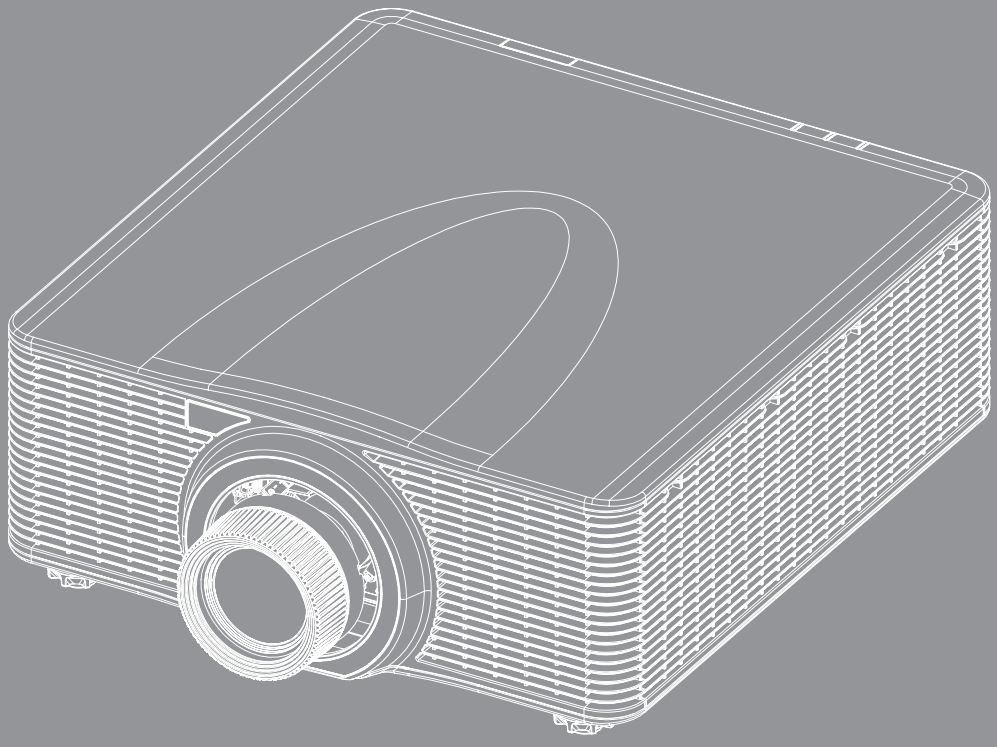
DLP® Projector



User manual

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SAFETY

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

Please follow all warnings, precautions and maintenance as recommended in this user manual.

Important safety instructions

- Do not block any ventilation openings. To ensure reliable operation of the projector and to protect from overheating, it is recommended to install the projector in a location that does not block ventilation. As an example, do not place the projector on a crowded surface. Do not put the projector in an enclosure such as a book case or a cabinet that restricts air flow.
- To reduce the risk of fire and/or electric shock, do not expose the projector to rain or moisture. Do not install near heat sources such as radiators, heaters, stoves or any other apparatus such as amplifiers that emits heat.
- 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.
- Do not use under the following conditions:
  - In extremely hot, cold or humid environments.
    (i) Ensure that the ambient room temperature is within 0°C~40°C (32°F~104°F)
    (ii) Relative humidity is 10% ~ 85%
  - In areas susceptible to excessive dust and dirt.
  - Near any appliance generating a strong magnetic field.
  - In direct sunlight.
- 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 place the projector on an unstable surface. The projector may fall over resulting in injury or the projector may become damaged.
- Do not block the light coming out of the projector lens when in operation. The light will heat the object and cause it to melt, burn or start a fire.
- Please do not open or disassemble the projector as this may cause electric shock.
- 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.
- See projector enclosure for safety related markings.
- The unit should only be repaired by authorized service personnel.
- Only use attachments/accessories specified by the manufacturer.
- Do not look straight into the projector lens during operation. The bright light may harm your eyes.
- 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 projector housing. Do not use abrasive cleaners, waxes or solvents to clean the unit.

- Disconnect the power plug from the AC outlet if the product will not be used for a long period of time.
- Do not setup the projector in places where it might be subjected to vibration or shock.
- Do not touch the lens with bare hands.
- Do not clean the lens when the projector is turned on. Any damage resulting from doing so will void the warranty.
- Remove battery/batteries from remote control before storage. If the battery/batteries are left in the remote for long periods, they may leak.
- Do not use or store the projector in places where smoke from oil or cigarettes may be present, as it can adversely affect the quality of the projector performance.
- Please follow the correct projector orientation installation as non standard installation may affect the projector performance.
- Use a power strip and/or surge protector. As power outages and brown-outs can KILL devices.
- Warning: Do not remove the earthing pin on the mains plugs. This apparatus is equipped with a three prong earthing type mains plug. This plug will only fit an earthing-type mains socket. This is a safety feature. If you are unable to insert the plug into the mains socket, contact an electrician.
- Caution: This equipment is equipped with a three-pin grounding-type power plug. Do not remove the grounding pin on the power plug. This plug will only fit a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician.
- These requirements apply to consumer products containing button batteries or coin cells batteries. They do not apply to products that by virtue of their dedicated purpose and instructions are not intended to be used in locations where they may be accessed by children, such as products for dedicated professional use or commercial use in locations where children are not normally or typically present.

Light Intensity Hazard Distance

This product is classified as CLASS 1 LASER PRODUCT - RISK GROUP 2 of IEC 60825-1 : 2014 and also complies with 21 CFR 1040.10 and 1040.11 except for conformance as a Risk Group 2 LIP as defined in IEC 62471-5:Ed. 1.0. For more information, see Laser Notice No. 57, dated May 8, 2019.

When set up with BX-CTA13 lens (throw ratio greater than 2.92), this projector may become Class 1 Laser Product-Risk Group 3 (RG3); with other lens (throw ratio less than 2.92), this projector may become Class 1 Laser Product-Risk Group 2 (RG2) according to IEC 60825-1:2014 and IEC 62471-5: 2015, and also make a variance approvals under 21 CFR 1010.4 for RG3 LIP according to Classification and Requirements for Laser Illuminated Projectors (LIPs) (Laser Notice No. 57).

Projection Lens	Throw Ratio	Classification and Requirements for Laser Illuminated Projectors (LIPs)	
• BX-CAA01/ BX-CTA01	• 0.95-1.22	• HD: N/A	• IEC 62471-5: 2015 • IEC 60825-1: 2014 • CLASS 1 LASER PRODUCT RISK GROUP 2
• BX-CAA03/ BX-CTA03	• 1.52-2.92		
• BX-CAA06/ BX-CTA06	• 1.22-1.52		
• BX-CTA15	• 0.75-0.95		
• BX-CTA16	• 0.361(120")		
• BX-CTA17	• 0.65-0.75		

Projection Lens	Throw Ratio	Classification and Requirements for Laser Illuminated Projectors (LIPs)	
• BX-CTA13	• 2.9-5.5	• HD: 2.2 meters	• IEC 62471-5: 2015 • IEC 60825-1: 2014 • CLASS 1 LASER PRODUCT RISK GROUP 3

Laser radiation safety information

To ensure safe operation, read all laser safety precautions before installing and operating the projector.

- This projector is class 1 laser product of IEC/EN 60825-1:2014 and risk group 2 with the requirements of IEC

62471-5:2015.

- This projector uses extremely high brightness laser. Do not stare directly into the light beam, as the extremely high brightness may cause permanent eye damage. (Risk Group 2 of IEC 62471-5:2015).
- No direct exposure to the beam shall be permitted. (Risk Group 3 of IEC 62471-5:2015).
- This product is not for household use.
- Possibly hazardous optical radiation emitted from this product.
- This projector has a built-in Class 4 laser module. Never attempt to disassemble or modify the laser module.
- Any operation or adjustment not specifically instructed in the User manual creates the risk of hazardous laser radiation exposure.
- Do not stare into beam when the projector is on. When turning on the projector, make sure no one within projection range is looking into the lens.
- Follow the control, adjustment, or operation procedures to avoid damage or injury from exposure to laser radiation.
- The instructions for the assembly, operation, and maintenance include clear warnings to avoid possible exposure to hazardous laser radiation.
- We recommend you install this projector above the reach of children.
- Notice is given to supervise children and to never allow them to stare into the projector beam at any distance from the projector.
- Notice is given to use caution when using the remote control for starting the projector while in front of the projection lens.
- Notice is given to the user to avoid the use of optical aids such as binoculars or telescopes inside the beam.

Product safety labels

Light beam related safety labels

Label image	Label description
	"WARNING: MOUNT ABOVE THE REACH AND SIGHT OF CHILDREN." The use of a ceiling mount is recommended with this product to place it above the eye level of children. Additional warning against eye exposure for close exposures less than 1 m.
	FDA laser variance (US projectors only)
	This product is classified as Class 1 Laser Product-Risk Group 2 of IEC 60825-1:2014 and also complies with 21 CFR 1040.10 and 1040.11 as a Risk Group 2, LIP (Laser Illuminated Projector) as defined in IEC 62471-5:Ed.1.0. For more information, see Laser Notice No. 57, dated May 8, 2019.
	This projector may become Risk Group 3 product when an interchangeable lens with throw ratio greater than 2.92 is installed. Refer to the manual for the lens list and hazard distance before operation. Such combinations of projector and lens are intended for professional use only, and are not intended for consumer use. Not for household use. No direct exposure to beam shall be permitted, which can cause injury to the retina in the back of the eye. As with any bright light source, do not stare into the beam, RG2 IEC 62471-5:2015

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Disclaimer

The information in this document is subject to change without notice. The manufacturer makes no representations or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. The manufacturer reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation of the manufacturer to notify any person of such revision or changes.

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HDBaseT™ and the HDBaseT Alliance logo are trademarks of the HDBaseT Alliance.

All other product names used in this manual are the properties of their respective owners and are Acknowledged.

FCC

This device has been tested and found to comply with the limits for a Class A 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 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 A digital apparatus complies with Canadian ICES-003.

Remarque à l’intention des utilisateurs canadiens

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

Declaration of conformity for EU countries

- EMC Directive 2014/30/EU (including amendments)
- Low Voltage Directive 2014/35/EU
- Radio Equipment Directive 2014/53/EU (if product has RF function)
- RoHS Directive 2011/65/EU

WEEE

Disposal instructions

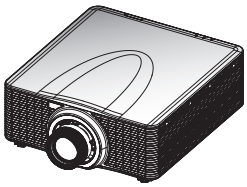
Do not throw this electronic device into the trash when discarding. To minimize pollution and ensure utmost protection of the global environment, please recycle it.

INTRODUCTION

Package overview

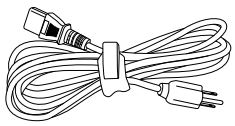
Carefully unpack and verify that the projector comes with all the standard accessories shown below. Some accessories may not be available depending on the projector model, specification and your region of purchase. The warranty card is only supplied in specific regions. Please check with your place of purchase or consult your dealer for more information.

Standard accessories



Projector

Remote control(*)



Power lead

☑ Quick Start User Manual
☑ Warranty Card(**)

Documentation

Lens ring for BX-CAA01/BX-CTA01/ BX-CAA03/BX-CTA03/ BX-CTA13

Lens ring for BX-CAA06/BX-CTA06

Note:

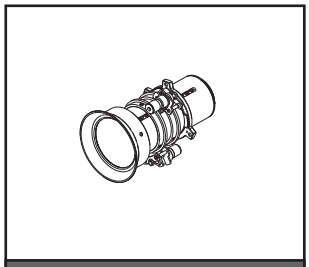
- *(*)The remote control requires two AAA batteries. See Installing/replacing the batteries on page 27 for more information.*
- *(**) For European warranty Information, please visit www.optoma.com.*

Please scan the OPAM warranty QR code or visit the following URL: https://www.optoma.com/us/support/warranty-and-return-policy/

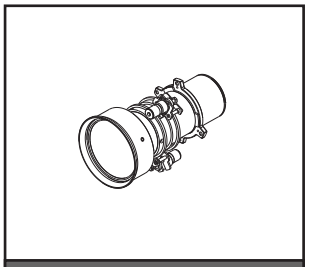
Please scan the QR code or visit the following URL: https://www.optoma.com/support/download

INTRODUCTION

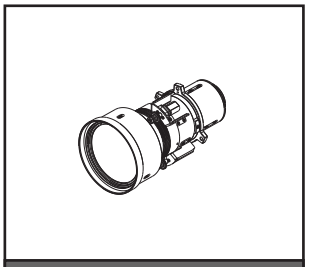
Optional accessories



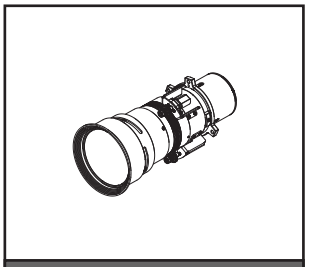
Optional lens
BX-CAA01/BX-CTA01
(0.95-1.22)



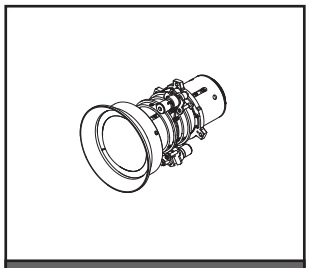
Optional lens
BX-CAA03/BXCTA03
(1.52-2.92)



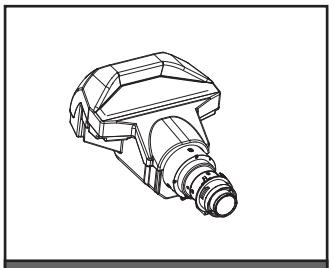
Optional lens
BX-CAA06/BX-CTA06
(1.22-1.52)



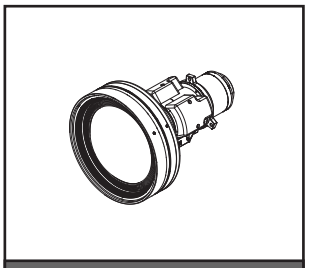
Optional lens
BX-CTA13 (2.9-5.5)



Optional lens
BX-CTA15 (0.75-0.95)



Optional lens
BX-CTA16 (0.361(120”))

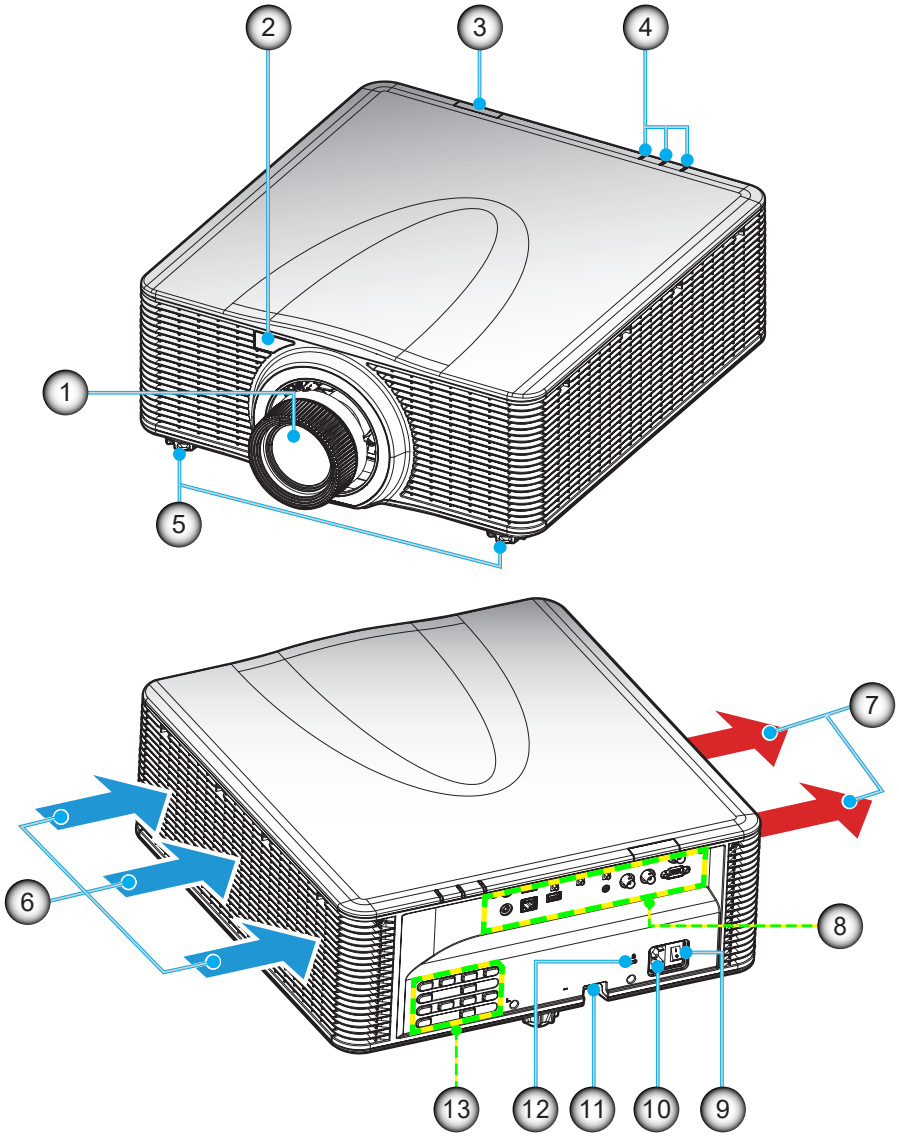


Optional lens
BX-CTA17 (0.65-0.75)

Note: *The accessories may vary depending on model, specification and region.*

INTRODUCTION

Product overview



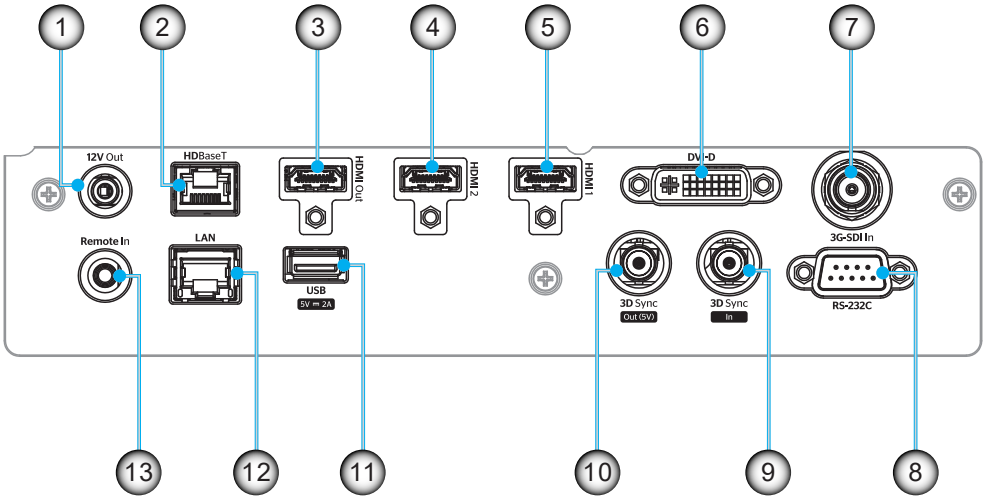
No	Item	No	Item
1.	Lens	8.	Input / Output
2.	Front IR Receiver	9.	Power Switch
3.	Top IR Receiver	10.	Power Socket
4.	LED Status Indicators	11.	Security Bar
5.	Tilt-Adjustment Feet	12.	Kensington™ Lock Port
6.	Ventilation (inlet)	13.	Keypad
7.	Ventilation (outlet)		

Note: *Do not block projector inlet or outlet air vents.*

INTRODUCTION

Connections

Rear I/O panel

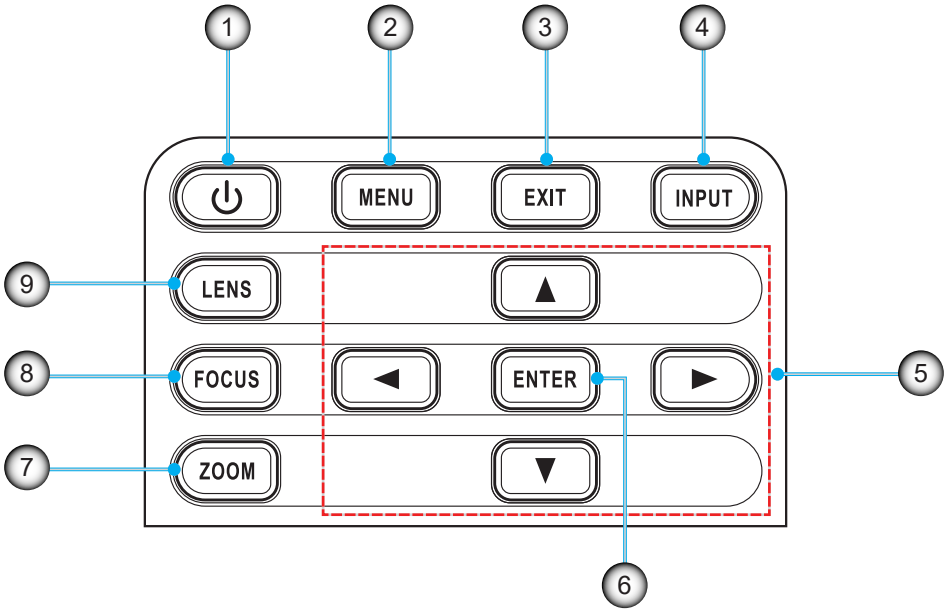


No	IO	Type	Cable	Device Example
1.	12V OUT	IO port	12V Cable	Device
2.	HDBaseT	Input signal	RJ-45 Cable	HDBaseT set-top box
3.	HDMI OUT	Output	HDMI Cable	Screen, Projector, Display device
4.	HDMI 2 IN	Input signal	HDMI Cable	Device
5.	HDMI 1 IN	Input signal	HDMI Cable	Device
6.	DVI-D	Input signal	DVI-D Cable	Device
7.	3G-SDI IN	Input signal	3G-SDI Cable	Device of 3G-SDI signal
8.	RS-232C	IO port	RS-232C Cable	Device
9.	3D SYNC IN	IO port	3D SYNC Cable	Device of 3D signal
10.	3D SYNC OUT	IO port	3D SYNC Cable	3D Emitter
11.	USB TYPE-A	IO port	USB Cable	Only for power supply
12.	ETHERNET	IO port	RJ-45 Cable	Device, Internet
13.	REMOTE IN	IO port	TRS Cable	Remote control

Note: *The USB port is for power (5V; 2A) delivery only.*

INTRODUCTION

Keypad

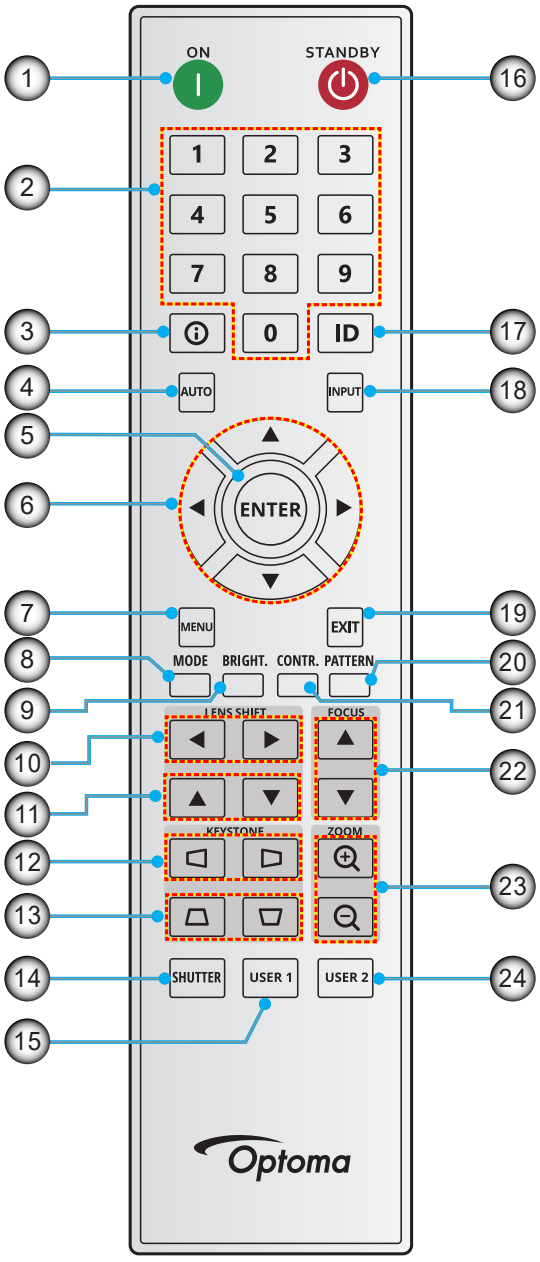


No	Item	No	Item
1.	Power key	6.	ENTER
2.	MENU	7.	ZOOM
3.	EXIT	8.	FOCUS
4.	INPUT	9.	LENS
5.	Arrow keys		

INTRODUCTION

Remote control

Button location



No	Button	Function
1.	Power On	Turn the projector on.
2.	Number Keys	Input numbers (0-9)
3.	Info	Display information on the source image.
4.	Auto	Automatically synchronize the projector to an input source.
5.	Enter	Confirm an selection.
6.	Arrow Keys	Use arrow keys to navigate through the menu or select the appropriate settings.
7.	Menu	Show the main menu on the screen.
8.	Mode	Press to select the preset display mode.
9.	Bright. (brightness)	Set the brightness of the image.
10.	Lens Shift (horizontal)	Adjust the image position horizontally.
11.	Lens Shift (vertical)	Adjust the image position vertically.
12.	Keystone (horizontal)	Adjust a horizontally keystone image.
13.	Keystone (vertical)	Adjust a vertically keystone image.
14.	Shutter	Momentarily turn off/on the screen (AV Mute).
15.	User 1	Press to assign custom functions. See user guide for more info.
16.	Standby	Turn the projector off.
17.	ID	Set the projector address.
18.	Input	Select an input source manually.
19.	Exit	Back to the previous menu.
20.	Pattern	Display the test patterns.
21.	Contr. (Contrast)	Set the contrast of the image.
22.	Focus	Adjust the image focus.
23.	Zoom In/Zoom Out	Adjust the image size.
24.	User 2	Press to assign custom functions. See user guide for more info.

SETUP AND INSTALLATION

Installing the projection lens

Before setting up the projector, install the projection lens in to the projector.

在安装或替换镜头前，关掉投影机的电源。

在镜头安装联接过程中，避免使用遥控器或投影机按键板的按钮调节侧平移镜头或缩放/聚焦。

Before installing or replacing the lens, switch off the power to the projector.

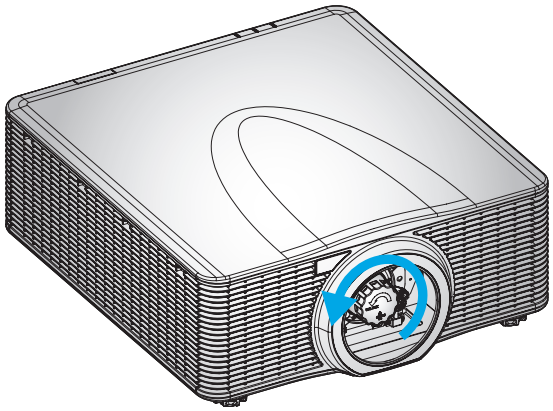
Avoid using the remote control or projector keypad button to adjust the lens shift or zoom/focus while the lens attachment process is carried out.

IMPORTANT!

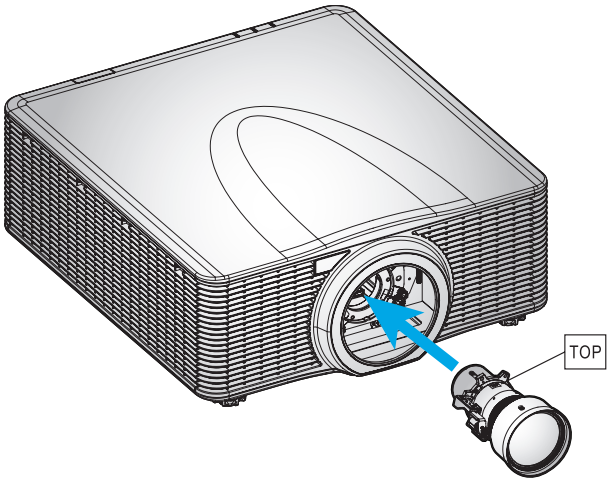
- *Before installing or replacing the lens, make sure the projector's power switch is turned off.*
- *During lens installation, do not adjust the lens shift, zoom, or focus either using the remote control or the projector keypad.*
- *To prevent damage to the lens and avoid personal injury, do not clean the lens when the projector is turned on. Any damage resulting from doing so will void the warranty.*

Procedure:

1. Rotate the lens cap counterclockwise. Then remove the lens cap.

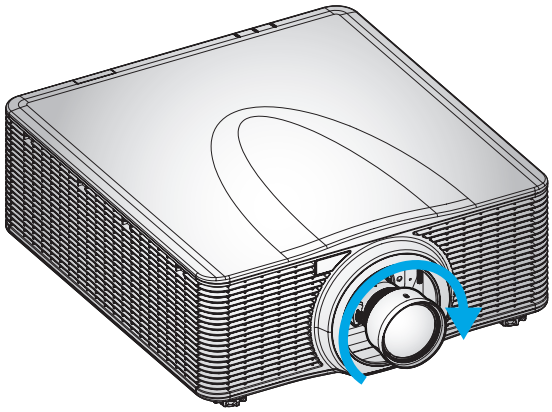


2. Install the lens into the projector.

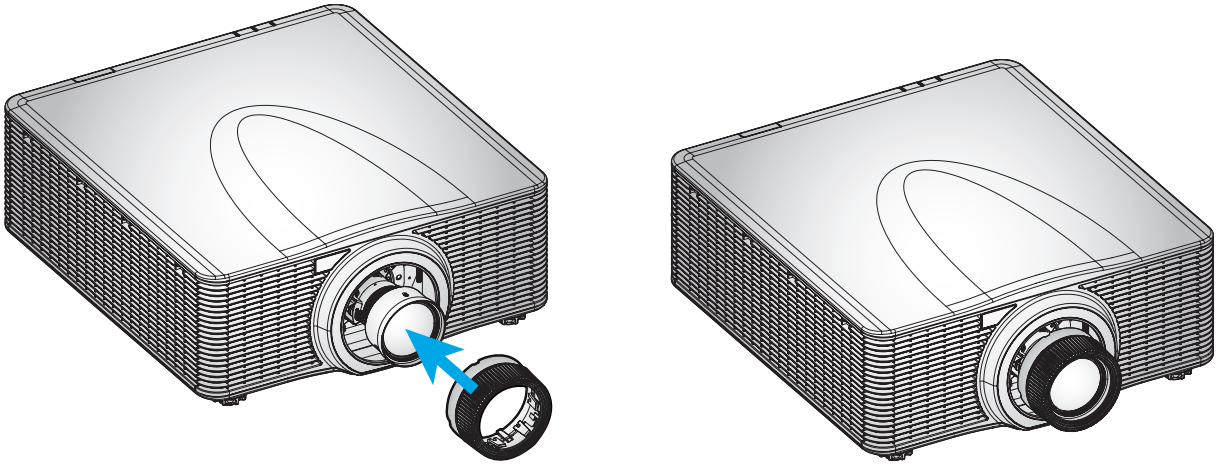


SETUP AND INSTALLATION

3. Rotate the lens clockwise to lock the lens in place.



4. Firmly install the lens ring onto the lens.



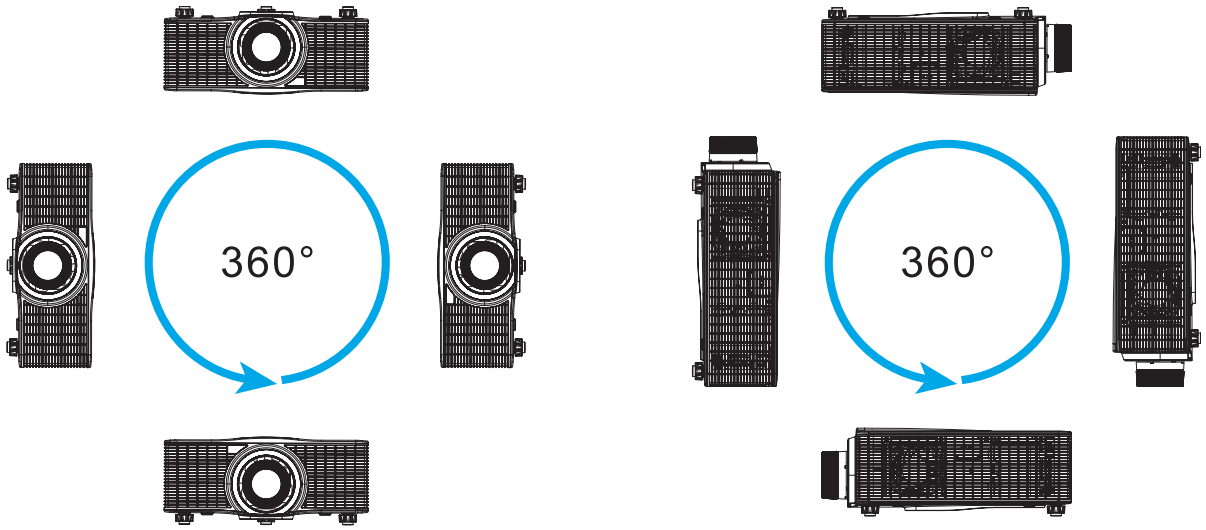
Note: *Remove the lens in the reverse order.*

SETUP AND INSTALLATION

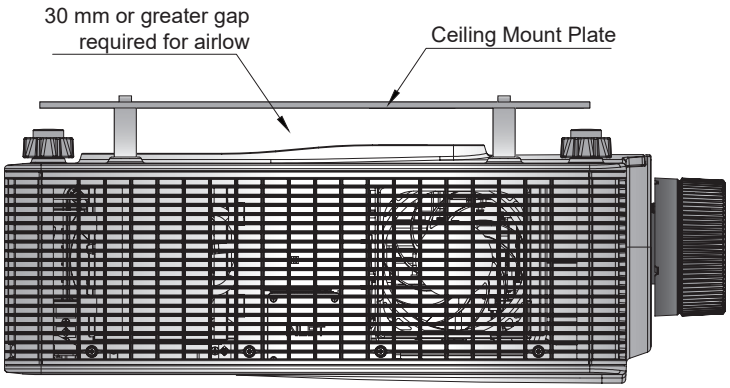
Adjusting the projector position

When you select a position for 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. Follow these general guidelines:

- Position the projector on a flat surface at a right angle to the screen.
- Position the projector to the desired distance from the screen. The distance from the lens of the projector to the screen, the zoom setting, and the video format determine the size of the projected image.
- 360 degree free orientation operation

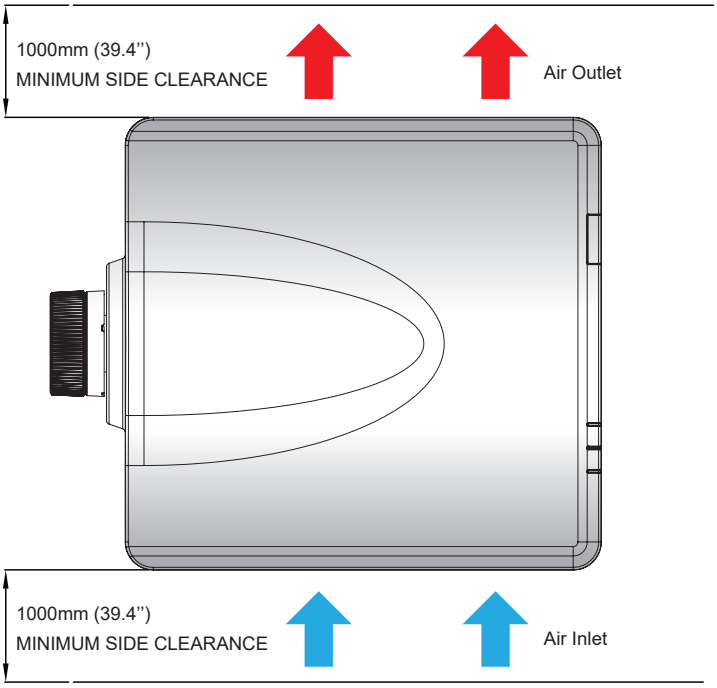


- For ceiling mount installations, make sure to leave 30mm (1.2”) between the ceiling mount and the bottom intake vents of the projector.



SETUP AND INSTALLATION

- Allowing proper space around the projector is critical for air circulation and cooling. For 360° installations and multiple projectors, make sure to leave at least 1000mm (39.4’’) space around the air intakes and outlet of the projector.



SETUP AND INSTALLATION

Boresight adjustment

Only apply a boresight adjustment in case the overall focus of the projected image is not equally sharp. The boresight adjustment helps to balance the tilt of the lens mount to sharpen the unfocused sections of the image. It tilts the lens holder to parallel the lens plane and the DMD plane.

Note: *This boresight adjustment process may cause the other areas of the image to slide out of focus. This is totally normal.*

Required tool

For BX-CAA01/BX-CTA01/BX-CAA03/BX-CTA03/BX-CAA06/BX-CTA06/ BX-CTA13/ BX-CTA15 lens, the following tools are required for boresight adjustment:

- Allen key, hex 4mm

For BX-CTA16/ BX-CTA17 lens, the following tools are required:

- Boresight extender with red rubber ring
- L-shape socket tool

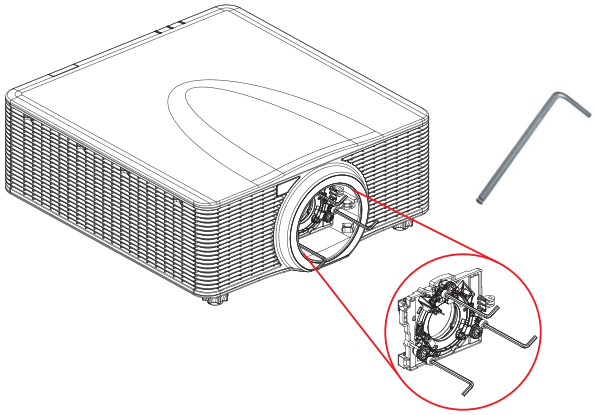
Setting the projector start mode

1. Choose the test pattern of the OSD. Switch to full screen mode.
2. Prepare the test area. Verify that the throw ratio of the installed lens matches the requirements of the installation area (projection distance and screen size).
3. Check that the lens is correctly installed.

Performing the boresight adjustment

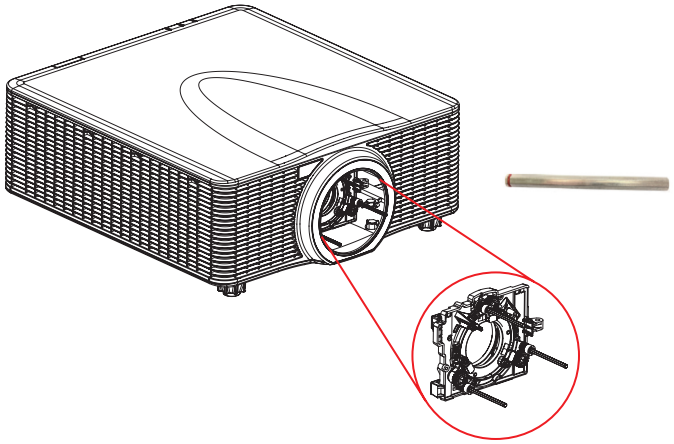
For BX-CAA01/BX-CTA01/BX-CAA03/BX-CTA03/BX-CAA06/BX-CTA06/ BX-CTA13/ BX-CTA15 lens

Use the Allen key screwdriver to clockwise or counter-clockwise adjust the three boresight screws.



For BX-CTA16/ BX-CTA17 lens

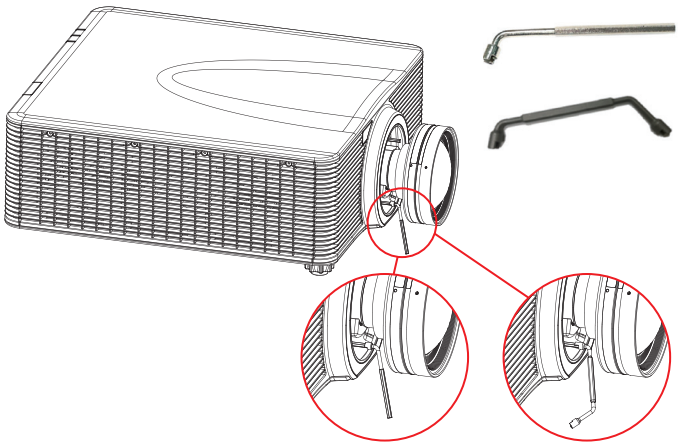
The boresight extenders must be installed before installing the BX-CTA16/ BX-CTA17 lens.



Note: *BX-CTA16 lens setup requires a special support kit. For more information, please refer to the BX-CTA16 lens user manual.*

SETUP AND INSTALLATION

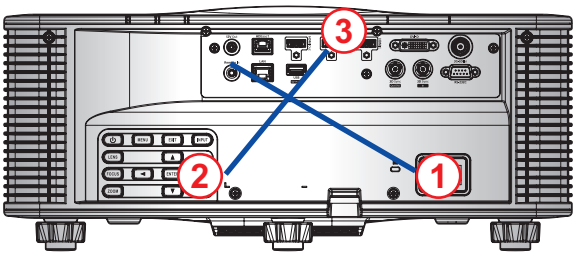
1. Use the boresight tool to adjust the three boresight screws.

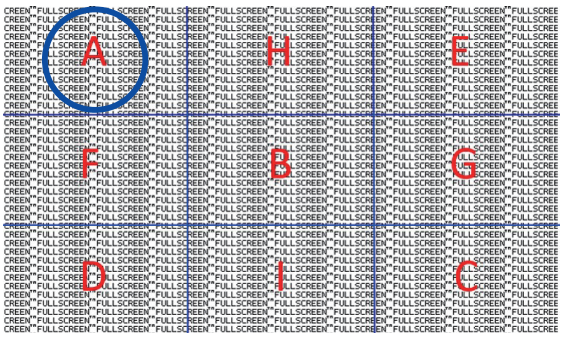


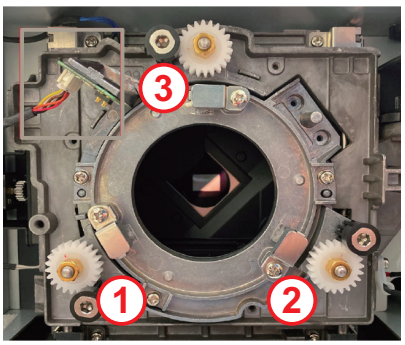
2. Zoom the lens to its widest opening.
3. Adjust the focus control to search for the best sharpness of the projected image.
4. Zone A/C boresight adjustment.

   If zone C is in focus on the screen, please check the focal plane of zone A.

   - If clear position is just on the screen then no need to adjust.
   - If clear position is out of the screen (Close to the projector), rotate screw (1) CCW and then screw (2) & (3) CW for half amount that (1) rotated. Then repeat until both A and C are clear. For example, turn (1) CCW in a circle, then turn (2) & (3) CW in half circle).
   - If clear position is in the screen (away from the projector), rotate screw (1) CW and then screw (2) & (3) CCW for half amount that (1) rotated. Then repeat until both A and C are clear.





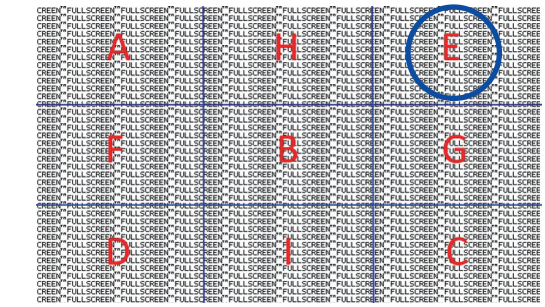


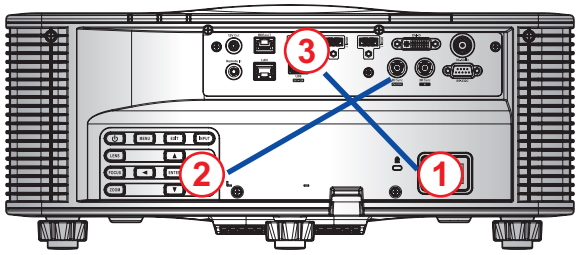
SETUP AND INSTALLATION

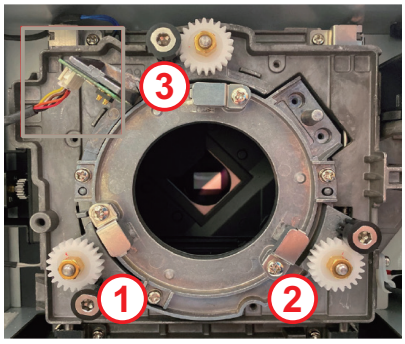
5. Zone D/E boresight adjustment.

   If zone D is in focus on the screen, please check the focal plane of zone E.

   - If clear position is just on the screen then no need to adjust.
   - If clear position is out of the screen (close to the projector), rotate screw (2) CCW and then screw (1) & (3) CW for half amount that (2) rotated. Then repeat until both D and E are clear. For example, turn (2) CCW in a circle, then turn (1) & (3) CW in half circle).
   - If clear position is in the screen (away from the projector), rotate screw (2) CW and then screw (1) & (3) CCW for half amount that (2) rotated. Then repeat until both D and E are clear.



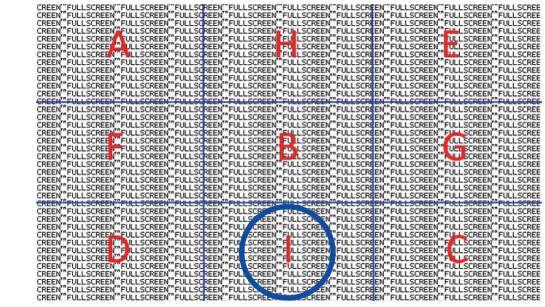


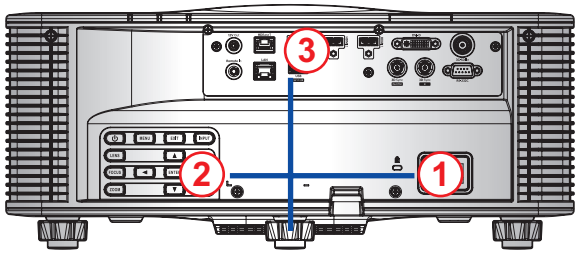


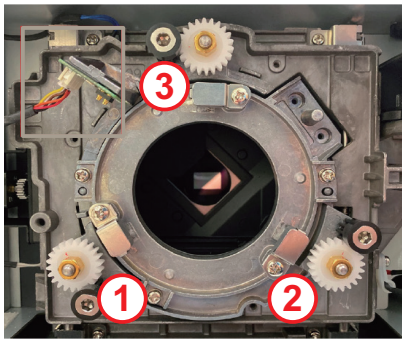
6. Zone H/I boresight adjustment.

   If zone H is in focus on the screen, please check the focal plane of zone I.

   - If clear position is just on the screen then no need to adjust.
   - If clear position is out of the screen (close to the projector), rotate screw (3) CCW and then screw (1) & (2) CW for half amount that (3) rotated. Then repeat until both H and I are clear. For example, turn (3) CCW in a circle, then turn (1) & (2) CW in half circle).
   - If clear position is in the screen (away from the projector), rotate screw (3) CW and then screw (1) & (2) CCW for half amount that (3) rotated. Then repeat until both H and I are clear.

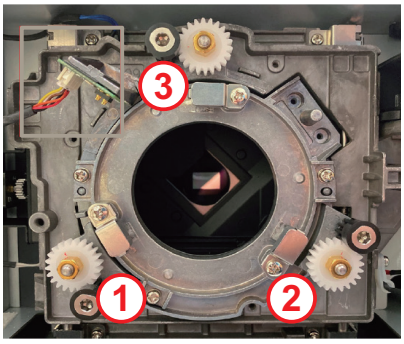






SETUP AND INSTALLATION

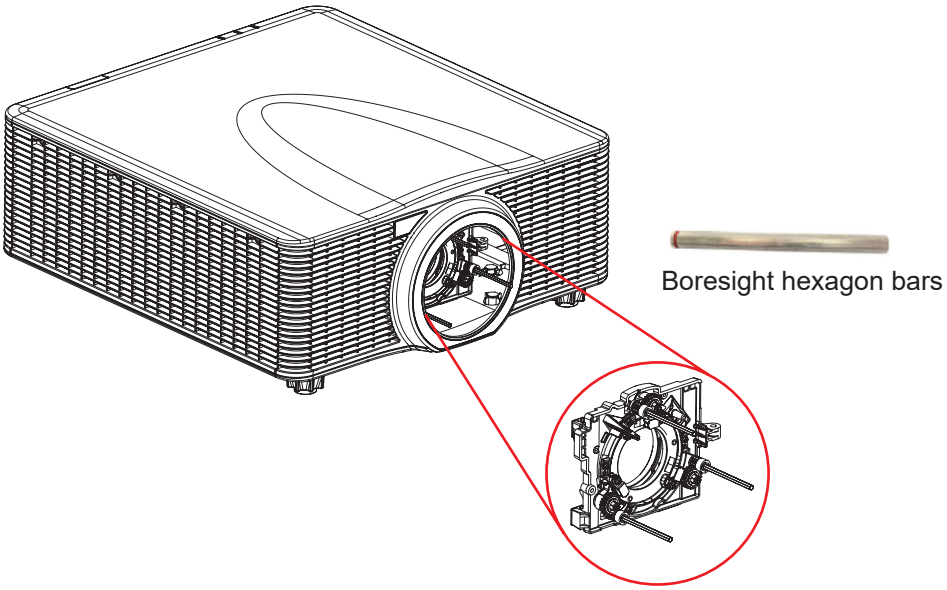
7. After the above adjustment of the viewing axis, the projected image from zone A to zone I still cannot achieve a clear focus on the screen. Please remove the PJ-lens then turn the boresight screws (1) to (3) counterclockwise to the end (STOP), and then turn clockwise 2 circles to the design value position.



8. Repeat steps 2 to 6 above to adjust.

BX-CTA17 Boresight Tool Operating

To mount the ST lens, do the following:

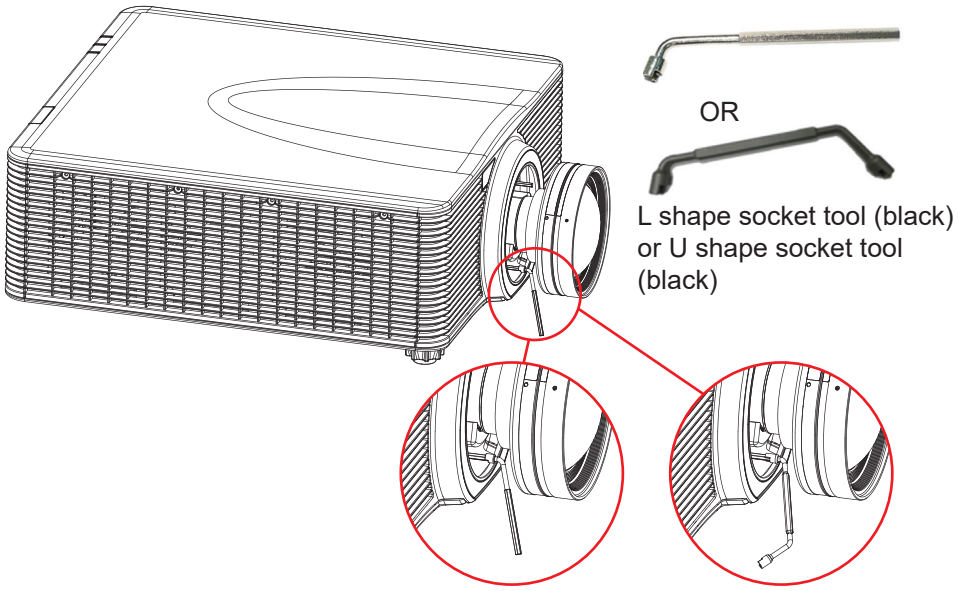


1. Install the three boresight extenders.
2. Face the socket heads of the extenders towards the projector.

SETUP AND INSTALLATION

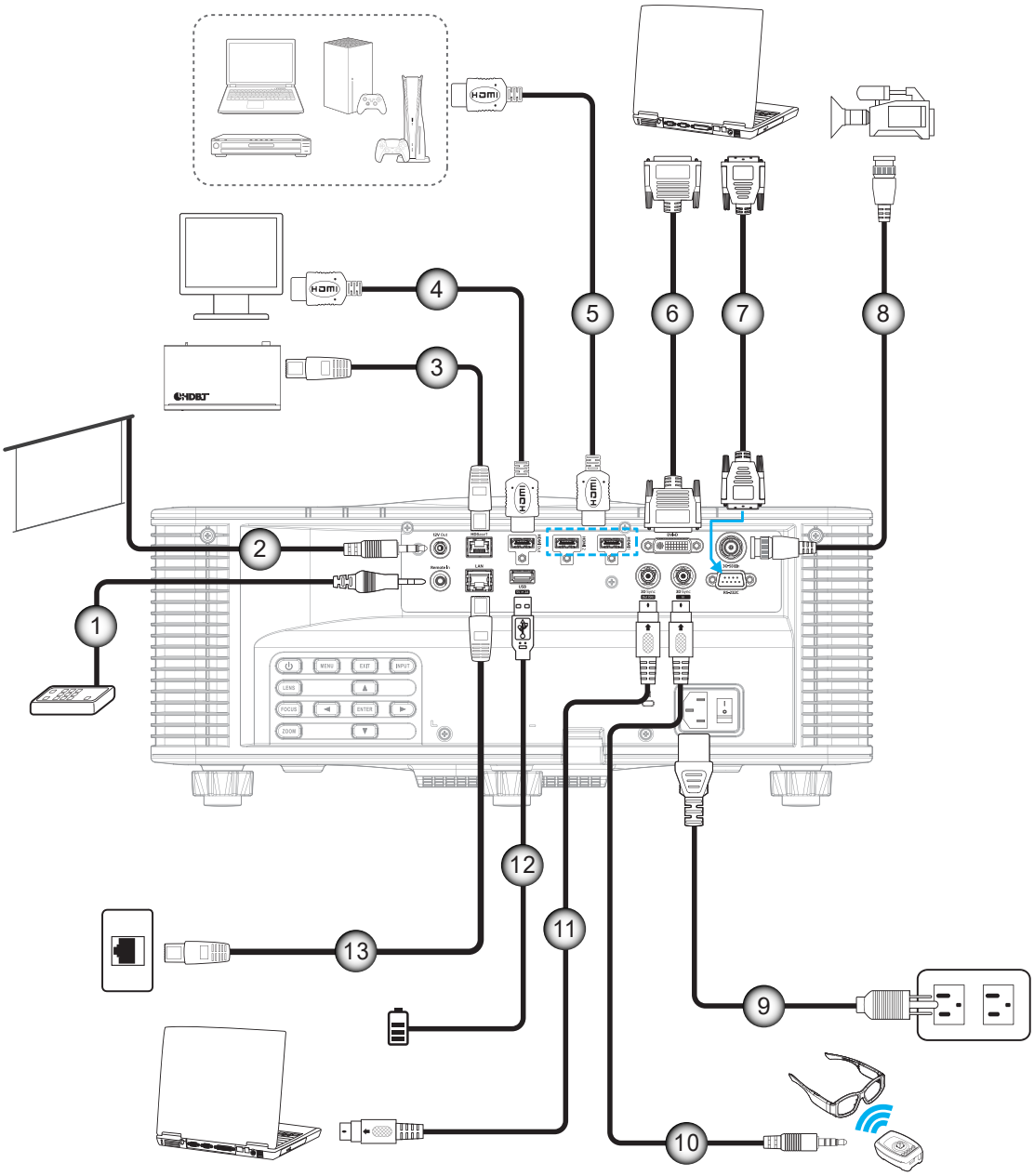
Boresight adjustment

Boresight adjustment is needed if the image is still unsharp after the focus adjustment. The boresight adjustment tilts the lens holder to parallel the lens plane and the DMD plane to fully focus the image on the screen.



SETUP AND INSTALLATION

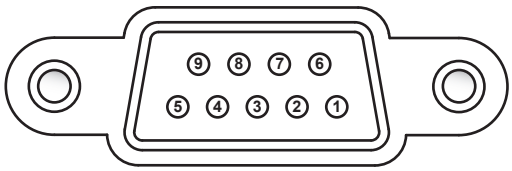
Connecting sources to the projector



No	Item	No	Item
1.	Wired Remote-In/Out Cable	8.	3G-SDI Cable
2.	12V Trigger Cable	9.	Power Cord
3.	RJ-45 Cable	10.	3D Emitter Cable
4.	HDMI Cable	11.	3D Sync Cable
5.	HDMI Cable	12.	USB Cable
6.	DVI-D Cable	13.	RJ-45 Cable
7.	RS-232 Cable		

SETUP AND INSTALLATION

RS232 Pin assignments



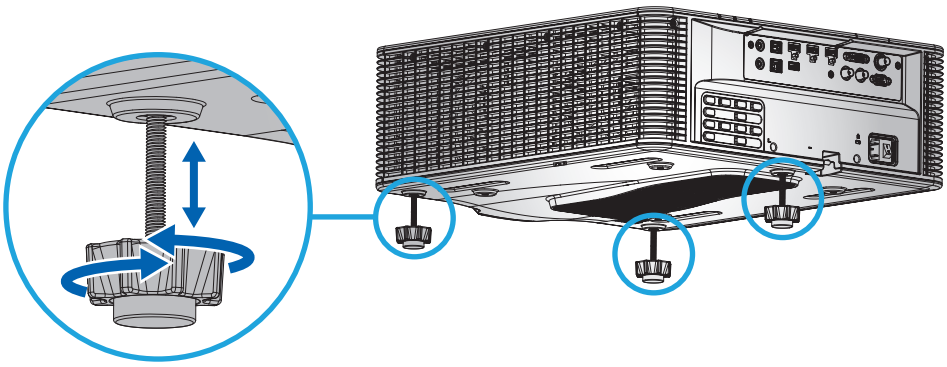
Pin No.	Signal	Pin No.	Signal
1	N/A	6	N/A
2	RXD	7	N/A
3	TXD	8	N/A
4	N/A	9	N/A
5	GND		

Adjusting the projector image

Image height

The projector is equipped with adjustable feet to change the image height.

1. Locate the adjustable foot you wish to adjust on the underside of the projector.
2. Rotate the adjustable foot clockwise or counterclockwise to raise or lower the projector.

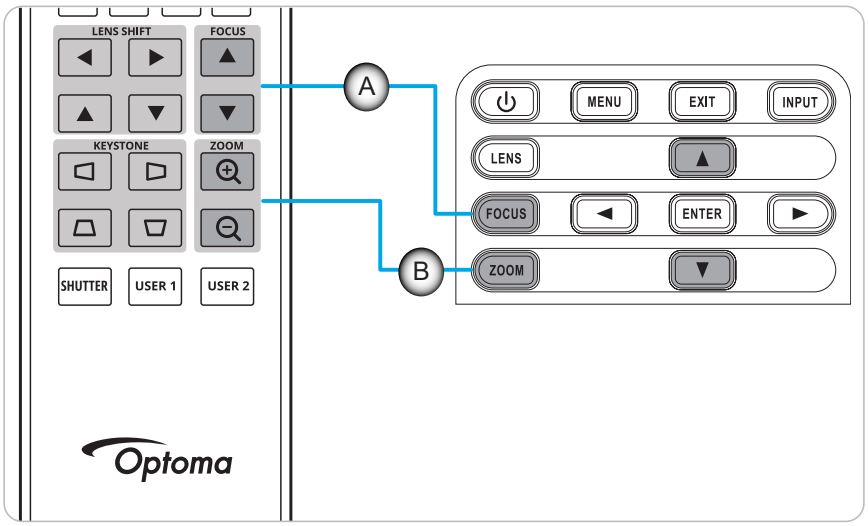


Note: *The adjustable feet can be raised up to 38mm, or may be removed for certain installations. Please ensure sufficient space around projector for proper air flow.*

Zoom and Focus

Use the remote control or projector keypad to adjust the zoom and focus of the projected image.

- To adjust the image focus, press **Focus** and the ▲▼ buttons to improve the image quality. (A)
- To adjust the image size, press **Zoom** and the buttons to get the required image size. (B)



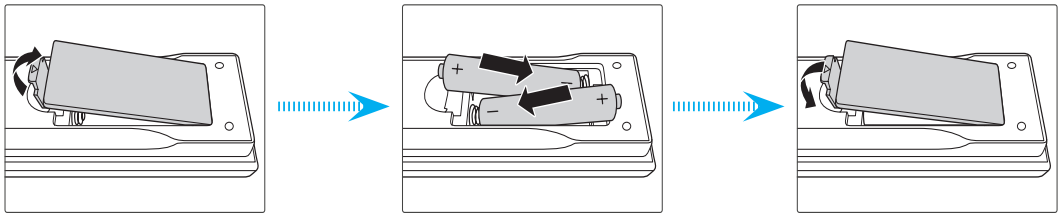
SETUP AND INSTALLATION

Remote setup

Installing / replacing the batteries

Two AAA size batteries are supplied for the remote control.

1. Remove the battery cover on the back of the remote control.
2. Insert AAA batteries in the battery compartment as illustrated.
3. Replace back cover on remote control.



Note: *Replace only with the same or equivalent type batteries.*

CAUTION

Improper use of batteries can result in chemical leakage or explosion. Be sure to follow the instructions below.

- Do not mix batteries of different types. Different types of batteries have different characteristics.
- Do not mix old and new batteries. Mixing old and new batteries can shorten the life of new batteries or cause chemical leakage in old batteries.
- Remove batteries as soon as the are depleted. Chemicals that leak from batteries that come in contact with skin can cause a rash. If you find any chemical leakage, wipe thoroughly with a cloth.
- The batteries supplied with this product may have a shorter life expectancy due to storage conditions.
- If you will not be using the remote control for an extended period of time, remove the batteries.
- When you dispose of the batteries, you must obey the law in the relative area or country.

Remote control ID setup

The Infra-Red (IR) remote control supports individual addressing of projectors. The remote receiver on the projector can be set with a specific number from 00 to 99, and the projector only responds to the IR remote set to the same number. The default ID code of the IR remote is 00, allowing it to control all projectors within its effective range.

Follow below methods to set up the ID code for the IR remote control:

ID Code	Change mode	Customer code
1	Keep pressing the “ID” button for 3 sec, enter “0” then enter “1” within 2 sec, and then release “ID” button.	3201
2	Keep pressing the “ID” button for 3 sec, enter “0” then enter “2” within 2 sec, and then release “ID” button.	3202
...	...	
10	Keep pressing the “ID” bottom for 3 sec, enter “1” then enter “0” within 2 sec, and then release “ID” button.	3210
11	Keep pressing the “ID” button for 3 sec, enter “1” then enter “1” within 2 sec, and then release “ID” button.	3211
...	...	
98	Keep pressing the “ID” button for 3 sec, enter “9” then enter “8” within 2 sec, and then release “ID” button.	3298
99	Keep pressing the “ID” button for 3 sec, enter “9” then enter “9” within 2 sec, and then release “ID” button.	3299

To have the IR remote control return to default value 00 where all projectors can be controlled, press the “ID button” for 3 seconds, and press “0” twice within 2 seconds.

For more information on setting the remote receivers on the projector, refer to *“Remote Setup” on page 70*.

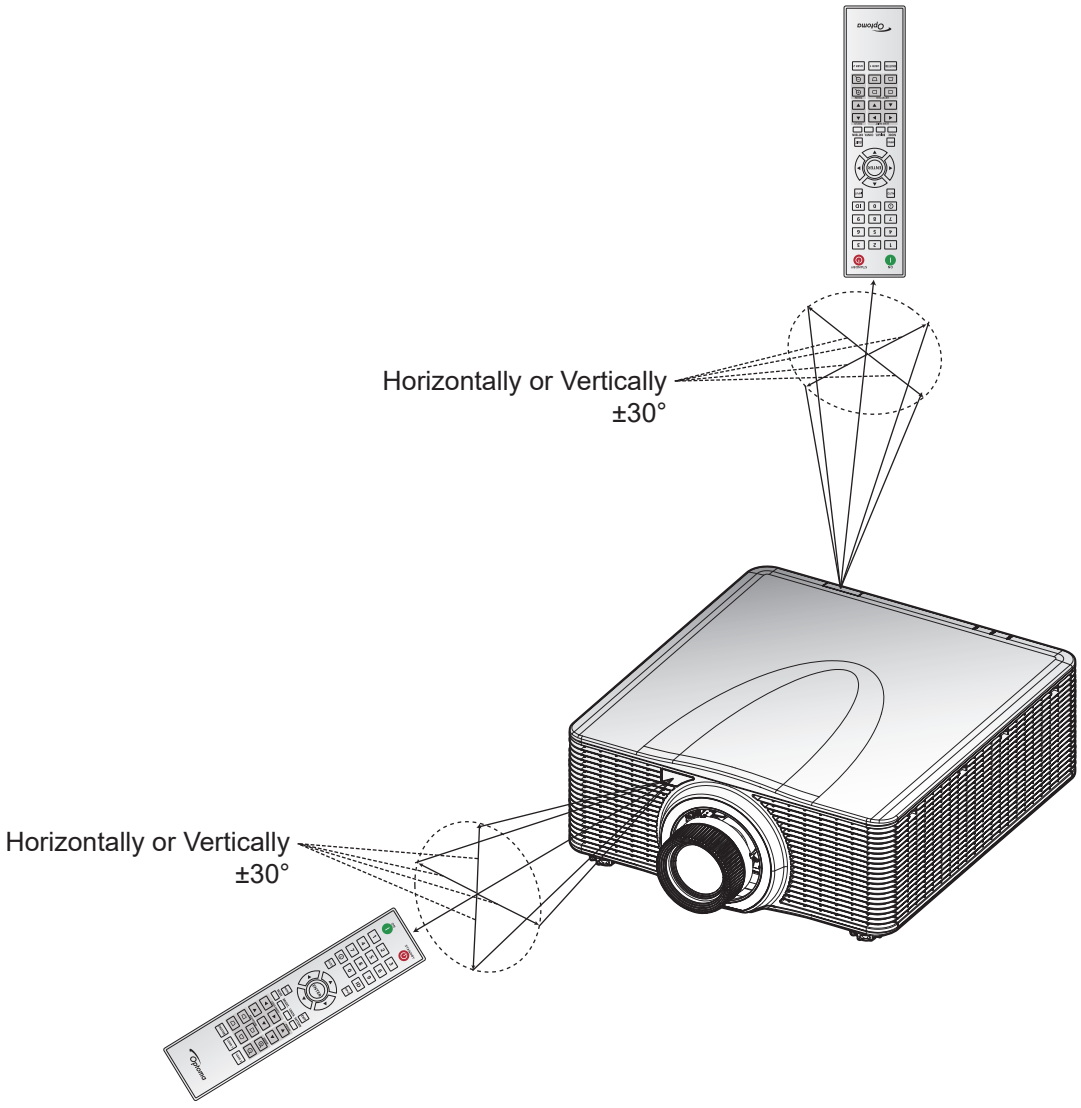
SETUP AND INSTALLATION

Effective range

The Infra-Red (IR) remote control sensors are located on the front and top sides of the projector. To have the remote control function correctly, be sure to hold the remote control at an angle of ±30° horizontally or vertically within the distance of 10m (32.8 ft) to the projector's IR remote control sensor.

- Make sure that there are no obstacles between the remote control and the IR sensor on the projector.
- Make sure the IR transmitter of the remote control is not being obstructed by direct light from sunlight or fluorescent lamps.
- Keep the remote control away from fluorescent lamps for at least 2m or it may malfunction.
- If the remote control is near Inverter-Type fluorescent lamps, it may operate ineffectively at times.
- If the remote control and the projector are within a very short distance, it may operate ineffectively.
- When aiming at a screen, the effective distance is less than 5m from the remote control to the screen and reflects the IR beams back to the projector. However, the effective range may vary between screens.

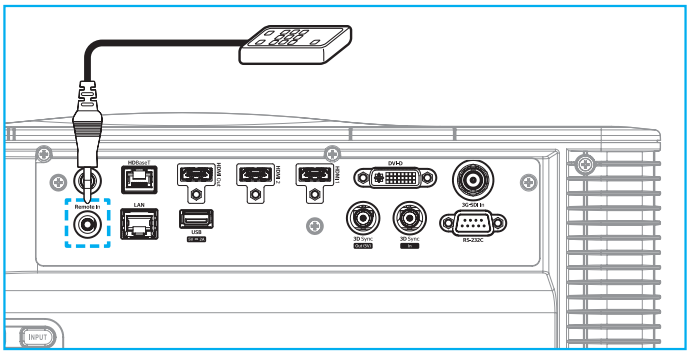
IMPORTANT! *If you want to use the 3D IR emitter, refer to "IR Control setup when using the 3D IR emitter" on page 52.*



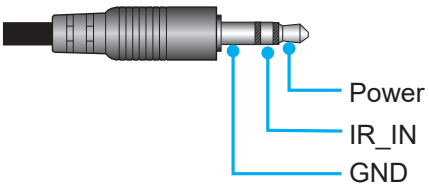
SETUP AND INSTALLATION

Wired remote

Remote In connector is designed to work with Wired Remote or IR Keypad with longer range and provides fast, easy set-up and reliable individual control of a specific projector. Remote Out connector sends the IR control signal to the next projector when using multiple projectors.



The connector type is 3.5mm Phone Jack connector:



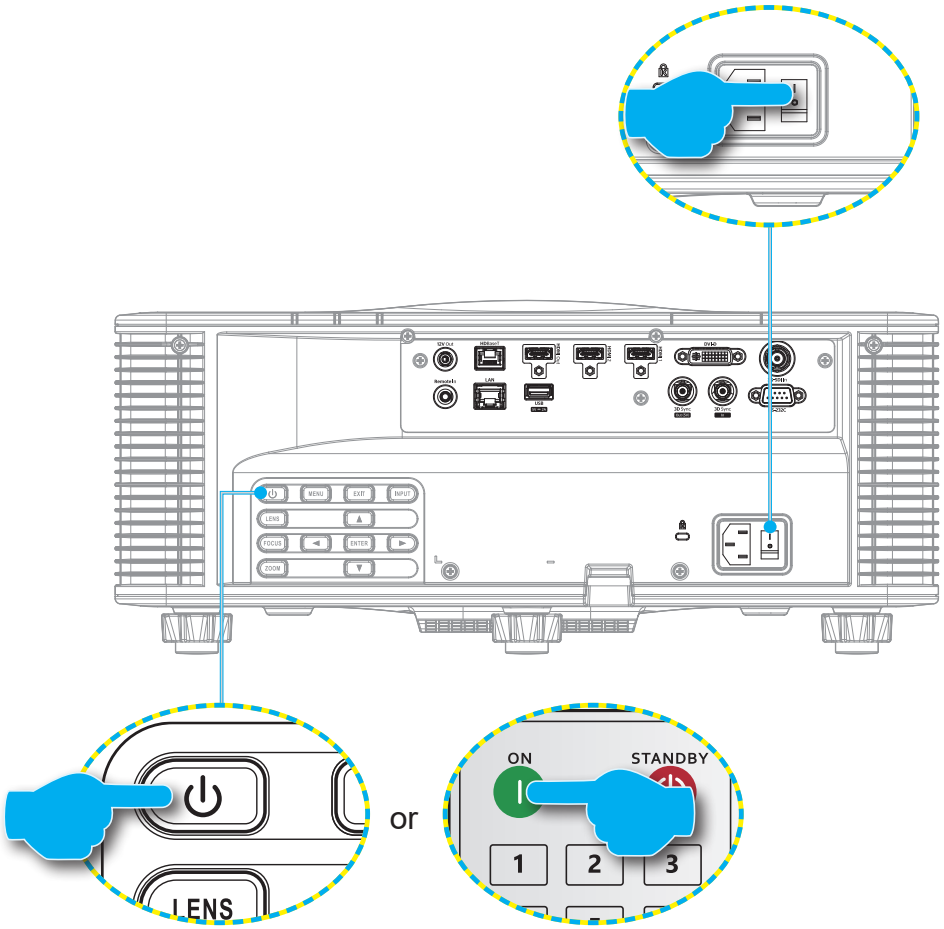
USING THE PROJECTOR

Powering on / off the projector

Powering on

1. Securely connect the AC power cord and signal/source cable to the projector.
2. Set the power switch to the "**I**" (ON) position and wait until the power button "⏻" on the projector keypad is solid orange.
3. Turn on the projector by pressing the **ON** button "I" on the remote control or the power button "⏻" on the projector keypad.

   The status LED is orange with a long blink and the status LED will turn to solid green.



Note: *If the projector is turned on for the first time, you will be prompted to select the projector language, projection orientation, and other settings.*

USING THE PROJECTOR

Powering off

1. Turn off the projector by pressing the power button "⏻" on the projector keypad or the **OFF** button "⏻" on the remote control.

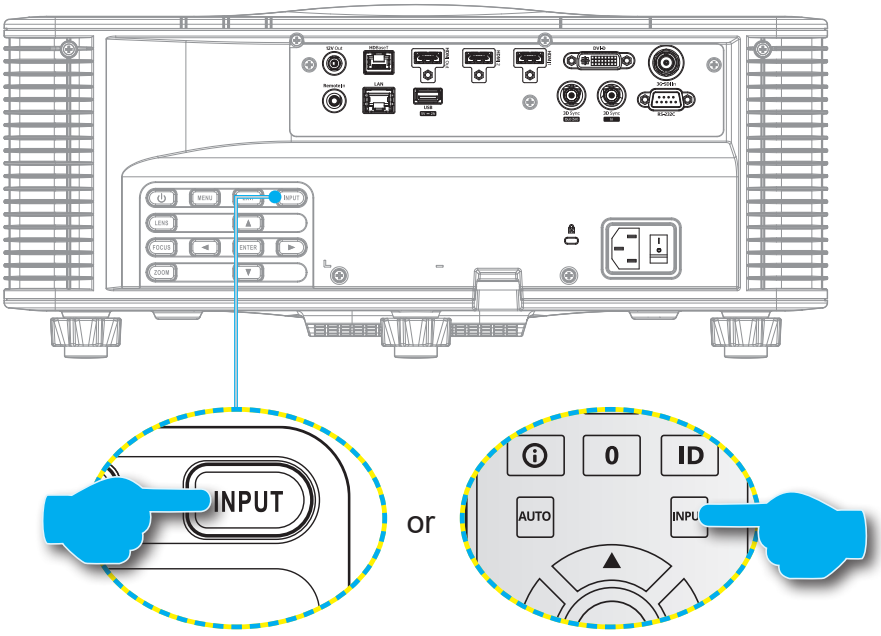
   A message will pop up to confirm that you want to turn off the projector.

2. Press the power button or the **OFF** button again to confirm, otherwise the warning message disappears after 10 seconds and the projector remains on.
3. Set the Power switch to the "**o**" (OFF) position.
   The status LED turns from blinking orange to solid orange and the keypad also turns to solid orange.
4. Disconnect the power cord from both the projector and the electrical outlet.

Note: *It is not recommended to turn on the projector immediately after powering it off. Wait for 10 seconds until you power it on again.*

Selecting an input source

Turn on the connected source that you want to display on the screen, such as computer, notebook, and/or video player. The projector will automatically detect the input source. If multiple sources are connected, press the **INPUT** button on the remote control or **INPUT** key on the projector keypad to select an input source.

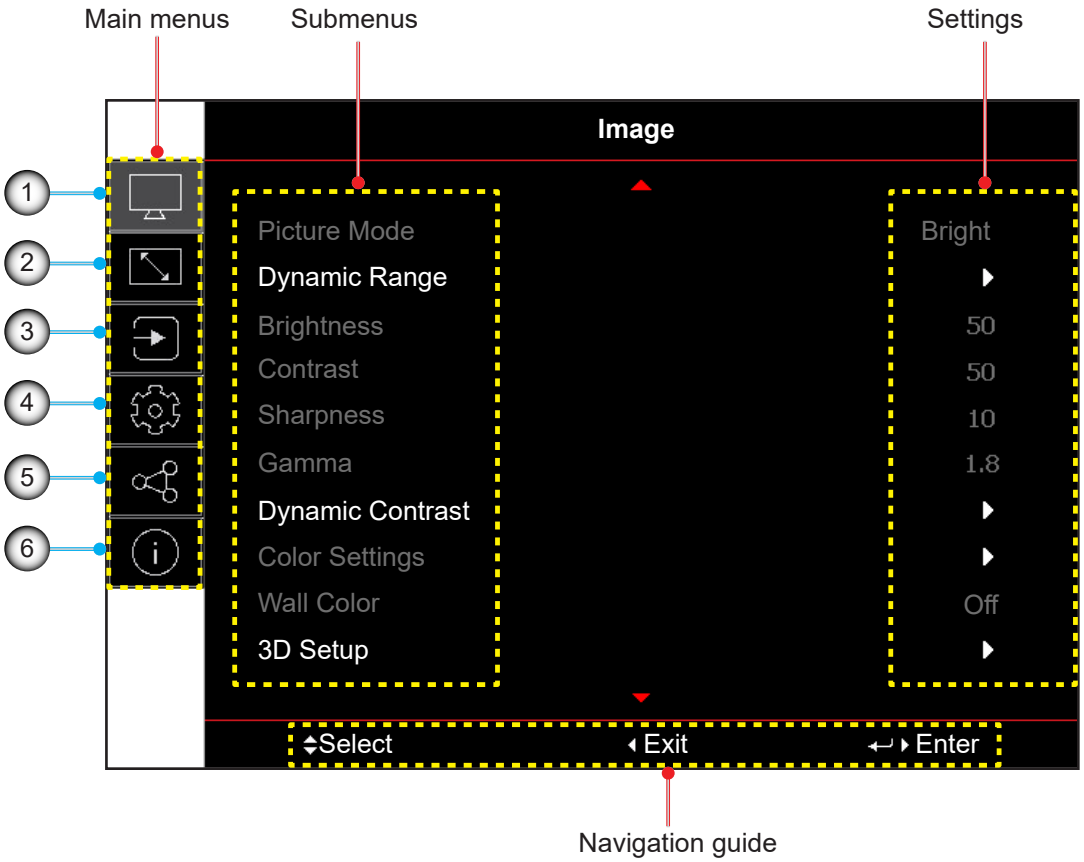


USING THE PROJECTOR

Menu navigation and features

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

1. To open the OSD menu, press the **Menu** key on the remote control or projector keypad.
2. To select a main menu or submenu, use the ▲ and ▼ buttons to highlight it. Then, press the **Enter** key to enter the submenu.
3. Press the **Exit** key to return to the previous menu or exit the OSD menu if at top level.
4. Setting methods to adjust the function value or selection an option.
   - To adjust the slide bar values, highlight the function, and use the ◀ ▶ buttons to change value.
   - To check or uncheck a checkbox, highlight the function, and press **Enter**.
   - To input a number or symbol, highlight the number or symbol, and use the ▲ and ▼ buttons to make a selection. You can also use the number keys on the remote control or keypad.
   - To select a function option, use the ▲ ▼ ◀ ▶ buttons to make the selection. If no **Enter** icon shows at the navigation bar, the highlighted option is automatically applied. If there is an **Enter** icon at the navigation bar, press **Enter** to confirm your selection.



No	Item	No	Item
1.	Image menu	4.	Device setup menu
2.	Display menu	5.	Communication menu
3.	Input settings menu	6.	Information menu

USING THE PROJECTOR

OSD menu tree

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Image	Picture Mode					Presentation
						Bright
						Cinema
						HDR
						sRGB
						DICOM SIM.
						Blending
						3D
						2D High Speed
						User
	Dynamic Range	HDR				Off
						Auto
		HDR Picture Mode				Bright
						Standard
						Film
						Detail
	Brightness					0~100
	Contrast					0~100
	Sharpness					1-15
	Gamma					Film
						Graphics
						Standard(2.2)
						Vivid
						3D
						Blackboard
						DICOM SIM.
						1.8
						2.0
						2.4
						2.6
	Dynamic Contrast	Dynamic Black				Off
						On
		Speed				1~15
		Strength				0~3
		Level				50%~100%
		Extreme Black				Off
						On
		AV Mute Timer				0s~10s
		Black Signal Level				0~5

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Image	Color Settings	Color				0~100
		Tint				0~100
		Color Temperature				Warm
						Standard
						Cool
		White Balance	Red Gain			0-100
			Green Gain			0-100
			Blue Gain			0-100
			Red Offset			0-100
			Green Offset			0-100
			Blue Offset			0-100
		White Enhancement				0-10
		Color Space				Auto
						RGB (0-255)
						RGB (16-235)
						REC709
						REC601
		Color Matching	Auto Test Pattern			Off
						On
			Red	Hue		0~254
				Saturation		0~254
				Luminance		0~254
			Green	Hue		0~254
				Saturation		0~254
				Luminance		0~254
			Blue	Hue		0~254
				Saturation		0~254
				Luminance		0~254
			Cyan	Hue		0~254
				Saturation		0~254
				Luminance		0~254
			Magenta	Hue		0~254
				Saturation		0~254
				Luminance		0~254
			Yellow	Hue		0~254
				Saturation		0~254
				Luminance		0~254
			White	Red		0~254
				Green		0~254
				Blue		0~254
			Reset			Yes / Cancel (Dialog box)

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Image	Wall Color					Off
						Blackboard
						Light Yellow
						Light Green
						Light Blue
						Pink
						Gray
	3D Setup	3D Mode				Off
						Active 3D
		3D Format				Auto
						Frame Packing
						Side by Side
						Top and Bottom
						Frame Sequential
		3D Tech				DLP-link
						3D Sync
		3D-2D				3D
						L
						R
		3D Sync Out				To Emitter
						To Next Projector
		3D Invert				Off
						On
		Frame Delay				1~200
		Reset				Yes / Cancel (Dialog box)
	Save to User					Yes / Cancel (Dialog box)
	Apply to User					User-Presentation
						User-Bright
						User-Cinema
						User-HDR
						User-sRGB
						User-DICOM SIM.
						User-Blending
						User-3D
						User-2D High Speed
	Reset					Yes / Cancel (Dialog box)

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Display	Aspect Ratio					Auto
						4:3
						16:9
						16:10
						LBX
						Native
	Digital Zoom	Proportional				Off
						On
		Horizontal				50%~400%
		Vertical				50%~400%
		Horizontal Shift				0~100
		Vertical Shift				0~100
		Reset				Yes / Cancel (Dialog box)
	Geometric Correction	Warp Control				Basic
						Advanced
						AP
		Basic Warp	Keystone	Horizontal		0~40
				Vertical		0~40
			Pincushion	Horizontal		0~100
				Vertical		0~100
			4-Corner	Top Left		
				Top Right		
				Bottom Left		
				Bottom Right		
		Advanced Warp	Grid Color			Green
						Magenta
						Red
						Cyan
			Grid Background			Black
						Transparent
			Warp Setting	Grid Points		2x2
						3x3
						5x5
						9x9
						17x17
				Warp Inner		Off
						On
				Warp Sharpness		0~9
			Blend Setting	Blend Width		
				Overlap Grid Number		4 / 6 / 8 / 10 / 12
				Gamma		1.8 /1.9 /2.0/2.1/2.2/2.3/2.4

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Display	Geometric Correction	Advanced Warp	Black Level	Area		Bottom
						Top
				Enable		Off
						On
				Edit Area		
				Brightness	Brightness	
					Red	0~255
					Green	0~255
					Blue	0~255
					Exit	
				Red		0~255
				Green		0~255
				Blue		0~255
				Reset	Bottom	Yes / Cancel (Dialog box)
					Top	Yes / Cancel (Dialog box)
					All	Yes / Cancel (Dialog box)
		Memory	Save Memory			Memory 1~Memory 5
			Apply Memory			Memory 1~Memory 5
			Clear Memory			Yes / Cancel (Dialog box)
		Reset				Yes / Cancel (Dialog box)
	Edge Mask					0~10
	Freeze Screen					Unfreeze
						Freeze
	Test Pattern					Off
						Green Grid
						Magenta Grid
						White Grid
						White
						Black
						Red
						Green
						Blue
						Yellow
						Magenta
						Cyan
						ANSI Contrast 4x4
						Color bar
						Full screen

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Display	PIP/PBP	Screen				Off
						PIP
						PBP
		Main Source				HDMI1
						HDMI2
						DVI-D
						3G-SDI
						HDBaseT
		Sub Source				HDMI1
						HDMI2
						DVI-D
						3G-SDI
						HDBaseT
		Swap				
		Size				Small
						Medium
						Large
		Location				PBP, Main Left
						PBP, Main Top
						PBP, Main Right
						PBP, Main Bottom
						PIP, Bottom Right
						PIP, Bottom Left
						PIP, Top Left
						PIP, Top Right
	Reset					Yes / Cancel (Dialog box)
Input Settings	Auto Source					Off
						On
	Quick Resync					Off
						On
	Active Inputs					HDMI1
						HDMI2
						DVI-D
						3G-SDI
						HDBaseT
	Latency Adjustment					Normal
						2D Ultra

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Input Settings	Backup Input	Auto Switch				Off
						On
		Current Signal				(read only)
		First Input				HDMI1
						HDMI2
						HDBaseT
						DisplayPort
		Second Input				HDMI1
						HDMI2
						HDBaseT
						DisplayPort
		Backup Input Status				Active/Inactive (read only)
		Backup Input Change				Changed/No Change (read only)
		Backup Input Info.	Current Signal			(read only)
			Backup Input Status			Active/Inactive (read only)
			Backup Input Change			Changed/No Change (read only)
			First Input			By First Input (read only)
			Resolution			(read only)
			Horz Refresh			(read only)
			Color Space			(read only)
			HDR			Yes/No (read only)
			Second Input			By Second Input (read only)
			Resolution			(read only)
			Horz Refresh			(read only)
			Color Space			(read only)
			HDR			Yes/No (read only)
	HDMI	Output				HDMI 1
						HDMI 2
		HDMI 1 EDID				1.4
						2.0
		HDMI 2 EDID				1.4
						2.0
	Reset					Yes / Cancel (Dialog box)

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Device Setup	Language					English
						Deutsch
						Français
						Italiano
						Español
						Português
						Polski
						Nederlands
						Norsk
						繁體中文
						簡体中文
						日本語
						한국어
						Русский
						Magyar
						ไทย
	Projection	Ceiling				Auto
						On
						Off
		Rear				Off
						On
	Lens Settings	Focus				+
						-
		Zoom				⊕
						⊖
		Lens Shift				▲
						▼
						◀
						▶
		Lens Memory	Save Memory			Memory 1~Memory 5
			Apply Memory			Memory 1~Memory 5
			Clear Memory			Yes / Cancel (Dialog box)
		Lens Calibration				Yes / Cancel (Dialog box)
		Lens Lock				Lock
						Unlock
		Reset				Yes / Cancel (Dialog box)
	Schedule	Date and Time				----/--/-- --:--
		Schedule Mode				Off / On
		View Today				Monday / Tuesday / Wednesday / Thursday / Friday / Saturday / Sunday

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Device Setup	Schedule	Monday / Tuesday / Wednesday / Thursday / Friday / Saturday / Sunday	Schedule Enable			Off
						On
			Event 01-16	Time		00:00 ~ 23:59
				Function		Off / Power Settings / Input Source / Light Source Mode / Shutter
				Event		Off
				(Function = Power Settings)		Power On / Eco / Active / Communication
				(Function = Input Source)		HDMI1 / HDMI2 / DVI-D / 3G-SDI / HDBaseT
				(Function = Light Source Mode)		Normal Mode / Eco Mode / Custom Brightness
				(Function = Shutter)		Shutter On / Shutter Off
				Reset		Yes / Cancel (Dialog box)
			Copy Events To			Monday / Tuesday / Wednesday / Thursday / Friday / Saturday / Sunday
			Reset the Day			Yes / Cancel (Dialog box)
		Reset Schedule				Yes / Cancel (Dialog box)
	Date and Time	Clock Mode				Use NTP Server
						Manual
		Date				2000 ~ 2037 (Year)
						01 ~ 12 (Month)
						01 ~ 31 (Day)
		Time				00 ~ 23 (Hour)
						00 ~ 59 (Minute)
		Daylight Saving Time				Off
						On
		NTP Server				time.google.com
						asia.pool.ntp.org
						europe.pool.ntp.org
						north-america.pool.ntp.org
		Time Zone				UTC+14:00
						UTC+13:00
						UTC+12:45
						UTC+12:00
						UTC+11:00
						UTC+10:30
						UTC+10:00
						UTC+09:30
						UTC+09:00
						UTC+08:45
						UTC+08:00
						UTC+07:00

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Device Setup	Date and Time	Time Zone				UTC+06:30
						UTC+06:00
						UTC+05:45
						UTC+05:30
						UTC+05:00
						UTC+04:30
						UTC+04:00
						UTC+03:30
						UTC+03:00
						UTC+02:00
						UTC+01:00
						UTC+00:00
						UTC-01:00
						UTC-02:00
						UTC-03:00
						UTC-03:30
						UTC-04:00
						UTC-05:00
						UTC-06:00
						UTC-07:00
						UTC-08:00
						UTC-09:00
						UTC-09:30
						UTC-10:00
						UTC-11:00
						UTC-12:00
		Update Interval				Hourly
						Daily
		Apply				Yes / Cancel (Dialog box)
	Power Settings	Power Mode (Standby)				Eco
						Active
						Communication
		Signal Power On				Off
						On
		Auto Power Off				0~180 m
		Sleep Timer				0~16 h
		12V Trigger				Off
						On
		Reset				Yes / Cancel (Dialog box)
	Light Source Settings	Light Source Mode				Normal
						Eco Mode
						Custom Power
		Custom Brightness	Brightness Level			30%~100%
			Constant Brightness			Off
						On

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Device Setup	Shutter	Fade-In				0.5~5s
		Fade-Out				0.5~5s
		Startup				Shutter Off
						Shutter On
	Security	Security				Off
						On
		Security Timer	Month			0-35
			Day			0-29
			Hour			0-23
		Change Password				
	On Screen Display	Menu Location				Top Left
						Top Right
						Center
						Bottom Left
						Bottom Right
		Menu Transparency				0~9
		Menu Timer				Off
						5s
						10s
						15s
						30s
						60s
		Information Hide				Off
						On
		Background				Blue
						Black
						White
						Logo
	Logo Setup	Change Logo				Default Logo
						Neutral
						User Logo
						Captured Logo
		Logo Capture				Yes / Cancel (Dialog box)
		Delete Logo	Captured Logo			Yes / Cancel (Dialog box)
			User Logo			Yes / Cancel (Dialog box)
	Backlight	Keypad				Off
						On
		Power key				Off
						On
	High Altitude					Off
						On
	User Data	Save all settings				Memory 1~Memory 5
		Load all settings				Memory 1~Memory 5
	System Update (FOTA)	Auto				On
						Off
		Update				Yes / Cancel (Dialog box)

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Device Setup	Reset	Reset OSD				Yes / Cancel (Dialog box)
		Reset to default				Yes / Cancel (Dialog box)
		Reset Selective	Image			Yes / Cancel (Dialog box)
			Display			Yes / Cancel (Dialog box)
			Input			Yes / Cancel (Dialog box)
			Communication			Yes / Cancel (Dialog box)
			Setup			Yes / Cancel (Dialog box)
Communi-cation	Projector ID					0~99
	Remote Setup	Remote Code				0~99
		Quick Switch Code				Off
						1~9
		IR Function	Front			Off
						On
			Top			Off
						On
			HDBaseT			Off
						On
		User 1				Freeze Screen
						Blank Screen
						PIP/PBP
						Aspect Ratio
						Information Hide
						Network setup
						Projector ID
						Color Matching
						Reset Selective
		User 2				Freeze Screen
						Blank Screen
						PIP/PBP
						Aspect Ratio
						Information Hide
						Network setup
						Projector ID
						Color Matching
						Reset Selective
	Network Setup	LAN Interface				RJ-45
						HDBaseT
		MAC Address				(read only)
		Network Status				(read only) Connected / Disconnected
		DHCP				Off
						On
		IP Address				- - - . - - - . - - - . - - -
		Subnet Mask				- - - . - - - . - - - . - - -
		Gateway				- - - . - - - . - - - . - - -
		DNS				- - - . - - - . - - - . - - -
		Apply				Yes / Cancel (Dialog box)
		Network Reset				Yes / Cancel (Dialog box)

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Communi-cation	Email Notification	Email 1				Email 1 Address (read only)
		Email 2				Email 1 Address (read only)
		Event				
		Fan Error				Off/Email
		Power On/Off				Off/Email
		Video Loss				Off/Email
		Laser				Off/Email
		Reset				Yes / Cancel (Dialog box)
	Control	Crestron				Off
						On
		IP Address				- - - . - - - . - - - . - - -
		IPID				2~255
		Port				0~65535
		Crestron Setup Apply				Yes / Cancel (Dialog box)
		PJ Link				Off
						On
		Authentication				Off
						On
		Password				(read only)
		Service				- - - . - - - . - - - . - - -
		PJ Link Setup Apply				Yes / Cancel (Dialog box)
		Extron				Off
						On
		AMX				Off
						On
		Telnet				Off
						On
		HTTP				Off
						On
		Reset				Yes / Cancel (Dialog box)
	Baud Rate	Serial Port In				1200
						2400
						4800
						9600
						19200
						38400
						57600
						115200
	Reset					Yes / Cancel (Dialog box)

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Information	Device	Regulatory				
		Serial Number				
		Projection Hours				
	System Status	Standby Mode				
		Light Source Mode				
		Light Source Hours				
		Total Hours				
		Normal				
		Eco Mode				
		Custom Power				
		Temperature				
		AC Voltage				
	Communication	Projector ID				
		Remote Code				
		LAN Interface				
		MAC Address				
		Network Status				
		DHCP				
		IP Address				
		Subnet Mask				
		Gateway				
		DNS				
		Crestron				
		Extron				
		PJ Link				
		AMX				
		Telnet				
		HTTP				
	Signal	Input Signal				
		Resolution				
		Signal Format				
		Pixel Clock				
		Horz Refresh				
		Vert Refresh				
		Color Space				
		Picture Mode				
		Second Signal				
		Resolution				
		Signal Format				
		Pixel Clock				
		Horz Refresh				
		Vert Refresh				
		Color Space				

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Information	Backup Input	Current Signal				
		Backup Input Status				
		Backup Input Change				
		First Input				
		Resolution				
		Horz Refresh				
		Color Space				
		HDR				
		Second Input				
		Resolution				
		Horz Refresh				
		Color Space				
		HDR				
	Firmware Version	Main Version				
		I-SCALER Version				
		F-MCU Version				
		M-MCU Version				
		L-MCU Version				
		A-MCU Version				
		K-MCU Version				
		LAN Version				
		Formatter Version				
		FPGA0 Version				
		FPGA1 Version				
		FPGA2 Version				
		XFPGA Version				
		HDBaseT Version				
		Camera Version				

USING THE PROJECTOR

Image menu

Learn how to configure image settings.

Submenus

- Picture Mode
- Dynamic Range
- Brightness
- Contrast
- Sharpness
- Gamma
- Dynamic Contrast
- Color Settings
- Wall Color
- 3D Setup

Picture Mode

Picture Mode menu provides various functions to optimize the projected image to achieve the best image quality in all kinds of surroundings, in consideration of factors such as input source, screen color, and ambient lighting.

Presentation

Best for displaying presentation slides in a bright room.

Bright

Best for the installations requiring high brightness images.

Cinema

Best for videos projected in a dark room.

HDR

Best for displaying High Dynamic Range (HDR) content.

sRGB

Standardized image color that matches the sRGB color standard.

DICOM SIM.

Best for projecting monochrome medical images, such as X-ray diagram.

Blending

Best for multiple projector installations.

3D

Best for playing 3D videos.

2D High Speed

Display the status of 2D High Speed mode (This mode should not be used for medical diagnosis).

Note: *If the resolution of the input source is 800 x 600 @120Hz, 1024 x 768 @120Hz, or 1280 x 720 @120Hz, then the display mode will automatically switch to 2D High Speed then the 3D mode, PIP/PBP modes are not supported.*

User

Image settings saved by the user.

Dynamic Range

Configure the HDR setting and its effect when displaying video from 4K Blu-ray players and streaming devices.

HDR

Enable or disable HDR processing.

HDR Picture Mode

- **Bright**: Select this mode for more saturated colors.
- **Standard**: Select this mode for natural looking images.
- **Film**: Select this mode for improved detail.
- **Detail**: Select this mode for more detail in dark scenes.

Brightness

Adjust the luminous brightness of the projected image to adapt to different ambient light.

Contrast

Adjust the contrast ratio of the projected image. The contrast controls the degree of difference between the lightest and darkest parts of the image.

Sharpness

Adjust the clarity of details in the projected image to make the image clearer and sharper.

Gamma

Select an appropriate gamma value to optimize the image conformance to different input sources.

Film

Best for home theater setting.

Graphics

Best for projecting photos from PC input.

Standard (2.2)

Standard gamma value.

Vivid

Best for playing games. In this mode, color saturation and brightness are well-balanced.

3D

Best for playing 3D videos.

Blackboard

Best for projecting on to a blackboard.

DICOM SIM.

Best for projecting monochrome medical images, such as X-ray diagram.

1.8 / 2.0 / 2.4 / 2.6

Select a preset gamma value to adjust the image performance. In general, the smaller the value, the brighter the dark areas of the image will become.

Dynamic Contrast

Set up Dynamic Contrast to maximize the contrast for dark content.

Dynamic Black

Enable this function to automatically adjust the contrast ratio for video sources. It improves the black level in dark scenes by reducing the light output.

- **Speed:** Adjust the speed of the light source correction. The value ranges from 1 to 15. A lower value makes the correction slower and less aggressive while a higher value results in the faster correction.
- **Strength:** Set the strength of the dynamic contrast adjustment. The value ranges from 0 to 3, the higher the value the stronger the correction.
- **Level:** Adjust the light source when the brightness level of the current content gets lower than the set value. The value ranges from 50% to 100%. The higher the value, the larger the range to adjust the light source.

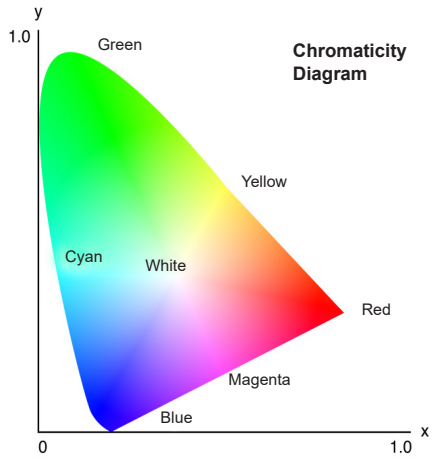
Extreme Black

Enable this function to automatically increase the contrast ratio by turning off the laser light when black image is detected.

- **AV Mute Timer:** Set a timer for the laser light to turn off after detecting black content. The set value ranges from 0s to 10s.
- **Black Signal Level:** Set a black level value as the threshold for the Real Black function. The value can be adjusted from 0% to 5%, with 0 being the darkest black and 5 being the brightest.

Color Settings

Configure the color settings of the projected image to improve the color performance.



Color

Adjust the saturation of the selected color. The value indicates the color shifts from or towards the white in the center of the chromaticity diagram.

Tint

Adjust the color balance of red and green in video images.

Color Temperature

Adjust the color temperature of the projected image. The available options are Warm, Standard, and Cool.

White Balance

Adjust the white balance of the projected image via gain and offset. Gain and offset are individual controls for each RGB channels used to set greyscale. The Gains calibrate the color of the dark parts and Bias calibrate the white parts.

- **Red / Green / Blue Gain:** Adjust the color of the image's bright areas.
- **Red / Green / Blue Offset:** Adjust the color of the image's dark areas.

White Enhancement

Adjust the image color brightness while providing more vibrant colors, in increments from 0 to 10.

Color Space

Select a color space that has been specifically tuned for the input signal. The available options are Auto, RGB (0~255), RGB (16~235), REC709, and REC601.

Note: *The Color Space function is grayed out if the Picture Mode is sRGB or without any source input.*

Color Matching

Change the color of a projected image by adjusting each color component in the image. The adjustable color includes Red, Green, Blue, Cyan, Yellow, and Magenta (R / G / B / C / Y / M).

- **Auto Test Pattern:** Enable the function to view a specific color pattern while adjusting.
- **Red / Green / Blue / Cyan / Magenta / Yellow:** Select a color for further adjustment.
  - **Hue**: Adjust the hue of the selected color. The value reflects the number of degrees of rotation around the chromaticity diagram from the original color. Increasing value indicates counterclockwise rotation, and decreasing value, clockwise rotation.
  - **Saturation**: Adjust the saturation of the selected color. The value reflects the color shifts from or towards the white in the center of the chromaticity diagram.
  - **Luminance**: Adjust the luminance of the selected color. Increase the value to brighten the image (add white to a color) or decrease the value to darken the image (add black to a color).
- **White:** Adjust the white color performance via setting the Red, Green, and Blue values.
  - **Red / Green / Blue:** Adjust the red, green, and blue colors to optimize the white color performance.
- **Reset:** Reset the function settings to factory default values.

Wall Color

Set the wall color of the projector to achieve best color performance for a specific wall. The available options are Off, Blackboard, Light Yellow, Light Green, Light Blue, Pink, and Gray.

3D Setup

3D video file combines two slightly different images (frames) of the same scene representing the different views that the left and right eyes see. When these frames are displayed fast enough and viewed with 3D glasses synchronized with the left and right frames, the viewer's brain then assemble the separate images into a single 3D image. 3D Menu provides options to set up the 3D functions to correctly display 3D videos.

3D Mode

Enable or disable the 3D function.

3D Format

Select a proper 3D format for the 3D input signal. The available options are Auto, Frame Packing, Side by Side, Top and Bottom, and Frame Sequential.

3D Tech

Select a proper 3D technology according to how the 3D sync signal is processed.

- **DLP-Link:** Select DLP-Link when the 3D sync signal is generated by the DLP Link technology built into the projector. DLP Link works only with the glasses that are compatible with DLP 3D technology and the 3D function is enabled
- **3D Sync:** Select 3D Sync when the 3D sync out signal is sent to an emitter or another projector through the 3D sync out port.

3D-2D

Transform the 3D content to 2D images.

- **3D:** Play the 3D content normally.
- **L:** Play the left images of the 3D content.
- **R:** Play the right images of the 3D content.

3D Sync Out

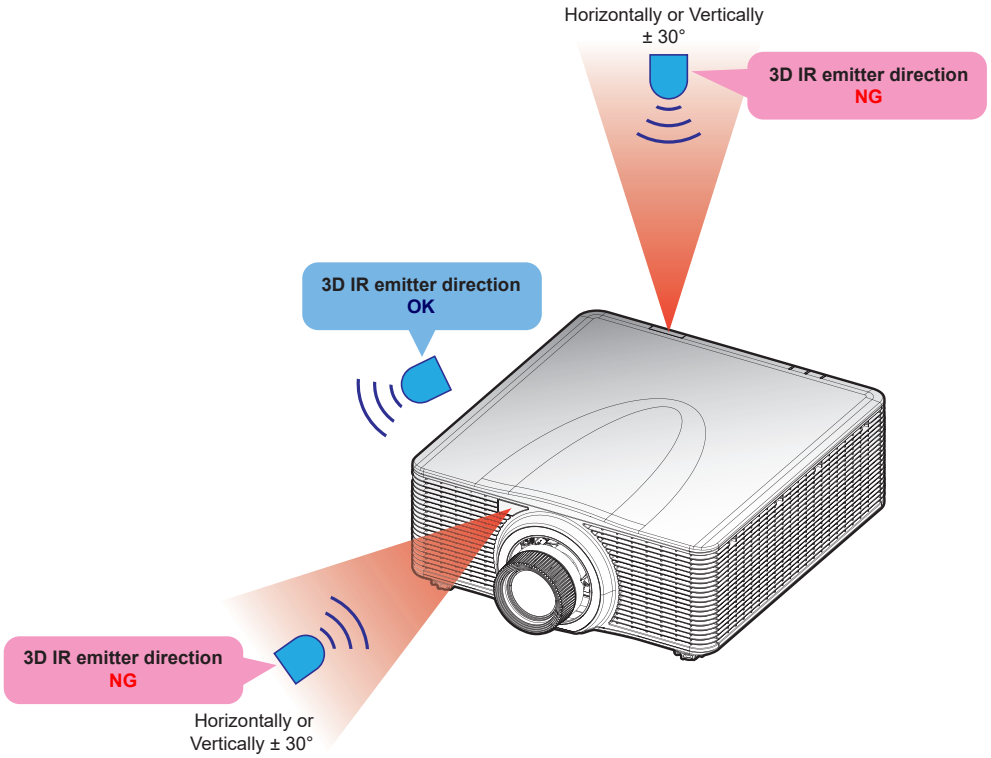
Set up the transmission of the 3D sync output signal.

- **To Emitter:** Send the 3D sync signal to the emitter connected to the 3D sync out port.
- **To Next Projector:** Send the 3D sync signal to next projector when using multiple projectors.

IR Control setup when using the 3D IR emitter

Infrared devices interfere with each other if placed in the same sensing angle. If you want to use the 3D IR emitter and the IR remote function, do any of the following:

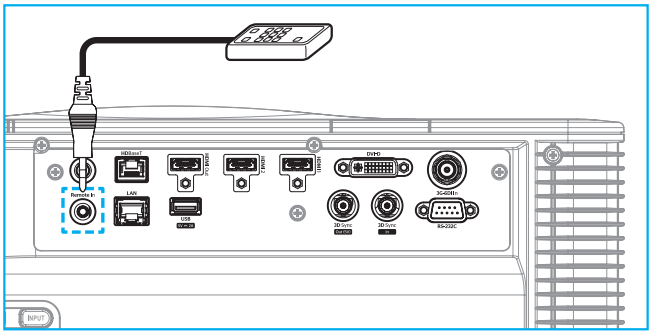
- Place the 3D IR emitter outside the IR remote control sensing angle as shown below:



- Based on the room layout, disable either the front or the top remote receiver in the OSD menu > Communication > Remote Setup > IR Function menu to avoid the 3D IR emitter interference, yet allowing to use the IR remote control function.

If neither of the two methods described above solved the problem, please use another 3D IR emitter/3D RF emitter or try any of the following two methods.

- Use a wired remote-in cable for the IR control.



- Use the IR control via the HDBaseT device (not supplied).

Note: *Disable the Front/Top remote receivers and enable the HDBaseT for IR control in the OSD menu > Communication > Remote Setup > IR Function.*

3D Invert

When the 3D video does not appear correctly, use this function to invert the 3D left and right frames.

Frame Delay

Set a frame delay value for the projector to correct the time difference between the 3D signal being given and the result being executed. This function works only when L/R Reference is set to Field GPIO. When performing 3D blending on multiple projectors, set the frame delay for each projector to correct the non-synchronous images.

Reset

Reset the function settings to factory default values.

Save to User

Save the image settings to the User mode.

Apply to User

Apply the image settings to User-Presentation, User-Bright, User-Cinema, User-HDR, User sRGB, User-DICOM SIM., User-Blending, User-3D, or User-2D High Speed.

Reset

Reset all 3D settings.

USING THE PROJECTOR

Display menu

Learn how to configure the settings to properly project images according to your installation circumstances.

Submenus

- Aspect Ratio
- Digital Zoom
- Geometric Correction
- Edge Mask
- Freeze Screen
- Test Pattern
- PIP/PBP

Aspect Ratio

Set the aspect ratio of the projected image. The available options are Auto, 4:3, 16:9, 16:10, LBX, or Native. Select Auto to display the detected image size.

Digital Zoom

Digitally adjust the size of the projected image.

Note: *Image projection on the screen depends on the signal source..*

Proportional

Enable the function to have the image's height and width changed at the same ratio.

Horizontal

Use the ◀ and ▶ buttons to change the width of the projected image.

Vertical

Use the ▲ and ▼ buttons to change the height of the projected image.

Horizontal Shift

Use the ◀ and ▶ buttons to horizontally shift the image.

Vertical Shift

Use the ▲ and ▼ buttons to vertically shift the image.

Reset

Reset digital zoom settings to factory default values.

USING THE PROJECTOR

Geometric Correction

Configure the geometric settings to reshape the image for different projection surfaces.

Warp Control

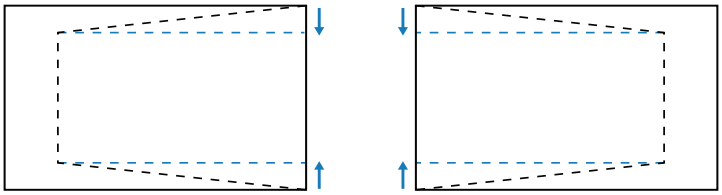
Configure warp settings. Select between Basic, Advanced, and AP.

- **Basic:** Configure keystone, pincushion, 4-corner settings.
- **Advanced:** Set the grid color and grid background, as well as configure warp and blend settings.
- **AP:** Use the ***Visual Suite*** to control the projector. When the ***Visual Suite*** is enabled, the projector's built in geometry functions are disabled.

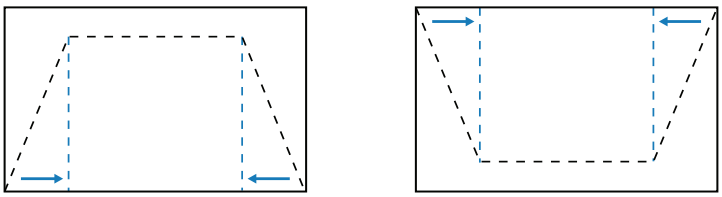
Basic Warp

Configure basic warp settings.

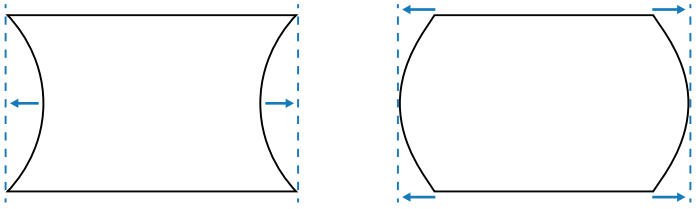
- **Keystone:** Keystone function is used to adjust the images in asymmetric rectangle shape.
  - **Horizontal:** Adjust the left and right side of the projected image to make it an even rectangle. It is used for the images with unequal left and right sides.



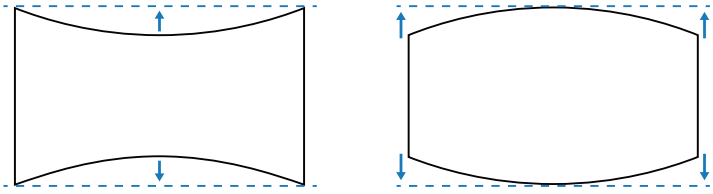
  - **Vertical:** Adjust the top and bottom side of the projected image to make it an even rectangle. It is used for the images with unequal top and bottom sides.



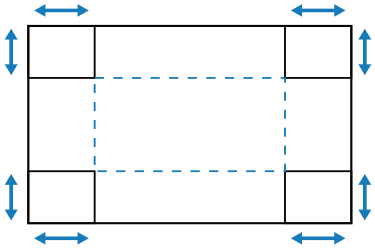
- **Pincushion:** Pincushion function is used to adjust the image with barrel or pincushion distortion.
  - **Horizontal:** Correct the projected image with horizontal barrel or pincushion distortion.



  - **Vertical:** Correct the projected image with vertical barrel or pincushion distortion.



- **4-Corner:** Reshape the image by moving the 4 corners of the image to have it fit a specific projection surface.



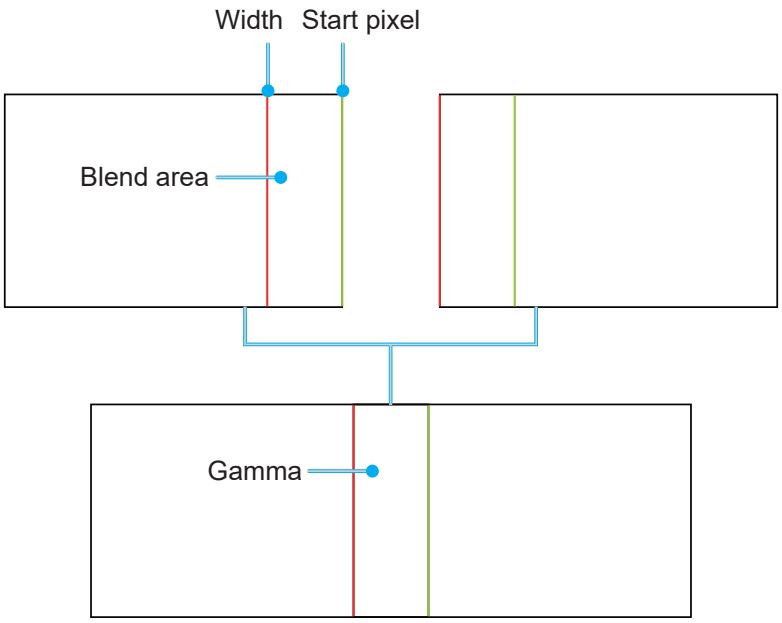
Advanced Warp

Configure advanced warp settings. Refer to “Manual Warp Control Instruction” on page 100.

Note: *When Basic or AP of Warp Control is selected, the Advanced Warp will be unavailable.*

- **Grid Color:** Select a grid color for warp and blend pattern between Green, Magenta, Red, and Cyan.
- **Grid Background:** Select the grid background between Black and Transparent.
- **Warp Setting:** Configure warp settings.
  - **Grid Point:** The grid number selection of warping control, 2x2 / 3x3 / 5x5 / 9x9 / 17x17.
  - **Warp Inner:** Turn on to adjust the inner grid, the function activates when exceeding 3x3 grid points.
  - **Warp Sharpness:** When the grid lines are warped from straight into curve, the grid lines will be distorted and become jagged. To avoid the line jagging, adjust the warp sharpness to blur or sharpen the edge of the images.
- **Blend Setting:** Configure the blend settings directly on the projector to merge two or more adjacent images into one larger and seamless image.
  - **Blend Width:** Set the blend pattern width.
  - **Overlap Grid Number:** Set adjustment scale of blend width, up to 12 pixels.
  - **Gamma:** Select the gamma value of the blend area to adjust the curvature of the blending effect.

  Note: *For install flexibility we have not applied a FW limitation to the blending menu of this device. Distortion may occur if you attempt to warp to an extreme level. For more complex installs, at a cost, please contact your dealer for external devices for warping.*



- **Black Level:** Manually adjust the black level of the projected image.
  - **Area:** Support two layers black level adjustment, top and bottom. Please avoid overlapping areas of the two layers, only top black level value displayed in overlapping area.
  - **Enable:** Enable or disable the black level adjustment in the selected area.
  - **Edit Area:** The area adjustment of black level. When entering the area adjustment view, user can press “INFO” button on remote control to get the hot key for add and remove points.
    - **Add Point:** Add up to 32 area control points for black level adjustment.
    - **Remove Point:** Remove at least 4 control points from the selected area.

    Note:
    - *Enter the Edit Area:*

      a) Use the “INPUT” hotkey of the remote control to enable or disable the Add Point function.

      b) Use the “AUTO” hotkey of the remote control to enable or disable the Remove Point function.

      c) Use the “INFO” hotkey of the remote control to show the Edit Area’s hotkey help dialog, and use “MENU” or “Exit” to hide help dialog.
    - *After adding or removing a control point, press **Enter** to move to the next point counterclockwise.*
  - **Brightness:** Adjust Red / Green / Blue values of selected black level area simultaneously.
  - **Red/Green/Blue:** Adjust each color of selected black level area individually.
  - **Reset:** Reset the black level to factory default values either on the Bottom or on the Top area or on both areas.

Memory

The projector allows the user to save up to five geometry memories, including the ones set directly on the projector and the ones configured via external software tools. The available options are Save Memory, Apply Memory, and Clear Memory.

Reset

Reset geometric settings to factory default values.

Edge Mask

The edge blending function allows you to hide one or multiple edges of the projected image. You can use this function to remove the video encoding noise on the edges of the video images.

Freeze Screen

Select to pause the display screen despite any change in the source device.

Test Pattern

Select a test pattern. The available options are Off, Green Grid, Magenta Grid, White Grid, White, Black, Red, Green, Blue, Yellow, Magenta, Cyan, ANSI Contrast 4x4, Color bar, and Full screen.

USING THE PROJECTOR

PIP/PBP

PIP/PBP (picture in picture/picture by picture) allows simultaneously displaying two images from two input sources.

Screen

Select the appropriate PIP/PBP mode or disable the function.

- **Off:** Disable PIP/PBP mode.
- **PIP:** Display one input source on the main screen and the other input source in an inset window.
- **PBP:** Display two images of the same size on the screen.

Main Source

Select an input source for the main image. The available input sources are HDMI1, HDMI2, DVI-D, 3G-SDI, and HDBaseT.

Sub Source

Select an input source for the second image. The available input sources are HDMI1, HDMI2, DVI-D, 3G-SDI, and HDBaseT.

Swap

Swap the main source and sub source.

Size

Change the display size of the sub source in PIP mode.

Location

Adjust the location of the sub image. In the layout chart below, the “P” indicates the main image:

- **PBP Layout**

PBP Layout	
PBP, Main Left 	**PBP, Main Right** 
PBP, Main Top 	**PBP, Main Bottom** 

- **PIP Layout**

PIP Layout	PIP Size		
	Small	**Medium**	**Large**
PIP, Bottom Right			
PIP, Bottom Left			
PIP, Top Left			

PIP Layout	PIP Size		
	Small	Medium	Large
PIP, Top Right			

Note: *Refer to the table below for PIP/PBP compatibility.*

PIP/PBP Compatibility

PIP/PBP Matrix	DVI-D	HDMI-1	HDMI-2	3G-SDI	HDBaseT
DVI-D	—	V	V	V	V
HDMI-1	V	—	V	V	V
HDMI-2	V	V	—	V	V
3G-SDI	V	V	V	—	V
HDBaseT	V	V	V	V	—

Reset

Reset all the display settings to factory default values.

USING THE PROJECTOR

Input Settings menu

Learn how to configure the projector input settings.

Submenus

- Auto Source
- Quick Resync
- Active Inputs
- Latency Adjustment
- Backup Input
- HDMI
- HDBaseT

Auto Source

When Auto Source is enabled, the projector automatically detects and selects the input signal. Once an input source is selected, press the Input button on the remote control or keypad to switch to other available sources. When the function is disabled, pressing Input will bring up the Active Inputs submenu.

Quick Resync

Enable this feature to perform a quick process for synchronizing the projector with the input signal.

Active Inputs

Select an input signal from the source list. The available input sources are HDMI1, HDMI2, DVI-D, 3G-SDI, and HDBaseT.

Latency Adjustment

Enable this feature to reduce response time.

Note: *If the latency adjustment is set to 2D Ultra then the 3D mode, PIP modes, and 4K 30Hz resolution are not supported.*

Backup Input

Backup Input function allows the user to set up two input sources with the same timing specification. Upon loss of one input source, the projector automatically switches to the other source.

This function can be useful for the installations requiring uninterruptedly displaying the content source, such as live show, exhibition, and critical control room. The available input sources are HDMI1, HDMI2, DVI, and HDBaseT.

Auto Switch

Check the box to enable automatically switching to the backup input source when the current source fails.

Current Signal

Displays the current active signal.

First Input

Select a signal as the first input source. Once the selected source is activated, the OSD menu lists out the signal's Resolution, Horz Refresh (horizontal refresh rate), and Color Space.

Second Input

Select a signal as the second input source. Once the selected source is activated, the OSD menu lists out the signal's Resolution, Horz Refresh (horizontal refresh rate), and Color Space.

Backup Input Status

Display the function status. The Backup Input Status is active when meeting the following conditions:

- Auto Switch is checked.
- The two sources are with the same timing specification.
- The two sources are active.
- Projector is displaying one of the two sources.

Backup Input Change

Display the function change.

Backup Input Info.

Display the function information, including Current Signal, Backup Input Status, Backup Input Change, First Input and its Resolution, Horz Refresh, Color Space, HDR, Second Input and its Resolution, Horz Refresh, Color Space, and HDR.

HDMI

Setup the projector's HDMI ports.

Output

Select a HDMI port to output the signal.

HDMI 1 EDID/HDMI 2 EDID

When receiving a HDMI signal, set the projector's EDID compatibility to display the signal correctly. Select **1.4** for the input devices with HDMI 1.4, or **2.0** for HDMI 2.0 devices.

Reset

Reset all the input settings to factory default values.

USING THE PROJECTOR

Device Setup menu

Learn how to configure the system settings for the projector.

Submenus

- Language
- Projection
- Lens Settings
- Schedule
- Date and Time
- Power Settings
- Light Source Settings
- Shutter
- Security
- On Screen Display
- Logo Setup
- Backlight
- High Altitude
- User Data
- System Update

Language

Select a language for the OSD menu. The available languages are English, German, French, Italian, Spanish, Portuguese, Polish, Dutch, Norwegian, Traditional Chinese, Simplified Chinese, Japanese, Korean, Russian, Hungarian, and Thai.

Projection

Change the image direction by selecting a proper projection mode.

Ceiling

Enable the function for ceiling mount installation.

Rear

Check the function for rear projection.

Lens Settings

Configure the lens settings to adjust the image quality and position.

Focus

Use the ▲ and ▼ buttons to adjust the focus of the projected image.

Zoom

Use the ⊕ and ⊖ buttons to adjust the size of the projected image.

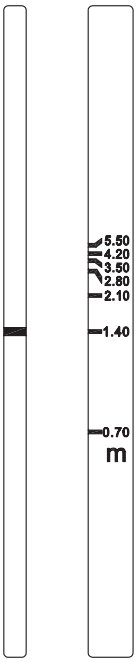
Lens Shift

Use the ▲ ▼ ◀ ▶ buttons to adjust the lens position to shift the projected area.

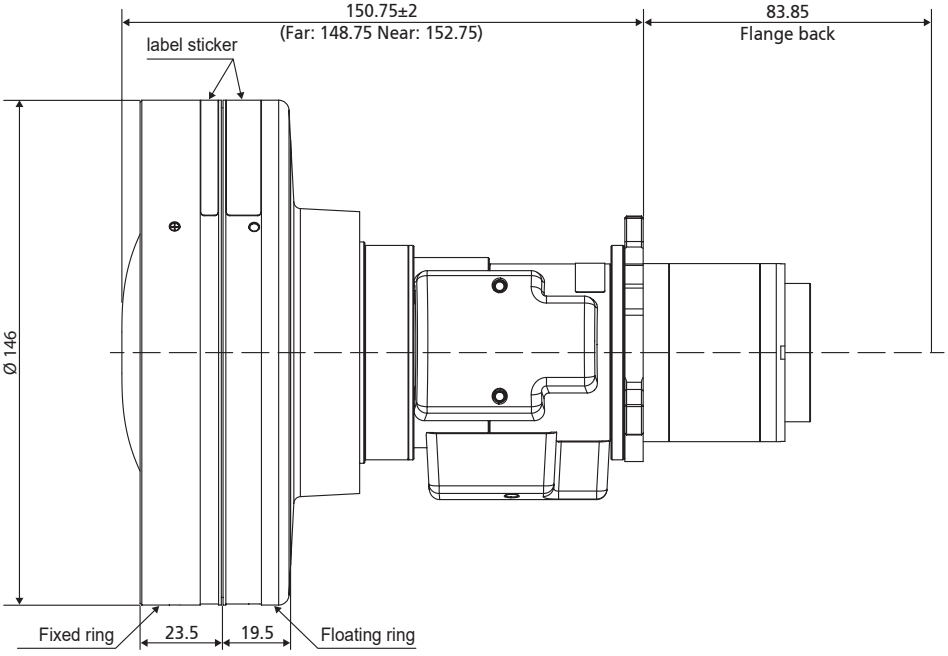
USING THE PROJECTOR

Note: *BX-CTA17 floating ring*

- *For better optical performance, manually adjust the floating ring before adjusting Zoom & Focus.*
- *Floating ring's label scale shows the projection distance.*
- *The projection distance is from the projector lens to the screen. For example, if the distance between the screen and the projector lens is 1.4 m, adjust the floating ring scale to "1.40" for better performance.*



Floating rings
label sticker



Lens Memory

This projector can save up to five lens settings, which records the lens position. To record correct data, please perform lens calibration at first time processing lens memory.

- **Save Memory:** Select a record from 1 to 5 to save the current lens settings.
- **Apply Memory:** Select a record from 1 to 5 to apply the lens settings.
- **Clear Memory:** Clear the saved lens records.

Note:

- *Must Save Memory before Apply Memory, otherwise the function of apply memory will gray out or disable.*
- *Performing a lens calibration will clear the saved lens records.*
- *BX-CTA16 setup requires a special support kit. For more information, please refer to the BX-CTA16 user manual.*

Lens Calibration

Calibrate the lens position to return it to the center. To prevent damage to the projector and the lens, always perform lens calibration before replacing the lens.

Lens Lock

Lock the lens to prevent the lens motors from moving, which disables all lens functions.

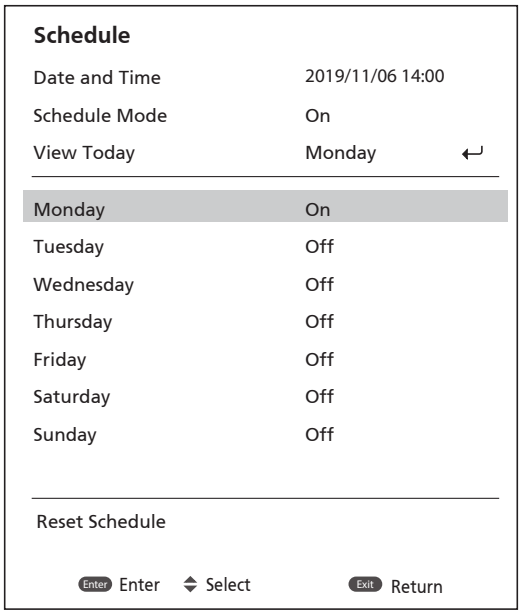
Reset

Reset the lens settings to factory default values.

USING THE PROJECTOR

Schedule

Schedule the projector functions to operate automatically at the set time.



Date and Time

Before setting a schedule, setup the date and time settings. Refer to “Date and Time” on page 66.

Schedule Mode

Enable or disable the schedule function. If the projector is controlled via external devices or software, the Schedule Mode displays AP Mode, and the projector’s schedule functions are grayed out.

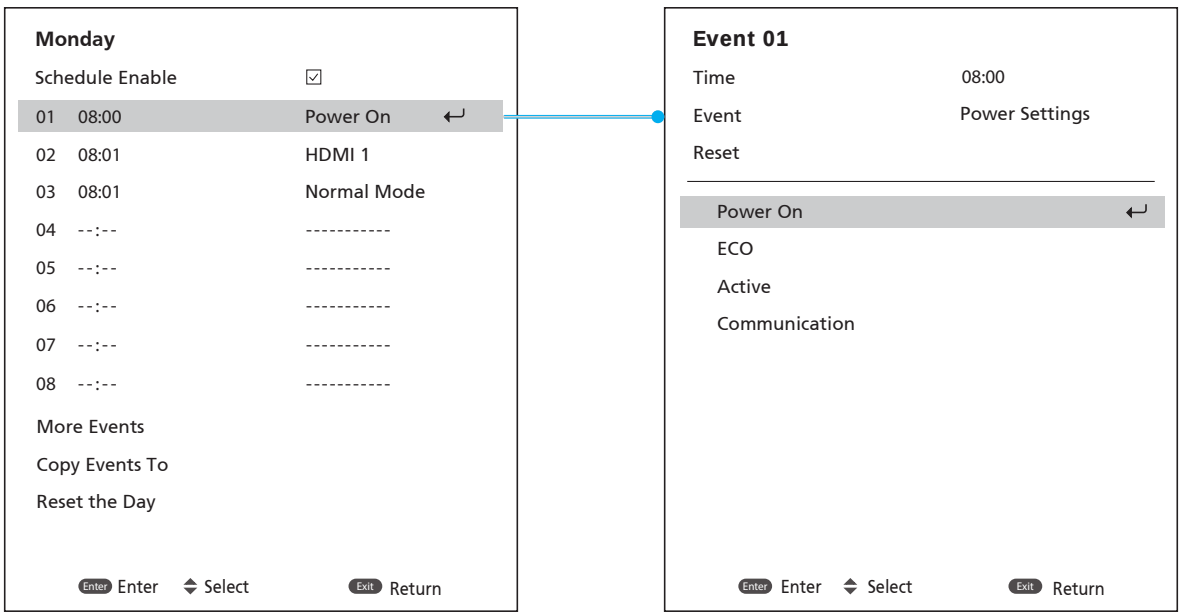
View Today

View the event list scheduled for today.

Note: *After the schedule is set up, make sure to save all the settings.*

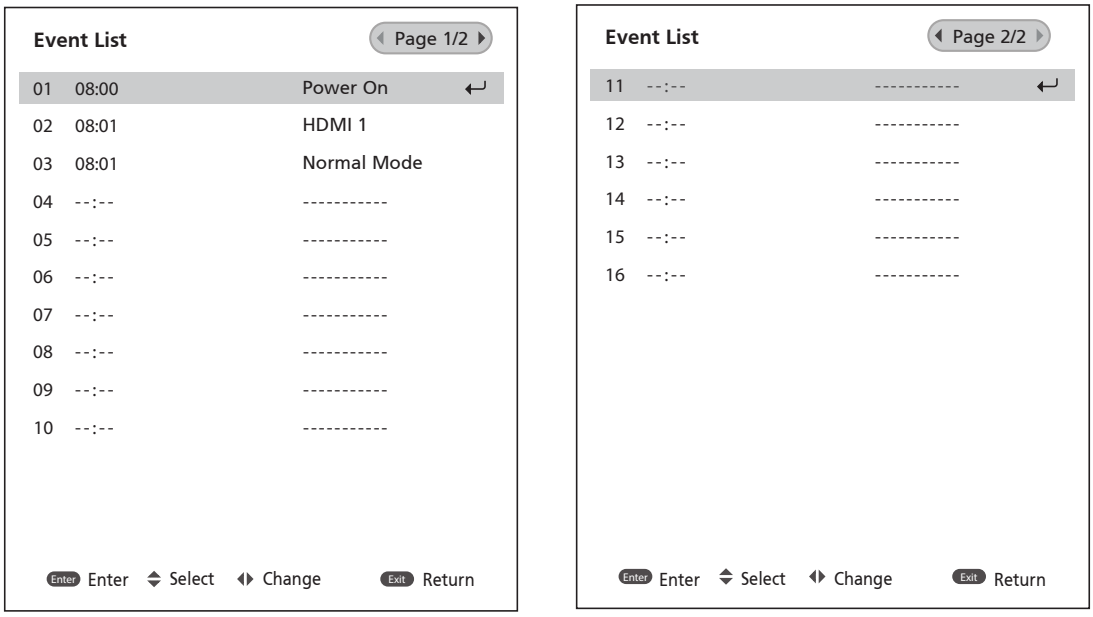
Monday to Sunday

Set up the schedule for days of a week. On the Schedule menu page, select a day and configure the schedule settings.

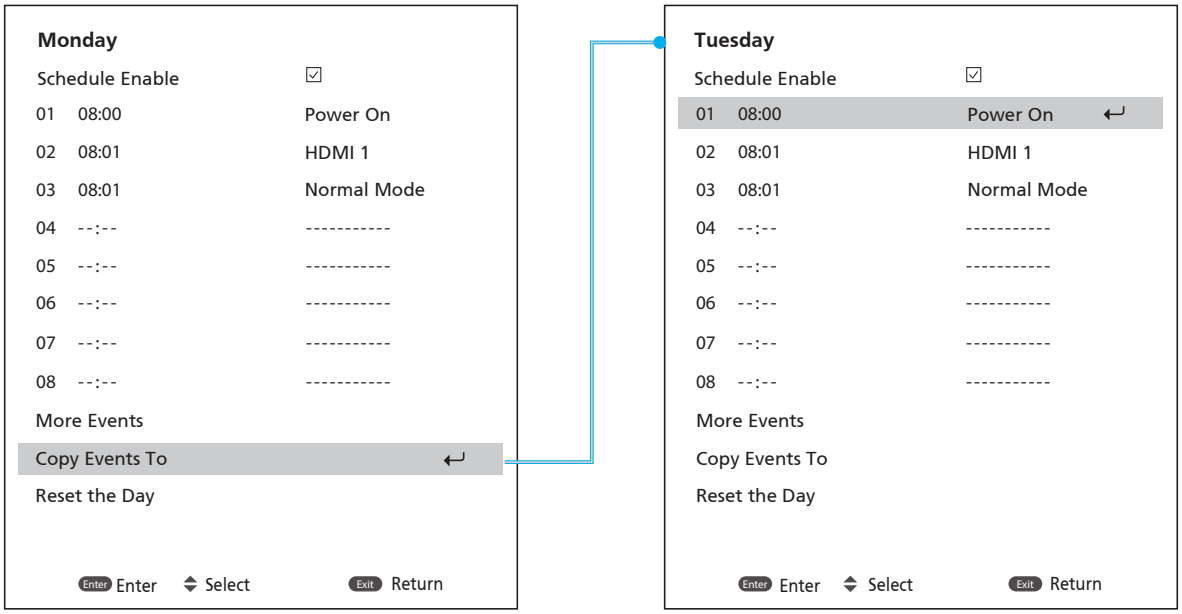


- **Schedule Enable:** Enable or disable the schedule function for the selected day.

- **Event 01-16:** Select an event record number, and set up the schedule details.
  - **Time:** Set the time for the event.
  - **Function:** Select the function. The available functions are Power Settings, Input Source, Light Source Mode, and Shutter
    Note: *If the Power Setting is set to Eco or Active, then the projector cannot boot up again.*
  - **Event:** Select a function for the event, which operates automatically at the set time.
  - **Reset:** Reset the event settings.



- **Copy Events To:** Copy the events setup for the day to another day.



- **Reset the Day:** Reset the schedule settings for the day.

Reset Schedule

Reset all of the schedule settings.

Date and Time

Set up the projector's date and time.

Clock Mode

Set the clock mode to NTP Server or Manual.

Note: *To use NTP Server, make sure the projector is connected to the Internet.*

Date

Set a date for the projector. The date format is in Year/Month/Date.

Time

Set the time for the projector.

Daylight Saving Time

Enable or disable the daylight savings function.

NTP Server

Select a NTP Server for the network clock mode.

Time Zone

Set a time zone for the network clock mode.

Update Interval

Set the date and time update interval.

Apply

Apply date and time modifications.

USING THE PROJECTOR

Power Settings

Configure the projector's power settings.

Power Mode (Standby)

Setup the projector's standby mode.

- **Eco:** Minimum power consumption (< 0.5 Watt) which does not allow network control.
- **Active:** Low power consumption (< 2 Watt) which allows the LAN module to enter sleep mode and supports to be woken by Wake on LAN (WoL). When the LAN module is woken by WoL, the projector is ready to receive commands over the network.
- **Communication:** More power consumption that allows controlling the projector over the network.

Signal Power On

Turn on this function to have the projector automatically turning on when connected to HDMI input sources. It only applies to the standby projector set to Communication mode.

Auto Power Off

Set an interval timer for the projector to automatically turn off if no signal is detected within the specified time period. Press the ◀ and ▶ buttons to add or reduce time, 1 minute for each press.

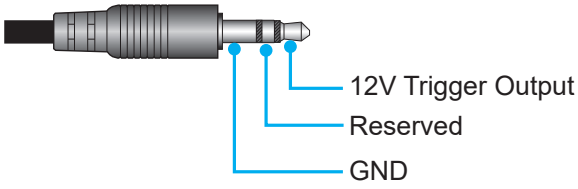
Sleep Timer

Set an interval timer for the projector to automatically turn off after operating for the specified amount of time.

12V Trigger

When enabled, the projector screen is automatically raised or lowered when the projector is turned on or off. This function only works when the projector is connected to an electrical projector screen.

Note: *3.5mm mini jack that outputs 12V 500mA (max.) for relay system control.*



- **On**: Choose "On" to enable the trigger.
- **Off**: Choose "Off" to disable the trigger.

Reset

Reset the power settings to factory default values.

Light Source Settings

Set up the light source to control the projector brightness.

Light Source Mode

Select a light source mode depending on the installation requirements. The available options are Normal, Eco Mode, and Custom Power.

Custom Brightness

When the Light Source Mode is set to Custom Mode, set up the custom brightness level.

Set up the Constant Brightness to maintain the image brightness at a specified level. A special algorithm is designed to compensate for the natural decay of brightness so that the image can be maintained at a fixed brightness level.

- **Brightness Level:** Adjust the brightness level from 30% to 100%.
- **Constant Brightness:** Enable to maintain the image brightness at the set brightness level. A special algorithm is designed to compensate for the natural decay of brightness so that the image can be maintained at a fixed brightness level.

Shutter

Set up the shutter behavior.

Fade-In

This function allows the fading-in effect when turning off the shutter. The length of the fading effect can be adjusted from 0s to 5s.

Fade-Out

This function allows the fading-out effect when turning on the shutter. The length of the fading effect can be adjusted from 0s to 5s.

Startup

Select the shutter behavior when turning on the projector.

- **Shutter Off:** Projector projects images normally after being powered on.
- **Shutter On:** Projector automatically turns on shutter after being powered on.

Security

Set up security verification to protect the projector.

Security

Select On to protect the projector with a password.

Note:

1. *For the first time use security function, please enter a password when security function turned on.*
2. *Non first time use security function, please enter previous password to verify when security function turned on again.*

Security Timer

Specify the length of time the projector can be used without the password. Once the timer counts to 0, the user must enter a password to use the projector. The timer restarts every time the projector is turned on.

Change Password

Change the projector password.

Note: *In the last minute before reaching a specified timer, including Auto Power Off, Sleep Timer, and Security Timer, an on-screen message will pop up warning that the projector shuts down in 60 seconds. Press any button on the remote control or projector keypad to reset the timer and the projector remains on.*

On Screen Display

Set up the on screen display menus.

Menu Location

Select the menu location from Top Left, Top Right, Center, Bottom Left, and Bottom Right.

Menu Transparency

Set the menu transparency level.

Menu Timer

Set the length of time the menu displays on the screen.

Information Hide

Enable or disable the corner information messages, such as input source, IP address, and so on.

Background

Set a background color to display when no input signal is detected. The available options are Blue, Black, White, and Logo.

USING THE PROJECTOR

Logo Setup

Set up the logo for the startup screen.

Change Logo

Change the logo for the startup screen. Apart from the Default logo, user can select from Neutral, User Logo, and Captured Logo.

- **Default:** The projector default logo.
- **Neutral:** The logo is not displayed on the startup screen.
- **User Logo:** User customized logo.
- **Captured Logo:** The logo saved via the Logo Capture function.

Note: *The supported logo format is PNG and size is 1920 x 1200 pixels.*

Logo Capture

Capture part of the projected image and save it as a customized logo.

Delete Logo

Delete the saved customized logo, including the Captured Logo and User Logo.

Backlight

Set up the projector backlight options.

Keypad

Enable or disable the keypad backlight.

Power Key

Enable or disable the backlight for the power key.

High Altitude

Select On to increase the fan speed. To ensure the image quality and prevent damage to the projector, enable High Altitude mode in high temperature, high humidity, or high altitude environment.

User Data

User can save the projector settings as user data and reload the settings later.

- **Save all settings:** Save all of the projector settings as user data. User can save up to 5 records.
- **Load all settings:** Load the previously saved user data.

System Update (FOTA)

Update the system automatically or manually.

- **Auto:** System checks for new updates automatically every time it is connected to the Internet.
- **Auto Download:** System will download the firmware upgrade file in the background and starts the upgrade process when you power off the projector. When the upgrade is done, the projector will power off.
- **Update:** Manually update the system firmware.

Reset

Reset the settings to factory default values.

- **Reset OSD:** Reset OSD settings to default values.
- **Reset to Default:** Reset all projector settings to default values.
- **Reset Selective:** Reset the settings of one of the main menus. User can choose from Image, Display, Advanced, Input, Communication, and Setup.

USING THE PROJECTOR

Communication menu

Communication menu is used to configure the settings that allow the projector to communicate with other projectors or control devices.

Submenus

- Projector ID
- Remote Setup
- Network Setup
- Email Notification
- Control
- Baud Rate

Supplemental information

- Using the web control panel
- Using RS232 command by Telnet

Projector ID

Assign an ID code for the projector from 00 to 99. Use this code as the projector ID when controlling the projector by RS232, HDBaseT, Telnet or other control methods.

Remote Setup

Configure the settings of the Infra-Red (IR) remote control.

Remote Code

Press and hold the remote control ID key. When all the key lights turn on, press the number key 00-99 to assign a number. When all key lights flash rapidly twice, the remote control code has been changed. At this time, release the remote control ID key.

Quick Switch Code

The IR receiving function of the projector can be temporarily deactivated by hot key(0~9) to avoid the IR interference between projectors. The remote ID needs to be set to **All**.

Note: *When hotkey is on, the default functions are inactive temporarily.*

IR Function

Set the remote receiver for the projector to control the communication between the projector and the IR remote.

- **Front:** Enable or disable the front remote receiver.
- **Top:** Enable or disable the top remote receiver.
- **HDBaseT:** Select On to set the HDBaseT terminal as the remote receiver.

User 1 / User 2

Assign a function to the User 1 and User 2 buttons on the remote control. It allows you to use the function easily without going through the OSD menus. The available functions are Freeze Screen, Blank Screen, PIP/PBP, Aspect Ratio, Information Hide, Network Setup, Projector ID, Color Matching, and Reset Selective.

USING THE PROJECTOR

Network Setup

Configure the projector's network settings.

LAN Interface

To avoid clash, specify the LAN interface to RJ-45 or HDBaseT.

MAC Address

Display the MAC address. (Read only)

Network Status

Display the network connection status. (Read only)

DHCP

Turn on DHCP to automatically acquire IP address, subnet mask, gateway, and DNS.

IP Address

Assign the projector's IP address.

Subnet Mask

Assign the projector's subnet mask.

Gateway

Assign the projector's gateway.

DNS

Assign the projector's DNS.

Apply

Apply the wired network settings.

Network Reset

Reset the network settings to default factory values.

Email Notification

Set up email notifications for some events, which allows them to be received as early alerts via emails.

Control

This projector can be controlled remotely by a computer or other external devices through wireless or wired network connection. It allows the user to control one or more projectors from a remote control center, such as powering the projector on or off, and adjusting the image brightness or contrast.

Use the Control submenu to select a control device for the projector.

Crestron

Control the projector with Crestron controller and related software. (Port: 41794)

For more information, please visit http://www.crestron.com.

- **Crestron Setup:** Setup the Crestron IP Address, IPID, and Port. Then select **Crestron Setup Apply** to save the modifications.

PJ Link

Control the projector with PJLink v2.0 commands. (Port: 4352)

For more information, please visit http://pjlink.jbmia.or.jp/english.

- **PJ Link Service:** Setup the address for the PJ Link service and the related settings. Then select **PJ Link Setup Apply** to save the modifications.

Extron

Control the projector with Extron devices. (Port: 2023)

For more information, please visit http://www.extron.com.

AMX

Control the projector with AMX devices. (Port: 9131)

For more information, please visit http://www.amx.com.

Telnet

Control the projector using RS232 commands though Telnet connection. (Port: 23)

For more information, refer to “Using RS232 command by Telnet” on page 76.

HTTP

Control the projector with web browser. (Port: 80)

For more information, refer to “Using the web control panel” on page 73.

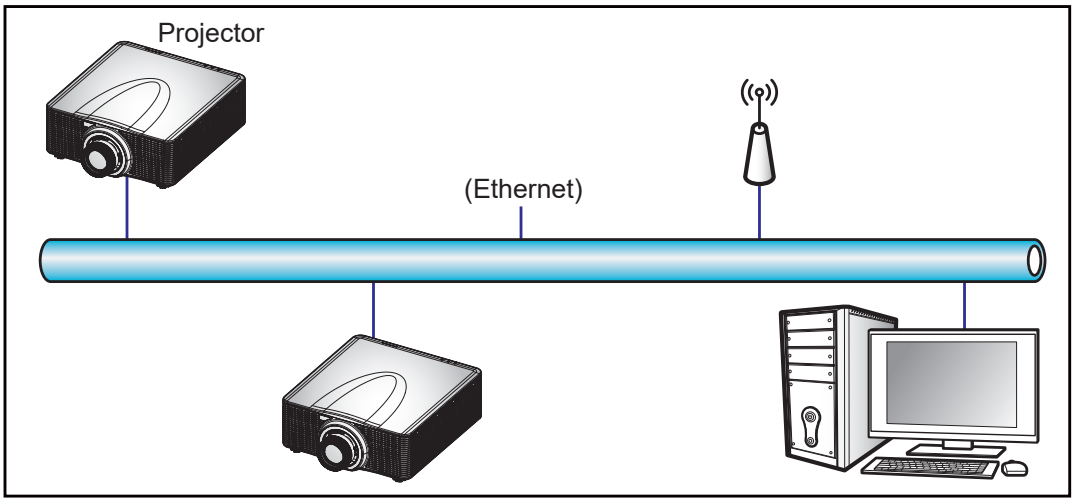
Optoma Management Suite (OMS)

Control the projector with OMS.

For more information, please visit https://www.optoma.com.

Reset

Reset the control functions to default factory values.



Note:

- *Crestron is a registered trademark of Crestron Electronics, Inc. of the United States.*
- *Extron is a registered trademark of Extron Electronics, Inc. of the United States.*
- *AMX is a registered trademark of AMX LLC of the United States.*
- *PJLink applied for trademark and logo registration in Japan, the United States of America, and other countries by JBMIA.*
- *For more information about the various types of external devices which can be connected to the LAN / RJ45 port and remotely control the projector, as well as the supported commands for these external devices, please contact the Support-Service directly.*

Baud Rate

Set the baud rate for Serial Port In and Serial Port Out. The available options are 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200.

Reset

Reset all network settings to default factory values.

USING THE PROJECTOR

Using the web control panel

The Web control panel allows the user to configure various projector settings using a web browser from any personal computer or mobile devices.

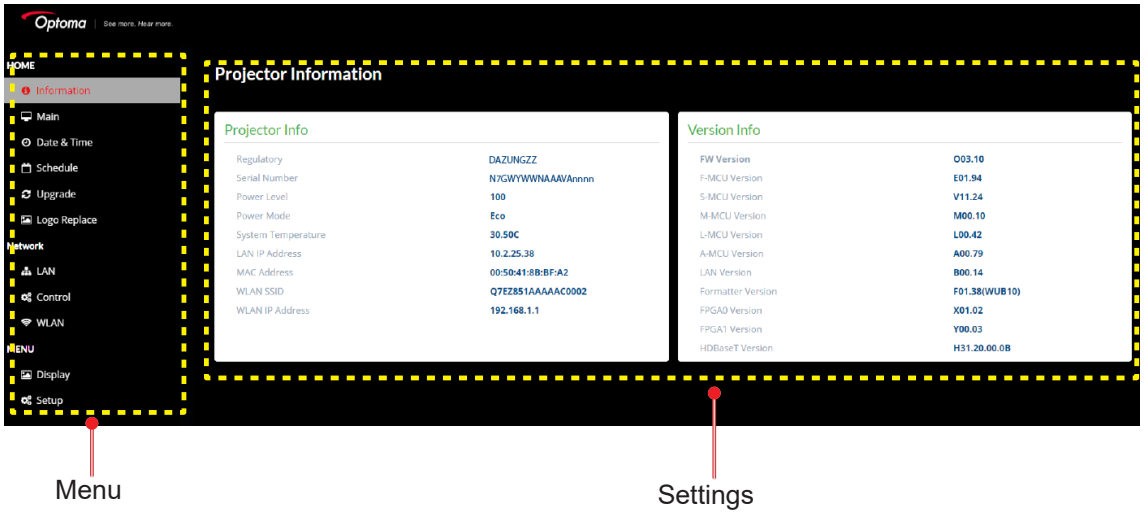
System Requirements

To use the web control panel, make sure your devices and software meet the minimum system requirements.

- RJ45 cable (CAT-5e) or wireless dongle
- PC, laptop, mobile phone, or tablet installed with a web browser
- Compatible web browsers:
  - Microsoft Edge 40 or higher version
  - Firefox 57 or higher version
  - Chrome 63 or higher version

Overview of the web control panel

Configure the projector settings using web browser.



Menu	Description
HOME	View the projector information and firmware version details.
IMAGE	To configure image settings.
DISPLAY	To configure the settings to properly project images according to your installation circumstances.
INPUT SETTINGS	To configure the projector input settings.
DEVICE SETUP	To configure the system settings for the projector.
COMMUNICATION	Communication menu is used to configure the settings that allow the projector to communicate with other projectors or control devices.
INFORMATION	View the projector information about its status and settings. The projector information is read only.

Accessing the web control panel

When network is available, connect the projector and the computer to the same network. Use the projector address as the web URL to open the web control panel in a browser.

1. Check the projector address using the OSD menu.
   - On a wired network, select **Network > LAN > IP Address**.

     Note: *Make sure DHCP is enabled.*
   - On a wireless network, select **Network > WLAN > Gateway**.
2. Open a web browser and type the projector address in the address bar.
3. The web page redirects to the web control panel.
4. In the Username field, type the username: admin (first time login).

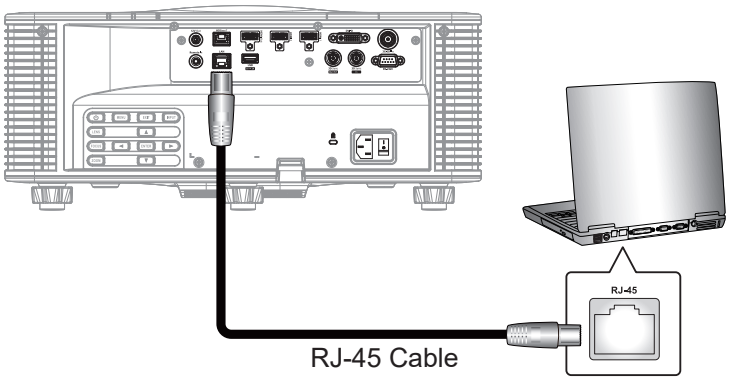
   Note:
   - *When logging in for the first time, you don't need to enter a password.*
   - *It is needed to change the username and password once you have logged in. It is also advised to use a strong password.*

When network is not available, refer to "Directly connect the projector to a computer" on page 75.

USING THE PROJECTOR

Directly connect the projector to a computer

When network is not available, connect the projector to the computer directly using a RJ-45 cable, and configure the network settings manually.



1. Assign IP address to the projector
   - From the OSD menu, select **Network > LAN**.
   - Turn off DHCP, and manually set the projector's IP Address, Subnet Mask, and Gateway.
   - Press **Enter** to confirm the settings.
2. Assign IP address to the computer
   - Set the Default Gateway and Subnet Mask of the computer to match the projector.
   - Set the IP address of the computer to match the first three numbers of the projector.

     For example, if the projector IP address is 192.168.000.100, set the computer IP address to 192.168.000.xxx, where xxx is not 100.
3. Open a web browser and type the projector address in the address bar.
4. The web page redirects to the web control panel.

Using RS232 command by Telnet

This projector supports using RS232 commands through Telnet connection.

1. Set up a direct connection between the projector and computer. Refer to *Directly connect the projector to a computer* on page 75.
2. Disable the firewall on the computer.
3. Open the command dialogue on the computer. For Windows 7 operating system, select **Start > All Programs > Accessories > Command Prompt**.
4. Input the command “telnet ttt.xxx.yyy.zzz 23”.
   Replace “ttt.xxx.yyy.zzz” with the projector IP address.
5. Press **Enter** on the computer keyboard.

Specification for RS232 by Telnet

- Telnet: TCP
- Telnet port: 23 (contact service team for more details)
- Telnet utility: Windows “TELNET.exe” (console mode).
- Disconnection for RS232-by-Telnet control normally: Close
- Below are the limitations for using Windows Telnet utility directly after TELNET connection is ready:
  - There is less than 50 bytes for successive network payload for Telnet-Control application.
  - There is less than 26 bytes for one complete RS232 command for Telnet-Control.
  - Minimum delay for next RS232 command must be more than 200 (ms).Information menu.

Info menu

View the projector information about its status and settings. The projector information is read only.

Submenus

- Device
- System Status
- Communication
- Signal
- Backup Input
- Firmware Version

ADDITIONAL INFORMATION

Compatible resolutions

Timing table

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	HDMI 1/HDMI 2						
						RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
PC	VGA	640 x 350	1.33	16:10	85	V	V	V	V	V	V	V
		640 x 400			85	V	V	V	V	V	V	V
		640 x 480		4:3	60	V	V	V	V	V	V	V
					72	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
		720 x 400	1.8	9:5	70	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	SVGA	800 x 600	1.33	4:3	60	V	V	V	V	V	V	V
					72	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
					120	V	V	V	V	V	V	V
		832 x 624	1.33	4:3	75	V	V	V	V	V	V	V
		848 x 480			60	V	V	V	V	V	V	V
	XGA	1024 x 768	1.33	4:3	60	V	V	V	V	V	V	V
					70	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
					120	V	V	V	V	V	V	V
	SXGA	1152 x 864	1.33	4:3	75	V	V	V	V	V	V	V
		1152 x 870	1.32		75	V	V	V	V	V	V	V
	WXGA	1280 x 768	1.67	5:3	60	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	WXGA	1280 x 800	1.6	16:10	60	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	SXGA	1280x960	1.33	4:3	60	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
		1280 x 1024	1.25	5:4	60	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	WXGA	1360 x 765	1.78	16:9	60	V	NA	NA	V	NA	NA	NA
		1360 x 768			60	V	V	V	V	V	V	V
		1366 x 768			60	V	V	V	V	V	V	NA
	SXGA+	1400 x 1050	1.33	4:3	60	V	V	V	V	V	V	V
	WXGA+	1440 x 900	1.6	16:10	60	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	WXGA++	1600 x 900	1.78	16:9	60	V	V	V	V	V	V	V
	UXGA	1600 x 1200	1.33	4:3	50	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	HDMI 1/HDMI 2						
						RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
PC	WSXGA+	1680 x 1050	1.6	16:10	60	V	V	V	V	V	V	V
	WUXGA RB	1920 x 1200RB	1.6	16:10	50	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	2K	2560 x 1440RB	1.78	16:9	60	V	V	V	V	V	V	V
TV	SDTV (480i)	720 x 480	1.5	3:2	59.94	V	V	V	V	V	V	V
	SDTV (480i)	720 x 480	1.5	3:2	60	V	V	V	V	V	V	V
	SDTV (576i)	720 x 576	1.25	5:4	50	V	V	V	V	V	V	V
	EDTV (480p)	720 x 480	1.5	3:2	59.94	V	V	V	V	V	V	V
	EDTV (480p)	720 x 480	1.5	3:2	60	V	V	V	V	V	V	V
	EDTV (576p)	720 x 576	1.25	5:4	50	V	V	V	V	V	V	V
	HDTV (1080i)	1920 x 1080	1.78	16:9	50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	HDTV (720p)	1280 x 720	1.78	16:9	50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
					120	V	V	V	V	V	V	V
	HDTV (1080p)	1920 x 1080	1.78	16:9	23.98	V	V	V	V	V	V	V
					24	V	V	V	V	V	V	V
					25	V	V	V	V	V	V	V
					29.97	V	V	V	V	V	V	V
					30	V	V	V	V	V	V	V
					50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
SD-SDI	SDTV (480i)	720 x 480	1.5	3:2	59.94	NA	NA	NA	NA	NA	NA	NA
	SDTV (576i)	720 x 576	1.25	5:4	50	NA	NA	NA	NA	NA	NA	NA
HD-SDI	HDTV (720p)	1280 x 720	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
	HDTV (1080i)	1920 x 1080	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
	HDTV (1080p)	1920 x 1080	1.78	16:9	23.98	NA	NA	NA	NA	NA	NA	NA
					24	NA	NA	NA	NA	NA	NA	NA
					25	NA	NA	NA	NA	NA	NA	NA
					29.97	NA	NA	NA	NA	NA	NA	NA
					30	NA	NA	NA	NA	NA	NA	NA
	HDTV (1080sF)	1920 x 1080	1.78	16:9	25	NA	NA	NA	NA	NA	NA	NA
					29.97	NA	NA	NA	NA	NA	NA	NA
					30	NA	NA	NA	NA	NA	NA	NA
3GA-SDI	HDTV (1080p)	1920 x 1080	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	HDMI 1/HDMI 2						
						RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
3GB-SDI	HDTV (1080p)	1920x1080 with 352M Payload ID	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
Mandatory 3D	Frame Packing (1080p)	1920 x 1080	1.78	16:9	23.98	V	V	V	V	V	V	V
					24	V	V	V	V	V	V	V
Mandatory 3D	Frame Packing (720p)	1280 x 720	1.78	16:9	50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	Side by Side (1080i)	1920 x 1080	1.78	16:9	50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	Side by Side (1080p)	1920 x 1080	1.78	16:9	24	V	V	V	V	V	V	V
					50	V	V	V	V	V	V	V
					59.9	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	Top and Bottom (720p)	1280 x 720	1.78	16:9	50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	Top and Bottom (1080p)	1920 x 1080	1.78	16:9	23.98	V	V	V	V	V	V	V
					24	V	V	V	V	V	V	V
					59.9	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
Frame Sequential 3D	SVGA	800 x 600	1.33	4:3	120	V	V	V	V	V	V	V
	XGA	1024 x 768	1.33	4:3	120	V	V	V	V	V	V	V
	HDTV	1280 x 720	1.78	16:9	120	V	V	V	V	V	V	V
	HDTV	1280 x 800	1.78	16:9	120	V	V	V	V	V	V	V
	1080p	1920 x 1080	1.78	16:9	120	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	X
	WUXGA	1920 x 1200	1.6	16:10	60	V	V	V	V	V	V	V
4K	3840 x 2160	3840 x 2160	1.78	16:9	24	V	V	V	V	V	V	V
					25	V	V	V	V	V	V	V
					30	V	V	V	V	V	V	V
					50	V	NA	NA	V	NA	NA	V
					60	V	NA	NA	V	NA	NA	V
	4096 x 2160 SMPTE	4096 x 2160	1.9	N/A	24	V	V	V	V	V	V	V
					25	V	V	V	V	V	V	V
					30	V	V	V	V	V	V	V
					50	V	NA	NA	V	NA	NA	V
					60	V	NA	NA	V	NA	NA	V

Note:

- *"V" means supported and "NA" means not supported.*
- *"RB" means "reduced blanking".*

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	DVI						
						RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
PC	VGA	640 x 350	1.33	16:10	85	V	V	V	V	V	V	V
		640 x 400			85	V	V	V	V	V	V	V
		640 x 480		4:3	60	V	V	V	V	V	V	V
					72	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
		720 x 400	1.8	9:5	70	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	SVGA	800 x 600	1.33	4:3	60	V	V	V	V	V	V	V
					72	NA	NA	NA	NA	NA	NA	V
					75	NA	NA	NA	NA	NA	NA	V
					85	V	V	V	NA	NA	NA	V
					120	NA	NA	NA	NA	NA	NA	NA
		832 x 624	1.33	4:3	75	V	V	V	NA	NA	NA	V
		848 x 480			60	V	V	V	V	V	V	V
	XGA	1024 x 768	1.33	4:3	60	V	V	V	V	V	V	V
					70	NA	NA	NA	NA	NA	NA	V
					75	NA	NA	NA	V	V	V	V
					85	V	V	V	V	V	V	V
					120	NA	NA	NA	NA	NA	NA	NA
	SXGA	1152 x 864	1.33	4:3	75	V	V	V	V	V	V	V
		1152 x 870	1.32		75	V	V	V	V	V	V	V
	WXGA	1280 x 768	1.67	5:3	60	NA	NA	NA	V	NA	NA	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	WXGA	1280 x 800	1.6	16:10	60	NA	NA	NA	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	SXGA	1280x960	1.33	4:3	60	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
		1280 x 1024	1.25	5:4	60	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	WXGA	1360 x 765	1.78	16:9	60	V	NA	NA	V	NA	NA	NA
		1360 x 768			60	V	V	V	V	V	V	V
		1366 x 768			60	V	V	V	V	V	V	V
	SXGA+	1400 x 1050	1.33	4:3	60	V	V	V	V	V	V	V
	WXGA+	1440 x 900	1.6	16:10	60	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	WXGA++	1600 x 900	1.78	16:9	60	V	V	V	V	V	V	V
	UXGA	1600 x 1200	1.33	4:3	50	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	WSXGA+	1680 x 1050	1.6	16:10	60	V	V	V	V	V	V	V
	WUXGA RB	1920 x 1200RB	1.6	16:10	50	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	DVI						
						RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
PC	2K	2560 x 1440RB	1.78	16:9	60	NA	NA	NA	NA	NA	NA	NA
TV	SDTV (480i)	720 x 480	1.5	3:2	59.94	V	V	V	V	V	V	V
	SDTV (480i)	720 x 480	1.5	3:2	60	V	V	V	V	V	V	V
	SDTV (576i)	720 x 576	1.25	5:4	50	V	V	V	V	V	V	V
	EDTV (480p)	720 x 480	1.5	3:2	59.94	V	V	V	V	V	V	V
	EDTV (480p)	720 x 480	1.5	3:2	60	V	V	V	V	V	V	V
	EDTV (576p)	720 x 576	1.25	5:4	50	V	V	V	V	V	V	V
	HDTV (1080i)	1920 x 1080	1.78	16:9	50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	HDTV (720p)	1280 x 720	1.78	16:9	50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
					120	NA	NA	NA	NA	NA	NA	NA
	HDTV (1080p)	1920 x 1080	1.78	16:9	23.98	V	V	V	V	V	V	V
					24	V	V	V	V	V	V	V
					25	V	V	V	V	V	V	V
					29.97	V	V	V	V	V	V	V
					30	V	V	V	V	V	V	V
					50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
SD-SDI	SDTV (480i)	720 x 480	1.5	3:2	59.94	NA	NA	NA	NA	NA	NA	NA
	SDTV (576i)	720 x 576	1.25	5:4	50	NA	NA	NA	NA	NA	NA	NA
HD-SDI	HDTV (720p)	1280 x 720	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
	HDTV (1080i)	1920 x 1080	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
	HDTV (1080p)	1920 x 1080	1.78	16:9	23.98	NA	NA	NA	NA	NA	NA	NA
					24	NA	NA	NA	NA	NA	NA	NA
					25	NA	NA	NA	NA	NA	NA	NA
					29.97	NA	NA	NA	NA	NA	NA	NA
					30	NA	NA	NA	NA	NA	NA	NA
	HDTV (1080sF)	1920 x 1080	1.78	16:9	25	NA	NA	NA	NA	NA	NA	NA
					29.97	NA	NA	NA	NA	NA	NA	NA
					30	NA	NA	NA	NA	NA	NA	NA
3GA-SDI	HDTV (1080p)	1920 x 1080	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
3GB-SDI	HDTV (1080p)	1920x1080 with 352M Payload ID	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
Mandatory 3D	Frame Packing (1080p)	1920 x 1080	1.78	16:9	23.98	NA	NA	NA	NA	NA	NA	NA
					24	NA	NA	NA	NA	NA	NA	NA

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	DVI						
						RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
Mandatory 3D	Frame Packing (720p)	1280 x 720	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
	Side by Side (1080i)	1920 x 1080	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
	Side by Side (1080p)	1920 x 1080	1.78	16:9	24	NA	NA	NA	NA	NA	NA	NA
					50	NA	NA	NA	NA	NA	NA	NA
					59.9	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
	Top and Bottom (720p)	1280 x 720	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
	Top and Bottom (1080p)	1920 x 1080	1.78	16:9	23.98	NA	NA	NA	NA	NA	NA	NA
					24	NA	NA	NA	NA	NA	NA	NA
					59.9	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
Frame Sequential 3D	SVGA	800 x 600	1.33	4:3	120	V	V	V	V	V	V	V
	XGA	1024 x 768	1.33	4:3	120	V	V	V	V	V	V	V
	HDTV	1280 x 720	1.78	16:9	120	V	V	V	V	V	V	V
	HDTV	1280 x 800	1.78	16:9	120	V	V	V	V	V	V	V
	1080p	1920 x 1080	1.78	16:9	120	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	WUXGA	1920 x 1200	1.6	16:10	60	V	V	V	V	V	V	V
4K	3840 x 2160	3840 x 2160	1.78	16:9	24	NA	NA	NA	NA	NA	NA	NA
					25	NA	NA	NA	NA	NA	NA	NA
					30	NA	NA	NA	NA	NA	NA	NA
					50	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
	4096 x 2160 SMPTE	4096 x 2160	1.9	N/A	24	NA	NA	NA	NA	NA	NA	NA
					25	NA	NA	NA	NA	NA	NA	NA
					30	NA	NA	NA	NA	NA	NA	NA
					50	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA

Note:

- *"V" means supported and "NA" means not supported.*
- *"RB" means "reduced blanking".*

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	3G-SDI YCbCr 4:2:2 10 bit
PC	VGA	640 x 350	1.33	16:10	85	NA
		640 x 400			85	NA
		640 x 480		4:3	60	NA
					72	NA
					75	NA
					85	NA
		720 x 400	1.8	9:5	70	NA
					85	NA
	SVGA	800 x 600	1.33	4:3	60	NA
					72	NA
					75	NA
					85	NA
					120	NA
		832 x 624	1.33	4:3	75	NA
		848 x 480			60	NA
	XGA	1024 x 768	1.33	4:3	60	NA
					70	NA
					75	NA
					85	NA
					120	NA
	SXGA	1152 x 864	1.33	4:3	75	NA
		1152 x 870	1.32		75	NA
	WXGA	1280 x 768	1.67	5:3	60	NA
					75	NA
					85	NA
	WXGA	1280 x 800	1.6	16:10	60	NA
					75	NA
					85	NA
	SXGA	1280x960	1.33	4:3	60	NA
					85	NA
		1280 x 1024	1.25	5:4	60	NA
					75	NA
					85	NA
	WXGA	1360 x 765	1.78	16:9	60	NA
		1360 x 768			60	NA
		1366 x 768			60	NA
	SXGA+	1400 x 1050	1.33	4:3	60	NA
	WXGA+	1440 x 900	1.6	16:10	60	NA
					75	NA
					85	NA
	WXGA++	1600 x 900	1.78	16:9	60	NA
	UXGA	1600 x 1200	1.33	4:3	50	NA
					60	NA
	WSXGA+	1680 x 1050	1.6	16:10	60	NA
	WUXGA RB	1920 x 1200RB	1.6	16:10	50	NA
					60	NA
	2K	2560 x 1440RB	1.78	16:9	60	NA

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	3G-SDI YCbCr 4:2:2 10 bit
TV	SDTV (480i)	720 x 480	1.5	3:2	59.94	NA
	SDTV (480i)	720 x 480	1.5	3:2	60	NA
	SDTV (576i)	720 x 576	1.25	5:4	50	NA
	EDTV (480p)	720 x 480	1.5	3:2	59.94	NA
	EDTV (480p)	720 x 480	1.5	3:2	60	NA
	EDTV (576p)	720 x 576	1.25	5:4	50	NA
	HDTV (1080i)	1920 x 1080	1.78	16:9	50	NA
					59.94	NA
					60	NA
	HDTV (720p)	1280 x 720	1.78	16:9	50	NA
					59.94	NA
					60	NA
					120	NA
	HDTV (1080p)	1920 x 1080	1.78	16:9	23.98	NA
					24	NA
					25	NA
					29.97	NA
					30	NA
					50	NA
					59.94	NA
					60	NA
SD-SDI	SDTV (480i)	720 x 480	1.5	3:2	59.94	V
	SDTV (576i)	720 x 576	1.25	5:4	50	V
HD-SDI	HDTV (720p)	1280 x 720	1.78	16:9	50	V
					59.94	V
					60	V
	HDTV (1080i)	1920 x 1080	1.78	16:9	50	V
					59.94	V
					60	V
	HDTV (1080p)	1920 x 1080	1.78	16:9	23.98	V
					24	V
					25	V
					29.97	V
					30	V
	HDTV (1080sF)	1920 x 1080	1.78	16:9	25	V
					29.97	V
					30	V
3GA-SDI	HDTV (1080p)	1920 x 1080	1.78	16:9	50	V
					59.94	V
					60	V
3GB-SDI	HDTV (1080p)	1920x1080 with 352M Payload ID	1.78	16:9	50	V
					59.94	V
					60	V
Mandatory 3D	Frame Packing (1080p)	1920 x 1080	1.78	16:9	23.98	NA
					24	NA

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	3G-SDI YCbCr 4:2:2 10 bit
Mandatory 3D	Frame Packing (720p)	1280 x 720	1.78	16:9	50	NA
					59.94	NA
					60	NA
	Side by Side (1080i)	1920 x 1080	1.78	16:9	50	NA
					59.94	NA
					60	NA
	Side by Side (1080p)	1920 x 1080	1.78	16:9	24	NA
					50	NA
					59.9	NA
					60	NA
	Top and Bottom (720p)	1280 x 720	1.78	16:9	50	NA
					59.94	NA
					60	NA
	Top and Bottom (1080p)	1920 x 1080	1.78	16:9	23.98	NA
					24	NA
					59.9	NA
					60	NA
Frame Sequential 3D	SVGA	800 x 600	1.33	4:3	120	NA
	XGA	1024 x 768	1.33	4:3	120	NA
	HDTV	1280 x 720	1.78	16:9	120	NA
	HDTV	1280 x 800	1.78	16:9	120	NA
	1080p	1920 x 1080	1.78	16:9	120	NA
					60	NA
					50	NA
	WUXGA	1920 x 1200	1.6	16:10	120	NA
					60	NA
4K	3840 x 2160	3840 x 2160	1.78	16:9	24	NA
					25	NA
					30	NA
					50	NA
					60	NA
	4096 x 2160 SMPTE	4096 x 2160	1.9	N/A	24	NA
					25	NA
					30	NA
					50	NA
					60	NA

Note:

- *“V” means supported and “NA” means not supported.*
- *“RB” means “reduced blanking”.*

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	HDBaseT						
						RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
PC	VGA	640 x 350	1.33	16:10	85	V	V	V	V	V	V	V
		640 x 400			85	V	V	V	V	V	V	V
		640 x 480		4:3	60	V	V	V	V	V	V	V
					72	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
		720 x 400	1.8	9:5	70	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	SVGA	800 x 600	1.33	4:3	60	V	V	V	V	V	V	V
					72	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
					120	V	V	V	V	V	V	V
		832 x 624	1.33	4:3	75	V	V	V	V	V	V	V
		848 x 480			60	V	V	V	V	V	V	V
	XGA	1024 x 768	1.33	4:3	60	V	V	V	V	V	V	V
					70	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
					120	V	V	V	V	V	V	V
	SXGA	1152 x 864	1.33	4:3	75	V	V	V	V	V	V	V
		1152 x 870	1.32		75	V	V	V	V	V	V	V
	WXGA	1280 x 768	1.67	5:3	60	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	WXGA	1280 x 800	1.6	16:10	60	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	SXGA	1280x960	1.33	4:3	60	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
		1280 x 1024	1.25	5:4	60	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	NA	V
	WXGA	1360 x 765	1.78	16:9	60	V	NA	NA	V	NA	NA	NA
		1360 x 768			60	V	V	V	V	V	V	V
		1366 x 768			60	V	V	V	V	V	V	NA
	SXGA+	1400 x 1050	1.33	4:3	60	V	V	V	V	V	V	V
	WXGA+	1440 x 900	1.6	16:10	60	V	V	V	V	V	V	V
					75	V	V	V	V	V	V	V
					85	V	V	V	V	V	V	V
	WXGA++	1600 x 900	1.78	16:9	60	V	V	V	V	V	V	V
	UXGA	1600 x 1200	1.33	4:3	50	V	V	V	V	V	V	V
					60	V	V	V	V	V	NA	V
	WSXGA+	1680 x 1050	1.6	16:10	60	V	V	V	V	V	V	V
	WUXGA RB	1920 x 1200RB	1.6	16:10	50	V	V	V	V	V	V	V
					60	V	V	V	V	V	NA	V

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	HDBaseT						
						RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
PC	2K	2560 x 1440RB	1.78	16:9	60	V	NA	NA	V	NA	NA	V
TV	SDTV (480i)	720 x 480	1.5	3:2	59.94	V	V	V	V	V	V	V
	SDTV (480i)	720 x 480	1.5	3:2	60	V	V	V	V	V	V	V
	SDTV (576i)	720 x 576	1.25	5:4	50	V	V	V	V	V	V	V
	EDTV (480p)	720 x 480	1.5	3:2	59.94	V	V	V	V	V	V	V
	EDTV (480p)	720 x 480	1.5	3:2	60	V	V	V	V	V	V	V
	EDTV (576p)	720 x 576	1.25	5:4	50	V	V	V	V	V	V	V
	HDTV (1080i)	1920 x 1080	1.78	16:9	50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	HDTV (720p)	1280 x 720	1.78	16:9	50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
					120	V	V	V	V	V	V	V
	HDTV (1080p)	1920 x 1080	1.78	16:9	23.98	V	V	V	V	V	V	V
					24	V	V	V	V	V	V	V
					25	V	V	V	V	V	V	V
					29.97	V	V	V	V	V	V	V
					30	V	V	V	V	V	V	V
					50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
SD-SDI	SDTV (480i)	720 x 480	1.5	3:2	59.94	NA	NA	NA	NA	NA	NA	NA
	SDTV (576i)	720 x 576	1.25	5:4	50	NA	NA	NA	NA	NA	NA	NA
HD-SDI	HDTV (720p)	1280 x 720	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
	HDTV (1080i)	1920 x 1080	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
	HDTV (1080p)	1920 x 1080	1.78	16:9	23.98	NA	NA	NA	NA	NA	NA	NA
					24	NA	NA	NA	NA	NA	NA	NA
					25	NA	NA	NA	NA	NA	NA	NA
					29.97	NA	NA	NA	NA	NA	NA	NA
					30	NA	NA	NA	NA	NA	NA	NA
	HDTV (1080sF)	1920 x 1080	1.78	16:9	25	NA	NA	NA	NA	NA	NA	NA
					29.97	NA	NA	NA	NA	NA	NA	NA
					30	NA	NA	NA	NA	NA	NA	NA
3GA-SDI	HDTV (1080p)	1920 x 1080	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
3GB-SDI	HDTV (1080p)	1920x1080 with 352M Payload ID	1.78	16:9	50	NA	NA	NA	NA	NA	NA	NA
					59.94	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
Mandatory 3D	Frame Packing (1080p)	1920 x 1080	1.78	16:9	23.98	V	V	V	V	V	V	V
					24	V	V	V	V	V	V	V

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	HDBaseT						
						RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
Mandatory 3D	Frame Packing (720p)	1280 x 720	1.78	16:9	50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	Side by Side (1080i)	1920 x 1080	1.78	16:9	50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	Side by Side (1080p)	1920 x 1080	1.78	16:9	24	V	V	V	V	V	V	V
					50	V	V	V	V	V	V	V
					59.9	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	Top and Bottom (720p)	1280 x 720	1.78	16:9	50	V	V	V	V	V	V	V
					59.94	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	Top and Bottom (1080p)	1920 x 1080	1.78	16:9	23.98	V	V	V	V	V	V	V
					24	V	V	V	V	V	V	V
					59.9	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
Frame Sequential 3D	SVGA	800 x 600	1.33	4:3	120	V	V	V	V	V	V	V
	XGA	1024 x 768	1.33	4:3	120	V	V	V	V	V	V	V
	HDTV	1280 x 720	1.78	16:9	120	V	V	V	V	V	V	V
	HDTV	1280 x 800	1.78	16:9	120	V	V	V	V	V	V	V
	1080p	1920 x 1080	1.78	16:9	120	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	WUXGA	1920 x 1200	1.6	16:10	60	V	V	V	V	V	V	V
4K	3840 x 2160	3840 x 2160	1.78	16:9	24	V	V	V	V	V	V	V
					25	V	V	V	V	V	V	V
					30	V	V	V	V	V	V	V
					50	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA
	4096 x 2160 SMPTE	4096 x 2160	1.9	N/A	24	NA	NA	NA	NA	NA	NA	NA
					25	NA	NA	NA	NA	NA	NA	NA
					30	NA	NA	NA	NA	NA	NA	NA
					50	NA	NA	NA	NA	NA	NA	NA
					60	NA	NA	NA	NA	NA	NA	NA

Note:

- *"V" means supported and "NA" means not supported.*
- *"RB" means "reduced blanking".*

ADDITIONAL INFORMATION

EDID table

DVI		
Established Timing:	Standard Timing:	Detail Timing:
720 x 400 @70Hz	1024 x 768 @120Hz	1920 x 1200 @59Hz
720 x 400 @88Hz	1280 x 800 @75Hz	1920 x 1080 @60Hz
640 x 480 @60Hz	1280 x 1024 @60Hz	640 x 480 @60Hz
640 x 480 @67Hz	1360 x 765 @60Hz	720 x 480 @60Hz
640 x 480 @72Hz	800 x 600 @120Hz	1280 x 720 @60Hz
640 x 480 @75Hz	1400 x 1050 @60Hz	1920 x 1080i @60Hz
800 x 600 @56Hz	1600 x 1200 @60Hz	720 x 480i @60Hz
800 x 600 @60Hz	1680 x 1050 @60Hz	720 x 576 @50Hz
800 x 600 @72Hz		1280 x 720 @50Hz
800 x 600 @75Hz		1920 x 1080i @50Hz
832 x 624 @75Hz		720 x 576i @50Hz
1024 x 768 @60Hz		1920 x 1080 @50Hz
1024 x 768 @70Hz		1920 x 1080 @24Hz
1024 x 768 @75Hz		1440 x 480 @60Hz
1280 x 1024 @75Hz		1920 x 1080 @25Hz
1152 x 870 @75Hz		

HDMI 1.4		
Established Timing:	Standard Timing:	Detail Timing:
720 x 400 @70Hz	1024 x 768 @120Hz	1920 x 1200 @59Hz
720 x 400 @88Hz	1280 x 800 @75Hz	1920 x 1080 @60Hz
640 x 480 @60Hz	1280 x 1024 @60Hz	640 x 480 @60Hz
640 x 480 @67Hz	1360 x 765 @60Hz	720 x 480 @60Hz
640 x 480 @72Hz	800 x 600 @120Hz	1280 x 720 @60Hz
640 x 480 @75Hz	1400 x 1050 @60Hz	1920 x 1080i @60Hz
800 x 600 @56Hz	1600 x 1200 @60Hz	720 x 480i @60Hz
800 x 600 @60Hz	1680 x 1050 @60Hz	720 x 576 @50Hz
800 x 600 @72Hz		1280 x 720 @50Hz
800 x 600 @75Hz		1920 x 1080i @50Hz
832 x 624 @75Hz		720 x 576i @50Hz
1024 x 768 @60Hz		1920 x 1080 @50Hz
1024 x 768 @70Hz		1920 x 1080 @24Hz
1024 x 768 @75Hz		1440 x 480 @60Hz
1280 x 1024 @75Hz		1920 x 1080 @25Hz
1152 x 870 @75Hz		1280 x 720 @120Hz
		1920 x 1080 @120Hz
		3840 x 2160 @24Hz
		3840 x 2160 @25Hz
		3840 x 2160 @30Hz
		4096 x 2160 @24Hz
		4096 x 2160 @25Hz
		4096 x 2160 @30Hz

ADDITIONAL INFORMATION

HDMI 2.0		
Established Timing:	Standard Timing:	Detail Timing:
720 x 400 @70Hz	1024 x 768 @120Hz	1920 x 1200 @59Hz
720 x 400 @88Hz	1280 x 800 @75Hz	1920 x 1080 @60Hz
640 x 480 @60Hz	1280 x 1024 @60Hz	640 x 480 @60Hz
640 x 480 @67Hz	1360 x 765 @60Hz	720 x 480 @60Hz
640 x 480 @72Hz	800 x 600 @120Hz	1280 x 720 @60Hz
640 x 480 @75Hz	1400 x 1050 @60Hz	1920 x 1080i @60Hz
800 x 600 @56Hz	1600 x 1200 @60Hz	720 x 480i @60Hz
800 x 600 @60Hz	1680 x 1050 @60Hz	720 x 576 @50Hz
800 x 600 @72Hz		1280 x 720 @50Hz
800 x 600 @75Hz		1920 x 1080i @50Hz
832 x 624 @75Hz		720 x 576i @50Hz
1024 x 768 @60Hz		1920 x 1080 @50Hz
1024 x 768 @70Hz		1920 x 1080 @24Hz
1024 x 768 @75Hz		1440 x 480 @60Hz
1280 x 1024 @75Hz		1920 x 1080 @25Hz
1152 x 870 @75Hz		1280 x 720 @120Hz
		1920 x 1080 @120Hz
		3840 x 2160 @24Hz
		3840 x 2160 @25Hz
		3840 x 2160 @30Hz
		3840 x 2160 @50Hz
		3840 x 2160 @60Hz
		4096 x 2160 @24Hz
		4096 x 2160 @25Hz
		4096 x 2160 @30Hz
		4096 x 2160 @50Hz
		4096 x 2160 @60Hz

ADDITIONAL INFORMATION

Image size and projection distance

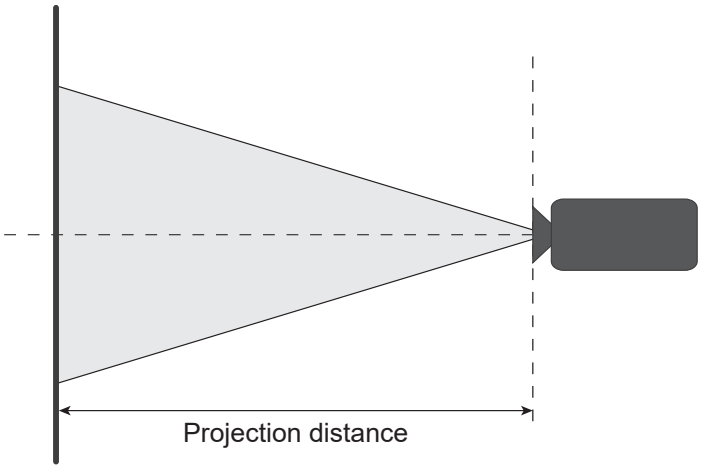
Platform			WUXGA (16:10)											
DMD			0.67”											
Projection Lens			BX-CTA16	BX-CTA17		BX-CTA15		BX-CAA01/ BX-CTA01		BX-CAA06/ BX-CTA06		BX-CAA03/ BX-CTA03		BX-CTA13	
			Ultra Short Throw	Short Throw		Short Throw		Wide Zoom		Standard		Long Zoom		Ultra-Long Zoom	
Throw Ratio Spec.(Wide/Tele)			0.361 (120")	0.65-0.75		0.75-0.95		0.95-1.22		1.22-1.52		1.52-2.92		2.90-5.50	
Zoom Ratio			NA	1.15x		1.26X		1.28X		1.25X		1.9X		1.9X	
Throw Distance (m) (min/max)			0.96 ~ 3.01m	0.68 ~ 16.61m		0.79 ~ 20.78m		1.01 ~ 26.68m		1.29 ~ 33.19m		1.61 ~ 63.45m		3.18 ~ 115.61m	
Projection screen size			Throw distance (m)												
Diagonal (inch)	Height (m)	Width (m)	-	Wide	Tele	Wide	Tele	Wide	Tele	Wide	Tele	Wide	Tele	Wide	Tele
50	0.67	1.08	-	0.68	0.79	0.79	1.01	1.01	1.31	1.29	1.62	1.61	3.12	3.18	5.89
60	0.81	1.29	-	0.83	0.96	0.96	1.22	1.22	1.57	1.56	1.95	1.94	3.76	3.78	7.05
70	0.94	1.51	-	0.97	1.13	1.12	1.43	1.43	1.84	1.82	2.29	2.27	4.39	4.39	8.20
80	1.08	1.72	-	1.11	1.29	1.28	1.64	1.63	2.11	2.09	2.62	2.60	5.03	5.00	9.36
90	1.21	1.94	-	1.26	1.46	1.45	1.85	1.84	2.38	2.35	2.95	2.94	5.66	5.61	10.51
100	1.35	2.15	-	1.40	1.63	1.61	2.05	2.05	2.64	2.62	3.28	3.27	6.30	6.21	11.67
110	1.48	2.37	-	1.55	1.79	1.78	2.26	2.26	2.91	2.89	3.62	3.60	6.93	6.82	12.82
120	1.62	2.58	0.96	1.69	1.96	1.94	2.47	2.47	3.18	3.15	3.95	3.94	7.57	7.43	13.98
130	1.75	2.80	1.04	1.83	2.13	2.10	2.68	2.67	3.44	3.42	4.28	4.27	8.20	8.04	15.13
140	1.88	3.02	1.11	1.98	2.29	2.27	2.89	2.88	3.71	3.69	4.61	4.60	8.84	8.65	16.29
150	2.02	3.23	1.18	2.12	2.46	2.43	3.09	3.09	3.98	3.95	4.95	4.94	9.47	9.25	17.44
160	2.15	3.45	1.26	2.27	2.62	2.60	3.30	3.30	4.24	4.22	5.28	5.27	10.11	9.86	18.60
170	2.29	3.66	1.33	2.41	2.79	2.76	3.51	3.51	4.51	4.48	5.61	5.60	10.74	10.47	19.75
180	2.42	3.88	1.40	2.55	2.96	2.92	3.72	3.72	4.78	4.75	5.94	5.93	11.38	11.08	20.91
190	2.56	4.09	1.48	2.70	3.12	3.09	3.93	3.92	5.05	5.02	6.27	6.27	12.01	11.69	22.06
200	2.69	4.31	1.55	2.84	3.29	3.25	4.13	4.13	5.31	5.28	6.61	6.60	12.65	12.29	23.22
250	3.37	5.38	1.91	3.56	4.12	4.07	5.17	5.17	6.65	6.61	8.27	8.27	15.82	15.33	28.99
300	4.04	6.46	2.28	4.28	4.96	4.89	6.21	6.21	7.98	7.95	9.93	9.93	19.00	18.37	34.77
350	4.71	7.54	2.65	5.00	5.79	5.71	7.26	7.25	9.32	9.28	11.59	11.60	22.17	21.41	40.54
400	5.38	8.62	3.01	5.72	6.62	6.53	8.30	8.29	10.66	10.61	13.25	13.26	25.35	24.45	46.31
450	6.06	9.69	NA	6.45	7.45	7.35	9.34	9.33	11.99	11.94	14.92	14.93	28.52	27.49	52.09
500	6.73	10.77		7.17	8.29	8.17	10.38	10.37	13.33	13.27	16.58	16.59	31.70	30.53	57.86
550	7.40	11.85		7.89	9.12	8.99	11.42	11.41	14.66	14.60	18.24	18.26	34.87	33.57	63.64
600	8.08	12.92		8.61	9.95	9.81	12.46	12.45	16.00	15.93	19.90	19.92	38.05	36.61	69.41
650	8.75	14.00		9.33	10.78	10.63	13.50	13.49	17.33	17.26	21.56	21.59	41.22	39.65	75.19
700	9.42	15.08		10.05	11.62	11.45	14.54	14.53	18.67	18.59	23.22	23.25	44.40	42.68	80.96
750	10.10	16.15		10.77	12.45	12.27	15.58	15.58	20.00	19.93	24.89	24.92	47.57	45.72	86.74
800	10.77	17.23		11.49	13.28	13.09	16.62	16.62	21.34	21.26	26.55	26.58	50.75	48.76	92.51
850	11.44	18.31		12.21	14.11	13.91	17.66	17.66	22.67	22.59	28.21	28.25	53.92	51.80	98.29
900	12.12	19.39		12.93	14.95	14.73	18.70	18.70	24.01	23.92	29.87	29.91	57.10	54.84	104.06
950	12.79	20.46		13.65	15.78	15.55	19.74	19.74	25.34	25.25	31.53	31.58	60.27	57.88	109.84
1000	13.46	21.54		14.37	16.61	16.36	20.78	20.78	26.68	26.58	33.19	33.24	63.45	60.92	115.61

Note: *If the screen is larger than 300 inches, then fine text and images may not display clearly.*

ADDITIONAL INFORMATION

Projection distance

The distance between the projector and its screen determines the approximate size of the image. The farther the projector is from the screen, the larger the projected image will be. The image size also varies depending on the aspect ratio, zoom and other settings.



Powered lens shift range

Projection Lens	Optical Lens Shift Range		Become Dark Image		Mechanical Shift Range	
	ΔHo	ΔVo	ΔH	ΔV	Max. of ΔHm	Max. of ΔVm
BX-CTA15	30%	100%	2%	50%	40%	120%

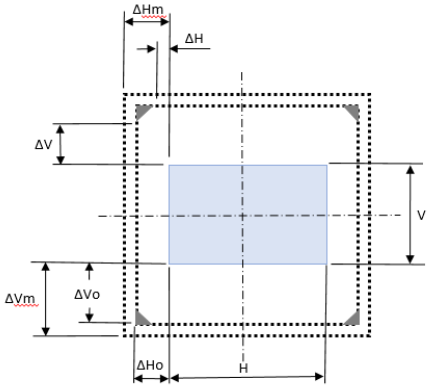
V: Height of the projected image

H: Width of the projected image

☐ Projected image

When the lens is shifted beyond the described range of operation, screen edges may become darker or images may become out of focus.

Note: *The calculation is based on 1/2 image width and 1/2 image height.*



Projection Lens	Optical Lens Shift Range		Become Dark Image		Mechanical Shift Range	
	ΔHo	ΔVo	ΔH	ΔV	Max. of ΔHm	Max. of ΔVm
BX-CAA06/ BX-CTA06 BX-CTA17	30%	100%	20%	80%	40%	120%

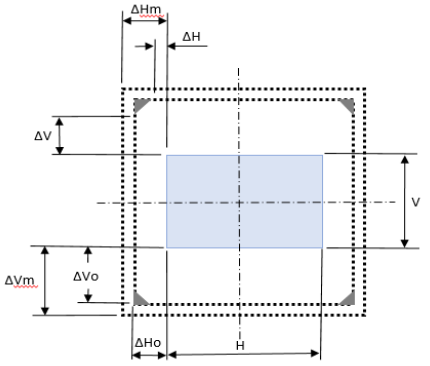
V: Height of the projected image

H: Width of the projected image

☐ Projected image

When the lens is shifted beyond the described range of operation, screen edges may become darker or images may become out of focus.

Note: *The calculation is based on 1/2 image width and 1/2 image height.*



ADDITIONAL INFORMATION

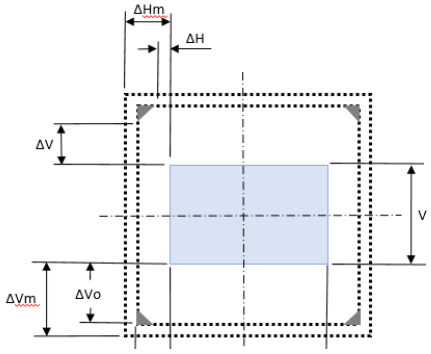
Projection Lens	Optical Lens Shift Range		Become Dark Image		Mechanical Shift Range	
	ΔHo	ΔVo	ΔH	ΔV	Max. of ΔHm	Max. of ΔVm
BX-CAA01/ BX-CTA01, BX-CAA03/ BX-CTA03 BX-CTA13	30%	100%	30%	100%	40%	120%

V: Height of the projected image

H: Width of the projected image

☐ Projected image

◺ When the lens is shifted beyond the described range of operation, screen edges may become darker or images may become out of focus.



Note: *The calculation is based on 1/2 image width and 1/2 image height.*

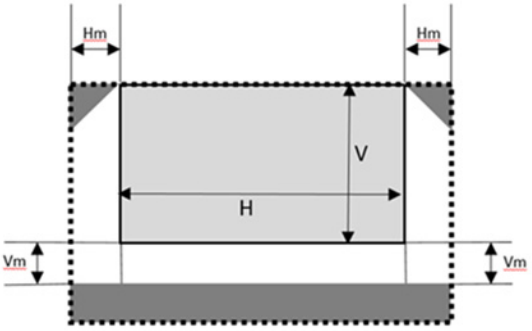
Projection Lens	Mechanical Shift Range	
	Max. of ΔHm	Max. of ΔVm
BX-CTA16	+/- 24%	0/-24%

V: Height of the projected image

H: Width of the projected image

☐ Projected image

◺ When the lens is shifted beyond the described range of operation, screen edges may become darker or images may become out of focus.



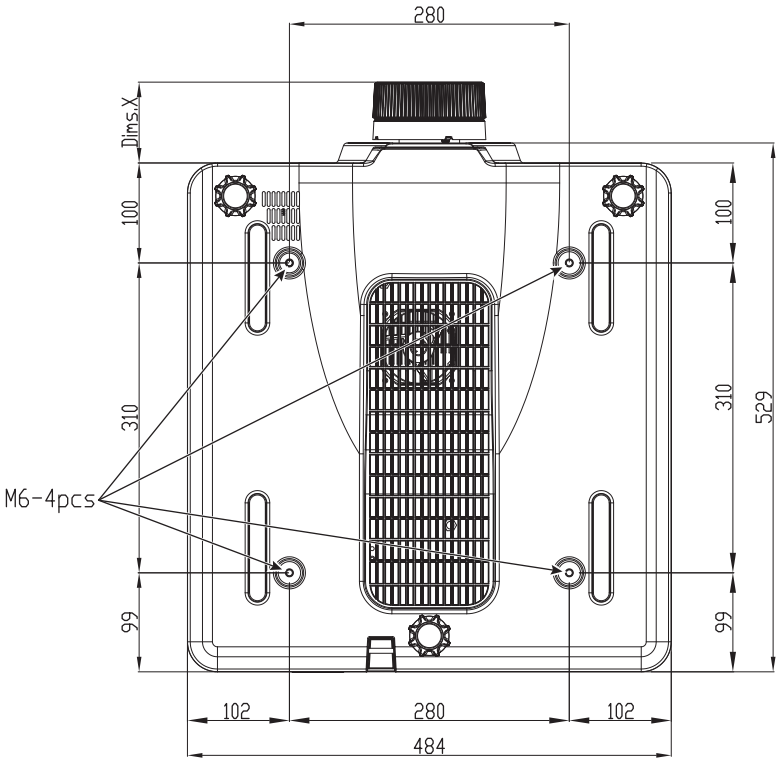
Note:

- *The calculation is based on 1/2 image width and 1/2 image height.*
- *"Mechanical Lens Shift Range" for reference only and only can be moved under UST Test Pattern situation.*

ADDITIONAL INFORMATION

Ceiling mount installation

Projector dimensions



All dimensions given in mm

1 Mounting holes for ceiling mount

X Distance between projector and end of lens

Lens type	Distance X (in mm)
BX-CAA01/ BX-CTA01	61.6
BX-CAA03/ BX-CTA03	81.4
BX-CAA06/ BX-CTA06	80.9
BX-CTA13	109.1
BX-CTA15	68.9
BX-CTA16	315.5
BX-CTA17	103

Ceiling mount information

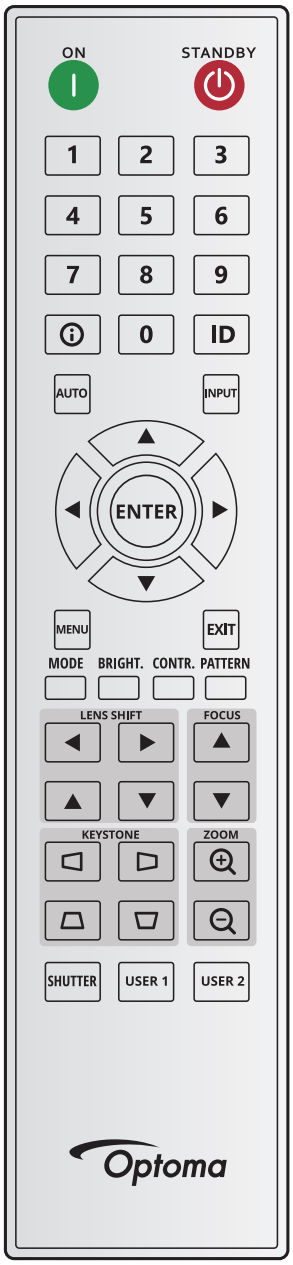
If you wish to use a third party ceiling mount kit, please ensure the screws used to attach a mount to the projector meet the following specifications:

- Screw type: M6 x 4
- Maximum hole depth: 10 mm
- Tightening torque: 25Kgf-cm~30Kgf-cm

Note: *Damage resulting from incorrect installation will void the warranty.*

ADDITIONAL INFORMATION

IR remote codes



Key Legend	Key Position	Repeat Format	Address		Data		Description
			Byte 1	Byte 2	Byte 3	Byte 4	
ON	1	F1	32	CD	2	FD	Press to turn on the projector.
OFF	2	F1	32	CD	2E	D1	Press to turn off the projector.
1	3	F1	32	CD	72	8D	Use as numeric keypad number “1”.
2	4	F1	32	CD	73	8C	Use as numeric keypad number “2”.
3	5	F1	32	CD	74	8B	Use as numeric keypad number “3”.
4	6	F1	32	CD	75	8A	Use as numeric keypad number “4”.
5	7	F1	32	CD	77	88	Use as numeric keypad number “5”.
6	8	F1	32	CD	78	87	Use as numeric keypad number “6”.

ADDITIONAL INFORMATION

Key Legend	Key Position	Repeat Format	Address		Data		Description
			Byte 1	Byte 2	Byte 3	Byte 4	
7	9	F1	32	CD	79	86	Use as numeric keypad number “7”.
8	10	F1	32	CD	80	7F	Use as numeric keypad number “8”.
9	11	F1	32	CD	81	7E	Use as numeric keypad number “9”.
Info (ⓘ)	12	F1	32	CD	82	7D	Press to display source image information.
0	13	F1	32	CD	25	DA	Use as numeric keypad number “0”.
ID	14	F1	32	CD	A7	58	Press to set remote ID. Please refer to “Remote control ID setup” on page 27.
Auto	15	F1	32	CD	4	FB	Press to automatically synchronize the projector to the input source.
Input	16	F1	32	CD	18	E7	Press to select an input signal.
UP (▲)	17	F1	32	CD	0F	F0	Press to select items or make adjustments to our selection.
LEFT (◄)	18	F1	32	CD	11	EE	Press to select items or make adjustments to our selection.
Enter	19	F1	32	CD	14	EB	Press to confirm your item selection.
RIGHT (►)	20	F1	32	CD	10	EF	Press to select items or make adjustments to our selection.
DOWN (▼)	21	F1	32	CD	12	ED	Press to select items or make adjustments to our selection.
Menu	22	F1	32	CD	0E	F1	Press to display the on-screen display menus for projector.
Exit	23	F1	32	CD	2A	D5	Press to return to previous level or exit menus if at top level.
Mode	24	F1	32	CD	5	FA	Press to select the preset display mode.
Bright.	25	F1	32	CD	28	D7	Press to adjust amount of light in the image.
Contr.	26	F1	32	CD	29	D6	Press to adjust difference between dark and light.
Pattern	27	F1	32	CD	58	A7	Press to display a test pattern.
Lens Shift◄	28	F1	32	CD	41	BE	Press to adjust the position of the image horizontally.
Lens Shift ►	29	F1	32	CD	42	BD	
Focus ▲	30	F1	32	CD	86	79	Press to adjust focus to improve image clarity as desired.
Lens Shift ▲	31	F1	32	CD	34	CB	Press to adjust the position of the image vertically.
Lens Shift ▼	32	F1	32	CD	32	CD	Press to adjust the position of the image vertically.
Focus ▼	33	F1	32	CD	26	D9	Press to adjust focus to improve image clarity as desired.
Keystone	34	F1	32	CD	87	78	Press to adjust the horizontal keystone.
Keystone	35	F1	32	CD	51	AE	Press to adjust the horizontal keystone.
Zoom	36	F1	32	CD	52	AD	Press to adjust zoom to achieve a desired image size.
Keystone	37	F1	32	CD	53	AC	Press to adjust the vertical keystone.
Keystone	38	F1	32	CD	54	AB	Press to adjust the vertical keystone.
Zoom	39	F1	32	CD	55	AA	Press to adjust zoom to achieve a desired image size.
Shutter (AV Mute)	40	F1	32	CD	56	A9	Press to hide/unhide the screen picture.
User 1	41	F1	32	CD	57	A8	Press to assign user functions. Please refer to “Remote Setup” on page 70.
User 2	42	F1	32	CD	27	D8	Press to assign user functions. Please refer to “Remote Setup” on page 70.

ADDITIONAL INFORMATION

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 *Setup and Installation* section.
- Ensure the pins of connectors are not crooked or broken.
- Ensure that the Shutter (AV Mute) feature is not turned on.

Image is out of focus

- Press the **Focus ▲** or **Focus ▼** button on the remote control or projector keypad to adjust the focus until the image is sharp and legible.
- Make sure the projection screen is between the required distance from the projector. (Please refer to *Image size and projection distance* page *91*).

The image is stretched when displaying 16:10 DVD title

- When you play anamorphic DVD or 16:10 DVD, the projector will show the best image in 16:10 format on projector side.
- If you play 4:3 format DVD title, please change the format as 4:3 in projector OSD.
- Please setup the display format as 16:10 (wide) aspect ratio type on your DVD player.

Image is too small or too large

- Press the **Zoom** ⊕ or **Zoom** ⊖ button on the remote control or projector keypad to adjust the projected image size.
- Move the projector closer to or further from the screen.
- From the OSD menu, select **Display > Aspect Ratio** to change the aspect ratio.

Image has slanted sides:

- If possible, reposition the projector so that it is centered on the screen and below the bottom of the screen.
- Press the **Keystone** ◇/◇/◇/◇ buttons on the remote control to adjust the screen shape.

Image is reversed

- From the OSD menu, select **Device Setup > Projection > Rear** to reverse the image so you can project from behind a translucent screen.

Other problems

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

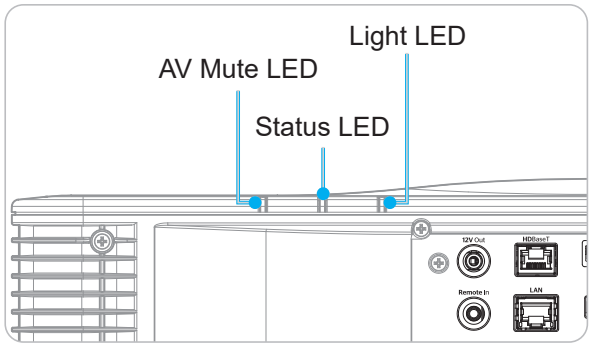
If the remote control does not work

- Check that the operating angle of the remote control is pointed within ±30° horizontally or ±20° vertically to the IR receivers on the projector.
- Make sure there are not any obstructions between the remote control and the projector. Move to within 10 m (32.8 ft) of the projector.
- Make sure batteries are inserted correctly.
- Replace batteries if they are exhausted.

ADDITIONAL INFORMATION

LED status indicators

Overview



Explanation

Message	Light LED			Status LED			AV Mute LED	
	Green	Orange	Red	Green	Orange	Red	Green	Orange
Standby State								
Power on (Warm up)					Flashing			
Power on & Laser diode on	Steady			Steady			Steady	
Power off (Cooling down)					Flashing			
AV mute is off (Image is displayed)	Steady			Steady			Steady	
AV mute is on (Image is black)	Steady			Steady				Steady
Projector communication	Steady			Flashing			Steady	
Firmware upgrade				Flashing	Flashing			
Burn-in	Steady			Steady			Steady	
Factory reset			Steady	Steady				
Over temperature error						Steady		
Fan failure error						Flashing		
Color wheel failure error						Flashing		

Note: *Keypad LED (Power Key) will be in steady red for standby mode.*

ADDITIONAL INFORMATION

Specifications

Optical	Description
Resolution	WUXGA (1920 x 1200)
Lens	Power Zoom/Focus and full lens shift
Projection distance	Please refer to “Throw Distance” spec. in “Image size and projection distance” on page 91.

Electrical	Description
Inputs	2 x HDMI In (version 2.0) (with locking screw) 1 x DVI-D 1 x HDBaseT 1 x 3G-SDI In 1 x 3D SYNC In
Outputs	1 x HDMI Out (version 2.0) (with locking screw) 1 x 3D SYNC Out
Control port	1 x RS232 (D-sub 9 pin) (PC Control) 1 x Wired in (3.5mm phone jack) (Remote In) 1 x 12V Trigger (3.5mm phone jack / Black) 1 x USB type A (5V/0.5A) 1 x RJ-45 (LAN) 2 x IR Receiver (Front / Top)
Power requirement	100-240V~ 50/60 Hz, 8.5A

Mechanical	Description
Installation orientation	360° rotation, no restrictions
Dimensions	484 (W) x 529 (D) x 207.8 (H) mm (w/o lens, with feet) 484 (W) x 529 (D) x 195 (H) mm (w/o lens, w/o feet)
Environmental conditions	Operating: 0°C ~ 40°C*(32~104°F); 10~85%RH, non-condensing Storage: -10°C ~ 60°C(14~140°F); 5~90%RH, non-condensing **Note:** *If High Altitude >5000 ft, the system will be operated at the range of 0~35°C to ensure the normal operation of the projector. The light power will be reduced due to the high ambient temperature (≥35°C).*

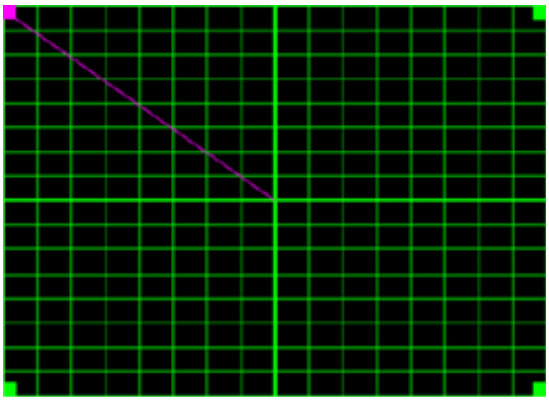
Note: *All specifications are subject to change without notice.*

ADDITIONAL INFORMATION

Manual Warp Control Instruction

1. The Warp/Blend control option needs to be switched to the OSD option. Steps: Menu -> Display -> Geometric Correction -> Warp Control -> Advanced.

2. Changing the grid color can help to distinguish between grid color lines on each projector when completing the warping adjustment. The Warp/Blend grid color options include: Green (default), Magenta, Red, and Cyan. Steps: Menu -> Display -> Geometric Correction -> Advanced Warp -> Grid Color.



3. Set Blend overlap size. Steps: Menu -> Display -> Geometric Correction -> Advanced Warp -> Blend Setting -> Blend Width. The options and effective range of overlap size as follows:

   (a) Left: 0 (0%) / 192 (10%) ~ 960 (50%)

   (b) Right: 0 (0%) / 192 (10%) ~ 960 (50%)

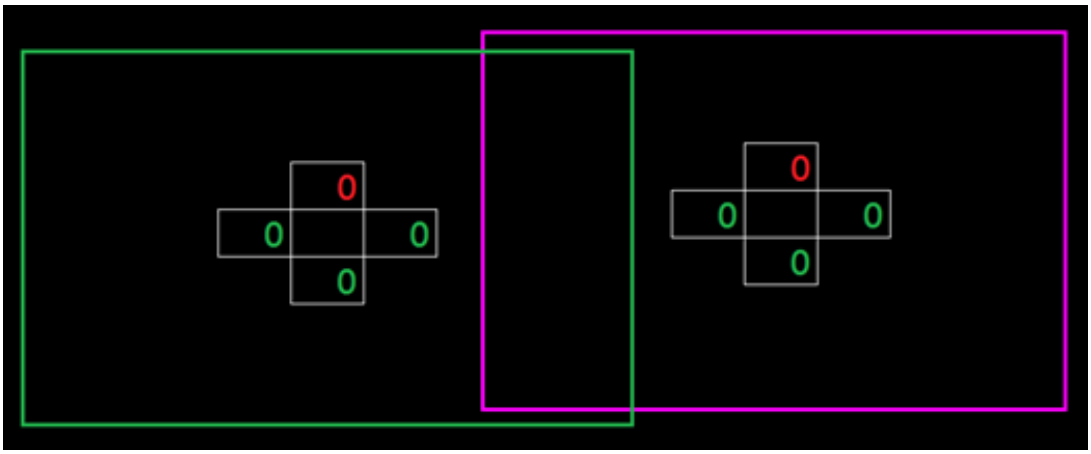
   (c) Top: 0 (0%) / 120 (10%) ~ 600 (50%)

   (d) Bottom: 0 (0%) / 120 (10%) ~ 600 (50%)

3.1 Setup projectors and then set the overlap size according to the actual projection overlap.

   A. Make sure the overlap size for is smaller than the overlap size of actual projection.

   B. Turning on the blend width screen for all the projectors helps determine the effective overlap range.
   See below for settings for a 1x2 layout as an example, and follow the steps below:

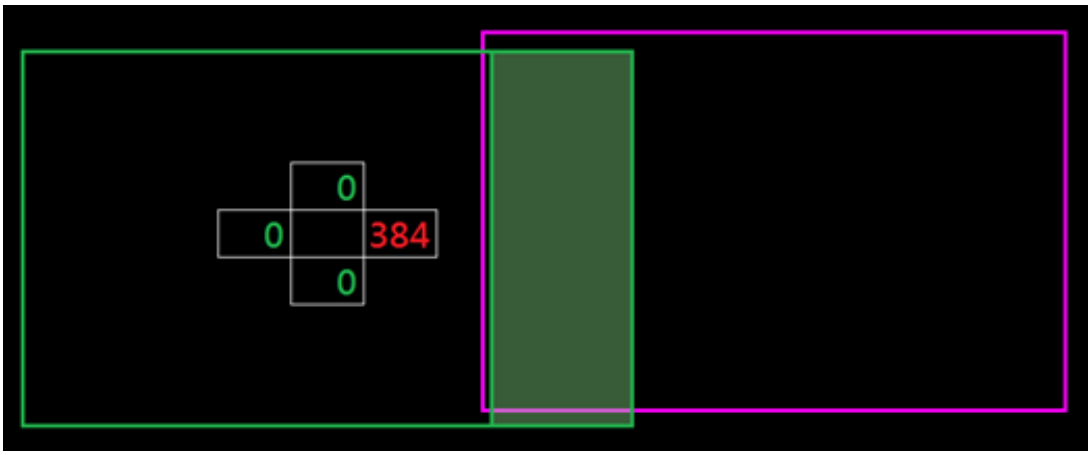


3.2 Adjust the overlap size of right boundary of left projector first.

   A. The left side of the overlap area will shift along with the values of the blend setting. Overlap area is shown by a square with light color.

   B. Adjust overlap size until the left side of overlap area of left projector does not exceed the left boundary of right projector.

ADDITIONAL INFORMATION



3.3 Adjust the overlap size of left boundary of right projector.

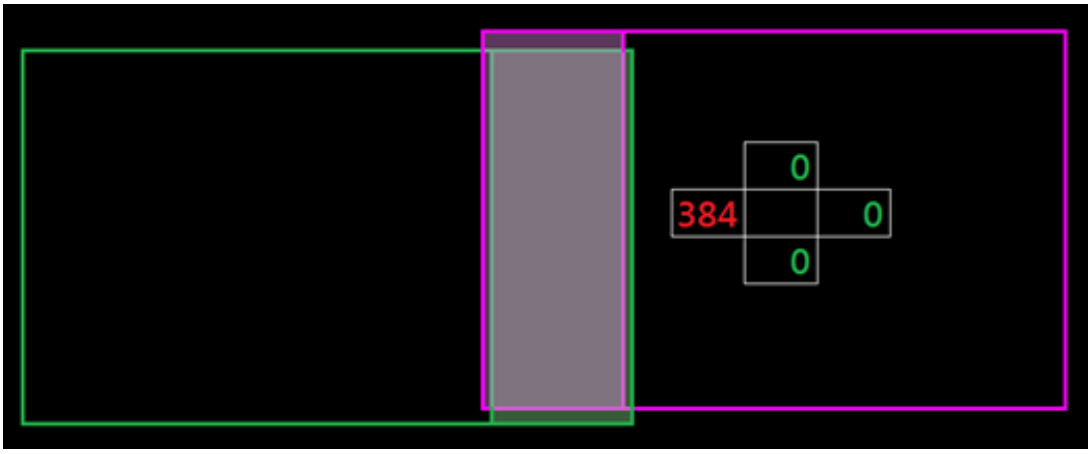
A. The right side of overlap area will shift along with the values of blend setting. Overlap area is shown by a square with light color.

B. Adjust the value of the blend setting to the same as the overlap size of the right boundary of left projector.

C. Make sure the right side of overlap area does not exceed the right boundary of left projector.

D. If not, reduce the value of blend setting until the result matches the condition of step C.

E. If the value of the blend setting of the right projector is less than left projector, adjust the value of left projector to the same as right projector.



4. Use grid points and warp inner to complete the warping calibration.

A. Grid points options include: 2x2 (default), 3x3, 5x5, 9x9, and 17x17.

Note:

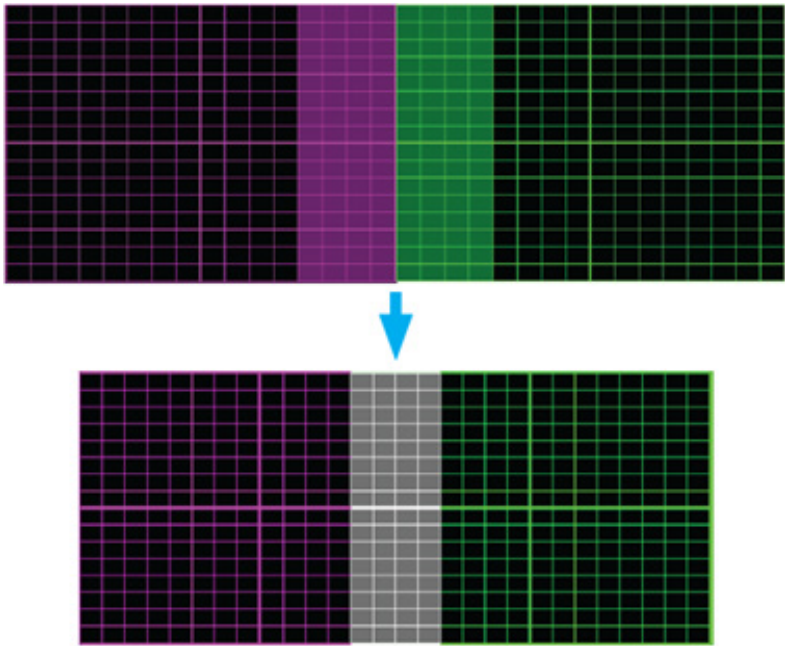
1. Use ⬆ , ⬇ , ⬅ or ➡ buttons to select the grid point.
2. Press Enter button to select the point.
3. Then press ⬆ , ⬇ , ⬅ or ➡ buttons to shift the selected point location.
4. Press ⮌ to return to the previous page.

B. Warp inner: Turn On/Off inner control.

Note: *Warp inner does not support 2x2 grid point.*

C. The overlap area is divided into four parts equally in warping pattern.

D. Use the warp adjustment to align the grid lines of the overlap with the two projectors to finish manual blending. Follow the steps below:



(1) Select grid point 2x2 and align boundary of projectors with the side of overlap areas.

(2) Depending on the installation situation select grid points 3x3, 5x5, 9x9, or 17x17 to adjust the grid line.

(3) Turn on warp inner to adjust the inner grid.

(4) All the grid lines are aligned. Press “**Exit**” button to exit grid pattern and then manual blending setting is finished.

5. When the grid lines are warped from straight to curve, the grid lines may become distorted or jagged. To avoid this users can adjust the warp sharpness to blur or sharpen the edge of the images.

ADDITIONAL INFORMATION

Optoma global offices

For service or support, please contact your local office.

USA
Optoma Technology, Inc.
47697 Westinghouse Drive.
Fremont, Ca 94539

888-289-6786
510-897-8601
services@optoma.com

Canada
Optoma Technology, Inc.
47697 Westinghouse Drive.
Fremont, Ca 94539

888-289-6786
510-897-8601
services@optoma.com

Latin America
Optoma Technology, Inc.
47697 Westinghouse Drive.
Fremont, Ca 94539

888-289-6786
510-897-8601
services@optoma.com

Europe
Unit 1, Network 41, Bourne End Mills
Hemel Hempstead, Herts,
HP1 2UJ, United Kingdom
www.optoma.eu
Service Tel : +44 (0)1923 691865

+44 (0) 1923 691 800
+44 (0) 1923 691 888
service@tsc-europe.com

Benelux BV
Randstad 22-123
1316 BW Almere
The Netherlands
www.optoma.nl

+31 (0) 36 820 0252
+31 (0) 36 548 9052

France
Bâtiment E
81-83 avenue Edouard Vaillant
92100 Boulogne Billancourt, France

+33 1 41 46 12 20
+33 1 41 46 94 35
savoptoma@optoma.fr

Spain
C/ José Hierro,36 Of. 1C
28522 Rivas VaciaMadrid,
Spain

+34 91 499 06 06
+34 91 670 08 32

Deutschland
Am Nordpark 3
41069 Mönchengladbach
Germany

+49 (0) 2161 68643 0
+49 (0) 2161 68643 99
info@optoma.de

Scandinavia
Lerpeveien 25
3040 Drammen
Norway

+47 32 98 89 90
+47 32 98 89 99
info@optoma.no

PO.BOX 9515
3038 Drammen
Norway

China
Room 2001, 20F, Building 4,
No.1398 Kaixuan Road,
Changning District
Shanghai, 200052, China
www.optoma.com.cn

+86-21-62947376
+86-21-62947375
servicecn@optoma.com.cn

Japan
https://www.optoma.com/jp/

Korea
https://www.optoma.com/kr/

Taiwan
https://www.optoma.com/tw/

Australia
https://www.optoma.com/au/