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PROJECTOR OWNER'S MANUAL

Optoma

HD161X / HD50

Need a replacement lamp for this projector?

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Table of contents

Table of contents 1
Usage Notice 3
Safety Information 3
Precautions 5
Eye Safety Warnings 7
Introduction 8
Package Overview 8
Standard Accessories 8
Optional Accessories 8
Product Overview 9
Main Unit 9
Connection Ports 10
Remote Control 11
Installation 12
Connecting the Projector 12
Connect to Notebook 12
Connect to Video Sources 13
Powering On/Off the Projector 14
Powering On the Projector 14
Powering Off the Projector 15
Warning Indicator 15
Adjusting the Projected Image 16
Adjusting the Projector's Height 16
Adjusting the vertical image position 16
Adjusting Projection Image Size (1080p) 17
User Controls 18
Remote Control 18
On-screen Display Menus 20
How to operate 20
Menu Tree 21
Image 25
Image | Advanced 27
Image | Advanced | PureEngine 29
Image | Advanced | Color Settings 30
Display 32

English

Table of contents

Display | 3D 38
System 40
System | Lamp Setting 42
Setup 44
Setup | Language 46
Setup | Input Source 47
Setup | HDMI Link Settings 48
Setup | Signal (VGA/Component) 49
Setup | Signal (Video) 50
Setup | Advanced 51

Appendices 52

Troubleshooting 52
Image 52
Other 53
Projector LED Status Indicator 54
Remote Control 55
Replacing the Lamp 56
Compatibility Modes 59
Video Compatibility 59
Video Timing Detail Describe 59
Computer Compatibility - VESA standards 60
Input Signal for HDMI/DVI-D 61
True 3D Video Compatibility table 62
RS232 Commands and Protocol Function List 63
RS232 Pin Assignments (projector side) 63
RS232 Protocol Function List 64
Trademarks 80
Ceiling Mount Installation 81
Optoma Global Offices 82
Regulation & Safety Notices 84

Ver.: 2

Safety Information

	The lightning flash with arrow head within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE. DO NOT OPEN THE CABINET. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

Class B emissions limits

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Important Safety Instruction

1. Do not block any ventilation openings. To ensure reliable operation of the projector and to protect from over heating, it is recommended to install the projector in a location that does not block ventilation. As an example, do not place the projector on a crowded coffee table, sofa, bed, etc. Do not put the projector in an enclosure such as a book case or a cabinet that restricts air flow.
2. Do not use the projector near water or moisture. To reduce the risk of fire and/or electric shock, do not expose the projector to rain or moisture.
3. Do not install near heat sources such as radiators, heaters, stoves or any other apparatus such as amplifiers that emits heat.
4. Clean only with dry cloth.

5. Only use attachments/accessories specified by the manufacturer.
6. Do not use the unit if it has been physically damaged or abused.
   Physical damage/abuse would be (but not limited to):
   - Unit has been dropped.
   - Power supply cord or plug has been damaged.
   - Liquid has been spilled on to the projector.
   - Projector has been exposed to rain or moisture.
   - Something has fallen in the projector or something is loose inside.

   Do not attempt to service the unit yourself. Opening or removing covers may expose you to dangerous voltages or other hazards. Please call Optoma before you send the unit for repair.
7. Do not let objects or liquids enter the projector. They may touch dangerous voltage points and short out parts that could result in fire or electric shock.
8. See projector enclosure for safety related markings.
9. The unit should only be repaired by appropriate service personnel.

Precautions

Please follow all warnings, precautions and maintenance as recommended in this user's guide.

- Warning- Do not look into the projector's lens when the lamp is on. The bright light may hurt your eyes.
- Warning- To reduce the risk of fire or electric shock, do not expose this projector to rain or moisture.
- Warning- Please do not open or disassemble the projector as this may cause electric shock.
- Warning- When replacing the lamp, please allow the unit to cool down. Follow instructions as described on page 56.
- Warning- This projector will detect the life of the lamp itself. Please be sure to change the lamp when it shows warning messages.
- Warning- Reset the "Lamp Reset" function from the on-screen display "System|Lamp Setting" menu after replacing the lamp module (refer to pages 42-43).
- Warning- When switching the projector off, please ensure the cooling cycle has been completed before disconnecting power. Allow 90 seconds for the projector to cool down.
- Warning- Do not use lens cap when projector is in operation.
- Warning- When the lamp is approaching to the end of its life time, the message "Replacement suggested" will show on the screen.
  Please contact your local reseller or service center to change the lamp as soon as possible.

Note

When the lamp reaches the end of its life, the projector will not turn back on until the lamp module has been replaced. To replace the lamp, follow the procedures listed under "Replacing the Lamp" section on page 56.

Usage Notice

Do:

- Turn off and unplug the power plug from the AC outlet before cleaning the product.
- Use a soft dry cloth with mild detergent to clean the display housing.
- Disconnect the power plug from AC outlet if the product is not being used for a long period of time.

Do not:

- Block the slots and openings on the unit provided for ventilation.
- Use abrasive cleaners, waxes or solvents to clean the unit.
- Use under the following conditions:
  - In extremely hot, cold or humid environments.
    - Ensure that the ambient room temperature is within 5 - 40°C
    - Relative Humidity is 10 - 85% (Max.), non-condensing
  - In areas susceptible to excessive dust and dirt.
  - Near any appliance generating a strong magnetic field.
  - In direct sunlight.

Note

Keep this manual for future reference.

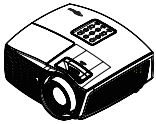
Eye Safety Warnings

- Avoid staring/facing directly into the projector beam at all times. Keep your back to the beam as much as possible.
- When projector is used in a classroom, adequately supervise students when they are asked to point out something on the screen.
- In order to minimize the lamp power, use room blinds to reduce ambient light levels.

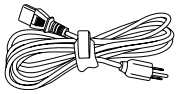
Package Overview

Unpack and inspect the box contents to ensure all parts listed below are in the box. If something is missing, please contact Optoma customer service.

Standard Accessories

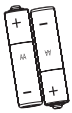


Projector



Power Cord 1.8m

Remote Control

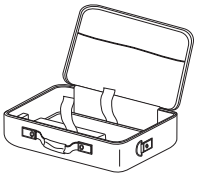


2 x AAA Batteries

Note

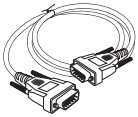
Optional accessories vary depending on model, specification and region.

Optional Accessories



Carrying Case

Lens Cap



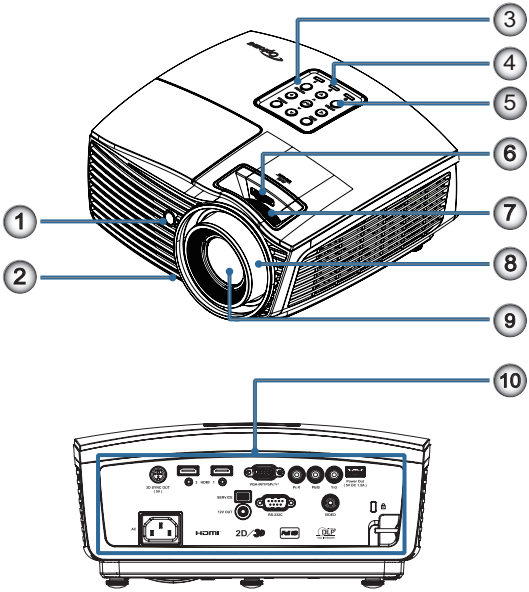
VGA Cable

HDMI Cable

Documentation:
- ☑ User's Manual
- ☑ Warranty Card
- ☑ Quick Start Guide

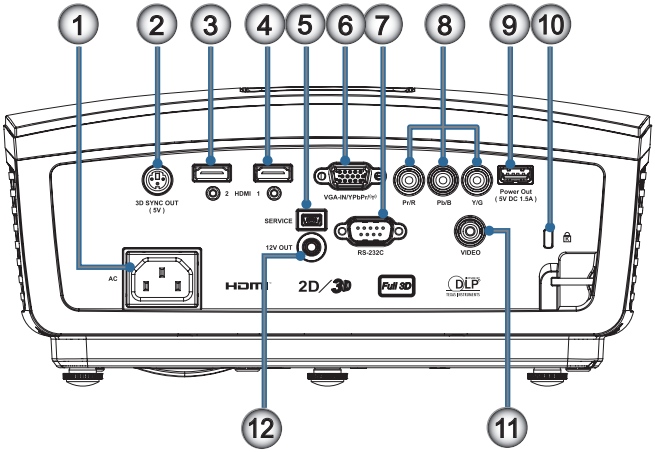
Product Overview

Main Unit



1. IR Receiver
2. Tilt-Adjustment Feet
3. Function Keys
4. LED Indicators
5. Power Button
6. LENS SHIFT
7. Zoom
8. Focus
9. Lens
10. Connection Ports

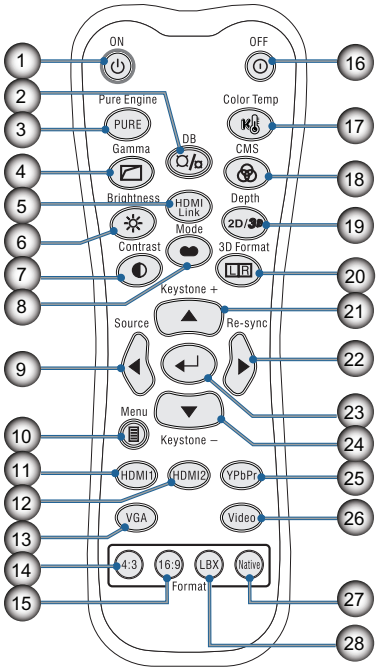
Connection Ports



1. Power Socket
2. 3D Sync Out (5V) connector
3. HDMI 2 Connector (v1.4a 3D supported)
4. HDMI 1 Connector (v1.4a 3D supported)
5. USB for firmware upgrad
6. VGA-IN/YPbPr/ (•)
7. RS-232 Connector (9-pin)
8. Component Video Input Connector (YPbPr)
9. USB for Power (5V@1.5A)
10. Kensington Lock Port
11. Composite Video Input Connector
12. 12V OUT (12V, 500mA, 3.5mm mini jack)

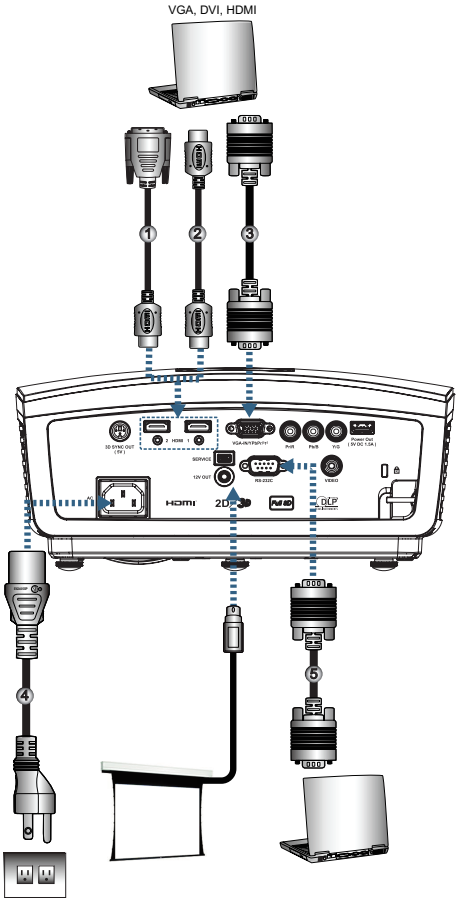
Remote Control

1. Power On
2. DynamicBlack
3. PureEngine
4. Gamma
5. HDMI Link
6. Brightness
7. Contrast
8. Mode
9. Source / ◄
10. Menu
11. HDMI1
12. HDMI2
13. VGA
14. 4:3
15. 16:9
16. Power Off
17. Color Temp
18. Color
19. Depth
20. 3D Format
21. Keystone + / ▲
22. Re-sync / ►
23. Enter
24. Keystone - / ▼
25. YPbPr
26. Video
27. Native
28. LBX



Connecting the Projector

Connect to Notebook

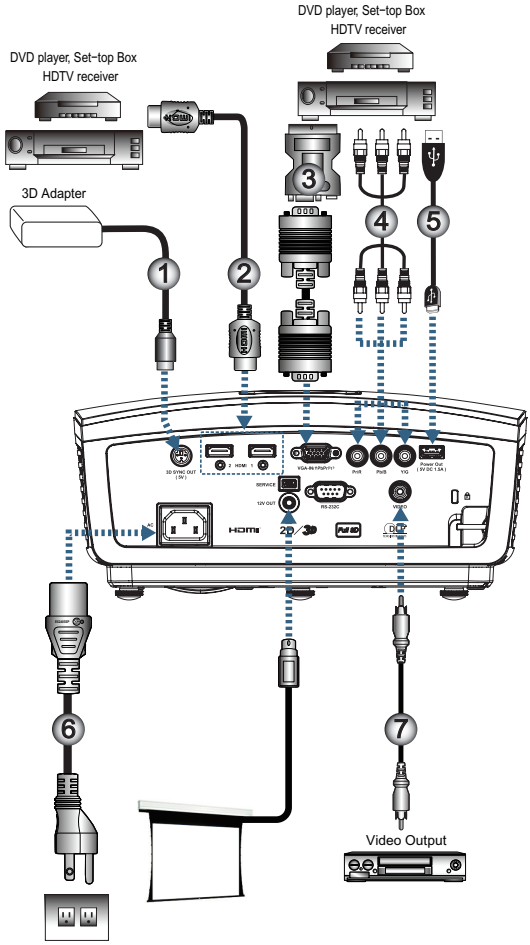


Note

Due to the difference in applications for each country, some regions may have different accessories.

1..... DVI/HDMI Cable (Optional Accessory)
2..... HDMI Cable (Optional Accessory)
3..... VGA Input Cable (Optional Accessory)
4..... Power Cord
5.....RS232 Cable (Optional Accessory)

Connect to Video Sources



Note

Due to the difference in applications for each country, some regions may have different accessories.

Note

12V OUT is a programmable trigger.

1.....3D Sync Cable (Optional Accessory)
2.....HDMI Cable (Optional Accessory)
3.....SCART RGB/S-Video Adapter (Optional Accessory)
4.....RCA Component Cable for YPbPr (Optional Accessory)
5.....USB Power Charger (Optional Accessory)
6.....Power Cord
7.....Composite Video Cable (Optional Accessory)

Powering On/Off the Projector

Powering On the Projector

1. Connect the power cord to the projector.
2. Turn On the connected devices.
3. Ensure the Power LED is flashing and then press the power button to turn On the projector.

Note

Turn on the projector first and then select the signal sources.

The projector's startup logo screen displays and connected devices are detected. If the connected device is a laptop, press the appropriate keys on the computer keyboard to switch the display output to the projector. (Check the user manual of the laptop to determine the appropriate Fn key combination to change display output.)

Note

Due to the difference in applications for each country, some regions may have different accessories.

4. If more than one input device is connected, press the "Source" button sequentially to switch between devices. For direct source selection, see page 19.

Powering Off the Projector

1. Press the "⏻" button on the remote control or "**POWER**" button on the panel of the projector to turn off the projector. First push of button will display the following message on the screen.

   Press the button again to confirm the shut down. If the button is not pressed, the message will disappear in 5 seconds.

2. The Power LED flashes green (1 sec on, 1sec off) and the fans will speed up during shut down cooling cycle. The projector reaches stand-by mode as soon as the Power LED flashes green (2 sec on, 2 sec off).

   If you wish to turn the projector back on, you must wait until the projector has completed the cooling cycle and has entered standby mode. Once in standby mode, simply press "**POWER**" button on the rear of the projector or "⏻" on the remote control to restart the projector.

3. Disconnect the power cord from the electrical outlet and the projector only when the projector is in stand-by mode.

Warning Indicator

- When the Lamp LED indicator lights red, the projector will automatically shut itself down. Please contact your local reseller or service center. See page 54.

- When the Temp LED is on a steady (not flashing) red, the projector will automatically shut itself down. Under normal conditions, the projector can be switched on again after it has cooled down. If the problem persists, you should contact your local dealer or our service center. See page 54.

Note

Contact the nearest service center if the projector displays these symptoms. See page 82 for more information.

Adjusting the Projected Image

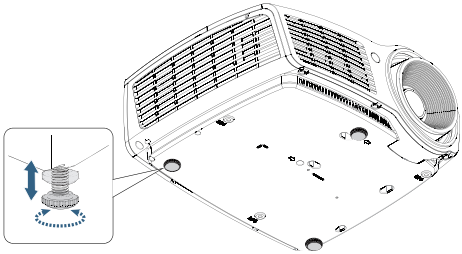
Adjusting the Projector's Height

Note

- The projector table or stand should be level and sturdy.
- Position the projector so that it is perpendicular to the screen.
- For personal safety, please secure the cables properly.

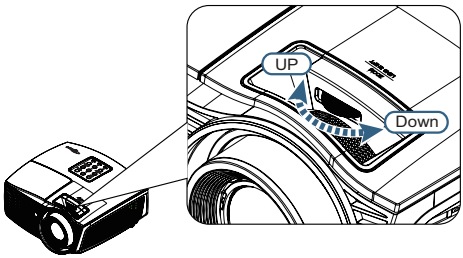
The projector is equipped with tilt-adjuster feet for adjusting the image height.

To adjust the angle of the picture, turn the tilt-adjuster right or left until the desired angle has been achieved.



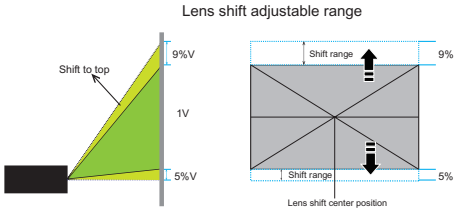
Adjusting the vertical image position

The Lens Shift function can be used to adjust the position of the vertically.

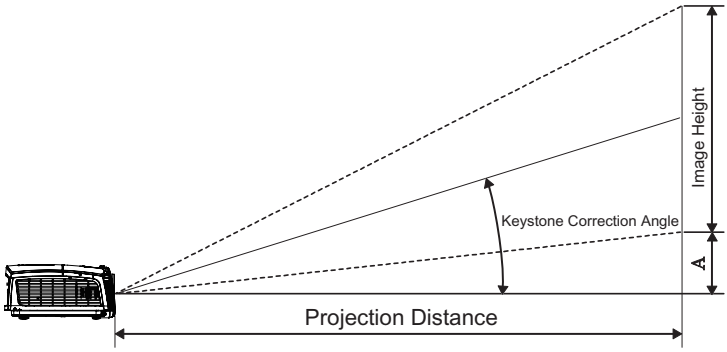


Lens shift adjustment for 1080P

The display position can be shifted upward up to 9% and down to 5% elevation of the display.

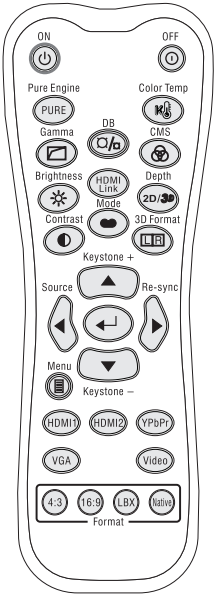


Adjusting Projection Image Size (1080p)



Diagonal length (inch) size of 16:9 Screen	Screen Size W X H (16:9)				Projection distance (D)				Offset (A)	
	(m)		(feet)		(m)		(feet)			
	Width	Height	Width	Height	wide	tele	wide	tele	(m)	(feet)
30	0.66	0.37	2.18	1.23	0.92	1.39	3.03	4.55	0.06	0.18
40	0.89	0.50	2.91	1.63	1.23	1.85	4.04	6.07	0.07	0.25
60	1.33	0.75	4.36	2.45	1.85	2.78	6.06	9.11	0.11	0.37
80	1.77	1.00	5.81	3.27	2.46	3.70	8.08	12.14	0.15	0.49
100	2.21	1.25	7.26	4.09	3.08	4.63	10.10	15.18	0.19	0.61
120	2.66	1.49	8.72	4.90	3.69	5.55	12.11	18.22	0.22	0.74
140	3.10	1.74	10.17	5.72	4.31	6.48	14.13	21.25	0.26	0.86
160	3.54	1.99	11.62	6.54	4.92	7.40	16.15	24.29	0.30	0.98
190	4.21	2.37	13.80	7.76	5.85	8.79	19.18	28.84	0.35	1.16
230	5.09	2.86	16.71	9.40	7.08	10.64	23.22	34.91	0.43	1.41
280	6.20	3.49	20.34	11.44	8.62	12.96	28.27	42.50	0.52	1.72
300	6.64	3.74	21.79	12.26	9.23	13.88	30.29	45.54	0.56	1.84

Remote Control



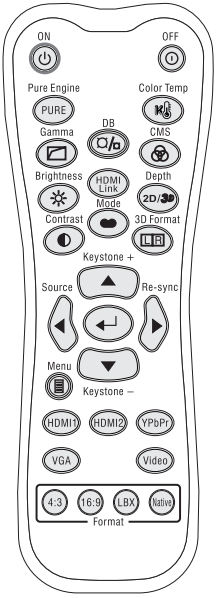
Using the Remote Control

Power On/Off	Refer to the “Powering Off the Projector” on page 15. Refer to the “Powering On the Projector” on page 14.
PureEngine	The PureEngine is a collection of advanced image processing technologies that enhances the quality of the displayed image.
Color Temp	Refer to the “Color Temp.” on page 30.
Gamma	Set up gamma curve type.
DynamicBlack	Enable the projector to automatically optimize the display of dark movie scenes enabling them to be shown in incredible detail. (refer to page 28)
CMS	Select one of the colors (R/G/B/C/M/Y) to adjust its x/y offset and brightness.
Brightness	Adjust the brightness of the image.
HDMI Link	Enables and disables the HDMI link function.
2D/3D Depth	Adjust the 3D depth (this function is only available when 2D->3D is enabled).
Contrast	Control the degree of difference between the lightest and darkest parts of the picture.
Mode	Select the display mode from Cinema, Reference, Vivid, Bright, Game, 3D, User, ISF Day and ISF Night.
3D Format	Manually select a 3D mode that matches your 3D content.
Keystone + / ▲	1. Adjust the image Keystone positively. 2. Navigates and changes settings in the OSD.
Source / ◄	1. Press “Source” to search for source. 2. Navigates and changes settings in the OSD.

Note

Due to the difference in applications for each country, some regions may have different accessories.

Using the Remote Control



↵ Enter	Confirm your item selection.
Re-sync / ►	1. Automatically synchronizes the projector to the input source. 2. Navigates and changes settings in the OSD.
Keystone - / ▼	1. Adjust the image Keystone negatively. 2. Navigates and changes settings in the OSD.
Menu	Press “Menu” to launch the on-screen display (OSD) menu. To exit OSD, press “Menu” again.
HDMI 1	Press “HDMI 1” to choose source from HDMI 1 connector.
HDMI 2	Press “HDMI 2” to choose source from HDMI 2 connector.
YPbPr	Press “YPbPr” to choose YPbPr source.
VGA	Press “VGA” to choose source from VGA- IN connector.
Video	Press “Video” to choose Composite video source.
4:3	Scale the image at a 4:3 aspect ratio.
16:9	Scale the image at a 16:9 aspect ratio.
LBX	Enable the viewing of the letterboxed nonanamorphically enhanced movie at full screen width. Part of the original image will be lost if the image aspect ratio is less than 2.35:1.
Native	The input source will be displayed without scaling.

Note

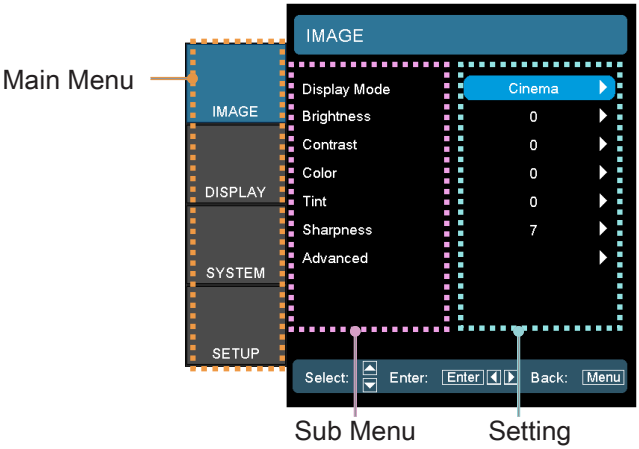
Due to the difference in applications for each country, some regions may have different accessories.

On-screen Display Menus

The Projector has multilingual On-screen Display menus that allow you to make image adjustments and change a variety of settings. The projector will automatically detect the source.

How to operate

1. To open the OSD menu, press “Menu” on the Remote Control or Control Panel.
2. When OSD is displayed, use ▲ or ▼ keys to select any item in the main menu. While making a selection on a particular page, press ◄ or ► or “ENTER” key on the Remote Control or “Enter” on the Control Panel to enter sub menu.
3. Use ▲ or ▼ keys to select the desired item and adjust the settings by ◄ or ► key.
4. Select the next item to be adjusted in the sub menu and adjust as described above.
5. Press “ENTER” key on the Remote Control or “Enter” on the Control Panel or “Menu” to confirm, and the screen will return to the main menu.
6. To exit, press “Menu” again. The OSD menu will close and the projector will automatically save the new settings.



Menu Tree

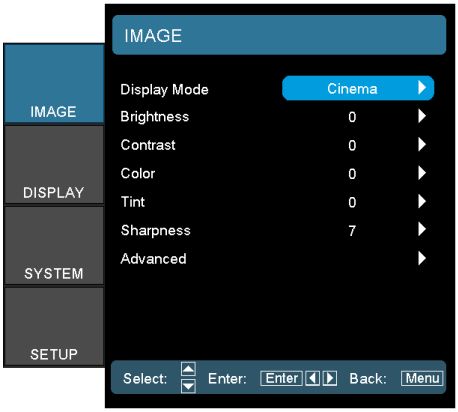
Main Menu	Sub Menu		Settings
IMAGE	Display Mode		Cinema / Reference / Vivid / Bright / Game / 3D / User / ISF Day / ISF Night
	Brightness		-50 ~ 50
	Contrast		-50 ~ 50
	#1 Color		-50 ~ 50
	#1 Tint		-50 ~ 50
	Sharpness		0 ~ 15
	Advanced	Noise Reduction	0 ~ 15
		Gamma	Film / Video / Graphics / Standard
		BrilliantColor™	1 ~ 10
		PureEngine	UltraDetail / PureColor / PureMotion / PureEngine Demo / Exit
		#2 DynamicBlack	Off / On
		Color Settings	Color Temp. / Color Gamut / CMS / RGB Gain/Bias / Color Space / RGB Channel / Exit
		Exit	
DISPLAY	Format		4:3 / 16:9 / LBX / Native 4:3 / 16:9 / LBX / Auto235 / Auto235_Subtitle (When 12V set to Auto235)
	Edge Mask		0 ~ 5
	Zoom		0~10
	Image Shift	H	-100 ~ 100
		V	-100 ~ 100
	V Keystone		-30 ~ 30
	#3 3D	3D Mode	DLP-Link / VESA 3D / Off
		3D Format	Auto / SBS / Top and Bottom / Frame Sequential / 2D→3D
		3D→2D	3D / L / R
		2D→3D	Low / Mid / High
		3D Sync Invert	On / Off
		Exit	

Main Menu	Sub Menu		Settings
SYSTEM	Menu Location		
	Lamp Settings	Lamp Hour	
		Lamp Reminder	On / Off
		Lamp Mode	Bright / ECO
		Lamp Reset	Yes / No
		Exit	
	Projection		
	Keypad Lock		On / Off
	Test Pattern		Off / Grid / White
	Background Color		Blue / Gray / Black
	12V Trigger		Off / On / Auto235 / Auto 3D
	Closed Captioning		Off / CC1 / CC2

Main Menu	Sub Menu		Settings
SETUP	Language		
	Input Source		HDMI1 / HDMI2 / Component / VGA / Video
	HDMI Link Settings	HDMI Link	Off / On
		Inclusive TV	Yes / No
		Power On Link	Mutual / PJ→Device / Device→PJ
		Power Off Link	Off / On
		Exit	
	Source Lock		On / Off
	High Altitude		On / Off
	Information Hide		On / Off
	Signal	Automatic	On / Off
		Frequency (VGA)	0 ~ 100
		Phase (VGA)	-50 ~ 50
		H. Position (VGA)	-50 ~ 50
		V. Position (VGA)	-50 ~ 50
		Exit	
		White Level	-50 ~ 50
		Black Level	-50 ~ 50
		Saturation	-50 ~ 50
		Hue	-50 ~ 50
		IRE	0 IRE / 7.5 IRE
		Exit	
	Advanced	Auto Power Off (min.)	0 ~ 180
		Sleep Timer (min.)	0 ~ 990
		Power Mode (Standby)	Active / Eco
		Exit	
	Reset	Current	Cancel / Yes
		All	Cancel / Yes

Note

- (#1) “Color” and “Tint” is only supported in for YUV video sources.
- (#2) When DynamicBlack is On, and Lamp Mode is set to Bright, the Dynamic range is 100%~30%. When Lamp mode is on ECO Mode, the dynamic range is 80%~30%
- (#3) “3D” is only available when a compatible signal is supplied.
- Off in 3D Mode is only supported on non-HDMI 1.4a 3D timing.



Image

Display Mode

There are many factory presets optimized for various types of images.

- Cinema: Setting for home theater.
- Reference: This mode is intended to reproduce, as close as possible, the image the way the movie director intended. Color, color temperature, brightness, contrast and gamma settings are all configured to standard reference levels.
- Vivid: Provides a bright and vivid picture. The color saturation and brightness are well-balanced.
- Bright: Maximum brightness from PC input.
- Game: For game mode.
- 3D: Recommended setting for 3D mode enabled. Any further adjustments by the user in 3D will be saved in this mode for further use.
- User: User's settings.
- ISF Day: Optimize the image with the ISF Day mode to be perfectly calibrated and high picture quality.
- ISF Night: Optimize the image with the ISF Night mode to be perfectly calibrated and high picture quality.

Note

"ISF Day" and "ISF Night" will not be shown when the ISF modes have not been calibrated.

Brightness

Adjust the brightness of the image.

- Press ◀ to darken image.
- Press ▶ to lighten the image.

Contrast

The contrast controls the degree of difference between the lightest and darkest parts of the picture.

- Press ◀ to decrease the contrast.
- Press ▶ to increase the contrast.

Color

Adjusts a video image from black and white to full color saturation.

- Press ◀ to decrease the amount of color in the image.
- Press ▶ to increase the amount of color in the image.

Tint

Adjusts the color balance of red and green.

- Press ◀ to increase the amount of green in the image.
- Press ▶ to increase the amount of red in the image.

Sharpness

Adjusts the sharpness of the image.

- Press ◀ to decrease the sharpness.
- Press ▶ to increase the sharpness.

Advanced

Enter the Advanced menu. Select advanced display options such as Noise Reduction, Gamma, BrilliantColor™, PureEngine, DynamicBlack, Color Settings, and Exit. See page 27 for more information.

Note

"Color" and "Tint" are only supported for composite and component sources.

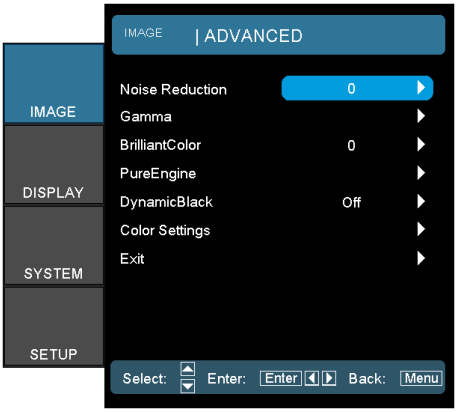


Image | Advanced

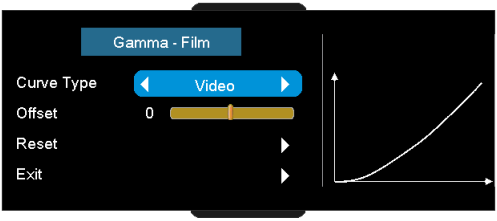
Noise Reduction

The motion Adaptive Noise Reduction reduces the amount of visible noise in interlaced signals. The range is from “0” to “15”. (0=Off)

Gamma

This allows you to set up gamma curve type. After the initial setup and fine tuning is completed, utilize the Gamma Adjustment steps to optimize your image output.

- Film: for home theater.
- Video: for video or TV source.
- Graphics: for image source.
- Standard: for standardized setting.



- Curve: The type of gamma curve.
- Offset: The input offset of gamma can range the start level of base point in gamma curve .
- Reset: Choose “Yes” to return the factory default settings for color adjustments.

BrilliantColor™

This adjustable item utilizes a new color-processing algorithm and system level enhancements to enable higher brightness while providing true, more vibrant colors in picture. The range is from 1 to 10. If you prefer a stronger enhanced image, adjust toward the maximum setting. For a smoother, more natural image, adjust toward the minimum setting.

PureEngine

The PureEngine is a collection of advanced image processing technologies that enhances the quality of the displayed image. See page 29 for more details.

DynamicBlack

DynamicBlack enables the projector to automatically optimize the display of dark movie scenes enabling them to be shown in incredible detail.

Color Settings

Enter the Color Settings menu. See page 30 for more details.

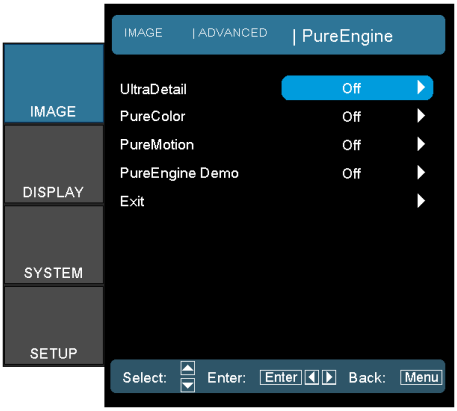


Image | Advanced | PureEngine

UltraDetail

UltraDetail is an edge enhancement tool that better defines the edges in the projected image thus providing more perceived detail.

PureColor

This adjustable item utilizes a new color-processing algorithm and enhancements to enable the picture's vividness to be significantly increased. The range is from "Off" to "5".

Note

Turn the PureMotion feature to "Off" to reduce the response lag during gameplay.

PureMotion

PureMotion uses sophisticated algorithms to ensure that the natural motion in the image is preserved.

PureEngine Demo

This feature enables you to see the difference in the image quality between the raw unprocessed image and the image processed by the PureEngine. Use this mode to check the adjustments that you make to the PureEngine settings.

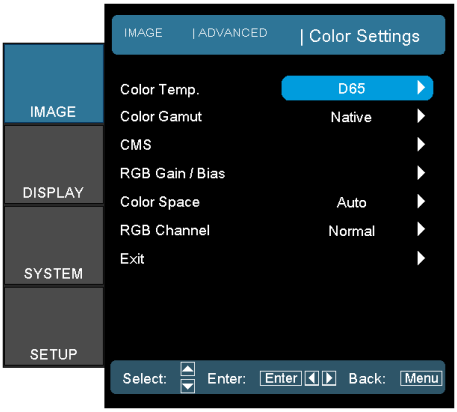


Image | Advanced | Color Settings

Color Temp.

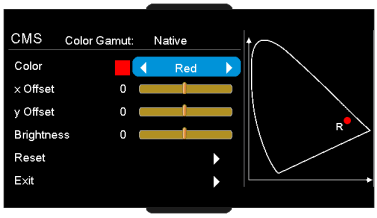
Adjust the color temperature. Cold temperature, the screen looks colder; with Warm temperature, the screen looks warmer.

Color Gamut

Select this menu to optomize the color gamut color range for Native, DLP-C, HDTV, EBU or SMPTE-C.

CMS (Color Management System)

Press ► into the next menu and then use ▲ or ▼ to select item. Select one of the colors (R/G/B/C/M/Y) to adjust its x/y offset and brightness.

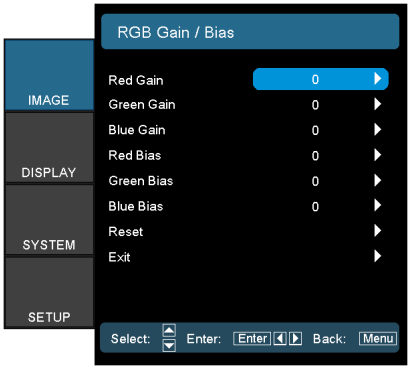


- Color: Use ◄ or ► to select from Red, Green, Blue, Cyan, Magenta or Yellow colors.
- x Offset: Use ◄ or ► to adjust the x offset value of selected color.
- y Offset: Use ◄ or ► to adjust the y offset value of selected color.

- Brightness: Use ◄ or ► to adjust the brightness value of selected color.
- Reset: Choose “Yes” to return the factory default settings for color adjustments.

RGB Gain/Bias

Press ► into the next menu as below and then use ▲ or ▼ to select item.



- Use ◄ or ► to select Red, Green, or Blue for brightness (Gain) and contrast (Bias).
- Reset: Choose “Yes” to return the factory default settings for color adjustments.

Color Space

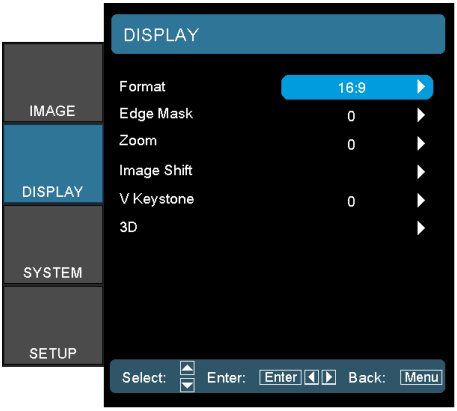
Select an appropriate color matrix type from AUTO, RGB, YUV.

- For HDMI only: Select color matrix from Auto, RGB (0-255), RGB (16-235), YUV.

RGB Channel

Display image with just blue or just green or just red channel.

This can be very handy for user to make sure the Tint and Saturation is correctly adjusted

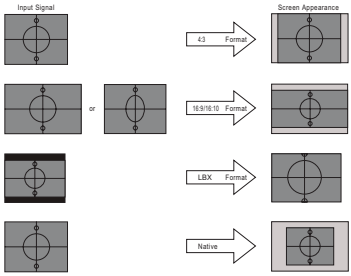


Display

Format

Use this function to choose your desired aspect ratio.

- 4:3: This format is for 4x3 input sources not enhanced for Wide screen TV.
- 16:9: This format is for 16x9 input sources, like HDTV and DVD enhanced for Wide screen TV.
- LBX: This format is for non-16x9, letterbox source and for users who use an external 16x9 lens to display 2.35:1 aspect ratio using full resolution.
- Native: Depends on the resolution of the input source – No scaling is performed.



1080P

- Auto235: Automatically selects the appropriate display format.
- Auto235_Subtitle: When the 2.35:1 format is detected, the projector scales up the image size and leave a dark area at the bottom for subtitle.

Note

- Auto235, Auto235_ Subtitle (When 12V Trigger is set to Auto235).
- When Auto235 feature is selected the 12V trigger will send power to the anamorphic lens if the source format is 2.35:1. It will not send the power when the source format is 4:3 or 16:9.

HDMI	Auto235 OFF			
	4:3	16:9	LBX	Native
2D/HQFS/2D→3D	✓	✓	✓	✓
SBS		✓		
Top and Bottom		✓	✓	
1080p24FP	✓	✓	✓	✓
720pFP	✓	✓	✓	

HDMI	Auto235 ON				
	4:3	16:9	LBX	Auto235	Auto235_ Subtitle
2D/HQFS/2D→3D	✓	✓	✓	✓	✓
SBS		✓			
Top and Bottom		✓	✓	✓	✓
1080p24FP	✓	✓	✓	✓	✓
720pFP	✓	✓	✓	✓	✓

Component	Auto235 OFF			
	4:3	16:9	LBX	Native
2D/HQFS/2D→3D	✓	✓	✓	✓
SBS		✓		
Top and Bottom		✓		

Component	Auto235 ON				
	4:3	16:9	LBX	Auto235	Auto235_ Subtitle
2D/HQFS/2D→3D	✓	✓	✓	✓	✓
SBS		✓			
Top and Bottom		✓			

Detail informations about LBX mode:

1. Some Letter-Box Format DVDs are not enhanced for 16x9 TVs. In this situation, the image will not look right when displayed in 16:9 mode. In this situation, please try to use the 4:3 mode to view the DVD. If the content is not 4:3, there will be black bars around the image in 16:9 display. For this type of content, you can use LBX mode to fill the image on the 16:9 display.
2. If you use an external anamorphic lens, this LBX mode also allows you to watch a 2.35:1 content (include Anamorphic DVD and HDTV film source) that support anamorphic wide is enhanced for 16x9 Display in a wide 2.35:1 image. In this case, there are no black bars. Vertical resolution are fully utilized.

No anamorphic lens attached 1080p Scaling Table 16:9 Screen 480i/p 576i/p 1080i/p 720p PC	
4:3	1440 x 1080 center
16:9	1920 x 1080 center
LBX (#1)	1920 x 1440 center, then get the central 1920 x 1080 image to display
Native	No resize image, 1:1 mapping and centered. This format shows original image without scaling.
Auto235	If this format is select, Screen type will auto become 16:9 (1920 x 1080) If source is 4:3, auto resize to 1440 x 1080 If source is 16:9 auto resize to 1920 x 1080 If source is 16:10 auto resize to 1920 x 1200 and cut 1920 x 1080 area to display

Note

- (#1) This function is not supported in SBS mode.
- Pressing “Native” button on the remote will be “Auto235” when Anamorphic lens is fixed or movable.

When anamorphic lens is movable					
16:9 Screen	480i/p	576i/p	1080i/p	720p	PC
4:3	1440 x 1080 center				
16:9	1920 x 1080 center				
LBX (#1)	Catch 720 x 363 (Center)	Catch 720 x 436 (Center)	Catch 1920 x 817 (Center)	Catch 1920 x 545 (Center)	Catch 75.65% of height (Center)
	Scale to 1920x1440, then get the central 1920x1080 image to display				
Auto235 (#1) (same button on remote of Native)	When source is 2.35:1(with black bar at top/bottom), Doing LBX format. When source isn't 2.35:1 that is full 4 x 3 or 16 x 9 (There is no black bar at top/bottom), doing 16 x 9 format				
Auto235_ Subtitle	Catch 720 x 422 (bottom)	Catch 720 x 506 (bottom)	Catch 1920 x 948 (bottom)	Catch 1920 x 632 (bottom)	Catch 87.8% of height (bottom)
	When source is 2.35:1(with black bar at top/bottom), Doing above catching rule and Scale to 1920 x 1440, then get the central 1920 x 1080 image to display. When source isn't 2.35:1 that is full size 4 x 3 or 16 x 9 (There is no black bar at top/bottom), doing 16 x 9 format				

When anamorphic lens is fixed					
16:9 Screen	480i/p	576i/p	1080i/p	720p	PC
4:3	1080 x 1080 center				
16:9	1440 x 1080 center				
LBX (#1)	Catch 720 x 363 (Center)	Catch 720 x 436 (Center)	Catch 1920 x 817 (Center)	Catch 1920 x 545 (Center)	Catch 75.65% of height (Center)
	Scale to 1920 x 1440, then get the central 1920 x 1080 image to display				
Auto235 (#1) (same button on remote of Native)	When source is 2.35:1(with black bar at top/bottom), Doing LBX format. When source isn't 2.35:1 that is full 4 x 3 or 16 x 9 (There is no black bar at top/bottom), doing 16 x 9 format				
Auto235_ Subtitle	Catch 720 x 422 (bottom)	Catch 720 x 506 (bottom)	Catch 1920 x 948 (bottom)	Catch 1920 x 632 (bottom)	Catch 87.8% of height (bottom)
	When source is 2.35:1(with black bar at top/bottom), Doing above catching rule and Scale to 1920 x 1440, then get the central 1920 x 1080 image to display. When source isn't 2.35:1 that is full size 4 x 3 or 16 x 9 (There is no black bar at top/bottom), doing 16 x 9 format				

Note

Each I/O has different setting of "Edge Mask".

Edge Mask

Edge Mask the image to remove video encoding noise on the edge of video source.

Zoom

- Press ◄ to reduce the size of the image.
- Press ► to magnify an image on the projected screen.

Image Shift

Shifts the projected image position.

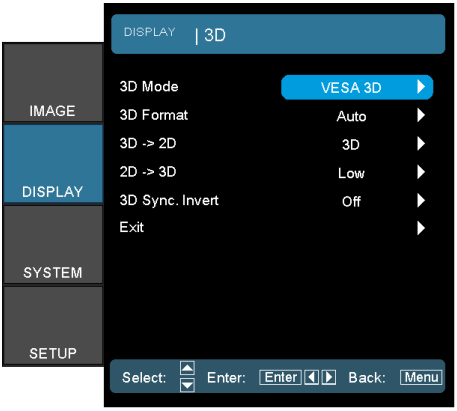
- Press ◄ or ► to move the image horizontal on the projected screen.
- Press ▲ or ▼ to move the image vertical on the projected screen.

V Keystone

Press ◄ or ► to compensate for vertical images distortion when the projector is positioned at an angle to the screen.

3D

Enter the 3D menu. Select 3D options such as 3D Mode, 3D Format, 3D→2D, 2D→3D, and 3D Sync Invert. See page 38 for more information.



Display | 3D

3D Mode

- DLP Link: Select DLP Link to use optimized settings for DLP Link 3D Glasses.
- VESA 3D: Select VESA 3D to use optimized settings for VESA 3D-based 3D images.
- Off: Select Off to disable 3D Mode.

3D Format

- Auto: When a 3D identification signal is detected, the 3D format is selected automatically. (For HDMI 1.4 3D sources only)
- SBS: Display 3D signal in Side-by-Side format.
- Top and Bottom: Display 3D signal in Top and Bottom format.
- Frame Sequential: Display 3D signal in Frame Sequential format.
- 2D→3D: 2D signal transform 3D signal.

3D→2D

Press ◄ or ► to select projector display 3D content in 2D (Left) or 2D (Right) without using 3D glasses to enjoy 3D content. This setting can also be used for dual projector passive 3D installations.

- 3D: Display 3D signal.
- L (Left): Display the left frame of 3D content.
- R (Right): Display the right frame of 3D content.

Note

- 3D settings are saved after adjustment.
- 3D Format is only supported on 3D Timing on page 62.
- “3D Format” and “3D Mode: Off“ are only supported on non-HDMI 1.4a 3D timing.

2D→3D

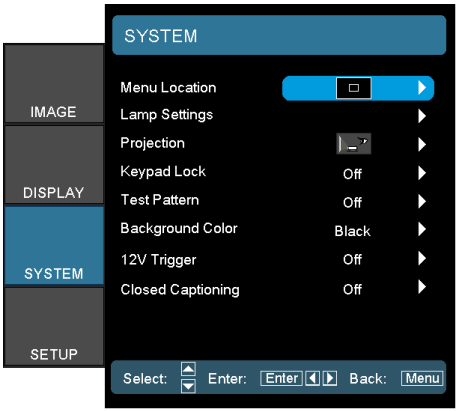
Select 3D depth of field (or strength) from Low, Middle or High.

3D Sync. Invert

Press ◄ or ► to enable or disable the 3D Sync invert function to invert images.

Note

"3D Sync. Invert" function wouldn't save the setting. It will set to "Off" when powers on and changes source.



System

Menu Location

Choose the menu location on the display screen.

Lamp Setting

Enter the Lamp Setting menu. See pages 42-43 for more details.

Projection

Select projection method:

- Front

  The factory default setting.

- Rear

  When you select this function, the projector reverses the image so you can project from behind a translucent screen.

- Front Ceiling

  When you select this function, the projector turns the image upside down for ceiling-mounted projection.

- Rear Ceiling

  When you select this function, the projector reverses and turns the image upside down at same time. You can project from behind a translucent screen with ceiling mounted projection.

Note

Hold "ENTER" key on keypad for 10 seconds to unlock keypad

Keypad Lock

Lock the buttons on the projector top panel.

- On: A warning message displays to confirm keypad lock.

- Off: Projector keypad functions as normal.

Test Pattern

Display a test pattern. There are Grid, White and None.

Background Color

Select the desired background color for the projected image when no source is detected.

12V Trigger

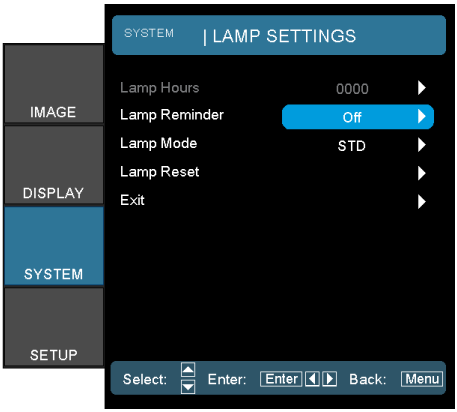
Press ◄ or ► to select 12V Trigger.

- Off: Disables the 12V Trigger.
- On: Enables the 12V Trigger and the programmable sub-menu. The sub-menu is accessed by selecting the ON option then pressing the Enter button on the remote control. Checking an option in the sub-menu will activate the 12V Trigger when the selected display mode is selected. In the example below 16:9 has been selected – this means that 12V Trigger will be active when the projector display mode is set to 16:9. The 12V Trigger will be inactive for all the other display mode options.
- Auto235: When Auto235 is enabled the projector will automatically detect when a 2.35:1 ratio presentation is being shown and will activate the trigger on this port which, in turn, can be used to activate a motorised anamorphic lens assembly. The Auto235 setting and a motorized anamorphic lens assembly can be used in this way to provide a fully automated “Constant Height” projection system.
- Auto 3D: When “Auto 3D” is enabled, the projector will automatically detect when a 3D image is shown and will activate the trigger on this port.

Closed Captioning

Select the screen to display closed captioning

- Off: The supplied default setting.
- CC1/CC2: Closed captioning type select.



System | Lamp Setting

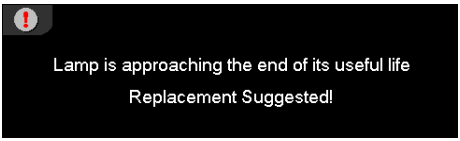
Lamp Hour

Displays the number of hours the lamp has been active. This item is for display only.

Lamp Reminder

Enable or disable the lamp life span reminder.

- On: A warning message displays when remaining lamp life is less than 30 hours.



- Off: No warning message displays.

Lamp Mode

Select the lamp brightness mode.

- Bright: Suit for 3D contents.
- ECO: Suit for 2D contents and lower brightness setting to conserve lamp life.

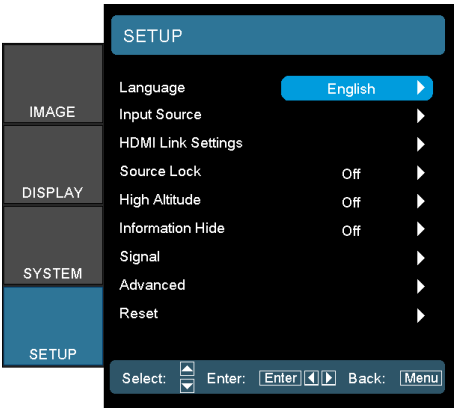
Lamp Reset

After replacing the lamp, reset the lamp counter to accurately reflect the new lamp's life span.

1. Select Lamp Reset.

   A confirmation screen displays.

2. Select Yes to reset the lamp counter to zero.



Setup

Language

Enter the Language menu. Select the multilingual OSD menu. See page 46 for more information.

Input Source

Enter the Input Source submenu. Select the sources to scan for at startup. See page 47 for more information.

HDMI Link Settings

See page 48 for more information.

Source Lock

Lock the current source as the only available source, even if the cable is unplugged.

- On: Only the current source is recognized as an input source.
- Off: All sources selected in Setup | Input Source are recognized as an input source.

High Altitude

Adjust the fan speed to reflect the environment.

- On: Increases fan speed for high temperature, humidity, or altitude.
- Off: Regular fan speed for normal conditions.

Information Hide

Suppress informational messages on the projected screen.

- On: No status messages appear on screen during operation.
- Off: Status messages appear as normal on screen during operation.

Signal

See pages 49-50 for more information.

Advanced

Enter the Advanced menu. See page 51 for more information.

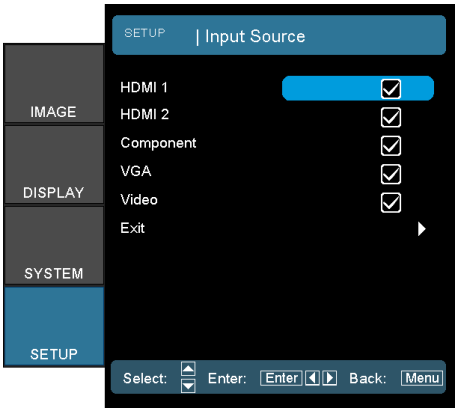
Reset

Reset current or all Options to default factory settings.

Setup | Language

Language

Choose the multilingual OSD menu. Press “ENTER” into the sub menu and then use the ▲, ▼, ◄ or ► key to select your preferred language.



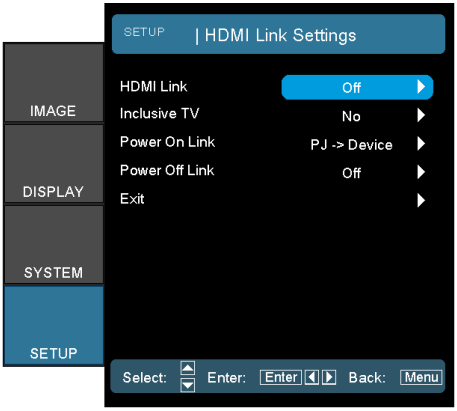
Setup | Input Source

Input Source

Use this option to enable / disable input sources. Press ▲ or ▼ to select a source, then press ◄ or ► to enable / disable it. Press “ENTER” to finalize the selection. The projector will not search inputs that are de-selected.

Note

If all sources are deselected, the projector cannot display any images. Always leave at least one source selected.



Setup | HDMI Link Settings

HDMI Link

Enable/Disable the HDMI Link function. The Inclusive TV, Power on Link, and Power off Link options will only available if the setting is set to On.

Inclusive TV

If the setting is set to “Yes”, both TV and projector will be automatically turned off at the same time. To prevent both devices to be turned off at the same time, set the setting to “No”.

Power On Link

CEC power on command.

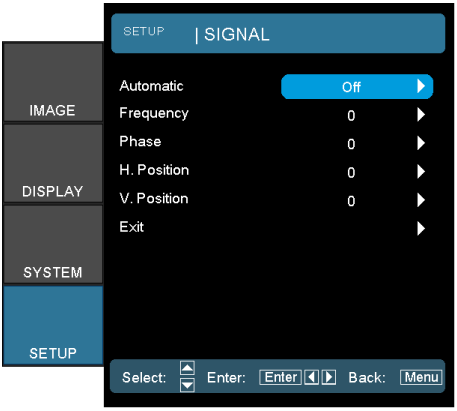
- Mutual: Both projector and CEC device will be turned on simultaneously.
- PJ→Device: The CEC device will be turned on only after the projector is switched on.
- Device→PJ: The projector will be switched on only after the CEC device is turned on.

Power Off Link

If the setting is set to “On”, both HDMI Link and projector will be automatically turned off at the same time. Set to “Off”, both HDMI Link and projector will be not automatically turned off at the same time.

Note

- When Power Mode (Standby) is set to Active, Device→PJ will be active when the projector is in standby
- Some HDMI Link functions may not operate, depending on the connected product’s design and compliance with the HDMI CEC standard.



Setup | Signal (VGA/Component)

Note

"Signal" is only supported in Analog VGA (RGB) signal.

Automatic

Automatically configures the signal (the Frequency and Phase items are grayed out). If Automatic is disabled, the Frequency and Phase items will appear for user to manually tune and save the settings.

Frequency

Change the display data frequency to match the frequency of your computer's graphics card. If you experience a vertical flickering bar, use this function to make an adjustment.

Phase

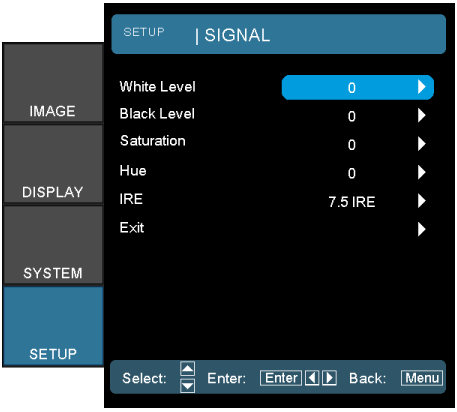
Phase synchronizes the signal timing of the display with the graphics card. If you experience an unstable or flickering image, use this function to correct it.

H. Position

- Press ◀ to move the image left.
- Press ▶ to move the image right.

V. Position

- Press ◀ to move the image down.
- Press ▶ to move the image up.



Setup | Signal (Video)

White Level

Allow user to adjust White Level when inputting Video signals.

Black Level

Allow user to adjust Black Level when inputting Video signals.

Saturation

Adjust a video image from black and white to fully saturated color.

- Press ◀ to decrease the amount of color in the image.
- Press ▶ to increase the amount of color in the image.

Hue

Adjust the color balance of red and green.

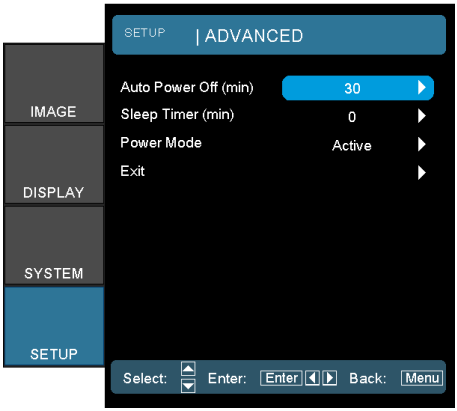
- Press ◀ to increase the amount of green in the image.
- Press ▶ to increase the amount of red in the image.

IRE

Adjust measurement of composite video signals.

Note

"IRE" is only supported on NTSC signal.



Setup | Advanced

Auto Power Off (min)

Set the Auto Power Off interval. The projector powers off the lamp after 30 minutes of no signal by default. The following warning is displayed 60 seconds before power off.

Note

When Power Mode (Standby) is set to Eco, RS232 will be deactivated when the projector is in standby.

Sleep Timer (min)

Set the Sleep Timer interval. The projector powers off after the specified time period of inactivity (regardless of signal). The following warning is displayed 60 seconds before power off.

Power Mode (Standby)

- Eco.: Choose “Eco.” to save power dissipation further < 0.5W.
- Active: Choose “Active” to return to normal standby.

Troubleshooting

If you experience a problem with your projector, please refer to the following information. If a problem persists, please contact your local reseller or service center.

Image

No image appears on-screen

- Ensure all the cables and power connections are correctly and securely connected as described in the “Installation” section.
- Ensure the pins of connectors are not crooked or broken.
- Check if the projection lamp has been securely installed. Please refer to the “Replacing the Lamp” section.
- Make sure you have removed the lens cap and the projector is switched on.

Image is out of focus

- Make sure the Lens cap is removed.
- Adjust the Focus Ring on the projector lens.
- Make sure the projection screen is between the required distance from the projector. See page 17.

The image is stretched when displaying 16:9 DVD title

- When you play anamorphic DVD or 16:9 DVD, the projector will show the best image in 16: 9 format on projector side.
- If you play the LBX format DVD title, please change the format as LBX in projector OSD.
- If you play 4:3 format DVD title, please change the format as 4:3 in projector OSD.
- If the image is still stretched, you will also need to adjust the
  aspect ratio by referring to the following:
- Please setup the display format as 16:9 (wide) aspect ratio type on your DVD player.

Image is too small or too large

- Adjust the zoom lever from the lens.
- Move the projector closer to or further from the screen.
- Press [Menu] on the projector panel, go to “Display -> Format”. Try the different settings.

Image has slanted sides:

- If possible, reposition the projector so that it is centered on the screen and below the bottom of the screen and use PureShift to make adjustments to the image position.
- Use “Display->V Keystone” from the OSD to make an adjustment.

Image is reversed

- Select “System -> Projection” from the OSD and adjust the projection direction.

Other

The projector stops responding to all controls

- If possible, turn off the projector, then unplug the power cord and wait at least 20 seconds before reconnecting power.

Lamp burns out or makes a popping sound

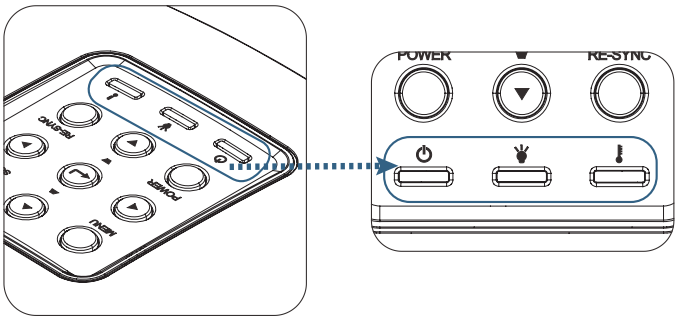
- When the lamp reaches its end of life, it will burn out and may make a loud popping sound. If this happens, the projector will not turn on until the lamp module has been replaced. To replace the lamp, follow the procedures in the “Replacing the Lamp” section on page 56.

Projector LED Status Indicator

Message	Power LED (Green)	Temp LED (Red)	Lamp LED (Red)
Standby State (Input power cord)	Slow Flashing 2 sec off 2 sec on	○	○
Power on (Warming)	Flashing 0.5 sec off 0.5 sec on	○	○
Power on & Lamp lighting	☀	○	○
Power off (Cooling)	Flashing 1 sec off 1 sec on	○	○
Error (Lamp fail)	Flashing 0.5 sec off 0.5 sec on	○	☀
Error (Fan fail)	Flashing 0.5 sec off 0.5 sec on	Flashing 0.5 sec off 0.5 sec on	○
Error (Over Temp)	Flashing 0.5 sec off 0.5 sec on	☀	○

Note

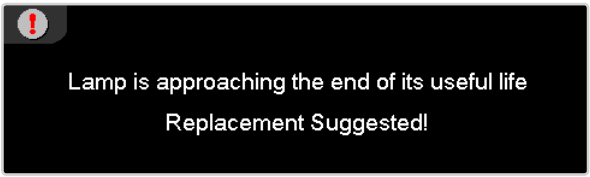
- Steady light => ☀ No light => ○
- Turn all LED's Off after the OSD menu disappears.



LED states

On Screen Messages

- Fan failed:
  The projector will switch off automatically.
- Over temperature:
  The projector will switch off automatically.
- Replacing the lamp:
  Lamp is approaching the end of its rated life.
  Replacement suggested.



Warning:
Only use genuine lamps.

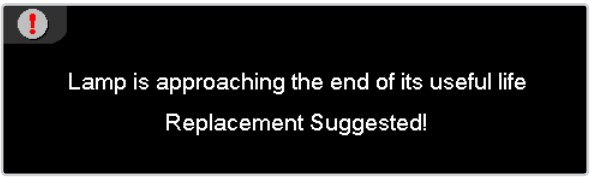
Remote Control

If the remote control does not work

- Check the operating angle of the remote control is within ±15° both horizontally and vertically of on of the IR receivers on the projector.
- Make sure there are no any obstructions between the remote control and the projector. Move to within 7 m (23 ft) of the projector.
- Make sure batteries are inserted correctly.
- Replace batteries if they are exhausted.

Replacing the Lamp

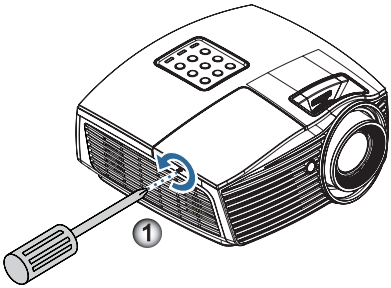
The projector automatically detects the lamp life. When the lamp life is nearing the end of use, you will receive a warning message.

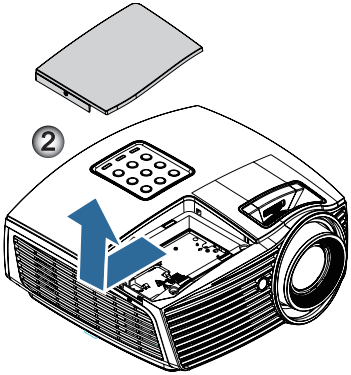


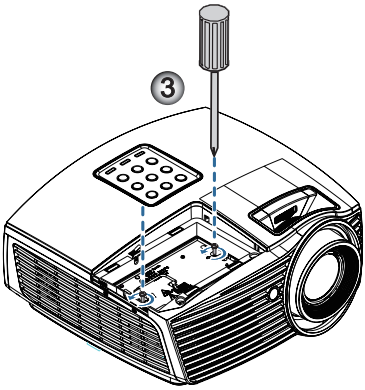
When you see this message, please contact your local reseller or service center to change the lamp as soon as possible. Make sure the projector has been cooled down for at least 30 minutes before changing the lamp.

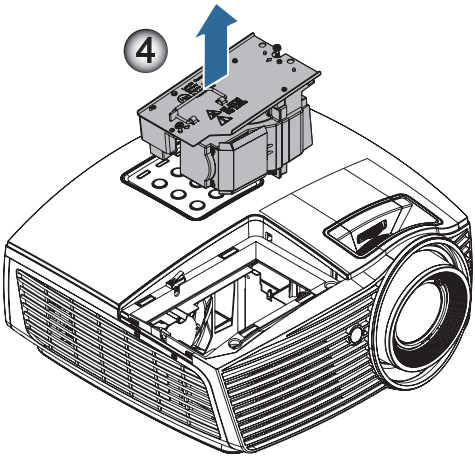
Warning: Lamp compartment is hot! Allow it to cool down before changing lamp!

Warning: To reduce the risk of personal injury, do not drop the lamp module or touch the lamp bulb. The bulb may shatter and cause injury if it is dropped.


1


2


3



Lamp Replacing Procedure:

1. Switch off the power to the projector by pressing the Power button.
2. Allow the projector to cool down at least 30 minutes.
3. Disconnect the power cord.
4. Remove the single screw on the lamp compartment cover.❶
5. Remove the lamp compartment cover.❷
6. Remove the two screws from the lamp module.
   Lift the module handle up.❸
7. Pull firmly on the module handle to remove the lamp module.❹

To replace the lamp module, reverse the previous steps. While installing, align the lamp module with the connector and ensure it is level to avoid damage.

8. Turn on the projector and do "Lamp Reset" after the lamp module is replaced.
   Lamp Reset: (i)Press "Menu" -> (ii)Select "System" -> (iii) Select "Lamp Settings" ->(iv)Select "Lamp Reset" -> (v) Select "Yes".

Compatibility Modes

Video Compatibility

NTSC	NTSC M/J, 3.58MHz, 4.43MHz
PAL	PAL B/D/G/H/I/M/N, 4.43MHz
SECAM	SECAM B/D/G/K/K1/L, 4.25/4.4 MHz
SDTV	480i/p, 576i/p
HDTV	720p (50/60Hz), 1080i (50/60Hz), 1080P (50/60Hz)

Video Timing Detail Describe

Signal	Resolution	Refresh Rate(Hz)	Notes
TV(NTSC)	720 x 480	60	For Composite Video /S-video
TV(PAL, SECAM)	720 x 576	50	
SDTV (480i)	720 x 480	60	For Component
SDTV (480p)	720 x 480	60	
SDTV (576i)	720 x 576	50	
SDTV (576p)	720 x 576	50	
HDTV (720p)	1280 x 720	50/60	
HDTV (1080i)	1920 x 1080	50/60	
HDTV (1080p)	1920 x 1080	24/50/60	

Computer Compatibility - VESA standards

Computer Signal (Analog RGB Compatible

Signal	Resolution	Refresh Rate(Hz)	Notes
VGA	640 X 480	60/67/72/85	Mac 60/72/85
SVGA	800 X 600	56/60 (*2)/72/ 85/120 (*2)	Mac 60/72/85
XGA	1024 X768	60 (*2)/70/75/ 85/120 (*2)	Mac 60/70/75/ 85
HDTV (720p)	1280 x 720	50/60 (*2)/ 120 (*2)	Mac 60
WXGA	1280 x 768	60/75/85	Mac 60/75/85
	1280 x 800	60/120	Mac 60
	1366 x 768	60	Mac 60
WXGA+	1440 x 900	60	Mac 60
SXGA	1280 x 1024	60/75/85	Mac 60/75
SXGA+	1400 x 1050	60	
UXGA	1600 x 1200	60	
HDTV (1080p)	1920 x 1080	24/50/60	Mac 60
WUXGA	1920 x 1200 (*1)	50/60	Mac 60

(*1) 1920 x 1200 @60Hz only support RB (reduced blanking).

(*2) 3D timing for True 3D projector.(Option)

Input Signal for HDMI/DVI-D

Signal	Resolution	Refresh Rate(Hz)	Notes
VGA	640 x 480	60	Mac 60/72/85
SVGA	800 x 600	60 (*2)/72/ 85/120 (*2)	Mac 60/72/85
XGA	1024 x 768	60 (*2)/70/75/ 85/120 (*2)	Mac 60/70/75/ 85
SDTV (480i)	720 x 480	60	
SDTV (480p)	720 x 480	60	
SDTV (576i)	720 x 576	50	
SDTV (576p)	720 x 576	50	
WSVGA (1024 x 600)	1024 x 600	60	
HDTV (720p)	1280 x 720	50 (*2)/60/ 120 (*2)	Mac 60
WXGA	1280 x 768	60/75/85	Mac 75
	1280 x 800	60 (*2)/120 (*2)	Mac 60
	1366 x 768	60	Mac 60
WXGA+	1440 x 900	60	Mac 60
SXGA	1280 x 1024	60/75/85	Mac 60/75
SXGA+	1400 x 1050	60	
UXGA	1600 x 1200	60	
HDTV (1080i)	1920 x 1080	50/60	
HDTV (1080p)	1920 x 1080	24/30/50/60	Mac 60
WUXGA	1920 x 1200 (*1)	50/60	Mac 60

(*1) 1920 x 1200 @60Hz only support RB (reduced blanking).

(*2) 3D support.(Option)

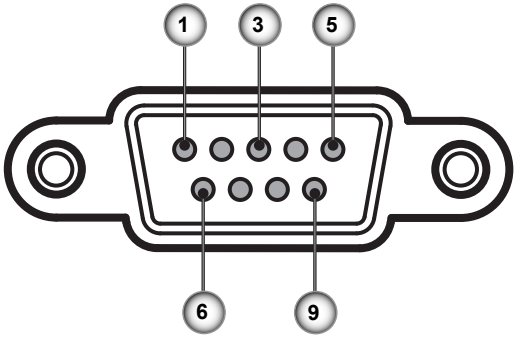
True 3D Video Compatibility table

Input Resolutions	Input timing		
HDMI 1.4a 3D Input	1280 x 720p @50Hz	Top-and–Bottom	
	1280 x 720p @60Hz	Top-and–Bottom	
	1280 x 720p @50Hz	Frame packing	
	1280 x 720p @60Hz	Frame packing	
	1920 x 1080i @50Hz	Side-by-Side (Half)	
	1920 x 1080i @60Hz	Side-by-Side (Half)	
	1920 x 1080p @24Hz	Top-and–Bottom	
	1920 x 1080p @24Hz	Frame packing	
HDMI 1.3	1920 x 1080i @50Hz	Side-by-Side (Half)	SBS mode is on
	1920 x 1080i @60Hz		
	1280 x 720p @50Hz		
	1280 x 720p @60Hz		
	1920 x 1080i @50Hz	Top-and-Bottom	TAB mode is on
	1920 x 1080i @60Hz		
	1280 x 720p @50Hz		
	1280 x 720p @60Hz		
	480i	HQFS	3D format is Frame sequential

- If 3D input is 1080p @24Hz, the DMD should replay with integral multiple with 3D mode.
- 1080i @25Hz and 720p @50Hz will run in 100Hz; other 3D timing will run in 120Hz.

RS232 Commands and Protocol Function List

RS232 Pin Assignments (projector side)



Pin no.	Name	I/O (From Projector Side)
1	NC	__
2	RXD	IN
3	TXD	OUT
4	NC	__
5	NC	__
6	NC	__
7	RS232	RTS
8	RS232	CTS
9	NC	__

RS232 Protocol Function List

232 ASCII Code Function	HEX Code Description
~XX00 1	7E 30 30 30 30 20 31 0D
Power ON	
~XX00 0	7E 30 30 30 30 20 30 0D
Power OFF	(0/2 for backward compatible)
~XX01 1	7E 30 30 30 31 20 31 0D
Resync	
~XX02 1	7E 30 30 30 32 20 31 0D
AV Mute	On
~XX02 0	7E 30 30 30 32 20 30 0D
	Off (0/2 for backward compatible)
~XX04 1	7E 30 30 30 34 20 31 0D
Freeze	
~XX04 0	7E 30 30 30 34 20 30 0D
Unfreeze	(0/2 for backward compatible)
~XX05 1	7E 30 30 30 35 20 31 0D
Zoom Plus	
~XX06 1	7E 30 30 30 36 20 31 0D
Zoom Minus	
~XX12 1	7E 30 30 31 32 20 31 0D
Direct Source Commands	HDMI1
~XX12 15	7E 30 30 31 32 20 31 35 0D
	HDMI2
~XX12 5	7E 30 30 31 32 20 35 0D
	VGA
~XX12 8	7E 30 30 31 32 20 38 0D
	VGA Component
~XX12 10	7E 30 30 31 32 20 31 30 0D
	Video
~XX12 11	7E 30 30 31 32 20 31 31 0D
	Wireless
~XX12 14	7E 30 30 31 32 20 31 34 0D
	Component RCA

232 ASCII Code Function	HEX Code Description
~XX20 1	7E 30 30 32 30 20 31 0D
Display Mode	Cinema
~XX20 4	7E 30 30 32 30 20 34 0D
	Reference
~XX20 3	7E 30 30 32 30 20 33 0D
	Vivid
~XX20 2	7E 30 30 32 30 20 32 0D
	Bright
~XX20 10	7E 30 30 32 30 20 31 30 0D
	Game
~XX20 9	7E 30 30 32 30 20 39 0D
	3D
~XX20 5	7E 30 30 32 30 20 35 0D
	User
~XX20 7	7E 30 30 32 30 20 37 0D
	ISF Day
~XX20 8	7E 30 30 32 30 20 38 0D
	ISF Night
~XX21 n	7E 30 30 32 31 20 a 0D
Brightness	n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX22 n	7E 30 30 32 32 20 a 0D
Contrast	n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX23 n	7E 30 30 32 33 20 a 0D
Sharpness	n = 1 (a=31) ~ 15 (a=31 35)
~XX44 n	7E 30 30 34 34 20 a 0D
Tint	n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX45 n	7E 30 30 34 35 20 a 0D
Color	n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX196 n	7E 30 30 31 39 36 20 a 0D
Noise Reduction	n = 1 (a=31) ~ 10 (a=31 30)
~XX35 1	7E 30 30 33 35 20 31 0D
Gamma Film	

232 ASCII Code Function	HEX Code Description
~XX182 n	7E 30 30 31 38 32 20 a 0D
Curve type (Film)	n = −5 (a=2D 35) ~ 6 (a=36)
~XX183 n	7E 30 30 31 38 33 20 a 0D
Offset (Film)	n = −5 (a=2D 35) ~ 5 (a=35)
~XX206 1	7E 30 30 32 30 36 20 31 0D
Reset (Film)	
~XX35 2	7E 30 30 33 35 20 32 0D
Video	
~XX184 n	7E 30 30 31 38 34 20 a 0D
Curve type (Video)	n = −5 (a=2D 35) ~ 6 (a=36)
~XX185 n	7E 30 30 31 38 35 20 a 0D
Offset (Video)	n = −5 (a=2D 35) ~ 5 (a=35)
~XX207 1	7E 30 30 32 30 37 20 31 0D
Reset (Video)	
~XX35 3	7E 30 30 33 35 20 33 0D
Graphics	
~XX186 n	7E 30 30 31 38 36 20 a 0D
Curve type (Graphics)	n = −5 (a=2D 35) ~ 6 (a=36)
~XX187 n	7E 30 30 31 38 37 20 a 0D
Offset (Graphics)	n = −5 (a=2D 35) ~ 5 (a=35)
~XX208 1	7E 30 30 32 30 38 20 31 0D
Reset (Graphics)	
~XX35 4	7E 30 30 33 35 20 34 0D
Standard	
~XX188 n	7E 30 30 31 38 38 20 a 0D
Curve type (Standard)	n = −5 (a=2D 35) ~ 6 (a=36)
~XX189 n	7E 30 30 31 38 39 20 a 0D
Offset (Standard)	n = −5 (a=2D 35) ~ 5 (a=35)
~XX209 1	7E 30 30 32 30 39 20 31 0D
Reset (Standard)	

232 ASCII Code Function	HEX Code Description
~XX34 n	7E 30 30 33 34 20 a 0D
BrilliantColorTM	n = 1 (a=30) ~ 10 (a=31 30)
~XX190 0	7E 30 30 31 39 30 20 30 0D
PureMotion	Off
~XX190 1	7E 30 30 31 39 30 20 31 0D
	Low
~XX190 2	7E 30 30 31 39 30 20 32 0D
	Mid
~XX190 3	7E 30 30 31 39 30 20 33 0D
	High
~XX41 0	7E 30 30 34 31 20 30 0D
UltraDetail	Off
~XX41 1	7E 30 30 34 31 20 31 0D
	On
~XX41 2	7E 30 30 34 31 20 32 0D
	HD+
~XX42 0	7E 30 30 34 31 20 30 0D
PureColor	Off
~XX42 1	7E 30 30 34 31 20 31 0D
	1
~XX42 2	7E 30 30 34 31 20 32 0D
	2
~XX42 3	7E 30 30 34 31 20 33 0D
	3
~XX42 4	7E 30 30 34 31 20 34 0D
	4
~XX42 5	7E 30 30 34 31 20 35 0D
	5
~XX197 0	7E 30 30 31 39 37 20 30 0D
PureEngine Demo	Off
~XX197 1	7E 30 30 31 39 37 20 31 0D
	H Split
~XX197 2	7E 30 30 31 39 37 20 32 0D
	V Split

232 ASCII Code Function	HEX Code Description
~XX191 0	7E 30 30 31 39 31 20 30 0D
DynamicBlack	Off
~XX191 1	7E 30 30 31 39 31 20 31 0D
	On
~XX210 1	7E 30 30 32 31 30 20 31 0D
Color Temp.	D50
~XX210 2	7E 30 30 32 31 30 20 32 0D
	D65
~XX210 4	7E 30 30 32 31 30 20 34 0D
	D75
~XX210 5	7E 30 30 32 31 30 20 35 0D
	D83
~XX210 6	7E 30 30 32 31 30 20 36 0D
	D93
~XX210 7	7E 30 30 32 31 30 20 37 0D
	Native
~XX211 1	7E 30 30 32 31 31 20 31 0D
Color Gamut	Native
~XX211 2	7E 30 30 32 31 31 20 32 0D
	DLP Cinema
~XX211 3	7E 30 30 32 31 31 20 33 0D
	HDTV
~XX211 4	7E 30 30 32 31 31 20 36 0D
	EBU
~XX211 5	7E 30 30 32 31 31 20 35 0D
	SMPT−C
~XX212 1	7E 30 30 32 31 32 20 31 0D
CMS	Red
~XX212 2	7E 30 30 32 31 32 20 32 0D
	Green

232 ASCII Code Function	HEX Code Description
~XX212 3	7E 30 30 32 31 32 20 33 0D
	Blue
~XX212 4	7E 30 30 32 31 32 20 34 0D
	Cyan
~XX212 5	7E 30 30 32 31 32 20 35 0D
	Yellow
~XX212 6	7E 30 30 32 31 32 20 36 0D
	Megenta
~XX213 n	7E 30 30 32 31 31 20 a 0D
	X−offset n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX214 n	7E 30 30 32 31 31 20 a 0D
	Y−offset n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX215 1	7E 30 30 32 31 35 20 31 0D
	Reset
~XX24 n	7E 30 30 32 34 20 a 0D
RGB Gain/Bias	Red Gain n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX25 n	7E 30 30 32 35 20 a 0D
	Green Gain n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX26 n	7E 30 30 32 36 20 a 0D
	Blue Gain n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX27 n	7E 30 30 32 37 20 a 0D
	Red Bias n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX28 n	7E 30 30 32 38 20 a 0D
	Green Bias n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX29 n	7E 30 30 32 39 20 a 0D
	Blue Bias n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX33 1	7E 30 30 33 33 20 31 0D
	Reset
~XX37 1	7E 30 30 33 37 20 31 0D
Color Space	Auto
~XX37 2	7E 30 30 33 37 20 32 0D
	RGB\ RGB (0−255)

232 ASCII Code Function	HEX Code Description
~XX37 3	7E 30 30 33 37 20 33 0D
	YUV
~XX37 4	7E 30 30 33 37 20 34 0D
	RGB (16 – 235)
~XX60 1	7E 30 30 36 30 20 31 0D
Format	4:3
~XX60 2	7E 30 30 36 30 20 32 0D
	16:9
~XX60 5	7E 30 30 36 30 20 35 0D
	LBX
~XX60 6	7E 30 30 36 30 20 36 0D
	Native
~XX60 8	7E 30 30 36 30 20 38 0D
	Auto235
~XX60 11	7E 30 30 36 30 20 31 31 0D
	Auto235_Subtitle
~XX61 n	7E 30 30 36 31 20 a 0D
Edge mask	n = 0 (a=30) ~ 5 (a=35)
~XX62 n	7E 30 30 36 32 20 a 0D
Zoom	n = 0 (a=30) ~ 10 (a=31 30)
~XX63 n	7E 30 30 36 33 20 a 0D
H Image Shift	n = −100 (a=2D 31 30 30) ~ 100 (a=31 30 30)
~XX64 n	7E 30 30 36 34 20 a 0D
V Image Shift	n = −100 (a=2D 31 30 30) ~ 100 (a=31 30 30)
~XX66 n	7E 30 30 36 36 20 a 0D
V Keystone	n = −30 (a=2D 33 30) ~ 30 (a=33 30)
~XX230 1	E 30 30 32 33 30 20 31 0D
3D Mode	DLP−Link
~XX230 2	7E 30 30 32 33 30 20 32 0D
	VESA 3D
~XX400 0	7E 30 30 34 30 30 20 30 0D
3D□2D	3D

232 ASCII Code Function	HEX Code Description
~XX400 1	7E 30 30 34 30 30 20 31 0D
	L
~XX400 2	7E 30 30 34 30 30 20 32 0D
	R
~XX405 0	7E 30 30 34 30 35 20 30 0D
3D Format	Auto
~XX405 1	7E 30 30 34 30 35 20 31 0D
	SBS
~XX405 2	7E 30 30 34 30 35 20 32 0D
	Top and Bottom
~XX405 3	7E 30 30 34 30 35 20 33 0D
	Frame sequential
~XX405 4	7E 30 30 34 30 35 20 34 0D
2D□3D	Low
~XX405 5	7E 30 30 34 30 35 20 35 0D
	Mid
~XX405 6	7E 30 30 34 30 35 20 36 0D
	High
~XX231 0	7E 30 30 32 33 31 20 30 0D
3D Sync Invert	On
~XX231 1	7E 30 30 32 33 31 20 31 0D
	Off
~XX72 1	7E 30 30 37 32 20 31 0D
Menu Location	Top Left
~XX72 2	7E 30 30 37 32 20 32 0D
	Top Right
~XX72 3	7E 30 30 37 32 20 33 0D
	Centre
~XX72 4	7E 30 30 37 32 20 34 0D
	Bottom Left
~XX72 5	7E 30 30 37 32 20 35 0D
	Bottom Right
~XX109 1	7E 30 30 31 30 39 20 31 0D
Lamp Reminder	On

232 ASCII Code Function	HEX Code Description
~XX109 0	7E 30 30 31 30 39 20 30 0D
	Off (0/2 for backward compatible)
~XX110 1	7E 30 30 31 31 30 20 31 0D
Lamp Mode	Bright
~XX110 2	7E 30 30 31 31 30 20 32 0D
	ECO
~XX111 1	7E 30 30 31 31 31 20 31 0D
Lamp Reset	Yes
~XX111 0	7E 30 30 31 31 31 20 30 0D
	No (0/2 for backward compatible)
~XX71 1	7E 30 30 37 31 20 31 0D
Projection	Front−Desktop
~XX71 2	7E 30 30 37 31 20 32 0D
	Rear−Desktop
~XX71 3	7E 30 30 37 31 20 33 0D
	Front−Ceiling
~XX71 4	7E 30 30 37 31 20 34 0D
	Rear−Ceiling
~XX103 1	7E 30 30 31 30 33 20 31 0D
Keypad Lock	On
~XX103 0	7E 30 30 31 30 33 20 30 0D
	Off (0/2 for backward compatible)
~XX195 0	7E 30 30 31 39 35 20 30 0D
Test Pattern	Off
~XX195 1	7E 30 30 31 39 35 20 31 0D
	Grid (White)
~XX195 2	7E 30 30 31 39 35 20 32 0D
	White
~XX104 1	7E 30 30 31 30 34 20 31 0D
Background Color	Blue

232 ASCII Code Function	HEX Code Description
~XX104 2	7E 30 30 31 30 34 20 32 0D
	Black
~XX104 6	7E 30 30 31 30 34 20 36 0D
	Gray
~XX193 0	7E 30 30 31 39 33 20 30 0D
12v trigger	Off
~XX193 1	7E 30 30 31 39 33 20 31 0D
	On
~XX193 2	7E 30 30 31 39 33 20 32 0D
	Auto235
~XX193 3	7E 30 30 31 39 33 20 33 0D
	Auto 3D
~XX88 0	7E 30 30 38 38 20 30 0D
Closed Captioning	Off
~XX88 1	7E 30 30 38 38 20 31 0D
	cc1
~XX88 2	7E 30 30 38 38 20 32 0D
	cc2
~XX70 1	7E 30 30 37 30 20 31 0D
Language	English
~XX70 2	7E 30 30 37 30 20 32 0D
	German
~XX70 3	7E 30 30 37 30 20 33 0D
	French
~XX70 4	7E 30 30 37 30 20 34 0D
	Italian
~XX70 5	7E 30 30 37 30 20 35 0D
	Spanish
~XX70 6	7E 30 30 37 30 20 36 0D
	Portuguese
~XX70 7	7E 30 30 37 30 20 37 0D
	Polish

232 ASCII Code Function	HEX Code Description
~XX70 8	7E 30 30 37 30 20 38 0D
	Dutch
~XX70 9	7E 30 30 37 30 20 39 0D
	Swedish
~XX70 10	7E 30 30 37 30 20 31 30 0D
	Norwegian/Danish
~XX70 11	7E 30 30 37 30 20 31 31 0D
	Finnish
~XX70 12	7E 30 30 37 30 20 31 32 0D
	Greek
~XX70 13	7E 30 30 37 30 20 31 33 0D
	Traditional Chinese
~XX70 14	7E 30 30 37 30 20 31 34 0D
	Simplified Chinese
~XX70 15	7E 30 30 37 30 20 31 35 0D
	Japanese
~XX70 16	7E 30 30 37 30 20 31 36 0D
	Korean
~XX70 17	7E 30 30 37 30 20 31 37 0D
	Russian
~XX70 18	7E 30 30 37 30 20 31 38 0D
	Hungarian
~XX70 19	7E 30 30 37 30 20 31 39 0D
	Czechoslovak
~XX70 20	7E 30 30 37 30 20 32 30 0D
	Arabic
~XX70 21	7E 30 30 37 30 20 32 31 0D
	Thai
~XX70 22	7E 30 30 37 30 20 32 32 0D
	Turkish
~XX100 1	7E 30 30 31 30 30 20 31 0D
Source Lock	On
~XX100 0	7E 30 30 31 30 30 20 30 0D
	Off (0/2 for backward compatible)

232 ASCII Code Function	HEX Code Description
~XX101 1	7E 30 30 31 30 31 20 31 0D
High Altitude	On
~XX101 0	7E 30 30 31 30 31 20 30 0D
	Off (0/2 for backward compatible)
~XX102 1	7E 30 30 31 30 32 20 31 0D
Information Hide	On
~XX102 0	7E 30 30 31 30 32 20 30 0D
	Off (0/2 for backward compatible)
~XX73 n	7E 30 30 37 33 20 a 0D
Signal	Frequency n = 0 (a= 30) ~ 100 (a=31 30 30)
~XX91 n	7E 30 30 39 31 20 a 0D
	Automatic n = 0 disable; n = 1 enable
~XX74 n	7E 30 30 37 34 20 a 0D
	Phase n = −50 (a= 2D 35 30) ~ 50 (a=35 30)
~XX75 n	7E 30 30 37 35 20 a 0D
	H. Position n = −50 (a= 2D 35 30) ~ 50 (a=35 30)
~XX76 n	7E 30 30 37 36 20 a 0D
	V. Position n = −50 (a= 2D 35 30) ~ 50 (a=35 30)
~XX200 n	7E 30 30 32 30 30 20 a 0D
	White Level n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX201 n	7E 30 30 32 30 31 20 a 0D
	Black Level n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX202 n	7E 30 30 32 30 32 20 a 0D
	Saturation n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX203 n	7E 30 30 32 30 33 20 a 0D
	Hue n = −50 (a=2D 35 30) ~ 50 (a=35 30)
~XX204 n	7E 30 30 32 30 30 24 a 0D
	IRE n = 1 (0 IRE); n = 0 (7.5 IRE)
~XX106 n	7E 30 30 31 30 36 20 a 0D
	Auto Power Off (min) n = 0 (a=30) ~ 180 (a=31 38 30) (5 minutes for each step).
~XX107 n	7E 30 30 31 30 37 20 a 0D
	Sleep Timer (min) n = 0 (a=30) ~ 995 (a=39 39 30) (30 minutes for each step).

232 ASCII Code Function	HEX Code Description
~XX114 1	7E 30 30 31 31 34 20 31 0D
	Power Mode (Standby) Eco.(<=0.5W)
~XX114 0	7E 30 30 31 31 34 20 30 0D
	Active (0/2 for backward compatible)
~XX112 1	7E 30 30 31 31 32 20 31 0D
	Reset Yes
SEND to emulate Remote	
~XX140 10	7E 30 30 31 34 30 20 31 30 0D
	Up
~XX140 11	7E 30 30 31 34 30 20 31 31 0D
	Left
~XX140 12	7E 30 30 31 34 30 20 31 32 0D
	Enter (for projection MENU)
~XX140 13	7E 30 30 31 34 30 20 31 33 0D
	Right
~XX140 14	7E 30 30 31 34 30 20 31 34 0D
	Down
~XX140 15	7E 30 30 31 34 30 20 31 35 0D
	Keystone +
~XX140 16	7E 30 30 31 34 30 20 31 36 0D
	Keystone □
~XX140 19	7E 30 30 31 34 30 20 31 39 0D
	Brightness
~XX140 20	7E 30 30 31 34 30 20 32 30 0D
	Menu
~XX140 21	7E 30 30 31 34 30 20 32 31 0D
	Zoom
~XX140 28	7E 30 30 31 34 30 20 32 38 0D
	Contrast
~XX140 47	7E 30 30 31 34 30 20 34 37 0D
	Source

SEND from projector automatically

232 ASCII Code Function	Projector Return	HEX Code Description
when Standby/ Warming/Cooling/ Out of		
Range/Lamp fail/ Fan Lock/Over Temperature/		
Lamp Hours Running Out/ Cover Open		
	INFOn	n : 0/1/2/3/4/6/7/8/ = Standby/Warming/Cooling/Out of Range /Lamp fail/Fan Lock/Over Temperature/ Lamp Hours Running Out/Cover Open

READ from projector

232 ASCII Code Function	Projector Return	HEX Code Description
~XX121 1	7E 30 30 31 32 31 20 31 0D	
Input Source Commands	OKn	n: 0/1/2/3/4/5/ = None/VGA/Video/HDMI1/HDMI2/ Component
~XX122 1	7E 30 30 31 32 32 20 31 0D	
Sofware Version	OKdddd	dddd: FW version
~XX123 1	7E 30 30 31 32 33 20 31 0D	
Display Mode	OKn	n : 0/1/2/3/4/5/6/7/8 =
	None/Cinema/Reference/Photo/ Bright/3D/	
	User/ISF Day/ISF Night	

232 ASCII Code Function	HEX Code Projector Return	Description
~XX124 1	7E 30 30 31 32 34 20 31 0D	
Power State	OKn	n : 0/1 = Off/On
~XX125 1	7E 30 30 31 32 35 20 31 0D	
Brightness	OKn	
~XX126 1	7E 30 30 31 32 36 20 31 0D	
Contrast	OKn	
~XX127 1	7E 30 30 31 32 37 20 31 0D	
Format	OKn	n: 0/1/2/3/4/5 =
	4:3/16:9/LBX/Native/Auto235/Auto235_Subtitle	
~XX128 1	7E 30 30 31 32 38 20 31 0D	
Color Temperature	OKn	n : 0/1/2/3/4/5/ = D50/D65/D75/D83/D93/ Native
~XX129 1	7E 30 30 31 32 39 20 31 0D	
Projection Mode	OKn	n : 0/1/2/3 = Front−Desktop/ Rear−Desktop/
	Front−Ceiling/ Rear−Ceiling	
~XX150 1	7E 30 30 31 35 30 20 31 0D	
Information	OKabbbbccdddde	
	a : 0/1 = Off/On	
	bbbb: LampHour	
	cc: source	00/01/02/03/04/05/ =
	None/VGA/Video/HDMI1/HDMI2/Component	
	dddd: FW version	
	e : Display mode0/1/2/3/4/5/6/7/8	

232 ASCII Code	HEX Code	
Function	Projector Return	Description
	None/Cinema/Reference/Photo/Bright/	
	3D/User/ISF Day/ISF Night	
~XX151 1	7E 30 30 31 35 31 20 31 0D	
Model name	OKn	
~XX108 1	7E 30 30 31 30 38 20 31 0D	
Lamp Hours	OKbbbb	bbbb: LampHour
~XX108 2	7E 30 30 31 30 38 20 31 0D	
Cumulative Lamp Hours	OKbbbbb	bbbbb: (5 digits) Total Lamp Hours

Trademarks

- DLP is trademarks of Texas Instruments.
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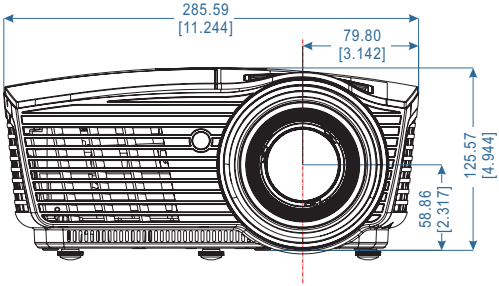
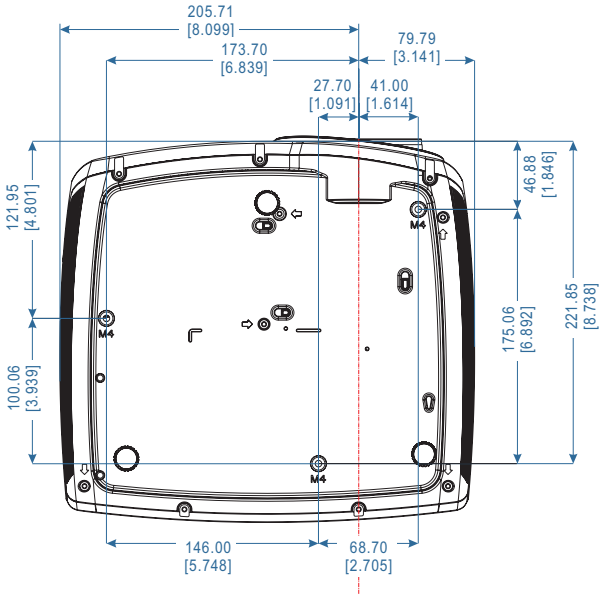
- HDMI, the HDMI Logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

Ceiling Mount Installation

1. To prevent damage to your projector, please use the Optoma ceiling mount.
2. If you wish to use a third party ceiling mount kit, please ensure the screws used to attached a mount to the projector met the following specifications:
   - Screw type: M4
   - Maximum screw length: 11mm
   - Minimum screw length: 9mm





Note

Please note that damage resulting from incorrect installation will invalidate the warranty.

Warning:

1. If you buy ceiling mount from other company, please be sure to use the correct screw size. Screw size will be different on different mounts. It depends on the plate thickness.
2. Be sure to keep at least 10cm gap between the ceiling and the bottom of the projector.
3. Avoid installing the projector near a heat source.

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Regulation & Safety Notices

This appendix lists the general notices of your Projector.

FCC notice

This device 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 device 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 communications.

However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device 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 device and receiver.
- Connect the device into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Notice: Shielded cables

All connections to other computing devices must be made using shielded cables to maintain compliance with FCC regulations.

Caution

Changes or modifications not expressly approved by the manufacturer could void the user's authority, which is granted by the Federal Communications Commission, to operate this projector.

Operation conditions

This device complies with Part 15 of the FCC Rules. 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.

Notice: Canadian users

This Class B digital apparatus complies with Canadian ICES-003.

Remarque à l'intention des utilisateurs canadiens

Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.

Declaration of Conformity for EU countries

- EMC Directive 2004/108/EC (including amendments)
- Low Voltage Directive 2006/95/EC
- R & TTE Directive 1999/5/EC
  (if product has RF function)

Disposal instructions

Do not throw this electronic device into the trash when discarding. To minimize pollution and ensure utmost protection of the global environment, please recycle it.