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Safety Information

⚡ (lightning flash in triangle)	The lightning flash with arrow head within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous volt-age" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
! (exclamation point in triangle)	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servic-ing) 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 loca-tion 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 ap-paratus 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 mainte-nance as recommended in this user's guide.*

■ Warning-   Do not look into the projector's lens when the LED 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 switching the projector off, please ensure the cooling cycle has been completed before disconnecting power. Allow 10 seconds for the projector to cool down.

■ Warning-   Do not use lens cap when projector is in opera-tion.

■ Warning-   Allowing the proper amount of space on the top, sides, and rear of the projector cabinet is critical for proper air circulation and cooling of the unit. The dimensions shown here indicate the minimum space required. If the projector is to be built into a compartment or similarly enclosed, these minimum distances must be maintained.

4" (10cm)

8" (20cm)   8" (20cm)   4" (10cm)
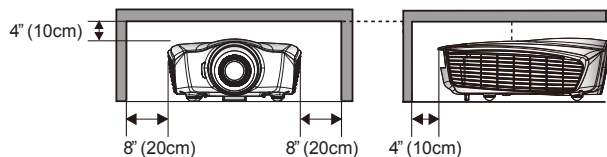
Usage Notice

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°C ~ 40°C
    ▸ Relative humidity is 10% ~ 85%
  - In areas susceptible to excessive dust and dirt.
  - Near any appliance generating a strong magnetic field.
  - In direct sunlight.

Viewing 3D projection using the 3D function

IMPORTANT SAFETY INFORMATION. READ THE FOLLOWING WARNINGS BEFORE YOU OR YOUR CHILD USE THE 3D FUNCTION.

Warning
❖ Children and teenagers may be more susceptible to health issues associated with viewing in 3D and should be closely supervised when viewing these images.

Photosensitive Seizure Warning and Other Health Risks
❖ Some viewers may experience an epileptic seizure or stroke when exposed to certain flashing images or lights contained in certain Projector pictures or video games. If you suffer from, or have a family history of epilepsy or strokes, please consult with a medical specialist before using the 3D function.
❖ Even those without a personal or family history of epilepsy or stroke may have an undiagnosed condition that can cause photosensitive epileptic seizures.
❖ Pregnant women, the elderly, sufferers of serious medical condi-

tions, those who are sleep deprived or under the influence of alcohol should avoid utilizing the unit's 3D functionality.

❖ If you experience any of the following symptoms, stop viewing 3D pictures immediately and consult a medical specialist: (1) altered vision; (2) light-headedness; (3) dizziness; (4) involuntary movements such as eye or muscle twitching; (5) confusion; (6) nausea; (7) loss of awareness; (8) convulsions; (9) cramps; and/ or (10) disorientation. Children and teenagers may be more likely than adults to experience these symptoms. Parents should monitor their children and ask whether they are experiencing these symptoms.

❖ Watching 3D projection may also cause motion sickness, perceptual after effects, disorientation, eye strain and decreased postural stability. It is recommended that users take frequent breaks to lessen the potential of these effects. If your eyes show signs of fatigue or dryness or if you have any of the above symptoms, immediately discontinue use of this device and do not resume using it for at least thirty minutes after the symptoms have subsided.

❖ Watching 3D projection while sitting too close to the screen for an extended period of time may damage your eyesight. The ideal viewing distance should be at least three times the screen height. It is recommended that the viewer's eyes are level with the screen.

❖ Watching 3D projection while wearing 3D glasses for an extended period of time may cause a headache or fatigue. If you experience a headache, fatigue or dizziness, stop viewing the 3D projection and rest.

❖ Do not use the 3D glasses for any other purpose than for watching 3D projection. Wearing the 3D glasses for any other purpose (as general spectacles, sunglasses, protective goggles, etc.) may be physically harmful to you and may weaken your eyesight.

❖ Viewing in 3D projection may cause disorientation for some viewers. Accordingly, DO NOT place your 3D PROJECTOR near open stairwells, cables, balconies, or other objects that can be tripped over, run into, knocked down, broken or fallen over.

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 re-duce ambient light levels.

Flexible Angle Setting

■ Available angle in vertial direction

360°

■ Available angle in horizontal direction

90°
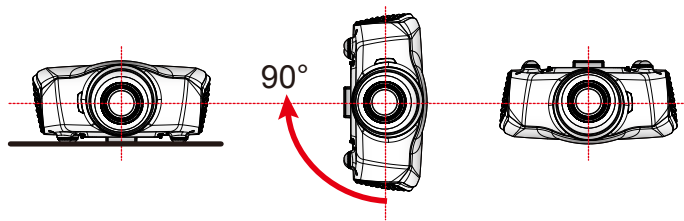
Package Overview

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.
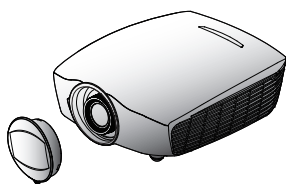
Projector with lens cap   Power Cord
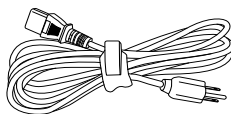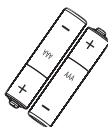
2 × AAA Batteries   IR Remote Control
(Remote may vary de-
pending on model)

❖ Due to different
   applications in
   each Country,
   some regions may
   have different
   accessories.

Documentation :

☑ Warranty Card
☑ Quick Start Card
☑ WEEE Card
   (for EMEA only)

❖ For European warranty information please visit www.optomaeurope.com

Introduction

Product Overview

Main Unit

❖ The interface is subject to model's specifications.
❖ Do not block projector in/out air vents.
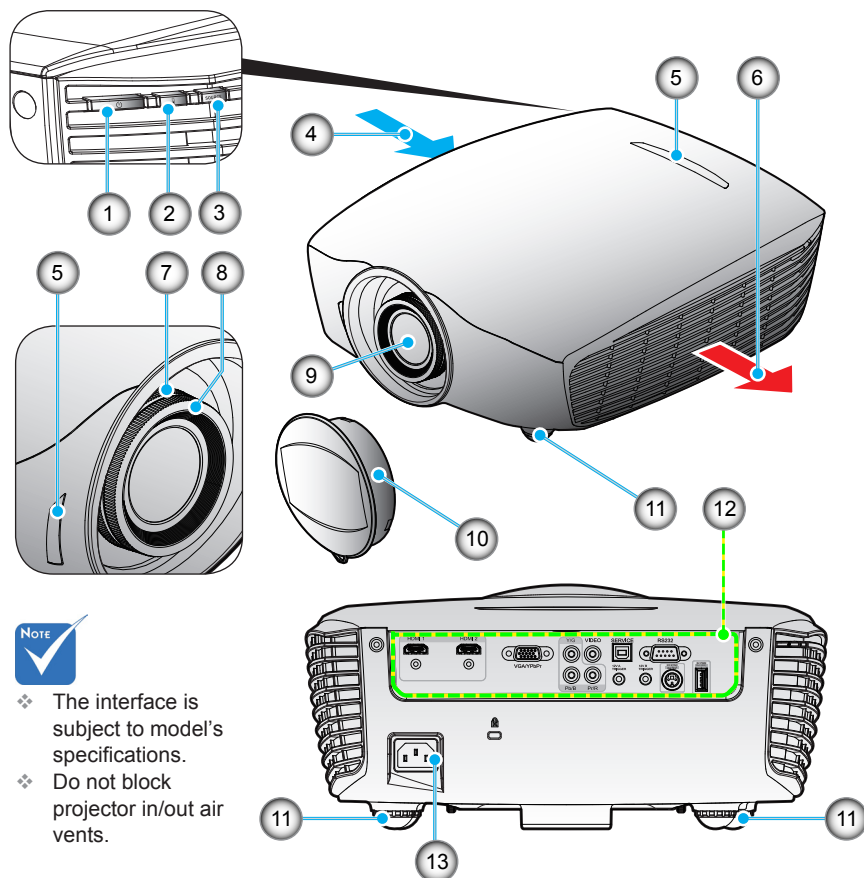
1. Power Button / Power LED
2. Temp LED
3. Source Button
4. Ventilation (inlet)
5. IR Receivers
6. Ventilation (outlet)
7. Zoom Ring
8. Focus Ring
9. Lens
10. Lens Cap
11. Tilt-Adjustment Feet
12. Input / Output Connections
13. Power Socket

Input/Output Connections

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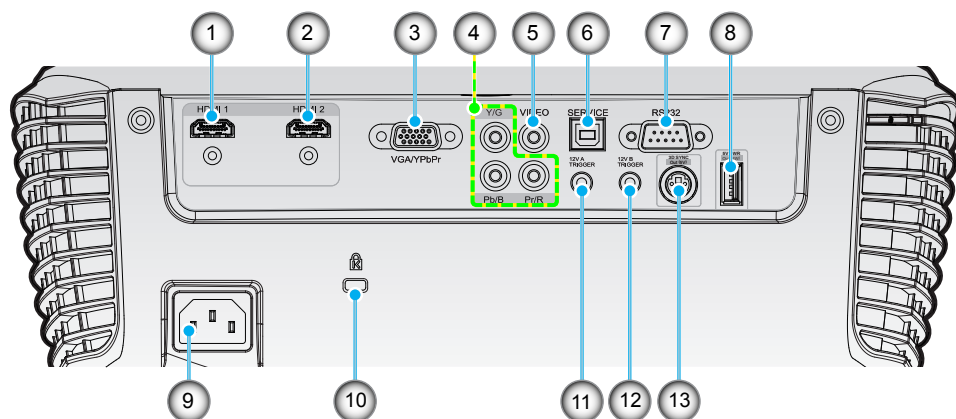
1. HDMI 1 Connector (v1.4a 3D supported)
2. HDMI 2 Connector (v1.4a 3D supported)
3. VGA-In/YPbPr Connector
   (PC Analog Signal/Component Video Input/HDTV/YPbPr)
4. Component Video Input Connector (YPbPr)
5. Composite Video Input Connector
6. USB for firmware upgrade
7. RS-232 Connector (9-pin)
8. USB for Power (5V@1A)
9. Power Socket
10. Kensington™ Lock Port
11. 12V Trigger A Relay Connector (12V, 250mA. 3.5mm Mini Jack)
12. 12V Trigger B Relay Connector (12V, 250mA. 3.5mm Mini Jack)
13. 3D Sync Out (5V)

❖ The interface is subject to model's specifications.

Introduction

Remote Control

NOTE

❖ The remote is subject to model's specifications.
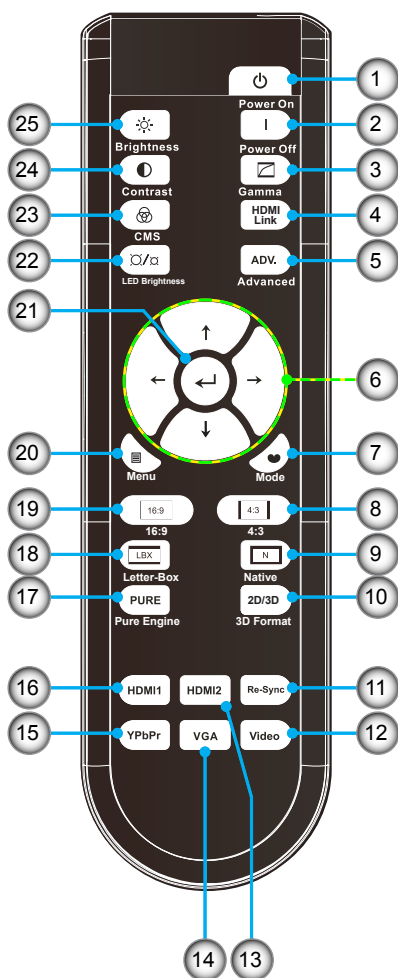
1. Power On
2. Power Off
3. Gamma
4. HDMI Link
5. Advanced
6. Four Directional Select Keys
7. Mode
8. 4:3
9. Native
10. 3D format
11. Re-Sync
12. Video Source
13. HDMI2 Source
14. VGA Source
15. YPbPr Source
16. HDMI1 Source
17. PureEngine
18. LBX
19. 16:9
20. Menu
21. Enter
22. LED Brightness
23. CMS (Color Management System)
24. Contrast
25. Brightness

Connecting the Projector

Connect to Computer/Notebook

NOTE

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

❖ (*) Optional accessory

+12V Output

3D Glasses

1..Power Cord
2...*HDMI Cable
3.. *VGA Cable
4..*USB Cable
5..*RS232 Cable
6.. *12V DC Jack
7...*3D Emitter cable

Installation

Connect to Video Sources

DVD Player, Set-top Box, HDTV receiver

Composite Video Output

+12V Output

DVD Player, Set-top Box, HDTV receiver

3D Glasses

1...Power Cord
2...*HDMI Cable
3...*VGA/RCA Adaptor
4...*3 RCA Component Cable
5...*VGA/RCA Cable
6...*Composite Video Cable
7.. *12V DC Jack
8..*3D Emitter cable

Connect to 3D Video Devices

Once you have connected your devices together with HDMI cables, as shown in the diagram, you are ready to begin. Power ON your 3D video source and your 3D projector.

PlayStation® 3 Games
- Make sure that you have updated your console to the latest software version.
- Go to the "Settings menu -> Display settings -> Video output -> HDMI". Select "Automatic" and follow the on-screen instructions.
- Insert your 3D game disc. Alternatively you can download games (and 3D updates) via the PlayStation® network.
- Launch the game. In the in-game menu, select "Play in 3D".

Blu-ray 3D™ Player
- Make sure that your player can support 3D Blu-ray™ disc and that 3D output is enabled.
- Insert the 3D Blu-ray™ disc into the player, press "Play".

3D TV (e.g. SKY 3D, DirecTV)
- Contact your TV service provider to enable any 3D channels on your channel package.
- Once enabled, switch to the 3D channel.
- You should see two images side-by-side.
- Switch to the "SBS Mode" of the 3D projector. The option is located in the "DISPLAY" section of the projector OSD menu.

3D Device (e.g. 3D DV/DC) with 2D 1080i side by side signal output
- Connect your 3D device and switch to out 3D content with 2D side-by-side output to 3D Projector.
  - You should see two images side-by-side.
- Switch to the "SBS Mode" of the 3D projector. The option is located in the "DISPLAY" section of the projector OSD menu.

❖ If input video is normal 2D, please press "3D Format" and switch to "AUTO".
❖ If "SBS Mode" is active, 2D video content will not display correctly.

If watching 3D content from an HDMI 1.4a source (e.g. 3D Blu-ray) your 3D glasses should always be in sync. If watching 3D content from an HDMI 1.3 source (e.g. 3D broadcast using SBS mode) it may be necessary to use the projector's 3D Sync-Invert option to optimize your 3D experience. The option is located in the "DISPLAY ->3D" section of the projector OSD menu.

3D Broadcast   3D Blu-ray™ Disc   3D Console Games

SKY+HD, cable/satellite
box   3D Blu-ray™ Player

PlayStation® 3

3D Glasses

Full 3D 1080p DLP® Projector

Installation

Using the 3D glasses

1. To turn ON 3D glasses: Press the "Power" button and the LED will flash one time indicating the glasses are ready to use 3D mode.
2. Verify that 3D content is being sent to the projector and signal is compatible with projector specifications.
3. Turn on the "3D Mode" of the 3D projector. The option is located in the "DISPLAY" section of the projector OSD menu.
4. Turn on 3D glasses and verify image appears in 3D without eyestrain.
5. If the image does not appear in 3D, please check 3D device set up correctly to send out 3D image or not. Or "SBS Mode" should turn on when input signal is 2D 1080i side-by-side and repeat previous steps 1 ~ 4.
6. It may be necessary to use projector's "3D Sync. Invert" option to optimize your 3D experience. The option is located in the "DISPLAY" section of the projector OSD menu.
7. To turn OFF 3D glasses: Press the "Power" button and hold until the LED switches off.
8. For more detailed information, please refer to the 3D glasses user's guide, or manufacturer's Website.

Installation

Powering On/Off the Projector

Powering On the Projector

1. Remove the lens cap. ❶
2. Securely connect the power cord and signal cable. When connected, the Power LED will turn red.
3. Turn on the projector by pressing "⏻" button either on the side of the projector or on the remote. The Power LED will now turn blue. ❷

   The startup screen will display in approximately 10 seconds. The first time you use the projector, you will be asked to select the preferred language.

4. Turn on and connect the source that you want to display on the screen (computer, notebook, video player, etc). The projector will detect the source automatically. If not, push menu button and go to "SETUP".
   Make sure that the "Source Lock" has been set to "Off".

❖ If you connect multiple sources at the same time, press the "SOURCE" button on the control panel or the direct source keys on the remote control to switch between inputs.

NOTE

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

② Power

① Lens Cap

Installation
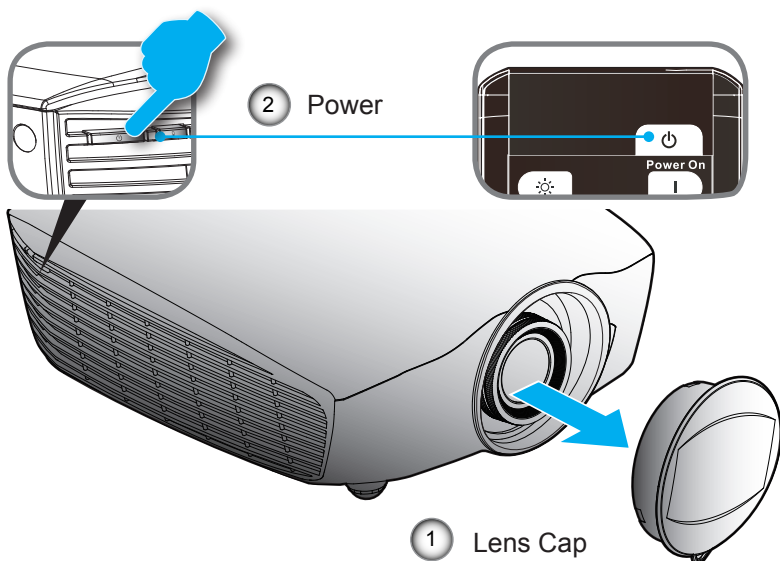
Powering Off the Projector

1. Press the "**I**" button on the remote control or " ⏻ " button on the side of the projector two times with one second interval to turn off the projector. The following message will be displayed on the screen.

> **Power off?**
> Press power key again
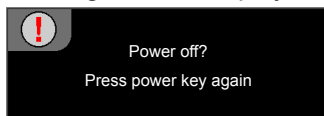
   Press the "**I**" button again to confirm otherwise the message will disappear after 15 seconds. When you press the "**I**" button for the second time, the projector will shut down.

2. The cooling fans continue to operate for about 10 seconds for cooling cycle and the Power LED will flash blue. When the Power LED lights solid red, the projector has entered standby mode.

   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 "⏻" button to restart the projector.

3. Disconnect the power cord from the electrical outlet and the projector.

4. Do not turn on the projector immediately following a power off procedure.

Installation

Warning Indicator

When the warning indicators (see below) come on, the projector will automatically shutdown:

❖ "Power" LED indicator flashes red.

❖ "TEMP" LED indicator is lit red and if "Power" LED indicator flashes red. This indicates the projector has overheated. Under normal conditions, the projector can be switched back on.

❖ "TEMP" LED indicator flashes red and if "Power" LED indicator flashes red.

Unplug the power cord from the projector, wait for 30 seconds and try again. If the warning indicator light up again, please contact your nearest service center for assistance.

Adjusting the Projected Image

Adjusting the Projector's Height

The projector is equipped with elevator feet for adjusting the image height.

1. Locate the adjustable foot you wish to modify on the underside of the projector.

2. Rotate the adjustable ring clockwise to raise the projector or counter clockwise to lower it. Repeat with the remaining feet as needed.

Tilt-Adjustment Feet

Tilt-Adjustment Ring
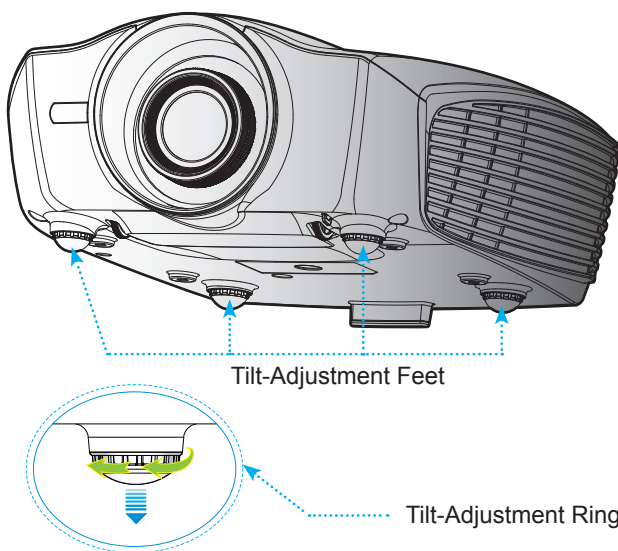
Installation

Adjusting the Projector's Position

To determine where to position the projector, consider the size and shape of your screen, the location of your power outlets, and the distance between the projector and the rest of your equipment.

Zoom Ring

Focus Ring

Horizontal Lens Shift Lever

Vertical Lens Shift Lever

60%H

60%H

Height (H)

Width(W)

10%W

10%W
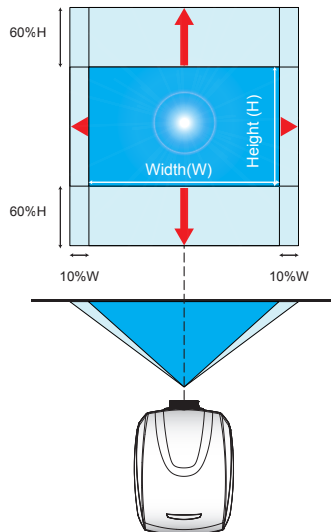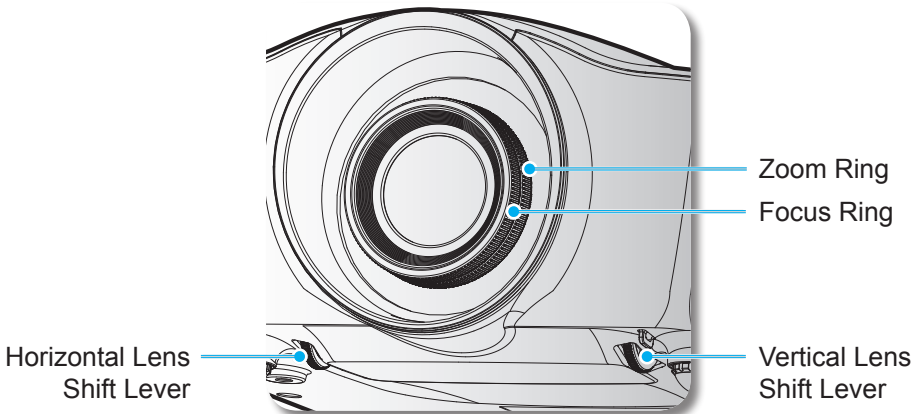
Lens

Optoma Model Name	Wide version	Tele Version
Focal Length (f) (mm)	18.07~22.59	22.56~42.87
F number	2.0~2.32	2.3~3.39
Zoom Range (Ratio)	1.25	1.90
Zoom & Focus Adjustment	Manual	
Motorized Lens Shift	Horizontal : +/-10%, Vertical : +/-60%	

	Wide version		Tele Version	
Screen size	Projection Distance (mm)			
(inch)	Wide	Tele	Wide	Tele
40	1065	1335	1310	2555
50	1335	1680	1650	3205
60	1610	2020	1995	3860
70	1885	2365	2335	4510
80	2160	2705	2680	5165
90	2430	3045	3020	5815
100	2705	3390	3365	6470
150	4075	5100	5080	9730
180	4901	6137	6105	11684
200	5445	6810	6790	12995
250	6810	8520	8505	16255
300	8180	10230	10215	19520
350	9550	11940	11930	22780
400	10920	13650	13640	26040
450	12285	15360	15350	29305
500	13655	17070	17065	32565

User Controls

Control Panel & Remote Control

Control Panel
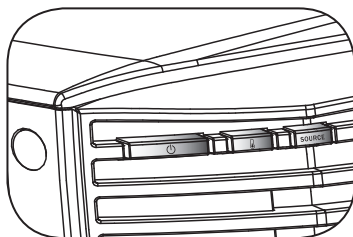
Using the Control Panel		
Power Button /	⏻	Refer to the "Power On/Off the Projector" section on pages 16-17.
Power LED		Indicate the projector's status.
Temp LED	🌡	Indicate the projector's temperature status.
SOURCE		Press "SOURCE" to select an input signal.

Remote Control
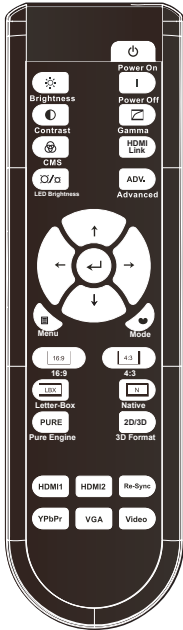
Using the Remote Control

Power On	⏻	Turn on the projector.
Power Off	I	Turn off the projector.
Gamma	◿	Set up gamma curve type.
HDMI Link		Enables and disables the HDMI link function.
Advanced	**ADV.**	Display or exit the "IMAGE | Advanced" menu.
Four Directional Select Keys	↑←↓→	Use directional select keys to select items or make adjustments to your selection.
Mode	❤	Select a display mode for optimised settings for different applications. (refer to page 28)
4:3	4:3	Scale the image at a 4:3 (1440x1080) aspect ratio.
Native	N	The input source will be displayed without scaling.
3D Format	**2D/3D**	Manually select a 3D mode that matches your 3D content.
Re-Sync		Automatically synchronizes the projector to the input source.
Video		Press "Video" to choose Composite video source.
HDMI2		Press "HDMI2" to choose source from HDMI 2 connector.
VGA		Press "VGA" to choose source from VGA-In/YPbPr connector.
YPbPr		Press "YPbPr" to choose source from YPbPr connector.

Using the Remote Control

HDMI1		Press "HDM1" to choose source from HDMI 1 connector.
PureEngine	PURE	The PureEngine is a collection of advanced image processing technologies that enhances the quality of the displayed image.
LBX	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.
16:9	16:9	Scale the image at a 16:9 (1920x1080) aspect ratio.
Menu	☰	Display or exit the on-screen display menus for projector.
Enter	↵	Confirm your item selection.
LED Brightness	○/○	Increase/Decrease the luminance of the image. (refer to page 30)
CMS (Color Management System)	⊗	Select one of the colors (R/G/B/ C/M/Y) to adjust its x/y offset and brightness.
Contrast	◑	Control the degree of difference between the lightest and darkest parts of the picture.
Brightness	☼	Adjust the brightness of the image.

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 ▲▼ keys to select any item in the main menu. While making a selection on a particular page, press ► or "Enter" key to enter sub menu.
3. Use ▲▼ keys to select the desired item in the sub menu and then press ► or "Enter" key to view further settings. Adjust the settings by ◄► key.
4. Select the next item to be adjusted in the sub menu and adjust as described above.
5. Press "Enter" 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.

Setting

IMAGE	
Display Mode	Cinema ►
Contrast	0 ►
Brightness	0 ►
Sharpness	0 ►
Color	0 ►
Tint	0 ►
Advanced	0 ►

IMAGE
DISPLAY
SYSTEM
SETUP

Main Menu

Sub Menu

Select ▲▼   Enter ENTER ►   Back ◄ MENU
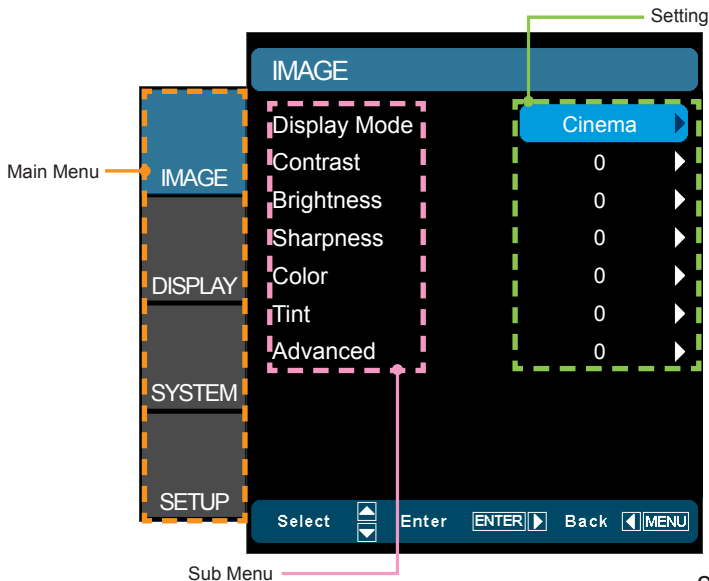
User Controls

Menu Tree

Main Menu	Sub Menu		Settings
IMAGE	Display Mode		Cinema / Film / Reference / Photo / Bright / 3D / ISF Day / ISF Night / User
	Contrast		-50~50
	Brightness		-50~50
	Sharpness		0~15
	#1 Color		-50~50
	#1 Tint		-50~50
	Advanced	Noise Reduction	0~10
		Gamma	Film / Video / Graphics / Standard
		PureEngine	UltraDetail / PureColor / PureMotion / PureEngine Demo / Exit
		LED Brightness	Power / DynamicBlack 1 / DynamicBlack 2 / DynamicBlack 3
		Color Settings	Color Temperature / Color Gamut / CMS / RGB Gain/Bias / Color Space / RGB Channel
		Exit	
DISPLAY	Format		4:3 / 16:9 / LBX / Native / Auto235 / Auto235_Subtitle
	Zoom		0~10
	Edge Mask		0~5
	Image Shift	H	-100~100
		V	-100~100
	V Keystone		-30~30
	3D	3D Format	AUTO / SBS / Top and Bottom / Frame Sequential / 2D -> 3D
		3D -> 2D	3D / L / R
		2D -> 3D	Low / Middle / High
		#2 3D Sync. Invert	On / Off
		Exit	
SYSTEM	Menu Location		
	LED Hours		
	Projection		
	Test Pattern		Off / Grid / White
	Background Color		Blue / Gray / Black
	IR Function		All / Front / Top
	12V Trigger A		On / Off
	12V Trigger B	Off	
		On	4:3 / 16:9 / LBX / Native / Exit
		Auto 3D	
		Exit	
	Anamorhic Lens		None / Fixed / Movable

Main Menu	Sub Menu		Settings
SETUP	Language		English / Deutsch / Français / Italiano / Español / Português / Svenska / Nederlands / Norsk / Dansk / Polski / Suomi / Русский / ελληνικά / Magyar / Čeština / عربي / 繁體中文 / 简体中文 / 日本語 / 한국어 / Türkçe / ไทย
	Input Source		HDMI 1 / HDMI 2 / Component / VGA / Video / Exit
	HDMI Link Settings	HDMI Link	On / Off
		Inclusive of TV	Yes / No
		Power On Link	Mutual / PJ -> Device / Device -> PJ
		Power Off Link	On / Off
	Source Lock		On / Off
	High Altitude		On / Off
	Information Hide		On / Off
	Auto Power Off (min)		0~180
	Signal	Frequency	0~100
		Phase	-50~50
		H. Position	-50~50
		V. Position	-50~50
		Automatic	Enable / Disable
		Exit	
		White Level	-50~50
		Black Level	-50~50
		Saturation	-50~50
		Hue	-50~50
		IRE	0 IRE / 7.5 IRE
		Exit	
	Reset	Current	Cancel / Yes
		All	Cancel / Yes

❖ Please note that the on-screen display (OSD) menus vary according to the signal type selected and the projector model you are using.

❖ (#1) "Color" and "Tint" are only supported in Video mode.

❖ (#2) "3D Sync. Invert" is only available when 3D is enabled.

IMAGE

IMAGE	
Display Mode	Cinema ▶
Contrast	0 ▶
Brightness	0 ▶
Sharpness	0 ▶
Color	0 ▶
Tint	0 ▶
Advanced	0 ▶

Select ⬍ Enter ENTER▶ Back ◀MENU

IMAGE
DISPLAY
SYSTEM
SETUP
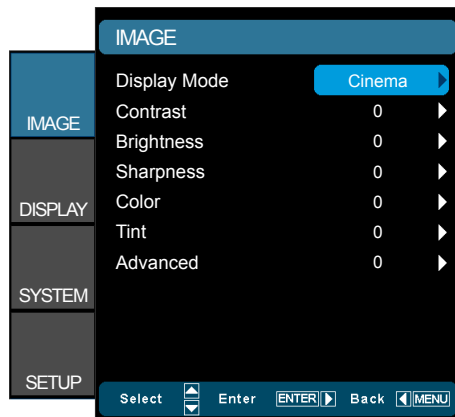
Display Mode

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

▸ Cinema: Default settings 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.

▸ Film: The purest color settings for home theater.

▸ Photo: Optimized for displaying photographic images.

▸ Bright: Maximum brightness from PC input.

▸ 3D: Recommended setting for 3D mode enabled. Any further adjustments by the user in 3D will be saved in this mode for further use.

▸ 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.

▸ User: User's settings.

Contrast

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

▸ Press the ◄ to decrease the contrast.

▸ Press the ► to increase the contrast.

Brightness

Adjust the brightness of the image.

▸ Press the ◄ to darken image.

▸ Press the ► to lighten the image.

Sharpness

Adjust the sharpness of the image.

▸ Press the ◄ to decrease the sharpness.

▸ Press the ► to increase the sharpness.

<u>Color</u>

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

▸ Press the ◄ to decrease the color saturation in the image.

▸ Press the ► to increase the color saturation in the image.

<u>Tint</u>

Adjust the color balance of red and green.

▸ Press the ◄ to increase the amount of green in the image.

▸ Press the ► to increase the amount of red in the image.

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

User Controls

IMAGE | Advanced

IMAGE	ADVANCED	
Noise Reduction	0	▶
Gamma	Standard	▶
PureEngine		▶
LED Brightness	100%	▶
Color Settings		▶
Exit		▶
		▶
		▶
		▶
		▶

Select ▲▼ Enter ENTER▶ Back ◀MENU

IMAGE
DISPLAY
SYSTEM
SETUP
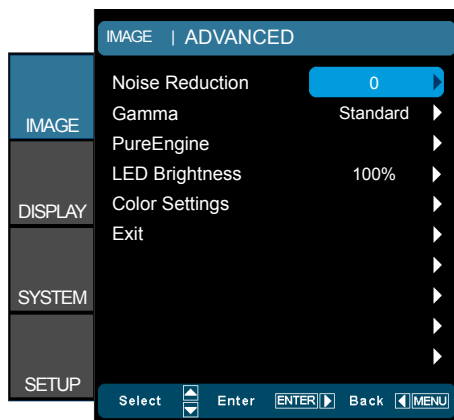
Noise Reduction

The Noise Reduction reduces the amount of visible noise inter-laced signals. The range is from "0" to "10". (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.
▸ Standard: for standardized setting.
▸ Graphics: for PC / Photo source.

PureEngine

The PureEngine is a collection of advanced image processing technologies that enhances the quality of the displayed image.

LED Brightness

▸ Power: Manually adjust the LED brightness (100%~50%).
▸ DynamicBlack 1: Automatically adjusts the LED brightness between 100% ~ 13%.
▸ DynamicBlack 2: Automatically adjusts the LED brightness between 100% ~ 5%.
▸ DynamicBlack 3: Automatically adjusts the LED brightness between 100% ~ 0%.

Color Settings

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

IMAGE | ADVANCED | PureEngine

UltraDetail	Off ▶
PureColor	Off ▶
PureMotion	Off ▶
PureEngine Demo	Off ▶
Exit	▶

Select ⬍ Enter ENTER▶ Back ◀MENU

IMAGE | Advanced | PureEngine
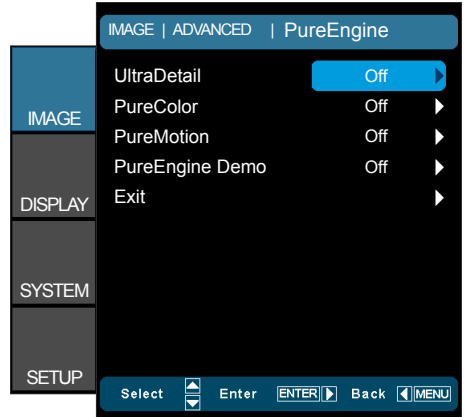
UltraDetail

UltraDetail is an edge enhancement tool that enables the edges in the projected image is be enhanced 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 "0" to "5".

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 as processed by the PureEngine. Use this mode to check the adjustments that you make to the PureEngine settings.

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

User Controls

IMAGE | Advanced | Color Settings

IMAGE | ADVANCED | Color Settings

Color Temperature	D65 ▶
Color Gamut	Adobe ▶
CMS	▶
RGB Gain/Bias	▶
Color Space	Auto ▶
RGB Channel	Normal ▶
Exit	▶
	▶
	▶
	▶

Select ⬍ Enter ENTER▶ Back ◀ MENU

IMAGE
DISPLAY
SYSTEM
SETUP
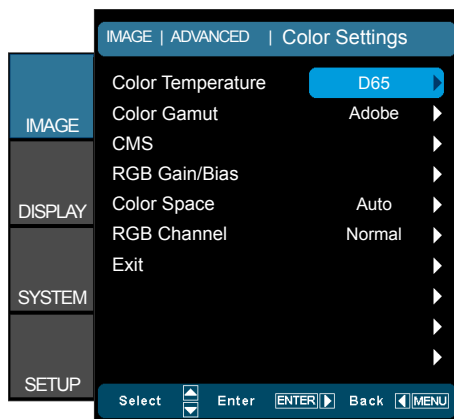
Color Temperature

Select a color temperature from D50, D65, D75, D83, D93 and Native.

Color Gamut

Select an appropriate color gamut from Native, Adobe, DLP-C, HDTV, 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.

CMS	Color Gamut : DLP-C
Color	◀ Red ▶
x Offset	0
y Offset	0
Brightness	0
Reset	▶
Exit	▶
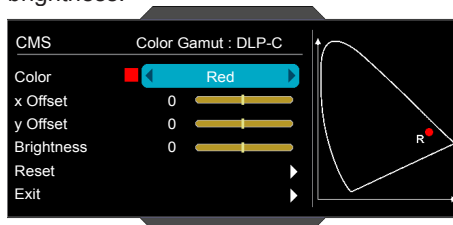
▶ Color: Use ◄ or ► to select from Red, Green, Blue, Cyan, Magenta or Yellow colors.
▶ x Offset: Use ◄ or ► to adjust the x offset value of selected color.
▶ y Offset: Use ◄ or ► to adjust the y offset value of selected color.
▶ Brightness: Use ◄ or ► to adjust the brightness value of selected color.
▶ Reset: Choose "Yes" to return the factory default settings for color adjustments.

RGB Gain/Bias

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

RGB Gain/Bias		
IMAGE	Red Gain	0 ►
	Green Gain	0 ►
	Blue Gain	0 ►
DISPLAY	Red Bias	0 ►
	Green Bias	0 ►
	Blue Bias	0 ►
SYSTEM	Reset	►
	Exit	►
SETUP	Select ⬍ Enter ENTER ► Back ◄ MENU	
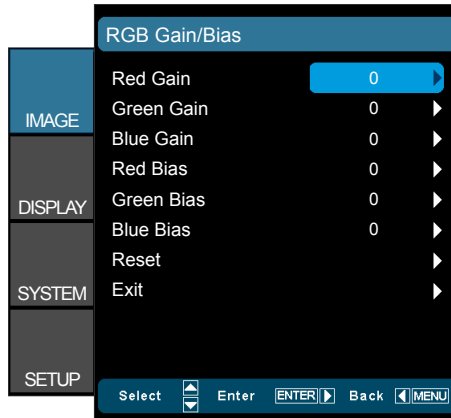
▶ Use ◄ or ► to select Red, Green, or Blue for brightness (Gain) and contrast (Bias).

▶ Reset: Choose "Yes" to return the factory default settings for color adjustments.

Color Space

Select an appropriate color matrix type from AUTO, RGB(0-255), RGB(16-235) or YUV.

RGB Channel

Use ◄ or ► to select from Normal, Red, Green or Blue channels.

User Controls

DISPLAY

DISPLAY

DISPLAY	
Format	16:9 ▶
Zoom	0 ▶
Edge Mask	0 ▶
Image Shift	▶
V Keystone	0 ▶
3D	▶

IMAGE · DISPLAY · SYSTEM · SETUP

Select ▲▼ Enter ENTER▶ Back ◀MENU
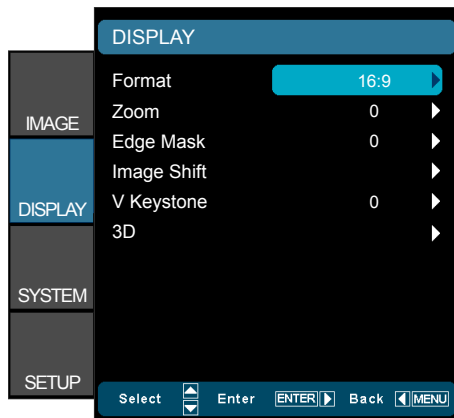
> ❖ (#1) This function is not supported in the movable or fixed of anamorphic lens.
> ❖ (#2) This function is only supported when System/Anamorphic Lens is Fixed or Movable.

Format

Use this function to choose your desired aspect ratio.

▶ 4:3: This format is for 4x3 input sources.

▶ 16:9: This format is for 16x9 input sources, like HDTV and DVD enhanced for Widescreen TV.

▶ LBX: This format is for non-16x9, letterbox source and for users who use external anamorphic lens to display 2.35:1 aspect ratio using full resolution.

▶ Native [#1]: This format displays the original image without scaling.

▶ Auto235 [#2]: Automatically selects the appropriate display format.

▶ Auto235_Subtitle [#2]: 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		✓			

❖ Pressing "Native" button on the remote will be "Auto235" when Anamorphic lens is fixed or movable.

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. LED power and vertical resolution are fully utilized.

User Controls

❖

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.

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 (1920x1080) If source is 4:3, auto resize to 1440 x1080 If source is 16:9 auto resize to 1920x1080 If source is 16:10 auto resize to 1920 x 1200 and cut 1920x1080 area to display				

NOTE

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

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 720x363 (Center)	Catch 720x436 (Center)	Catch 1920x817 (Center)	Catch 1920x545 (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 4x3 or 16x9 (There is no black bar at top/bottom), doing 16x9 format				
Auto235_Subtitle	Catch 720x422 (bottom)	Catch 720x506 (bottom)	Catch 1920x948 (bottom)	Catch 1920x632 (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 1920x1440, then get the central 1920x1080 image to display. When source isn't 2.35:1 that is full size 4x3 or 16x9 (There is no black bar at top/bottom), doing 16x9 format				

English 36

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 720x363 (Center)	Catch 720x436 (Center)	Catch 1920x817 (Center)	Catch 1920x545 (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 4x3 or 16x9 (There is no black bar at top/bottom), doing 16x9 format				
Auto235_Subtitle	Catch 720x422 (bottom)	Catch 720x506 (bottom)	Catch 1920x948 (bottom)	Catch 1920x632 (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 1920x1440, then get the central 1920x1080 image to display. When source isn't 2.35:1 that is full size 4x3 or 16x9 (There is no black bar at top/bottom), doing 16x9 format				

Edge Mask

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

Zoom

▸ Press the ◄ to reduce the size of an image.

▸ Press the ► to magnify an image on the projection screen.

Image Shift

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

Image Shift

H: 0
V: 0
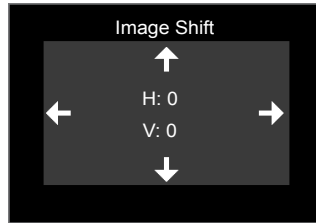
▶ H: Press the ◄ ► to shift the projected image position hori-
zontally.
▶ V: Press the ▲ ▼ to shift the projected image position verti-
cally.

V Keystone

Press the ◄ or ► to adjust image distortion vertically and make a
squarer image.

DISPLAY | 3D

DISPLAY | 3D

3D Format
3D -> 2D   3D
2D -> 3D   Middle
3D Sync. Invert   Off
Exit

Select ⬍ Enter ENTER▶ Back ◀ MENU
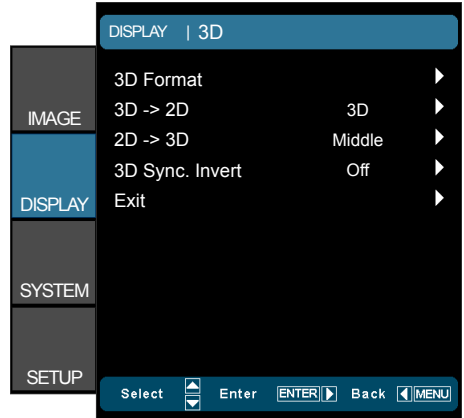
3D -> 2D

▸ 3D: Display 3D signal.

▸ L (Left): Display the left frame of 3D content.

▸ R (Right): Display the right frame of 3D content.

2D -> 3D

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

3D Format

▸ Auto: Display the native format.

▸ 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 Sync. Invert

▸ Press the "On" to invert left and right frame contents.

▸ Press the "Off" for default frame contents.

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

❖ 3D Format is only supported on 3D Timing on page 55.

❖ "3D Format" is only supported on non-HDMI 1.4a 3D timing.

SYSTEM

SYSTEM	FW:B01
Menu Location	◼ ▶
LED Hours	☀ ━ ☀ 0
Projection	▶
Test Pattern	Off ▶
Background Color	Black ▶
IR Function	All ▶
12V Trigger A	On ▶
12V Trigger B	Off ▶
Anamorhic Lens	None ▶

Select ▲▼ Enter ENTER▶ Back ◀MENU

IMAGE
DISPLAY
SYSTEM
SETUP

Menu Location

Choose the menu location on the display screen.

LED Hours

Display the LED time.

Projection

❖ Rear-Desktop and Rear-Ceiling are to be used with a translucent screen.

▶ Front-Projection

This is the default selection. The image is projected straight on the screen.

▶ Rear-Desktop

When selected, the image will appear reversed.

▶ Front-Ceiling

When selected, the image will turn upside down.

▶ Rear-Ceiling

When selected, the image will appear reversed in upside down position

Test Pattern

Display a test pattern. There are Grid, White pattern and Off.

Background Color

Use this feature to display a "Black", "Blue", or "Gray" screen when no signal is available.

IR Function

▶ All: Choose "All", the projector can be operated by the remote control from front or top IR receiver.
▶ Front: Choose "Front", the projector can be operated by the remote control from front IR receiver.

▸ Top: Choose "Top", the projector can be operated by the re-mote control from top IR receiver.

12V Trigger A

12V trigger A provides a standard trigger for motorized screens.

12V Trigger B (#1)

▸ Press the "Off" to disable the trigger.

▸ Press the "On" to enable the 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 trigger when the corresponding display mode is selected. For the ex-ample, 4:3 has been selected – this means that Trigger B will be active when the projector display mode is set to 4:3. The trigger will be inactive for all the other display mode options.

❖ (#1) When the mov-able lens is selected, this item will be gray out and become "Auto235".

▸ Auto235:
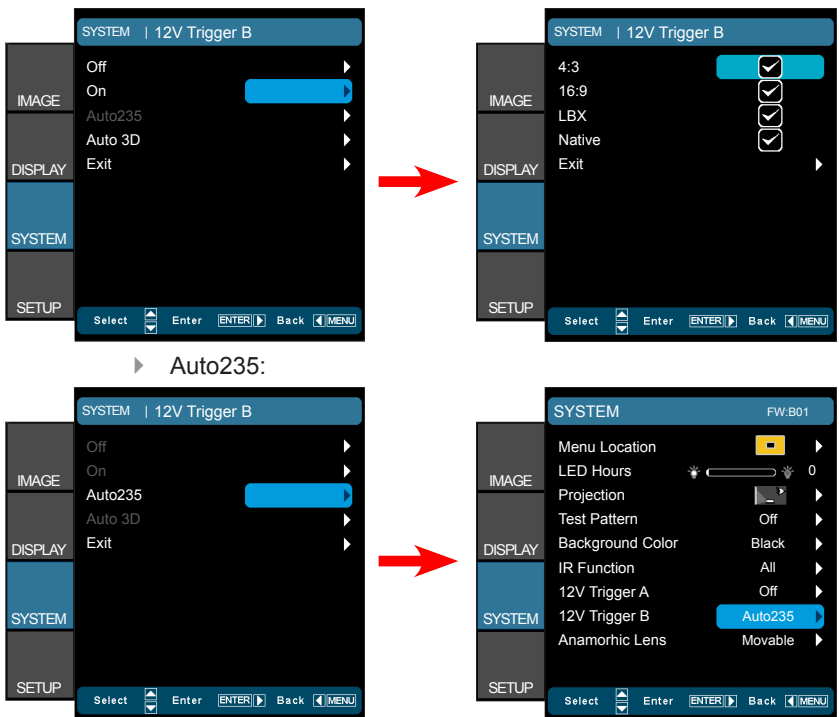
▸ Auto 3D: When "Auto 3D" is enabled, the projector will auto-matically detect when a 3D image is shown and will activate the trigger on this port.

User Controls

Anamorhic Lens

Select an anamorhic Lens from "None", "Fixed", or "Movable".

(Anamorhic Lens)	(12V Trigger B)			
	Off	On	Auto235	Auto 3D
None	✓	✓		✓
Fixed			✓	
Movable			✓	

SETUP

SETUP		
IMAGE		
DISPLAY		
SYSTEM		
SETUP		

SETUP

Language — English ▶
Input Source ▶
HDMI Link Settings ▶
Source Lock — Off ▶
High Altitude — Off ▶
Information Hide — Off ▶
Auto Power Off (min) — Off ▶
Signal ▶
Reset

Select ▲▼ | Enter ENTER ▶ | Back ◀ MENU
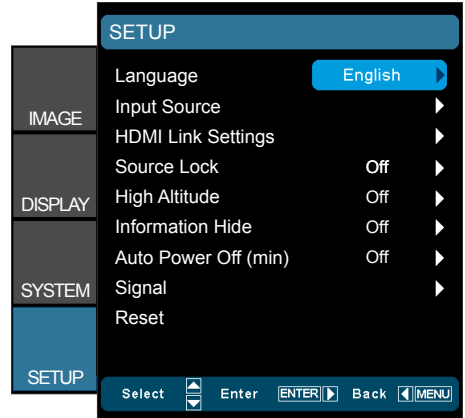
Language

Choose the multilingual OSD menu. Press ► into the sub menu and then use the ▲ or ▼ or ◄ or ► key to select your preferred language. Press "Enter" to finalize the selection.

Language		
▶ English	▶ Dutsch	▶ Français
▶ Italiano	▶ Espanol	▶ Português
▶ Svenska	▶ Norsk/Dansk	▶ Polski
▶ Русский	▶ Suomi	▶ Nederlands
▶ Ελληνικά	▶ 繁體中文	▶ 简体中文
▶ 日本語	▶ 한국어	▶ Magyar
▶ Čeština	▶ Türkçe	▶ عربي
▶ فارسی	▶ ไทย	▶ Exit

Input Source

Use this option to enable / disable input sources. Press ► to enter the sub menu and select which sources you require. Press "Enter" to finalize the selection. The projector will only search for inputs that are enabled.

SETUP	INPUT SOURCE
VGA	☑
Video	☑
HDMI 1	☑
HDMI 2	☑
Component	☑
Exit	▶

IMAGE
DISPLAY
SYSTEM
SETUP

Select ⬍ Enter ENTER▶ Back ◀MENU
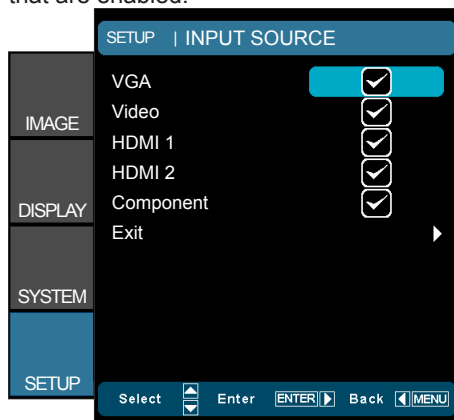
Source Lock

▶ On: The projector will only search current input connection.
▶ Off: The projector will search for other signals if the current input signal is lost.

High Altitude

When "On" is selected, the fans will spin faster. This feature is useful in high altitude areas where the air is thin.

Information Hide

▶ On: Choose "On" to hide the info message.
▶ Off: Choose "Off" to show the "searching" message.

Auto Power Off (min)

Sets the countdown timer interval. The countdown timer will start, when there is no signal being sent to the projector. The projector will automatically power off when the countdown has finished (in minutes).

Reset

▶ Current: Choose "Yes" to return the display parameters on this menu to the factory default settings.
▶ All: Choose "Yes" to return the display parameters on all menus to the factory default settings.

SETUP | HDMI Link Settings

```
SETUP    | HDMI Link Settings

                IMAGE
                          HDMI Link              On          ▶
                          Inclusive of TV        Yes         ▶
                          Power On Link      Device -> PJ    ▶
                DISPLAY   Power Off Link         Off         ▶
                          Exit                               ▶
                                                             ▶
                SYSTEM                                       ▶
                                                             ▶
                                                             ▶
                SETUP
                          Select  ▲▼  Enter  ENTER▶  Back  ◀MENU
```
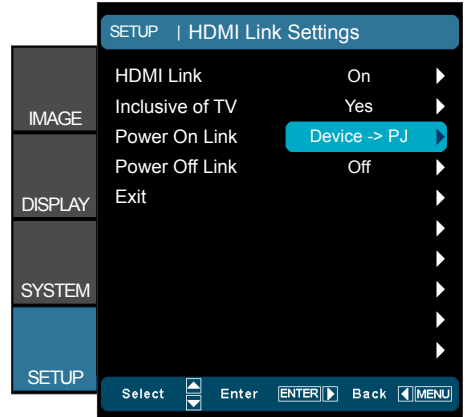
Using HDMI Link

❖ When HDMI Link is set to Off, the standby mode is <0.5W.

- When you connect HDMI CEC-compatible devices to the projector with HDMI cables, you can control them on same Power On or Power Off status using the HDMI Link control feature on the projector's OSD.
- This lets one device or multiple devices in a group Power On or Power Off via HDMI Link Feature.
- In a typical configuration, your DVD player may be connected to the projector through an amplifier or home theater system.

```
                    HDMI                       HDMI
            HDMI              Amplifier              DVD Player
```
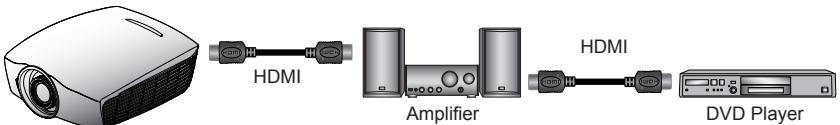
❖ Some HDMI Link functions may not operate, depending on the connected product's design and compliance with the HDMI CEC standard.

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 of 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.

SETUP | Signal (VGA)

SETUP	SIGNAL	
Frequency	50	▶
Phase	0	▶
H. Position	0	▶
V. Position	0	▶
Automatic	Disable	▶
Exit		▶
		▶
		▶
		▶

Select ⬍ Enter ENTER ▶ Back ◀ MENU

IMAGE
DISPLAY
SYSTEM
SETUP

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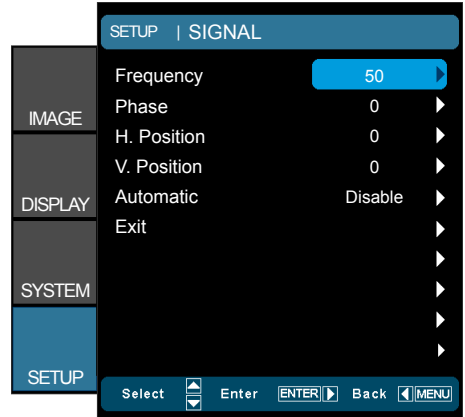
Frequency

Change the display data frequency to match the frequency of your computer's graphic card. Use this function only if the image appears to flicker vertically.

Phase

Synchronize the signal timing of the display with the graphic card. If the image appears to be unstable or flickers, use this function to correct it.

H. Position

▶ Press the ◄ to move the image left.
▶ Press the ► to move the image right.

V. Position

▶ Press the ◄ to move the image down.
▶ Press the ► to move the image up.

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.

User Controls

SETUP | Signal (Video)

```
SETUP   | SIGNAL

White Level              0      ▶
Black Level              0      ▶
Saturation               0      ▶
Hue                      0      ▶
IRE                    0 IRE    ▶
Exit                            ▶
                                ▶
                                ▶
                                ▶

Select  ⬆⬇  Enter  ENTER ▶  Back  ◀ MENU
```

IMAGE

DISPLAY

SYSTEM

SETUP

❖ "Signal" is not supported when the source is HDMI.

❖ "IRE" is only supported on NTSC signal.
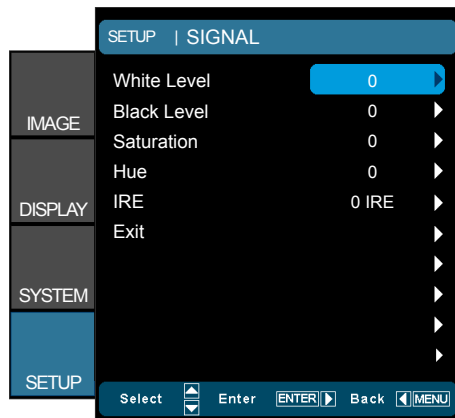
White Level

Allow user adjust White Level when inputting Video signals.

Black Level

Allow user adjust Black Level when inputting Video signals.

Saturation

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

▷ Press the ◄ to decrease the amount of color in the image.

▷ Press the ► to increase the amount of color in the image.

Hue

Adjust the color balance of red and green.

▷ Press the ◄ to increase the amount of green in the image.

▷ Press the ► to increase the amount of red in the image.

IRE

Adjust measurement of composite video signals.

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 Problems

? 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.
▸ 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. (refer to pages 20-21)

? 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 on the top of the projector.
▸ Move the projector closer to or further from the screen.
▸ Press "Menu" on the projector panel, go to "DISPLAY-->Format". Try the different settings.

Appendices

? Image has slanted sides:
  ▸ If possible, reposition the projector so that it is centered on the screen and below the bottom of the screen.
  ▸ 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.

? Blurry double image
  ▸ Press "3D Format" button and switch to "Auto" to avoid normal 2D image is blurry double image.

? Two images, side-by-side format
  ▸ Press "3D Format" button and switch to "SBS" for input signal is HDMI 1.3 2D 1080i side-by-side.

? Image does not display in 3D
  ▸ Check if the battery of 3D glasses is drained.
  ▸ Check if the 3D glasses is turned on.
  ▸ When the input signal is HDMI 1.3 2D (1080i side-by-side half), press "3D Format" button and switch to "SBS".

Other Problems

⑦ 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.

Remote Control Problems

⑦ If the remote control does not work

▶ Check the operating angle of the remote control is within ±25° both horizontally and vertically of on of the IR receivers on the projector.

▶ Make sure there are not any obstructions between the remote control and the projector. Move to within 6 m (20 ft) of the projector.

▶ Make sure batteries are inserted correctly.

▶ Replace batteries if they are exhausted.

Appendices

LED Lighting Messages

Message	Power LED (Red)	Power LED (Blue)	Temp LED (Red)
Standby State (Input power cord)	Steady light *	Off	Off
Power on (Warming)	Off	Flashing	Off
Power on and LED lighting	Off	Steady light	Off
Power off (Cooling)	Off	Flashing	Off
Error (LED fail)	Flashing	Off	Off
Error (Fan fail)	Flashing	Off	Flashing
Error (Over Temp.)	Flashing	Off	Steady light

✳ ON/STANDBY LED be ON when OSD appears, be OFF when OSD disappears.

Appendices
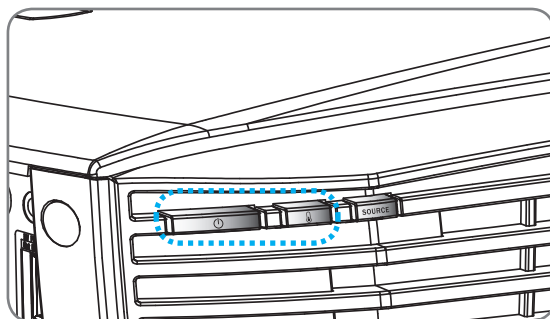
On Screen Messages

❖ Power off:

> Power off?
>
> Press power key again

❖ LED warning:

> LED Warning
>
> LED Life exceeded.

❖ Temperature warning:

> Projector Overheated
>
> The projector will switch off autormatically

❖ Fan failed:

> Fan Failure
>
> The projector will switch off autormatically

❖ Out of display range:

> Video
>
> Out of range

Appendices
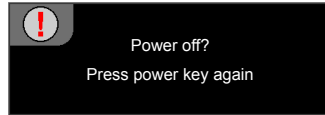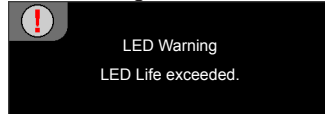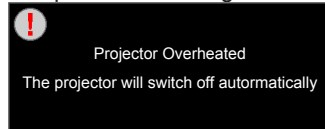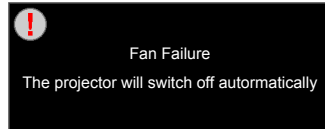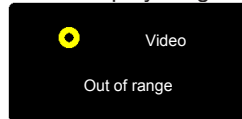
Compatibility Modes

❖ Computer/Video/HDMI/Mac Compatibility

Signal	Resolution	Refresh Rate (Hz)	Video	Analog	HDMI	Mac
NTSC	720 x 480	60	O	-	-	-
PAL/SECAM	720 x 576	50	O	-	-	-
VGA	640 x 480	60	-	O	O	O
	640 x 480	67	-	O	-	-
	640 x 480	72.8	-	O	-	O
	640 x 480	85	-	O	-	O
SVGA	800 x 600	56.3	-	O	-	-
	800 x 600	60.3	-	O	O	O
	800 x 600	72.2	-	O	O	O
	800 x 600	85.1	-	O	O	O
	800 x 600	120 (*2)	-	O	O	-
XGA	1024 x 768	60	-	O	O	O
	1024 x 768	70.1	-	O	O	O
	1024 x 768	75	-	O	O	O
	1024 x 768	85	-	O	O	O
	1024 x 768	120 (*2)	-	O	O	-
HDTV (720p)	1280 x 720	50	O	O	O	-
	1280 x 720	60	O	O	O	O
	1280 x 720	120 (*2)	-	O	O	-
WXGA	1280 x 768	60	-	O	O	O (*3)
	1280 x 768	75	-	O	O	O
	1280 x 768	85	-	O	O	O (*3)
	1280 x 800	60	-	O	O	O
SXGA	1280 x 1024	60	-	O	O	O
	1280 x 1024	75	-	O	O	O
	1280 x 1024	85	-	O	O	-
SXGA+	1400 x 1050	60	-	O	O	-
UXGA	1600 x1200	60	-	O	O	-
HDTV (1080p)	1920 x 1080	24	O	O	O	-
	1920 x 1080	30	-	-	O	-
	1920 x 1080	50	O	O	O	-
	1920 x 1080	60	O	O	O	O
HDTV (1080i)	1920 x 1080	50	O	-	O	-
	1920 x 1080	60	O	-	O	-
WUXGA	1920 x 1200	60 (*1)	-	O	O	O

❖ (*1) 1920 x1200 @60Hz only support RB (reduced blanking).
❖ (*2) 3D timing for True 3D projector.
❖ (*3) is not supported HDMI input singal for Mac.
❖ 120Hz input signals may be dependent on graphics cards support.

Signal	Resolution	Refresh Rate (Hz)	Video	Analog	HDMI	Mac
SDTV (576i)	720 x 576	50	O	-	O	-
SDTV (576p)	720 x 576	50	O	-	O	-
SDTV (480i)	720 x 480	60	O	-	O	-
SDTV (480p)	720 x 480	60	O	-	O	-

❖ 3D Input Video Compatibility

		Input Timing		
Input Resolution	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 @ 50 Hz	Side-by-Side (Half)	
		1920 x 1080i @ 60 Hz	Side-by-Side (Half)	
		1920 x 1080p @ 24 Hz	Top-and-Bottom	
		1920 x 1080p @ 24 Hz	Frame packing	
	HDMI 1.3 3D Content	1920 x 1080p @ 60Hz	Side-by-Side (Half)	While 3D Format is "SBS"
		1920 x 1080i @ 50Hz		
		1920 x 1080i @ 60Hz		
		1280 x 720p @ 50Hz		
		1280 x 720p @ 60Hz		
		1920 x 1080p @ 60Hz	Top-and-Bottom	While 3D Format is "Top and Bottom"
		1920 x 1080i @ 50Hz		
		1920 x 1080i @ 60Hz		
		1280 x 720p @ 50Hz		
		1280 x 720p @ 60Hz		
		480i	HQFS	While 3D Format is "Frame Sequential"

Appendices

RS232 Commands and Protocol Function List

RS232 Pin Assignments
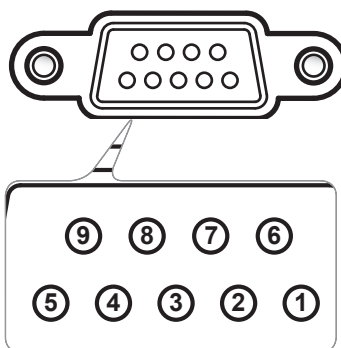
Pin no.	Spec. (from projector side)
1	N/A
2	RXD
3	TXD
4	N/A
5	GND
6	N/A
7	N/A
8	N/A
9	N/A

RS232 Protocol Function List

Baud Rate : 9600
Data Bits: 8
Parity: None
Stop Bits: 1
Flow Control : None
UART16550 FIFO: Disable

Projector Return (Pass): P
Projector Return (Fail): F
XX=00-99, projector's ID,
XX=00 is for all projectors
There is a <CR> after all ASCII commands.
0D is the HEX code for <CR> in ASCII code.

~	X	X	X	X	X	n	CR
	Projector ID		Command ID			space / variable	carriage return

Section	Function	Item	Detail	Notes	variable (n)	ASCII	Pass	Fail
	Power	On/Off			n=1/n=0 & 2	~XX00 n	P	F
	Re-sync				n=1	~XX01 n	P	F
					n=1	~XX12 n	P	
	Direct Source Commands	HDMI 1			n=1			
		VGA			n=5			
		VGA Component			n=8			
		Video			n=10			
		Component RCA			n=14			
		HDMI 2			n=15			
IMAGE	Display Mode	Cinema			n=1	~XX20 n	P	F
		Film			n=11			
		Bright			n=2			
		Photo			n=3			
		Reference			n=4			
		User			n=5			
		ISF Day			n=7			
		ISF Night			n=8			
		3D			n=9			
	Brightness				n= -50 - +50	~XX21 n	P	F
	Contrast				n= -50 - +50	~XX22 n	P	F
	Sharpness				n= 0 - +15	~XX23 n	P	F
	Tint				n= -50 - +50	~XX44 n	P	F
	Color				n= -50 - +50	~XX45 n	P	F
	Color Settings	RGB Gain/Bias	Red Gain		n= -50 - +50	~XX24 n		
			Green Gain		n= -50 - +50	~XX25 n		
			Blue Gain		n= -50 - +50	~XX26 n		
			Red Bias		n= -50 - +50	~XX27 n		
			Green Bias		n= -50 - +50	~XX28 n		
			Blue Bias		n= -50 - +50	~XX29 n		
			Reset		n=1	~XX33 n		
		Color Temperature	D50		n=1	~XX210 n		
			D65		n=2	~XX210 n		
			D75		n=4	~XX210 n		
			D83		n=5	~XX210 n		
			D93		n=6	~XX210 n		
			Native		n=7	~XX210 n		
		Color Gamut	Native		n=1	~XX211 n		
			Adobe		n=6	~XX211 n		
			DLP Cinema		n=2	~XX211 n		
			HDTV		n=3	~XX211 n		
			SMPT-C		n=5	~XX211 n		
		CMS	Red		n=1	~XX212 n		
			Green		n=2	~XX212 n		
			Blue		n=3	~XX212 n		
			Cyan		n=4	~XX212 n		
			Yellow		n=5	~XX212 n		
			Magenta		n=6	~XX212 n		
			x offset	-50 ~ 50	n= -50 - +50	~XX213 n		
			y offset	-50 ~ 50	n= -50 - +50	~XX214 n		
			Brightness	-50 ~ 50	n= -50 - +50	~XX217 n		
			Reset		n=1	~XX215 n		
	Advanced	Gamma	Film		n=1	~XX35 n	P	F
			Curve Type	Film/Video/Graphics/1.8 /1.9/2.0/2.1/2.2/2.3/2.4/2.5/2.6	n=-5 - +6	~XX182 n		
			Offset		n=-5 - +5	~XX183 n		
			Reset		n=1	~XX206 n		
			Video		n=2	~XX35 n		
			Curve Type	Film/Video/Graphics/1.8 /1.9/2.0/2.1/2.2/2.3/2.4/2.5/2.6	n=-5 - +6	~XX184 n		
			Offset		n=-5 - +5	~XX185 n		
			Reset		n=1	~XX207 n		
			Graphics		n=3	~XX35 n		
			Curve Type	Film/Video/Graphics/1.8 /1.9/2.0/2.1/2.2/2.3/2.4/2.5/2.6	n=-5 - +6	~XX186 n		
			Offset		n=-5 - +5	~XX187 n		
			Reset		n=1	~XX208 n		
			Standard		n=4	~XX35 n		
			Curve Type	Film/Video/Graphics/1.8 /1.9/2.0/2.1/2.2/2.3/2.4/2.5/2.6	n=-5 - +6	~XX188 n		
			Offset		n=-5 - +5	~XX189 n		
			Reset		n=1	~XX209 n		
		Color Space	Auto		n=1	~XX37 n	P	F
			RGB (0-255)*	* RGB (0-255) supports when HDMI is detected	n=2			
			RGB(16 - 235)*	*RGB(16 - 235) supports when HDMI is detected	n=4			
			YUV		n=3			
		Noise Reduction			n= 0 - 10	~XX196 n	P	F
		PureEngine	PureMotion	OFF	n=0	~XX190 n		
				LOW	n=1	~XX190 n		
				MED	n=2	~XX190 n		
				HIGH	n=3	~XX190 n		
			UltraDetail	OFF	n=0	~XX41 n		
				ON	n=1	~XX41 n		
				HD+	n=2	~XX41 n		
			PureColor	OFF	n=0	~XX42 n		
				1	n=1	~XX42 n		
				2	n=2	~XX42 n		
				3	n=3	~XX42 n		
				4	n=4	~XX42 n		
				5	n=5	~XX42 n		
			PureEngine Demo	OFF	n=0	~XX197 n		
				H Split	n=1		P	F
				V Split	n=2		P	F
		LED Brightness	Power	100%/95%/90%/85%/ 80%/75%/70%/65%/ 60%/50%	n=0/n=1/n=2/n=3/n=4 /n=5/n=6/n=7/n=8/n=9	~XX326 n	P	F
			DynamicBlack 1		n=1	~XX191 n	P	F
			DynamicBlack 2		n=2		P	F
			DynamicBlack 3		n=3		P	F
DISPLAY	Format	4:3			n=1	~XX60 n	P	F
		16:9			n=2			
		LBX	Don't support when Anamorphic lens is fixed		n=5			
		Native	Don't support when Anamorphic lens is motored or fixed		n=6			
		Auto235			n=8			
		Auto235_Subtitle	Supportingit When Anamorphic lens is fixed or motor		n=11			
		SuperWide	Don't support when Anamorphic lens is motored or fixed		n=9			
	Edge masking				n=0-5	~XX61 n	P	F

~	X	X	X	X	X	n	CR
	Projector ID		Command ID			space	variable	carriage return

DISPLAY

Item	Option	Sub-option	Detail	Notes	n	Command	variable	CR
Zoom					n=0-10	~XX62 n	P	F
H Image Shift					n=-100 - +100	~XX63 n	P	F
V Image Shift					n=-100 - +100	~XX64 n	P	F
V Keystone					n=-30 - +30	~XX66 n	P	F
3D	3D->2D	3D / L / R	2D->2D; 3D->3D / 3D->L /3D->R		n=1/n=2/n=3	~XX230 n	P	F
	3D Format	Auto			n=0	~XX405 n	P	F
		SBS	Decoding HDMI1.3 3D timing		n=1		P	F
		Top and Bottom			n=2		P	F
		Frame Sequential			n=3		P	F
		2D->3D	Low		n=4		P	F
			Mid		n=5		P	F
			High		n=6		P	F
	3D Sync. Invert	On/Off			n=0/n=1	~XX231 n		

SYSTEM

Item	Option	Sub-option	Notes	n	Command	variable	CR
Menu Location	Top Left			n=1	~XX72 n	P	F
	Top Right			n=2			
	Centre			n=3			
	Bottom Left			n=4			
	Bottom Right			n=5			
LED Hours				n=1	~XX108 n	Oknnnnn	return LED hour
Projection	Front-Desktop			n=1	~XX71 n	P	F
	Rear-Desktop			n=2			
	Front-Ceiling			n=3			
	Rear-Ceiling			n=4			
Test Pattern	None / Grid / White Pattern			n=0/n=1/n=2	~XX195 n		
Background Color	Blue			n=1	~XX104 n	P	F
	Black			n=2			
	Gray			n=6			
IR Function	All/Front/Top			n=0 /n=1 / n=2	~XX11 n	P	F
12V Trigger A	Off/On			n=0/n=1	~XX192 n		
12V Trigger B	Off/On/Auto235/Auto 3D			n=0/n=1/n=2/n=3	~XX193 n		
	4:3	4:3 check	When Movable lens is selected, 12V Trigger B won't accept any commands)		~XX205 0		
		4:3 uncheck			~XX205 1		
	16:9	16:9 check			~XX205 2		
		16:9 uncheck			~XX205 3		
	Letter Box	letter box check			~XX205 4		
		letter box uncheck			~XX205 5		
	Native	native check			~XX205 6		
		native uncheck			~XX205 7		
	Exit						

SETUP

Item	Option	Sub-option	n	Command	variable	CR
Language	English		n=1	~XX70 n	P	F
	German		n=2			
	French		n=3			
	Italian		n=4			
	Spanish		n=5			
	Portuguese		n=6			
	Polish		n=7			
	Dutch		n=8			
	Swedish		n=9			
	Norwegian/Danish		n=10			
	Finnish		n=11			
	Greek		n=12			
	Traditional Chinese		n=13			
	Simplified Chinese		n=14			
	Japanese		n=15			
	Korean		n=16			
	Russian		n=17			
	Hungarian		n=18			
	Czech		n=19			
	Arabic		n=20			
	Thai		n=21			
	Turkish		n=22			
Input Source Filters	HDMI 1		n=1	~XX39 n	P	F
	HDMI 2		n=7			
	VGA		n=8			
	3 x RCA Component		n=5			
	Video		n=10			
Source Lock	On/Off		n=1/n=0 & 2	~XX100 n	P	F
High Altitude	On/Off		n=1/n=0 & 2	~XX101 n	P	F
Information Hide	On/Off		n=1/n=0 & 2	~XX102 n	P	F
Auto Power Off (min)			n=0-180	~XX106 n	P	F
Signal	Automatic	Enable/Disable	n=1/n=0	~XX91 n		
	Frequency\Tracking		n=0~ 100	~XX73 n	P	F
	Phase		n= -50 - +50	~XX74 n	P	F
	H. Position		n= -50 - +50	~XX75 n	P	F
	V. Position		n= -50 - +50	~XX76 n	P	F
	White level		n=-50-+50	~XX200 n		
	Black level		n=-50-+50	~XX201 n		
	Saturation		-50~+50	~XX202 n		
	Hue		-50~+50	~XX203 n		
	IRE	0 IRE / 7.5 IRE	n=1/n=0	~XX204 n		
Reset	Yes		n=1	~XX112 n	P	F
	No		n=2			

Information from Projector Automatically when:

Item	a	Command
Standby Mode	a=0	INFOa
Warming up	a=1	INFOa
Cooling Down	a=2	INFOa
Out of Range	a=3	INFOa
LED Fail	a=4	
Thermal Switch Error	a=5	
Fan Lock	a=6	
Over Temperature	a=7	
Lamp Hours Running Out	a=8	

READ/Return Information from projector

Item	Option	Sub-option	n	Command	variable
Information			n=1	~XX150 n	Okabbbbbccddddee
	a = Power State	Off/On	a=0/1		
	b = LED Hour		bbbbb		
	c = Input Source Commands	None	c=00		
		VGA	c=02		
		Video	c=05		
		HDMI1	c=07		
		HDMI2	c=08		
	d = Firmware Version		dddd		
	e = Display mode	None	ee=0		
		Cinema	ee=1		
		Bright	ee=2		
		Film	ee=11		
		Photo	ee=3		
		Reference	ee=4		
		User	ee=5		
		ISF Day	ee=7		
		ISF Night	ee=8		
		3D	ee=9		
Model Name				~XX151 n	Oka
	Depends		a=0/1/2		

~	X	X	X	X	X		n	CR
	Projector ID			Command ID		space	variable	carriage return
	RS232 Version No					n=1	~XX152 n	Oka
			Depends			a=???		
		Input Source Commands	None/VGA/Video/HDMI1/ HDMI2/Component			n=1	~XX121 n	Oka	a=0/2//5//7/8/11
		Software Version				n=1	~XX122 n	Okdddd
		Display Mode	None/Cinema/Bright/Photo/ Reference/User/ISF Day/ ISF Night/3D/Film			n=1	~XX123 n	Oka	a=0/1/2/3/4/5/7/8/9/11
		Power State	On/Off			n=1	~XX124 n	Oka	a=1/0
		Brightness				n=1	~XX125 n	Oka
		Contrast				n=1	~XX126 n	Oka
		Aspect Ratio	4:3/16:9/LBX/Native/Auto235/ Auto235_Subtitle			n=1	~XX127 n	Oka	aa=1/2/5/6/8//9/11 for 4:3/16:9/LBX/ Native/Auto235/ Auto235_Subtitle
		Color Temperature	D50/D65/D70/D75/D83/D93/ Native			n=1	~XX128 n	Oka	a=1/2 /3/4/5/6/7
		Projection Mode	Front-Desktop Rear-Desktop Front-Ceiling Rear-Ceiling			n=1	~XX129 n	Oka	a=0/1/2/3 for Front-Desktop/Rear-Desktop /Front-Ceiling/Rear-Ceiling
Remote Control								
		Up				n=10	~XX140 n	
		Left				n=11		
		Enter				n=12		
		Right				n=13		
		Down				n=14		
		Menu				n=20		
		Re-sync				n=41		

Appendices

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 attach a mount to the projector meet the following specifications:

    ▸ Screw type: M6
    ▸ Maximum screw length: 12mm
   ▸ Minimum screw length: 10mm

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

⚠ Warning:

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

Lens

Unit: mm

24.5
151.50
442.3
138.5
138.5
110.00
110.00
344.2

148.5
12.9
66.0
172.1
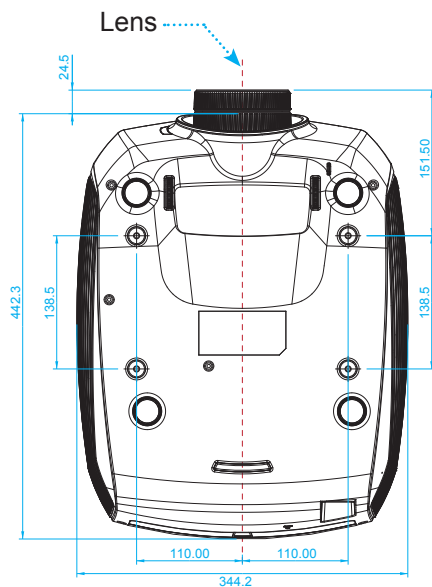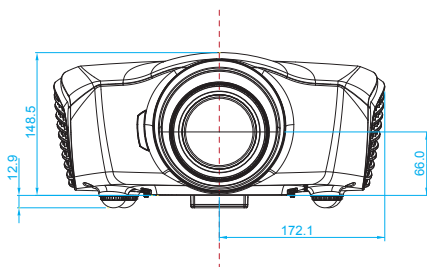
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Regulation & Safety Notices

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.

Appendices

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.

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