony corporation



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- BrightEra Panel

Product Overview

- **Concept**
 - Easy installation , Ultra short throw distance to minimize glare
- **Application**
 - Middle size room , Mainly for education market
- **Line up**

Model	Specification	Ex-Factory
VPL-SX535	3,000lm, XGA, TR=0.34-0.36:1	FY11 Dec.
VPL-SW535	3,000lm, WXGA, TR=0.27~0.29:1 , HDMI	FY11 Dec.

- **Sales points**
 - **Better TCO:**
 - Competitive pricing
 - Low TCO , Longest lamp life and filter 6,000h
 - **Installation friendly:**
 - Optical lens shift & zoom for easy adjustment
 - Supplied wall mount
 - **ECO friendly:**
 - ECO button
 - New Lamp dimming function for school use with new lamp control
 - New Picture muting

Sales Points

- **Ultra Short throw distance**

- Ultra short throw distance to minimize glare especially for education usage
 - ✓ Throw ratio: 0.34:1(SX535) 0.27:1(SW535)

Sony's advantage

- **Installation friendly**

- Optical Lens Shift & Zoom for easy adjustment
 - ✓ Optical Zoom: x1.05, Shift: 0.69V±4.6% 0H±3.4%(SX535) ,0.65V±4.4% 0H±2.7%(SW535) , Digital zoom & shrink
- Supplied simple wall mount

Sony unique

- **No.1 Low TCO** (Total Cost of Ownership)

- Low running cost
 - ✓ Lamp replacement time : 6000* hours
 - ✓ Filter cleaning time : 6000* hours (synchronized)

Sony's advantage

Sony's advantage

- **ECO friendly (Ecology, Green)**

- New ECO friendly function
 - ✓ Lamp dimming mode with new lamp control technology
 - ✓ New picture muting function with low power consumption
- “ECO button” with 3 lamp mode
 - ✓ Easy switching to low power consumption mode

Sony unique

Sony unique

- **Rich features**

- Brighter 3,000lm for both WXGA and XGA models
- Rich terminals , RJ-45, HDMI (only for SW535) , S-Video input

Sony's advantage

* They vary depending on the environment or how the projector is used.

Ultra Short throw distance

● Reduce glare and shadow

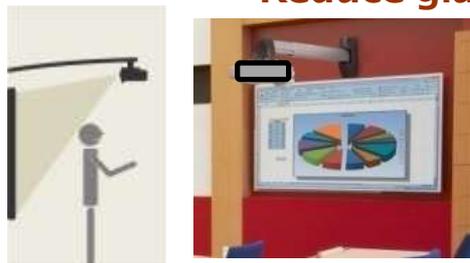
-Ultra Short Throw reduces glare from its light source, offering it comfortable use for the teacher and students.

And their shadow are minimized with this capability, making it easy to see the screen.

Normal Throw



Short Throw



Reduce glare for teacher and students

Ultra Short Throw



Screen size : Throw distance [m] ([inch.])

EX100 series (XGA) Ceiling mount condition

100" : 2.82-3.65 m (111-144inch)

80" : 2.25-2.92 m (89-115 inch)

EW130 series (WXGA) Ceiling mount condition

100" : 2.98-3.87 m(118-152inch)

80" : 2.38-3.09m (94-121inchi)

TR : 1.40~1.82 : 1

Screen size : Throw distance [m] ([inch.])

SX125 (XGA)

100" : 1.26m (50inch)

80" : 1.00m (39inch)

SW125 (WXGA)

100" : 1.34m (53inch)

80" : 1.06m (42inch)

TR : 0.62 : 1

Screen size : Throw distance [m] ([inch.])*

SX535 (XGA)

100" : 0.40-41m (16inch)

80" : 0.26-27m (10inch)

SW535 (WXGA)

100" : 0.29-0.30m (12inch)

80" : 0.17-0.18m (7inch)

TR : 0.34~0.36 : 1(XGA)
0.27~0.29 : 1(WXGA)

Long lasting lamp

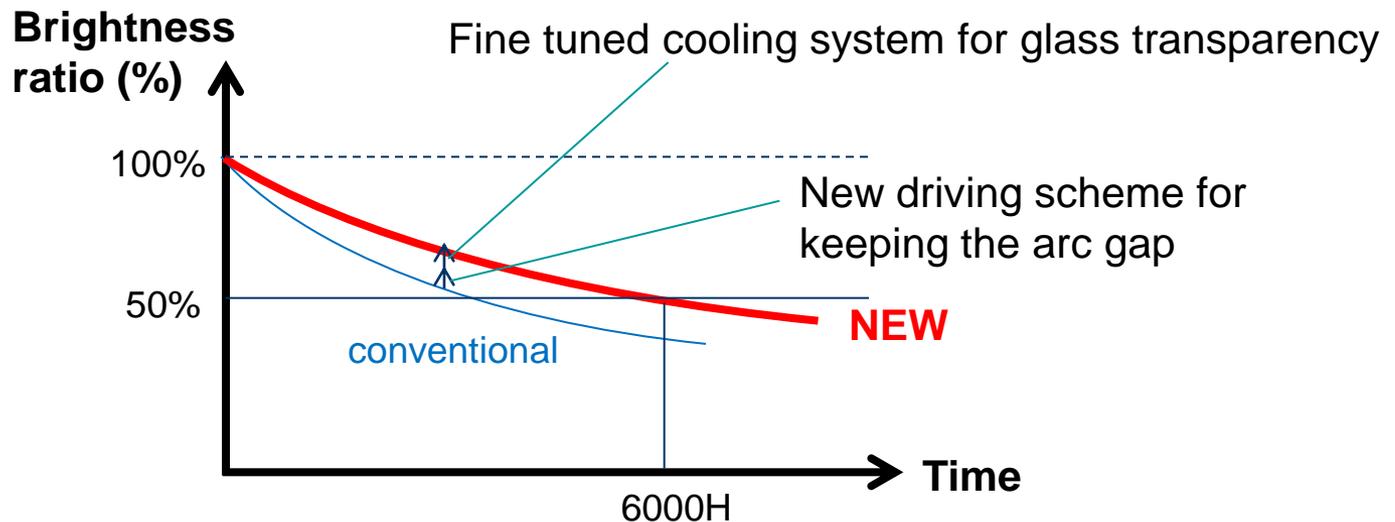
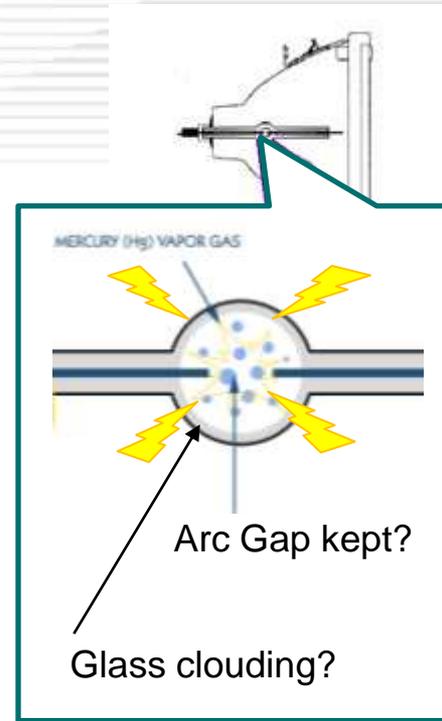
Long lasting lamp is realized by the following technologies.

- **Progress of driver circuit**

Expanding lamp arc gap causes brightness degradation. New driving scheme (by Phillips) reduces this gap expansion.

- **New fine-tuned cooling system** **Sony unique**

Clouded glass also causes brightness degradation. New cooling system allows uniformity in the temperature reduction of the glass bulb which prevents the glass from clouding.

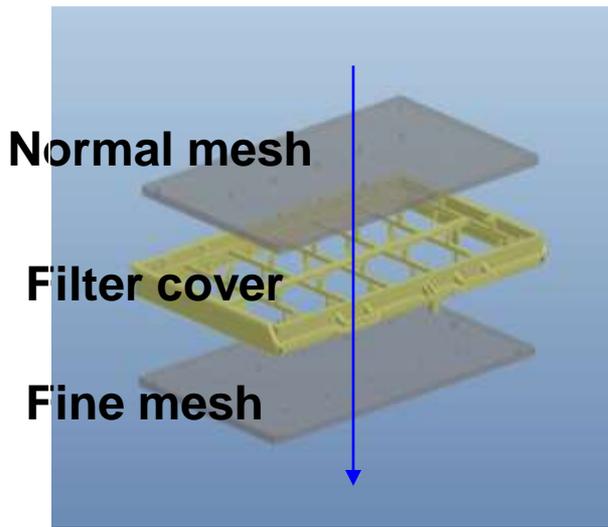


Dust protection

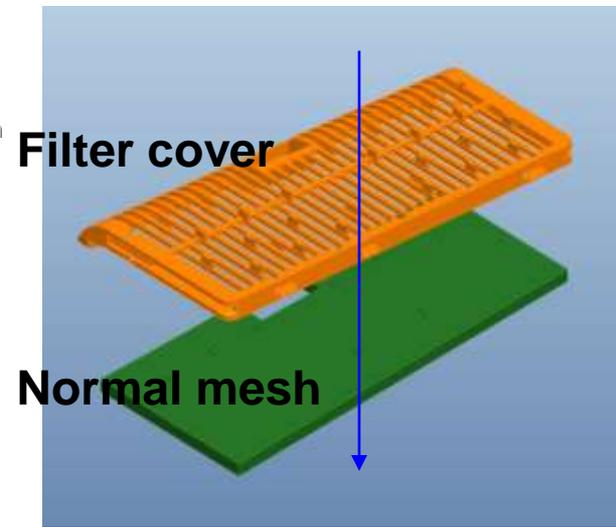
- **New Filter System**

- To extend the cleaning cycle and efficiently trap various dusts, the system is composed of follows;
 - ✓ **Normal mesh filter + Fine mesh filter**

VPL-SX535/SW535



VPL-EX100 series



Optical zoom & shift for easy installation

VOD feature

Competitors don't have, **Sony ONLY.**

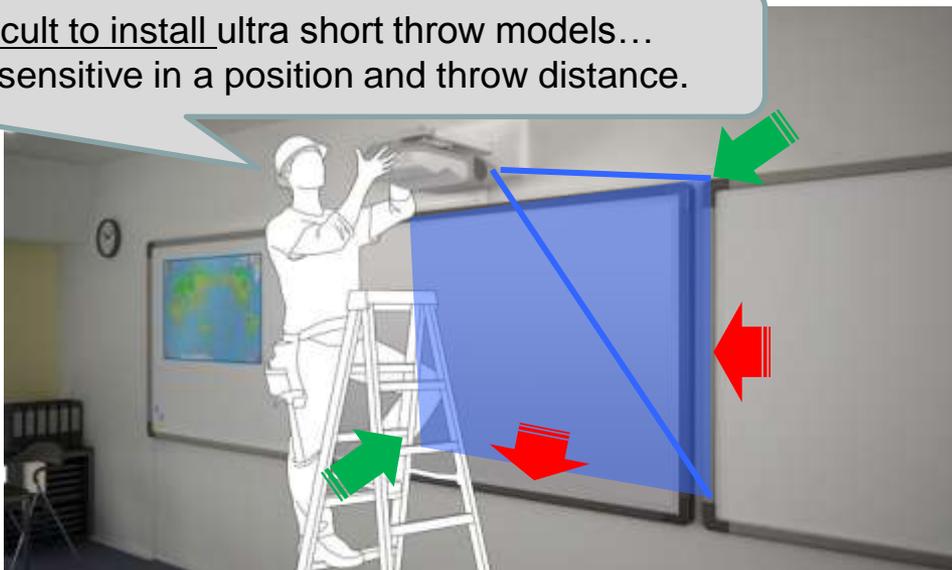
Spider with "Optical" Zoom & Shift function will offer ,,,

"Easy installation" by Installer

"Easy adjustment" by User

"Optical" Zoom: x1.05 & Shift: $0.69V \pm 4.6\%$ $0H \pm 3.4\%$ (SX535) ,
 $0.65V \pm 4.4\%$ $0H \pm 2.7\%$ (SW535)

It's difficult to install ultra short throw models...
It is very sensitive in a position and throw distance.



If they can use lens zoom & shift function, they can save time.

Dealers can save labor cost !



Optical zoom & shift for easy installation

Setting step

Sony
VPL-SX535/SW535

Conventional

1) Decide screen size

2) Wall plate position

3) Forward/backward slide

4) Set PJ main unit

5) Vertical tilt

6) Horizontal rotation

7) Horizontal roll

8) Vertical slide

9) Horizontal slide

10) Forward/backward slide

Setting for each screen size

Projection screen adjustment (correct trapezoid)

Projection screen adjustment (correct position and size)

with Wall mount



with Wall mount



Re-adjustment

with Wall mount



with Wall mount



Easy & one way !!

with optical Zoom & Shift



with Wall mount



Lamp Dimming

◆Function outline

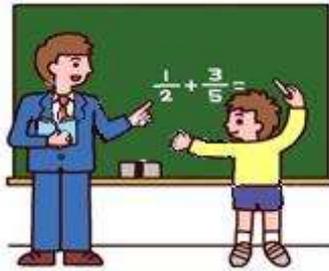
New models have new “Auto power saving” functions with current “power saving” function. Auto power saving functions have new “Lamp dimming” mode. Lamp dimming model work with no-change input signal (static image) that is condition in no-use projector.



ECO in use

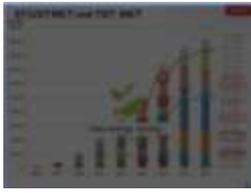
About 10%-15% gradually dimming that user cannot recognize

When input signal is not changed for 10 second, shift into this mode.



ECO in no-use

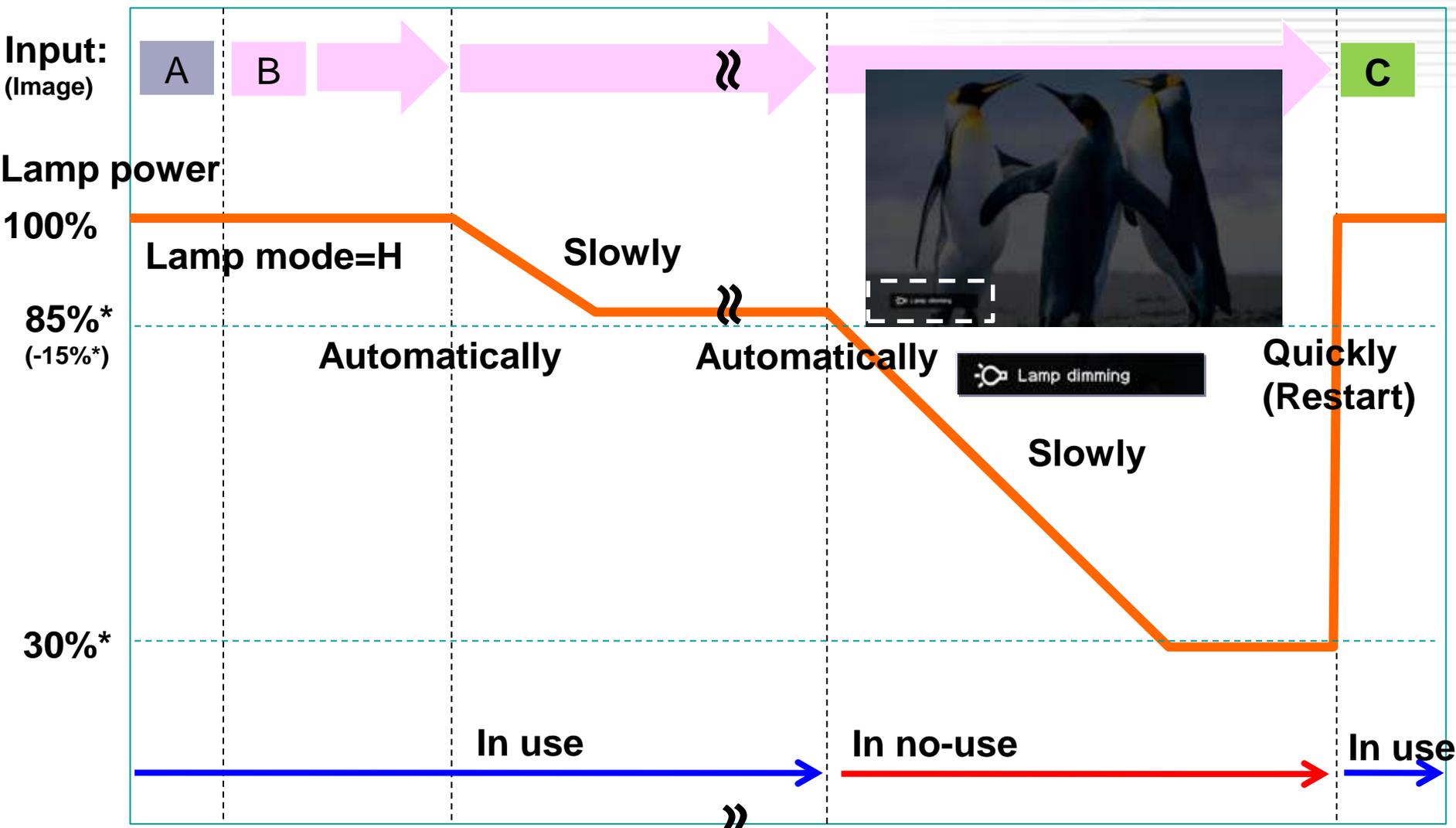
Dimming to about 30% lamp power



When input signal is not changed for 5,10,15 20 min, shift into this mode.

Automatically ! (=Detect input signal)
Concentrate lesson (=Slow dimming)

Lamp dimming Scheme



* Approx.

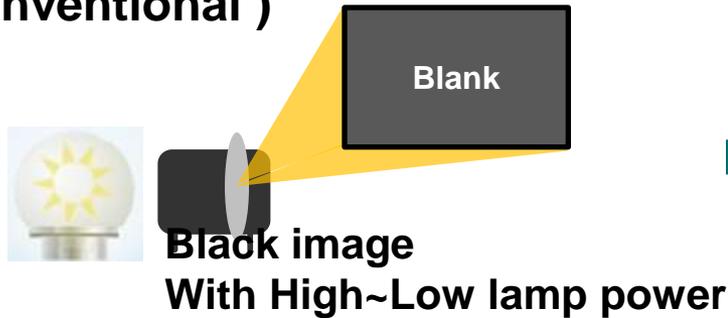
5/10/15/20min.
& Demo

New Picuture Muting

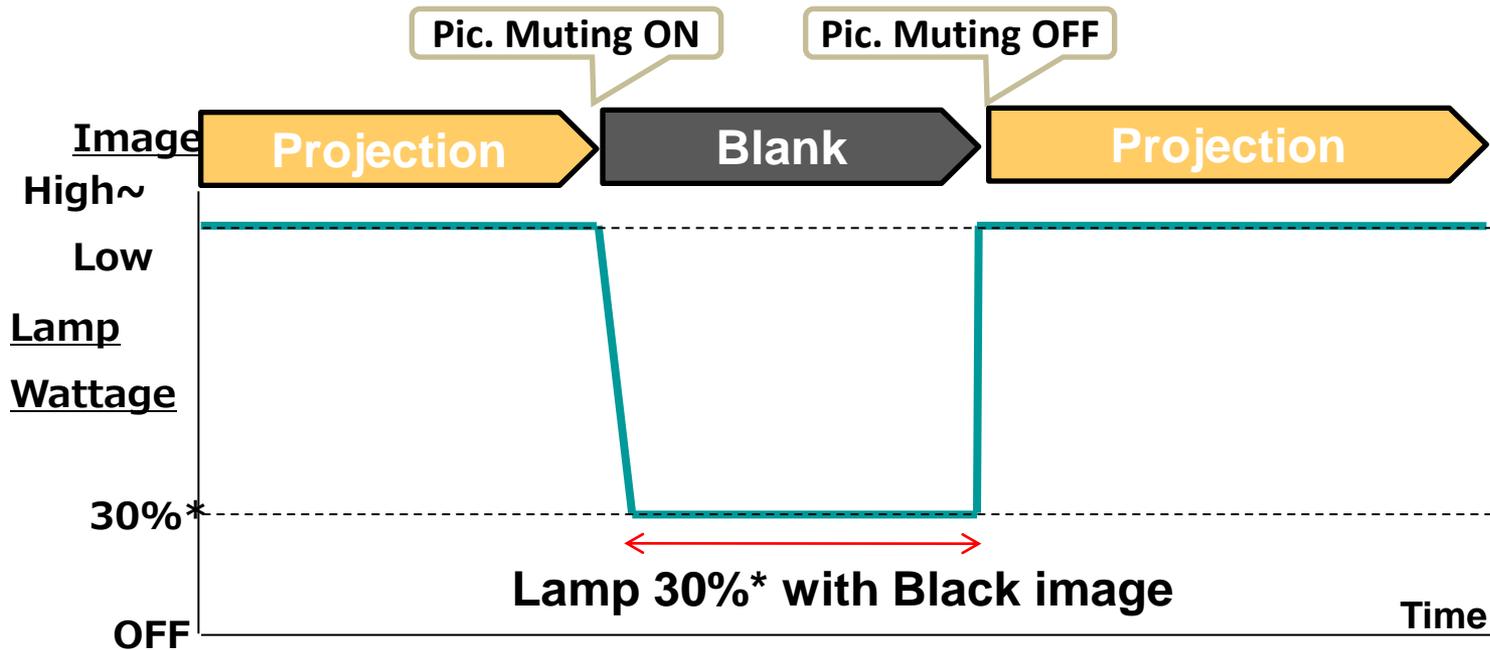
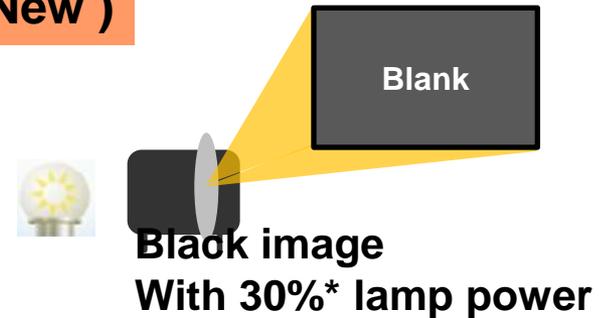
- **Blank image (Muting) with low power consumption**

-New picture muting function allow blank black image projection with low power consumption using lamp control technology.

Conventional)



New)



* Approx.

ECO Friendly

- **Long lasting lamp for reducing environmental burdens**

- 6000 hours recommended replacement time = 20% longer than conventional model
- This 6000 hours cover approx. 7.7 years in a school setting. (784hr/year, UK)*

- **Lower power consumption reduces CO2 and running costs**

With “ECO MODE = ECO”

- Approx. -30% lamp power saving (lamp mode : Low) and Lamp diming function
- Automatic turn-off after 10 min. no-inputs by “Power Saving Mode”
- Less than 0.3 W in standby mode (better than Lot6 2nd compliance: 0.5W)

=> Approx. 42 % power reduction in UK classroom example

- **ECO Mode & Function**

ECO mode key for easy switching to ECO setting

3 lamp mode

Lamp Dimming function

New Picture Muting



* Data from Future Source

3 Lamp Mode

- **SX535/SW535 have 3 lamp modes, “High/Standard/Low”.**

Brightness	
Lamp mode	High
	Standard

Conventional

Brightness		
Lamp mode	High	3000lm
	Standard	2400lm
	Low	2000lm

SX535/SW535

The benefits of “Low” Mode

- Lamp’s longer replacement time up to 6000hours.
- Longer filter cleaning cycle up to 6000hours.

NOTE

Brightness is darkened at low mode.

Usage of ECO MODE key

“ECO MODE” key for easy switching between high performance and ECO.

Bright room



ECO Mode : “User” (or default)

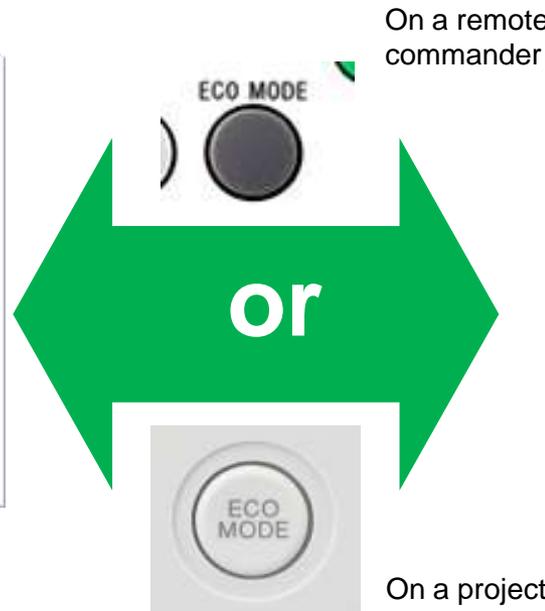
Higher brightness projection in a brighter environment (ex. watching presentation)

Dark room



ECO Mode : “ECO”

Low brightness power saving projection in a darker environment (ex. watching Videos, etc)

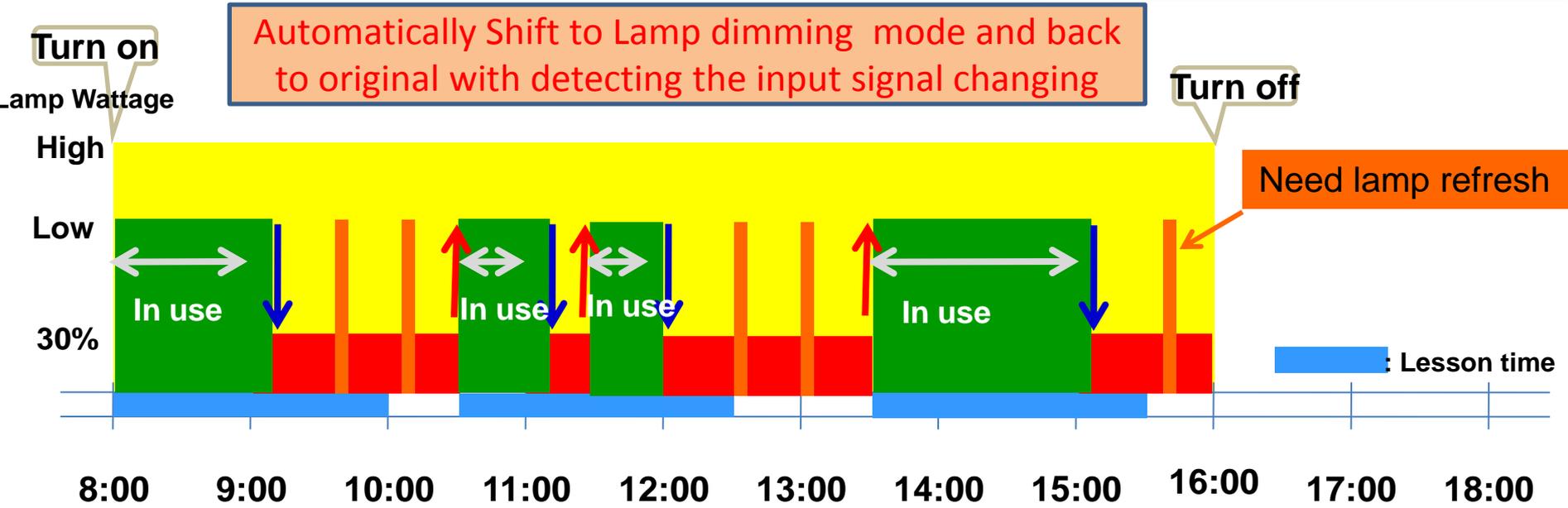


Just pushing direct Key!

Lower power consumption

Lesson time date from
Future Source
Consulting

- Example of classroom in UK



[Assumption]

Teacher turns on a PJ and IT manager turns off all PJ at the end of the day.

High performance

Lamp mode : HIGH
 Power saving mode : OFF
 Standby mode : STANDARD
 Lamp dimming mode : OFF

ECO mode :
 "ECO"



Lamp mode : LOW
 Power saving mode : STANDBY
 Standby mode : LOW

Lamp dimming mode : lamp dimming(ON)

Approx.
 42%

* In case of SX535

Convenient terminals SX535

*** For the SX535**

Various Video and Audio inputs

S-Video input



Not supplied



Legacy Video equipment with S-Video

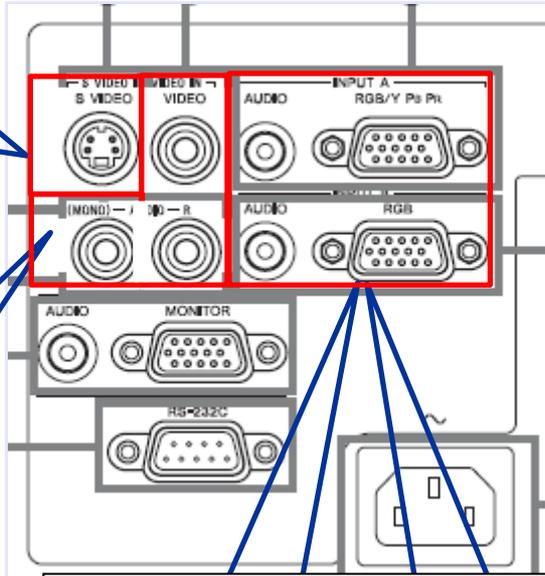
Composite Video / Audio input



Not supplied



Video equipment



RGB /Component / Audio input



Supplied

Not supplied

Or



Not supplied



Computer



Video equipment with Component video

The switcher for each audio inputs is not needed.

*Models are just image.

Please see the page "Functions /Audio Switcher Usage"

Convenient terminals SW535

*** For the SW535**

Various Video and Audio inputs

S-Video input

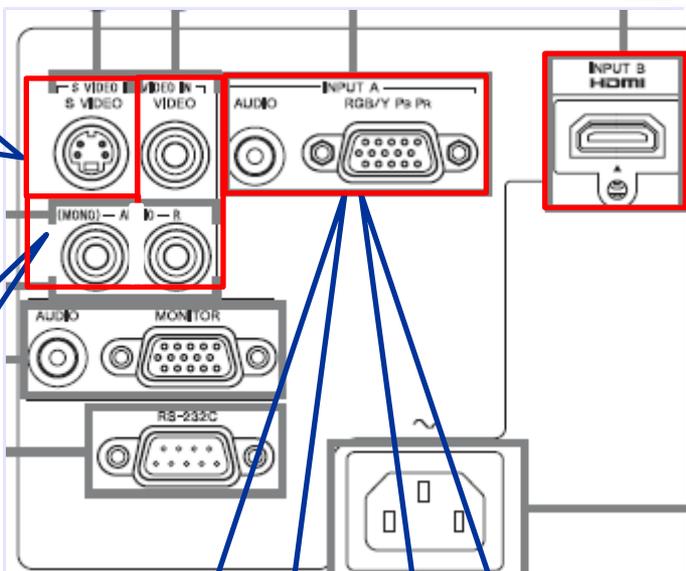


Legacy Video equipment with S-Video

Composite Video / Audio input



Video equipment



RGB /Component / Audio input



Computer



Video equipment with Component video



HDMI input



Computer or Video equipment with HDMI

The switcher for each audio inputs is not needed.

**Models are just image.*

Please see the page "Functions /Audio Switcher Usage"

Performance

- Specification table
- High Image Quality

Specification table (1/5)

Some terminologies have been changed under the policy of ISO

Model		VPL-SX535	VPL-SW535
Projection system		3LCD system	3LCD system
Luminous flux	High	3000lm	3000lm
	Standard	2,400 lm	2,400 lm
	Low	2,000 lm	2,000 lm
Contrast ratio *3		2500:1	2400:1
Display elements		LCD 0.63" x 3	LCD 0.75" x 3
Micro Lens		Yes	Yes
Effective picture elements		2,359,296 pixels	3,072,000 pixels
Resolution		XGA (1024x768)	WXGA(1280x800)
Filter		New Filter System	New Filter System
Access		Top(Slide)	Top(Slide)
Life *2		Same as Lamp life	Same as Lamp life
Dust protect		Filter	Filter
Optical Zoom		Manual	Manual
Zoom ratio		x 1.05	x 1.05
Digital Zoom			
Zoom ratio		x4	x4
Throw ratio		0.34~0.36:1	0.27~0.29:1
F		1.78-1.83	1.78-1.83
f		4.92~5.18mm	4.92~5.18mm
Screen size		60-110	70-130
OP lens		No	No
Lens shift		0.69V	0.65V
Fixed V shift		Manual	Manual
V		Manual	Manual
Max.range		±4.6%	±4.4%
H		Manual	Manual
Max.range		±3.4%	±2.7%

*2: The figures are approximate. They vary depending on the environment or how the projector is used.
Sony cannot guarantee them.

*3: This value is average with lamp dimming. check page "High Contrast Ratio"

Specification table (2/5)

Some terminologies have been changed under the policy of ISO

Model		VPL-SX535	VPL-SW535	
*4	Keystone correction	V	Manual	
		Degrees	±5	
	H	No	No	
		Degrees	-	
Light source	Type[W]	215 W	215 W	
	#	1	1	
	Lamp Life	High [h]	3,000 h	3,000 h
		Standard[h]	4,500 h	4,500 h
Low [h]		6,000 h	6,000 h	
*5	Fan noise	High [dB]	35dB	
		Standard[dB]	32dB	
		Low [dB]	28dB	
Operating temp.	Degrees C	0-40	0-40	
	Degrees F	32-104	32-104	
Storage Temp.	Degrees C	-20-60	-20-60	
	Degrees F	-4-120	-4-120	
Operating Humidity	%	35-85	35-85	
Storage Humidity	%	10-90	10-90	
Ventilation	In / Ex	Side	Side	
Operating angle		0-15°	0-15°	
Power requirements		AC 100-240V, 3.6-1.4A, 50/60Hz	AC 100-240V, 3.3-1.2A, 50/60Hz	
Power consump.	High [W]	100-120V	310 W	
		220-240V	300 W	
	Standby	Standard [W] 100-120V	8.0 W	
		Low [W]100-120V	0.3 W	
		Standard [W] 220-240V	8.0 W	
		Low [W]220-240V	0.3 W	
Heat Dissipation	100V	1,057 BTU		
	240V	1,023 BTU		

*4: Keystone correction is certain within this specification. Depend on resolution.

The picture quality may deteriorate when the V Keystone function is used for it is an electrical correction.

*5: Confidential and internal use only.

Specification table (3/5)

Some terminologies have been changed under the policy of ISO

Model		VPL-SX535	VPL-SW535	
Acceptable Computer Signal		fH	14-93KHZ	
		fV	47-93Hz	
		Max.	UXGA 1600x1200 fV:60Hz	
Acceptable Video Signal		Video (Composite), 15k (480/60i, 575/50i), DTV (480p/60p, 575/50p, 720/60p, 720/50p, 1080/60i, 1080/50i),		
Terminals	Input	D-sub 15	2	1
		Digital	No	1(HDMI)
		Audio (RCA)	1	1
		Audio (3.5mini)	2	1
		Composite Video (RCA)	1	1
		S-Video	1	1
		Component	Shared with D-sub 15	Shared with D-sub 15
	Output	D-sub 15	1	1
		Audio (3.5mini) *6	1 (VAO:Stereo)	1 (VAO:Stereo)
	Network & Control	RS-232C (RS-422)	D-sub 9pin(male)	D-sub 9pin(male)
RJ-45		Yes	Yes	
Speaker	[W]	1		
	System	Mono		
Network etc	Control/info. (Protocol)		Yes	
	SDCP(PJ Talk2)		Yes	
	PJ Link		Yes	
	SNMP		Yes	
	SDAP(Advertisement)		Yes	
	AMX DDDP		Yes	
	Web control(HTTP)		IE 6 / 7 / 8	
E-Mail Report(SMTP)		Yes		
Security fuction	Security bar		Yes	
	PIN code		Yes	
	Key protect		Yes	
Quick Functions	Quick re-start(new)		Yes	
	Direct Power		On/Off	

*6: Works as audio switcher function. From current channel only. Not available in standby.

Specification table (4/5)

Some terminologies have been changed under the policy of ISO

Model		VPL-SX535	VPL-SW535
Unique features		ECO mode, Lamp Dimming, New picture muting, Quick Re-start,Digital Shrink	
Other functions	D. Zoom	Yes	
	D. Shrink	Yes	
	Freeze	Yes	
	Audio muting	Yes	
	Picture muting	YES(New pic. muting)	
	Auto Input Search (AIS)	Yes(Input palette with AIS)	
	Smart APA(Auto Pixel Alignment)	Yes	
	Picture mode	Dynamic/Standard/Game/Living/Cinema/Presentation	
	Lamp Dimming	Yes	
	Lamp mode	High / Standard / Low	
	D. Keystone (V)	Yes	
	Kenginton Lock	Yes	
	Control Panel Lock	Yes	
	Password protection	Yes	
	Metal (Security) Bar	Yes	
	3D Gamma Correction	Yes (12bit)	
	Film Mode	Yes	
	Direct Power ON/OFF	Yes	
	OFF&GO	Yes	
	HDCP for Digital Interface	No	Yes
Lamp access	Top		
Filter access	Side		
Closed caption	Yes		
ECO mode	Yes		
Image flip	HV/H/V/Off		

High Image Quality

● High Color Reproduction by 3LCD

- Thanks to 3LCD technology, this model has very good color reproduction comparing to 1-chip DLP models. (Please see 3LCD panel system pages.)

● High resolution

- XGA

Three super-high-aperture 0.63-inch XGA panels with approximately 790,000 effective pixels, produce a resolution of 1024 × 768 dots (horizontal/vertical) for RGB input, and 750 horizontal TV lines for video input.

- WXGA

Three super-high-aperture 0.75-inch WXGA panels with approximately 1,024,000 effective pixels, produce a resolution of 1280 × 800 dots (horizontal/vertical) for RGB input, and 750 horizontal TV lines for video input.

● High Contrast ratio by BrightEra

- The highest contrast specification in this class. SX535: **2,500:1** / SW535: **2,400:1**

● Multi Optimization of Image

- Users can optimize projection image using functions of “Film mode” and “Picture mode”.

● Circuits for High Image Quality

- “12-bit 3D Gamma Correction” achieves uniform image color and brightness that extends right to the corners of the screen

*This contrast value is almost average. Jigyobu cannot guarantee the value and disclose each model's minimum value.

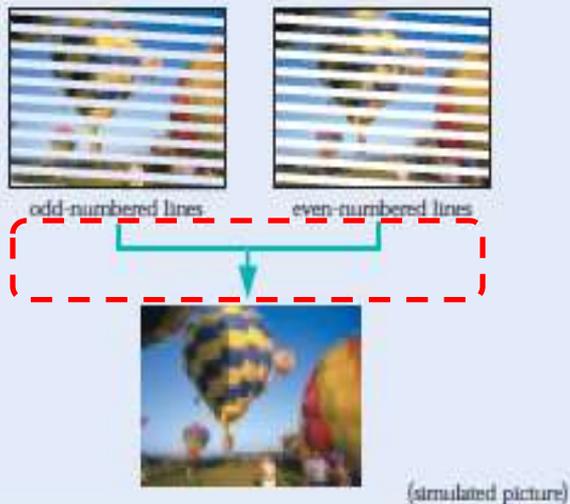
Film mode

This technology generates high quality images through the Interlace to Progressive conversion processor.

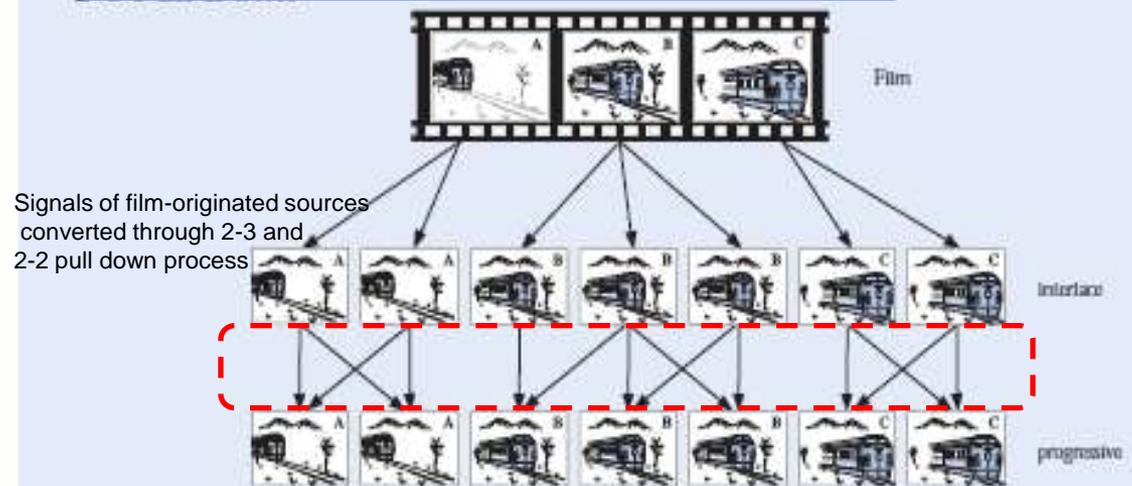
Signals of film-originated sources converted through 2-3 and 2-2 pull down process are detected, resulting in extremely accurate image reproduction.

Film Mode	Auto: Precisely reproduces the image from a film source to suit the original film source. Normally, select this option. Off: Select this option if the images are rough around the edges when “Auto” is selected.
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I/P Conversion



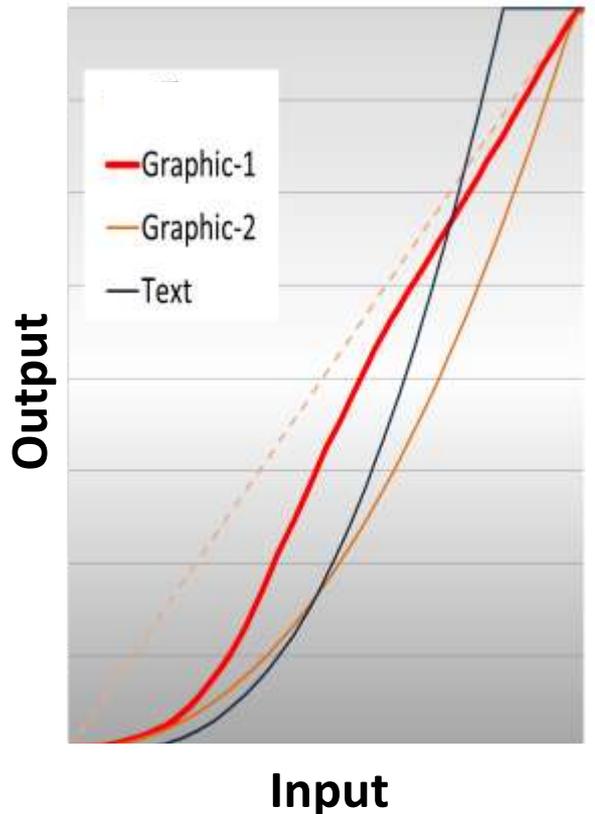
I/P conversion for 2-3 pull downed source from film



*** This model doesn't have the 2-3 pull down conversion capability.**

New gamma mode

Image



We add a new gamma mode.

Graphics-1: **NEW**

Improves the brightness of halftones. This mode is suitable for projecting photos and various images in the bright room.

We recommend this mode when you shoot out with competitors.

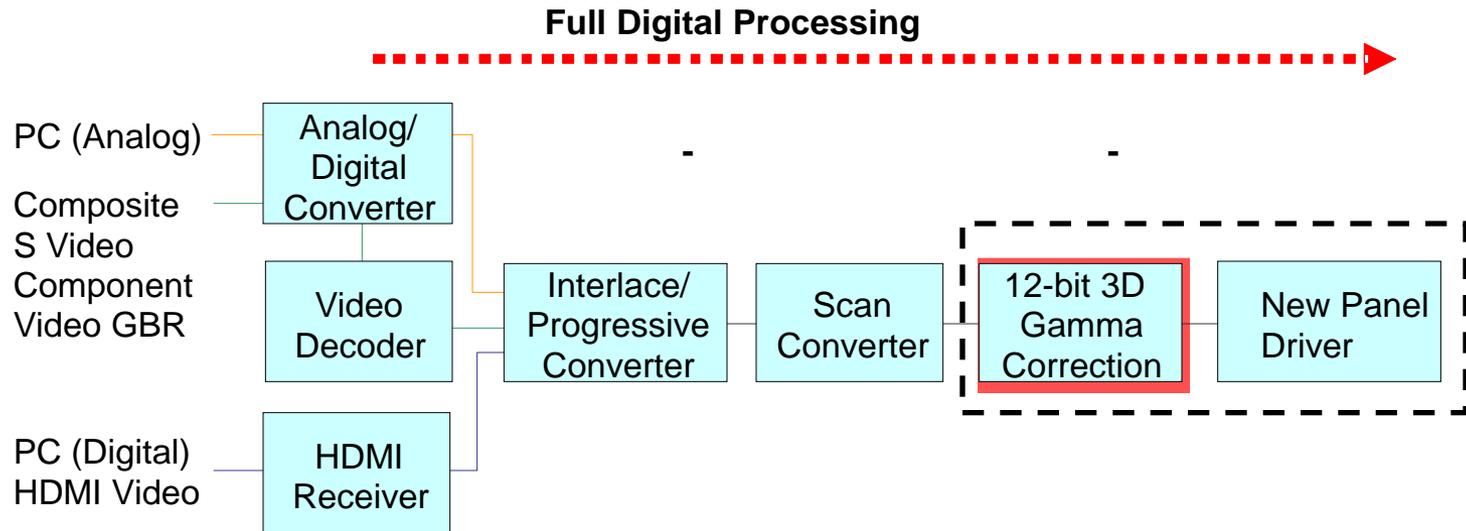
It is default setting for only “Presentation” mode. Menu displays this mode only when you chose “Presentation” mode.

Graphics-2: This mode is same “Graphics” as it was. Improves the reproduction of halftones. Photos can be reproduced in natural tones.

This mode is default setting without “Presentation” mode.

12-bit 3D Digital Gamma Correction

High performance gamma correction and new panel driver offer less information loss with low noise.



* Only for the SW535



image

Functions

- ECO Mode key
- Smart APA (Auto Pixel Alignment)
- Input pallet
- New Picture (Audio) Muting
- Audio Switcher Usage
- Freeze
- Digital Zoom / Shrink
- Picture Mode
- Wide Mode
- Security Pack
- Off & Go
- Direct Power On/Off
- New Power Off Scheme
- Network
- Configuration Reset
- High Altitude mode
- Closed Captioning

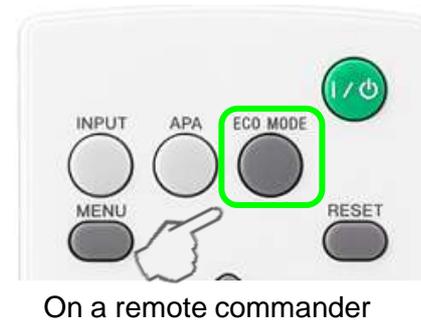
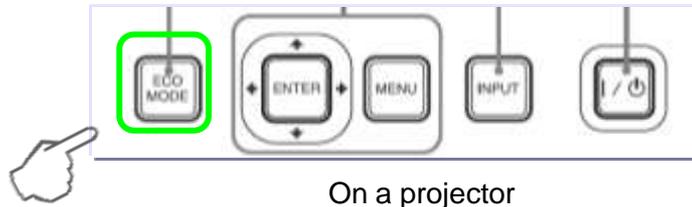
ECO Mode Key (1/2)

Customers can switch to ECO setting easily. There are 2 modes.

(ECO) To switch to the most ECO setting just by pushing ECO Mode keys

(USER) To customize ECO related 3 menus from this ECO Mode key

Direct Keys



OSD menu



TBD This will be updated



ECO Mode Key (2/2)

★: USER default

ECO related menus

High performance

ECO

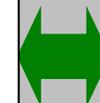
Lamp mode

To set lamp brightness

“High”
 Brightness *****
 Noise *
 Lamp life *
 Product life *
 Power Cons. *



“Standard”★
 Brightness ****
 Noise ***
 Lamp life ***
 Pro. Life **
 Power Cons. **



“Low”
 Brightness **
 Noise *****
 Lamp life *****
 Pro. Life *****
 Power Cons. *****

Auto Power Saving mode

To set functions in stand –by status

with No input

“OFF” (=running)
 Starting time*****
 Power Cons. *



“Lamp cutoff”
 Starting time***
 Power Cons. ****



“Standby”★
 Starting time *
 Power Cons. *****

with Static Signal
 (Lamp Dimming mode)

“OFF”
 Power Cons *
 Brightness *****



“Lamp Dimming”★
 Power cons *****
 Brightness ****

Standby mode

To set functions in stand – by status

“Standard”
 Power Cons *



“Low”★
 Power cons *****

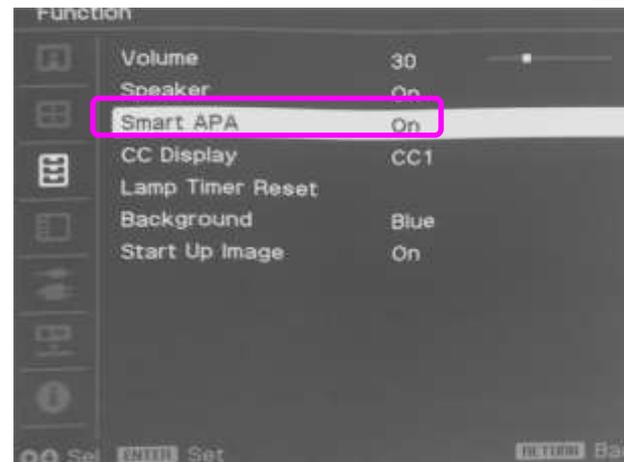


ECO MODE key

Good : *****

Smart APA (Auto Pixel Alignment)

Smart APA runs the APA (Auto Pixel Alignment) automatically when a computer signal is input. The APA optimizes the value of “Phase”, “Pitch” and “Shift” for a computer input signal so that the image can be seen clearly. The APA works only for a computer input signal. You can also run the APA manually by a remote commander.

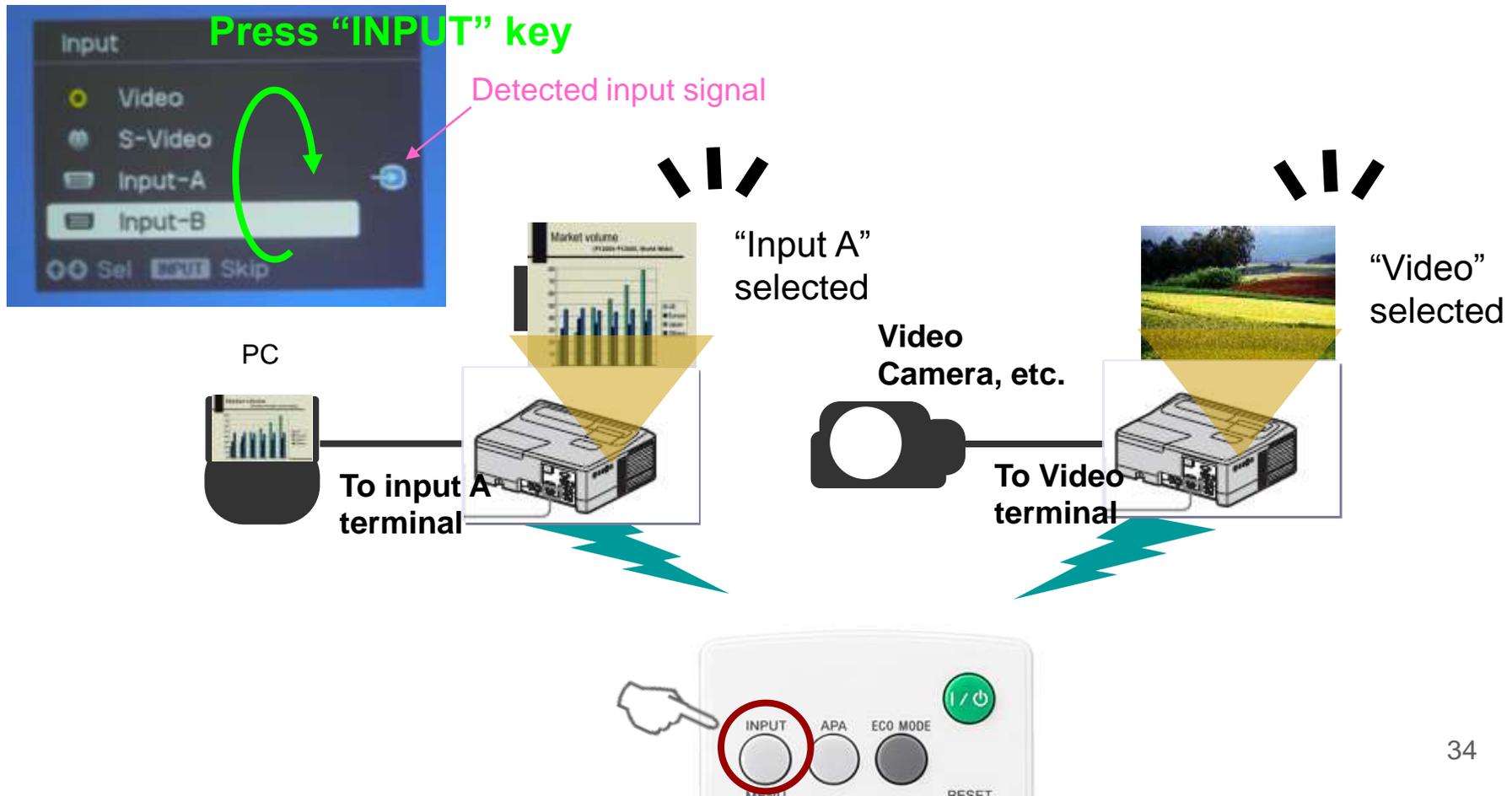


You can set the Smart APA On/Off by a menu.

Input palette (with auto input searching)

This detects the input signal and displays the detected input signal automatically when the "INPUT" key is pressed.

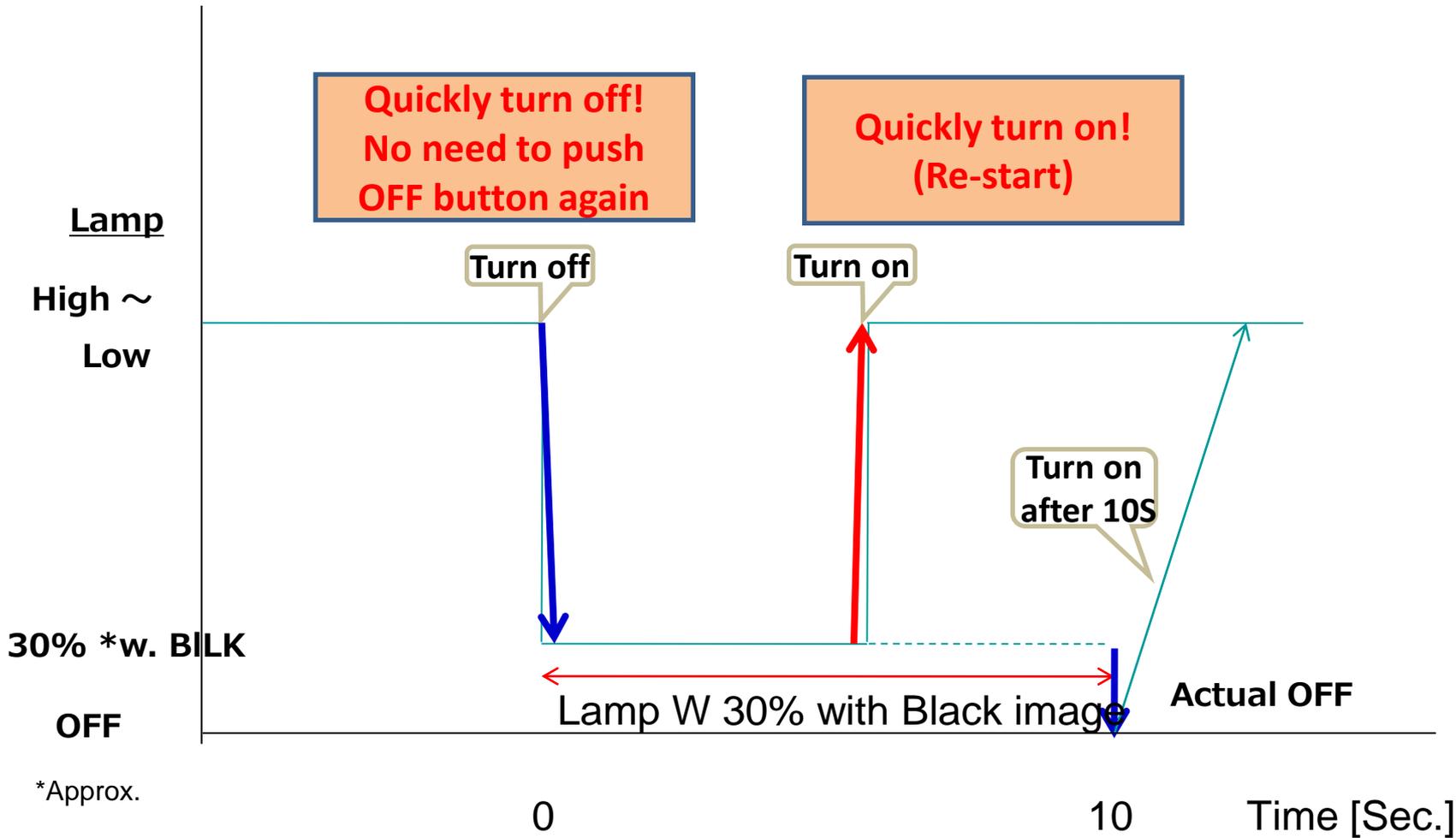
And displaying channel is switched to the next detected channel when pushed again. (Auto Input Search is not in OSD menu.)



New Shut Down Scheme ~ Restart Function

◆ Function outline

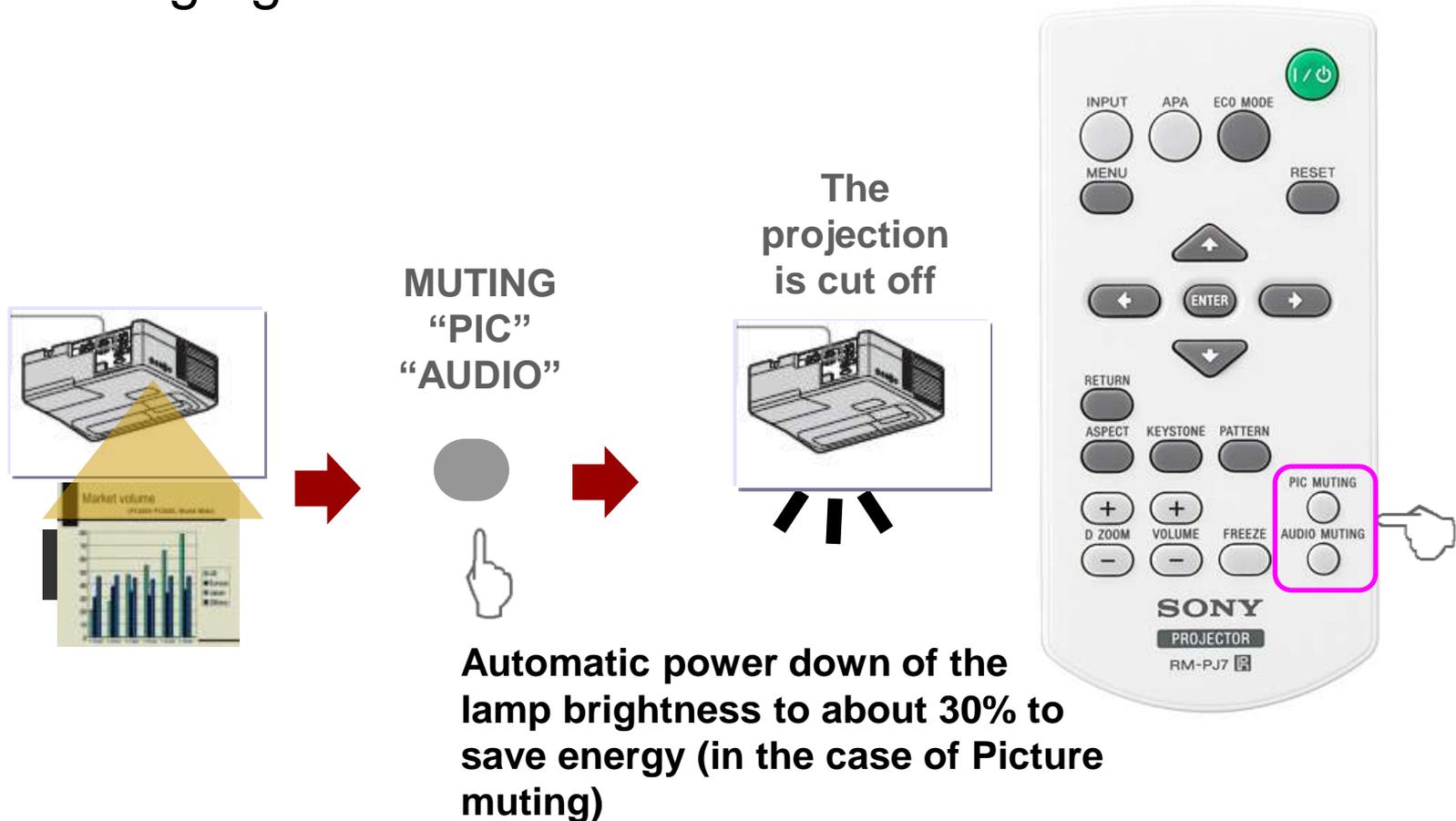
In case of turn off with wrong operation or other users want to use it soon. User can quickly turn on the projector .



*Approx.

New Picture Muting / Audio Muting

You can mute the image / audio with just one pressing of dedicated key on remote commander. You can resume it by pressing again.



Audio Switcher Usage

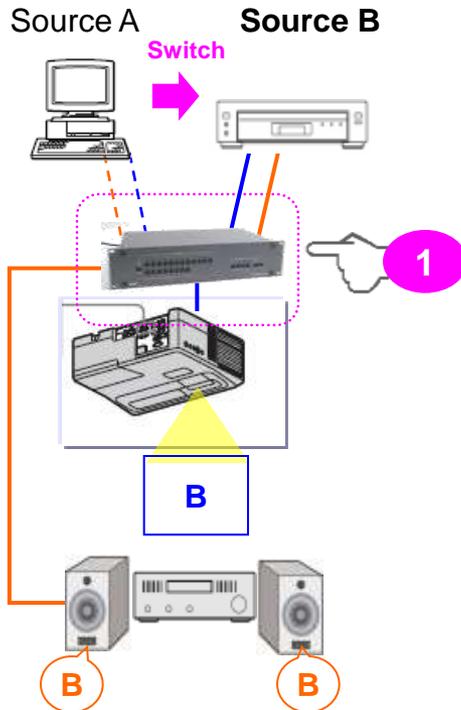
To save the switcher cost, you can substitute the projector for the switcher thanks to Audio Input / Output*.

*Not available in standby.

— Picture
— Audio

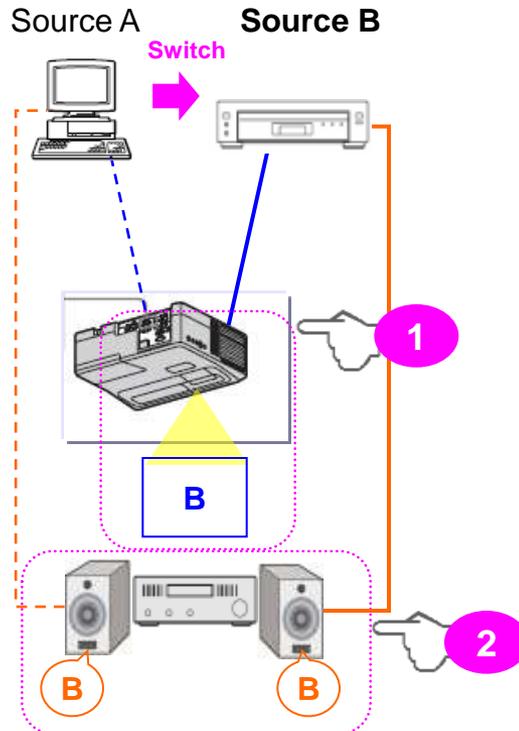
Case1: Using switcher system

-Both picture and audio can be switched at once. But system cost is expensive.



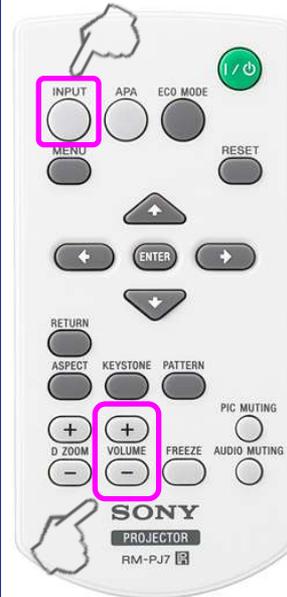
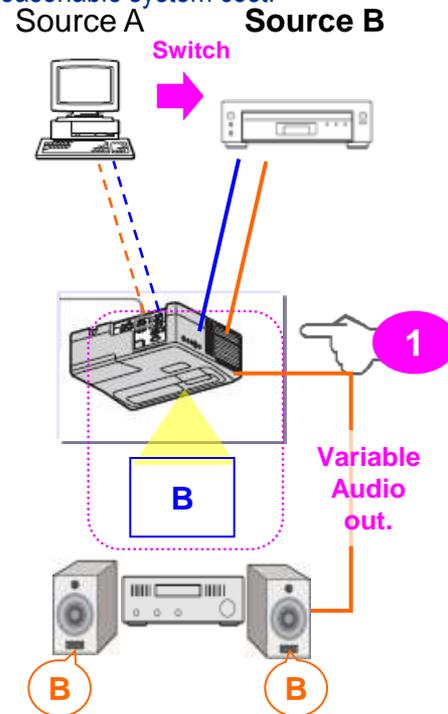
Case2: No audio out

- Not synchronized with input channel switching
- Need to switch twice (for Audio, for projector)



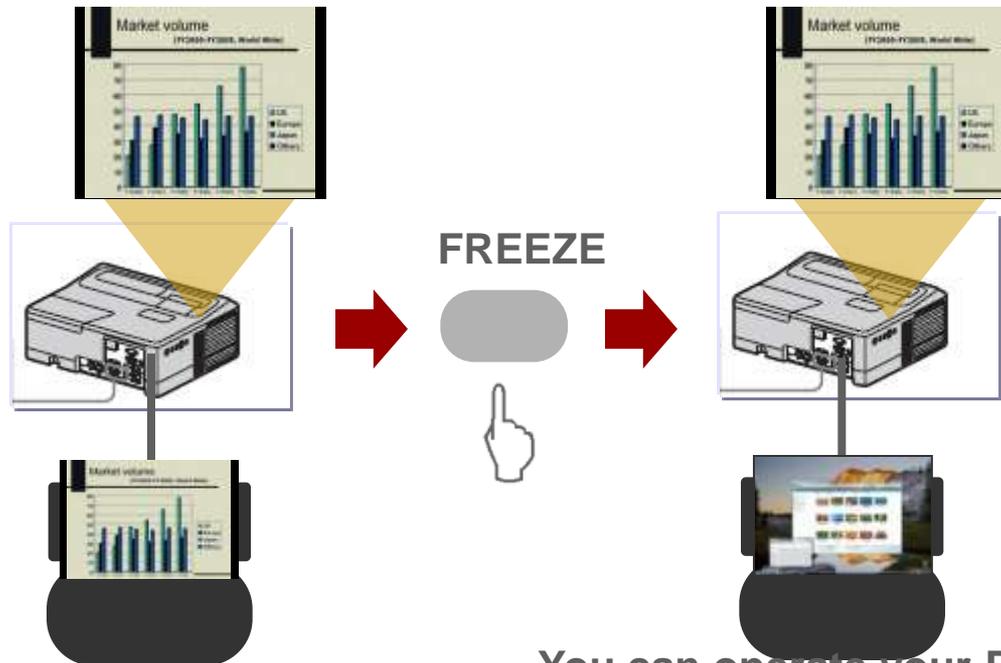
Case3: PJ for switcher function

-Audio and picture channels can be switched simultaneously with reasonable system cost.



Freeze

You can freeze the projected image by just a remote commander. It is convenient when you want to see another material while your presentation. Press again to cancel the frozen image.



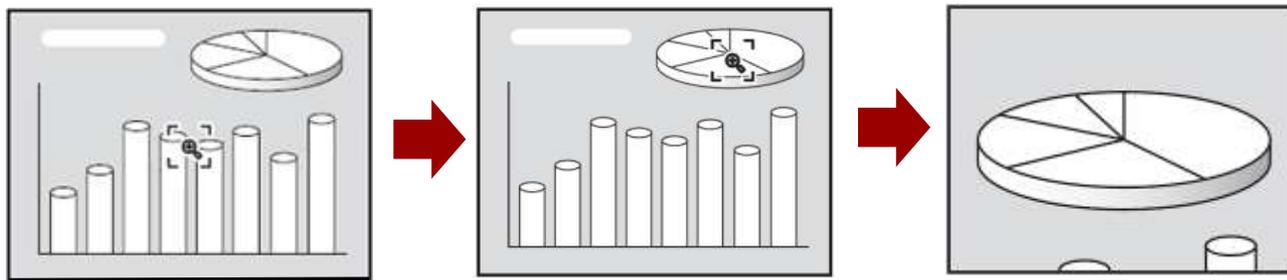
The projected image is frozen.



You can operate your PC with keeping the projection image.

Digital Zoom

You can enlarge the section of the image. The function works only for a computer input signal.



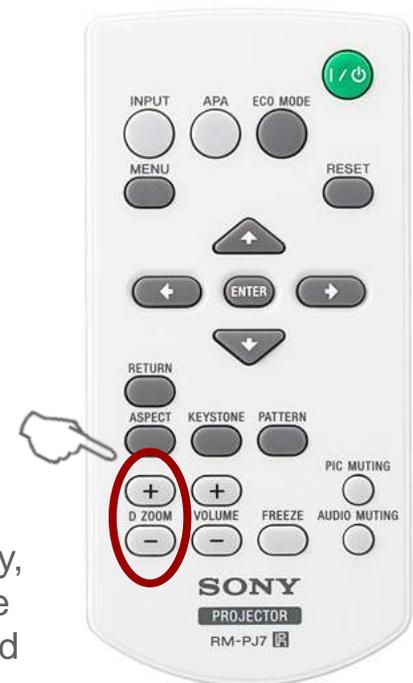
Once you push the D ZOOM + key, the digital zoom icon appears in the center of image.



You should move the icon to the point on the image you want to enlarge by using Arrow key.

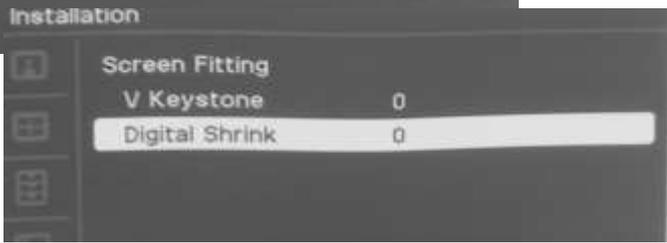
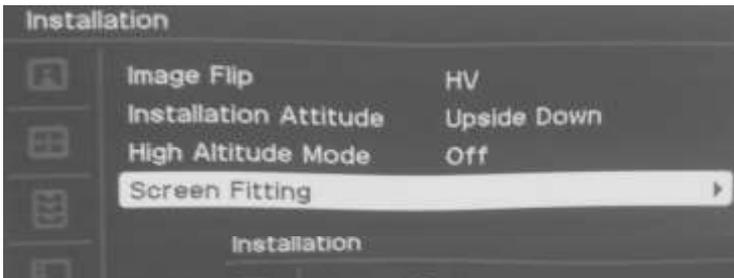
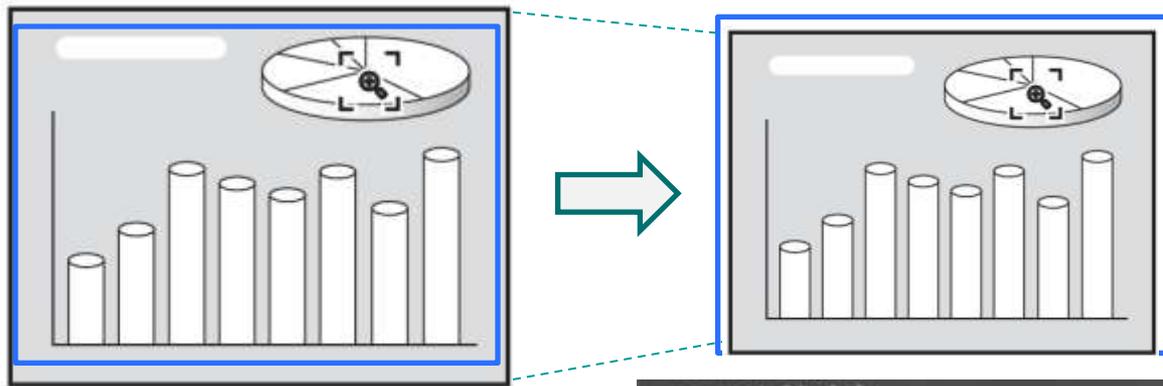


By pushing the D ZOOM + key repeatedly, the portion of the image where the icon is placed is enlarged. (ratio of enlargement: max. 4 times)



Digital Shrink

Instant / Quick adjustment to fit screen size by digital shrink of the projection image within about 10% range.



Picture Mode

• Six Picture Modes

- The SX535/SW535 have six picture modes; Dynamic, Standard, Game, Living, Cinema, and Presentation. User can select most suitable picture mode according to the picture source.
- When you want to compete DLP white, please set Middle in the Color Temp.

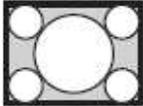
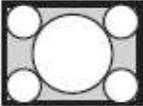
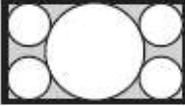
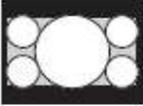
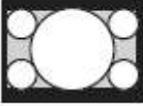
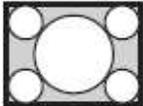
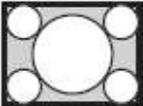
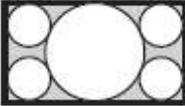
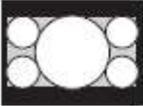
Mode	Description	Brightness	Situation	Note
Dynamic	Emphasizes the contrast to produce a “dynamic and vivid” picture	○○○○○	Meeting room	
Standard	Makes the picture be natural and well balanced	○○○	Meeting room	When to compare DLP white, please set “Middle” in the color temp.
Game	Select for viewing game picture	○○	Living	
Living	Select for viewing sports, music, and digital video camera picture	○○	Living	
Cinema	Select for viewing film-like picture	○	Living (dark)	
Presentation	Makes the picture bright to suit for a presentation	○○○○○	Meeting room	This is brightest mode. Color temp cannot be selected and is not displayed.

Wide Mode SX535

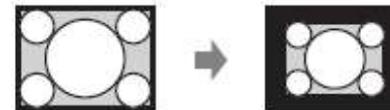
* For the SX535

• Wide Modes

- User can enjoy various wide screen modes according to the video signal received.

	Input signal	Recommended setting value and projected image
Computer signal	(4:3) 	(Full1) ^{*1} 
	(16:9) 	(Full1) ^{*1 *2} 
	(16:10) 	(Full1) ^{*1 *2} 
Video signal	(4:3) 	(4:3) ^{*3} 
	(16:9) 	(16:9) ^{*4} 

*1: If you select "Normal," the image is projected in the same resolution as the input signal without changing the aspect ratio of the original image.



*2: If you select "Full2," the image is projected to fit the projected image size, regardless of the aspect ratio of the image.



*3: Depending on the input signal, the projected image may be projected as illustrated below. In this a case, select "16:9."



*4: Depending on the input signal, the image may be projected as illustrated below. In this a case, select "Zoom."



Wide Mode SW535

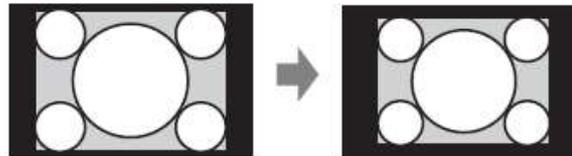
*** For the SW535**

● Wide Modes

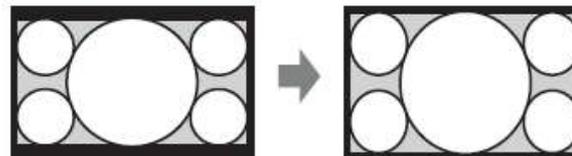
- User can enjoy various wide screen modes according to the video signal received.

	Input signal	Recommended setting value and projected image
Computer signal	(4:3)	(Full1) ^{*1 *2 *3}
	(16:9)	(Full1) ^{*1 *2 *3}
	(16:10)	(Full1) ^{*3}
Video signal	(4:3)	(Normal) ^{*4 *5}
	(16:9)	(Full)

*1: If you select “Normal,” the image is projected in the same resolution as the input signal without changing the aspect ratio of the original image.



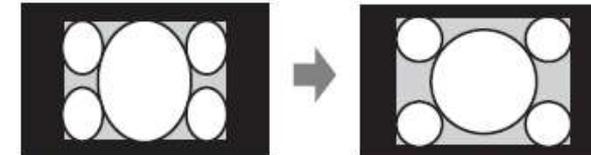
*2: If you select “Full2,” the image is projected to fit the projected image size, regardless of the aspect ratio of the image.



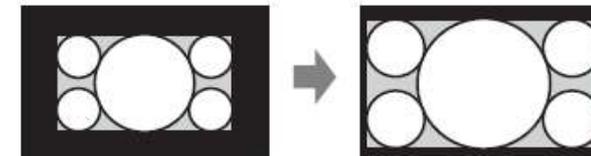
*3: If you adjust the projected image position using an image with 16:9 aspect ratio and then switch the input source to 4:3 image, the top and bottom edge of the image may be hidden. In this a case, select “Full3.”



*4: Depending on the input signal, the projected image may be projected as illustrated below. In this a case, select “Full.”



*5: Depending on the input signal, the image may be projected as illustrated below. In this a case, select “Zoom.”



Security Pack

Security lock (Password)

This function makes it possible to prevent projection of a picture on the screen unless the required password is entered when the projector is turned on.

(“Security label” is NOT supplied for the SX535/SW535.)

Panel key lock

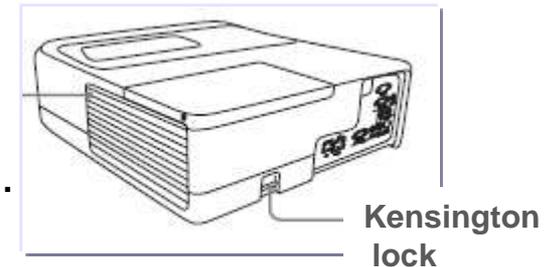
This function locks all the keys on the control panel of the projector, allowing use of the keys on the Remote Commander. This prevents the projector from operating incorrectly.

Security lock (Mechanical)

Connects to an optional security cable. (from Kensington).

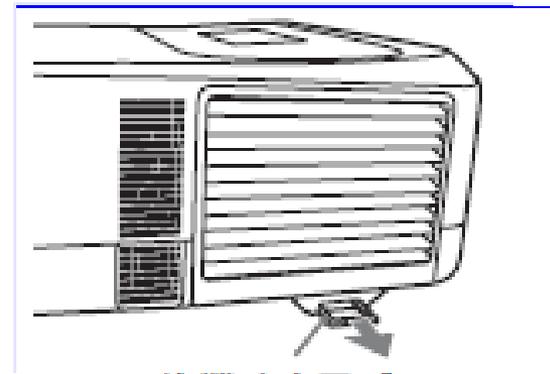
Web page address:

<http://www.kensington.com/>



Security Bar (Mechanical)

It is possible to connect to an optional security cable such as anti-theft chain or wire.



Security bar

Off & Go

If you are leaving the conference room immediately, turn the projector off, and then, you can unplug the AC power cord.

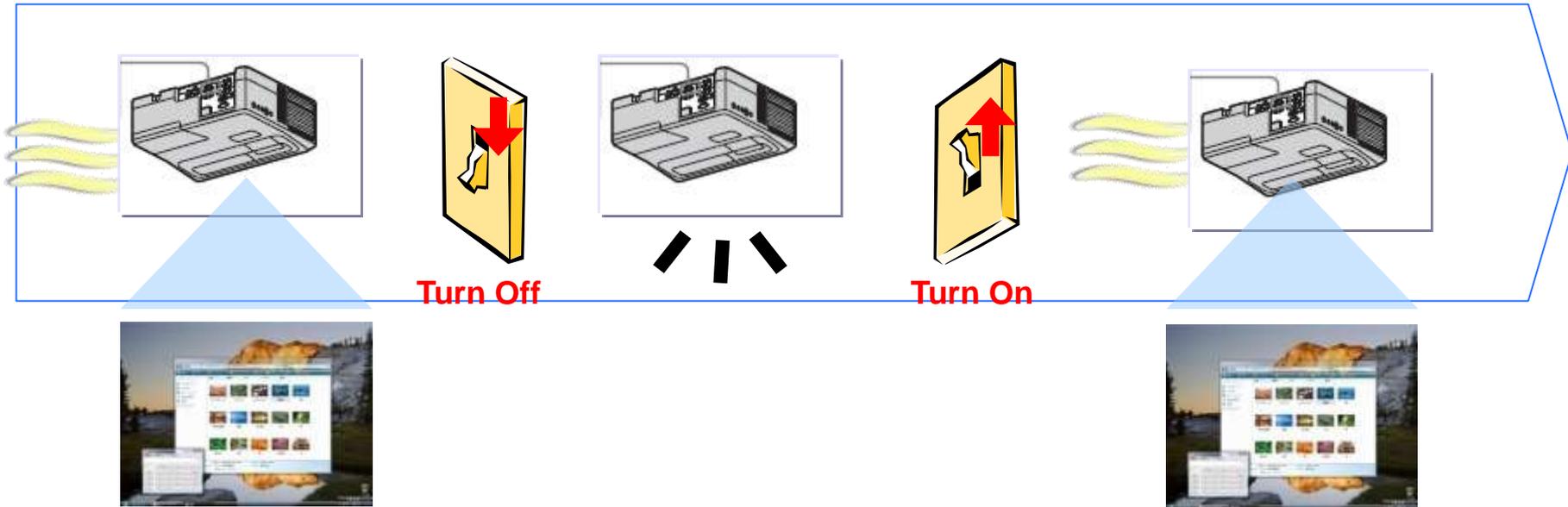


NOTICE

- If you store the projector in the carrying case*, turn off the projector and then wait for cooling it down. (* No carrying case is NOT included for this model.)

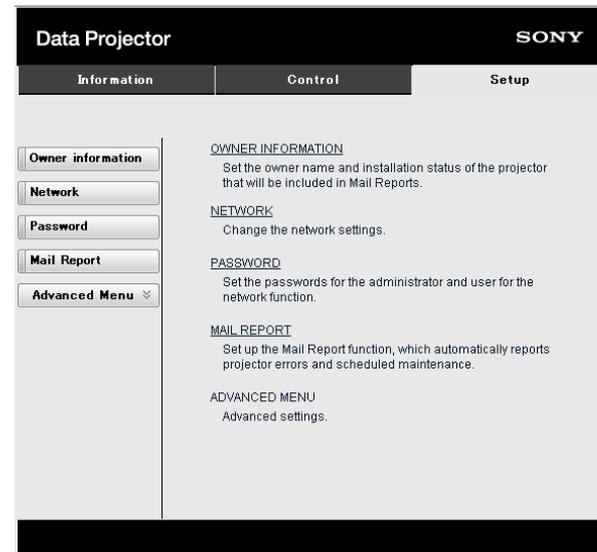
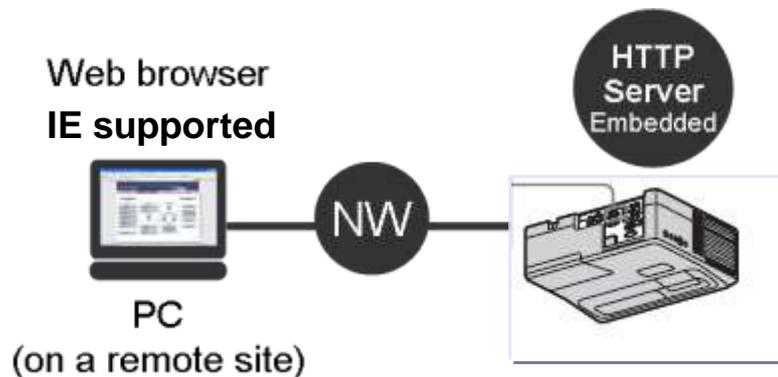
Direct Power On/Off

With this function, standby mode can be skipped over to activate the projector immediately. The projector can be turned on or off using a circuit-breaker switch on a switchboard.



Web Control and Monitoring / E-mail Report (1/3)

- Enables to operate the projector, and also to monitor its status such as lamp usage time...etc through the network.
- Receiving a lamp exchange timing report by E-mail
- These functions are almost same as that of current models

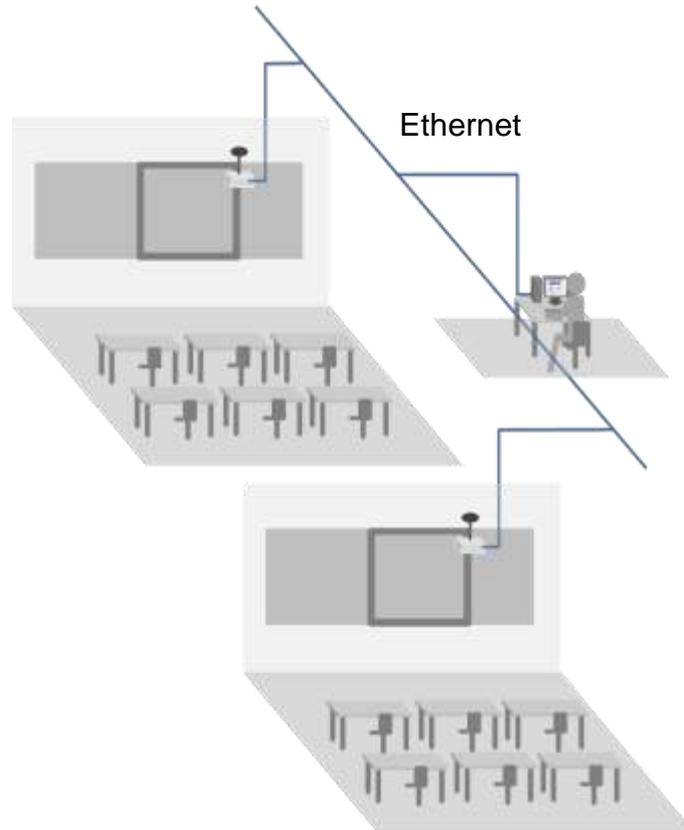


Note on usage

- Supported browser is Internet Explorer 6 / 7 / 8
- The supported language is English.

Web Control and Monitoring / E-mail Report (2/3)

Example application



Central Control

For example, If you use this function, you can check a projector status on your desk by using Web browser IE. The status which you can check is such as Power ON/STANDBY or Lamp usage time and you can also control a projector as operating by a remote control. In addition, once you set your E-mail address to it, a projector send E-mail to you itself at timing of a lamp exchanging or any problems are occurred.



Web Control and Monitoring / E-mail Report (3/3)

How to use

Before using any network functions, you have to connect the projector and PC to the same network. Please see “Network functions / Network Connection Setting” to do it.

 for PC

- **Launch the browser Internet Explorer**
- **Set the projector IP address**
 - Enter the projector IP address to the address bar like below
Example) <http://169.254.41.188/>

Enter IP address of the projector

Other network features

- PJ Talk 2 *
- PJ Link *
- SNMP
- SDAP
- AMX Dynamic Device Discovery

*Cannot use them simultaneously

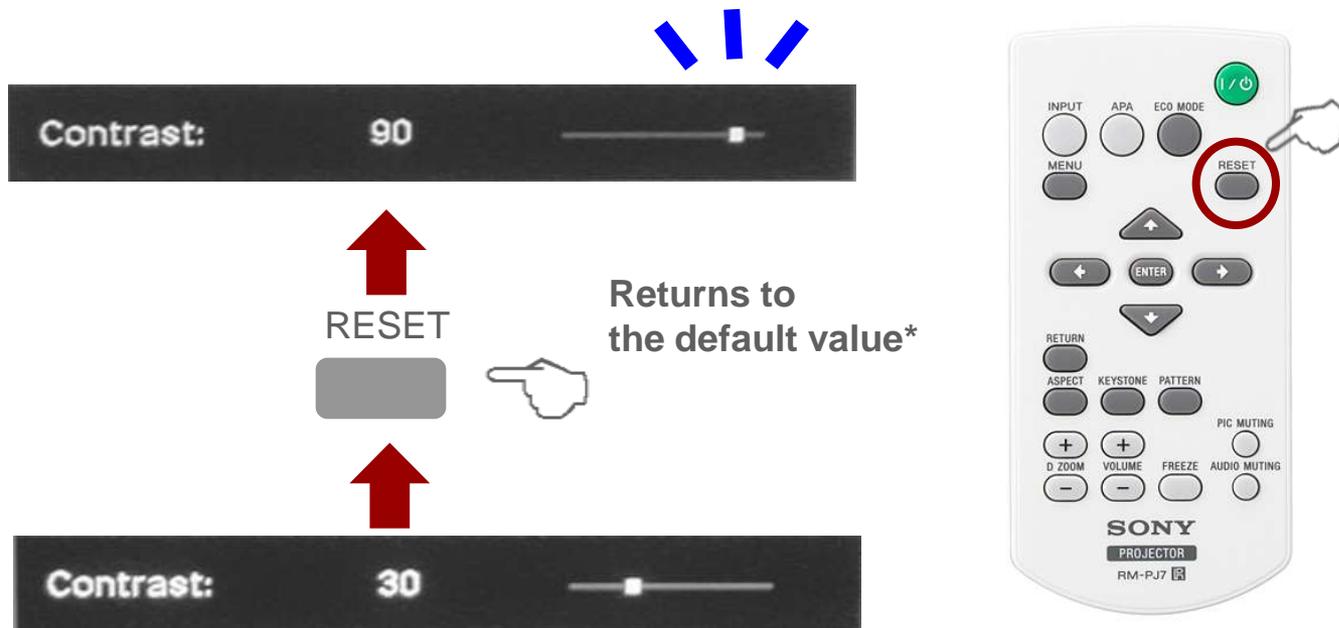
Protocol

Compatible with various control systems



Configuration RESET

You can reset the value of user adjustable items such like “Contrast” and “Brightness” etc. to its factory preset value by just a button



* This is example. The each default value depends on items.

High Altitude Mode

Use this item when using the projector at high altitudes.
(initial setting is OFF)

- On: Use this setting when using the projector at an altitude of 1,500 m (4,921 feet) or higher.
- Off: Use this setting when using the projector at normal altitudes.

NOTICE

- If you turn on “High Altitude Mode” to “On” at an altitude less than 1,500 m (4,921 feet), the projector may reduce the reliability of the lamp.
- When “High Altitude Mode” is set to “On”, the number of turns of the fan increases, and the fan noise becomes slightly louder.



Mexico City @ 2300m

Closed Captioning

- **Closed captioning** is an official teletext broadcasting that National Captioning Institute (NCI) of the United States developed.
- **Closed captioning** is a term describing several systems developed to display text on a television or video screen to provide additional or interpretive information to viewers who wish to access it. Closed captions typically display a transcription of the audio portion of a program as it occurs (either verbatim or in edited form), sometimes including non-speech elements.
- When you receive the TV signal of US which contains the CC or play the video DVDs which are available for CC, CC can be turned on/off via this projector. You can display CC by means of choosing a channel of CC from the OSD menu.

●Caption channels

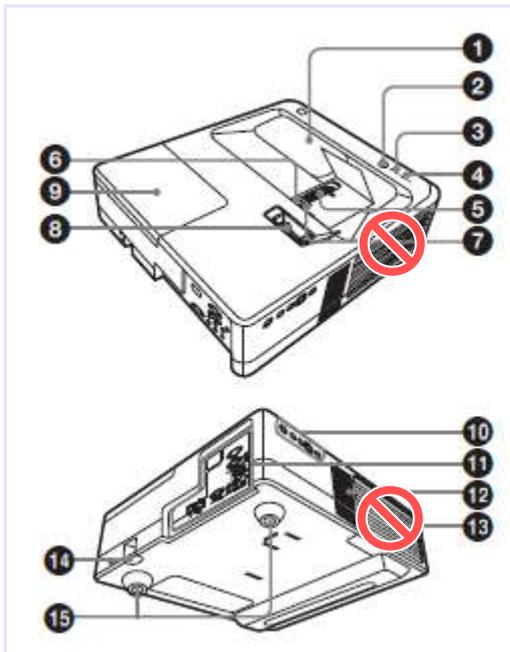
The Line 21 data stream can consist of data from several data channels multiplexed together. Field 1 has four data channels: two Captions (CC1, CC2) and two Text (T1, T2). Field 2 has five additional data channels: two Captions (CC3, CC4), two Text (T3, T4), and Extended Data Services (XDS). XDS data structure is defined in EIA-608. As CC1 and CC2 share bandwidth, if there is a lot of data in CC1, there will be little room for CC2 data. Similarly CC3 and CC4 share the second field of line 21.



Other Product Information

- Mechanical
- Control Panel
- Connector Panel
- Remote Commander (RM-PJ7)
- Replacement Lamp (LMP-E212)
- Replacing Lamp
- Filter Cleaning
- Installation Diagram
- Dimensions
- Wall Mount
- Preset Signals
- On screen menu
- Carton Box

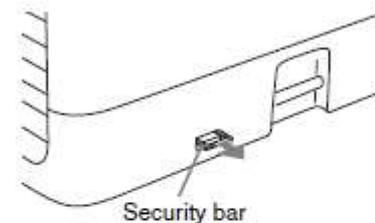
Mechanical



- ❶ Projection window
- ❷ Remote control detector
- ❸ ON/STANDBY indicator
- ❹ LAMP/COVER indicator
- ❺ Focus ring
- ❻ Lens shift dial H
- ❼ Lens shift dial V
- ❽ Zoom lever
- ❾ Lamp cover
- ❿ Control panel
- ⓫ Connector panel
- ⓬ Speaker



- ⓫ Air filter cover
Ventilation holes (intake)
- ⓬ Security bar
Connects to a commercially available security chain or wire.



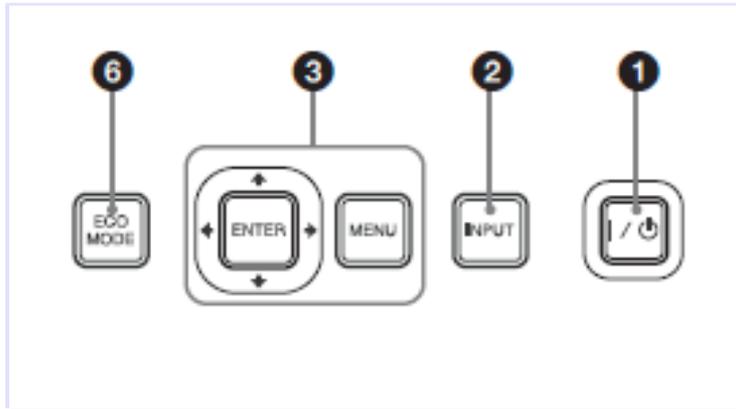
- ⓭ Adjuster
- ⓮ Security lock
Connects to an optional security cable manufactured by Kensington.
For details, visit Kensington's web site.
<http://www.kensington.com/>
- ⓯ Ventilation holes (exhaust)

Caution

Do not place anything near the ventilation holes as this may cause internal heat buildup. Do not place your hand near the ventilation holes and the circumference as this may cause injury.

 Do not cover these ventilation holes.

Control Panel



1 Turning on the power/Going to standby mode

I/⏻ (On/Standby) key

2 Selecting an input signal

INPUT key

3 Operating a menu

MENU key
RESET key
ENTER /↕/↔/↔/↔ (arrow) keys
RETURN key

6 Setting the energy-saving mode easily

ECO MODE key

Energy-saving mode can be set easily.
Energy-saving mode consists of "Lamp Mode," "With No Input," "With Static Signal," "Standby Mode."

Indicator

ON/STANDBY Indicator

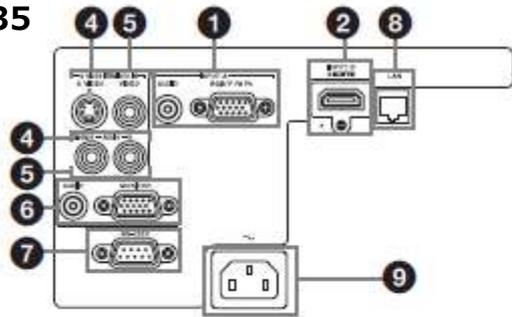
Status	Meaning/Remedies
Lights in red	The projector is in Standby mode.
Flashes in green	<ul style="list-style-type: none"> • The projector is ready to operate after having been turned on. • The lamp cools after the projector is turned off.
Lights in green	The projector's power is on.
Lights in orange	The projector is in With No Input (lamp cut off).
Flashes in red	The projector is in abnormal status. Symptoms are indicated by number of flashes. Address the problem in accordance with the following. If the symptom is shown again, consult with qualified Sony personnel.
Flashes twice	<p>The internal temperature is unusually high. Check the items below.</p> <ul style="list-style-type: none"> • Check to see if nothing is blocking the ventilation holes. • Check to see if the air filter is not clogged. • Check to see if the Installation Attitude in the INSTALL SETTING menu is set correctly.
Flashes six times	Unplug the AC power cord from a wall outlet. After checking that the ON/STANDBY indicator goes out, plug the power cord to a wall outlet again then turn on the projector.
Other number of flashes	Consult with qualified Sony personnel.

LAMP/COVER Indicator

Status	Meaning/Remedies
Flashes in red	Symptoms are indicated by number of flashes. Address the problem in accordance with the following.
Flashes twice	The lamp cover or the air filter cover is not attached securely.
Flashes three times	The temperature of lamp is unusually high. Turn off the power and wait for lamp to cool then turn on the power again. If the symptom is shown again, the lamp may be burnt out. In such a case, replace the lamp with a new one

Connector Panel

SW535



Input

- 1 INPUT A**
Video: RGB/YPbPr input connector (RGB/YPbPr)
Audio: Audio input connector (AUDIO)
- 2 INPUT B (VPL-SW535 only)**
Video: HDMI input connector (HDMI)
Audio: HDMI input connector (HDMI)
- 3 INPUT B (VPL-SX535 only)**
Video: RGB input connector (RGB)
Audio: Audio input connector (AUDIO)
- 4 S VIDEO (S VIDEO IN)**
Video: S video input connector
Audio: Audio input connector (L [MONO] AUDIO/R)

- 5 VIDEO (VIDEO IN)**
Video: Video input connector
Audio: Audio input connector (L [MONO] AUDIO/R)

Note

The audio inputs of S VIDEO and VIDEO are shared.

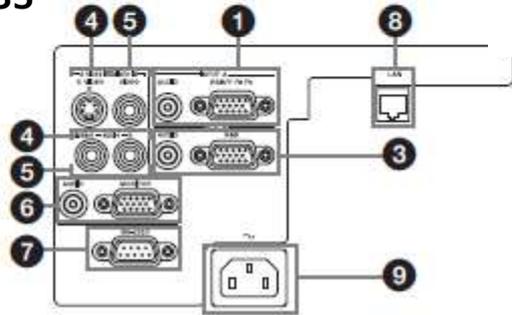
Output

- 6 OUTPUT**
Video: Monitor output connector (MONITOR)
Audio: Audio output connector (AUDIO)

Note

This connector outputs the projected image or audio. The image is output as a computer signal input from the RGB input connector (INPUT A/INPUT B (INPUT B is available only for VPL-SX535)) or a video signal input from the YPbPr input connector (INPUT A).

SX535



Others

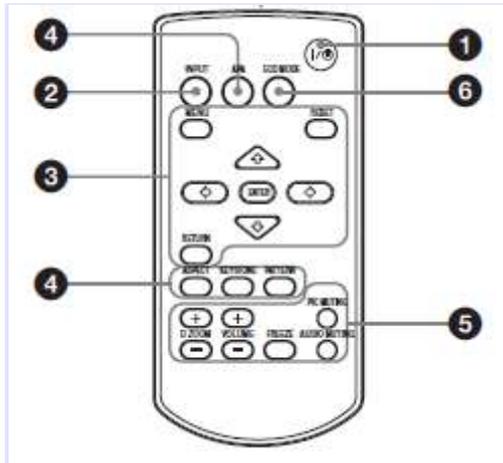
- 7 RS-232C connector (RS-232C)**
RS-232C compatible control connector. Connects the computer's RS-232C connector and the RS-232C cross cables.

- 8 LAN connector**

- 9 AC IN (~) socket**
Connects the supplied AC power cord.

*RS232C : male

Remote Commander (RM-PJ7)



1 Turning on the power/Going to standby mode
I/⏻ (On/Standby) key

2 Selecting an input signal

INPUT key

3 Operating a menu
MENU key
RESET key
ENTER /⬆/⬇/⬅/➡ (arrow) keys
RETURN key

4 Adjusting the image
ASPECT key
KEYSTONE key
PATTERN key
APA (Auto Pixel Alignment) key*

Note

* Use this key when inputting a computer signal via the RGB input connector (INPUT A/INPUT B (INPUT B is available only for VPL-SX535)).

5 Using various functions during projecting

D ZOOM (Digital Zoom) +/- key*¹
Enlarges a portion of the image while projecting.

PIC MUTING key

Turns off projection temporarily. Press again to restore the image. Picture muting helps reduce power consumption.

AUDIO MUTING key

Mutes the audio output. Press again to restore the previous volume.

VOLUME +/- key

For adjusting the volume output.

FREEZE key*²

Pauses a projected image. Press again to restore the image.

Notes

*1: Use this key when inputting a computer signal. But it may not be used depending on the resolution of the input signal.

*2: Use this key when inputting a computer signal.

6 Setting the energy-saving mode easily

ECO MODE key

Energy-saving mode can be set easily. Energy-saving mode consists of "Lamp Mode," "With No Input," "With Static Signal," "Standby Mode."

Replacement Lamp (LMP-E212)

This model works with the 215 watt ultra-high pressure lamp.

When replacing the lamp, please use optional replacement lamp, LMP-E212.

- Recommended Lamp Replacement Time

Lamp mode	Time
High	Approx. 3000 H
Standard	Approx. 4500 H
Low	Approx. 6000 H



- Is Krypton 85 used ? (especially for USA)
⇒ No

Other Product Information

Replacing Lamp

Replace the lamp with a new one if a message displayed on the projected image or the LAMP/COVER indicator notifies you to replace the lamp
Use an LMP-E212 projector lamp (not supplied) for replacement.

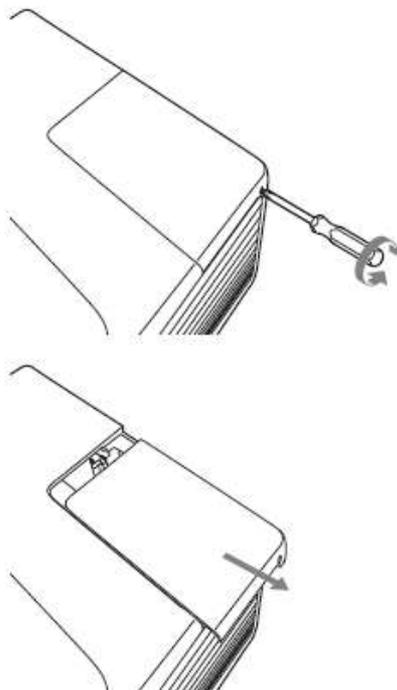
Caution

- The lamp remains hot after the projector is turned off. **If you touch the lamp, you may burn your finger. When you replace the lamp, wait for at least an hour after turning off the projector for the lamp to cool sufficiently.**
- Do not allow any metallic or inflammable objects into the lamp replacement slot after removing the lamp, otherwise it may cause electrical shock or fire. Do not put your hands into the slot.

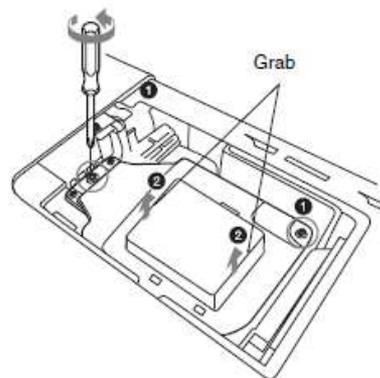
Notes

- **If the lamp breaks, contact qualified Sony personnel. Do not replace the lamp yourself.**
- When removing the lamp, be sure to pull it out straight, by holding the designated location. If you touch a part of the lamp other than the designated location, you may be burned or injured. If you pull out the lamp while the projector is tilted, the pieces may scatter if the lamp breaks any may cause injury.

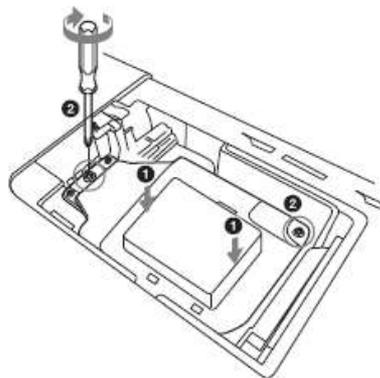
- 1 Turn off the projector, and disconnect the AC power cord from a wall outlet.
- 2 When the lamp has cooled sufficiently, open the lamp cover by loosening 1 screw.



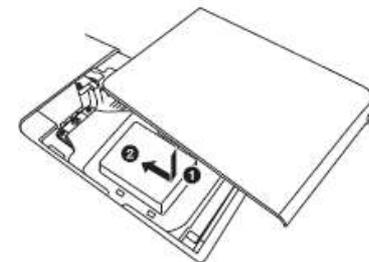
- 3 Loosen the 2 screws on the lamp then pull out the lamp by its grab.



- 4 Insert the new lamp all the way in until it is securely in place. Tighten the 2 screws.



- 5 Close the lamp cover and tighten the 1 screw.



Note

Be sure to install the lamp securely as it was. If not, the projector cannot be turned on.

- 6 Connect the AC power cord to a wall outlet and turn on the projector.
- 7 Reset the lamp timer for notification of the next replacement time. Select "Lamp Timer Reset" on the Function menu then press the ENTER key. When a message appears, select "Yes" to reset the lamp timer

Caution

Disposal of the used lamp
For the customers in the USA
Lamp in this product contains mercury. Disposal of these materials may be regulated due to environmental considerations. For disposal or recycling information, please contact your local authorities or the Telecommunications Industry Association (www.eiae.org).

Other Product Information

Filter Cleaning

When a message appears on the projected image indicating time for a filter cleaning, clean the air filter

If the dust cannot be removed from the air filter even after cleaning, replace the air filter with a new one.

For details on a new air filter, consult with qualified Sony personnel.

Caution

If you neglect to clean the air filter, dust may accumulate, clogging it. As a result, the temperature may rise inside the unit, leading to a possible malfunction or fire.

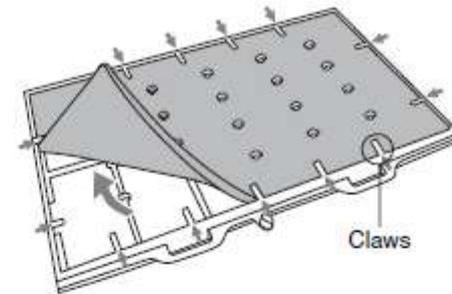
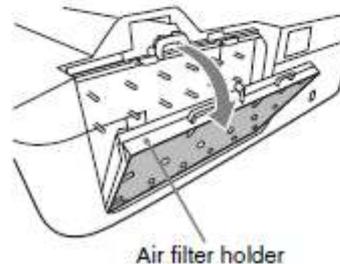
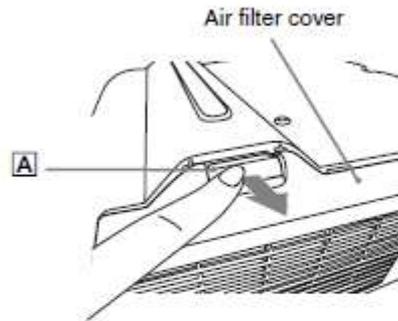
- 1 Turn off the projector, and disconnect the AC power cord from the AC outlet.
- 2 Open the air filter cover and remove the air filter holder.
Press **A** and open the air filter cover towards the arrow head as shown in the picture above, and remove the air filter holder.

- 3 Clean the air filter with a vacuum cleaner.
Remove the air filter as illustrated below then clean with the vacuum cleaner.

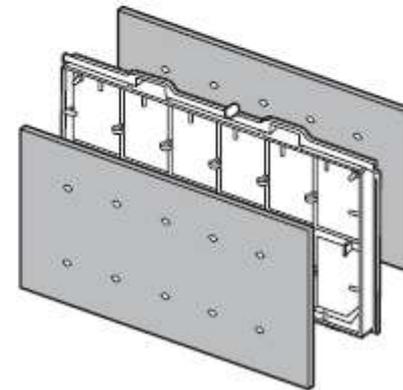
- 4 Attach the air filter cover to the unit.

Note

Be sure to attach the air filter cover firmly. If not, the projector cannot be turned on.

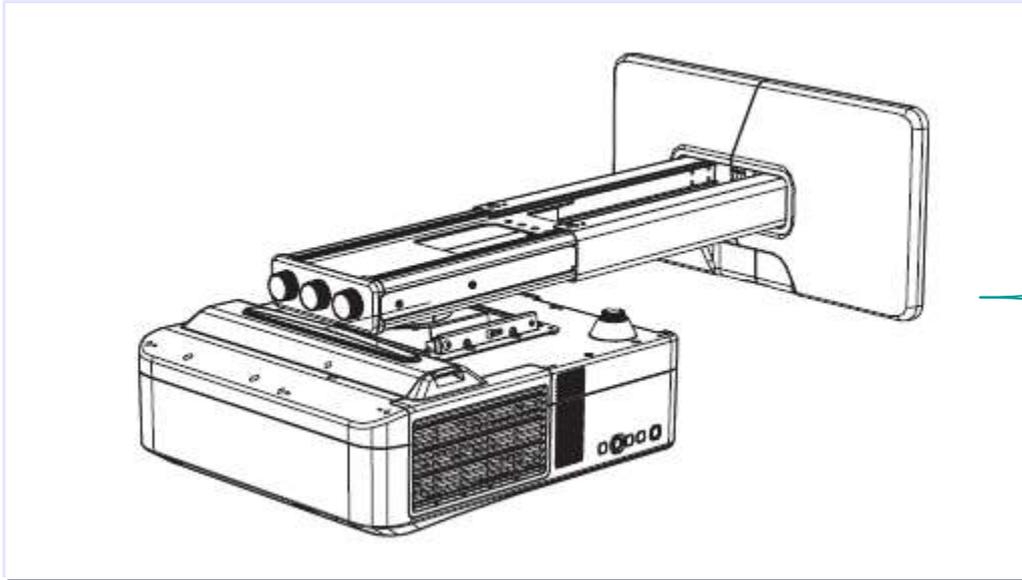


The air filter consists of 2 filters.



Other Product Information

Wall Mount

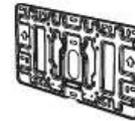


Supplied Accessories

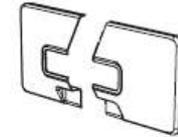
Setting plate (1)



Wall plate (1)



Wall plate cover



M4 × 12 fastener (4)



M5 × 10 fastener (4)



M6 × 10 fastener (4)



Allen key (1)



M6 × 55 self-tapping screw (5)



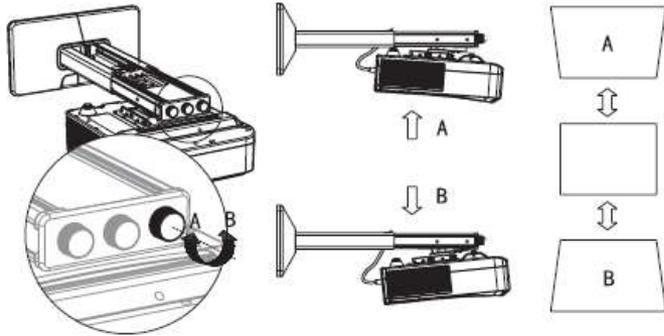
dia.11 × 50 wall plug (5)



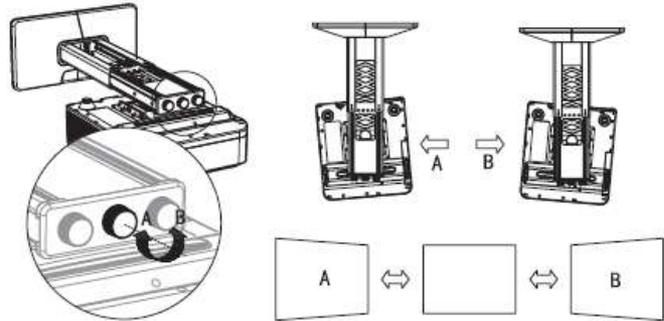
Other Product Information

Wall Mount Adjustment

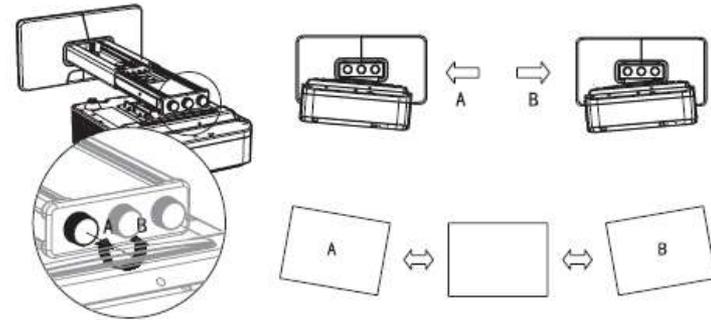
To adjust the vertical tilt



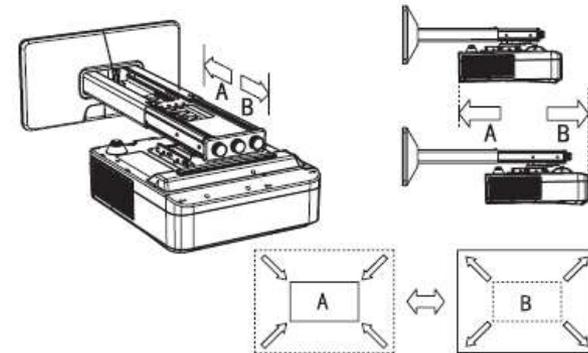
To adjust the horizontal rotation



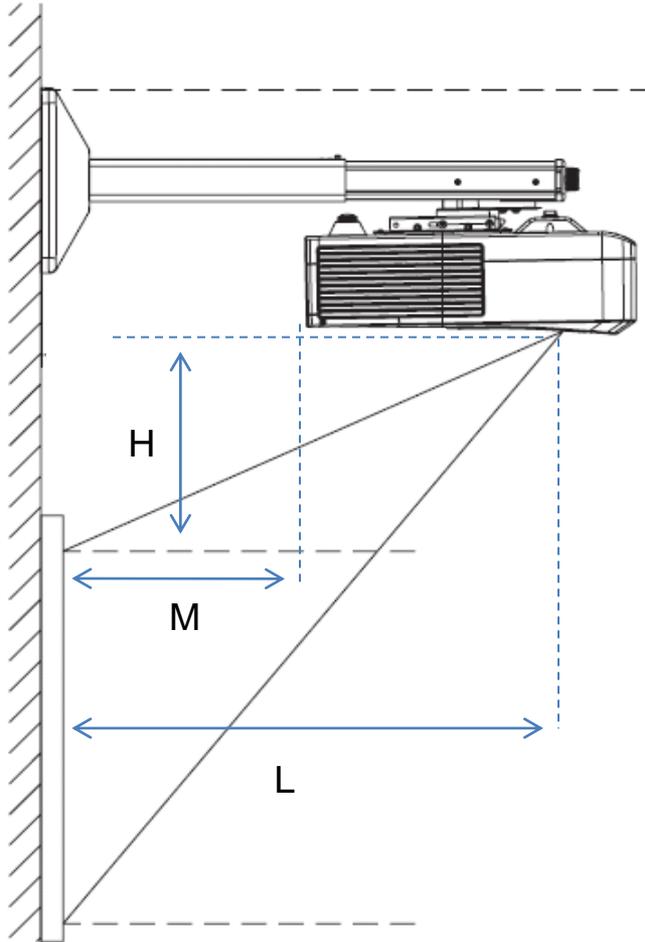
To adjust the horizontal roll



To adjust the forward/backward slide



Installation Diagram (1/2)



- H : Distance to picture edge
from the centre of projection window
 - L : Distance to screen
from the centre of projection window
 - M : Distance between the projector edge
and the centre of projection window
- $M=L-308.1\text{mm}$

Installation Diagram (2/2)

Projection distance (VPL-SX535)

Projected Image Size		Projection Distance L	Picture edge to picture H
Diagonal D	WxHt		
60inch(1.52m)	1.22x0.91	0.424-0.436	0.163
70inch(1.78m)	1.42x1.07	0.495-0.509	0.192
80inch(2.03m)	1.63x1.22	0.566-0.581	0.220
90inch(2.29m)	1.83x1.37	0.636-0.654	0.249
110inch(2.79m)	2.24x1.68	0.778-0.800	0.305

Projection distance formula (VPL-SX535)

D: Projected image size (Diagonal)

H: Distance to picture edge from the centre of projection window

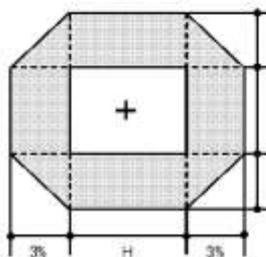
Expression#1

投射距離L(最短)	投射距離L(最長)
$L=0.007067 \times D - 0.0001$	$L=0.007275 \times D - 0.0001$

Expression#2

Distance to picture edge from the centre of projection window H
$H=0.00284 \times D - 0.00674$

Lens shift range (VPL-SX535)



$$\begin{aligned} V_{Sup}[\%] = V_{Sov}[\%] &= 4 - 1.333 \times (HSr[\%] \text{ or } HS[\%]) \\ HSr[\%] = HS[\%] &= 3 - 0.750 \times (V_{Sup}[\%] \text{ or } V_{Sov}[\%]) \end{aligned}$$

L-M=308.1mm

Projection distance (VPL-SW535)

Projected Image Size		Projection Distance L	Picture edge to picture H
Diagonal D	WxHt		
70型(1.78m)	1.51x0.94	0.416-0.428	0.138
80型(2.03m)	1.72x1.08	0.475-0.489	0.159
90型(2.29m)	1.94x1.21	0.534-0.550	0.179
100型(2.54m)	2.15x1.35	0.594-0.611	0.200
130型(3.30m)	2.80x1.75	0.771-0.795	0.262

Projection distance formula (VPL-SW535)

D: Projected image size (Diagonal)

H: Distance to picture edge from the centre of projection window

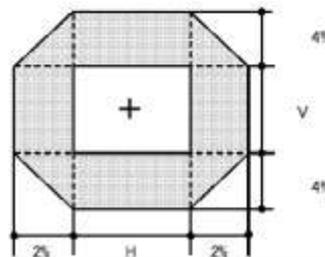
Expression#1

投射距離L(最短)	投射距離L(最長)
$L=0.005931 \times D - 0.0001$	$L=0.006119 \times D - 0.0001$

Expression#2

Distance to picture edge from the centre of projection window H
$H=0.00207 \times D - 0.00674$

Lens shift range (VPL-SW535)

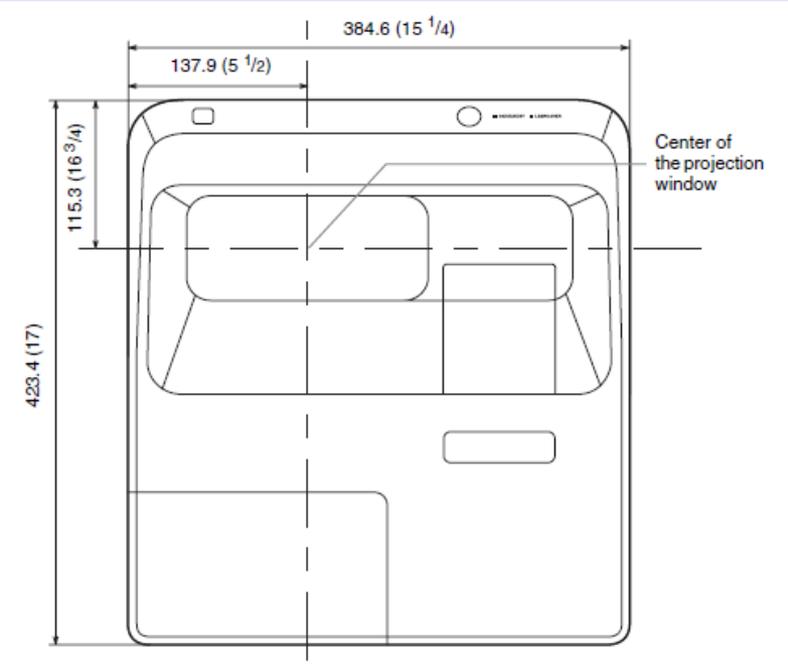


$$\begin{aligned} V_{Sup}[\%] = V_{Sov}[\%] &= 4 - 2.000 \times (HSr[\%] \text{ or } HS[\%]) \\ HSr[\%] = HS[\%] &= 2 - 0.500 \times (V_{Sup}[\%] \text{ or } V_{Sov}[\%]) \end{aligned}$$

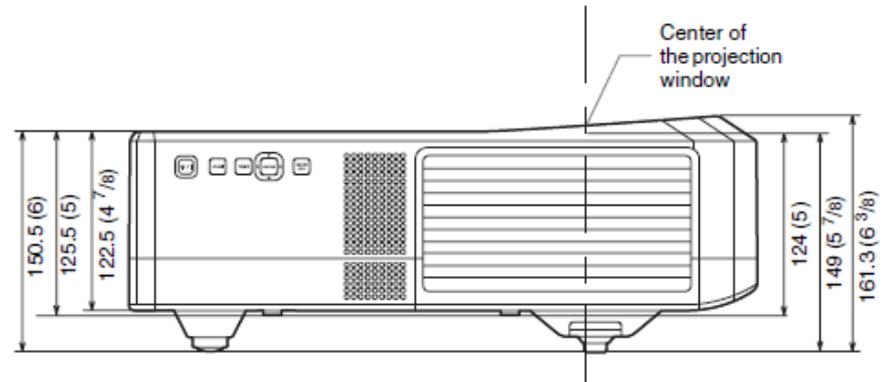
L-M=308.1mm

Other Product Information

Dimensions

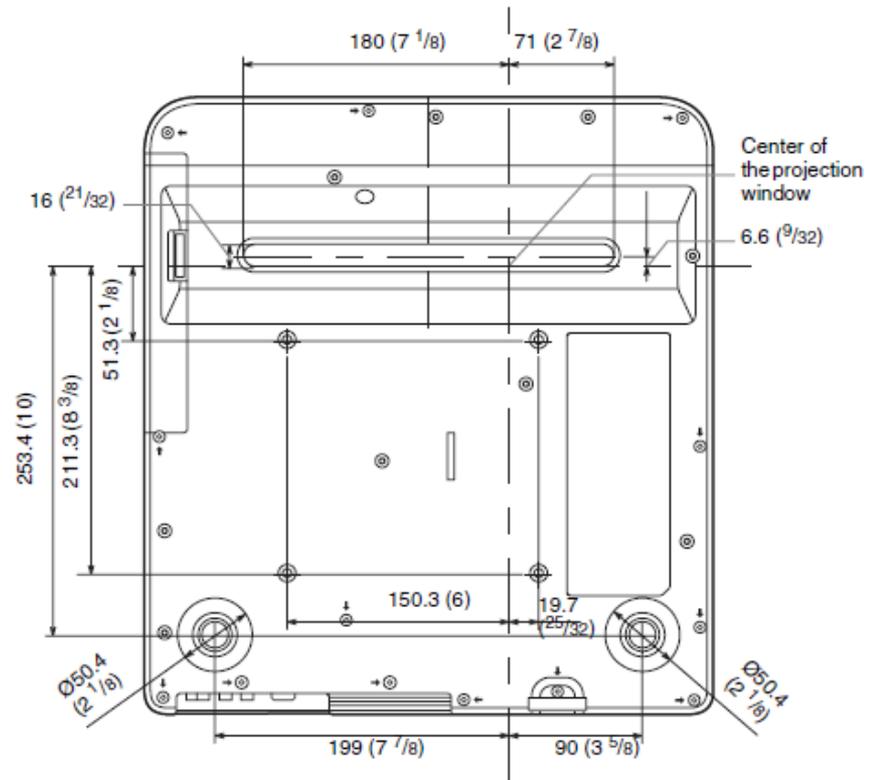


Side



Unit: mm (inches)

Bottom



Unit: mm (inches)

Other Product Information

Preset signals

- If the resolution of the unknown signal is other than table, the picture may not be displayed properly.
- If any signals other than preset signals listed is input, the picture may not be displayed depends on its condition. Please contact Jigyobu in advance.
- If the resolution of the unknown signal is exceeded to the maximum resolution for each model, the signal is displayed by its maximum resolution.
- If the resolution of the input signal is different from the panel resolution, the input signal is not displayed in its own resolution, and letters or lines may be uneven.
- When an SXGA+ signal is input, the image may extend beyond the edges of the screen. In this case, input a signal with no black edges around the image, and disconnect and reconnect the cable or select the input signal by pressing the INPUT key.

Acceptable Input Signals

Computer signal

Resolution	fH [kHz]/ fV [Hz]	Input connector
		RGB
640 × 350	31.5/70	●
	37.9/85	●
640 × 400	31.5/70	●
	37.9/85	●
640 × 480	31.5/60	●
	35.0/67	●
	37.9/73	●
	37.5/75	●
	43.3/85	●
800 × 600	35.2/56	●
	37.9/60	●
	48.1/72	●
	46.9/75	●
	53.7/85	●
832 × 624	49.7/75	●
1024 × 768	48.4/60	●
	56.5/70	●
	60.0/75	●
	68.7/85	●
1152 × 864	64.0/70	●
	67.5/75	●
	77.5/85	●
1152 × 900	61.8/66	●
1280 × 960	60.0/60	●
	75.0/75	●
1280 × 1024	64.0/60	●
	80.0/75	●
	91.1/85	●
1400 × 1050	65.3/60	●
1600 × 1200	75.0/60	●
1280 × 768	47.8/60	●
1280 × 720	45.0/60	●
1360 × 768	47.7/60	●

Resolution	fH [kHz]/ fV [Hz]	Input connector
		RGB
1440 × 900	55.9/60	●
1280 × 800	49.7/60	●

Digital TV signal

Signal	fV [Hz]	Input connector
		RGB ^{*1} / YPbPr
480i	60	●
576i	50	●
480p	60	●
576p	50	●
1080i	60	●
1080i	50	●
720p	60	●
720p	50	●

Analog TV signal

Signal	fV [Hz]	Input connector
		VIDEO/ S VIDEO
NTSC	60	●
PAL/SECAM	50	●

Notes

*1: With INPUT A only

- When a signal other than the signals listed in table is input, the picture may not be displayed properly.
- An input signal meant for screen resolution different from that of the panel will not be displayed in its original resolution. Text and lines may be uneven.

On screen menu (1/6)

PICTURE

Items		Options	Initial Setting	Note
Picture Mode		Dynamic/Standard/Presentation	Presentation (Computer signal) /Standard (Video signal)	"Presentation" is available for computer signal only
Reset		—	—	—
Contrast		0-100	80(50 for China) Depend on Picture Mode	—
Brightness		0-100	50 Depend on Picture Mode	—
Color		0-100	50 Depend on Picture Mode	For video signal only (except Black and white signal)
Hue		0-100	50 Depend on Picture Mode	For video signal only (NTSC3.58/NTSC4.43 when analog TV video signal is input, except Black and white signal)
Color Temp.		High/Middle/Low	Low for Video signal Depend on Picture Mode	Not available when "Picture Mode" is set to "Presentation"
Sharpness		0-100	50 Depend on Picture Mode	For video signal only
Expert Setting	Film Mode	Auto/Off	Auto	For video signal except progressive video signal only
Expert Setting	Gamma Mode	Graphics1/Graphics2/Text	Graphics1	For computer signal only

On screen menu (2/6)

SCREEN

Items		Options	Initial Setting	Note
Aspect	When the computer signal is input	Normal/Full1/Full2	Full1	—
	When the video signal is input	4:3/16:9/Zoom	4:3 (SD video signal)/16:9 (HD video signal)	—
Adjust Signal	APA	—	—	For computer signal via RGB input connector.
	Phase	0-31	Depend on signal	
	Pitch	Depend on signal	Depend on signal	
	Shift	H : Depend on signal V : 0-100	H : Depend on signal V : Depend on signal	For computer signal and Video signal via RGB input connector only

On screen menu (3/6)

FUNCTION

Items	Options	Initial Setting	Note
Volume	0-100	30	—
Audio Output Volume	0-100	30	—
Speaker	On/Off	On	—
Smart APA	On/Off	On	APA is available for computer signal via RGB input connector only
CC Display	Off/CC1/CC2/CC3/CC4/TEXT1/TEXT2/TEXT3/TEXT4	Off	—
Pic.Muting Mode	Shutter/Image	Shutter	—
Lamp Timer Reset	—	—	—
Background	Blue/Black	Blue	—
Start Up Image	On/Off	On	—

On screen menu (4/6)

OPERATION

Items	Options	Initial Setting	Note
Language	English/Dutch/French/Italian/German/Spanish/Portuguese/Russian/Swedish/Norwegian/Japanese/Chinese (Simplified Chinese)/Chinese (Traditional Chinese)/Korean/Thai/Arabic/Turkish/Polish/Vietnamese/Persian	English	Options are shown by each local language
Status	On/Off	On	—
IR Receiver	Front & Rear/Front/Rear	Front & Rear	—
ID Mode	All/1/2/3	All	—
Security Lock	On/Off	Off	—
Panel Key Lock	On/Off	Off	—
Lens Control	On/Off	On	—

On screen menu (5/6)

CONNECTION/POWER

Items		Options	Initial Setting	Note
Network Setting	IP Address Setup	Auto (DHCP)/Manual	Auto (DHCP)	—
	IP Address/Subnet Mask/Default Gateway/Primary DNS/Secondary DNS/Apply	—	—	—
Input-A Signal Sel.		Auto/Computer/Video GBR/Component	Auto	—
Color System		Auto/NTSC3.58/PAL/SECA M/NTSC4.43/PAL-M/PAL-N	Auto	—
ECO	Lamp Mode	High/Standard/Low	Standard	
	Auto PowerSaving	(sub title)		
	With No Input	Lamp Cutoff/Standby/Off	Standby	Lot6 stage2
	With Static Signal	Lamp Dimming/Off	Lamp Dimming(10min)	Dimming(5/10/15/20min./De mo)
Standby Mode		Standard/Low	Low	
PowerSaving		Lamp Cutoff/Standby/Off		
Direct Power On		On/Off	Off	—

On screen menu (6/6)

INSTALLATION

Items		Options	Initial Setting	Note
Image Flip		HV/H/V/Off	Off	—
Installation Attitude		Right Side Up/Upside Down	Upside Down	—
Installation Attitude		Right Side Up/Upside Down/Front Up/Front Down	Right Side Up	—
High Altitude Mode		On/Off	Off	—
Screen fit	V Keystone	-20 - +20	0	—
	Digital Shrink	0 - 100	0	
V Keystone		-120 - 120	0	—

INFORMATION

Items	Options	Initial Setting	Note
Model Name	—	—	—
Serial Number	—	—	—
fH/fV	—	—	—
Signal Type	—	—	—
Lamp Timer	—	—	—

Carton Box

For retail channel,
Photo label space is reserved.



Mock up on a pile of carton in a retail shop

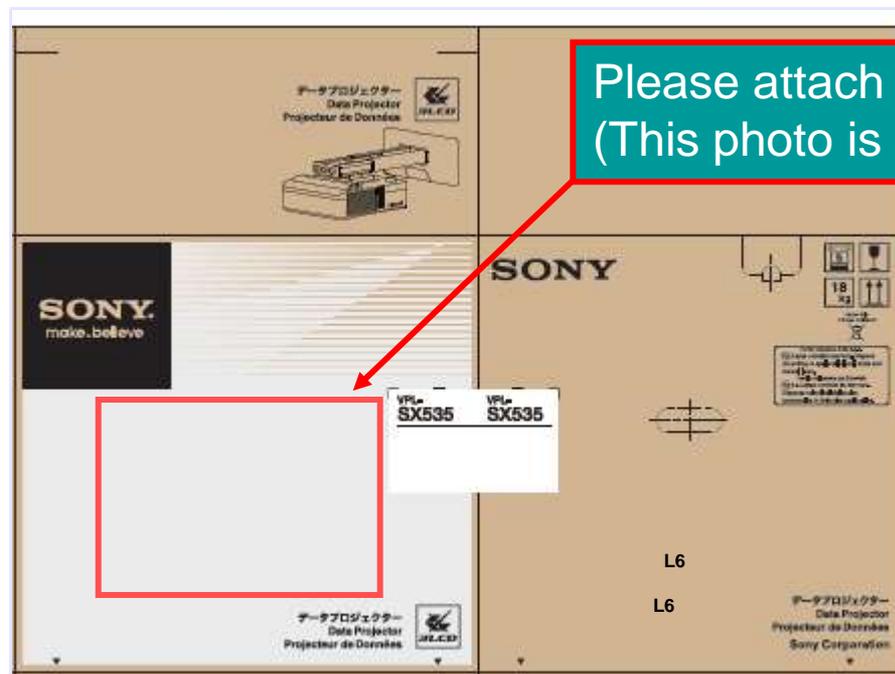
Size (W H D)

Approx.

568x551x515mm

Weight (include unit)

Approx. 18 kg



Please attach this area !!
(This photo is sample.)

Technology Information

- **3LCD panel system**

- Structure of 3LCD
- Benefits of 3LCD
- Bright Images
- Comparisons by actual photos
- Gentle on your eyes



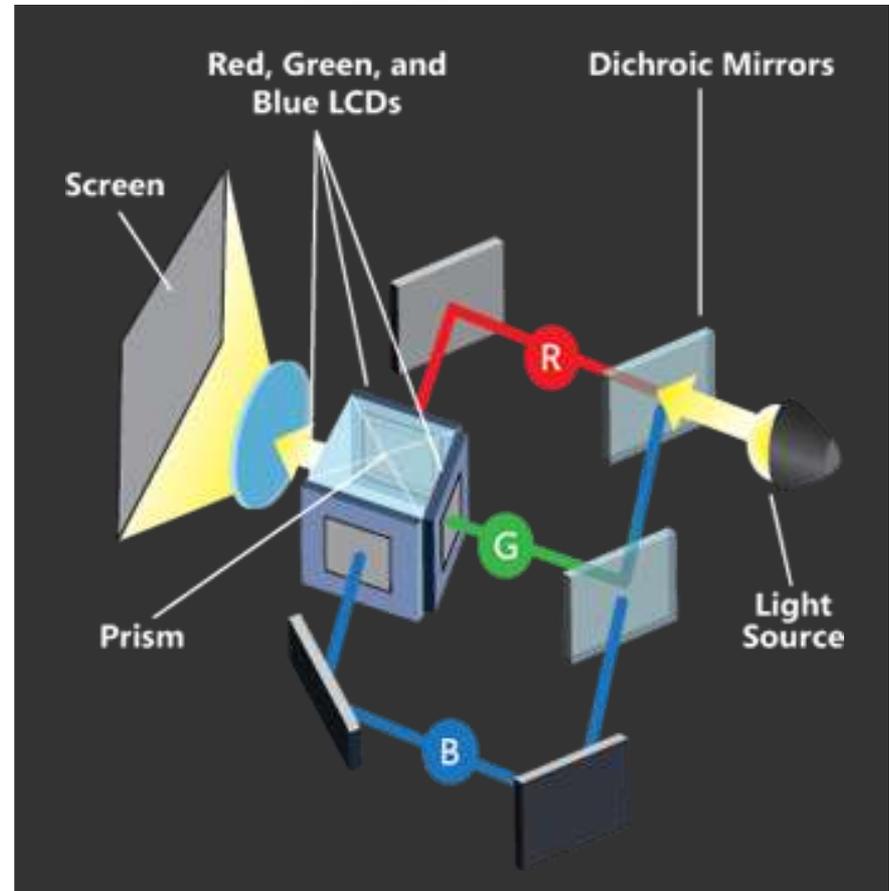
- **BrightEra Panel**

BrightEra



Structure of 3LCD

- A light source projects white light onto a combination of mirrors that split the light into its three basic video colors.
- Each LCD chip takes the electrical signal it receives and creates an image.
- The three color images are combined using a prism to form a full-color image consisting of millions of colors.
- The vibrant, full-color image passes through a lens and is projected onto a screen.





Benefits of 3LCD

- **Bright Images**

Light efficiency is excellent because the three basic colors are projected the whole time the projector is on. This ensures that users watch an image that is both bright and sharp.

- **Natural Images**

The three basic colors of red (R), green (G) and blue (B) are carefully controlled and then recombined to ensure accurate color reproduction to the single dot level. And because 3LCD allows true expression of intermediate colors, users can enjoy lifelike reproduction of dark and shadow sections.

- **Gentle on the Eyes**

Since colors are reproduced with three LCDs, the images reproduced are gentle on the eyes. With 3LCD there are no problems with color breakup - otherwise known as the rainbow effect - that can affect some projection systems. This makes superb reproduction of moving images.



Bright Images (1/4)

- **What is Color Light Output?**

Color light Output is a metric that measures a projector's ability to deliver color. Developed by color scientists using the same approach as White Light Output (Brightness) measurement way to evaluate projector Color Performance.

- **Does Brightness Measure Color?**

No. Current product specifications such as Brightness (or White Light Output), Contrast Ratio and Resolution give no information regarding a projector's ability to reproduce color.

- **Why is Color Light Output Important?**

Color Light Output is critically important because color is a key indicator of picture quality. In-depth market research by TFC Associates*, a leading projector market research firm, clearly shows that picture quality is the most important factor when choosing a projector. Color Light Output provides users with a way to evaluate projector's Color Performance to make better buying decisions.

*TFC Brand Strength Study 2008

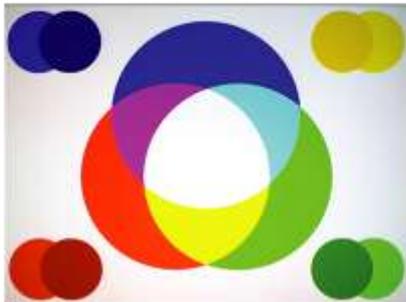


Bright Images (2/4)

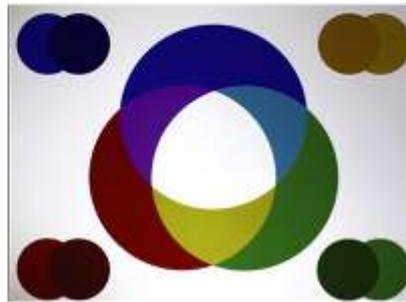
- **In Color Performance the same in all projectors?**

No. There are vast differences in the Color Performance of projectors on the market today. Look at the images below from two competing projectors.

Projector A



Projector B



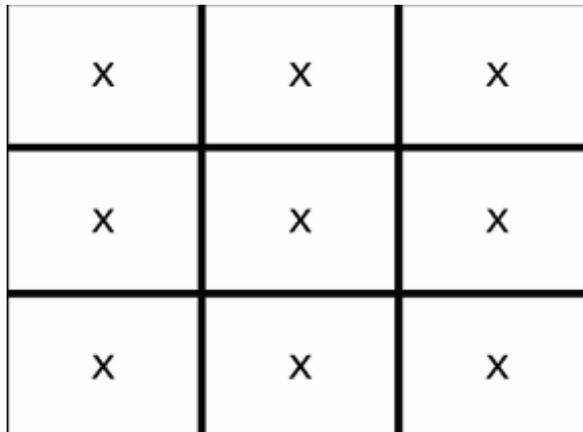
- * Projected images may vary among projectors with different color light output, or according to the type of image.
- * Actual photographs of images produced by 2 competing projectors run in default mode. Price, Resolution and Brightness (White Light Output) are the same for both projectors.



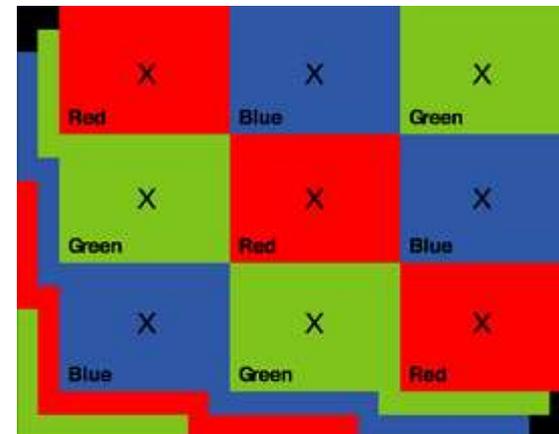
Bright Images (3/4)

- **How is Color Light Output measured?**

Brightness (or White Light Output) measures the total amount of white Light projected in lumens on a nine Point grid. It does not measure color.



Color Light Output uses 3 sets of a nine Point grid to measure the primary Colors red, green and blue, using the same approach used to measure White Light Output in lumens

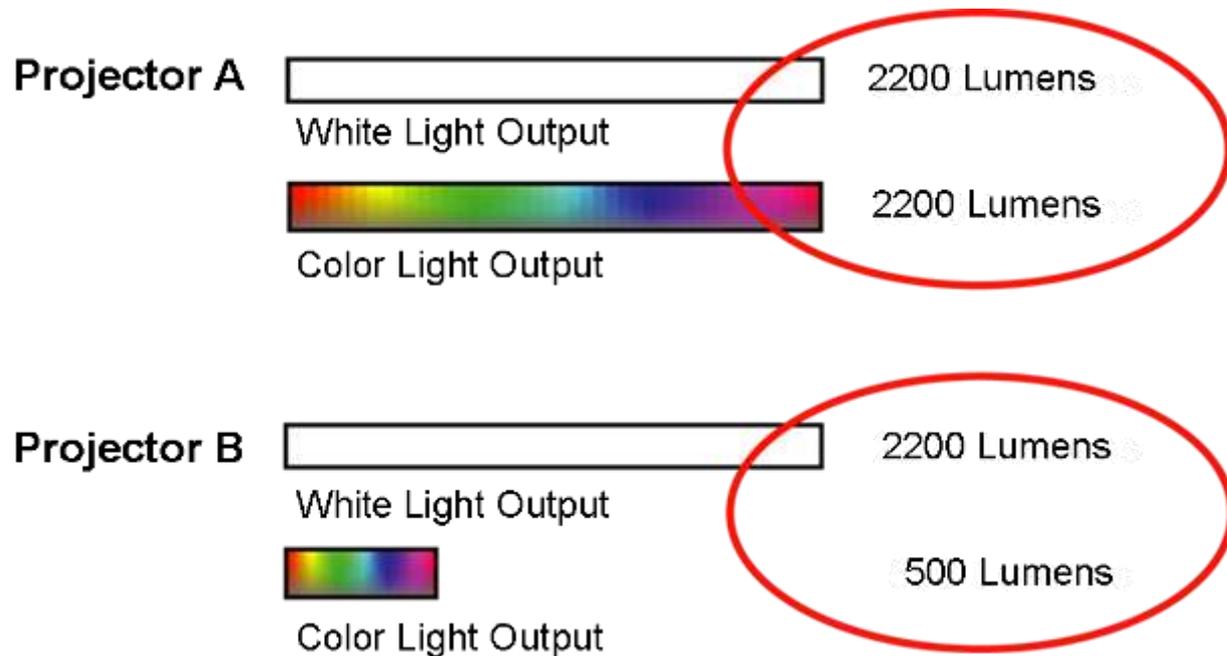




Bright Images (4/4)

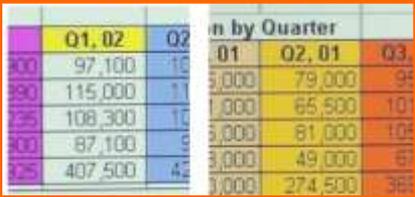
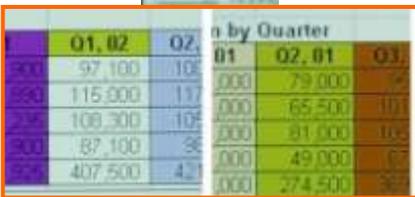
- **How should Color Light Output be used?**

Color Light Output should be used with White Light Output to provide insight into a projector's overall picture quality. Two things to remember in order to get optimal Color performance:



Comparisons by actual photos

To achieve the catalog brightness, 1-chip DLP with white filter rely on the white color whose transmittance is higher than R/G/B colors. The side effect is not only dark color brightness but also lost color balance.

Actual comparison	 SONY F300	A Model	
Sample. 6,000lm class with Default setting	Presentation mode Brightness: 100%	Dynamic mode Brightness: 100%	Natural mode Brightness: 58%
Color Reproduction and Light output	 	 	<div style="border: 1px solid red; padding: 5px; text-align: center;"> Better color, lower brightness </div>
			

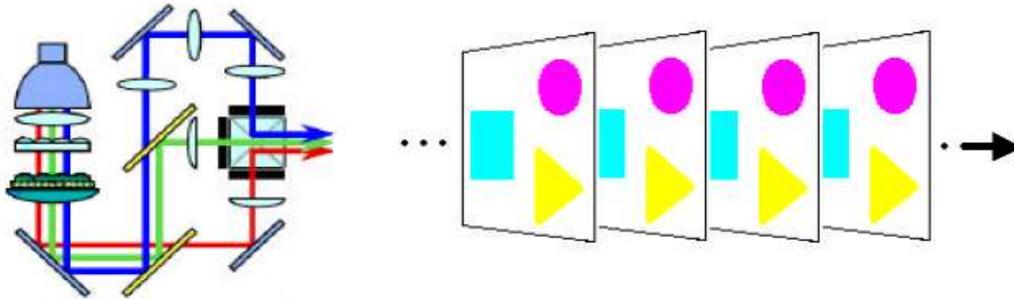


Gentle on your eyes

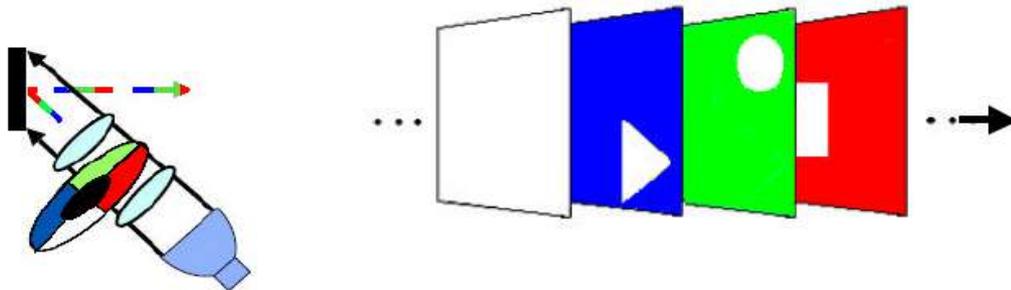
Color break-up

Color breakup is a sequential color driving system specific issue. It occurs due to the interaction between motions of a display and of a viewer's eyes. It occurs when the movie caption switches or a viewer follows the fast moving ball in a sports program, etc.

3LCD System : RGB are projected continuously



1DLP System : RGB are projected sequentially



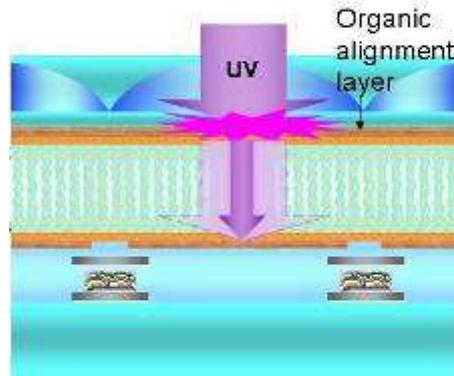
Color Breakup

BrightEra Panel

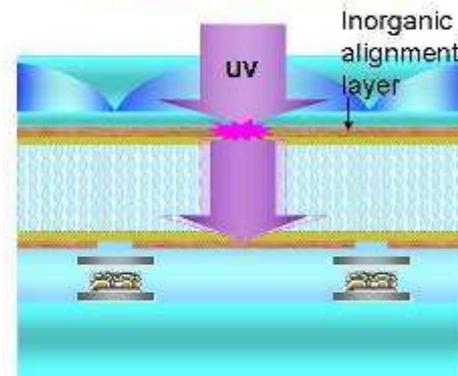
- **Inorganic Alignment**

- Thanks to the inorganic alignment layer, which improves panel light resistance, the projectors offers higher resolution, high brightness for 0.63" small panel, and increase of panel reliability at the same time.

Current organic panel (EX100)



BrightEra(SX535/SW535)



Bonding of molecules at inorganic alignment layer is stronger than at organic
→ Inorganic alignment is difficult to get damage from UV
→ Light Resistance Up and Brightness Up

- **Normally-Black-Mode LCD**

- By adopting Normally-Black-Mode LCD instead of current TN LCD, contrast ratio is improved. So that, the embedded projectors can achieves 700:1 without using WV film.

- **1F (field) Inversion drive**

- 1F Inversion drive method can control the individual pixel better than current one. For that, transmittance ratio is improved, and thus, brightness up becomes possible.
- Furthermore, drive becomes double, 60 to 120Hz, so line flicker is decreased.



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