

User's Guide

Multimedia Projector

EB-X14

EB-S12

EB-W12

EB-X11



EB-X12

EB-S11





Notations Used in This Guide

- **Safety indications**

The documentation and the projector use graphical symbols to show how to use the projector safely. Please understand and respect these caution symbols in order to avoid injury to persons or property.

 Warning	This symbol indicates information that, if ignored, could possibly result in personal injury or even death due to incorrect handling.
 Caution	This symbol indicates information that, if ignored, could possibly result in personal injury or physical damage due to incorrect handling.

- **General information indications**

Attention	Indicates procedures which may result in damage or injury if sufficient care is not taken.
	Indicates additional information and points which may be useful to know regarding a topic.
	Indicates a page where detailed information regarding a topic can be found.
	Indicates that an explanation of the underlined word or words in front of this symbol appears in the glossary of terms. See the "Glossary" section of the "Appendix".  "Glossary" p.109
[Name]	Indicates the name of the buttons on the remote control or the control panel. Example: [Esc] button
Menu Name	Indicates Configuration menu items. Example: Select Brightness from Image . Image - Brightness



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Introduction

This chapter explains the projector's features and the part names.

List of Functions by Model

Available functions differ depending on the model being used. See the table below for a list of the functions available for each model.

Function	EB-X14	EB-W12	EB-X12	EB-S12	EB-X11	EB-S11
USB Display	✓	✓	✓	✓	✓	✓
HDMI Connection	✓	✓	✓	-	-	-
External Equipment Connection	-	-	-	✓*1	✓	✓
Auto V-Keystone	✓	✓	✓	✓	✓	-
H-Keystone Adjuster	✓	✓	✓	✓	✓	-*2
Quick Corner	✓	✓	✓	✓	✓	✓
Slideshow	✓	✓	✓	✓	✓	✓

*1 Depending on the area of purchase, this may not be available.

*2 Although the horizontal keystone adjuster is not installed for this model, you can perform H-Keystone from the control panel or the Configuration menu.

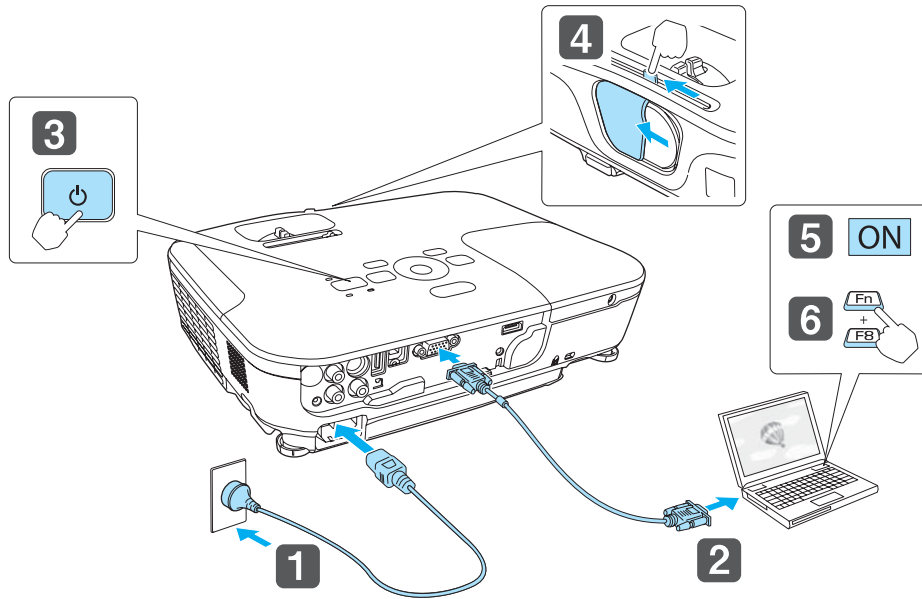


Basic Usage

This chapter explains how to project and adjust images.

From Installation to Projection


This section explains the procedure for connecting the projector to a computer with the computer cable and projecting images.



- 1** Connect the projector to an electrical outlet with the power cable.
- 2** Connect the projector to the computer with the computer cable.
- 3** Turn on the projector.
- 4** Slide open the A/V mute slide.
- 5** Turn on your computer.

6 Change the computer's screen output.

When using a laptop computer, you need to change the screen output from the computer.

Hold down the Fn key (function key), and press the  key.



The method for changing differs depending on the computer being used. See the documentation supplied with the computer.

If the image is not projected, you can change the projected image using one of the following methods.

- Press the [Source Search] button on the control panel or the remote control.
 - ☛ "Automatically Detect Input Signals and Change the Projected Image (Source Search)" [p.31](#)
- Press the button for the target port on the remote control.
 - ☛ "Switching to the Target Image by Remote Control" [p.32](#)



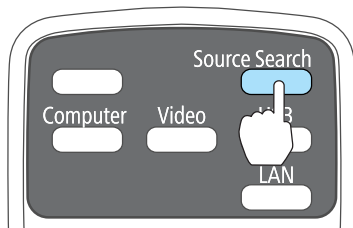
After projecting the image, adjust the image if necessary.

- ☛ "Correcting Keystone Distortion" [p.36](#)
- ☛ "Correcting the Focus" [p.41](#)

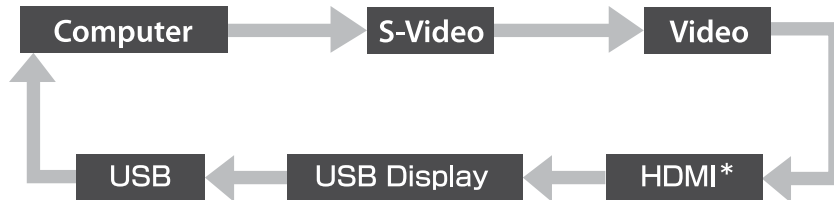
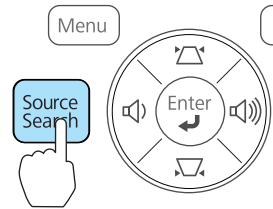
Automatically Detect Input Signals and Change the Projected Image (Source Search)

Press the [Source Search] button to project images from the port currently receiving an image.

Using the remote control



Using the control panel



* (EB-X14/EB-W12/EB-X12 only)

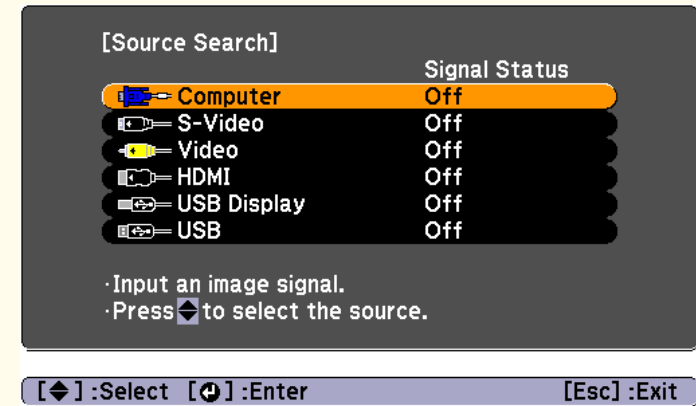
When two or more image sources are connected, press the [Source Search] button until the target image is projected.

When your video equipment is connected, start playback before beginning this operation.



The following screen is displayed while no image signals are input.

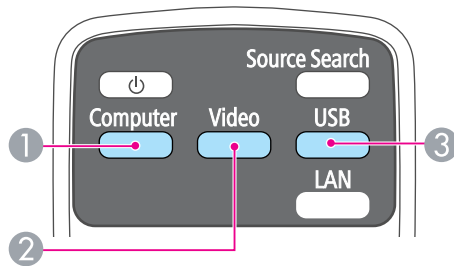
Example: EB-X14/EB-W12/EB-X12



Switching to the Target Image by Remote Control

You can change directly to the target image by pressing the following buttons on the remote control.

Remote control



- ① Changes to images from the Computer port.
- ② Each time the button is pressed, it cycles through the images being input from the following sources.
 - S-Video port
 - Video port
 - HDMI port (EB-X14/EB-W12/EB-X12 only)
- ③ Each time the button is pressed, it cycles through the images being input from the following sources.
 - USB Display
 - Images from the device connected to the USB(TypeA) port

Projecting with USB Display

You can use a USB cable to connect the projector to a computer to project images from the computer.

You can send the computer's audio with the projected image.

For EB-X14/EB-W12/EB-X12/EB-S12, set **USB Type B** to **USB Display** from the Configuration menu.

☛ **Extended - USB Type B** [p.71](#)

System requirements

For Windows

OS	Windows 2000*1	
	Windows XP*2	Professional 32 bit Home Edition 32 bit Tablet PC Edition 32 bit
	Windows Vista	Ultimate 32 bit Enterprise 32 bit Business 32 bit Home Premium 32 bit Home Basic 32 bit
	Windows 7	Ultimate 32/64 bit Enterprise 32/64 bit Professional 32/64 bit Home Premium 32/64 bit Home Basic 32 bit Starter 32 bit
CPU	Mobile Pentium III 1.2 GHz or faster Recommended: Pentium M 1.6 GHz or faster	

Amount of Memory	256 MB or more Recommended: 512 MB or more
Hard Disk Space	20 MB or more
Display	Resolution of no less than 640x480 and no higher than 1600x1200. Display color in 16-bit color or greater

*1 Service Pack 4 only

*2 Except for Service Pack 1

For Mac OS

OS	Mac OS X 10.5.x Mac OS X 10.6.x
CPU	Power PC G4 1GHz or faster Recommended: Core Duo 1.83GHz or faster
Amount of Memory	512 MB or more
Hard Disk Space	20 MB or more
Display	Resolution of no less than 640x480 and no higher than 1600x1200. Display color in 16-bit color or greater

Connecting for the first time

The first time you connect the projector and the computer using the USB cable, the driver needs to be installed. The procedure is different for Windows and Mac OS.



- You do not need to install the driver the next time you connect.
- When inputting images from multiple sources, change the input source to USB Display.
- If you use a USB hub, the connection may not operate correctly. Connect the USB cable directly to the projector.
- Depending on the model used and the area of purchase, the USB cable may not be supplied with the projector.

For Windows

- 1 Connect the computer's USB port to the projector's USB(TypeB) port using a USB cable.



For Windows 2000 or Windows XP, a message asking you if you want to restart your computer may be displayed. Select **No**.

For Windows 2000

Double-click **Computer**, **EPSON PJ_UD**, and then **EMP_UDSE.EXE**.

For Windows XP

Driver installation starts automatically.

For Windows Vista/Windows 7

When the dialog box is displayed, click **Run EMP_UDSE.exe**.

- 2 When the License Agreement screen is displayed, click **Agree**.



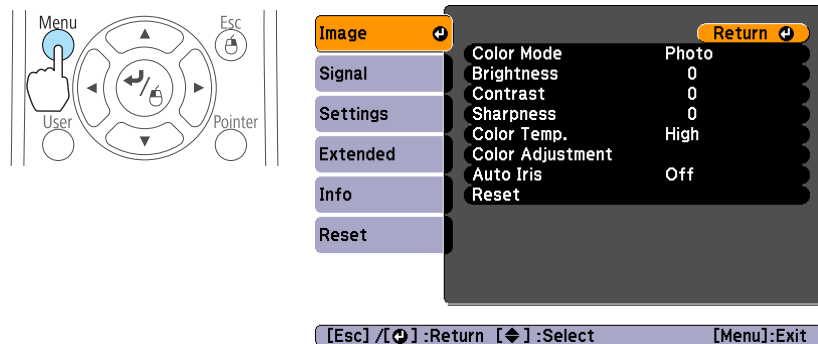
Configuration Menu

This chapter explains how to use the Configuration menu and its functions.

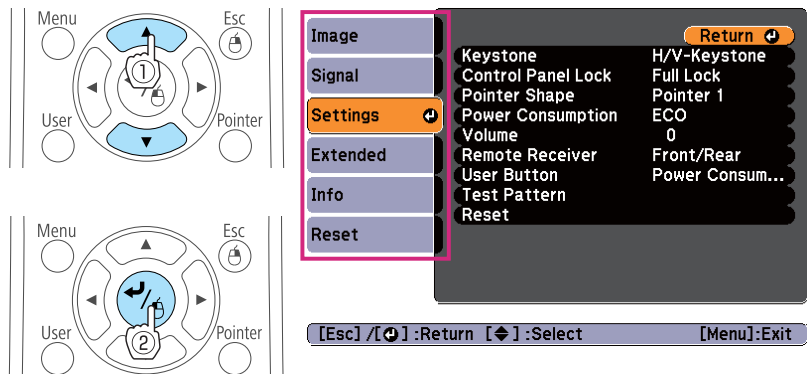
This section explains how to use the Configuration menu.

Although steps are explained using the remote control as an example, you can perform the same operations from the control panel. Check the guide under the menu for the available buttons and their operations.

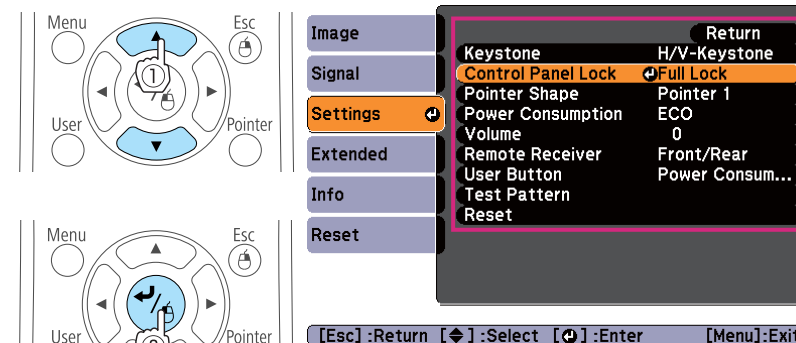
1 Display the Configuration menu screen.



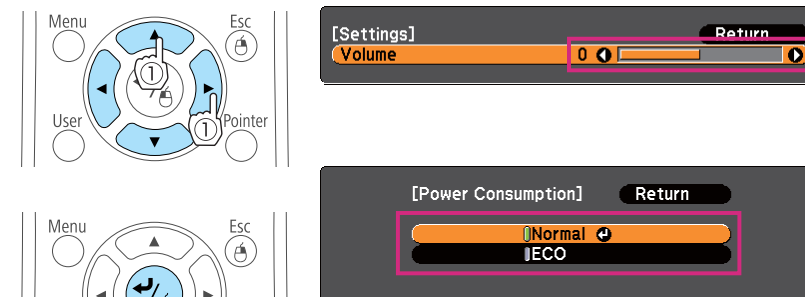
2 Select a top menu item.



3 Select a submenu item.



4 Change settings.



5 Press the [Menu] button to finish making settings.

Configuration Menu Table

Settable items vary depending on the model being used and the image signal and source being projected.

Top Menu Name	Submenu Name	Items or Setting Values
Image menu ☛ p.67	Color Mode	Dynamic, Presentation, Theatre, Photo, Sports, sRGB, Blackboard, and Whiteboard
	Brightness	-24 to 24
	Contrast	-24 to 24
	Color Saturation	-32 to 32
	Tint	-32 to 32
	Sharpness	-5 to 5
	Color Temp.	High, Medium, and Low
	Color Adjustment	Red: -16 to 16 Green: -16 to 16 Blue: -16 to 16
Auto Iris	On and Off	
Signal menu ☛ p.68	Auto Setup	On and Off
	Resolution	Auto, Wide, and Normal
	Tracking	-
	Sync.	0 to 31
	Position	Up, Down, Left, and Right
	Progressive	Off, Video, and Film/Auto (EB-X14/EB-W12/EB-X12 only) On and Off (EB-S12/EB-X11/EB-S11 only)
	Noise Reduction	Off, NR1, and NR2
	HDMI Video Range	Auto, Normal, and Expanded
	Input Signal	Auto, RGB, and Component

Top Menu Name	Submenu Name	Items or Setting Values
	Video Signal	Auto, NTSC, NTSC4.43, PAL, M-PAL, N-PAL, PAL60, and SECAM
	Aspect	Normal, Auto, 4:3, 16:9, Full, Zoom, and Native
	Overscan	Auto, Off, 4%, and 8%
Settings menu ☛ p.70	Keystone	H/V-Keystone and Quick Corner
	Zoom	-
	Control Panel Lock	Full Lock, Partial Lock, and Off
	Pointer Shape	Pointer 1, 2, and 3
	Power Consumption	Normal and ECO
	Volume	0 to 10
	Remote Receiver	Front/Rear, Front, Rear and Off
	User Button	Brightness Control, Info, Progressive, Test Pattern, Resolution
Test Pattern	-	
Extended menu ☛ p.71	Display	Messages, Display Background, Startup Screen, and A/V Mute
	User's Logo	-
	Projection	Front, Front/Ceiling, Rear, and Rear/Ceiling
	Operation	Direct Power On, Sleep Mode, Sleep Mode Timer, Lens Cover Timer, and High Altitude Mode
	Standby Mode	Communication On and Communication Off
	USB Type B	USB Display and Link 21L
	Language	15 or 35 languages*1

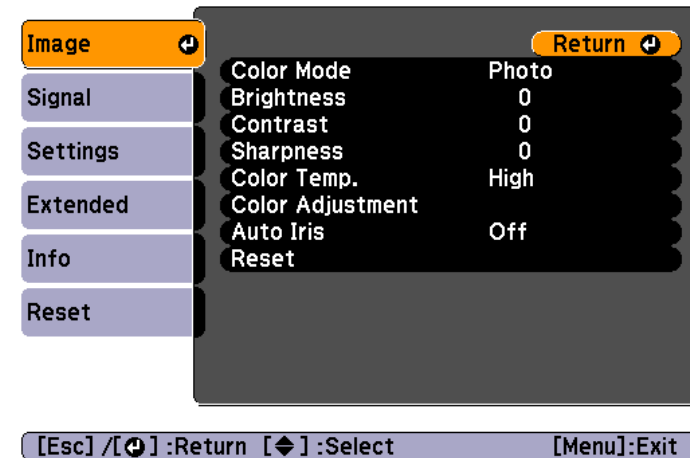
Top Menu Name	Submenu Name	Items or Setting Values
Info menu ☛ p.72	Lamp Hours	-
	Source	-
	Input Signal	-
	Resolution	-
	Video Signal	-
	Refresh Rate	-
	Sync Info	-
	Status	-
	Serial Number	-
Reset menu ☛ p.73	Reset All	-
	Reset Lamp Hours	-

*1 The number of supported languages differs depending on the region where the projector is used.

Image Menu

Settable items vary depending on the image signal and source currently being projected. Setting details are saved for each image signal.

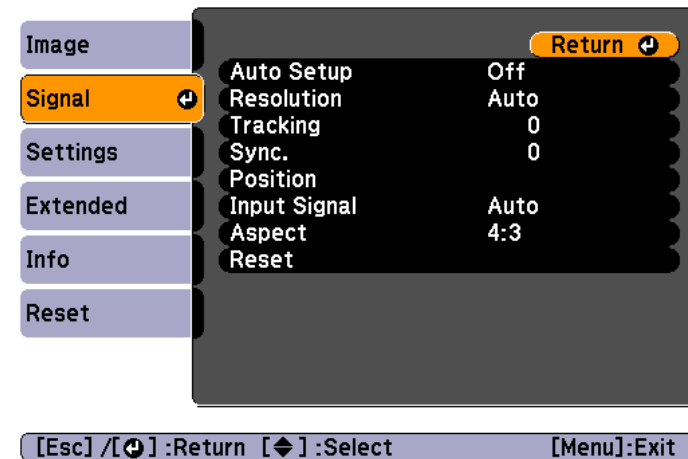
☛ "Automatically Detect Input Signals and Change the Projected Image (Source Search)" p.31



Submenu	Function
Color Mode	You can select the quality of the image to suit your surroundings. ☛ "Selecting the Projection Quality (Selecting Color Mode)" p.41
Brightness	You can adjust the image brightness.
Contrast	You can adjust the difference between light and dark in the images.
Color Saturation	You can adjust the color saturation for the images.
Tint	(Adjustment is possible when a component video signal is being input. If a composite video or S-video signal is input, adjustment is only possible when NTSC signals are being input.) You can adjust the image tint.
Sharpness	You can adjust the image sharpness.
Color Temp.	(This item cannot be selected if Color Mode is set to <u>sRGB</u> .) You can adjust the overall tint of the image. You can adjust tints in three stages from High , Medium , and Low . The image is tinted blue when High is selected and tinted red when Low is selected.

Submenu	Function
Color Adjust-ment	(This item cannot be selected if Color Mode is set to sRGB .) You can adjust the color strength for Red , Green , and Blue individually.
Auto Iris	(This item can be set only if Color Mode is set to Dynamic or Theatre .) Set to On to adjust the iris to obtain the optimum light for images being projected. The setting is stored for each Color Mode. ☛ "Setting Auto Iris" p.42
Reset	You can reset all adjustment values for the Image menu to their default settings. See the following to return all menu items to their default settings. ☛ "Reset Menu" p.73

☛ "Automatically Detect Input Signals and Change the Projected Image (Source Search)" [p.31](#)



Signal Menu

Settable items vary depending on the image signal and source currently being projected. Setting details are saved for each image signal.

You cannot make settings on the Signal menu when the source is USB Display or USB.

Submenu	Function
Auto Setup	Set to On to automatically adjust Tracking, Sync., and Position to the optimum state when the input signal changes.
Resolution	Set to Auto to automatically identify the resolution of the input signal. If images are not projected correctly when set to Auto , for example if some of the image is missing, adjust to Wide for wide screens, or set to Normal for 4:3 or 5:4 screens depending on the connected computer.
Tracking	You can adjust computer images when vertical stripes appear in the images.
Sync.	You can adjust computer images when flickering, fuzziness, or interference appear in the images.
Position	You can adjust the display position up, down, left, and right when a part of the image is missing so that the whole image is projected.



Maintenance

This chapter provides information on maintenance procedures to ensure the best level of performance from the projector for a long time to come.

You should clean the projector if it becomes dirty or if the quality of projected images starts to deteriorate.

Attention

Turn off the projector's power before cleaning.

Cleaning the Projector's Surface

Clean the projector's surface by wiping it gently with a soft cloth.

If the projector is particularly dirty, moisten the cloth with water containing a small amount of neutral detergent, and then firmly wring the cloth dry before using it to wipe the projector's surface.

Attention

Do not use volatile substances such as wax, alcohol, or thinner to clean the projector's surface. The quality of the case may change or become discolored.

Cleaning the Lens

Use a commercially available cloth for cleaning glasses to gently wipe the lens.

Warning

Do not use sprays that contain flammable gas to remove dust and lint from the lens. The projector may catch fire due to the high internal temperature of the lamp.

Attention

Do not rub the lens with harsh materials or subject the lens to shocks, as it can easily become damaged.

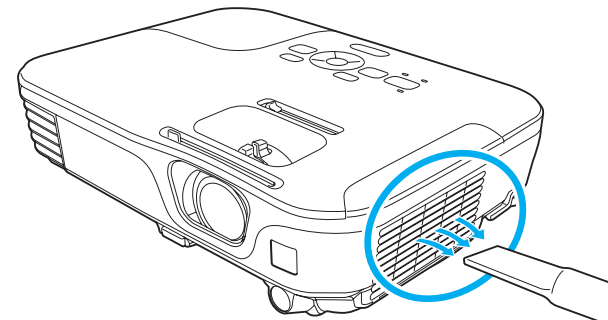
Cleaning the Air Filter

Clean the air filter and the air intake vent when the following message is displayed.

"The projector is overheating. Make sure nothing is blocking the air vent, and clean or replace the air filter."

Attention

- If dust collects on the air filter, it can cause the internal temperature of the projector to rise, and this can lead to problems with operation and shorten the optical engine's service life. Clean the air filter immediately when the message is displayed.
- Do not rinse the air filter in water. Do not use detergents or solvents.





- If a message is frequently displayed, even after cleaning, it is time to replace the air filter. Replace it with a new air filter.
 - ☛ "Replacing the Air Filter" [p.94](#)
- It is recommended that you clean these parts at least once every three months. Clean them more often than this if using the projector in a particularly dusty environment.

This section explains how to replace the lamp and the air filter.

Replacing the Lamp

Lamp replacement period

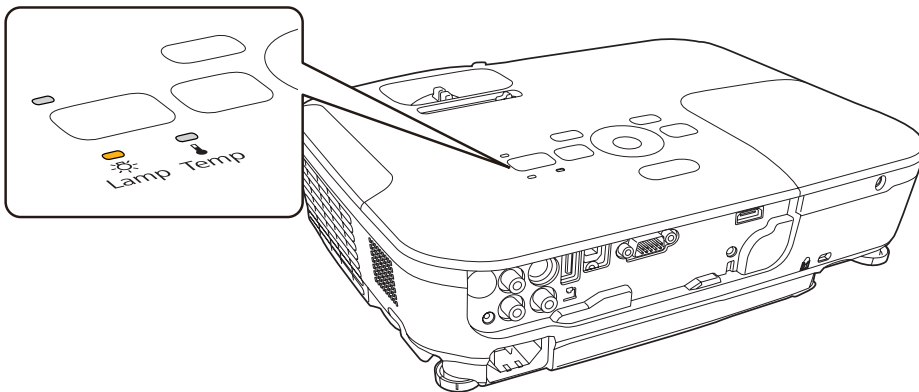
It is time to replace the lamp when:

- The following message is displayed.
"Time to replace the lamp. Please contact your Epson projector reseller or visit www.epson.com to purchase."



The message is displayed for 30 seconds.

- The lamp indicator flashes orange.



- The projected image gets darker or starts to deteriorate.

Attention

- The lamp replacement message is set to appear after the following time periods in order to maintain the initial brightness and quality of the projected images.
When **Power Consumption** is set to **Normal**: About 3900 hours
When **Power Consumption** is set to **ECO**: About 4900 hours
☛ **Settings - Power Consumption p.70**
- If you continue to use the lamp after the replacement period has passed, the possibility that the lamp may explode increases. When the lamp replacement message appears, replace the lamp with a new one as soon as possible, even if it is still working.
- Do not repeatedly turn off the power and immediately back on. Turning the power on and off frequently may shorten the lamp's operating life.
- Depending on the characteristics of the lamp and the way it has been used, the lamp may become darker or stop working before the lamp warning message appears. You should always have a spare lamp unit ready in case it is needed.

How to replace the lamp

The lamp can be replaced even when the projector is suspended from a ceiling.

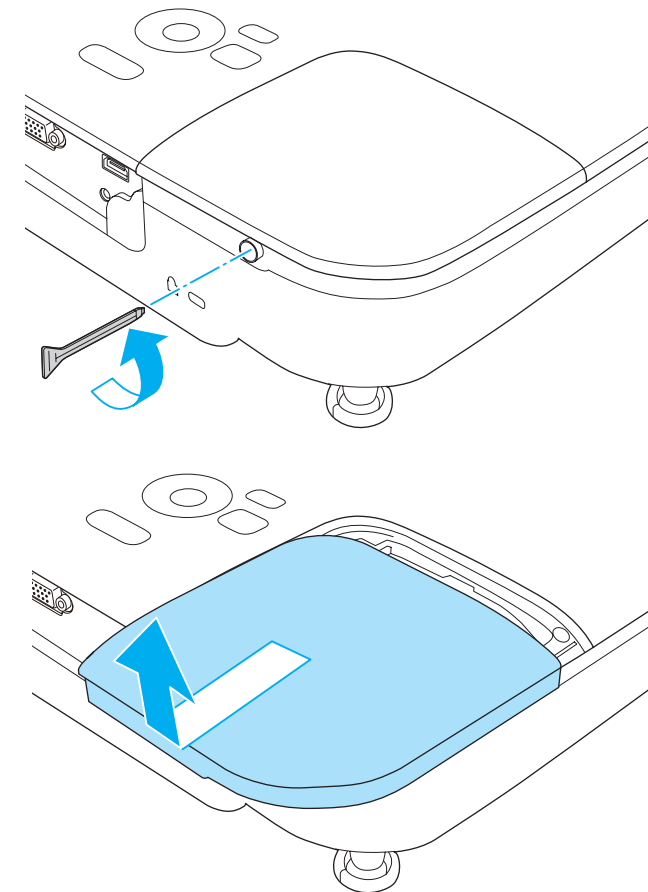
Warning

- When replacing the lamp because it has stopped illuminating, there is a possibility that the lamp may be broken. If replacing the lamp of a projector which has been installed on the ceiling, you should always assume that the lamp is cracked, and you should stand to the side of the lamp cover, not underneath it. Remove the lamp cover gently.
- Never disassemble or remodel the lamp. If a modified or disassembled lamp is installed in the projector and used, it could cause a fire, electric shock, or an accident.

Caution

Wait until the lamp has cooled down sufficiently before removing the lamp cover. If the lamp is still hot, burns or other injuries may result. It takes about one hour after the power has been turned off for the lamp to be cool enough.

- 1** After you turn off the projector's power and the confirmation buzzer beeps twice, disconnect the power cable.
- 2** Wait until the lamp has sufficiently cooled down, and then remove the lamp cover at the top of the projector.
Loosen the Lamp cover fixing screw with the screwdriver supplied with the new lamp unit or a Phillips screwdriver. Then slide the lamp cover straight forward and lift it to remove.

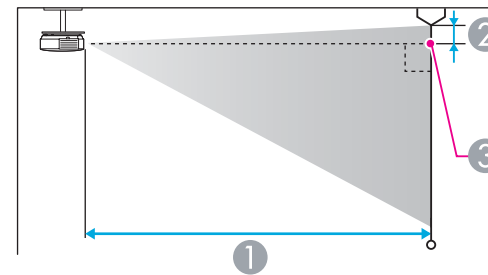
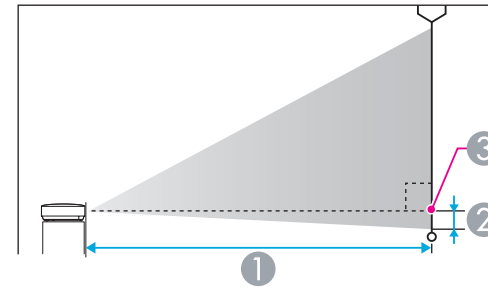


- 3** Loosen the two lamp fixing screws.

Unit: cm

16:10 Screen Size		①	②
		Minimum (Wide) to Maximum (Tele)	
35"	76x47	97 - 117	-7
40"	86x54	111 - 134	-8
50"	110x67	139 - 168	-10
60"	130x81	168 - 202	-12
80"	170x110	225 - 270	-15
100"	220x130	281 - 338	-19
150"	320x200	424 - 509	-29
200"	430x270	566 - 680	-38
320"	690 x 430	907 - 1089	-62

Projection Distance (For EB-X14/EB-X12/EB-X11)



- ① Projection distance
- ② Distance from the center of the lens to the base of the screen (or to the top of the screen, if suspended from a ceiling)
- ③ Center of lens

Unit: cm

4:3 Screen Size		①	②
		Minimum (Wide) to Maximum (Tele)	
30"	61x46	89 - 107	-5
40"	81x61	119 - 143	-7
50"	100x76	150 - 180	-8

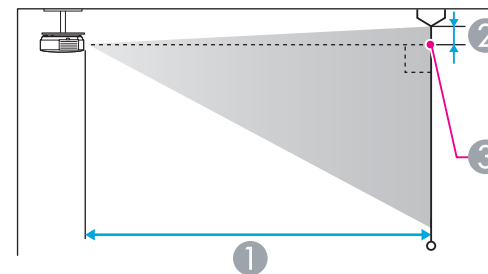
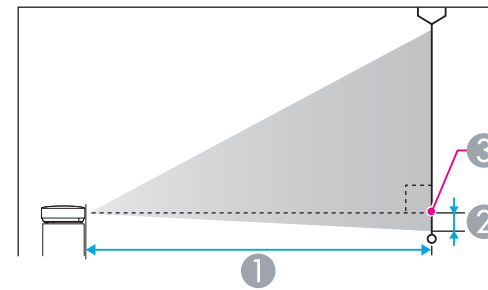
4:3 Screen Size		①	
		Minimum (Wide) to Maximum (Tele)	
60"	120x91	180 - 217	
80"	160x120	241 - 290	
100"	200x150	302 - 363	
150"	300x230	454 - 546	
200"	410x300	607 - 729	
250"	510x380	759 - 912	
300"	610x460	912 - 1095	

Unit: cm

16:9 Screen Size		①	
		Minimum (Wide) to Maximum (Tele)	
30"	66x37	97 - 117	
40"	89x50	130 - 156	
50"	110x62	163 - 196	
60"	130x75	196 - 236	
80"	180x100	263 - 316	
100"	220x120	329 - 396	
150"	330x190	495 - 595	
200"	440x250	661 - 794	
250"	550x310	827 - 994	
275"	610x340	910 - 1093	

Unit: cm

Projection Distance (For EB-S12/EB-S11)



- ① Projection distance
- ② Distance from the center of the lens to the base of the screen (or to the top of the screen, if suspended from a ceiling)
- ③ Center of lens

4:3 Screen Size		①	
		Minimum (Wide) to Maximum (Tele)	
30"	61x46	88 - 119	-5
50"	100x76	147 - 200	-8
60"	120x91	177 - 240	-10



4:3 Screen Size		①	②
		Minimum (Wide) to Maximum (Tele)	(Wide)
70"	142x107	207 - 280	-12
80"	160x120	237 - 321	-13
100"	200x150	297 - 401	-17
150"	300x230	446 - 603	-25
200"	410x300	595 - 805	-33

Unit: cm

16:9 Screen Size		①	②
		Minimum (Wide) to Maximum (Tele)	(Wide)
30"	66x37	96 - 130	1
50"	110x62	161 - 218	1
60"	130x75	193 - 262	2
70"	155x87	226 - 306	2
80"	180x100	258 - 349	2
100"	220x120	323 - 437	3
150"	330x190	486 - 657	4
200"	440x250	649 - 877	5

Supported Resolutions

Computer signals (analog RGB)

For EB-X14/EB-W12/EB-X12/EB-X11

Signal	Refresh Rate (Hz)	Resolution (dots)
VGA	60/72/75/85	640x480
SVGA	56/60/72/75/85	800x600
XGA	60/70/75/85	1024x768
WXGA	60	1280x768
	60	1360x768
	60/75/85	1280x800
WXGA+	60/75/85	1440x900
SXGA	70/75/85	1152x864
	60/75/85	1280x1024
	60/75/85	1280x960
SXGA+	60/75	1400x1050
WSXGA+*1, 2	60	1680x1050
UXGA	60	1600x1200
MAC13"	67	640x480
MAC16"	75	832x624
MAC19"	75	1024x768
	59	1024x768

Signal	Refresh Rate (Hz)	Resolution (dots)
MAC21"	75	1152x870

*1 EB-W12 only.

*2 Only compatible when **Wide** is selected as the **Resolution** from the Configuration menu.

For EB-S12/EB-S11

Signal	Refresh Rate (Hz)	Resolution (dots)
VGA	60/72/75/85	640x480
SVGA	56/60/72/75/85	800x600
XGA	60/70/75/85	1024x768
WXGA	60	1280x768
	60	1360x768
	60/75	1280x800
WXGA+	60	1440x900
SXGA	70/75	1152x864
	60	1280x1024
	60	1280x960
SXGA+	60	1400x1050
MAC13"	67	640x480
MAC16"	75	832x624
MAC19"	75	1024x768
	59	1024x768
MAC21"	75	1152x870

Even when signals other than those mentioned above are input, it is likely that the image can be projected. However, not all functions may be supported.

Component Video

Signal	Refresh Rate (Hz)	Resolution (dots)
SDTV (480i)	60	720x480
SDTV (576i)	50	720x576
SDTV (480p)	60	720x480
SDTV (576p)	50	720x576
HDTV (720p)	50/60	1280x720
HDTV (1080i)	50/60	1920x1080

Signal	Refresh Rate (Hz)	Resolution (dots)
SDTV (480i/480p)	60	720x480
SDTV (576i/576p)	50	720x576
HDTV (720p)	50/60	1280x720
HDTV (1080i)	50/60	1920x1080
HDTV (1080p)	24/30/50/60	1920x1080

Composite video

Signal	Refresh Rate (Hz)	Resolution (dots)
TV (NTSC)	60	720x480
TV (SECAM)	50	720x576
TV (PAL)	50/60	720x576

Input signal from the HDMI port (EB-X14/EB-W12/EB-X12 only)

Signal	Refresh Rate (Hz)	Resolution (dots)
VGA	60	640x480
SVGA	60	800x600
XGA	60	1024x768
WXGA	60	1280x800
SXGA	60	1280x960
	60	1280x1024
SXGA+	60	1400x1050
UXGA	60	1600x1200

S-Video port	1	Mini DIN 4-pin
Audio Input port	1	RCA pin jack x 2
Audio Output port *1	1	Stereo mini jack
Monitor Out port*1	1	Mini D-Sub15-pin (female)
HDMI port*2	1	HDMI (Audio is only supported by PCM)
USB(TypeA) port*3	1	USB connector (Type A)
USB(TypeB) port*3	1	USB connector (Type B)
RS-232C port*4	1	Mini D-Sub 9-pin (male)

*1 EB-S12/EB-X11/EB-S11 only.

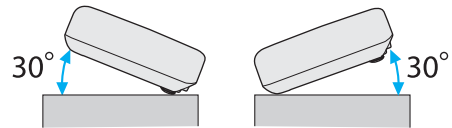
*2 EB-X14/EB-W12/EB-X12 only.

*3 Supports USB 2.0. However, USB ports are not guaranteed to operate all devices that support USB.

*4 EB-X11/EB-S11 only.

This product is also designed for IT power distribution system with phase-to-phase voltage 230V.

Angle of tilt



If you use the projector tilted at an angle of more than 30° it could be damaged and cause an accident.

DECLARATION of CONFORMITY

According to 47CFR, Part 2 and 15

Class B Personal Computers and Peripherals; and/or
CPU Boards and Power Supplies used with Class B Personal Computers

We: Epson America, Inc.
Located at: 3840 Kilroy Airport Way
MS: 3-13
Long Beach, CA 90806
Tel: 562-290-5254

Declare under sole responsibility that the product identified herein, complies with 47CFR Part 2 and 15 of the FCC rules as a Class B digital device. Each product marketed, is identical to the representative unit tested and found to be compliant with the standards. Records maintained continue to reflect the equipment being produced can be expected to be within the variation accepted, due to quantity production and testing on a statistical basis as required by 47CFR 2.909. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Trade Name: EPSON
Type of Product: Projector
Model: H428C/H429C/H430C/H431C/H432C/H433C/
H434C/H435C/H436C/H437C/H438C/H439C

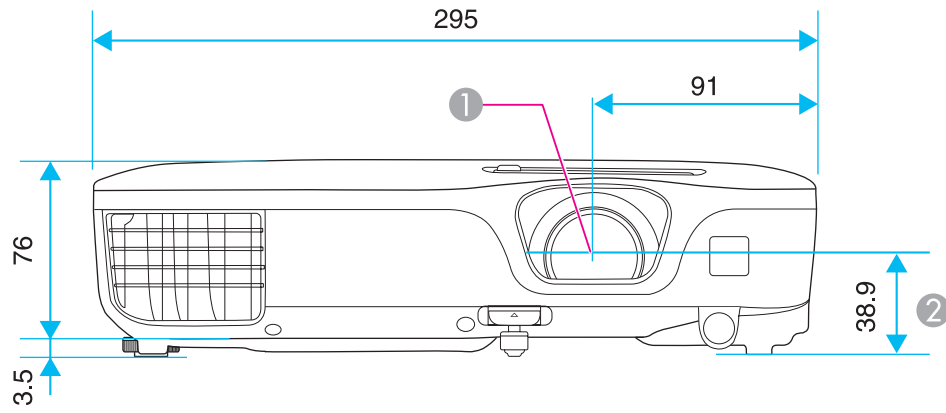
**FCC Compliance Statement
For United States Users**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

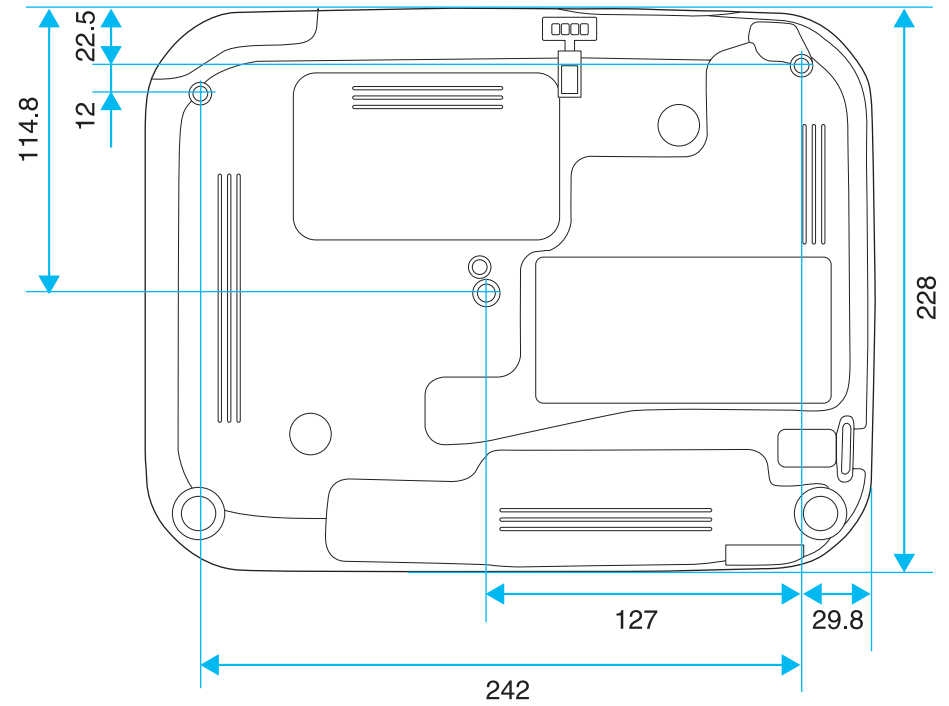
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING

The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification or Declaration of this device and may cause interference levels which exceed the limits established by the FCC for this equipment. It is the responsibility of the user to obtain and use a shielded equipment interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.



- ① Center of lens
- ② Distance from center of lens to suspension bracket fixing point



Units: mm

This section briefly explains the difficult terms that are not explained in the text of this guide. For details, refer to other commercially available publications.

Aspect Ratio	The ratio between an image's length and its height. Screens with a horizontal:vertical ratio of 16:9, such as HDTV screens, are known as wide screens. SDTV and general computer displays have an aspect ratio of 4:3.
Component Video	A method that separates the video signal into a luminance component (Y), and a blue minus luminance (Cb or Pb) and a red minus luminance (Cr or Pr).
Composite video	A method that combines the video signal into a luminance component and a color component for transmission down a single cable.
Contrast	The relative brightness of the light and dark areas of an image can be increased or decreased to make text and graphics stand out more clearly, or to make them appear softer. Adjusting this particular property of an image is called contrast adjustment.
HDCP	HDCP is an abbreviation for High-bandwidth Digital Content Protection. It is used to prevent illegal copying and protect copyrights by encrypting digital signals sent over DVI and HDMI ports. Because the HDMI port on this projector supports HDCP, it can project digital images protected by HDCP technology. However, the projector may not be able to project images protected with updated or revised versions of HDCP encryption.
HDTV	An abbreviation for High-Definition Television that refers to high-definition systems which satisfy the following conditions. <ul style="list-style-type: none"> • Vertical resolution of 720p or 1080i or greater (p = Progressive, i = Interlace) • Screen aspect ratio of 16:9
Interlace	Transmits information needed to create one screen by sending every other line, starting from the top of the image and working down to the bottom. Images are more likely to flicker because one frame is displayed every other line.
Progressive	Projects information to create one screen at a time, displaying the image for one frame. Even though the number of scan lines is the same, the amount of flicker in images decreases because the volume of information has doubled compared with an interlace system.
Refresh Rate	The light-emitting element of a display maintains the same luminosity and color for an extremely short time. Because of this, the image must be scanned many times per second to refresh the light-emitting element. The number of refresh operations per second is called the Refresh Rate and is expressed in hertz (Hz).
SDTV	An abbreviation for Standard Definition Television that refers to standard television systems which do not satisfy the conditions for HDTV High-Definition Television.
sRGB	An international standard for color intervals that was formulated so that colors that are reproduced by video equipment can be handled easily by computer operating systems (OS) and the Internet. If the connected source has an sRGB mode, set both the projector and the connected signal source to sRGB.
SVGA	A screen size standard with a resolution of 800 (horizontal) x 600 (vertical) dots.
S-Video	A method that separates the video signal into a luminance component (Y) and a color component (C).
SXGA	A screen size standard with a resolution of 1,280 (horizontal) x 1,024 (vertical) dots.
Sync.	The signals output from computers have a specific frequency. If the projector frequency does not match this frequency, the resulting images are not of a good quality. The process of matching the phases of these signals (the relative position of the crests and the troughs in the signal) is called Synchronization. If the signals are not synchronized, flickering, blurriness, and horizontal interference occur.

Tracking	The signals output from computers have a specific frequency. If the projector frequency does not match this frequency, the resulting images are not of a good quality. The process of matching the frequency of these signals (the number of crests in the signal) is called Tracking. If Tracking is not carried out correctly, wide vertical stripes appear in the signal.
VGA	A screen size standard with a resolution of 640 (horizontal) x 480 (vertical) dots.
XGA	A screen size standard with a resolution of 1,024 (horizontal) x 768 (vertical) dots.