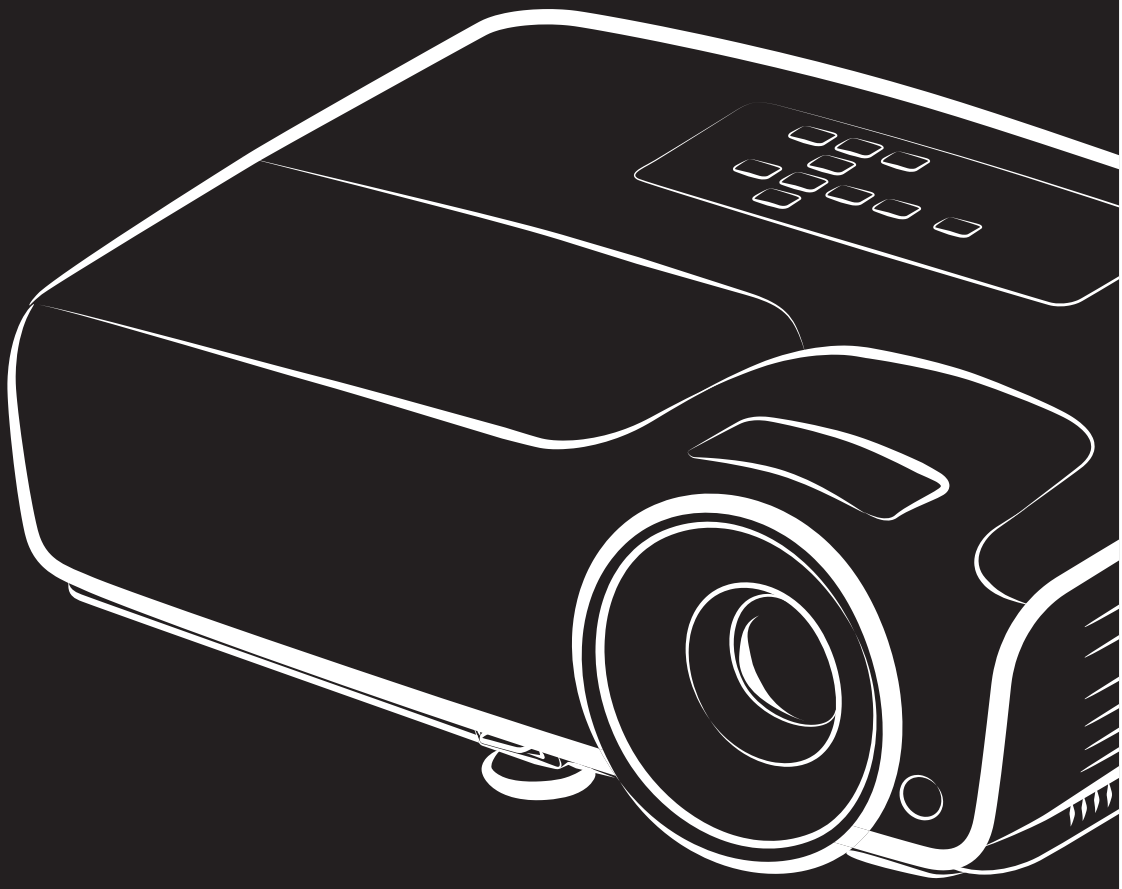
vivitek®
Vivid Color, Vivid Life

User Manual

DS272/DS27BAA/MS580/BS570
DX273/DX27CAA/MX581/BX571
DW275/DW27EAA/MW584/BW572
DH278/DH27HAA/MH588/BH577
DX283-ST/DX28CAA/MX595ST/BX585ST
DW284-ST/DW28DAAST/MW596ST/BW586ST
Series



DLP®
TEXAS INSTRUMENTS

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, detectable by turning the equipment in question 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 distance between the equipment and the receiver
- Connect the equipment to an outlet on a different circuit than that which the receiver is connected to
- Or consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference that may cause undesired operation.

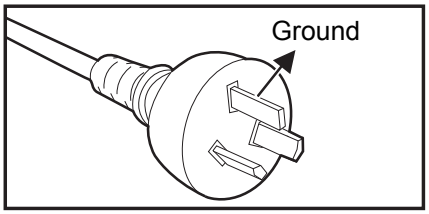
Safety instructions

Read all of these instructions before you operate your projector and save for future reference.

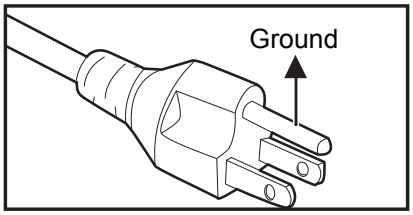
1. Read instructions
   All the safety and operating instructions should be read before the appliance is operated.
2. Notes and warnings
   All notes and warnings in the operating instructions should be adhered to.
3. Cleaning
   Unplug the projector from the wall socket before cleaning. Use a damp cloth for cleaning the projector housing. Do not use liquid or aerosol cleaners.
4. Accessories
   Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
   Keep the plastic packing materials (from the projector, accessories and optional parts) out of the reach of children as these bags may result in death by suffocation. Be particularly careful around the small children.
5. Ventilation
   The projector is equipped with ventilation holes (intake) and ventilation holes (exhaust).
   Do not block or place anything near these slots, or internal heat build-up may occur, causing picture degradation or damage to the projector.
6. Power sources
   Check that the operating voltage of your unit is identical with the voltage of your local power supply.
7. Servicing
   Do not attempt to service this projector yourself. Refer all servicing to qualified service personnel.
8. Replacement parts
   When replacement parts are required, be sure that the replacement parts are specified by the manufacture. Unauthorized substitutions may result in fire, electric shock or other hazards.
9. Moisture Condensation
   Never operate this projector immediately after moving it from a cold location to a warm one. When the projector is exposed to such a change in temperature, moisture may condense on the lens and the crucial internal parts. To prevent the unit from possible damage, do not use the projector for at least 2 hours when there is an extreme or sudden change in temperature.

Notes on the AC Power Cord

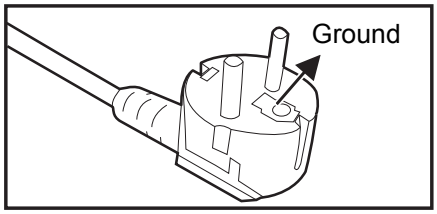
AC Power Cord must meet the requirement of countries where you use this projector. Please confirm your AC plug type with the graphics below and ensure that the proper AC Power Cord is used. If the supplied AC Power Cord does not match your AC outlet, please contact your sales dealer. This projector is equipped with a grounding type AC line plug. Please ensure that your outlet fits the plug. Do not defeat the safety purpose of this grounding type plug. We highly recommend using a video source device also equipped with a grounding type AC line plug to prevent signal interference due to voltage fluctuations.



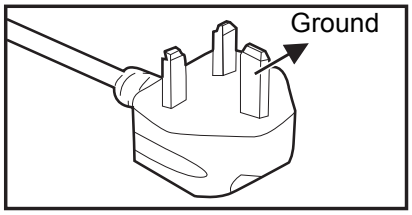
For Australia and
Mainland China



For the U.S.A. and
Canada



For Continental Europe



For the U.K.

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Introduction

Projector Features

The projector integrates high-performance optical engine projection and a user - friendly design to deliver high reliability and ease of use.

The projector offers the following features:

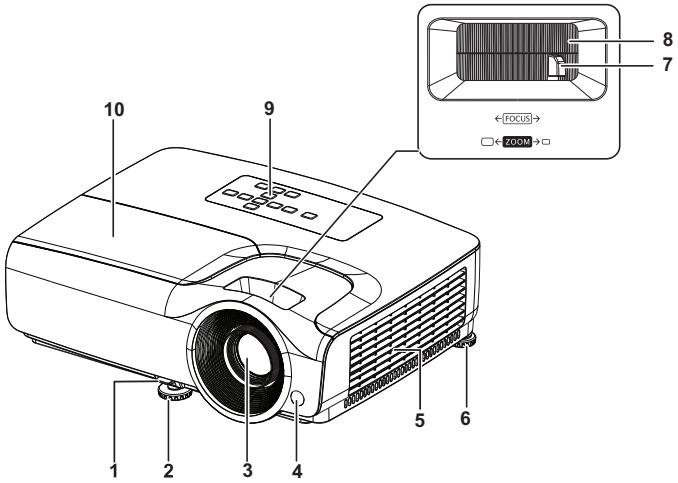
- DLP® technology
- DS272/DS27BAA/MS580/BS570 series: 800 x 600 SVGA resolution
- DX273/DX27CAA/MX581/BX571/DX283-ST/DX28CAA/MX595ST/BX585ST series: 1024 x 768 XGA resolution
- DW275/DW27EAA/MW584/BW572/DW284-ST/DW28DAAST/MW596ST/ BW586ST series: 1280 x 800 WXGA resolution
- DH278/DH27HAA/MH588/BH577 series: 1920 x 1080 1080P resolution
- Compatibility with Macintosh® computers
- Compatibility with NTSC, PAL, SECAM and HDTV
- D-Sub 15-pin terminal for analog video connectivity
- User-friendly, multi-language on-screen display
- Advanced electronic keystone correction
- RS-232 connector for serial control
- Less then 0.5w power consumption in standby mode.
- Dynamic ECO starts your dynamic power saving
- Quick Cooling, Auto Power Off, Auto Power On functions
- Instant Restart function enables to restart the projector immediately within 90 seconds after turning it off.
- 3D Function supported

☞ ***Note***

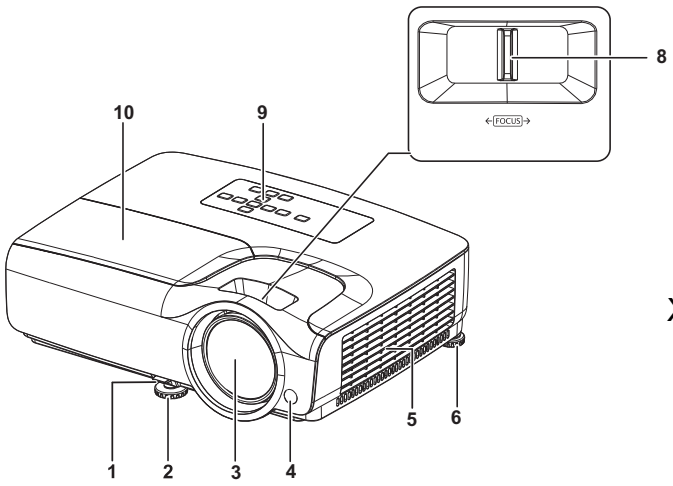
- ***The information in this manual is subject to change without notices.***
- ***The reproduction, transfer or copy of all or any part of this document is not permitted without express written consent.***
- ***The apparent brightness of the projected image will vary depending on the ambient lighting conditions, selected input signal contrast/brightness settings, and the projection distance.***
- ***The lamp brightness will decline over time and may vary within the lamp manufacturers specifications. This is normal and expected behavior.***

Projector Overview

Front View



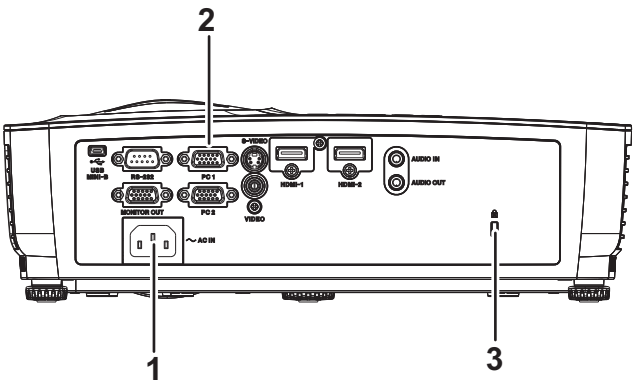
SVGA/XGA/WXGA/1080P series



XGA-ST/WXGA-ST series

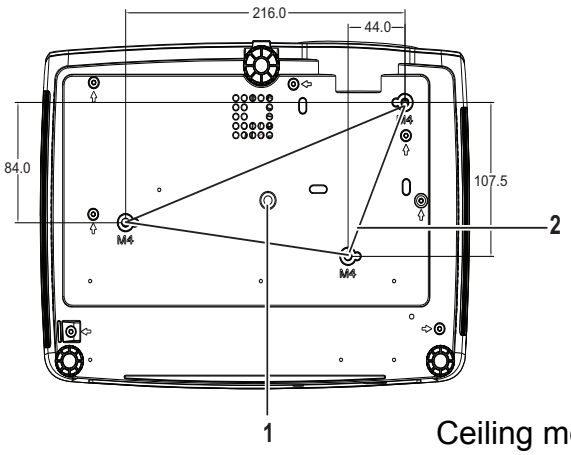
1. Quick-release lever
2. Front adjuster foot
3. Projection lens
4. Front IR remote control sensor
5. Ventilation holes
6. Rear adjuster foot
7. Zoom ring
8. Focus ring
9. Control panel
10. Lamp cover

Rear View



1. AC power socket
2. Connection ports
3. Kensington anti-theft lock slot

Bottom View



Ceiling mount screws:
M4 x 8 (Max. L = 8 mm)

Unit: mm

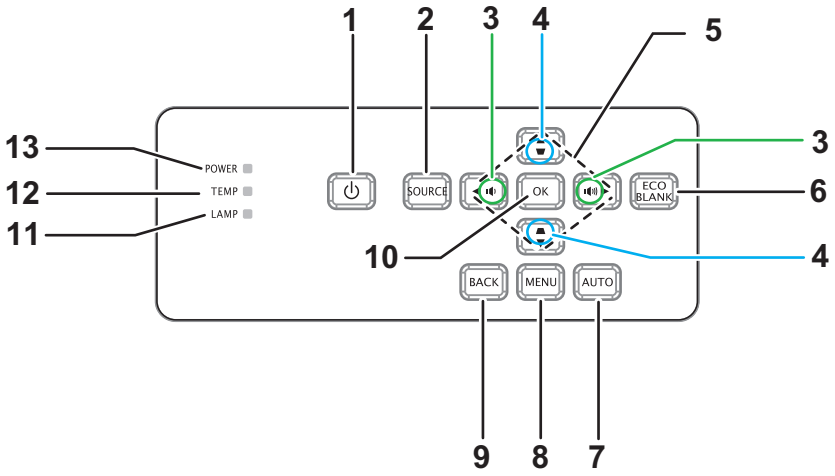
1. Tripod socket
2. Ceiling mount holes

☞ ***Note***

- ***This projector can be used with a ceiling mount for support. The ceiling mount is not included in the package.***
- ***Contact your dealer for information to mount the projector on a ceiling.***
- ***When installing the unit, incorporate a readily accessible disconnect device in the fixed wiring, or connect the power plug to an easily accessible socket-outlet near the unit. If a fault should occur during operation of the unit, operate the disconnect device to switch the power supply off, or disconnect the power plug.***

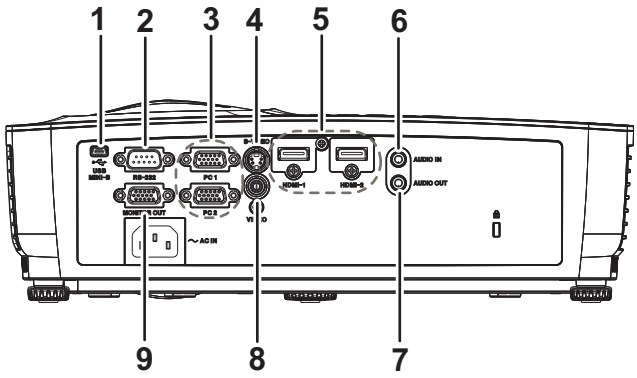
Using the Product

Control Panel



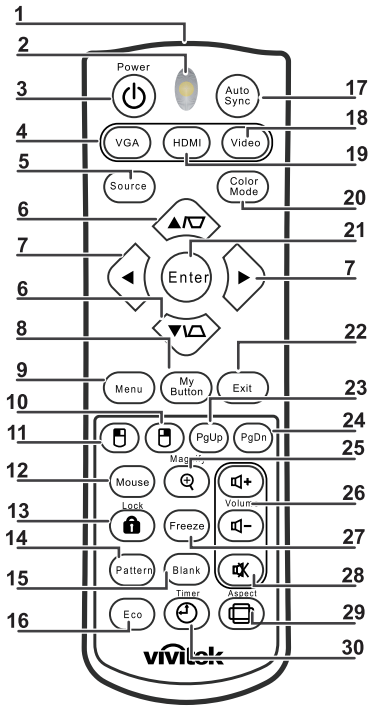
1. ⏻ **POWER**
   Turns the projector on or off
2. **SOURCE**
   Displays the source selection bar
3. 🔉/🔊 **Volume**
   Adjusts volume
4. ▼/▲ **Keystone**
   Corrects image-trapezoid (wider top/bottom) effect
5. ▲ / ▼ / ◀ / ▶ **Up/Down/Left/Right keys**
   Navigates and changes settings in the OSD
6. **ECO BLANK**
   Makes the screen blank
7. **AUTO**
   Auto adjustment phase, h.size, position
8. **MENU**
   Opens the OSD
9. **BACK**
   Goes back to previous OSD menu
10. **OK**
    Changes settings in the OSD
11. **LAMP** (Lamp LED indicator)
    Refers to "LED Indicator Messages”
12. **TEMP** (Temp LED indicator)
    Refers to "LED Indicator Messages”
13. **POWER** (Power LED indicator)
    Refers to “LED Indicator Messages”

Connection Ports



1. **USB MINI-B**
   This connector is for firmware update.
2. **RS-232**
   When operating the projector via a computer, connect this to the controlling computer's RS-232C port.
3. **PC 1/PC 2**
   Connect image input signal (analog RGB or component) to this jack.
4. **S-VIDEO**
   Connect S-Video output from video equipment to this jack.
5. **HDMI-1/HDMI-2**
   Connect HDMI output from video equipment or computer to this jack.
6. **AUDIO IN**
   Connect an audio output from video equipment or computer to this jack.
7. **AUDIO OUT**
   Connect to a speaker or other audio input equipment.
8. **VIDEO**
   Connect composite video output from video equipment to this jack.
9. **MONITOR OUT**
   Connect to a computer display, etc.

Remote Control



1. **IR transmitter**
   Transmits signal to projector
2. **Status LED**
   Lights when the remote control is used
3. **Power**
   Turns the projector on or off
4. **VGA**
   Displays COMPUTER signal
5. **Source**
   Displays the source selection bar
6. **Keystone**
   Corrects image-trapezoid (wider top/bottom) effect
   Up/Down
   Navigates and changes settings in the OSD
7. **Left/Right**
   Navigates and changes settings in the OSD
8. **My Button**
   No function
9. **Menu**
   Opens the OSD
10. **Right mouse**
    No function
11. **Left mouse**
    No function

12. **Mouse**
    No function
13. **Lock**
    No function
14. **Pattern**
    No function
15. **Blank**
    Makes the screen blank
16. **Eco**
    Displays the lamp mode selection bar (Normal/Economic/Dynamic ECO/Long ECO).
17. **Auto Sync**
    Auto adjustment phase, h.size, position
18. **Video**
    Displays VIDEO signal
19. **HDMI**
    Displays HDMI signal
20. **Color Mode**
    Selects the display mode
21. **Enter**
    Changes settings in the OSD
22. **Exit**
    Exits and saves menu settings
23. **Page Up**
    Page up when connected through USB to a PC
24. **Page Down**
    Page down when connected through USB to a PC
25. **Magnify**
    Magnifies the projected picture size
26. **Volume**
    Adjusts volume
27. **Freeze**
    Freeze/unfreeze the on-screen picture
28. **Mute**
    Mutes the built-in speaker
29. **Aspect**
    Selects the display aspect ratio
30. **Timer**
    Activates P-Timer OSD menu

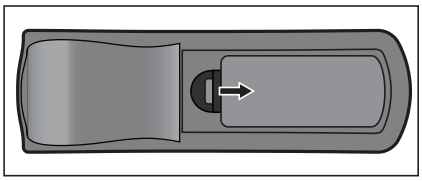
Using the remote mouse control

The capability of operating your computer with the remote control gives you more flexibility when delivering presentations.

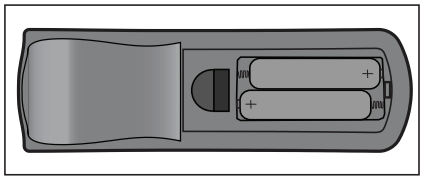
1. Connect the projector to your PC or notebook with a USB cable prior to using the remote control in place of your computer's mouse. See "Connecting a computer or monitor" on page 12 for details.
2. Set the input signal to **COMPUTER**.
3. To operate your display software program (on a connected PC) which responds to page up/down commands (like Microsoft PowerPoint), press **Page Up**/**Page Down**.
4. If remote paging function doesn't work, check if the USB connection is correctly made and the mouse driver on your computer is updated to the latest version.

Installing the Batteries

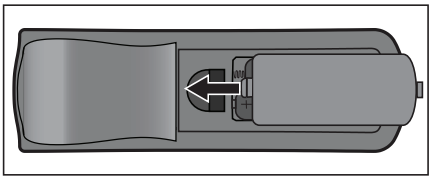
1. Open the battery cover in the direction shown.



2. Install batteries as indicated by the diagram inside the compartment.



3. Close the battery cover into position.



⚠ *Caution*

- ***Risk of explosion if battery is replaced by an incorrect type.***
- ***Dispose of used batteries according to the instructions.***
- ***Make sure the plus and minus terminals are correctly aligned when loading a battery.***

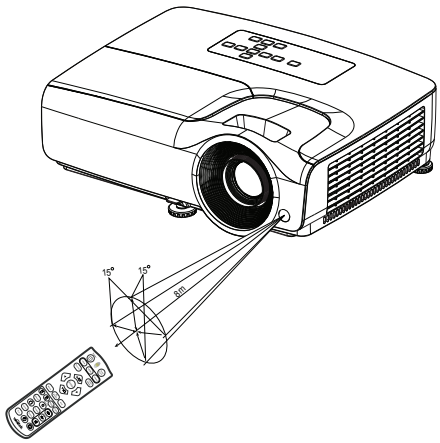
☞ *Note*

- ***Keep the batteries out of the reach of children. There is a danger of death by accidentally swallowing the batteries.***
- ***Remove batteries from remote control when not using for extended periods.***
- ***Do not dispose of the used batteries along with household waste. Dispose of used batteries according to local regulations.***
- ***Danger of explosion may happen if batteries are incorrectly replaced. Replace all the batteries with new ones.***
- ***Batteries should not be in or near to fire or water, keep batteries in a dark, cool and dry place.***
- ***If suspect battery leakage, wipe out the leakage and then replace new batteries.***
- ***If the leakage adheres to your body or clothes, rinse well with water immediately.***

Remote Control Operation

Point the remote control at the infrared remote sensor and press a button.

- Operating the projector from the front



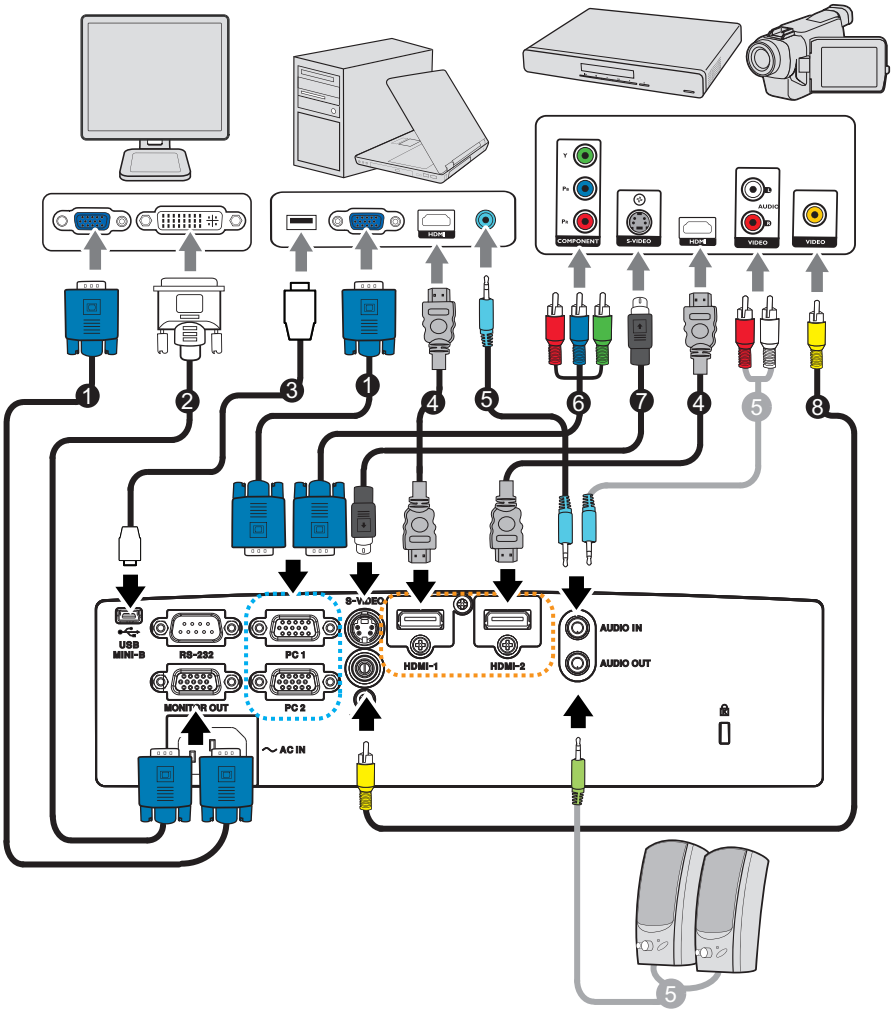
☞ ***Note***

- ***Do not point the laser directly to the people's eyes (especially small children). There is a danger of injury to the eyes.***
- ***The remote control may not operate when there is sunlight or other strong light such as a fluorescent lamp shining on the remote sensor.***
- ***Operate the remote control from a position where the remote sensor is visible.***
- ***Do not drop the remote control or jolt it.***
- ***Keep the remote control out of locations with excessively high temperature or humidity.***
- ***Do not get water on the remote control or place wet objects on it.***
- ***Do not disassemble the remote control.***

Connection

When connecting a signal source to the projector, be sure to:

1. Turn all equipment off before making any connections.
2. Use the correct signal cables for each source.
3. Ensure the cables are firmly inserted.



1. VGA cable (D-Sub to D-Sub)
2. VGA to DVI-A cable
3. USB cable (Mini B type to A type)
4. HDMI cable
5. Audio cable
6. VGA (D-Sub) to HDTV (RCA) cable
7. S-Video cable
8. Composite Video cable

☞ ***Important***

- ***In the connections shown above, some cables may not be included with the projector. They are commercially available from electronics stores.***
- ***The connection illustrations above are for reference only. The rear connecting jacks available on the projector vary with each projector model.***

Connecting a computer or monitor

Connecting a computer

The projector can connect to both IBM® compatibles and Macintosh® computers. A Mac adapter is needed if you are connecting legacy version Macintosh computers.

To connect the projector to a notebook or desktop computer:

- Using a VGA cable

1. Take a VGA cable and connect one end to the D-Sub output socket of the computer.
2. Connect the other end of the VGA cable to the **PC 1/PC 2** signal input socket on the projector.

- Using an HDMI cable

1. Take an HDMI cable and connect one end to the **HDMI-1/HDMI-2** jack of the computer.
2. Connect the other end of the cable to the HDMI jack on the projector.

☞ ***Important***

- ***Many notebooks do not turn on their external video ports when connected to a projector. Usually a key combo like FN + F3 or CRT/LCD key turns the external display on/off. Locate a function key labeled CRT/LCD or a function key with a monitor symbol on the notebook. Press FN and the labeled function key simultaneously. Refer to your notebook's documentation to find your notebook's key combination.***

Connecting a monitor

If you want to view your presentation close-up on a monitor as well as on the screen, you can connect the **MONITOR OUT** signal output socket on the projector to an external monitor with a VGA cable following the instructions below:

To connect the projector to a monitor:

1. Connect the projector to a computer as described in "Connecting a computer" on page 12.
2. Take a suitable VGA cable (only one supplied) and connect one end of the cable to the D-Sub input socket of the video monitor.
   Or if your monitor is equipped with a DVI input socket, take a VGA to DVI-A cable and connect the DVI end of the cable to the DVI input socket of the video monitor.
3. Connect the other end of the cable to the **MONITOR OUT** socket on the projector.

☞ ***Important***

- ***The output signal for MONITOR OUT jack only works when the input signal comes from PC jack. When the projector is powered on, the output signal from MONITOR OUT jack varies depending on the input signal from PC jack.***

Connecting Video Source Devices

- Using an HDMI cable

1. Take an HDMI cable and connect one end to the **HDMI-1/HDMI-2** jack of the computer.
2. Connect the other end of the cable to the HDMI jack on the projector.

- Using a VGA (D-Sub) to HDTV (RCA) cable

1. Take a VGA (D-Sub) to HDTV (RCA) cable and connect the end with 3 RCA type connectors to the Component Video output sockets of the Video source device. Match the color of the plugs to the color of the sockets; green to green, blue to blue, and red to red.
2. Connect the other end of the cable (with a D-Sub type connector) to the **PC 1/PC 2** socket on the projector.

- Connecting an S-Video/composite source device

1. Take an S-Video/Video cable and connect one end to the S-Video/Video output jack of the Video source device.
2. Connect the other end of the S-Video/Video cable to the **S-VIDEO**/ **VIDEO** jack on the projector.

☞ ***Important***

- ***If the selected video image is not displayed after the projector is turned on and the correct video source has been selected, check that the Video source device is turned on and operating correctly. Also check that the signal cables have been connected correctly.***

Operation

Powering On/Off the Projector

Powering On the Projector:

1. Complete the AC power cord and peripheral signal cable(s) connections.
2. Press ⏻ to turn on the projector.
   The projector takes a minute or so to warm up.
3. Turn on your source (computer, notebook, DVD, etc.). The projector automatically detects your source when Auto source setting is ON.
   - If the projector doesn't detect a valid signal, the message 'No Signal' will continue to be displayed.

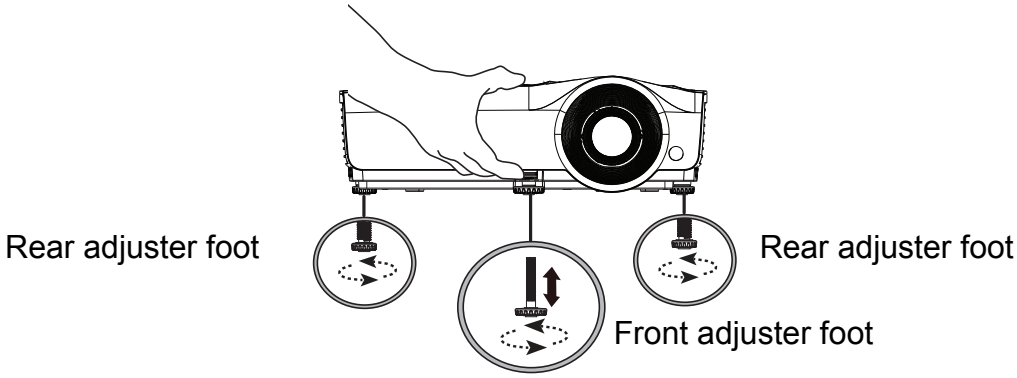
⚠ ***Warning***

- ***Never look into the lens when the lamp is on. This can damage your eyes.***
- ***This focal point concentrates high temperature. Do not place any object near it to avoid possible fire hazard.***

Powering Off the Projector:

1. Press ⏻ to turn off the projector lamp. You will see a message "Press ⏻ button again to power off" appear on the screen.
2. Press ⏻ again to confirm.
   - If you want to turn the projector back on, you must wait until the projector has completed the cooling cycle and has entered stand-by mode. Once in stand-by mode, simply press ⏻ to restart the projector.
3. Disconnect the AC power cord from the electrical outlet and the projector.
4. Do not turn on the projector right after power off.

Adjusting the Projector Height



The projector is equipped with 1 front adjuster foot and 2 rear adjuster feet.

These adjusters change the image height and projection angle.

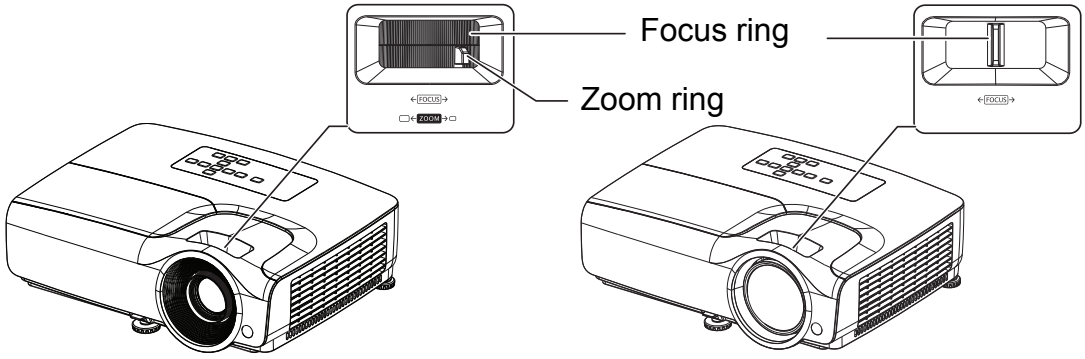
1. Pull the quick-release lever and lift the front of the projector. Once the image is positioned where you want it, release the quick-release lever to lock the foot in position. You may also screw the front adjuster foot to change the image height.
2. Use the rear adjuster foot to fine tune the horizontal angle.

To retract the foot, screw the adjuster foot in a reverse direction.

☞ ***Note***

- ***To avoid damaging the projector, make sure that the adjuster feet are fully retracted before placing the projector in its carrying case.***

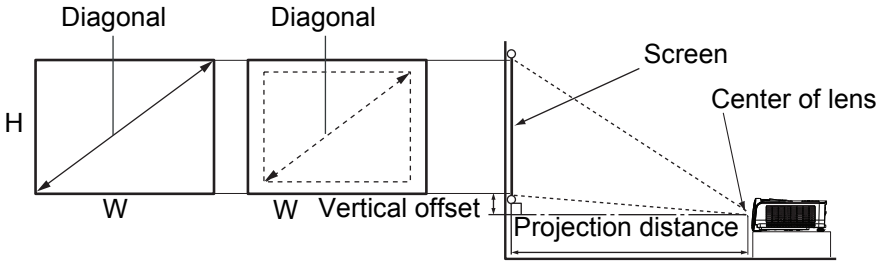
Adjusting the Projector Focus and Zoom



1. Focus the image by rotating the focus ring. A still image is recommended for focusing.
2. Adjust the image size by sliding the zoom ring.

Adjusting Projection Image Size

Refer to the graphic and table below to determine the screen size and projection distance.



SVGA series

The screen aspect ratio is 4:3 and the projected picture is 4:3

Screen size				Projection distance (m)		Vertical offset (cm)
Diagonal		W (cm)	H (cm)	Min distance	Max distance	
Inch	cm			(max. zoom)	(min. zoom)	
40	102	81	61	1.6	1.9	4.0
50	127	102	76	2.0	2.4	5.0
60	152	122	91	2.4	2.9	6.0
70	178	142	107	2.8	3.4	7.0
80	203	163	122	3.2	3.9	8.0
90	229	183	137	3.6	4.3	9.0
100	254	203	152	4.0	4.8	10.0
120	305	244	183	4.8	5.8	12.0
150	381	305	229	6.1	7.3	15.0
200	508	406	305	8.1	9.7	20.1
250	635	508	381	10.2	12.2	25.1
300	762	610	457	12.2	14.6	30.1

XGA series

The screen aspect ratio is 4:3 and the projected picture is 4:3

Screen size				Projection distance (m)		Vertical offset (cm)
Diagonal		W (cm)	H (cm)	Min distance	Max distance	
Inch	cm			(max. zoom)	(min. zoom)	
40	102	81	61	1.6	1.9	3.7
50	127	102	76	2.0	2.4	4.6
60	152	122	91	2.4	2.8	5.5
70	178	142	107	2.8	3.3	6.4
80	203	163	122	3.2	3.8	7.3
90	229	183	137	3.6	4.3	8.2
100	254	203	152	4.0	4.8	9.1
120	305	244	183	4.8	5.7	11.0
150	381	305	229	6.0	7.2	13.7
200	508	406	305	8.0	9.6	18.3
250	635	508	381	10.1	12.0	22.9
300	762	610	457	12.1	14.5	27.4

WXGA series

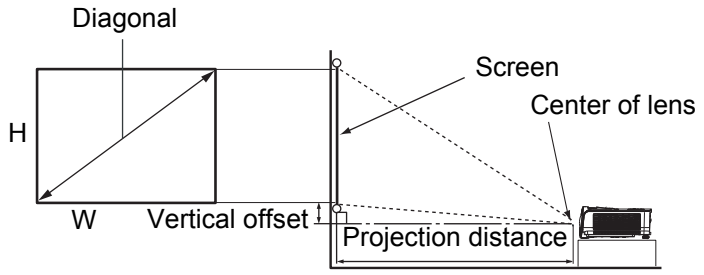
The screen aspect ratio is 16:10 and the projected picture is 16:10

Screen size				Projection distance (m)		Vertical offset (cm)
Diagonal		W (cm)	H (cm)	Min distance	Max distance	
Inch	cm			(max. zoom)	(min. zoom)	
40	102	86	54	1.3	1.6	2.0
50	127	108	67	1.7	2.0	2.5
60	152	129	81	2.0	2.4	3.0
70	178	151	94	2.3	2.8	3.6
80	203	172	108	2.7	3.2	4.1
90	229	194	121	3.0	3.6	4.6
100	254	215	135	3.4	4.0	5.1
120	305	258	162	4.0	4.9	6.1
150	381	323	202	5.1	6.1	7.6
200	508	431	269	6.8	8.2	10.2
250	635	538	337	8.5	10.2	12.7
300	762	646	404	10.2	12.3	15.2

1080P series

The screen aspect ratio is 16:9 and the projected picture is 16:9

Screen size				Projection distance (m)		Vertical offset (cm)
Diagonal		W (cm)	H (cm)	Min distance	Max distance	
Inch	cm			(max. zoom)	(min. zoom)	
40	102	89	50	1.2	1.5	3.4
50	127	111	62	1.5	1.8	4.3
60	152	133	75	1.8	2.2	5.1
70	178	155	87	2.1	2.6	6.0
80	203	177	100	2.4	3.0	6.8
90	229	199	112	2.7	3.3	7.7
100	254	221	125	3.1	3.7	8.6
120	305	266	149	3.7	4.5	10.3
150	381	332	187	4.6	5.6	12.8
200	508	443	249	6.2	7.5	17.1
250	635	553	311	7.7	9.4	21.4
300	762	664	374	9.3	11.2	25.7



XGA-ST series

The screen aspect ratio is 4:3 and the projected picture is 4:3

Screen size				Distance from screen (m)
Diagonal		W	H	
Inch	cm	(cm)	(cm)	
50	127	102	76	0.64
55	140	112	84	0.70
56	142	114	85	0.72
60	152	122	91	0.77
65	165	132	99	0.83
70	178	142	107	0.89
75	191	152	114	0.96
80	203	163	122	1.02
85	216	173	130	1.09
86	218	175	131	1.10
90	229	183	137	1.15
95	241	193	145	1.22
100	254	203	152	1.28
105	267	213	160	1.34
110	279	224	168	1.41

WXGA-ST series

The screen aspect ratio is 16:10 and the projected picture is 16:10

Screen size				Distance from screen (m)
Diagonal		W	H	
Inch	cm	(cm)	(cm)	
50	127	108	67	0.53
55	140	118	74	0.58
56	142	121	75	0.59
60	152	129	81	0.63
65	165	140	88	0.69
70	178	151	94	0.74
75	191	162	101	0.79
80	203	172	108	0.85
85	216	183	114	0.90
86	218	185	116	0.91
90	229	194	121	0.95
95	241	205	128	1.01
100	254	215	135	1.06
105	267	226	141	1.11
110	279	237	148	1.16

☞ ***Note***

- ***Position the projector in a horizontal position; other positions can cause heat build-up and damage to the projector.***
- ***Keep a space of 30 cm or more between the sides of the projector.***
- ***Do not use the projector in a smoky environment. Smoke residue may build up on critical parts and damage the projector or its performance***
- ***Consult with your dealer for special installation such as suspending from a ceiling.***

Securing the projector

Setting and changing a password

1. Open the OSD menu, go to the **SETTINGS 2** > **Security Settings** menu and press **Enter**.
2. Highlight **Change Password** and press **Enter**.
3. To set the password:
   According to the password you desire to set, press the arrow keys to enter six digits for the password.
4. To change the password:
   You will be asked to input current password first and then you can change a new one.
5. Confirm the new password by re-entering the password.
6. To leave the OSD menu, press **Menu**/**Exit**.

Activating the password function

1. Go back to **SETTINGS 2** > **Security Settings** and press **Enter**.
2. Highlight **Change Security** and press **Enter**. You will be asked to input password. Once the password is set, the OSD menu returns to the **Power on Lock**. Select **On** by pressing ◄/►.
3. To disable password protection, select **Off** in the **Power on Lock** menu.

Setting the presentation timer

The presentation timer can indicate the presentation time on the screen to help you achieve better time management when giving presentations. Follow these steps to utilize this function:

1. Press Timer on the remote control to access the Presentation Timer menu or go to the **SETTINGS 1** > **Presentation Timer** menu and press **Enter** to display the **Presentation Timer** page.
2. Highlight **Timer Period** and decide the timer period by pressing ◄/►.
3. Press ▼ to highlight **Timer Display** and choose if you want the timer to show up on the screen by pressing ◄/► .

Selection	Description
Always	Displays the timer on screen throughout the presentation time.
1 Min/2 Min/3 Min	Displays the timer on screen in the last 1/2/3 minute(s).
Never	Hides the timer throughout the presentation time.

4. Press ▼ to highlight **Timer Position** and set the timer position by pressing ◄/►. Top-Left → Bottom-Left → Top-Right → Bottom-Right
5. Press ▼ to highlight **Timer Counting Direction** and select your desired counting direction by pressing ◄/►.

Selection	Description
Count Up	Increases from 0 to the preset time.
Count Down	Decrease from the preset time to 0.

6. Press ▼ to highlight **Sound Reminder** and decide if you want to activate sound reminder by pressing ◄/►.
7. To activate the presentation timer, highlight **Presentation Timer**, select **On** and select **Yes**.
8. To cancel the timer, highlight **Presentation Timer**, select **Off** and select **Yes**.

Menu operation

The projector has multilingual on-screen display (OSD) menus that allow you to make image adjustments and change a variety of settings.

How to operate

1. Press **Menu** to open the OSD menu.
2. When OSD is displayed, use ◄/► to select any feature in the main menu.
3. After selecting the desired main menu item, press ▼ to enter sub-menu for feature setting.
4. Use ▲/▼ to select the desired item and adjust the settings with ◄/►.
   - To enter the next level of OSD menu, press **Enter**.
5. Press **Menu** twice* to leave and save the settings.
   *The first press leads you back to the main menu and the second press closes the OSD menu.

Menu tree

☞ ***Note***

- ***Supported on-screen display (OSD) menus vary by different input sources. The un-suported functions will be grayed out.***
- ****: Only available when Color Mode is selected to User1 or User2.***

Main Menu	Sub Menu	Settings	
DISPLAY	Wall Color	Off / Light Yellow / Pink / Light Green / Blue / Blackboard	
	Aspect Ratio	Auto / Real / 4:3 / 16:9 / 16:10	
	Keystone		
	Position		
	Phase		
	H. Size		
	Digital Zoom		
	3D	3D Mode	Auto / Top-Bottom / Frame Sequential / Frame Packing / Side By Side / Off
		3D Sync Invert	Disable / Invert
		Save 3D Settings	3D Settings 1 / 3D Settings 2 /3D Settings 3
		Apply 3D Settings	3D Settings 1 / 3D Settings 2 / 3D Settings 3 / Off
PICTURE	Color Mode	Bright / Presentation / sRGB / Movie / (Long ECO) /(3D) / User 1 / User 2	
	Reference Mode*	Bright / Presentation / sRGB / Movie / (Long ECO) /(3D)	
	Brightness		
	Contrast		
	Color		
	Tint		
	Sharpness		
	Brilliant Color	On / Off	
	Color Temperature	Cool / Normal / Warm	
	Color Temperature Fine Tuning	R Gain / G Gain / B Gain / R Offset / G Offset / B Offset	
	Color Management	Primary Color	R / G / B / C / M / Y
		Hue	
		Saturation	
		Gain	
	Reset Color Settings	Current / All / Cancel	
SOURCE	Auto Source	On / Off	

SETTINGS 1	Presentation Timer	Timer Period	1,2,3,4,5,10 - 240 Min
		Timer Display	Always / 3 min / 2 min / 1 min / Never
		Timer Position	Top-Left / Bottom-Left / Top-Right / Bottom-Right
		Timer Counting Direction	Count Down / Count Up
		Sound Reminder	On / Off
		On / Off	Yes / No
	Language	Multi-languages	
	Projection	Front Table / Rear Table / Rear Ceiling / Front Ceiling	
	Menu Settings	Menu Display Time	5 sec / 10 sec / 20 sec / 30 sec / Always
		Menu Position	Center / Top-Left / Top-Right / Bottom-Right / Bottom-Left
		Reminder Message	On / Off
	Operation Settings	Direct Power On	On / Off
		Signal Power On	On / Off
		Auto Power Off	Disable / 3 min / 10 min / 15 min / 20 min / 25 min / 30 min
		Quick Cooling	On / Off
		Instant Restart	On / Off
		Blank Timer	Disable / 5 min / 10 min / 15 min / 20 min / 25 min / 30 min
		Sleep Timer	Disable / 30 min / 1 hr / 2 hr / 3 hr / 4 hr / 8 hr / 12 hr
	Background Color	Factory Default / Black / Blue	
	Splash Screen	Factory Default / Black / Blue	

SETTINGS 2	High Altitude Mode	On / Off	Yes / No	
	Audio Settings	Mute	On / Off	
		Audio Volume		
		Power On/Off Ring Tone	On / Off	
	Lamp Settings	Lamp Mode	Normal / Eco / Dynamic ECO / Long ECO	
		Reset lamp timer	Reset / Cancel	
		Equivalent lamp hour	Normal: xxxhrs Eco: xxxhrs Dynamic ECO: xxxhrs Long ECO: xxxhrs Equivalent lamp hour: xxxhrs	
	Security Settings	Change Password		
		Change Security	Power on Lock	On / Off
	Baud Rate	2400 / 4800 / 9600 / 14400 / 19200 / 38400 / 57600 / 115200		
	Test Pattern	On / Off		
	Closed Caption	Closed Caption Enable	On / Off	
		Caption Version	CC1 / CC2 / CC3 / CC4	
	Standby Settings	Standby Monitor Out	On / Off	
		Audio Pass Through	Off/ Audio In / HDMI1 / HDMI2	
	Reset Settings	Reset / Cancel		
INFORMATION	Native Resolution			
	Current System Status	Source		
		Color Mode		
		Resolution		
		Lamp Mode		
		3D Format		
		Color System		
		Equivalent lamp hour		
		Firmware Version		

DISPLAY

Wall Color

Corrects the projected picture’s color when the projection surface is not white.

Aspect Ratio

There are four options to set the image's aspect ratio depending on your input signal source.

Keystone

Corrects any keystoning of the image.

Position

Displays the position adjustment page. To move image, use the directional arrow keys. The values lower position of the page change with every key until they reach their maximum or minimum.

Phase

Adjusts the clock phase to reduce image distortion.

H. Size

Adjusts the horizontal width of the image.

Digital Zoom

Magnifies or reduces the projected image.

3D

This projector features a 3D function which enables you to enjoy the 3D movies, videos, and sporting events in a more realistic way by presenting the depth of the images. You need to wear a pair of 3D glasses to view the 3D images.

- 3D Mode: The default setting is Off. If the projector cannot recognize the 3D format, choose a 3D Mode.
- 3D Sync Invert: When you discover the inversion of the image depth, enable this function to correct the problem.
- Apply 3D Settings: The projector will apply saved 3D settings and keep these settings when you reboot the projector next time.
- Save 3D Settings: The projector will memorize the current 3D settings.

PICTURE

Color Mode

Pre-defined display modes are provided so you can optimize your projector image set-up to suit your program type.

Reference Mode

Selects a display mode that best suits your need for the image quality and further fine-tune the image based on the selections listed on the same page below.

Brightness

Adjusts the brightness of the image.

Contrast

Adjusts the degree of difference between dark and light in the image.

Color

Adjusts the color saturation level -- the amount of each color in a video image.

Tint

Adjusts the red and green color tones of the image.

Sharpness

Adjusts the image to make it look sharper or softer.

Brilliant Color

Selecting On enables a greater brightness increase in mid-tone images.

Color Temperature

The options available for color temperature settings vary according to the signal type selected.

- Cool: Makes images appear bluish white.
- Normal: Maintains normal colorings for white.
- Warm: Makes images appear reddish white.

Color Temperature Fine Tuning

Sets a preferred color temperature.

- R Gain/G Gain/B Gain: Adjusts the contrast levels of Red, Green, and Blue.
- R Offset/G Offset/B Offset: Adjusts the brightness levels of Red, Green, and Blue.

Color Management

The Color Management provides six sets (RGBCMY) of colors to be adjusted. When you select each color, you can independently adjust its range, hue, saturation and gain according to your preference.

- Primary Color: selects a color from among Red, Yellow, Green, Cyan, Blue, or Magenta.
- Hue: Increases in the range will include colors consisted of more proportions of its two adjacent colors.
- Saturation: Is the amount of that color in a video picture. Lower settings produce less saturated colors.
- Gain: The contrast level of the primary color you select will be affected.

Reset Color Settings

Resets current or all color modes.

- Current: returns current display mode to the factory preset settings.
- All: returns color mode settings to the factory preset settings.

SOURCE

Auto Source

If you want the projector to automatically search for the signals, be sure the Auto Source function in the SOURCE menu is On (which is the default of this projector).

SETTINGS 1

Presentation Timer

Reminds the presenter to finish the presentation within a certain time frame.

Language

Sets the language for the On-Screen Display (OSD) menus.

Projection

The projector can be installed on a ceiling or behind a screen, or with one or more mirrors.

Menu Settings

- Menu Display Time: Sets the length of time the OSD will remain active after your last key press. The range is from 5 to 30 seconds in 5-second increments.
- Menu Position: Sets the On-Screen Display (OSD) menu position.
- Reminder Message: Sets whether to display the reminder message.

Operation Settings

- Direct Power On: Selecting On enables the function.
- Signal Power On: Selecting On the projector will turn on automatically when VGA signal is detected. Selecting Off the projector has to be turnned on manually (by keypad or remote).
- Auto Power Off: Allows the projector to turn off automatically if no input signal is detected after a set period of time.
- Quick Cooling: Selecting On enables the function and the projector cooling time will be shortened to a few seconds. If you attempt to restart the projector right after the quick cooling process, it may not be turned on successfully and will rerun its cooling fans.
- Instant Restart: When instant restart is on, users can restart projector immediately within 90 secs after turning off projector.
- Blank Timer: Sets the image blank time when the Blank feature is activated, once elapsed the image will return to the screen.
- Sleep Timer: Sets the auto-shutdown timer. The timer can be set to a value between 30 minutes and 12 hours.

Background Color

Allows you to select which background color will display when no signal is input into the projector.

Splash Screen

Allows you to select which logo screen will display during projector start-up.

SETTINGS 2

High Altitude Mode

Use this function to allow the fans operates at full speed continuously to achieve proper high altitude cooling of the projector. If the projector is installed a filter cover, make aure that High Altitude Mode is set to On.

Audio Settings

- Mute: Sets the mute function.
- Audio Volume: Adjusts the audio volume level.
- Power On/Off Ring Tone: Sets the power on/off ring tone.

Lamp Settings

- Lamp Mode: Using Eco/Dynamic ECO/Long ECO mode will reduces system noise and power consumption. If the Eco/Dynamic ECO/Long ECO mode is selected, the light output will be reduced and result in darker projected pictures, the projector protected for longer working life.
- Reset lamp timer: Resets the light Hour to 0 hours.
- Equivalent lamp hour: Display the lamp's elapsed operating time (in hours).

Security Settings

- Change Password: You will be asked to enter new password or the current password before changing to a new one.
- Change Security: You can activate or disable the password protection once the password is input.

Baud Rate

Selects a baud rate that is identical with your computer's so that you can connect the projector using a suitable RS-232 cable and update or download the projector's firmware. This function is intended for qualified service personnel.

Test Pattern

Selecting On enables the function and the projector displays the grid test pattern. It helps you adjust the image size and focus and check that the projected image is free from distortion.

Closed Caption

- Closed Caption Enable: Activates the function by selecting On when the selected input signal carries closed captions.
- Caption Version: Selects a preferred closed captioning mode. To view captions, select CC1, CC2, CC3, or CC4 (CC1 displays captions in the primary language in your area).

Standby Settings

- Standby Monitor Out: Selecting On enables the function. The projector can output a VGA signal when it is in standby mode and the PC and MONITOR OUT jacks are correctly connected to devices.
- Audio Pass Through: The projector can play sound when it is in standby mode and the corresponding jacks are correctly connected to devices.

Reset Settings

Returns all settings to the factory preset values.

☞ ***Note***

- ***The following settings will not be reset: User 1, User 2, Projector Installation, High Altitude Mode, Security Settings and Baud Rate.***

INFORMATION

Native Resolution

Shows the native resolution of the projector.

Current System Status

- Source: Shows the current signal source.
- Color Mode: Shows the selected mode in the **PICTURE** menu.
- Resolution: Shows the native resolution of the input signal.
- Lamp Mode: Shows the current lamp mode.
- 3D Format: Shows the current 3D mode.
- Color System: Shows input system format RGB or YUV.
- Equivalent lamp hour: Displays the number of hours the lamp has been used.
- Firmware Version: Shows firmware version.

Maintenance

The projector needs proper maintenance. You should keep the lens clean as dust, dirt or spots will project on the screen and diminish image quality. If any other parts need replacing, contact your dealer or qualified service personnel. When cleaning any part of the projector, always switch off and unplug the projector first.

⚠ ***Warning***

- ***Never open any of the covers on the projector. Dangerous electrical voltages inside the projector can cause severe injury. Do not attempt to service this product yourself. Refer all servicing to qualified service personnel.***

Cleaning the Lens

Gently wipe the lens with lens cleaning paper. Do not touch the lens with your hands.

Cleaning the Projector Housing

Gently wipe with a soft cloth. If dirt and stains are not easily removed, use a soft cloth damped with water, or water and neutral detergent, and wipe dry with a soft, dry cloth.

☞ ***Note***

- ***Turn off the projector and remove the AC power cord from the power outlet before beginning maintenance work.***
- ***Make sure the lens is cool before cleaning.***
- ***Do not use detergents or chemicals other than those noted above. Do not use benzene or thinners.***
- ***Do not use chemical sprays.***
- ***Use a soft cloth or lens paper only.***

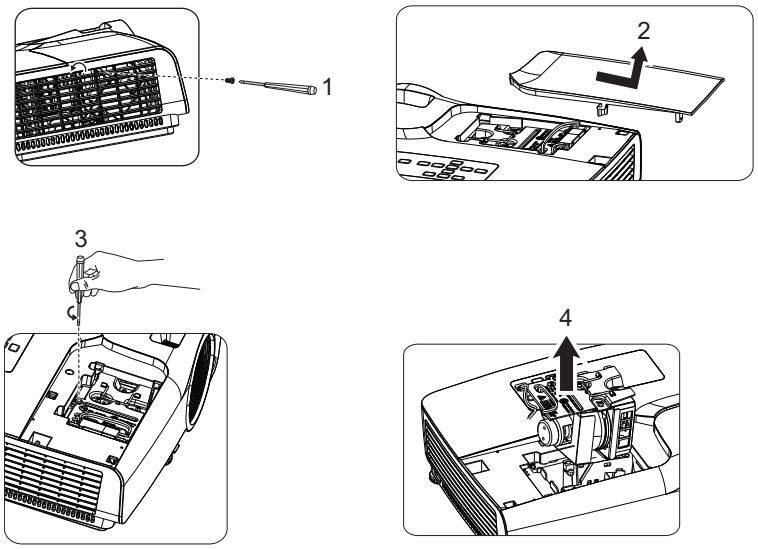
Replacing the Lamp

As the projector operates over time, the brightness of the projector lamp gradually decreases and the lamp becomes more susceptible to breakage. We recommend replacing the lamp if a warning message is displayed. Do not attempt to replace the lamp yourself. Contact the qualified service personnel for replacement.

☞ ***Note***

- ***The lamp is extremely hot right after turning off the projector. If you touch the lamp, you may scald your finger. When you replace the lamp, wait for at least 45 minutes for the lamp to cool down.***
- ***Do not touch the lamp glass at any time. The lamp may explode due to improper handling, including the touching of the lamp glass.***
- ***Lamp lifetime may differ from lamp to lamp and according to the environment of use. There is no guarantee of the same lifetime for each lamp. Some lamps may fail or terminate their lifetime in a shorter period of time than other similar lamps.***
- ***A lamp may explode as a result of vibration, shock or degradation as a result of hours of use as its lifetime draws to an end. Risk of explosion may differ according to the environment or conditions in which the projector and lamp are being used.***
- ***Wear protective gloves and eyeglasses when fixing or detaching the lamp.***
- ***Faster on-off-cycles will damage the lamp and reduce lamp life. Wait at least for 5 minutes to turn off the projector after powering on.***
- ***Do not operate the lamp in proximity to paper, cloth, or other combustible material nor cover it with such materials.***
- ***Do not operate the lamp in an atmosphere containing an inflammable substance, such as thinner.***
- ***Thoroughly ventilate the area or the room when operating the lamp in an oxygen atmosphere (in the air). If ozone is inhaled, it could cause headaches, nausea, dizziness, and other symptoms.***
- ***The inorganic mercury is involved in the lamp. If the lamp bursts, the mercury inside the lamp will be exposed. Leave the area immediately if the lamp shatters while being operated and ventilate the area for at least 30 minutes in order to avoid the inhalation of mercury fumes. Otherwise it could be harmful to user's health.***

1. Turn off the projector.
2. If the projector is installed in a ceiling mount, remove it
3. Unplug the power cord.
4. Use a screwdriver to remove the screw from the cover. (Illustration #1)
   Push up and remove the cover. (Illustration #2)
5. Remove the screw from the lamp module. (Illustration #3)
   Raise the handle, and lift out the module. (Illustration #4)



6. Insert the new lamp module into the projector and tighten the screws.
7. Replace the lamp cover and tighten the screw.
8. Turn on the projector. If the lamp does not turn on after the warm-up period, try reinstalling the lamp.
9. Reset the lamp hour. Refer to the "**SETTINGS 2 > Lamp Settings > Reset lamp timer**" menu.

☞ ***Note***

- ***Dispose the used lamp according to local regulations.***
- ***Ensure that screws are tightened properly. Screws not tightened fully may result in injury or accidents.***
- ***Since the lamp is made of glass, do not drop the unit and do not scratch the glass.***
- ***Do not reuse the old lamp. This could cause the lamp to explode.***
- ***Be sure to turn off the projector and unplug the AC power cord before replacing the lamp.***
- ***Do not use the projector with the lamp cover removed.***

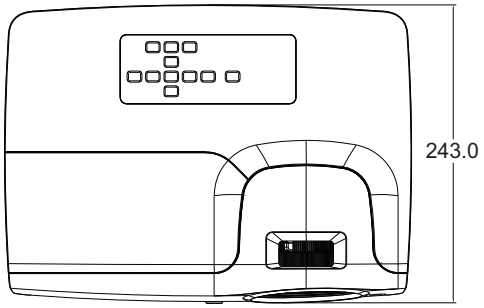
Specifications

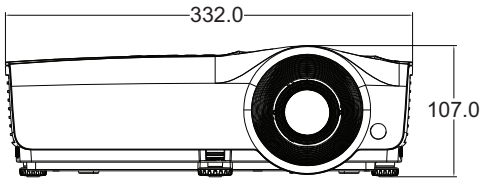
Model name		DS272/ DS27BAA/ MS580/BS570	DX273/ DX27CAA/ MX581/BX571	DW275/ DW27EAA/ MW584/ BW572	DH278/ DH27HAA/ MH588/BH577	DX283-ST/ DX28CAA/ MX595ST/ BX585ST	DW284-ST/ DW28DAAST/ MW596ST/ BW586ST
Display devices		0.55” DLP Chip		0.65” DLP Chip		0.55” DLP Chip	0.65” DLP Chip
Resolution		SVGA (800×600)	XGA (1024×768)	WXGA (1280x800)	1080P (1920x1080)	XGA (1024×768)	WXGA (1280x800)
Lens	F number	F 2.42-2.62			F 2.47-2.66	F 2.65	
	Zoom	1.2x				-	
	Focus	f=22-25.79			f=20.4-24.48	f=7.2	
Input terminal	HDMI	x2					
	D-Sub 15-pin	x2					
	S-Video	x1					
	Video	x1					
	Audio (PC audio jack)	x1					
Output terminals	D-Sub 15-pin	x1					
	Audio (PC audio jack)	x1					
Control terminals	USB (mini- B)	x1					
	RS-232	x1					
Speaker		2Wx1					
Projection lamp		203W					
Environmental Requirements		Operation: Temperature: 0°C to 40°C Humidity: 10%-90% (without condensation) Storage: Temperature: -20°C to 60°C Humidity: 10%-90% (without condensation)					
Power supply		AC 120-240 V, 50 - 60 Hz, 2.60 A					
Power consumption		250 W at Normal Mode					
Dimension		332 mm (W) x 243 mm (D) x 107 mm (H)				332 mm (W) x 243.6 mm (D) x 107 mm (H)	
Weight		2.6 kg (5.7 lbs)					
Note: Design and Specifications are subject to change without prior notice.							

Dimensions

SVGA/XGA/WXGA/1080P series

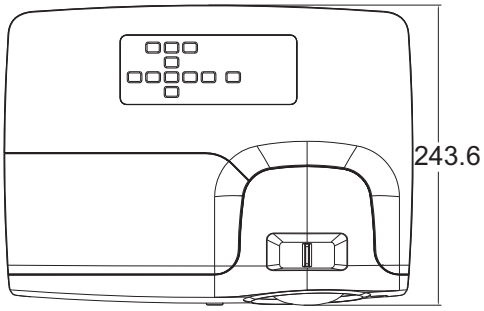
332 mm (W) x 243 mm (D) x 107 mm (H)

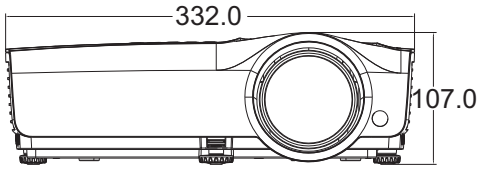




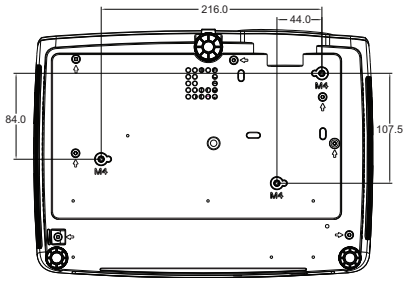
XGA-ST/WXGA-ST series

332 mm (W) x 243.6 mm (D) x 107 mm (H)





Ceiling mount installation



Ceiling mount screws:
M4 x 8 （Max. L = 8mm）

Unit: mm

Appendix

LED Indicator Messages

Light			Status & Description
POWER	**TEMP**	**LAMP**	
System Message			
Orange	Off	Off	Stand-by mode
Green Flashing	Off	Off	Powering up
Green	Off	Off	Normal operation
Orange Flashing	Off	Off	Normal power-down cooling
Red Flashing	Red Flashing	Red Flashing	Download
Green	Off	Red	CW start fail
Burn-In Messages			
Green	Off	Off	Burn-in ON
Green	Green	Green	Burn-in OFF
Lamp Error Messages			
Off	Off	Red	Lamp1 error in normal operation
Off	Off	Orange Flashing	Lamp is not lit up
Thermal Error Messages			
Red	Red	Off	Fan 1 error (the actual fan speed is outside the desired speed)
Red	Orange Flashing	Off	Fan 2 error (the actual fan speed is outside the desired speed)
Red	Green	Off	Fan 3 error (the actual fan speed is outside the desired speed)
Green	Red	Off	Temperature 1 error (over limited temperature)
Green	Red Flashing	Off	Thermal Sensor 1 open error
Green	Green	Off	Thermal Sensor 1 short error
Green Flashing	Green Flashing	Off	Thermal IC #1 I2C Connection error

Compatibility Modes

1. VGA Analog

Supported timing for PC input

Resolution	Timing	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Pixel Frequency (MHz)	3D Field Sequential	3D top botto m	3D side by side
640 x 480	VGA_60	59.94	31.469	25.175	◎	◎	◎
	VGA_72	72.809	37.861	31.500			
	VGA_75	75	37.5	31.500			
	VGA_85	85.008	43.269	36.000			
720 x 400	720 x 400_70	70.087	31.469	28.3221			
800 x 600	SVGA_60	60.317	37.879	40.000	◎	◎	◎
	SVGA_72	72.188	48.077	50.000			
	SVGA_75	75	46.875	49.500			
	SVGA_85	85.061	53.674	56.250			
	SVGA_120 (Reduce Blanking)	119.854	77.425	83.000	◎		
1024 x 768	XGA_60	60.004	48.363	65.000	◎	◎	◎
	XGA_70	70.069	56.476	75.000			
	XGA_75	75.029	60.023	78.750			
	XGA_85	84.997	68.667	94.500			
	XGA_120 (Reduce Blanking)	119.989	97.551	115.5	◎		
1152 x 864	1152 x 864_75	75	67.5	108			
1280 x 720	1280 x 720_60	60	45	74.250	◎	◎	◎
	1280 x 720_120	120	90.000	148.500	◎		
1280 x 768	1280 x 768_60	59.87	47.776	79.5	◎	◎	◎
1280 x 800	WXGA_60	59.81	49.702	83.500	◎	◎	◎
	WXGA_75	74.934	62.795	106.500			
	WXGA_85	84.88	71.554	122.500			
	WXGA_120 (Reduce Blanking)	119.909	101.563	146.25	◎		
1280 x 1024	SXGA_60	60.02	63.981	108.000		◎	◎
	SXGA_75	75.025	79.976	135.000			
	SXGA_85	85.024	91.146	157.500			
1280 x 960	1280 x 960_60	60	60	108.000		◎	◎
	1280 x 960_85	85.002	85.938	148.500			
1360 x 768	1360 x 768_60	60.015	47.712	85.5		◎	◎
1440 x 900	WXGA+_60	59.887	55.935	106.500		◎	◎
1400 x 1050	SXGA+_60	59.978	65.317	121.750		◎	◎
1600 x 1200	UXGA	60	75	162.000		◎	◎
1680 x 1050	1680 x 1050_60	59.954	65.29	146.25		◎	◎
640 x 480 @67Hz	MAC13	66.667	35	30.240			
832 x 624 @75Hz	MAC16	74.546	49.722	57.280			
1024 x 768 @75Hz	MAC19	75.02	60.241	80.000			
1152 x 870 @75Hz	MAC21	75.06	68.68	100.000			

- The timings showing above may not be supported due to EDID file and VGA graphic card limitations. It is possible that some timings cannot be chosen.

Supported timing for Component-YPbPr input

Timing	Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Pixel Frequency (MHz)	3D Field Sequential
480i	720 x 480	15.73	59.94	13.5	◎
480p	720 x 480	31.47	59.94	27	◎
576i	720 x 576	15.63	50	13.5	
576p	720 x 576	31.25	50	27	
720/50p	1280 x 720	37.5	50	74.25	
720/60p	1280 x 720	45.00	60	74.25	◎
1080/50i	1920 x 1080	28.13	50	74.25	
1080/60i	1920 x 1080	33.75	60	74.25	
1080/24P	1920 x 1080	27	24	74.25	
1080/25P	1920 x 1080	28.13	25	74.25	
1080/30P	1920 x 1080	33.75	30	74.25	
1080/50P	1920 x 1080	56.25	50	148.5	
1080/60P	1920 x 1080	67.5	60	148.5	

2. HDMI Digital

Supported timing for PC input

Resolution	Timing	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Pixel Frequency (MHz)	3D Field Sequential	3D top botto m	3D side by side
640 x 480	VGA_60	59.94	31.469	25.175	◎	◎	◎
	VGA_72	72.809	37.861	31.500			
	VGA_75	75	37.5	31.500			
	VGA_85	85.008	43.269	36.000			
720 x 400	720 x 400_70	70.087	31.469	28.3221			
800 x 600	SVGA_60	60.317	37.879	40.000	◎	◎	◎
	SVGA_72	72.188	48.077	50.000			
	SVGA_75	75	46.875	49.500			
	SVGA_85	85.061	53.674	56.250			
	SVGA_120 (Reduce Blanking)	119.854	77.425	83.000	◎		
1024 x 768	XGA_60	60.004	48.363	65.000	◎	◎	◎
	XGA_70	70.069	56.476	75.000			
	XGA_75	75.029	60.023	78.750			
	XGA_85	84.997	68.667	94.500			
	XGA_120 (Reduce Blanking)	119.989	97.551	115.5	◎		
1152 x 864	1152 x 864_75	75	67.5	108			
1280 x 720	1280 x 720_60	60	45	74.250	◎	◎	◎
1280 x 768	1280 x 768_60	59.87	47.776	79.5	◎	◎	◎
1280 x 800	WXGA_60	59.81	49.702	83.500	◎	◎	◎
	WXGA_75	74.934	62.795	106.500			
	WXGA_85	84.88	71.554	122.500			
	WXGA_120 (Reduce Blanking)	119.909	101.563	146.25	◎		
1280 x 1024	SXGA_60	60.02	63.981	108.000		◎	◎
	SXGA_75	75.025	79.976	135.000			
	SXGA_85	85.024	91.146	157.500			
1280 x 960	1280 x 960_60	60	60	108.000		◎	◎
	1280 x 960_85	85.002	85.938	148.500			
1360 x 768	1360 x 768_60	60.015	47.712	85.5		◎	◎
1440 x 900	WXGA+_60	59.887	55.935	106.500		◎	◎
1400 x 1050	SXGA+_60	59.978	65.317	121.750		◎	◎
1600 x 1200	UXGA	60	75	162.000		◎	◎
1680 x 1050	1680 x 1050_60	59.954	65.29	146.25		◎	◎

640 x 480 @67Hz	MAC13	66.667	35	30.240			
832 x 624 @75Hz	MAC16	74.546	49.722	57.280			
1024 x 768 @75Hz	MAC19	75.02	60.241	80.000			
1152 x 870 @75Hz	MAC21	75.06	68.68	100.000			
1920 x 1080	1920 x 1080_60	67.5	60	148.5		◎	◎
1920 x 1200	1920 x 1200_60 (Reduce Blanking)	59.95	74.038	154.000		◎	◎

- The timings showing above may not be supported due to EDID file and VGA graphic card limitations. It is possible that some timings cannot be chosen.

Supported timing for video input

Timing	Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)	Pixel Frequency (MHz)	3D Field Sequential	3D Frame Packing	3D Top-Bottom	3D Side by Side
480i	720 (1440) x 480	15.73	59.94	27	◎			
480p	720 x 480	31.47	59.94	27	◎			
576i	720 (1440) x 576	15.63	50	27				
576p	720 x 576	31.25	50	27				
720/50p	1280 x 720	37.5	50	74.25		◎	◎	◎
720/60p	1280 x 720	45.00	60	74.25	◎	◎	◎	◎
1080/50i	1920 x 1080	28.13	50	74.25				◎
1080/60i	1920 x 1080	33.75	60	74.25				◎
1080/24P	1920 x 1080	27	24	74.25		◎	◎	◎
1080/25P	1920 x 1080	28.13	25	74.25				
1080/30P	1920 x 1080	33.75	30	74.25				
1080/50P	1920 x 1080	56.25	50	148.5			◎	◎
1080/60P	1920 x 1080	67.5	60	148.5			◎	◎

3. Video/S-Video

Supported timing for Video input

Video mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Color sub-carrier Frequency (MHz)	3D Field Sequential
NTSC	15.73	60	3.58	◎
PAL	15.63	50	4.43	
SECAM	15.63	50	4.25 or 4.41	
PAL-M	15.73	60	3.58	
PAL-N	15.63	50	3.58	
PAL-60	15.73	60	4.43	
NTSC4.43	15.73	60	4.43	

Troubleshooting

Refer to the symptoms and measures listed below before sending the projector for repairs. If the problem persists, contact your local reseller or service center. Please refer to "LED Indicator Messages" as well.

Start-up problems

If no lights turn on:

- Be sure that the power cord is securely connected to the projector and the other end is plugged into an outlet with power.
- Press the power button again.
- Unplug the power cord and wait for a short while, then plug it in and press the power button again.

Image problems

If the searching source is displayed:

- Press **Source** on the remote control to select an active input source.
- Be sure the external source is turned on and connected.
- For a computer connection, ensure your notebook computer's external video port is turned on. Refer to the computer manual.

If the image is out of focus:

- While displaying the on-screen menu, adjust the focus ring. (The image size should not change; if it does, you are adjusting the zoom, not the focus.)
- Check the projection lens to see if it needs cleaning.

If the image is flickering or unstable for a computer connection:

- Press **Auto Sync** on the remote control.

Remote control problems

If the remote control does not operate:

- Be sure nothing is blocking the remote control receiver on the front of the projector. Use the remote control within the effective range.
- Aim the remote control at the screen or at the front or back of the projector.
- Move the remote control so it is more directly in front of or behind the projector and not as far to the side.

RS-232 Protocol

RS-232 Setting

Baud rate:	9600
Parity check:	None
Data bit:	8
Stop bit:	1
Flow control:	None

Function	Type	Operation	ASCII	HEX
Power	Write	Power On	<CR>$pow=on#<CR>	0D 24 50 4F 57 3D 4F 4E 23 0D
	Write	Power off	<CR>$pow=off#<CR>	0D 24 50 4F 57 3D 4F 46 46 23 0D
	Read	Power Status	<CR>$pow=?#<CR>	0D 24 50 4F 57 3D 3F 23 0D
Source Selection	Write	COMPUTER/ YPbPr	<CR>$sour=RGB#<CR>	0D 24 53 4F 55 52 3D 52 47 42 23 0D
	Write	COMPUTER 2/ YPbPr2	<CR>$sour=RGB2#<CR>	0D 24 53 4F 55 52 3D 52 47 42 32 23 0D
	Write	HDMI	<CR>$sour=hdmi#<CR>	0D 24 53 4F 55 52 3D 48 44 4D 49 23 0D
	Write	HDMI2	<CR>$sour=hdmi2#<CR>	0D 24 53 4F 55 52 3D 48 44 4D 49 32 23 0D
	Write	Composite	<CR>$sour=vid#<CR>	0D 24 53 4F 55 52 3D 56 49 44 23 0D
	Write	S-Video	<CR>$sour=svid#<CR>	0D 24 53 4F 55 52 3D 53 56 49 44 23 0D
	Read	Current source	<CR>$sour=?#<CR>	0D 24 53 4F 55 52 3D 3F 23 0D
Audio Control	Write	Mute On	<CR>$mute=on#<CR>	0D 24 4D 55 54 45 3D 4F 4E 23 0D
	Write	Mute Off	<CR>$mute=off#<CR>	0D 24 4D 55 54 45 3D 4F 46 46 23 0D
	Read	Mute Status	<CR>$mute=?#<CR>	0D 24 4D 55 54 45 3D 3E 3F 23 0D
	Write	Volume +	<CR>$vol=+#<CR>	0D 24 56 4F 4C 3D 2B 23 0D
	Write	Volume -	<CR>$vol=-#<CR>	0D 24 56 4F 4C 3D 2D 23 0D
	Read	Volume Status	<CR>$vol=?#<CR>	0D 24 56 4F 4C 3D 3F 23 0D

Color Mode	Write	Bright	<CR>$appmod=dynamic#<CR>	0D 24 41 50 50 4D 4F 44 3D 44 59 4E 41 4D 49 43 23 0D
	Write	Presentation	<CR>$appmod=preset#<CR>	0D 24 41 50 50 4D 4F 44 3D 50 52 45 53 45 54 23 0D
	Write	sRGB	<CR>$appmod=srgb#<CR>	0D 24 41 50 50 4D 4F 44 3D 53 52 47 42 23 0D
	Write	Movie	<CR>$appmod=cine#<CR>	0D 24 41 50 50 4D 4F 44 3D 43 49 4E 45 23 0D
	Write	Standard	<CR>$appmod=std#<CR>	0D 24 41 50 50 4D 4F 44 3D 53 54 44 23 0D
	Write	User1	<CR>$appmod=user1#<CR>	0D 24 41 50 50 4D 4F 44 3D 55 53 45 52 31 23 0D
	Write	User2	<CR>$appmod=user2#<CR>	0D 24 41 50 50 4D 4F 44 3D 55 53 45 52 32 23 0D
	Read	Color Mode	<CR>$appmod=?#<CR>	0D 24 41 50 50 4D 4F 44 3D 3F 23 0D

Picture Setting	Write	Contrast +	<CR>$con=+#<CR>	0D 24 43 4F 4E 3D 2B 23 0D
	Write	Contrast -	<CR>$con=-#<CR>	0D 24 43 4F 4E 3D 2D 23 0D
	Read	Contrast value	<CR>$con=?#<CR>	0D 24 43 4F 4E 3D 3F 23 0D
	Write	Brightness +	<CR>$bri=+#<CR>	0D 24 42 52 49 3D 2B 23 0D
	Write	Brightness -	<CR>$bri=-#<CR>	0D 24 42 52 49 3D 2D 23 0D
	Read	Brightness value	<CR>$bri=?#<CR>	0D 24 42 52 49 3D 3F 23 0D
	Write	Color +	<CR>$color=+#<CR>	0D 24 43 4F 4C 4F 52 3D 2B 23 0D
	Write	Color -	<CR>$color=-#<CR>	0D 24 43 4F 4C 4F 52 3D 2D 23 0D
	Read	Color value	<CR>$color=?#<CR>	0D 24 43 4F 4C 4F 52 3D 3F 23 0D
	Write	Sharpness +	<CR>$sharp=+#<CR>	0D 24 53 48 41 52 50 3D 2B 23 0D
	Write	Sharpness -	<CR>$sharp=-#<CR>	0D 24 53 48 41 52 50 3D 2D 23 0D
	Read	Sharpness value	<CR>$sharp=?#<CR>	0D 24 53 48 41 52 50 3D 3F 23 0D
	Write	Aspect 4:3	<CR>$asp=4:3#<CR>	0D 24 41 53 50 3D 34 3A 33 23 0D
	Write	Aspect 16:9	<CR>$asp=16:9#<CR>	0D 24 41 53 50 3D 31 36 3A 39 23 0D
	Write	Aspect 16:10	<CR>$asp=16:10#<CR>	0D 24 41 53 50 3D 31 36 3A 31 30 23 0D
	Write	Aspect Auto	<CR>$asp=AUTO#<CR>	0D 24 41 53 50 3D 41 55 54 4F 23 0D
	Write	Aspect Real	<CR>$asp=REAL#<CR>	0D 24 41 53 50 3D 52 45 41 4C 23 0D
	Write	Zoom In	<CR>$zoomI#<CR>	0D 24 5A 4F 4F 4D 49 23 0D
	Write	Zoom out	<CR>$zoomO#<CR>	0D 24 5A 4F 4F 4D 4F 23 0D
	Write	Auto	<CR>$auto#<CR>	0D 24 41 55 54 4F 23 0D
Baud Rate	Write	2400	<CR>$baud=2400#<CR>	0D 24 42 41 55 44 3D 32 34 30 30 23 0D
	Write	4800	<CR>$baud=4800#<CR>	0D 24 42 41 55 44 3D 34 38 30 30 23 0D
	Write	9600	<CR>$baud=9600#<CR>	0D 24 42 41 55 44 3D 39 36 30 30 23 0D
	Write	14400	<CR>$baud=14400#<CR>	0D 24 42 41 55 44 3D 31 34 34 30 30 23 0D
	Write	19200	<CR>$baud=19200#<CR>	0D 24 42 41 55 44 3D 31 39 32 30 30 23 0D
	Write	38400	<CR>$baud=38400#<CR>	0D 24 42 41 55 44 3D 33 38 34 30 30 23 0D

	Write	57600	<CR>$baud=57600#<CR>	0D 24 42 41 55 44 3D 35 37 36 30 30 23 0D
	Write	115200	<CR>$baud=115200#<CR>	0D 24 42 41 55 44 3D 31 31 35 32 30 30 23 0D
	Read	Current Baud Rate	<CR>$baud=?#<CR>	0D 24 42 41 55 44 3D 3F 23 0D
Lamp Control	Read	Equivalent lamp hour	<CR>$ltim=?#<CR>	0D 24 4C 54 49 4D 3D 3F 23 0D
	Write	Normal mode	<CR>$lampm=lnor#<CR>	0D 24 4C 41 4D 50 4D 3D 4C 4E 4F 52 23 0D
	Write	Economic mode	<CR>$lampm=eco#<CR>	0D 24 4C 41 4D 50 4D 3D 45 43 4F 23 0D
	Write	Dynamic Eco mode	<CR>$lampm=seco#<CR>	0D 24 4C 41 4D 50 4D 3D 73 45 43 4F 23 0D
	Read	Lamp Mode Status	<CR>$lampm=?#<CR>	0D 24 4C 41 4D 50 4D 3D 3F 23 0D
Miscellaneous	Write	Blank On	<CR>$blank=on#<CR>	0D 24 42 4C 41 4E 4B 3D 4F 4E 23 0D
	Write	Blank Off	<CR>$blank=off#<CR>	0D 24 42 4C 41 4E 4B 3D 4F 46 46 23 0D
	Read	Blank Status	<CR>$blank=?#<CR>	0D 24 42 4C 41 4E 4B 3D 3F 23 0D
	Write	Freeze On	<CR>$freeze=on#<CR>	0D 24 46 52 45 45 5A 45 3D 4F 4E 23 0D
	Write	Freeze Off	<CR>$freeze=off#<CR>	0D 24 46 52 45 45 5A 45 3D 4F 46 46 23 0D
	Read	Freeze Status	<CR>$freeze=?#<CR>	0D 24 46 52 45 45 5A 45 3D 3F 23 0D
	Write	Menu On	<CR>$menu=on#<CR>	0D 24 4D 45 4E 55 3D 4F 4E 23 0D
	Write	Menu Off	<CR>$menu=off#<CR>	0D 24 4D 45 4E 55 3D 4F 46 46 23 0D
	Write	Up	<CR>$up#<CR>	0D 24 55 50 23 0D
	Write	Down	<CR>$down#<CR>	0D 24 44 4F 57 4E 23 0D
	Write	Right	<CR>$right#<CR>	0D 24 4C 45 46 54 23 0D
	Write	Left	<CR>$left#<CR>	0D 24 52 49 47 48 54 23 0D
	Write	Enter	<CR>$enter#<CR>	0D 24 45 4E 54 45 52 23 0D