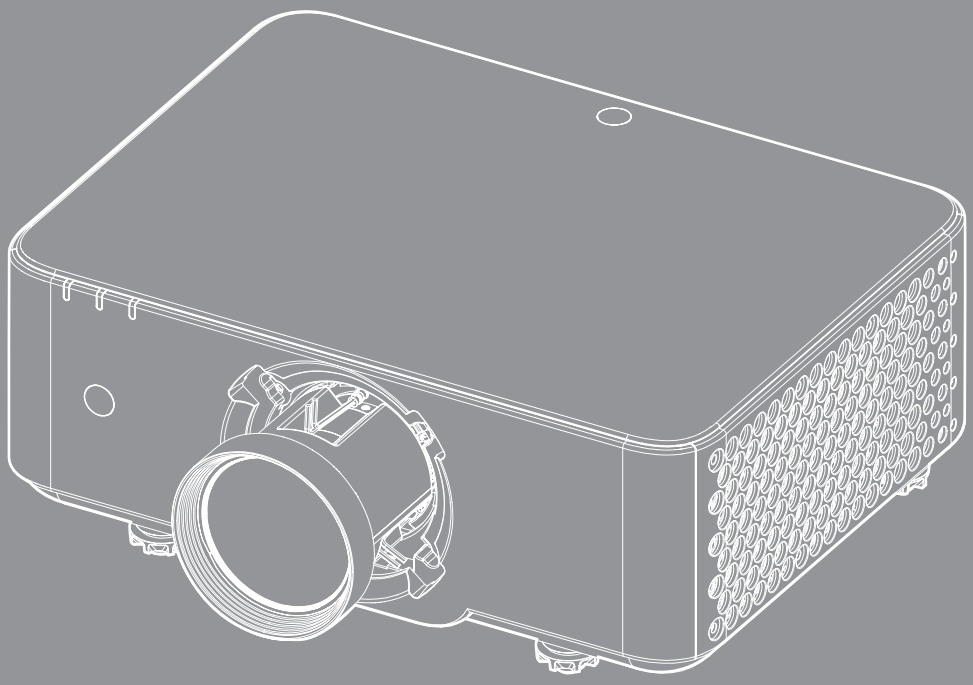
DLP® Projector



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 Instruction

- 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 5°C ~ 40°C (41°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 could melt, cause burns 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 unit for repair.
- See projector enclosure for safety related markings.
- The unit should only be repaired by appropriate 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.

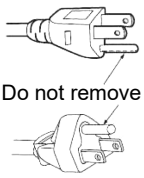
- When switching the projector off, please ensure the cooling cycle has been completed before disconnecting power. Allow 90 seconds for the projector to cool down.
- Turn off and unplug the power plug from the AC outlet before cleaning the product.
- Use a soft dry cloth with mild detergent to clean the display housing. 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.
- 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 are not normally or typically present.
- Ground the power cord:
  - This device is designed to be used with the power cord grounded. Failure to ground the power cord may result in electric shock. Ensure the power cord is properly grounded and directly connected to a wall outlet.
  - Do not use a 2-pin adapter.
- We recommend you install this projector above the reach of children.

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. Do not defeat the purpose of the earthing plug.

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. Do not defeat the purpose of the grounding plug.



– Hot surface, do not touch.

– Do not place your hands, face, or other objects in front of the projector lens while the projector is operating. Doing so can cause the object to get extremely hot, and possibly resulting in a fire or damage due to the heat emitted from the light output. Things placed in front of the lens may overheat and burn or start a fire.

– Do not spray flammable gas to get rid of dust and dirt that accumulate in the lens. Doing so could cause a fire.

Laser 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.

Projector set up with BX-CTA22 and BX-CTA23 lens (throw ratio greater than 2.4) may become Class 1 Laser Product-Risk Group 3 (RG3) are intended for professional use only, and are not intended for consumer use. Operators shall control access to the beam within the hazard distance (HD) or install the product at a height that will prevent eye exposure within the hazard distance (HD).

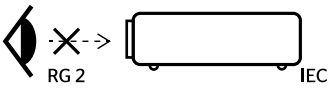
Projection Lens	Throw Ratio	Classification and Requirements for Laser Illuminated Projectors (LIPs)	
• BX-CTA28	• 0.34-0.37	• HD: N/A	• IEC 62471-1: 2015 • IEC 60825-1: 2014 • CLASS 1 LASER PRODUCT RISK GROUP 2
• BX-CTA10	• 0.50-0.65		
• BX-CTA11	• 0.78-0.90		
• BX-CTA12	• 0.90-1.30		
• BX-CTA07	• 1.30-1.80		
• BX-CTA08	• 1.25-2.00		
• BX-CTA20	• 1.44-1.80		
• BX-CTA21	• 1.80-2.40		

Projection Lens	Throw Ratio	Classification and Requirements for Laser Illuminated Projectors (LIPs)	
• BX-CTA22	• 2.40-4.80	• HD: 1.8 m	• IEC 62471-1: 2015 • IEC 60825-1: 2014 • CLASS 1 LASER PRODUCT RISK GROUP 3
• BX-CTA23	• 4.80-8.64	• HD: 3.6 m	

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.
- 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.
- IEC 60825-1:2014/EN 60825-1:2014+A11:2021/EN 50689:2021 class 1 consumer laser product, IEC 62741-5:2015 risk group 2.
- 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)



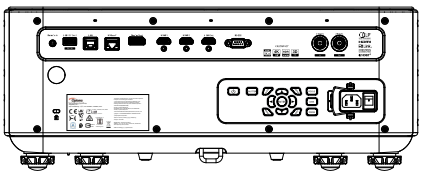
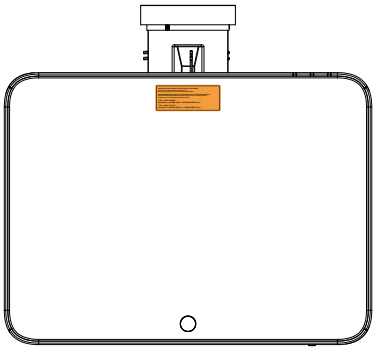
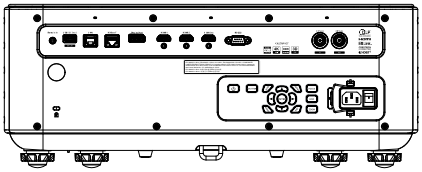
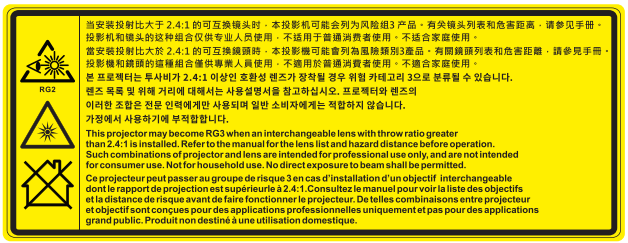
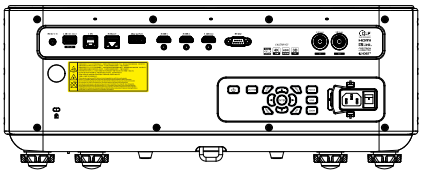
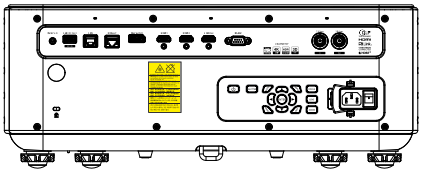
- Do not stare into the beam, RG2.
- As with any bright source, do not stare into the direct beam, RG2 IEC 62471-5:2015.
- No direct exposure to the beam shall be permitted. (Risk Group 3 of IEC 62471-5:2015)
- Possibly hazardous optical radiation emitted from this product.
- This projector has built-in Class 4 laser module. Disassembly or modification is very dangerous and should never be attempted.
- Any operation or adjustment not specifically instructed in the user manual creates the risk of hazardous laser radiation exposure.
- Do not open or disassemble the projector as this may cause damage by the exposure of laser radiation.
- When turning on the projector, make sure no one within projection range is looking at the lens.
- Without following the control, adjustment or operation procedure may cause damage by the exposure of laser radiation.
- Adequate instructions for assembly, operation, and maintenance, including clear warnings concerning precautions to avoid possible exposure to laser and collateral radiation in excess of the accessible emission limits in Class 2.
- 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.

CAUTION:

– Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Product Safety Labels and Location

Light Beam Related Safety Labels and Location

Label Name	Label Image	Label Location
Specification Label	 **Note:** *Spec label varies by region (for reference only).*	
Warning Label		
Warning Label		
Warning Label		
Warning Label		

3D Safety Information

Please follow all warnings and precautions as recommended before you or your child use the 3D function.

Warning

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

Photosensitive Seizure Warning and Other Health Risks

- Some viewers may experience an epileptic seizure or stroke when exposed to certain flashing images or lights contained in certain Projector pictures or video games. If you suffer from, or have a family history of epilepsy or strokes, please consult with a medical specialist before using the 3D function.
- Even those without a personal or family history of epilepsy or stroke may have an undiagnosed condition that can cause photosensitive epileptic seizures.
- Pregnant women, the elderly, sufferers of serious medical conditions, those who are sleep deprived or under the influence of alcohol should avoid utilizing the unit's 3D functionality.
- If you experience any of the following symptoms, stop viewing 3D pictures immediately and consult a medical specialist: (1) altered vision; (2) lightheadedness; (3) dizziness; (4) involuntary movements such as eye or muscle twitching; (5) confusion; (6) nausea; (7) loss of awareness; (8) convulsions; (9) cramps; and/ or (10) disorientation. Children and teenagers may be more likely than adults to experience these symptoms. Parents should monitor their children and ask whether they are experiencing these symptoms.
- Watching 3D projection may also cause motion sickness, perceptual after effects, disorientation, eye strain and decreased postural stability. It is recommended that users take frequent breaks to lessen the potential of these effects. If your eyes show signs of fatigue or dryness or if you have any of the above symptoms, immediately discontinue use of this device and do not resume using it for at least thirty minutes after the symptoms have subsided.
- Watching 3D projection while sitting too close to the screen for an extended period of time may damage your eyesight. The ideal viewing distance should be at least three times the screen height. It is recommended that the viewer's eyes are level with the screen.
- Watching 3D projection while wearing 3D glasses for an extended period of time may cause a headache or fatigue. If you experience a headache, fatigue or dizziness, stop viewing the 3D projection and rest.
- Do not use the 3D glasses for any other purpose than for watching 3D projection.
- Wearing the 3D glasses for any other purpose (as general spectacles, sunglasses, protective goggles, etc.) may be physically harmful to you and may weaken your eyesight.
- Viewing in 3D projection may cause disorientation for some viewers. Accordingly, DO NOT place your 3D PROJECTOR near open stairwells, cables, balconies, or other objects that can be tripped over, run into, knocked down, broken or fallen over.

Cleaning the Lens

- Before cleaning the lens, be sure to turn off the projector and unplug the power cord to allow it to completely cool down.
- Use a compressed air tank to remove the dust.
- Use a special cloth for cleaning lens and gently wipe the lens. Do not touch the lens with your fingers.
- Do not use alkaline/acid detergents or volatile solvents such as alcohol for cleaning lens. If the lens is damaged due to the cleaning process, it is not covered by the warranty.

Warning

- Do not use a spray containing flammable gases to remove dust or dirt from the lens. This may cause a fire due to excessive heat inside the projector.
- Do not clean the lens if the projector is warming up as this may cause the lens' surface film to peel off.
- Do not wipe or tap the lens with a hard object.

Copyright

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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DLP®, DLP Link and the DLP logo are registered trademarks of Texas Instruments and BrilliantColor™ is a trademark of Texas Instruments.

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 Notice

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.

This Equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, 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.

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.

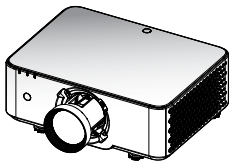
INTRODUCTION

Package Overview

Carefully unpack and verify that you have the items listed below under standard accessories. Some of the items under optional accessories may not be available depending on the model, specification and your region of purchase. Please check with your place of purchase. Some accessories may vary from region to region.

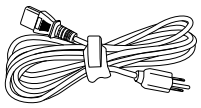
The warranty card is only supplied in some specific regions. Please consult your dealer for detailed information.

Standard Accessories



Projector

Remote control(*)



AC power cord

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

Documentation

Note:

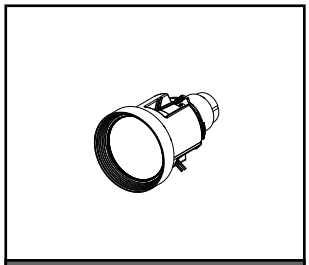
- *(*)The remote control requires two AAA batteries. See “Install / Replacing Remote Control Batteries” on page 29 for more information.*
- *(**) For European warranty Information, please visit www.optoma.com.*

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

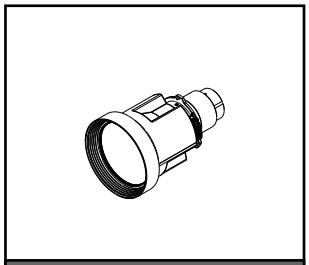
Please scan the Asia-Pacific QR code or visit the following URL:
https://www.optoma.com/support/download

INTRODUCTION

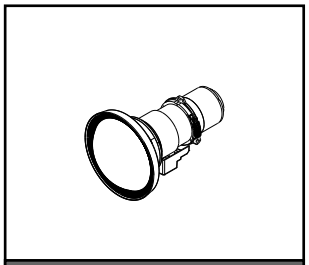
Optional Accessories



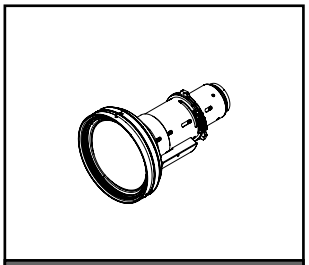
Optional lens
BX-CTA07 (1.30-1.80)



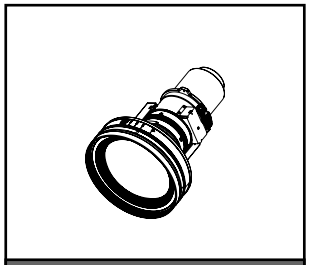
Optional lens
BX-CTA08 (1.25-2.00)



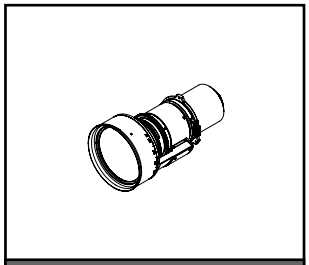
Optional lens
BX-CTA10 (0.50-0.65)



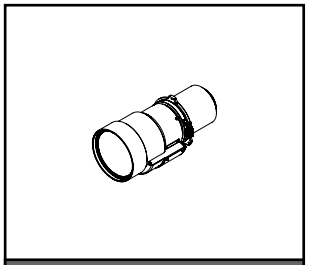
Optional lens
BX-CTA11 (0.78-0.90)



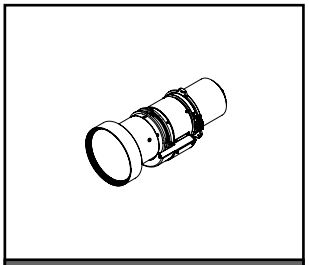
Optional lens
BX-CTA12 (0.90-1.30)



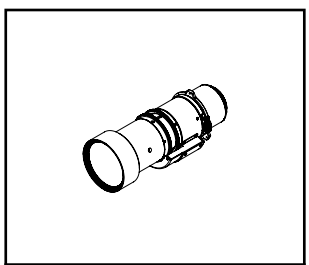
Optional lens
BX-CTA20 (1.44-1.80)



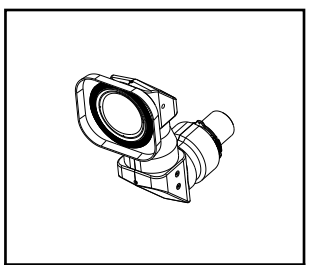
Optional lens
BX-CTA21 (1.80-2.40)



Optional lens
BX-CTA22 (2.40-4.80)



Optional lens
BX-CTA23 (4.80-8.64)

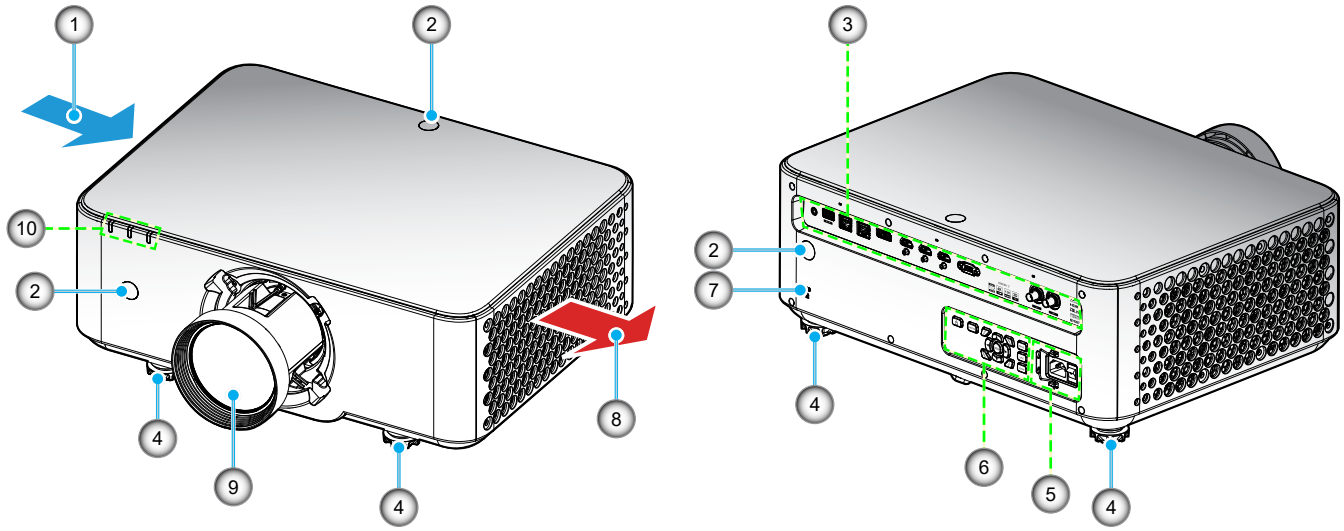


Optional lens
BX-CTA28 (0.34-0.37)

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

INTRODUCTION

Product Overview

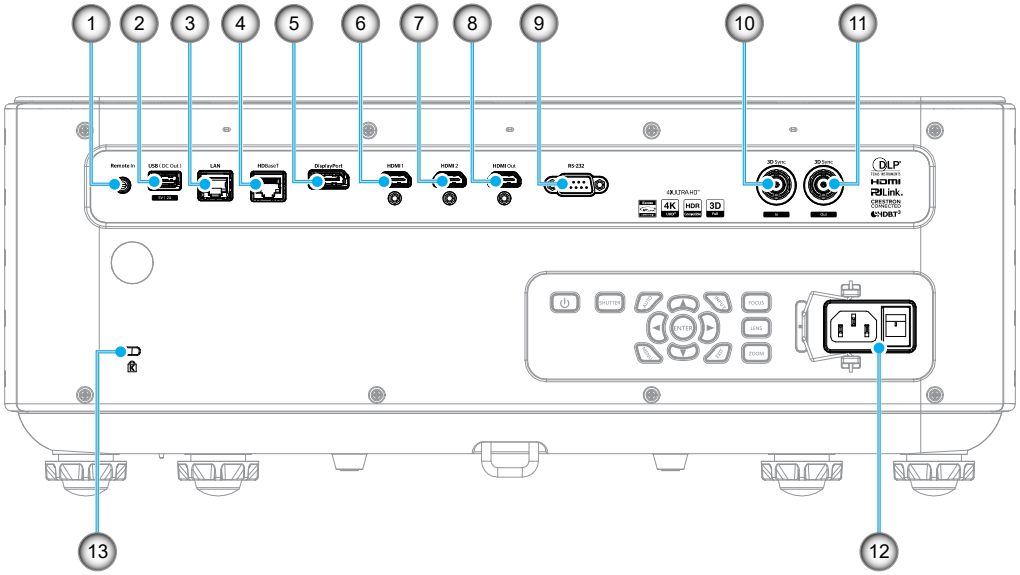


Note: *Do not block projector inlet or outlet air vents.*

No.	Item	No.	Item
1.	Ventilation (Inlet)	6.	Control Panel
2.	IR Receivers	7.	Kensington™ Lock Port
3.	Input / Output	8.	Ventilation (Outlet)
4.	Tilt-Adjustment Foot	9.	Projection Lens
5.	Power Socket / Power Switch	10.	LED Indicators

INTRODUCTION

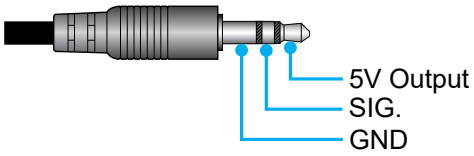
Connections



No.	Item	Cable	Example Connections[1]
1.	Remote In Connector	Wired Remote Control Cable or IR Receiver Cable (3.5mm TRS type[2])	Remote control
2.	USB Type-A Connector	USB (A to A) Cable	Only for power supply (5V/2A)
3.	LAN Connector	RJ-45 Cable	Device, Internet
4.	HDBaseT Connector	RJ-45 Cable	HDBaseT set-top box
5.	DisplayPort Connector	DisplayPort Cable	Device
6.	HDMI 1 Connector	HDMI Cable	Device
7.	HDMI 2 Connector	HDMI Cable	Device
8.	HDMI Out Connector	HDMI Cable	Screen, Projector, Display device
9.	RS-232 Connector	RS-232 Cable	Device
10.	3D Sync In Connector	3D Sync Cable	Device for 3D signal
11.	3D Sync Out Connector	3D Emitter Cable	3D Emitter
12.	Power Socket / Power Switch	Power Cord	Projector
13.	Kensington™ Lock Port	Protection Cable	Projector

Note:

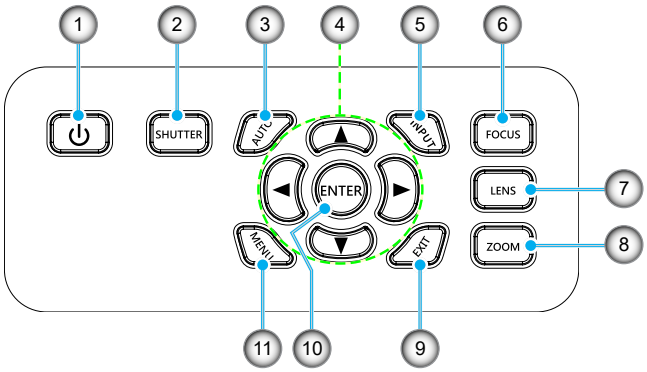
1. *These are just a few examples of what you can connect. There may be more options available for each port.*
2. *3.5mm TRS type.*



3. *Not recommended for charging a cell phone.*

INTRODUCTION

Keypad



No.	Button	Function
1.	Power Button	Turn the projector on or off.
2.	Shutter	Momentarily turn off/on the screen (AV Mute).
3.	Auto	Automatically synchronize the projector to an input source.
4.	Arrow Keys	Use arrow keys to navigate through the menu or select the appropriate settings.
5.	Input	Select an input signal.
6.	Focus	Adjust the image focus.
7.	Lens	Adjust the lens vertical / horizontal position.
8.	Zoom	Adjust the image size.
9.	Exit	Return to previous menu or exit menu if at top level.
10.	Enter	Confirm the settings.
11.	Menu	Show the main menu on screen.

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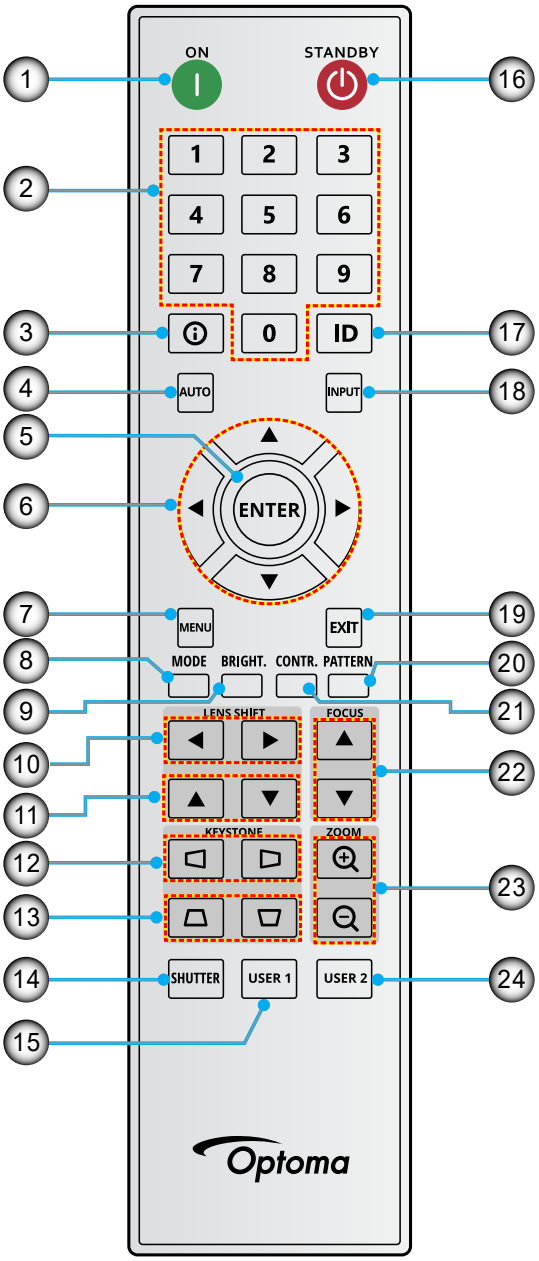
Remote Control



No.	Button	Function
1.	Power On	Turn the projector on.
2.	Number Keys	Input numbers (0-9).
3.	Info	Display information on the screen image.
4.	Auto	Automatically synchronize the projector to an input source.
5.	Enter	Press to confirm the 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.	Brightness	Set the brightness of the image.

INTRODUCTION

No.	Button	Function
10.	Left Shift (Horizontal)	Adjust the image position horizontally.
11.	Left 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 previous menu.
20.	Pattern	Display test pattern.
21.	Contrast	Set the contrast of the image.
22.	Focus	Adjust the image focus.
23.	Zoom	Adjust the image size.
24.	User 2	Press to assign custom functions. See user guide for more info.

Note: *Some keys may have no function for models that do not support these features.*

SETUP AND INSTALLATION

Installing the Projection Lens

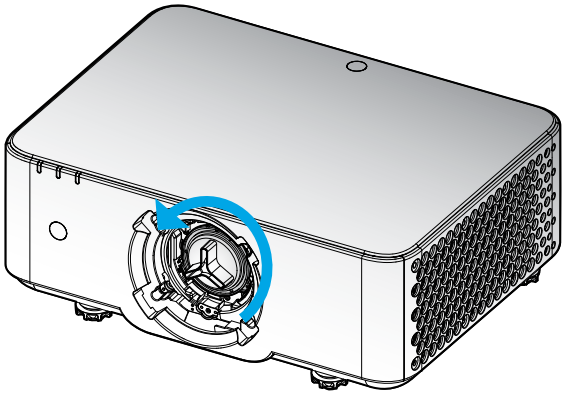
Before setting up the projector, install the projection lens in to the projector.

IMPORTANT!

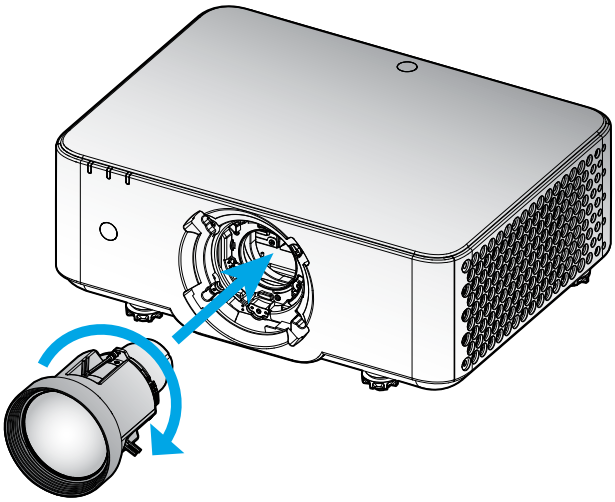
- *Before installing or replacing the lens, make sure the projector's power switch is turned off.*
- *During lens installation, do not adjust the lens shift, zoom, or focus either using the remote control or the projector keypad.*
- *To prevent damage to the lens and avoid personal injury, do not clean 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. Attach the lens to the projector. Then rotate the lens clockwise to lock the lens in place.

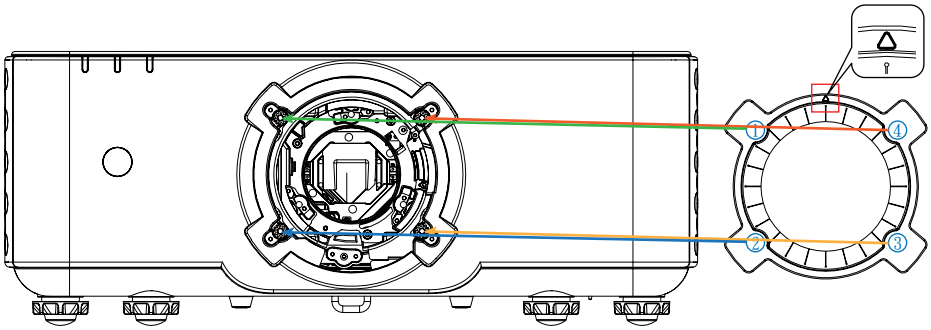


Note: *Remove the lens in the reverse order.*

SETUP AND INSTALLATION

Reinstalling the Lens Rubber

1. When the lens rubber comes off, please remove the lens from the projector before reinstalling it.
2. Perform Lens Calibration to ensure the lens is positioned at the center of the projector.
   From the OSD menu, select Device Setup → Lens Settings → Lens Calibration.
3. Press and reinstall the rubber sequentially onto the lens shift module.
   Note: *The triangular mark on the lens rubber should face upward.*



4. Carefully reinstall the lens onto the projector.

Note:

- *Do not apply excessive force or pull on the rubber during installation to avoid damaging the rubber.*
- *Removal of the lens rubber is not required when replacing the BX-CTA07, BX-CTA08, BX-CTA10, BX-CTA11, BX-CTA12, BX-CTA20, BX-CTA21, BX-CTA22, or BX-CTA23 lens.*
- *Please ensure the lens rubber is removed before replacing it with the BX-CTA28 lens.*

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 tilt 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 total normal.*

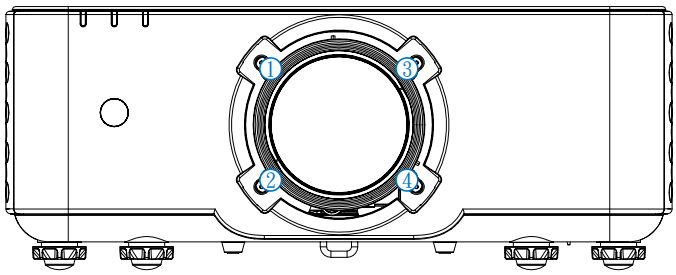
Setting the Projector Start Mode

1. From the OSD menu, select Device Setup → Test Pattern → Full Screen.
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

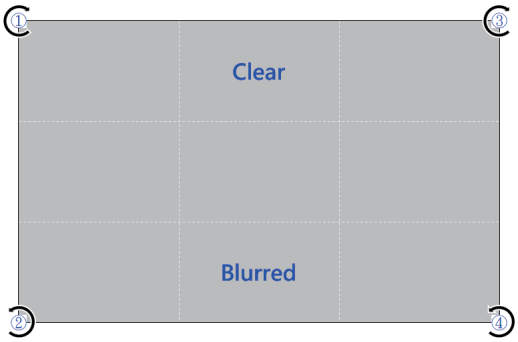
1. Use the Allen key to adjust the four boresight screws.

   Note: *It can be used by general hexagon wrenches.*



2. Zoom the lens to its widest opening.
3. Adjust the focus control to search for the best sharpness of the projected image.
4. Adjusting the vertical image resolution.

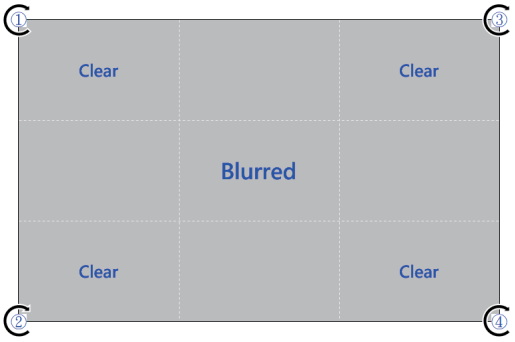
   - Turn screws (1) and (3) clockwise 1/8 turn and turn screws (2) and (4) counterclockwise 1/8 turn. Then repeat until the image is clear on both the top and bottom of the screen.



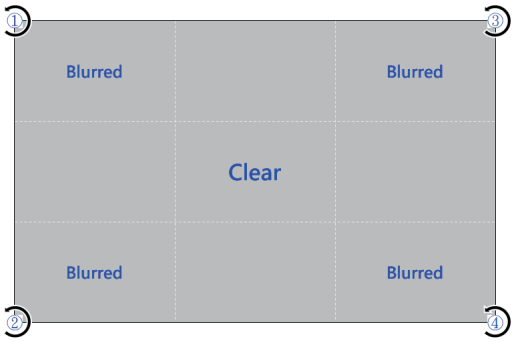
   - Turn screws (1) and (3) counterclockwise 1/8 turn and turn screws (2) and (4) clockwise 1/8 turn. Then repeat until the image is clear on both the top and bottom of the screen.

SETUP AND INSTALLATION

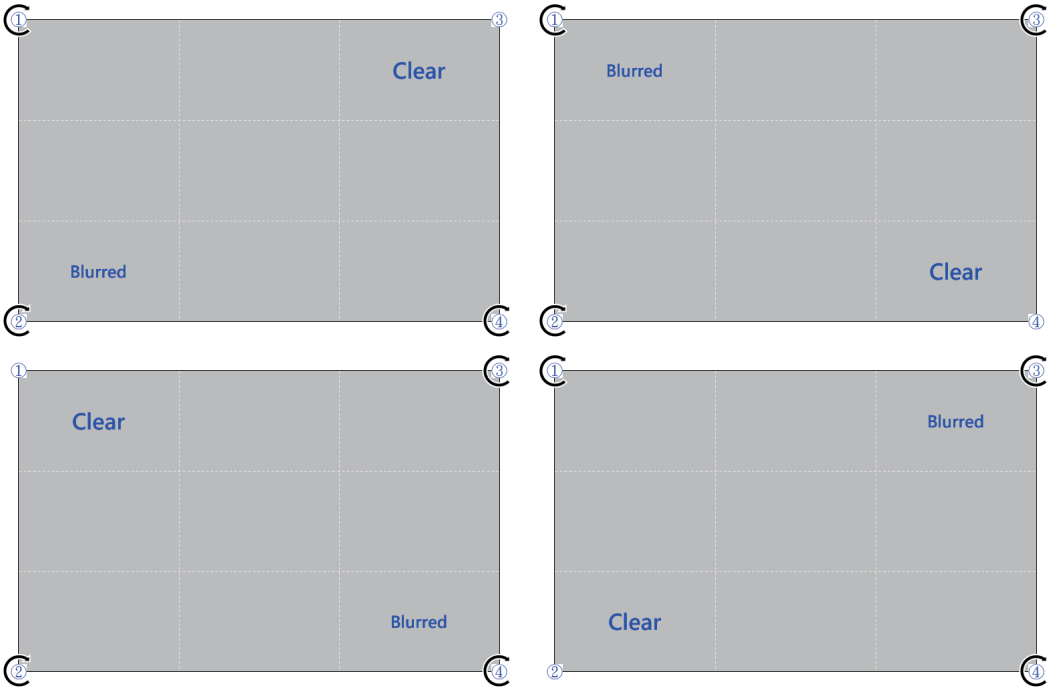
5. Adjusting the center square image resolution.
   - Roughly adjust screws ①, ②, ③, and ④ clockwise by 1/8 turn.
   - Finely adjust screws ①, ②, ③, and ④ clockwise by 1/16 turn.
   - Then adjust until the entire screen is clear.



   - Roughly adjust screws ①, ②, ③, and ④ counterclockwise by 1/8 turn.
   - Finely adjust screws ①, ②, ③, and ④ counter clockwise by 1/16 turn.
   - Then adjust until the entire screen is clear.



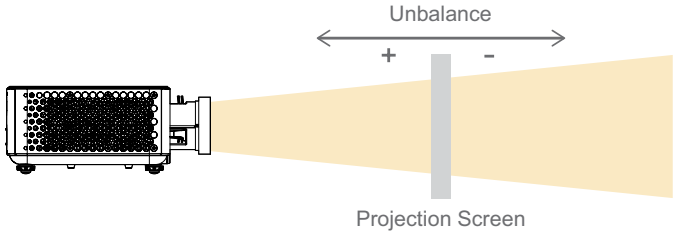
6. Fine tuning the entire screen is clear.
   - Adjust the screw clockwise a 1/8 turn for the blurred area and 11/16 turn for the adjacent areas. Adjust until the entire screen is clear.



SETUP AND INSTALLATION

7. Resetting boresight.

- Install a lens into the projector and tighten the four boresight screws evenly counterclockwise.
- Loosen the tightened screws by two turns in a clockwise direction.
- To check for a screen unbalance, select and hold Focus key until the first clear corner is identified.
- Adjust the boresight screw counterclockwise for negative unbalance and clockwise for positive unbalance (see the figure below).



- For the left-right adjustment, follow these steps (see the figure in step e) for image zones.

a. Approach the screen and if A, D, G is clear, examine C, F, I for unbalance (see the figure above).

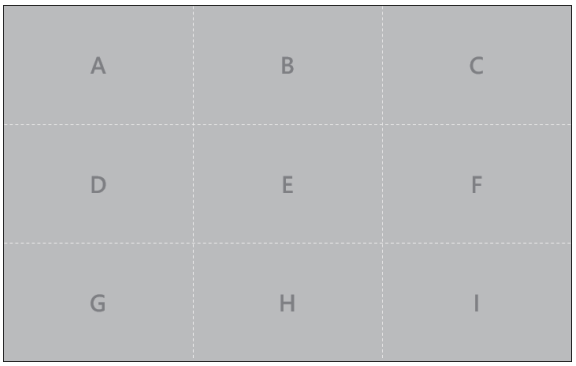
b. Adjust the focus for C, F, I with a negative unbalance.

- Turn screws (1) and (2) clockwise a 1/8 turn, and screws (3) and (4) counterclockwise a 1/8 turn.
- Observe if the image is clear.
- If it is not clear, check the unbalance and clear the area.

c. Adjust the focus for C, F, I with a positive unbalance.

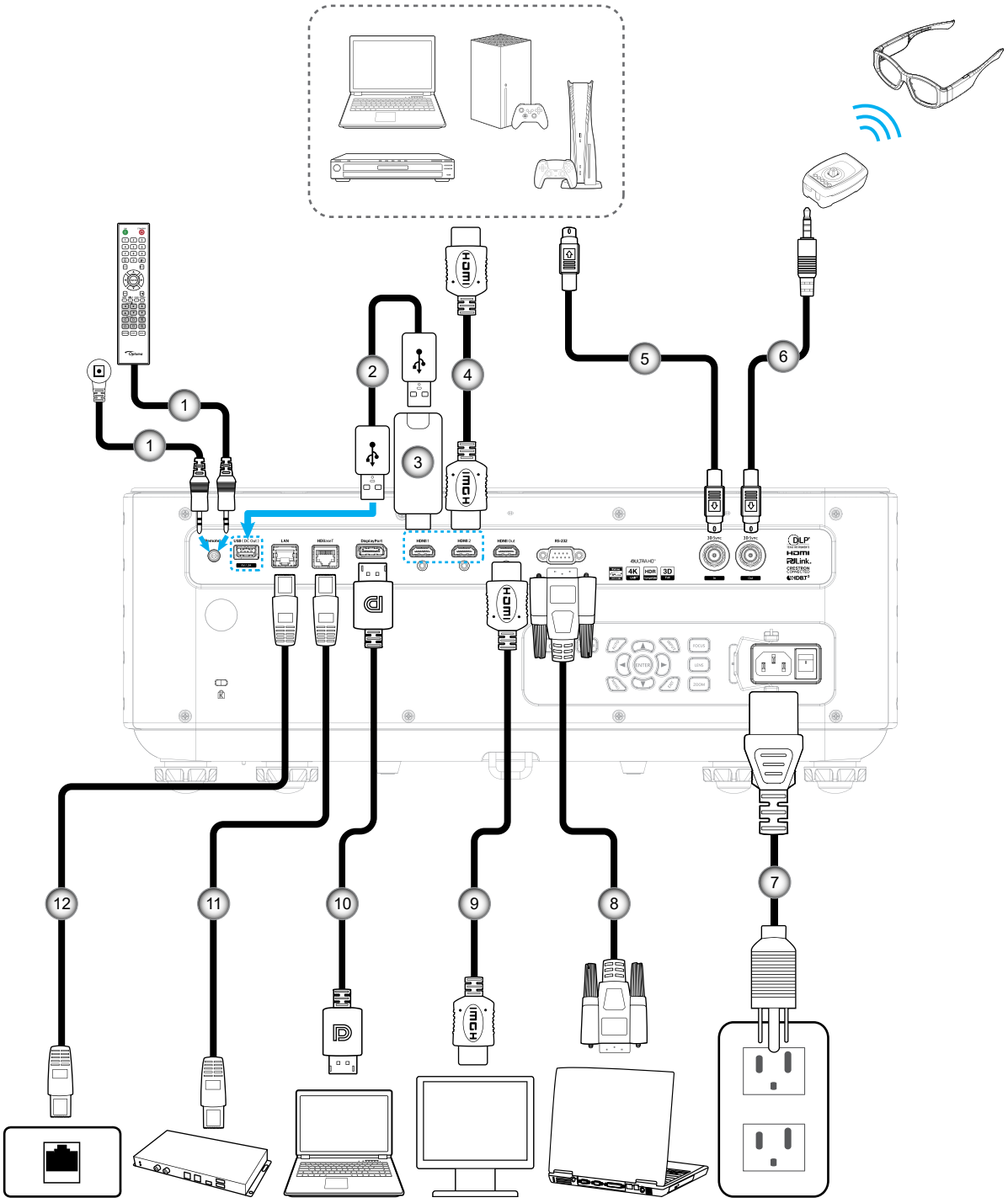
d. Turn the screws (1) and (2) a 1/8 turn, and screws (3) and (4) counterclockwise a 1/8 turn.

e. Repeat steps a to d until the image is clear on both the left and right sides of the image.



SETUP AND INSTALLATION

Connecting Sources to the Projector



No.	Item
1.	Wired Remote Control Cable or IR Receiver Cable (3.5mm TRS type)
2.	USB (A to A) Cable
3.	HDMI Dongle
4.	HDMI Cable

No.	Item
5.	3D Sync Cable
6.	3D Emitter Cable
7.	Power Cord
8.	RS-232 Cable

No.	Item
9.	HDMI Cable
10.	DisplayPort Cable
11.	RJ-45 Cable
12.	RJ-45 Cable

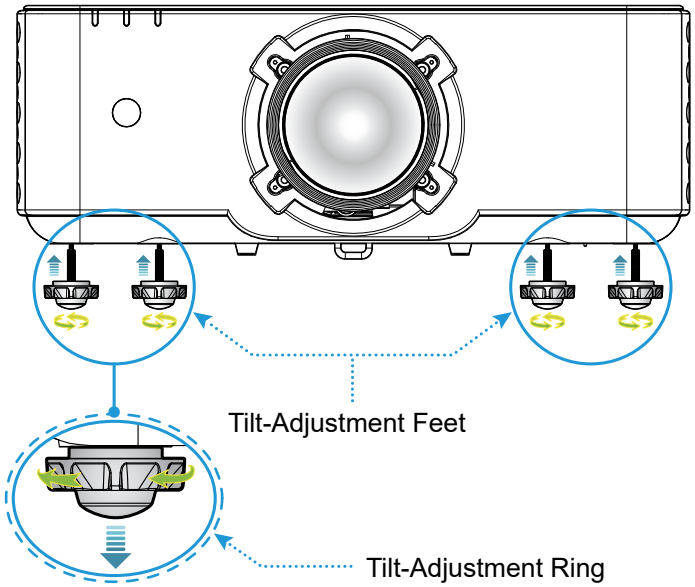
SETUP AND INSTALLATION

Adjusting the Projector Image

Adjusting the Projector's Height

The projector is equipped with adjustment feet for adjusting 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.

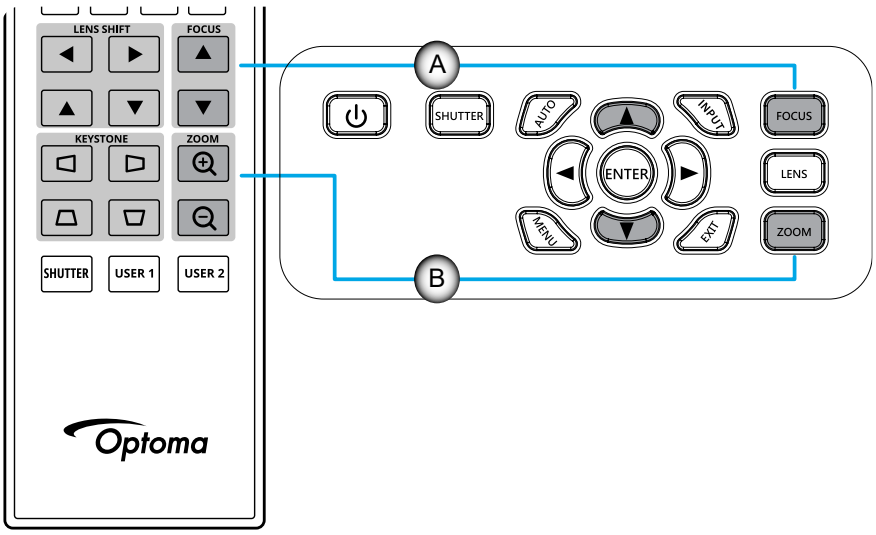


SETUP AND INSTALLATION

Adjusting the Projector 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 on the remote control or keypad until the image is sharp and legible. (A)
- To adjust the image size, press **Zoom** and the ▲▼ buttons on the keypad or the ⊕ ⊖ buttons on the remote control to get the required image size. (B)



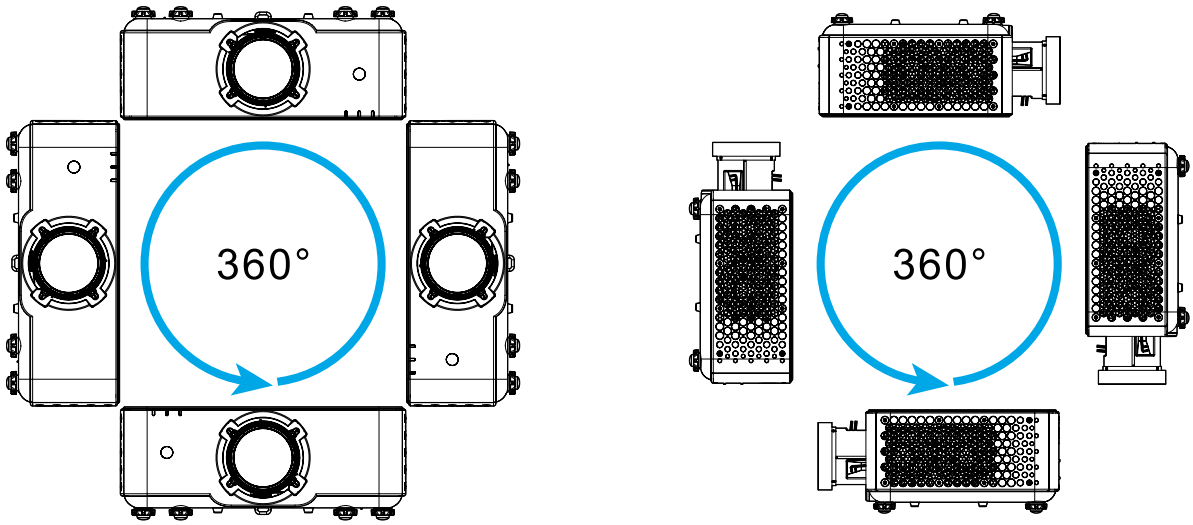
SETUP AND INSTALLATION

Adjusting the Projector Position

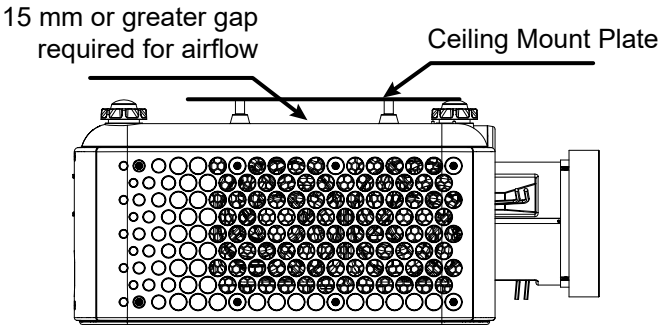
When you select a position for the projector, consider the size and shape of your screen, the location of your power outlets, and the distance between the projector and the rest of your equipment.

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 degrees free orientation operation.

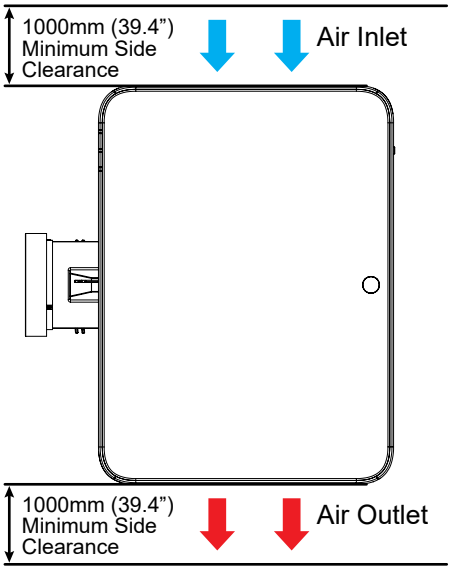


- For ceiling mount installations, make sure to leave 15 mm (0.6”) between the ceiling mount and the bottom intake vents of the projector.



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 1000 mm (39.4”) space around the air intakes and outlet of the projector.



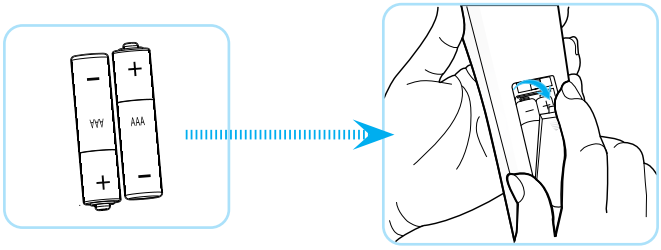
SETUP AND INSTALLATION

Remote Setup

Install / Replacing Remote Control 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.

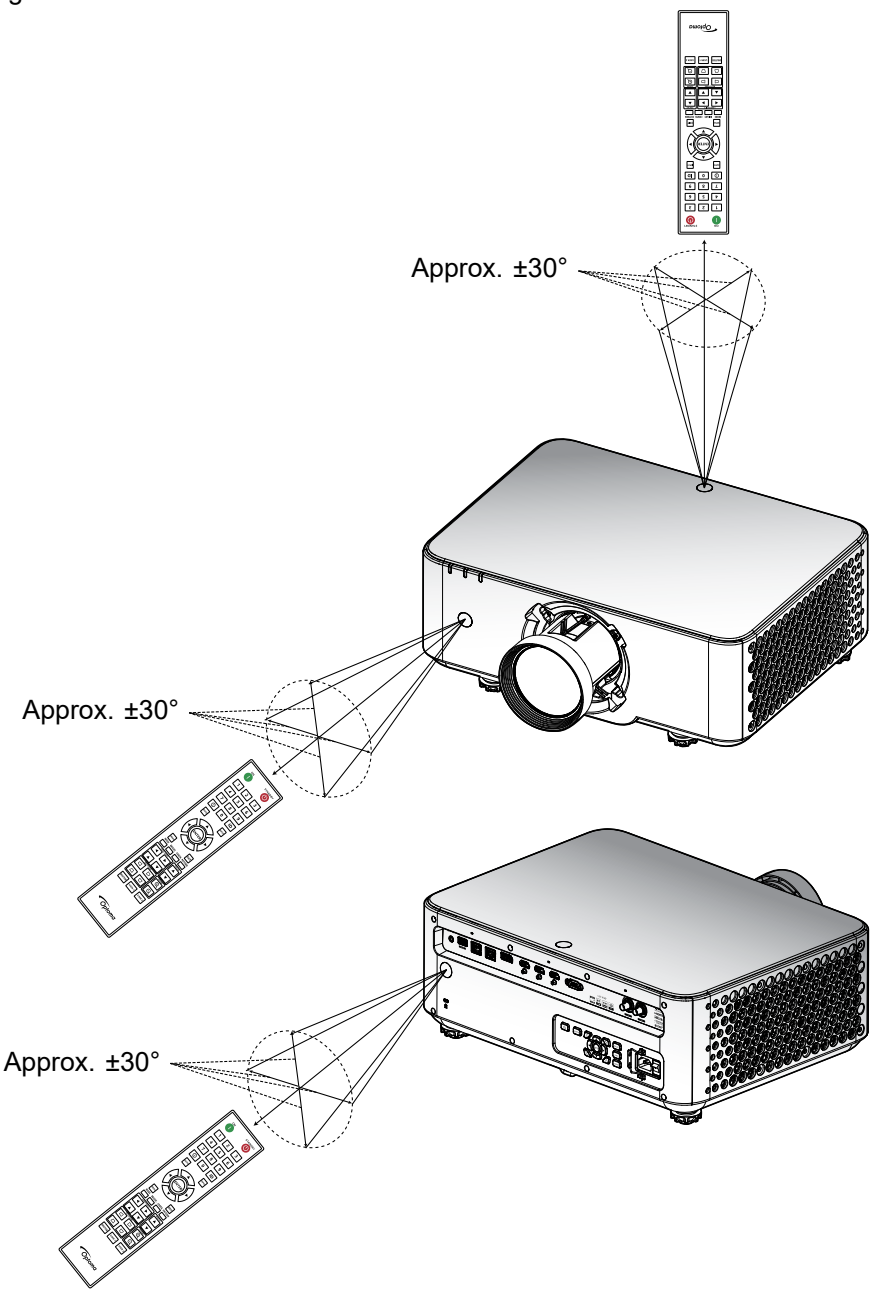
- Do not mix batteries of different types. Different types of batteries have different characteristics.
- Do not mix old and new batteries. Mixing old and new batteries can shorten the life of new batteries or cause chemical leakage in old batteries.
- Remove batteries as soon as the are depleted. Chemicals 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.

SETUP AND INSTALLATION

Remote Control Effective Range

Infra-Red (IR) remote control sensors are located on the top, front, and rear of the projector. Ensure to hold the remote control at an angle within 30 degrees perpendicular to the projector's IR remote control sensor to function correctly. The distance between the remote control and the sensor should not be longer than 20 meters (65.6 feet) when holding not longer than 30 meters (98.4 feet) when aiming the sensor at 0°.

- Make sure that there are no obstacles between the remote control and the IR sensor on the projector that might obstruct the infra-red beam.
- Make sure the IR transmitter of the projector/remote control is not being shined by sunlight or fluorescent lamps directly.
- Please keep the remote controller away from fluorescent lamps for over 2 m or the remote controller might become malfunction.
- If the remote control is close to Inverter-Type fluorescent lamps, it might become ineffective from time to time.
- If the remote control and the projector are within a very short distance, the remote control might become ineffective.
- When you aim at the screen, the effective distance is less than 5 m from the remote control to the screen and reflecting the IR beams back to the projector. However, the effective range might change according to screens.

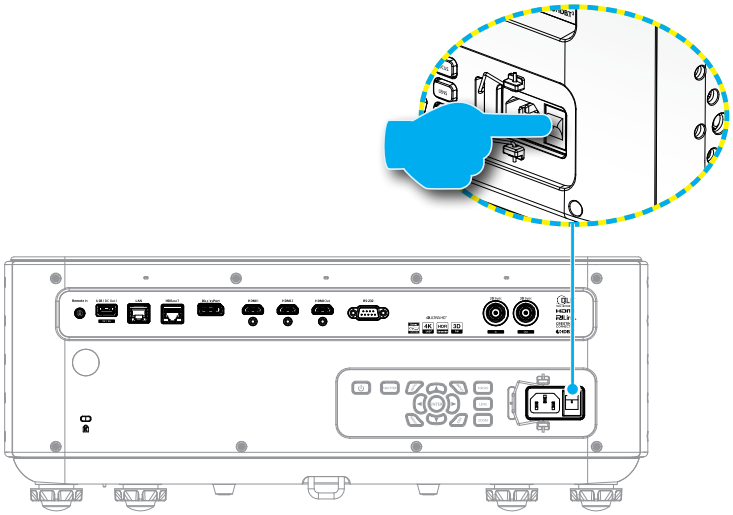


USING THE PROJECTOR

Powering On / Off the Projector

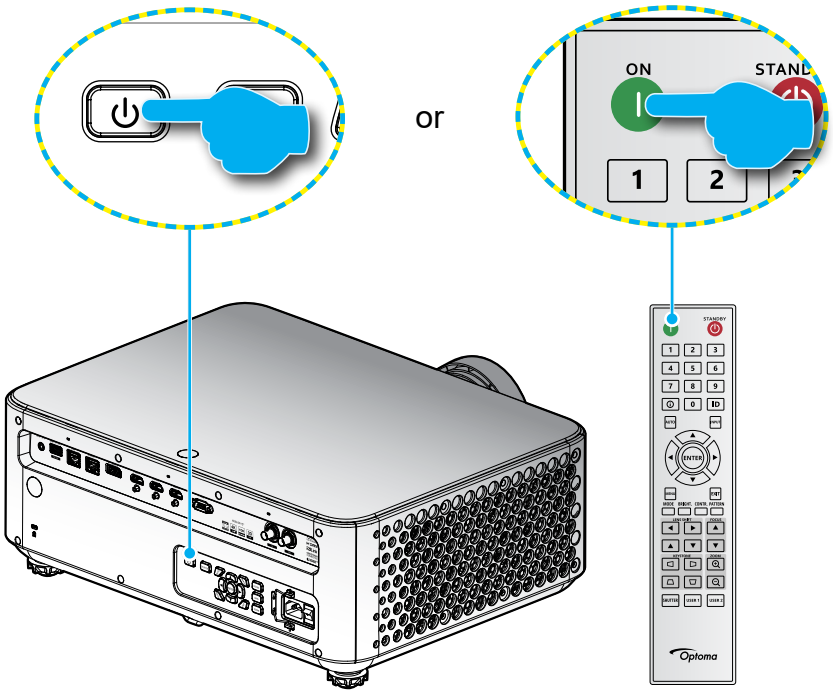
Powering On

1. Securely connect the power lead and signal/source cable. When connected, the power LED will turn red.
2. Set the power switch to the " | " (On) position and wait until the "⏻" button on the projector keypad is solid white.



3. Turn on the projector by pressing the "⏻" button on the projector keypad or remote control.

   During startup the power LED is flashing red and during normal operation, the power LED is solid green.

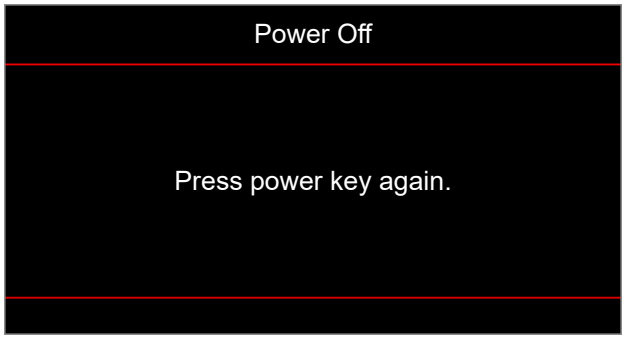


Note: *If the projector is turned on for the first time, you will be prompted to select the projector language, projection orientation, and other settings.*

USING THE PROJECTOR

Powering Off

1. Turn off the projector by pressing the "⏻" button on the projector keypad or remote control. The following message will be displayed:



2. Press the ⏻ button again to confirm, otherwise the message will disappear after 15 seconds. When you press the ⏻ button for the second time, the projector will shut down.
3. During the cooling cycle, the power LED is flashing green. When the power LED turns solid red, this indicates the projector has entered standby mode. If you wish to turn the projector back on, you must wait until the cooling cycle has finished and the projector has entered standby mode. When the projector is in standby mode, simply press the "⏻" button on the projector keypad or the ▎ on the remote control again to turn on the projector.
4. Disconnect the power cord from the electrical outlet and the projector.

Note:

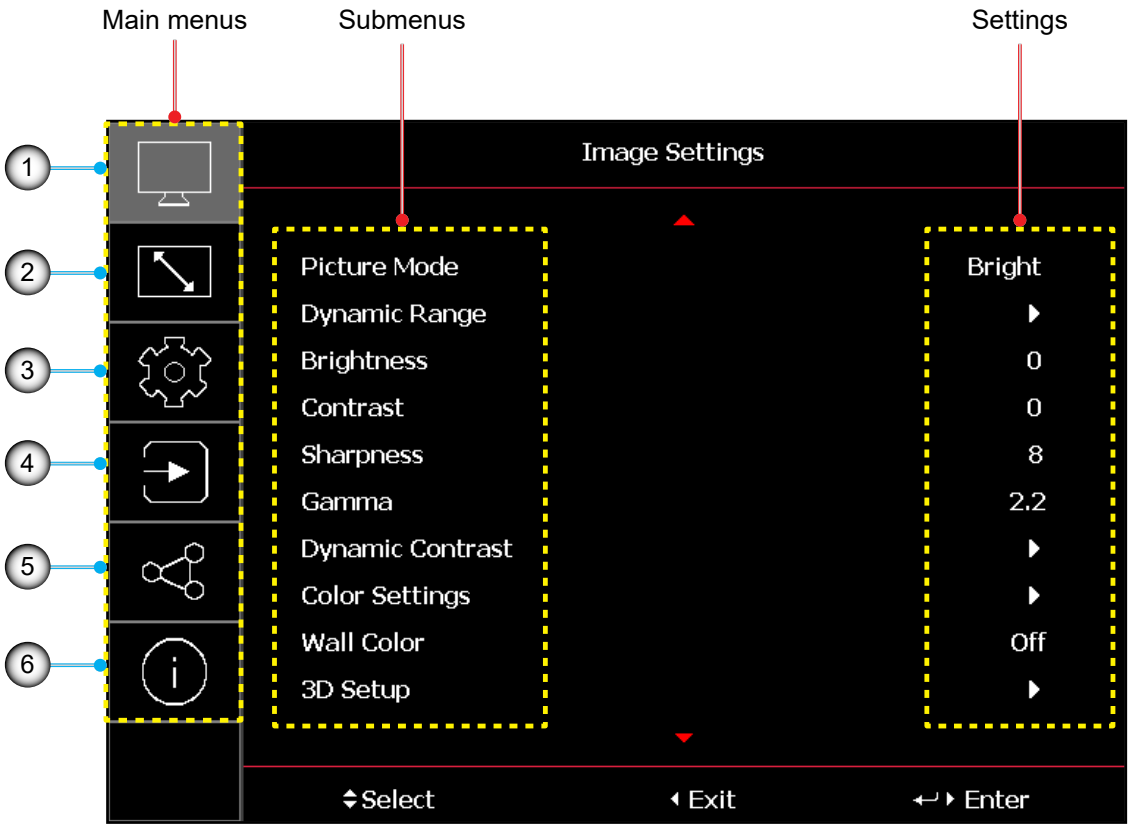
- *It is not recommended that the projector is turned on immediately, right after a power off procedure.*
- *By default, the projector turns off automatically after 20 minutes of inactivity. You can modify the idle time length in "Auto Power off (min.)" menu in "Device Setup → Power Settings". If you want the projector to enter standby mode instead, disable auto power off and set the sleep time interval in "Device Setup → Power Settings →Sleep Timer (min.)".*

USING THE PROJECTOR

Menu Navigation and Features

The projector features multilingual on-screen display (OSD) menus, enabling you to adjust images and modify various 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 sub menu, use the ▲▼ buttons to highlight it. Then, press the **Enter** button to enter the sub menu.
3. Press the **Exit** button 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 ▲ ▼ 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 Settings menu	4.	Input Settings menu
2.	Display Settings menu	5.	Control Settings menu
3.	Device Setup 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 Settings	Picture Mode					Vivid
						HDR
						HLG
						Cinema
						Reference
						Bright
						DICOM SIM.
						Blending
						3D
						High Frame Rate
						User
	Dynamic Range	HDR				Off
						Auto
		HDR Picture Mode				Bright
						Standard
						Film
						Detail
	Brightness					-50 ~ 50
	Contrast					-50 ~ 50
	Sharpness					1 ~ 15
	Gamma					Film
						Graphics
						1.8
						2.0
						2.2
						2.4
						Vivid
						3D
						Blackboard
						DICOM SIM.
						HDR
	Dynamic Contrast	Dynamic Black				Off
						On
		Speed				1 ~ 255
		Strength				0 ~ 3
		Level				50% ~ 100%
		Extreme Black				Off
						On
		AV Mute Timer				0.0s ~ 10.0s
		Black Signal Level				0 ~ 255
	Color Settings	Color				0 ~ 100
		Tint				0 ~ 100
		BrilliantColor™				0 ~ 10
		Color Temperature				Warm
						Standard
						Cool
						Cold

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Image Settings	Color Settings	Color Matching	Auto Test Pattern			Off
						On
			Red	Hue		0 ~ 254
				Saturation		0 ~ 254
				Luminance		0 ~ 254
				Reset		Yes
						Cancel
			Green	Hue		0 ~ 254
				Saturation		0 ~ 254
				Luminance		0 ~ 254
				Reset		Yes
						Cancel
			Blue	Hue		0 ~ 254
				Saturation		0 ~ 254
				Luminance		0 ~ 254
				Reset		Yes
						Cancel
			Cyan	Hue		0 ~ 254
				Saturation		0 ~ 254
				Luminance		0 ~ 254
				Reset		Yes
						Cancel
			Magenta	Hue		0 ~ 254
				Saturation		0 ~ 254
				Luminance		0 ~ 254
				Reset		Yes
						Cancel
			Yellow	Hue		0 ~ 254
				Saturation		0 ~ 254
				Luminance		0 ~ 254
				Reset		Yes
						Cancel
			White	Red		0 ~ 254
				Green		0 ~ 254
				Blue		0 ~ 254
				Reset		Yes
						Cancel
		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

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Image Settings	Color Settings	Color Space				Auto
						RGB (0-255)
						RGB (16-235)
						REC709
						REC601
	Wall Color					Off
						Blackboard
						Light Yellow
						Light Green
						Light Blue
						Pink
						Grey
	3D Setup	3D Mode				Off
						Auto
		3D Sync Type				DLP-Link
						3D Sync
		3D Format				Auto
						Frame Packing
						Side by Side
						Top and Bottom
						Frame Sequential
		3D Sync Invert				Off
						On
		3D Sync Out				To Emitter
						To Next Projector
		Frame Delay				1 ~ 202
		Reset				Yes
						Cancel
	Reset					Yes
						Cancel
Display Settings	Light Source Settings	Light Source Mode				Normal
						Eco Mode
						Custom Brightness
		Brightness Level				10% ~ 100%
		Constant Brightness				Off
						On
	Low Latency Mode					Off
						On
	Aspect Ratio					4:3
						16:9
						21:9
						LBX
						Auto
						Native

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Display Settings	Digital Zoom	Proportional				Off
						On
		Horizontal				50% ~ 400%
		Vertical				50% ~ 400%
		Horizontal Shift				0 ~ 100
		Vertical Shift				0 ~ 100
		Reset				Yes
						Cancel
	Image Shift	Horizontal				0 ~ 100
		Vertical				0 ~ 100
	Geometric Correction	Warp Control				Basic
						Advanced
						AP
		Basic	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	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

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Display Settings	Geometric Correction	Advanced	Black Level	Area		Bottom
						Top
				Enable		Off
						On
				Edit Area		
				Brightness	Brightness	
					Red	0 ~ 255
					Green	0 ~ 255
					Blue	0 ~ 255
					Boundary	Off
						On
				Red		0 ~ 255
				Green		0 ~ 255
				Blue		0 ~ 255
				Reset	Bottom	Yes
						Cancel
					Top	Yes
						Cancel
					All	Yes
						Cancel
		Memory	Save Memory			Memory 1 ~ Memory 5
			Apply Memory			Memory 1 ~ Memory 5
			Clear Memory			Yes
						Cancel
		Reset				Yes
						Cancel
	Edge Mask					0 ~ 10
	PIP/PBP	Screen				Off
						PIP
						PBP
		Main Source				HDMI 1
						HDMI 2
						DisplayPort
						HDBaseT
		Sub Source				HDMI 1
						HDMI 2
						DisplayPort
						HDBaseT
		Swap				
		Size				Small
						Medium
						Large

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Display Settings	PIP/PBP	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
Device Setup	Test Pattern					Off
						Green Grid
						Magenta Grid
						White Grid
						White
						Black
						Red
						Green
						Blue
						Yellow
						Magenta
						Cyan
						ANSI Contrast 4x4
						Color Bars
						Full screen
	Projection Orientation	Ceiling				Auto
						On
						Off
		Rear				Off
						On
	Language					English
						Deutsch
						Français
						Italiano
						Español
						Português
						Polski
						Nederlands
						Svenska
						Norsk
						Dansk
						Suomi
						ελληνικά
						中文(繁)
						中文(简)

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Device Setup	Language					日本語
						한국어
						Русский
						Magyar
						Čeština
						ไทย
						Türkçe
						Tiếng Việt
						Bahasa Indonesia
						Română
	Menu Settings	Menu Location				Top Left
						Top Right
						Center
						Bottom Left
						Bottom Right
		Menu Transparency				0 ~ 9
		Menu Timer				Off
						5s
						10s
						20s
						30s
						60s
		Information Hide				Off
						On
	High Altitude					Off
						On
	Lens Settings	Lens Type				(read only)
		Focus				+
						-
		Zoom				⊕
						⊖
		Lens Function				Locked
						Unlock
		Lens Shift				▲
						▼
						◀
						▶
		Lens Calibration				Yes
						Cancel
		Lens Memory	Save Memory			Memory 1 ~ Memory 5
			Apply Memory			Memory 1 ~ Memory 5
			Clear Memory			Yes
						Cancel
		Reset				Yes
						Cancel

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Device Setup	Schedule	Date and Time				----/--/-- --:--
		Schedule Mode				Off
						On
		View Today				Monday / Tuesday / Wednesday / Thursday / Friday / Saturday / Sunday
		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
						Power Off
				(Function = Input Source)		HDMI 1
						HDMI 2
						DisplayPort
						HDBaseT
				(Function = Light Source Mode)		Normal
						Eco Mode
						Custom Brightness
				(Function = Shutter)		Shutter On
						Shutter Off
				Reset		Yes
						Cancel
			Copy Events To			Monday
						Tuesday
						Wednesday
						Thursday
						Friday
						Saturday
						Sunday
			Reset the Day			Yes
						Cancel
		Reset Schedule				Yes
						Cancel
	Date and Time	Clock Mode				Use NTP Server
						Manual
		Date				2000 ~ 2037 (Year)
						01 ~ 12 (Month)
						01 ~ 31 (Day)

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				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				
		Update Interval				Hourly
						Daily
		Apply				
	Power Settings	Direct Power On				Off
						On
		Signal Power On				Off
						On
		Auto Power Off (min.)				0, 2 ~ 180
		Sleep Timer (min.)				0 ~ 960
		Energy Saving				Off
						On
		Power Mode (Standby)				Eco
						Active
						Communication
		USB Power				Off
						On
		Reset				Yes
						Cancel
	OMS					(Pop-up Binding Dialog box) (Display binding information)
	Shutter	Fade-In				0s ~ 5s
		Fade-Out				0s ~ 5s
		Startup				Shutter Off
						Shutter On
	Security	Security				Off
						On
		Security Timer	Month			0 ~ 35
			Day			0 ~ 29
			Hour			0 ~ 23
		Change Password				
	Keypad Lock					Off
						On
	Backlight	Keypad				Off
						On
		Power Key				Off
						On

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Device Setup	Startup Logo	Change Logo				Default
						Neutral
						User
		Delete Logo				Yes
						Cancel
	Background Color					None
						Blue
						Red
						Green
						Grey
						White
						Logo
	User Data	Save All Settings				Memory 1 ~ Memory 5
		Load All Settings				Memory 1 ~ Memory 5
	System Update	Auto				Off
						On
		Auto Download				Off
						On
		Update				Yes
						Cancel
	Device Reset	Reset OSD				Yes
						Cancel
		Reset All Settings				Yes
						Cancel
		Reset Selective	Image Settings			Yes
						Cancel
			Display Settings			Yes
						Cancel
			Device Setup			Yes
						Cancel
			Input Settings			Yes
						Cancel
			Control Settings			Yes
						Cancel
Input Settings	Auto Source					Off
						On
	Quick Resync					Off
						On
	Active Inputs					HDMI 1
						HDMI 2
						DisplayPort
						HDBaseT

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Input Settings	EDID Settings	HDMI 1 EDID				1.4
						2.0
		HDMI 2 EDID				1.4
						2.0
		HDBaseT EDID				1.4
						2.0
	HDMI Out					HDMI 1
						HDMI 2
	Reset					Yes
						Cancel
Control Settings	Device ID					0 ~ 99
	IR Function	Front				Off
						On
		Top				Off
						On
		Rear				Off
						On
		HDBaseT				Off
						On
	Remote Settings	Remote Code				0 ~ 99
		Quick Switch Code				Off
						1 ~ 9
		User1				HDMI 1
						HDMI 2
						Color Matching
						Color Temperature
						Projection Orientation
						Light Source Mode
						Freeze Screen
						LAN
						Reset Selective
		User2				HDMI 1
						HDMI 2
						Color Matching
						Color Temperature
						Projection Orientation
						Light Source Mode
						Freeze Screen
						LAN
						Reset Selective
	LAN	LAN Interface				RJ-45
						HDBaseT
		Network Status				Connected (read only)
						Disconnected (read only)
		MAC Address				(read only)
		DHCP				Off
						On

USING THE PROJECTOR

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Control Settings	LAN	IP Address				---.---.---.---
		Subnet Mask				---.---.---.---
		Gateway				---.---.---.---
		DNS 1				---.---.---.---
		DNS 2				---.---.---.---
		Apply				Yes
						Cancel
		Reset				Yes
						Cancel
	Control	Crestron				Off
						On
		PJLink				Off
						On
		Extron				Off
						On
		AMX Device Discovery				Off
						On
		Telnet				Off
						On
		HTTP				Off
						On
		Art-Net				Off
						On
						On(2.X.X.X)
						On(10.X.X.X)
	Art-Net	Net				0 ~ 127
		Subnet				0 ~ 15
		Universe				0 ~ 15
		Channel Settings				User 1
						User 2
		Edit Channel	User 1	1		Art-Net
				2		Light Source Settings
				3		Active Inputs
				4		Lens Shift (H)
				5		Lens Shift (V)
				6		Focus
				7		Zoom
				8		Lens Function
				9		Lens Control
				10		Lens Memory
				11		H Keystone
				12		V Keystone
				13		Power
				14		Shutter
				15		Freeze
				16		Test Pattern
				Reset		Yes
						Cancel

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Control Settings	Art-Net	Edit Channel	User 2	1		None
				2		None
				3		None
				4		None
				5		None
				6		None
				7		None
				8		None
				9		None
				10		None
				11		None
				12		None
				13		None
				14		None
				15		None
				16		None
				Reset		Yes
						Cancel
	Baud Rate					9600
						19200
						38400
						57600
						115200
	Reset					Yes
						Cancel
Information	Regulatory					
	Serial Number					
	Source Info.	Source				
		Resolution				
		Signal Format				
		Pixel Clock				
		Refresh Rate				
		Color Depth				
		Color Gamut				
		Color Space				
		Picture Mode				
		Sub Source				
		Resolution				
		Signal Format				
		Pixel Clock				
		Refresh Rate				
		Color Depth				
		Color Gamut				
		Color Space				
	Light Source Mode					
	Device ID					
	Remote Code					

Main Menu	Sub Menu 2	Sub Menu 3	Sub Menu 4	Sub Menu 5	Sub Menu 6	Values
Information	System Status	Power Mode (Standby)				
		Projection Hours				
		Total Hours				
		Normal				
		Eco Mode				
		Custom Brightness				
		Ambient Temp.				
		System Temp.				
		Pressure(hPA)				
		Humidity				
	Control	Crestron				
		Extron				
		PJLink				
		AMX Device Discovery				
		Telnet				
		HTTP				
		Art-Net				
		Art-Net Status	Channels			User 1
			1			Art-Net
			2			Light Source Settings
			3			Active Inputs
			4			Lens Shift (H)
			5			Lens Shift (V)
			6			Focus
			7			Zoom
			8			Lens Function
			9			Lens Control
			10			Lens Memory
			11			H Keystone
			12			V Keystone
			13			Power
			14			Shutter
			15			Freeze
			16			Test Pattern
	LAN	LAN Interface				
		MAC Address				
		Network Status				
		DHCP				
		IP Address				
		Subnet Mask				
		Gateway				
		DNS 1				
		DNS 2				
	FW Version					

USING THE PROJECTOR

Image Settings 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

There are several predefined display modes that you can choose from to suit your viewing preference. Each mode has been fine-tuned by our expert colour team to ensure superior colour performance for wide range of content.

Vivid

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

HDR / HLG

Decodes and displays High Dynamic Range (HDR) / Hybrid Log Gamma (HLG) content for the deepest blacks, brightest whites, and vivid cinematic color using REC.2020 color gamut. This mode will be automatically enabled if HDR/HLG is set to Auto (and HDR/HLG Content is sent to projector – 4K UHD Blu-ray, 1080p/4K UHD HDR/HLG Games, 4K UHD Streaming Video). While HDR/HLG mode is active, other display modes (Cinema, Reference, etc.) cannot be selected as HDR/HLG delivers color that is highly accurate, exceeding the color performance of the other display modes.

Cinema

Provides the best balance of detail and colors for watching movies.

Reference

This mode reproduces colors as close as possible the image the way the movie director intended. Color, color temperature, brightness, contrast and gamma settings are all configured to Rec.709 color gamut. Select this mode for the most accurate colour reproduction when watching movies.

Bright

This mode is suitable for environments where extra-high brightness is required, such as using the projector in well-lit rooms.

DICOM SIM.

This mode has been created for viewing greyscale images, perfect for viewing X-rays and scans during medical training.

Blending

When using multiple projectors, this mode can eliminate the visible banding and create a single bright, high resolution image across the screen.

3D

Optimized settings for watching 3D content.

Note: *To experience the 3D effect, you will need to have compatible DLP Link 3D glasses. See 3D section for more information.*

High Frame Rate

High Frame Rate (HFR) refers to higher frame rates than typical prior practice.

User

Based on Vivid, users can adjust color settings and save them.

Note:

- *When 3D mode is selected, the Vivid, HDR, HLG, Cinema, sRGB, Bright, DICOM SIM., Blending, and High Frame Rate mode will be unavailable.*
- *When Blending mode is selected, the HDR, HLG, 3D, and High Frame Rate mode will be unavailable.*

Dynamic Range

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

HDR

- **Off**: Turn off HDR Processing. When set to Off, the projector will NOT decode HDR content.
- **Auto**: Auto detect HDR signal.

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.

1.8 / 2.0 / 2.2 / 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. The standard gamma value is 2.2.

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.

HDR

Best for playing HDR videos.

Note: *When Blending mode is selected, only gamma 2.2 is supported.*

Dynamic Contrast

Set up the 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 255. 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 255, with 0 being the darkest black and 255 being the brightest.

Note:

- *When Dynamic Black is turned on, the Extreme Black will be unavailable.*
- *When Extreme Black is turned on, the Dynamic Black will be unavailable.*

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.

BrilliantColor™

This adjustable item utilizes a new color-processing algorithm and enhancements to enable higher brightness while providing true, more vibrant colors in picture.

Color Temperature

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

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).

- **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 indicates 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).
  - **Reset**: Reset the Red, Green, Blue, Cyan, Magenta, or Yellow color to factory default values.
- **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.

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.

Color Space

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

Note: *When 3D, High Frame Rate, or Blending mode is selected, the Color Temperature will be unavailable.*

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.

USING THE PROJECTOR

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

- **Off:** Select "Off" to turn off 3D mode.
- **On:** Select "On" to turn on 3D mode.

3D Sync Type

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 Format

Use this option to select the appropriate 3D format content.

- **Auto:** When a 3D identification signal is detected, the 3D format is selected automatically.
- **Frame Packing:** Display 3D signal in "Frame Packing" format.
- **Side by Side:** Display 3D signal in "Side-by-Side" format.
- **Top and Bottom:** Display 3D signal in "Top and Bottom" format.
- **Frame Sequential:** Display 3D signal in "Frame Sequential" format.

3D Sync Invert

Use this option to enable/disable the 3D sync invert function.

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.

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 nonsynchronous images.

Reset

Reset the function settings to factory default values.

Note:

- *When Blending mode is selected, the 3D Sync Type, 3D Sync Invert, and 3D Sync Out will be unavailable.*
- *This projector is a 3D ready projector with DLP-Link 3D solution.*
- *Please ensure that 3D glasses are in use for DLP-Link 3D content before enjoying your video.*
- *This projector supports frame sequential (page-flip) 3D via HDMI1/HDMI2 ports.*
- *To enable 3D mode, the input frame rate should be set to 60Hz only, lower or higher frame rate is not supported.*
- *To reach the best performance, resolution 1920x1080 is recommended, please note that 4K (3840x2160) resolution is not supported in 3D mode.*

Reset
Reset all the image settings to factory default values.

USING THE PROJECTOR

Display Settings menu

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

Submenus

- Light Source Settings
- Low Latency Mode
- Aspect Ratio
- Digital Zoom
- Geometric Correction
- Edge Mask
- PIP/PB

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 Brightness.

Brightness Level

Adjust the brightness level from 10% to 100%.

Constant Brightness

Set the Light Source Mode to Custom Brightness.

- Wait 10 minutes for the light source temperature to stabilize.
- Adjust the Brightness Level to the desired brightness.
- Set the Constant Brightness to “ON” to maintain consistent brightness.

Low Latency Mode

Enable this feature to reduce response times (input latency) during gaming to 8.2ms (1080p120Hz). All geometric correction settings (example: Keystone, Four Corners) will be disabled when Low Latency Mode is enabled. For more information is below.

Note:

- *The input lag by signals is described in the following table:*
- *The values in the table can vary slightly.*

Source Timing	*Output Resolution*	*Low Latency Mode*	*Total Latency*	*Frame*
4K60	*2400p60*	*On*	*34.9 ms*	*~2.1 frame*
1200p60	*2400p60*	*On*	*34.9 ms*	*~2.1 frame*
1080p60	*2400p60*	*On*	*34.9 ms*	*~2.1 frame*
1200p120	*1200p240*	*On*	*12.3 ms*	*~1.5 frame*
1080p120	*1200p240*	*On*	*12.4 ms*	*~1.5 frame*
1080p240	*1200p240*	*On*	*8.6 ms*	*~2.1 frame*
4K60	*2400p60*	*Off*	*47.9 ~ 64.1 ms*	*~2.9 ~ 3.9 frame*
1200p60	*2400p60*	*Off*	*47.5 ~ 63.3 ms*	*~2.9 ~ 3.9 frame*
1080p60	*2400p60*	*Off*	*47.9 ~ 64.1 ms*	*~2.9 ~ 3.9 frame*
1200p120	*1200p240*	*Off*	*20 ~ 23.9 ms*	*~2.4 ~ 2.9 frame*
1080p120	*1200p240*	*Off*	*20 ~ 23.9 ms*	*~2.4 ~ 2.9 frame*
1080p240	*1200p240*	*Off*	*12.5 ~ 16.3 ms*	*~3 ~ 3.9 frame*

Aspect Ratio

Set the aspect ratio of the projected image. The available options are 4:3, 16:9, 21:9, LBX, Auto, or Native. Select Auto to display the detected image size.

- **4:3:** This format is for 4:3 input sources.
- **16:9:** This format is for 16:9 input sources, like HDTV and DVD enhanced for Wide screen TV.
- **21:9:** This format is for 21:9 input source, like Microsoft Team Front Row compatible and DVD enhanced for Wide screen TV.
- **LBX:** This format is for non-16x9, letterbox source and if you use external 16x9 lens to display 2.35:1 aspect ratio in full resolution.
- **Auto:** Automatically selects the appropriate display format.
- **Native:** This format displays the original image without any scaling.

Note: *Native setting is not available when the input resolution is lower than 1080p.*

Digital Zoom

Use to reduce or magnify an image on the projection screen. Digital Zoom is not the same as optical zoom and can result in degradation of image quality.

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.

Note: *Before adjusting the Horizontal option for digital zoom, the Horizontal Shift will be unavailable.*

Vertical Shift

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

Note: *Before adjusting the Vertical option for digital zoom, the Vertical Shift will be unavailable.*

Reset

Reset digital zoom settings to factory default values.

Note: *Zoom settings are retained on power cycle of the projector.*

Image Shift

Adjust the projected image position.

Horizontal

Use the ◀ and ▶ buttons to adjust the projected image position horizontally.

Vertical

Use the ▲ and ▼ buttons to adjust the projected image position vertically.

Note: *When 3D mode is selected, the Image Shift will be unavailable.*

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

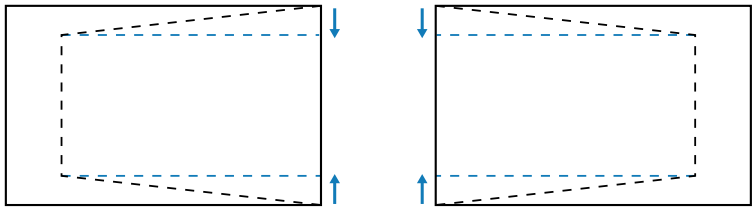
Note:

1. *Optoma Visual Suite is a professional desktop image adjustment software primarily used for multi-projector systems.*
2. *Optoma Visual Suite is integrated into the Optoma Management Suite. During the installation of the Optoma Management Suite, you will be asked whether you would like to install Visual Suite as well. To download the Optoma Management Suite (OMS) software and the Visual Suite user manual, please visit: https://www.optoma.com/support.*

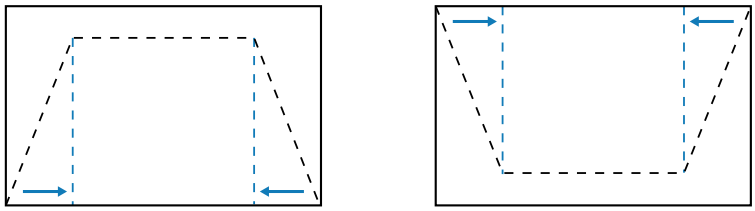
Basic

Configure basic settings.

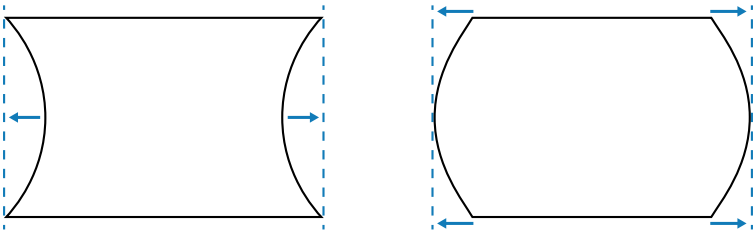
- **Keystone:** Keystone function is used to adjust the images in asymmetric rectangle shape.
  - **Horizontal**: Adjust the left and right side of the projected image to make it an even rectangle. It is used for the images with unequal left and right sides.



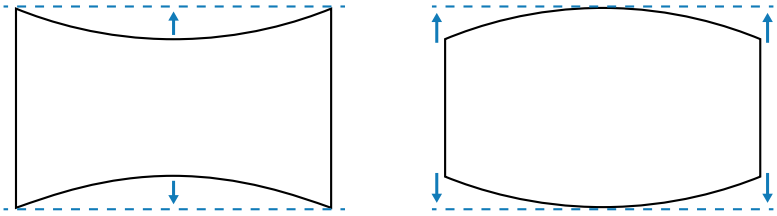
  - **Vertical**: Adjust the top and bottom side of the projected image to make it an even rectangle. It is used for the images with unequal top and bottom sides.



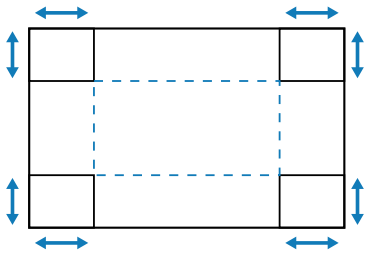
- **Pincushion:** Pincushion function is used to adjust the image with barrel or pincushion distortion.
  - **Horizontal**: Correct the projected image with horizontal barrel or pincushion distortion.



– **Vertical**: Correct the projected image with vertical barrel or pincushion distortio.



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



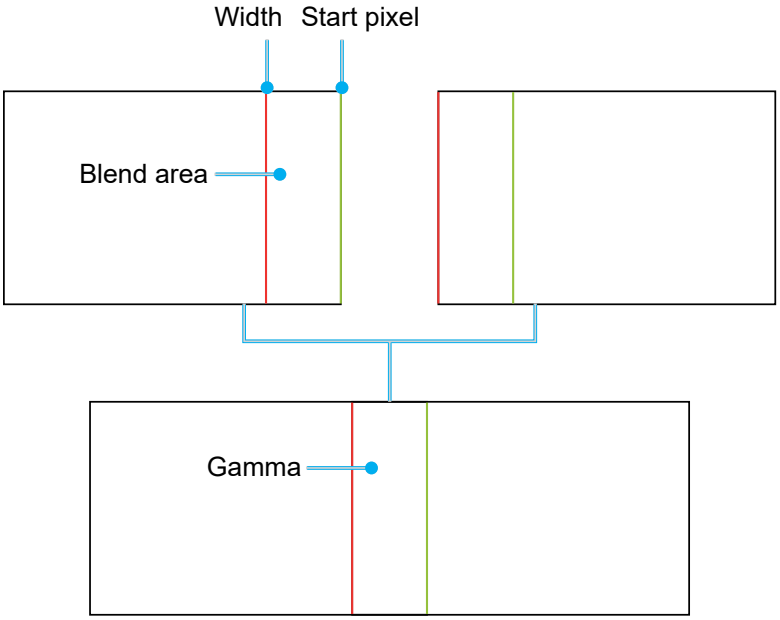
Advanced

Configure advanced warp settings. Refer to “Manual Warp Control Instruction” on page 106.

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.

Note: *When 3D mode is turned on, the Edge Mask will be unavailable.*

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, DisplayPort, and HDBaseT.

Sub Source

Select an input source for the second image. The available input sources are HDMI1, HDMI2, DisplayPort, and HDBaseT.

Swap

Swap the main source and sub source.

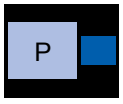
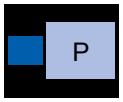
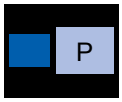
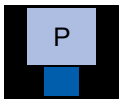
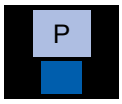
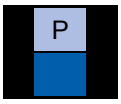
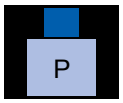
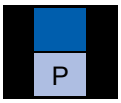
Size

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 Size		
	Small	Medium	Large
PBP, Main Left			
PBP, Main Right			
PBP, Main Top			
PBP, Main Bottom			

USING THE PROJECTOR

- **PIP Layout**

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

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

PIP/PBP Compatibility

PIP/PBP		Main Source			
		HDMI 1	HDMI 2	DisplayPort	HDBaseT
Sub Source	HDMI 1	–	V	V	V
	HDMI 2	V	–	V	V
	DisplayPort	V	V	–	V
	HDBaseT	V	V	V	–

a) Flashing lines may occur if the bandwidth of both inputs are too high, please try to reduce the resolution.

b) Frame tearing may occur due to a difference in frame rate between the Main and the Sub picture, please try to match the frame rate for each input.

Reset

Reset all the display settings to factory default values.

USING THE PROJECTOR

Device Setup menu

Learn how to configure the system settings for the projector.

Submenus

- Test Pattern
- Projection Orientation
- Language
- Menu Settings
- High Altitude
- Lens Settings
- Schedule
- Date and Time
- Power Settings
- OMS
- Startup
- Security
- Keypad Lock
- Backlight
- Startup Logo
- Background Color
- User Data
- System Update

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 bars, and Full screen.

Projection Orientation

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.

Language

Select a language for the OSD menu. The available languages are English, Czech, Danish, Dutch, Finnish, France, German, Greek, Hungarian, Indonesian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Romanian, Russian, Simplified Chinese, Spanish, Swedish, Thai, Traditional Chinese, Turkish, and Vietnamese.

Menu Settings

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.

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.

Lens Settings

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

Lens Type

Display the lens throw ratio. (Read only)

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 Function

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

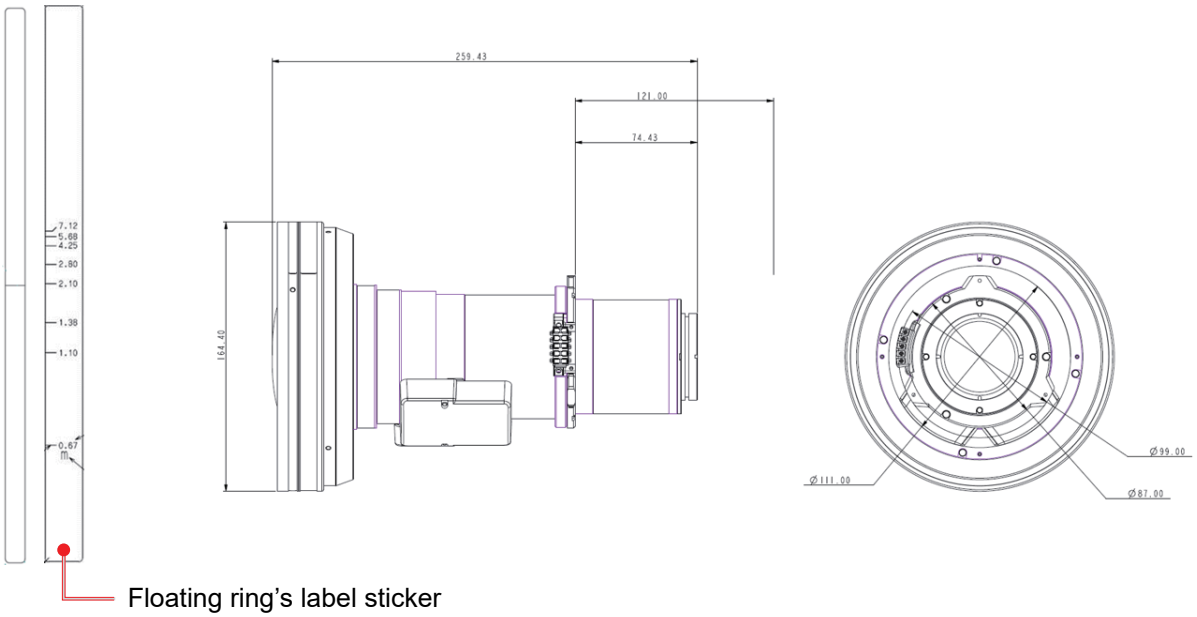
Note: *When Lens Function is turned on, the Focus, Zoom, Lens Shift, Lens Calibration, and Lens Shift Memory will be unavailable.*

Lens Shift

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

Note: *BX-CTA11 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 2.1m, adjust the floating ring scale to "2.10" for better performance.*



Floating ring's label sticker

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 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.

Lens Type	Lens Shift	Zoom	Focus
BX-CTA07	V	V	V
BX-CTA08	V	–	–
BX-CTA10	V	–	–
BX-CTA11	V	V	V
BX-CTA12	V	V	V
BX-CTA20	V	V	V
BX-CTA21	V	V	V
BX-CTA22	V	V	V
BX-CTA23	V	V	V
BX-CTA28	V	–	–

Note:

- *Process the lens calibration before setup lens shift memory.*
- *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.*
- *When the lens calibration is not completed, the lens shift memory will be unavailable.*

Reset

Reset the lens settings to factory default values.

Schedule

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

Date and Time

Display the date and time for the projector.

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.
  - **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 the date and time of the projector.

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.

Power Settings

Configure the projector's power settings.

Direct Power On

Choose "On" to activate Direct Power mode. The projector will automatically power on when AC power is supplied, without pressing the "Power" key on the projector keypad or on the remote control.

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 (min.)

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 minutes for each press.

Sleep Timer (min.)

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

Energy Saving

According to the ErP(EU) 2023/826 specification, the default setting of the Energy Saving function is enabled. If you want to change the other settings of “Auto Power Off (min.)” and “Power Mode (Standby)”, please turn off the energy saving function.

Note: *Since the default setting of energy saving is turned on, you won not be able to select the “Auto Power Off (min.)” and “Power Mode (Standby)” options. At the same time, “Auto Power Off (min)” will be automatically changed to 20 minutes, and “Power Mode (Standby)” will also be automatically changed to Eco mode.*

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.

USB Power

Enable or disable the USB power function.

Reset

Reset the power settings to factory default values.

OMS (Optoma Management Suite)

Control the projector with OMS. For more information, please visit https://oms.optoma.com.

Shutter

Set up the shutter behavior.

Fade-In/Fade-Out

Adjust shutter setting for Fade In, Fade Out duration. The set value ranges 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. If the user enters incorrect password three times, a message will pop up warning that the projector shuts down in 10 seconds.

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.*

Keypad Lock

When the keypad lock function is “On”, the Keypad will be locked. However, the projector can be operated by the remote control. By selecting “Off”, you will be able to reuse the Keypad..

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.

Startup Logo

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 Default and Neutral.

- **Default:** The projector default logo.
- **Neutral:** The logo is not displayed on the startup screen.
- **User:** User customized logo.

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

Delete Logo

Delete the saved customized logo.

Background Color

Set a background color to display when no input signal is detected. The available options are None, Blue, Red, Green, Grey, White, and Logo.

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

Update the system automatically or manually.

Auto

System checks for new updates automatically every time it is connected to the Internet.

Auto Download

When both “Auto” and “Auto Download” are On, new updates will be downloaded automatically when the projector is restarted.

Note:

1. *When new updates are automatically downloaded, there will be no prompts.*
2. *When the Power Off button is pressed, if the download is complete, a prompt to update will pop up.*
3. *Select the Update option to start the update.*

Update

Manually update the system firmware.

Device Reset

Reset the settings to factory default values.

Reset OSD

Reset OSD settings to default values.

Reset All Settings

Reset all projector settings to default values.

Reset Selective

Reset the settings of one of the main menus. User can choose from Image Settings, Display Settings, Device Setup, Input Settings, and Control Settings.

USING THE PROJECTOR

Input Settings menu

Learn how to configure the projector input settings.

Submenus

- Auto Source
- Quick Resync
- Active Inputs
- EDID Settings
- HDMI Out

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

Set the quick resync feature.

Active Inputs

Select an input signal from the source list. The available input sources are HDMI1, HDMI2, DisplayPort, and HDBaseT.

EDID Settings

Set the EDID compatibility.

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.

HDBaseT EDID

When receiving a HDMI signal via HDBaseT, 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.

HDMI Out

Set the HDMI 1 or HDMI 2 port to output the signal.

Reset

Reset all the input settings to factory default values.

USING THE PROJECTOR

Control Settings menu

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

Submenus

- Device ID
- IR Function
- Remote Settings
- LAN
- Control
- Art-Net
- Baud Rate

Device 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, Telnet or other control methods.

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.

Rear

Enable or disable the rear remote receiver.

HDBaseT

Select On to set the HDBaseT terminal as the remote receiver.

Remote Settings

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.

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 HDMI 1, HDMI 2, Color Matching, Color Temperature, Projection Orientation, Light Source Mode, Freeze Screen, LAN, and Reset Selective.

USING THE PROJECTOR

LAN

Configure the projector's network settings.

LAN Interface

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

Network Status

Display the network connection status. (Read only)

MAC Address

Display the MAC address. (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 1/DNS 2

Assign the projector's DNS 1/DNS 2.

Apply

Apply the wired network settings.

Note: *If you have adjusted the settings for DHCP, IP Address, Subnet Mask, Gateway, DNS1/2, please be sure to execute "Apply" so that the system will apply any changes to the network settings.*

Reset

Reset the network settings to default factory values.

Note: *The LAN menu cannot be selected when the Art-Net is set to On(2.X.X.X) or On(10.X.X.X).*

Control

This projector can be controlled remotely by a computer or other external devices through 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.

Note: *Crestron settings on the OSD only support Crestron V1 functions. If you want to configure Crestron V2 functions or more detailed settings, you need to go to the web page to set them.*

PJ Link

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

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

Extron

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

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

USING THE PROJECTOR

AMX Device Discovery

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

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

Note: *Only supports AMX Discovery function.*

Telnet

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

For more information, refer to “Using RS232 command by Telnet” on page 75.

HTTP

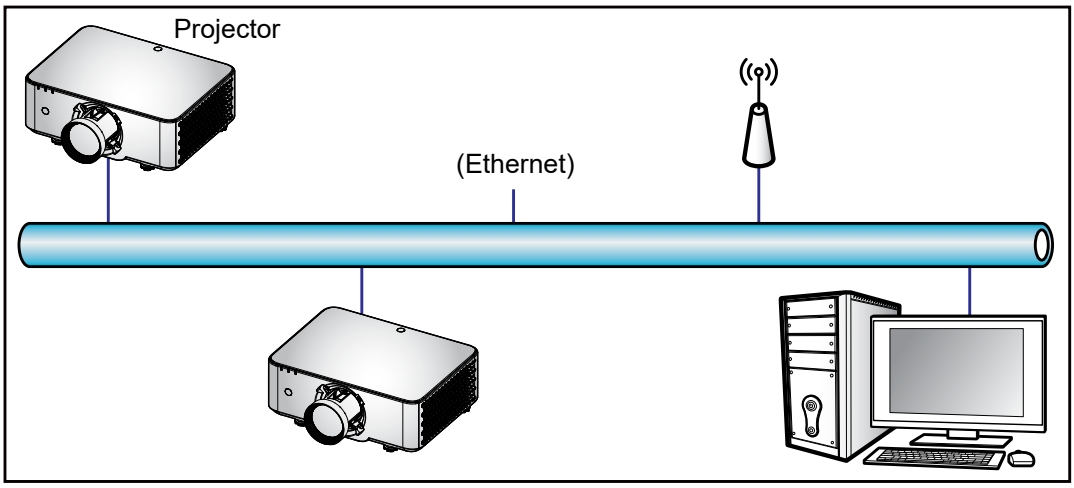
Control the projector with web browser (Port: 80).

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

Art-Net

Control the projector with Art-Net commands.

- **Off:** Disable the Art-Net function.
- **On:** Enable the Art-Net function and uses the IP address set in LAN menu.
- **On(2.X.X.X):** Enable the Art-Net function and uses the IP address to 2.X.X.X.
- **On(10.X.X.X):** Enable the Art-Net function and uses the IP address to 10.X.X.X.



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.*
- *Art-Net™ designed by and Copyright Artistic Licence Holdings Ltd.*
- *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.*
- *Support OMSC and OMSL. For more information, please contact the Support-Service directly.*

Art-Net

"Art-Net" is an Ethernet communication protocol based on the TCP/IP protocol.
Setting of the projector can be operated by the DMX controller or application software using the Art-Net protocol.
Refer to "Using Art-Net function" on page 76 for details.

- **Net:** Enter "Net" to be used when the projector processes Art-Net. The value ranges from 0 to 127.
- **Subnet:** Enter "Subnet" to be used when the projector processes Art-Net. The value ranges from 0 to 15.
- **Universe:** Enter "Universe" to be used when the projector processes Art-Net. The value ranges from 0 to 15.
- **Channel Settings:** Set the User 1 / User 2 channel.
- **Edit Channel:** Set the assignment of the channel. For the channel definitions used for controlling the projector with the Art-Net function, refer to "Using Art-Net function" on page 76 for details.
  - **User 1 / User 2:** Uses the channel assignment in standard setting. The function assigned to the channel is displayed by pressing the **Enter** button.

Note: *If On(2.X.X.X) or On(10.X.X.X) is selected, IP address is calculated and set automatically.*

Baud Rate

Set the baud rate for Serial Port In and Serial Port Out. The available options are 9600, 19200, 38400, 57600, and 115200 (default).

Reset

Reset all control 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.

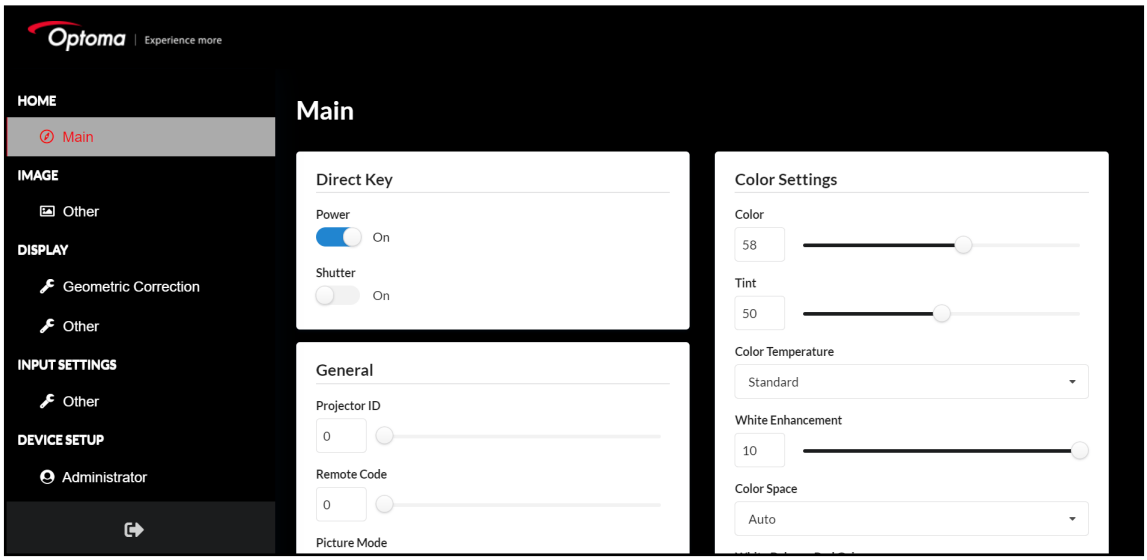
System Requirements

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

- RJ45 cable (CAT-5e)
- 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 SETTINGS	To configure image settings.
DISPLAY SETTINGS	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.
CONTROL SETTINGS	Control settings 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.

USING THE PROJECTOR

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.
   - Setup: **Control Settings** → **LAN** → **IP Address**.

     Note: *Make sure DHCP is enabled.*
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).

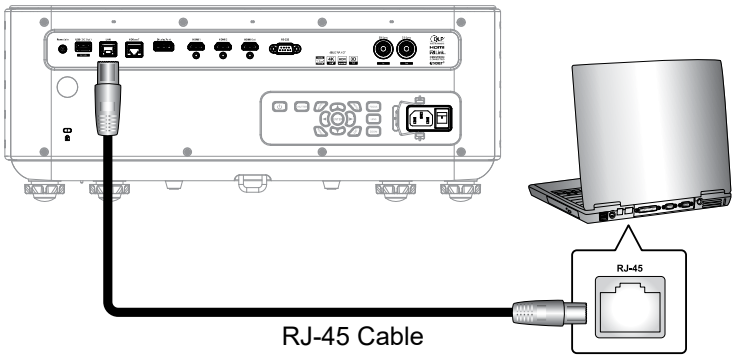
Note:

- *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 74.

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.



RJ-45 Cable

1. Assign IP address to the projector.
   - From the OSD menu, select **Control Settings** → **LAN** → **DHCP**.
   - 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 192.168.0.100, set the computer IP address to 192.168.0.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 74.
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).

USING THE PROJECTOR

Using Art-Net function

Since the network function of the projector supports the Art-Net function, you can control the projector settings with the DMX controller and application software using the Art-Net protocol.

Channel Definitions

The following table lists the channel definitions used for controlling the projector with Art-Net function.

The control details assigned to each channel are listed in the following table.

Channel	Control Details	
	User 1	User 2
Channel 1	Art-Net	None
Channel 2	Light Source Settings	None
Channel 3	Active Inputs	None
Channel 4	Lens Shift (H)	None
Channel 5	Lens Shift (V)	None
Channel 6	Focus	None
Channel 7	Zoom	None
Channel 8	Lens Function	None
Channel 9	Lens Control	None
Channel 10	Lens Memory	None
Channel 11	H Keystone	None
Channel 12	V Keystone	None
Channel 13	Power	None
Channel 14	Shutter	None
Channel 15	Freeze	None
Channel 16	Test Pattern	None

Control Details

- **Art-Net** (Operation for all channels is not accepted when set to “Disable”)

Performance	Parameter	Default Value
Disable	0-127	0
Enable	128-255	

- **Light Source Settings**

Performance	Parameter	Default Value
100%	0-15	0
99%	16-17	
98%	18-19	
97%	20-21	
96%	22-23	
95%	24-25	
…..	…..	
90%	34-35	
…..	…..	
80%	54-55	
…..	…..	
70%	74-75	

Performance	Parameter	Default Value
…..	…..	0
60%	94-95	
…..	…..	
50%	114-115	
…..	…..	
40%	134-135	
…..	…..	
30%	154-155	
…..	…..	
20%	174-175	
…..	…..	
10%	194-195	
…..	…..	
0%	214-215	
Non-operational	216-255	

- **Active Inputs**

Performance	Parameter	Default Value
Non-operational	0-15	0
HDMI 1	16-31	
Non-operational	32-47	
HDMI 2	48-63	
Non-operational	64-79	
HDBaseT	80-95	
Non-operational	96-111	
DisplayPort	112-127	
Non-operational	128-255	

- **Lens Shift (H)**

Performance	Parameter	Default Value
Right	0-31	128
STOP	64-191	
Left	224-255	

- **Lens Shift (V)**

Performance	Parameter	Default Value
Up	0-31	128
STOP	64-191	
Down	224-255	

- **Focus**

Performance	Parameter	Default Value
Lens Focus +	0-31	128
STOP	64-191	
Lens Focus -	224-255	

- **Zoom**

Performance	Parameter	Default Value
Lens Zoom +	0-31	128
STOP	64-191	
Lens Zoom -	224-255	

- **Lens Function**

Performance	Parameter	Default Value
Non-operational	0-31	0
Locked	32-47	
Operation Stop	128-159	
Unlock	160-175	
Non-operational	224-255	

- **Lens Control**

Performance	Parameter	Default Value
Non-operational	0-31	160
Long step move	32-95	
Non-operational	96-159	
Short step move	160-223	
Non-operational	224-255	

- **Lens Memory**

Performance	Parameter	Default Value
Non-operational	0-31	0
Move to Center Position	32-47	
Non-operational	48-63	
Apply Memory 1	64-79	
Non-operational	80-95	
Apply Memory 2	96-111	
Non-operational	112-143	
Apply Memory 3	144-159	
Non-operational	160-175	
Apply Memory 4	176-191	
Non-operational	192-207	
Apply Memory 5	208-223	
Non-operational	224-255	

- **H Keystone**

Performance	Parameter	Default Value
Non-operational	0-15	128
40	16-30	
39	31-35	
…..	…..	
30	76-80	
…..	…..	
20	126-130	
…..	…..	
10	176-180	
…..	…..	
0	226-230	
Non-operational	231-255	

- **V Keystone**

Performance	Parameter	Default Value
Non-operational	0-15	128
40	16-30	
39	31-35	
…..	…..	
30	76-80	
…..	…..	
20	126-130	
…..	…..	
10	176-180	
…..	…..	
0	226-230	
Non-operational	231-255	

- **Power**

Performance	Parameter	Default Value
Power Off	0-63	128
Non-operational	64-191	
Power On	192-255	

- **Shutter**

Performance	Parameter	Default Value
On	0-63	128
Non-operational	64-191	
Off	192-255	

- **Freeze**

Performance	Parameter	Default Value
Non-operational	0-31	128
Unfreeze	32-95	
Non-operational	96-159	
Freeze	160-223	
Non-operational	224-255	

- **Test Pattern**

Performance	Parameter	Default Value
Non-operational	0-15	0
Off	16-31	
Green Grid	32-47	
Magenta Grid	48-63	
White Grid	64-79	
White	80-95	
Black	96-111	
Red	112-127	
Green	128-143	
Blue	144-159	
Yellow	160-175	
Magenta	176-191	
Cyan	192-207	
ANSI Contrast 4x4	208-223	
Color Bars	224-239	
Full Screen	240-255	

Note: *If the projector is operated using the remote control or control panel, or by the control command while controlling the projector using the Art-Net function, the setting of DMX controller or computer application may be difference from projector status. To reflect the controls of all channels to the projector, set "Enable/ Disable" of channel 1 to "Disable" and then back to "Enable".*

USING THE PROJECTOR

Information menu

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

Submenus

- Regulatory
- Serial Number
- Source Info.
- Light Source Mode
- Device ID
- Remote Code
- System Status
- Control
- LAN
- FW Version

Regulatory

Display the projector model name.

Serial Number

Display the projector serial number.

Source Info.

Display the main and second source information.

Source

Display the current input signal of the projector.

- **Resolution:** Display the resolution of the current input signal source of the projector.
- **Signal Format:** Display the format of the current input signal source of the projector.
- **Pixel Clock:** Display the pixel clock of the projector's current input signal source.
- **Refresh Rate:** Display the horizontal and vertical refresh frequency of the projector's current input signal source.
- **Color Depth:** Display the color depth of the current input signal.
- **Color Gamut:** Display the Color Gamut of the current input signal.
- **Color Space:** Display the color space of the projector's current input signal source.
- **Picture Mode:** Display the Picture mode used by the projector's current input signal.

Light Source Mode

Display the current Light Source Mode setting of the projector.

Device ID

Display the current Device ID setting of the projector.

Remote Code

Display the current remote code setting of the projector.

System Status

Display the projector system status information.

- **Power Mode (Standby):** Display the current standby mode setting of the projector.
- **Projection Hours:** Display the total projector usage hours.
- **Total Hours:** Display the total laser usage time of the projector in Normal, Eco, and Custom Brightness modes.
- **Normal:** Display the total laser usage time of the projector in Normal mode.
- **Eco Mode:** Display the total laser usage time of the projector in Eco mode.
- **Custom Brightness:** Displays the total laser usage time of the projector in Custom Brightness mode.
- **Ambient Temp.:** Display the current ambient temperature of the projector.
- **System Temp:** Display the current system temperature of the projector.
- **Pressure(hPA):** Display the current pressure of the projector.
- **Humidity:** Display the current humidity of the projector.

Control

Display projector control setting information.

- **Crestron:** Display the current Crestron setting of the projector.
- **Extron:** Display the current Extron setting of the projector.
- **PJLink:** Display the current PJLink setting of the projector.
- **AMX Device Discovery:** Display the current AMX Device setting of the projector.
- **Telnet:** Display the current Telnet setting of the projector.
- **HTTP:** Display the current HTTP setting of the projector.
- **Art-Net:** Display the current Art-Net setting of the projector.
- **Art-Net Status:** Display the current Art-Net channel setting of the projector.

LAN

Display the projector network setting information.

- **LAN Interface:** Display the current LAN interface settings of the projector.
- **MAC Address:** Display the projector MAC address information.
- **Network Status:** Display the projector network connection status.
- **DHCP:** Display the projector DHCP settings.
- **IP Address:** Display the current IP address of the projector.
- **Subnet Mask:** Display the current Subnet Mask of the projector.
- **Gateway:** Display the current Gateway of the projector.
- **DNS 1 / DNS 2:** Display the current DNS1 and DNS2 address of the projector.

FW Version

Display the projector firmware version information.

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	640x480	1.33	4:3	60	V	V	V	V	V	V	V
	XGA	1024x768	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	1152x864	1.33	4:3	75	V	V	V	V	V	V	V
		1152x870	1.32		75	V	V	V	V	V	V	V
	WXGA	1280x768	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
		1280x800	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
		1280x1024	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	1360x765	1.78	16:9	60	V	NA	NA	V	NA	NA	NA
		1360x768			60	V	V	V	V	V	V	V
		1366x768			60	V	V	V	V	V	V	V
	SXGA+	1400x1050	1.33	4:3	60	V	V	V	V	V	V	V
	WXGA+	1440x900	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++	1600x900	1.78	16:9	60	V	V	V	V	V	V	V
	UXGA	1600x1200	1.33	4:3	50	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	WSXGA+	1680x1050	1.6	16:10	60	V	V	V	V	V	V	V
	WUXGA RB	1920x1200 RB	1.6	16:10	50	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
					120	V	NA	NA	V	NA	NA	V
	UWFHD	2560x1080	2.37	21.9	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	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
TV	EDTV (480p)	720x480	1.5	3:2	60	V	V	V	V	V	V	V
	EDTV (576p)	720x576	1.25	5:4	50	V	V	V	V	V	V	V
	HDTV (1080i)	1920x1080	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)	1280x720	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)	1920x1080	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
					120	V	V	V	V	V	V	V
	1920x1200	1920x1200	1.6	16:10	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
					120	V	NA	NA	V	NA	NA	V
Frame Sequential 3D	XGA	1024x768	1.33	4:3	120	V	V	V	V	V	V	V
	HDTV	1280x720	1.78	16:9	120	V	V	V	V	V	V	V
	1080p	1920x1080	1.78	16:9	120	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	X
	WUXGA	1920x1200	1.6	16:10	60	V	V	V	V	V	V	V
					120	V	NA	NA	V	NA	NA	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
4K	3840x2400	3840x2400	1.6	16:10	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
	3840x2160	3840x2160	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
	4096x2160	4096x2160	1.9	NA	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
High Frame Rate	1080p	1920x1080	1.78	16:9	240	V	NA	NA	V	NA	NA	V

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	DisplayPort						
						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	640x480	1.33	4:3	60	NA	NA	NA	NA	NA	NA	NA
	XGA	1024x768	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
	SXGA	1152x864	1.33	4:3	75	V	V	V	V	V	V	V
		1152x870	1.32		75	V	V	V	V	V	V	V
	WXGA	1280x768	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
		1280x800	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
		1280x1024	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	1360x765	1.78	16:9	60	V	NA	NA	V	NA	NA	NA
		1360x768			60	V	V	V	V	V	V	V
		1366x768			60	V	V	V	V	V	V	V
	SXGA+	1400x1050	1.33	4:3	60	V	V	V	V	V	V	V
	WXGA+	1440x900	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++	1600x900	1.78	16:9	60	V	V	V	V	V	V	V
	UXGA	1600x1200	1.33	4:3	50	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	WSXGA+	1680x1050	1.6	16:10	60	V	V	V	V	V	V	V
	WUXGA RB	1920x1200 RB	1.6	16:10	50	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
					120	V	NA	NA	V	NA	NA	V
	UWFHD	2560x1080	2.37	21:9	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
TV	EDTV (480p)	720x480	1.5	3:2	60	NA	NA	NA	NA	NA	NA	NA
	EDTV (576p)	720x576	1.25	5:4	50	NA	NA	NA	NA	NA	NA	NA

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	DisplayPort						
						RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
TV	HDTV (1080i)	1920x1080	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)	1280x720	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)	1920x1080	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
					120	V	V	V	V	V	V	V
	1920x1200	1920x1200	1.6	16:10	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
					120	V	NA	NA	V	NA	NA	V
Frame Sequential 3D	XGA	1024x768	1.33	4:3	120	V	V	V	V	V	V	V
	HDTV	1280x720	1.78	16:9	120	V	V	V	V	V	V	V
	1080p	1920x1080	1.78	16:9	120	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	WUXGA	1920x1200	1.6	16:10	60	V	V	V	V	V	V	V
					120	V	NA	NA	V	NA	NA	V

ADDITIONAL INFORMATION

Signal Type	Signal Format	Resolution	Aspect Ratio		V Sync (Hz)	DisplayPort						
						RGB			YCbCr 4:4:4			YCbCr 4:2:2
						8 bit	10 bit	12 bit	8 bit	10 bit	12 bit	8 bit
4K	3840x2400	3840x2400	1.6	16:10	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
	3840x2160	3840x2160	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
	4096x2160	4096x2160	1.9	NA	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
High Frame Rate	1080p	1920x1080	1.78	16:9	240	V	NA	NA	V	NA	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	VGA	640x480	1.33	4:3	60	V	V	V	V	V	V	V
	XGA	1024x768	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
	SXGA	1152x864	1.33	4:3	75	V	V	V	V	V	V	V
		1152x870	1.32		75	V	V	V	V	V	V	V
	WXGA	1280x768	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
		1280x800	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
		1280x1024	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	1360x765	1.78	16:9	60	V	NA	NA	V	NA	NA	NA
		1360x768			60	V	V	V	V	V	V	V
		1366x768			60	V	V	V	V	V	V	V
	SXGA+	1400x1050	1.33	4:3	60	V	V	V	V	V	V	V
	WXGA+	1440x900	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++	1600x900	1.78	16:9	60	V	V	V	V	V	V	V
	UXGA	1600x1200	1.33	4:3	50	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	WSXGA+	1680x1050	1.6	16:10	60	V	V	V	V	V	V	V
	WUXGA RB	1920x1200 RB	1.6	16:10	50	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
					120	V	NA	NA	V	NA	NA	V
	UWFHD	2560x1080	2.37	21:9	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	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
TV	EDTV (480p)	720x480	1.5	3:2	60	V	V	V	V	V	V	V
	EDTV (576p)	720x576	1.25	5:4	50	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
TV	HDTV (1080i)	1920x1080	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)	1280x720	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)	1920x1080	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
					23.98	V	V	V	V	V	V	V
	1920x1200	1920x1200	1.6	16:10	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
					120	V	NA	NA	V	NA	NA	V
Frame Sequential 3D	XGA	1024x768	1.33	4:3	120	V	V	V	V	V	V	V
	HDTV	1280x720	1.78	16:9	120	V	V	V	V	V	V	V
	1080p	1920x1080	1.78	16:9	120	V	V	V	V	V	V	V
					60	V	V	V	V	V	V	V
	WUXGA	1920x1200	1.6	16:10	60	V	V	V	V	V	V	V
					120	V	NA	NA	V	NA	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
4K	3840x2400	3840x2400	1.6	16:10	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
	3840x2160	3840x2160	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
	4096x2160	4096x2160	1.9	NA	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
High Frame Rate	1080p	1920x1080	1.78	16:9	240	V	NA	NA	V	NA	NA	V

Note:

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

ADDITIONAL INFORMATION

EDID Table

HDMI 1.4 / HDBaseT 1.4			
Established Timing	**Standard Timing**	**Detail Timing**	**Support Video Timing**
640x480 @60Hz	1024x768 @120Hz	1280x768 @59Hz	640x480 @60Hz
800x600 @60Hz	1280x800 @60Hz	1360x768 @59Hz	720x480x 60Hz
1024x768 @60Hz	1280x960 @60Hz	1360x768 @60Hz	720x576 @50Hz
1152x 870 @75Hz	1280x1024 @60Hz	1920x1080 @60Hz	1280x720 @50Hz
	1440x900 @60Hz	1920x1080i @60Hz	1280x720 @60Hz
	1600x900 @60Hz	1920x1200 @60Hz (Native)	1280x720 @120Hz
	1600x1200 @60Hz		1920x1080i @50Hz
	1680x1050 @60Hz		1920x1080i @60Hz
			1920x1080 @24Hz
			1920x1080 @25Hz
			1920x1080 @30Hz
			1920x1080 @50Hz
			1920x1080 @60Hz
			1920x1080 @120Hz
			3840x2160 @30Hz(HDMI VICs 4Kx2K 29.97,30Hz)
			3840x2160 @25Hz(HDMI VICs 4Kx2K 25Hz)
			3840x2160 @24Hz(HDMI VICs 4Kx2K 23.98,24Hz)
			4096x2160 @24Hz[HDMI VICs 4Kx2K 24Hz]

ADDITIONAL INFORMATION

HDMI 2.0 / HDBaseT 2.0			
Established Timing	**Standard Timing**	**Detail Timing**	**Support Video Timing**
1024x768 @60Hz	1024x768 @120Hz	1920x1080 @240Hz	640x480 @60Hz
1024x768 @70Hz	1280x800 @60Hz	1920x1200 @59Hz	720x480x 60Hz
1024x768 @75Hz	1280x960 @60Hz	3840x2400 @30Hz	720x576 @50Hz
1152x870 @75Hz	1280x1024 @60Hz	3840x2400 @60Hz (Native)	1280x720 @50Hz
1280x1024 @75Hz	1440x900 @60Hz		1280x720 @60Hz
	1600x900 @60Hz		1280x720 @120Hz
	1600x1200 @60Hz		1920x1080 @24Hz
	1680x1050 @60Hz		1920x1080 @25Hz
			1920x1080 @30Hz
			1920x1080 @50Hz
			1920x1080 @60Hz
			1920x1080 @120Hz
			2560x1080 @24Hz
			2560x1080 @25Hz
			2560x1080 @30Hz
			2560x1080 @50Hz
			2560x1080 @60Hz
			3840x2160 @24Hz
			3840x2160 @25Hz
			3840x2160 @30Hz
			3840x2160 @50Hz
			3840x2160 @60Hz
			4096x2160 @24Hz
			4096x2160 @25Hz
			4096x2160 @30Hz
			4096x2160 @50Hz
			4096x2160 @60Hz

ADDITIONAL INFORMATION

DisplayPort			
Established Timing	Standard Timing	Detail Timing	Support Video Timing
1024x768 @60Hz	1024x768 @120Hz	1366x768 @60Hz	1280x720 @50Hz
1024x768 @70Hz	1280x800 @60Hz	1920x1080 @60Hz	1280x720 @60Hz
1024x768 @75Hz	1280x1024 @60Hz	1920x1080 @240Hz	1280x720 @120Hz
1152x870 @75Hz	1360x765 @60Hz	3840x2160 @60Hz	1920x1080 @24Hz
	1440x900 @60Hz	3840x2400 @30Hz	1920x1080 @25Hz
	1600x1200 @60Hz	3840x2400 @60Hz (Native)	1920x1080 @50Hz
	1680x1050 @60Hz		1920x1080 @60Hz
	1920x1200 @60Hz		1920x1080 @120Hz
			1920x1080i @50Hz
			1920x1080i @60Hz
			3840x2160 @24Hz
			3840x2160 @25Hz
			3840x2160 @30Hz
			3840x2160 @50Hz
			3840x2160 @60Hz
			4096x2160 @24Hz
			4096x2160 @25Hz
			4096x2160 @30Hz
			4096x2160 @50Hz
			4096x2160 @60Hz

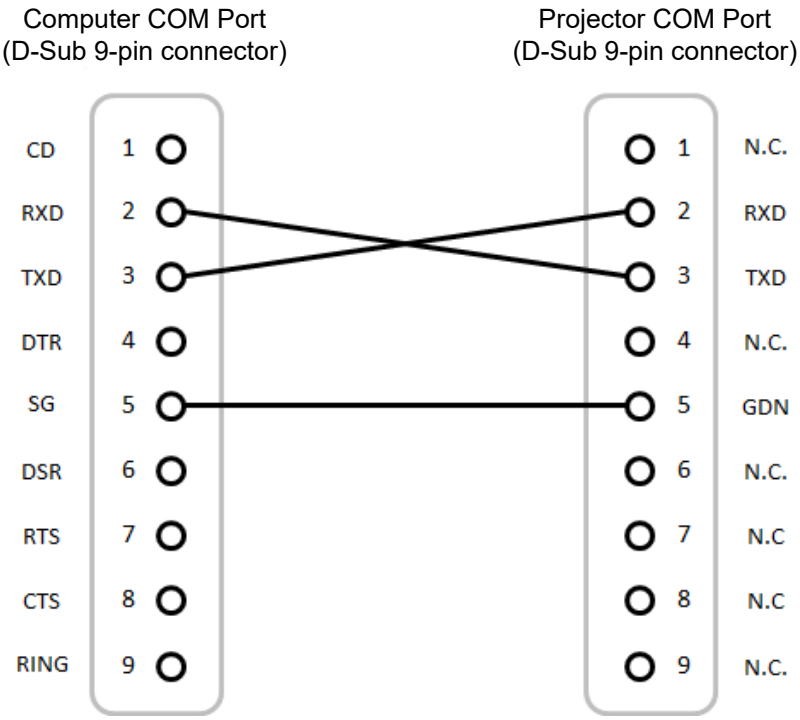
ADDITIONAL INFORMATION

RS232 Port Setting and Signals Connection

RS232 Port Setting

Items	Method
Communication Method	Asynchronous Communication
Baud Rate	115200
Data Bits	8 bits
Parity	None
Stop Bits	1
Flow Control	None

RS232 Signals Connection



Note: *RS232 shell is grounded.*

ADDITIONAL INFORMATION

Image Size and Projection Distance

Platform			4K+ (16:10)									
DMD			0.8”									
Projection Lens			BX-CTA28		BX-CTA10		BX-CTA11		BX-CTA12		BX-CTA08	
			Ultra Short Throw		Short Throw		Short Throw		Short Throw		Standard	
Throw Ratio Spec.(Wide/Tele)			0.34-0.37		0.50-0.65		0.78-0.90		0.90-1.30		1.25-2.00	
Zoom Ratio			1.1x		1.3x		1.15x		1.44x		1.6x	
Projection screen size			Throw distance (m)									
Diagonal (inch)	Height (m)	Width (m)	Wide	Tele	Wide	Tele	Wide	Tele	Wide	Tele	Wide	Tele
50	0.67	1.08	0.37	0.40	0.54	0.70	0.84	0.97	0.97	1.40	1.35	2.15
60	0.81	1.29	0.44	0.48	0.65	0.84	1.01	1.16	1.16	1.68	1.62	2.58
70	0.94	1.51	0.51	0.56	0.75	0.98	1.18	1.36	1.36	1.96	1.88	3.02
80	1.08	1.72	0.59	0.64	0.86	1.12	1.34	1.55	1.55	2.24	2.15	3.45
90	1.21	1.94	0.66	0.72	0.97	1.26	1.51	1.74	1.74	2.52	2.42	3.88
100	1.35	2.15	0.73	0.80	1.08	1.40	1.68	1.94	1.94	2.80	2.69	4.31
110	1.48	2.37	0.81	0.88	1.18	1.54	1.85	2.13	2.13	3.08	2.96	4.74
120	1.62	2.58	0.88	0.96	1.29	1.68	2.02	2.33	2.33	3.36	3.23	5.17
130	1.75	2.80	0.95	1.04	1.40	1.82	2.18	2.52	2.52	3.64	3.50	5.60
140	1.88	3.02	1.03	1.12	1.51	1.96	2.35	2.71	2.71	3.92	3.77	6.03
150	2.02	3.23	1.10	1.20	1.62	2.10	2.52	2.91	2.91	4.20	4.04	6.46
160	2.15	3.45	1.17	1.28	1.72	2.24	2.69	3.10	3.10	4.48	4.31	6.89
170	2.29	3.66	1.24	1.35	1.83	2.38	2.86	3.30	3.30	4.76	4.58	7.32
180	2.42	3.88	1.32	1.43	1.94	2.52	3.02	3.49	3.49	5.04	4.85	7.75
190	2.56	4.09	1.39	1.51	2.05	2.66	3.19	3.68	3.68	5.32	5.12	8.18
200	2.69	4.31	1.46	1.59	2.15	2.80	3.36	3.88	3.88	5.60	5.38	8.62
250	3.37	5.38	1.83	1.99	2.69	3.50	4.20	4.85	4.85	7.00	6.73	10.77
300	4.04	6.46	2.20	2.39	3.23	4.20	5.04	5.82	5.82	8.40	8.08	12.92
350	4.71	7.54	2.56	2.79	3.77	4.90	5.88	6.78	6.78	9.80	9.42	15.08
400	5.38	8.62	2.93	3.19	4.31	5.60	6.72	7.75	7.75	11.20	10.77	17.23
450	6.06	9.69	3.30	3.59	4.85	6.30	7.56	8.72	8.72	12.60	12.12	19.39
500	6.73	10.77	3.66	3.98	5.38	7.00	8.40	9.69	9.69	14.00	13.46	21.54

ADDITIONAL INFORMATION

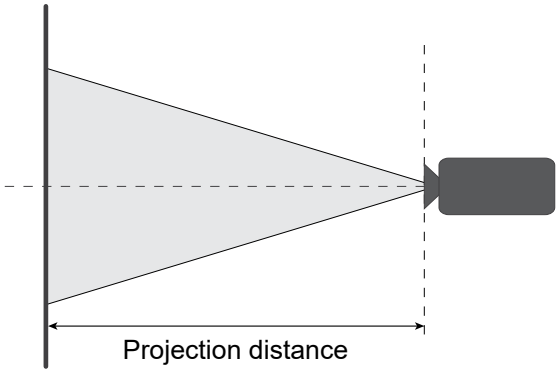
Platform			4K+ (16:10)									
DMD			0.8”									
Projection Lens			BX-CTA07		BX-CTA20		BX-CTA21		BX-CTA22		BX-CTA23	
			Standard		Standard		Long Zoom		Ultra-Long Zoom		Ultra-Long Zoom	
Throw Ratio Spec.(Wide/Tele)			1.30-1.80		1.44-1.80		1.80-2.40		2.40-4.80		4.80-8.64	
Zoom Ratio			1.38x		1.25x		1.33x		2x		1.8x	
Projection screen size			Throw distance (m)									
Diagonal (inch)	Height (m)	Width (m)	Wide	Tele	Wide	Tele	Wide	Tele	Wide	Tele	Wide	Tele
50	0.67	1.08	1.40	1.94	1.55	1.94	1.94	2.58	2.58	5.17	5.17	9.30
60	0.81	1.29	1.68	2.33	1.86	2.33	2.33	3.10	3.10	6.20	6.20	11.17
70	0.94	1.51	1.96	2.71	2.17	2.71	2.71	3.62	3.62	7.24	7.24	13.03
80	1.08	1.72	2.24	3.10	2.48	3.10	3.10	4.14	4.14	8.27	8.27	14.89
90	1.21	1.94	2.52	3.49	2.79	3.49	3.49	4.65	4.65	9.30	9.30	16.75
100	1.35	2.15	2.80	3.88	3.10	3.88	3.88	5.17	5.17	10.34	10.34	18.61
110	1.48	2.37	3.08	4.26	3.41	4.26	4.26	5.69	5.69	11.37	11.37	20.47
120	1.62	2.58	3.36	4.65	3.72	4.65	4.65	6.20	6.20	12.41	12.41	22.33
130	1.75	2.80	3.64	5.04	4.03	5.04	5.04	6.72	6.72	13.44	13.44	24.19
140	1.88	3.02	3.92	5.43	4.34	5.43	5.43	7.24	7.24	14.47	14.47	26.05
150	2.02	3.23	4.20	5.82	4.65	5.82	5.82	7.75	7.75	15.51	15.51	27.91
160	2.15	3.45	4.48	6.20	4.96	6.20	6.20	8.27	8.27	16.54	16.54	29.78
170	2.29	3.66	4.76	6.59	5.27	6.59	6.59	8.79	8.79	17.58	17.58	31.64
180	2.42	3.88	5.04	6.98	5.58	6.98	6.98	9.30	9.30	18.61	18.61	33.50
190	2.56	4.09	5.32	7.37	5.89	7.37	7.37	9.82	9.82	19.64	19.64	35.36
200	2.69	4.31	5.60	7.75	6.20	7.75	7.75	10.34	10.34	20.68	20.68	37.22
250	3.37	5.38	7.00	9.69	7.75	9.69	9.69	12.92	12.92	25.85	25.85	46.52
300	4.04	6.46	8.40	11.63	9.30	11.63	11.63	15.51	15.51	31.02	31.02	55.83
350	4.71	7.54	9.80	13.57	10.86	13.57	13.57	18.09	18.09	36.19	36.19	65.13
400	5.38	8.62	11.20	15.51	12.41	15.51	15.51	20.68	20.68	41.36	41.36	74.44
450	6.06	9.69	12.60	17.45	13.96	17.45	17.45	23.26	23.26	46.52	46.52	83.74
500	6.73	10.77	14.00	19.39	15.51	19.39	19.39	25.85	25.85	51.69	51.69	93.05

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

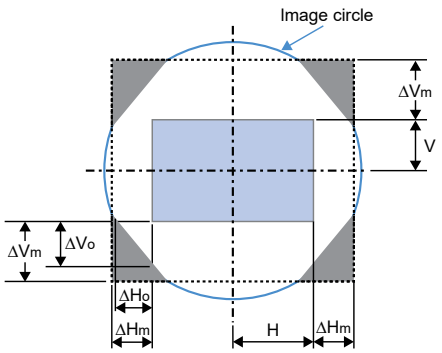
Projection Lens	Optical Lens Shift Range		Mechanical Shift Range	
	ΔHo	ΔVo	Max. of ΔHm	Max. of ΔVm
BX-CTA08	25%	55%	50%	120%
BX-CTA10		53%		
BX-CTA28		55%		
BX-CTA07	30%	60%		

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 image may become out of focus.



Note:

- *The calculation is based on 1/2 image width and 1/2 image height.*
- *Lens shift accuracy is 0.5 pixel per step.*

ADDITIONAL INFORMATION

Projection Lens	Optical Lens Shift Range		Mechanical Shift Range	
	ΔHo	ΔVo	Max. of ΔHm	Max. of ΔVm
BX-CTA12	40%	80%	50%	120%
BX-CTA11	42%	83%		
BX-CTA20	48%	94%		
BX-CTA21				
BX-CTA22				
BX-CTA23				

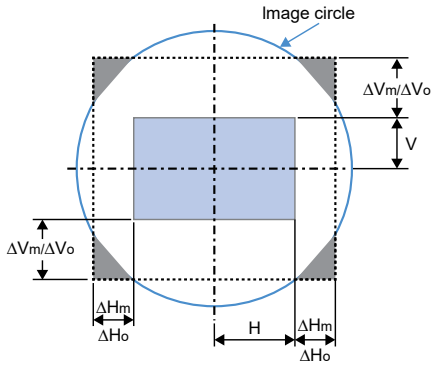
V: Height of the projected image

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 image may become out of focus.

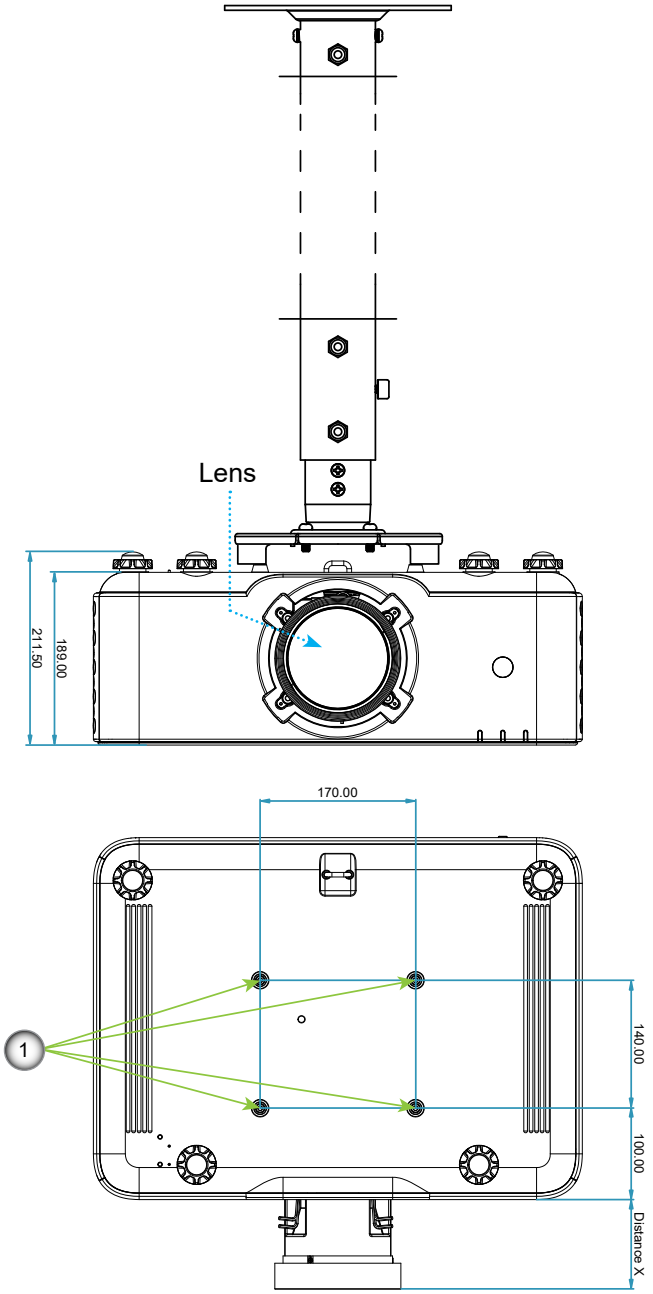
Note: *The calculation is based on 1/2 image width and 1/2 image height.*



ADDITIONAL INFORMATION

Ceiling Mount Installation

1. To prevent damage to your projector, please use the Optoma ceiling mount.
2. If you wish to use a third party ceiling mount kit, please ensure the screws used to attach a mount to the projector meet the following specifications:
   - Screw type: M6*4
   - Maximum hole depth: 16 mm
   - Tightening torque: 25Kgf-cm~30Kgf-cm



Unit: mm

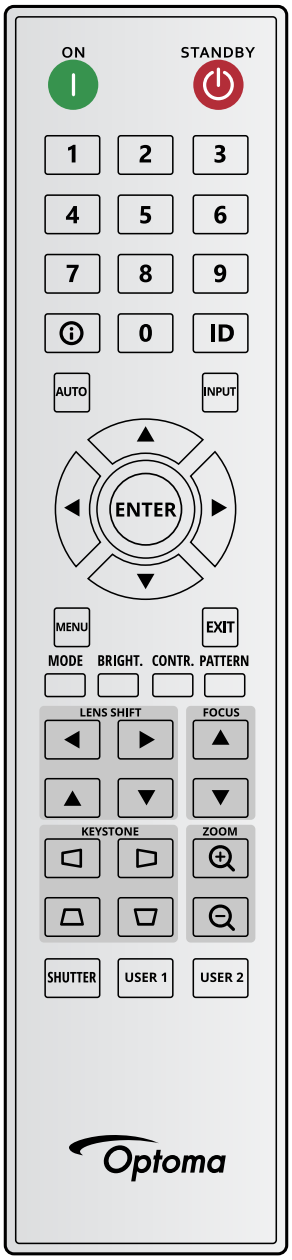
Lens Type	Distance X (in mm)
BX-CTA07	109.4
BX-CTA08	98.1
BX-CTA10	122.4
BX-CTA11	136.1
BX-CTA12	124.8
BX-CTA20	110.8
BX-CTA21	96.1
BX-CTA22	130.3
BX-CTA23	155.3
BX-CTA28	217.6

Note:

1. *Mounting holes for ceiling mount.*
2. *Please note that damage resulting from incorrect installation will void the warranty.*
3. *X: Distance between projector and end of lens.*

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.
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 Settings” on page 69.
User 2	42	F1	32	CD	27	D8	Press to assign user functions. Please refer to “Remote Settings” on page 69.

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 *96*).

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 Settings > 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 Orientation > 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.

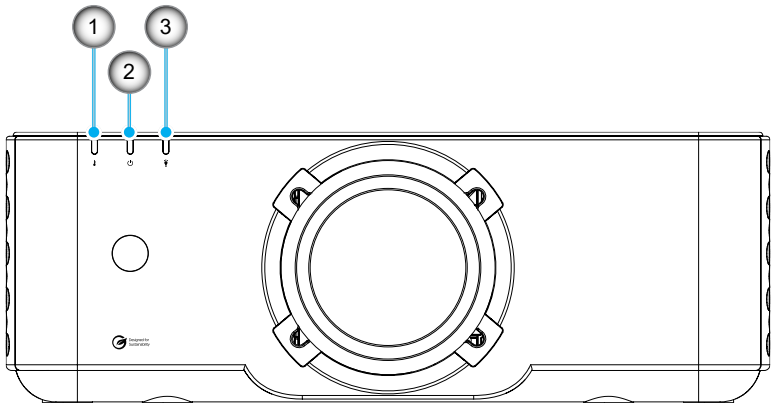
Remote control problems

If the remote control does not work

- Check that the operating angle of the remote control is pointed within ±30° to the IR receivers on the projector.
- Make sure there are not any obstructions between the remote control and the projector. Move to within 6 meters (19.7 feet) of the projector.
- Make sure batteries are inserted correctly.
- Replace batteries if they are exhausted.

ADDITIONAL INFORMATION

LED Indicators and Lightning Messages



No.	Item
1.	Temp LED
2.	Power LED
3.	Light LED

Status	Light LED	Power LED		Temp LED
	Red	Red	Green	Red
Standby	N/A	Steady light	N/A	N/A
Power On	N/A	N/A	Steady light	N/A
Warning Up Start	N/A	Flashing (1 sec off / 1 sec on)	N/A	N/A
Cooling Down Start	N/A	N/A	Flashing (0.5 sec off / 0.5 sec on)	N/A
AV Mute	Flashing (1 sec off / 1 sec on)	N/A	Steady light	N/A
Error (Power Failure)	Steady light	N/A	N/A	Steady light
Error (Fan Failure)	N/A	N/A	N/A	Flashing (3 sec on / 3 sec off)
Error (Color Wheel Breakdown)	N/A	N/A	N/A	Flashing (0.5 sec off / 0.5 sec on)
Error (Over Temp)	N/A	N/A	N/A	Steady light
Error (LD Over Temp)	N/A	N/A	N/A	Steady light
Error (LD Voltage Failure)	Steady light	N/A	N/A	N/A
Error (Temp Sensor Disconnect)	Flashing (0.5 sec off / 0.5 sec on)	Flashing (0.5 sec off / 0.5 sec on)	N/A	N/A
Error (LD Failure)	Steady light	N/A	Steady light	N/A
Upgrade Process	Flashing (3 sec off / 3 sec on)	Flashing (3 sec off / 3 sec on)	Flashing (3 sec off / 3 sec on)	Flashing (3 sec off / 3 sec on)

Note: *The light off for 10min when projector into upgrade process and All LED Flashing (3 sec off/ 3 sec on)*

ADDITIONAL INFORMATION

Specifications

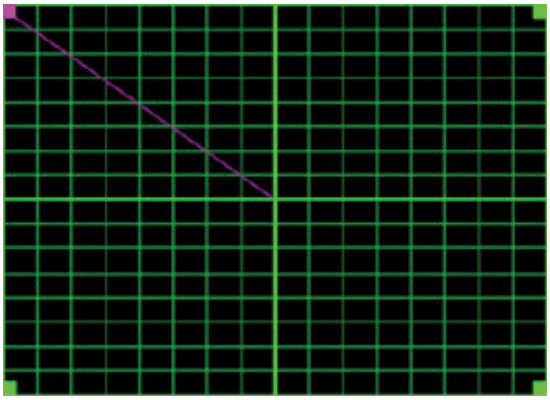
Optical	Description
Display resolution	3840 x 2400
Maximum resolution	3840 x 2400 @ 60Hz for HDMI
Offset	0
Image size	50” ~ 500” (mechanical travel) (optimized@100”)
Projection distance	Depends on lens type (optimized@1.87m) (Please refer to Image size and projection distance page 65)
Input Interface	• HDMI in 2.0 x 2 • DisplayPort in x 1 • HDBaseT x 1 • 3D Sync in x 1
Output Interface	• HDMI out 2.0 x 1 • USB type-A x 1 for power USB 5V/2A • 3D Sync out x 1
Control Interface	• LAN x 1 (10/100 Mbps) • RS232 x 1 • Wired Remote x 1
Colour	1073.4 Million color
Scan rate	• Horizontal scan rate: 15.375 ~ 91.146 KHz • Vertical scan rate: 24 ~ 85 Hz (120Hz for 3D feature)
Power requirement	AC 100-240V~, 50/60Hz
Input current	9A
Installation orientations	360° rotation, no restrictions
Dimensions (W x D x H)	• 535 x 396 x 189 mm (21.1 x 15.6 x 7.4 inches) (w/o lens, w/o feet) • 535 x 396 x 211.5 mm (21.1 x 15.6 x 8.3 inches) (w/o lens, with feet)
Weight	• 16.8 kg ± 0.5 kg (37.04 lbs ± 1.1 lbs) (w/o lens) • 18.9 kg ± 0.5 kg (41.67 lbs ± 1.1 lbs) (with BX-CTA08 lens)
Environmental	• 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 Settings > Geometric Correction > 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 Settings > Geometric Correction > Advanced > Grid Color**.

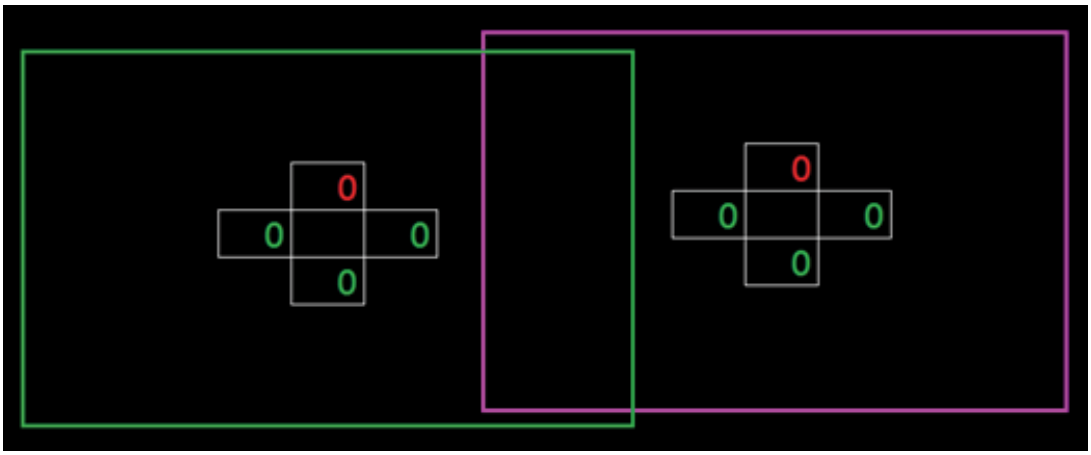


3. Set Blend overlap size. Steps: Menu **> Display Settings > Geometric Correction > Advanced > Blend Setting > Blend Width**. The options and effective range of overlap size as follows:
   (a) Left: 0 (0%) / 192 (10%) ~ 960 (50%)
   (b) Right: 0 (0%) / 192 (10%) ~ 960 (50%)
   (c) Top: 0 (0%) / 120 (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:

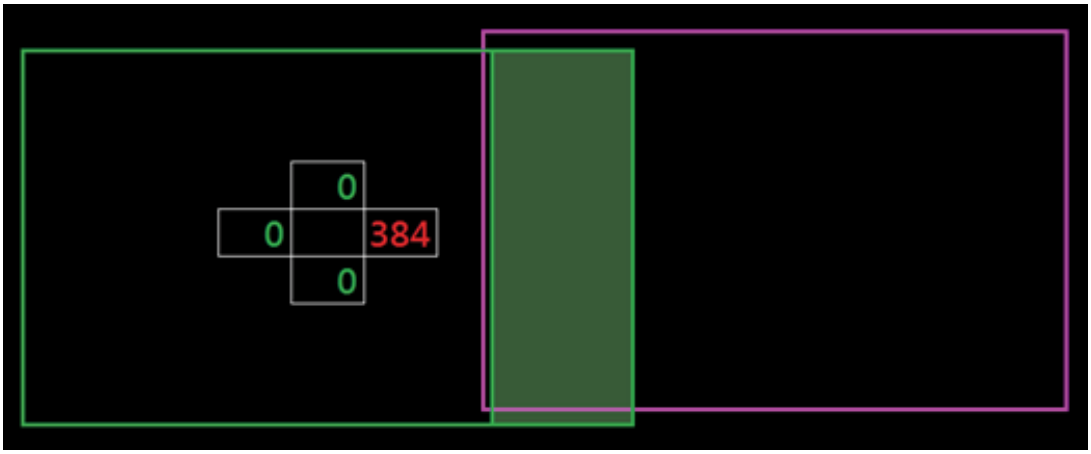


ADDITIONAL INFORMATION

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.



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

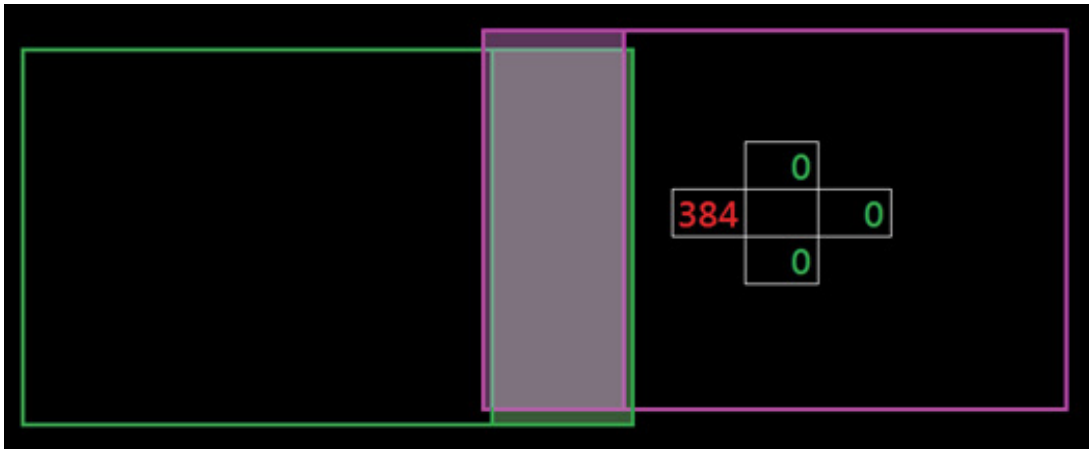
A. The right side of overlap area will shift along with the values of blend setting. Overlap area is shown by a square with light color.

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.

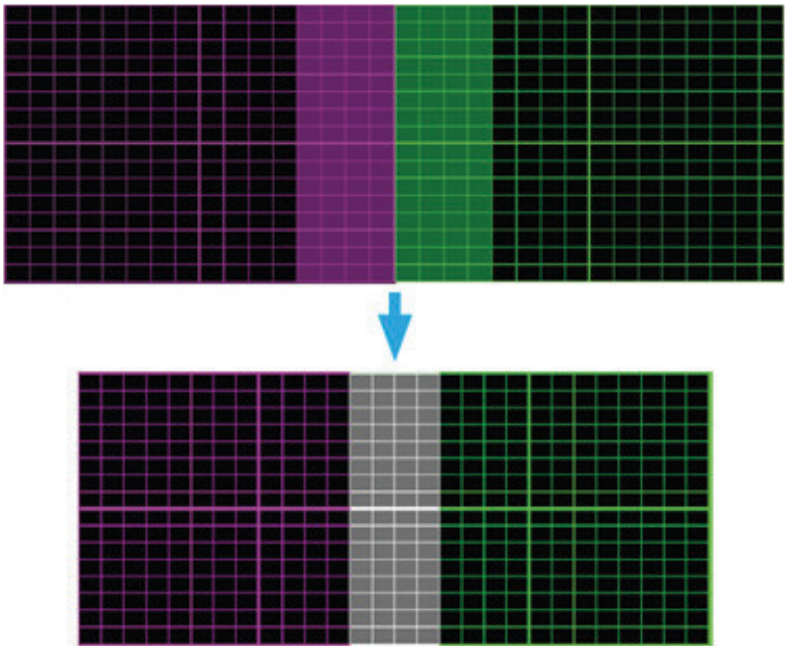
D. If not, reduce the value of blend setting until the result matches the condition of step C.

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.



ADDITIONAL INFORMATION

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

RS232 Protocol Function List

Baud Rate : 115200

Data Bits: 8

Parity: None

Stop Bits: 1

Flow Control : None

UART16550 FIFO: Disable

■ Write Command

~	X	X	X	X	X		n	CR
Lead Code	Projector ID		Command			space	variable	carriage return
Prefix	00~99 (Default: 00)		000~999				0~9999	suffix

Pass: P

Fail: F

■ Read Command

~	X	X	X	X	X		n	CR
Lead Code	Projector ID		Command			space	variable	carriage return
Prefix	00~99 (Default: 00)		000~999				0~9999	suffix

Response Format

Pass:

O	k	n
		Variable

Fail: F

■ System Automatically Send

I	N	F	O	n
				Variable

Note: *There is a <CR> after all ASCII commands. 0D is the HEX code for <CR> in ASCII code.*

ADDITIONAL INFORMATION

							Write Command			Read Command					
							Command			Command					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	n value	CMD	space	Set Para.	CMD	CMD Value	Pass			
Image Settings	Picture Mode	[None]								~XX123	1	O	k	0	
		Vivid					~XX20		16	~XX123	1	O	k	16	
		HDR					~XX20		21	~XX123	1	O	k	21	
		HLG					~XX20		25	~XX123	1	O	k	25	
		Cinema					~XX20		3	~XX123	1	O	k	3	
		Reference					~XX20		4	~XX123	1	O	k	4	
		Bright					~XX20		2	~XX123	1	O	k	2	
		DICOM SIM.					~XX20		13	~XX123	1	O	k	10	
		Blending					~XX20		19	~XX123	1	O	k	19	
		3D					~XX20		9	~XX123	1	O	k	9	
		High Frame Rate					~XX20		18	~XX123	1	O	k	18	
		User					~XX20		5	~XX123	1	O	k	5	
	Dynamic Range	HDR	Off				~XX565		0	~XX291	1	O	k	0	
			Auto				~XX565		1	~XX291	1	O	k	1	
		HDR Picture Mode	Bright				~XX566		0	~XX291	2	O	k	0	
			Standard				~XX566		1	~XX291	2	O	k	1	
			Film				~XX566		2	~XX291	2	O	k	2	
			Detail				~XX566		3	~XX291	2	O	k	3	
	Brightness	-50 ~ 50					~XX21		-50~50	~XX125	1	O	k	-50~50	
	Contrast	-50 ~ 50					~XX22		-50~50	~XX126	1	O	k	-50~50	
	Sharpness	1 ~ 15					~XX23		1~15						
	Gamma	Film					~XX35		1						
		Graphics					~XX35		3						
		1.8					~XX35		5						
		2.0					~XX35		6						
		2.2					~XX35		7						
		2.4					~XX35		12						
		2.6					~XX35		8						
		Vivid					~XX35		21						
		3D					~XX35		9						
		Blackboard					~XX35		10						
		DICOM SIM.					~XX35		11						
		HDR													
	Dynamic Contrast	Dynamic Black	Off				~XX191		0	~XX271	1	O	k	0	
			On				~XX191		1	~XX271	1	O	k	1	
		Speed	1 ~ 255				~XX253		1~255						
		Strength	0 ~ 3				~XX254		0~3						
		Level	50% ~ 100%				~XX255		50~100						
		Extreme Black	Off				~XX218		0	~XX271	2	O	k	0	
			On				~XX218		1	~XX271	2	O	k	1	
		AV Mute Timer	0.0s ~ 10.0s				~XX256		0~20						
		Black Signal Level	0 ~ 255				~XX257		0~255						
	Color Settings	Color	0 ~ 100				~XX45		0~100	~XX292	1	O	k	0~100	
		Tint	0 ~ 100				~XX44		0~100	~XX293	1	O	k	0~100	
		BrilliantColor™	0 ~ 10				~XX34		1~10	~XX294	1	O	k	0~10	
		Color Temperature	Warm				~XX36		4	~XX128	1	O	k	3	
			Standard				~XX36		1	~XX128	1	O	k	0	
			Cool				~XX36		2	~XX128	1	O	k	1	
			Cold				~XX36		3	~XX128	1	O	k	2	
		Color Matching	Auto Test Pattern	Off			~XX411		0						
				On			~XX411		1						
			Red	Hue	0 ~ 254		~XX327		0~254	~XX491	1	O	k	0~254	
				Saturation	0 ~ 254		~XX333		0~254	~XX491	2	O	k	0~254	
				Luminance	0 ~ 254		~XX339		0~254	~XX491	3	O	k	0~254	
				Reset			~XX215		5						
			Green	Hue	0 ~ 254		~XX328		0~254	~XX492	1	O	k	0~254	
				Saturation	0 ~ 254		~XX334		0~254	~XX492	2	O	k	0~254	
				Luminance	0 ~ 254		~XX340		0~254	~XX492	3	O	k	0~254	
				Reset			~XX215		6						
			Blue	Hue	0 ~ 254		~XX329		0~254	~XX493	1	O	k	0~254	
				Saturation	0 ~ 254		~XX335		0~254	~XX493	2	O	k	0~254	
				Luminance	0 ~ 254		~XX341		0~254	~XX493	3	O	k	0~254	
				Reset			~XX215		7						
			Cyan	Hue	0 ~ 254		~XX330		0~254	~XX494	1	O	k	0~254	
				Saturation	0 ~ 254		~XX336		0~254	~XX494	2	O	k	0~254	
				Luminance	0 ~ 254		~XX342		0~254	~XX494	3	O	k	0~254	
				Reset			~XX215		8						
			Magenta	Hue	0 ~ 254		~XX332		0~254	~XX495	1	O	k	0~254	
				Saturation	0 ~ 254		~XX338		0~254	~XX495	2	O	k	0~254	
				Luminance	0 ~ 254		~XX344		0~254	~XX495	3	O	k	0~254	
				Reset			~XX215		9						
			Yellow	Hue	0 ~ 254		~XX331		0~254	~XX496	1	O	k	0~254	
				Saturation	0 ~ 254		~XX337		0~254	~XX496	2	O	k	0~254	
				Luminance	0 ~ 254		~XX343		0~254	~XX496	3	O	k	0~254	
				Reset			~XX215		10						
			White	Red	0 ~ 254		~XX345		0~254	~XX497	1	O	k	0~254	
				Green	0 ~ 254		~XX346		0~254	~XX497	2	O	k	0~254	
				Blue	0 ~ 254		~XX347		0~254	~XX497	3	O	k	0~254	
				Reset			~XX215		4						
			Reset All (CLI Only)				~XX215		1						
		White Balance	Red Gain	0 ~ 100			~XX24		0~100	~XX498	1	O	k	0~100	
			Green Gain	0 ~ 100			~XX25		0~100	~XX498	2	O	k	0~100	
			Blue Gain	0 ~ 100			~XX26		0~100	~XX498	3	O	k	0~100	
			Red Offset	0 ~ 100			~XX27		0~100	~XX499	1	O	k	0~100	
			Green Offset	0 ~ 100			~XX28		0~100	~XX499	2	O	k	0~100	
			Blue Offset	0 ~ 100			~XX29		0~100	~XX499	3	O	k	0~100	
		Color Space (HDMI Input)	Auto				~XX37		1	~XX295	1	O	k	1	
			RGB (0-255)				~XX37		2	~XX295	1	O	k	2	
			RGB (16-235)				~XX37		4	~XX295	1	O	k	4	
			REC709				~XX37		5	~XX295	2	O	k	5	
			REC601				~XX37		6	~XX295	1	O	k	6	
	Wall Color	Off					~XX506		0	~XX296	1	O	k	0	
		BlackBoard					~XX506		1	~XX296	1	O	k	1	
		Light Yellow					~XX506		7	~XX296	1	O	k	7	
		Light Green					~XX506		3	~XX296	1	O	k	3	
		Light Blue					~XX506		4	~XX296	1	O	k	4	
		Pink					~XX506		5	~XX296	1	O	k	5	
		Gray					~XX506		6	~XX296	1	O	k	6	
	3D Setup	3D Mode	Off				~XX230		0	~XX297	1	O	k	0	
			Auto				~XX230		4	~XX297	1	O	k	4	
		3D Sync Type	DLP-Link				~XX230		1	~XX298	1	O	k	1	
			3D Sync				~XX230		3	~XX298	1	O	k	3	

ADDITIONAL INFORMATION

							Write Command			Read Command						
							Command			Command						
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	n value	CMD	space	Set Para.	CMD	CMD Value		Pass			
Image Settings	3D Setup	3D Format	Auto				~XX405		0							
			Frame Packing				~XX405		7							
			Side by Side				~XX405		1							
			Top and Bottom				~XX405		2							
			Frame Sequential				~XX405		3							
		3D Sync Invert	Off				~XX231		1							
			On				~XX231		0							
		3D Sync Out	To Emitter				~XX232		0							
			To Next Projector				~XX232		1							
		Frame Delay	1 ~ 202				~XX233		1~202							
		Reset					~XX234		1							
	Reset						~XX509		1							
Display Settings	Light Source Settings	Light Source Mode	Normal				~XX110		1	~XX241	1			O	k	1
			Eco Mode				~XX110		2	~XX241	1			O	k	2
			Custom Brightness				~XX110		6	~XX241	1			O	k	6
		Brightness Level	10%-100%				~XX326		10~100	~XX242	0			O	k	10~100
		Constant Brightness	Off				~XX522		0	~XX242	1			O	k	0
			On				~XX522		1	~XX242	1			O	k	1
	Low Latency Mode	Off					~XX220		0	~XX133	1			O	k	0
		On					~XX220		1	~XX133	1			O	k	1
	Aspect Ratio	4:3					~XX60		1	~XX127	1			O	k	1
		16:9					~XX60		2	~XX127	1			O	k	2
		21:9					~XX60		16	~XX127	1			O	k	16
		LBX					~XX60		5	~XX127	1			O	k	5
		Auto					~XX60		7	~XX127	1			O	k	7
		Native					~XX60		6	~XX127	1			O	k	6
	Digital Zoom	Proportional	Off				~XX364		0	~XX543	11			O	k	0
			On				~XX364		1	~XX543	11			O	k	1
		Horizontal	50% ~ 400%				~XX504		50~400	~XX543	8			O	k	50~400
		Vertical	50% ~ 400%				~XX505		50~400	~XX543	7			O	k	50~400
		Horizontal Shift	0 ~ 100				~XX365		0~100	~XX543	1			O	k	0~100
		Vertical Shift	0 ~ 100				~XX366		0~100	~XX543	2			O	k	0~100
		Reset					~XX364		9							
	Image Shift	Horizontal	0 ~ 100				~XX63		0~100	~XX543	1			O	k	0~100
		Vertical	0 ~ 100				~XX64		0~100	~XX543	2			O	k	0~100
	Geometric Correction	Warp Control	Basic				~XX142		1	~XX132	1			O	k	1
			Advanced				~XX142		5	~XX132	1			O	k	5
			AP				~XX142		2	~XX132	1			O	k	2
		Basic	Keystone	Horizontal	0 ~ 40		~XX66		0~40	~XX543	4			O	k	0~40
				Vertical	0 ~ 40		~XX65		0~40	~XX543	3			O	k	0~40
			Pincushion	Horizontal	0 ~ 100		~XX300		0~100	~XX543	6			O	k	0~100
				Vertical	0 ~ 100		~XX301		0~100	~XX543	5			O	k	0~100
			4-Corner	Top Left	right (0 ~ 1152)		~XX59		1	~XX58	1			O	k	0~1152
					left (0 ~ 1152)		~XX59		2	~XX58	1			O	k	0~1152
					up (0 ~ 648)		~XX59		3	~XX58	2			O	k	0~648
					down (0 ~ 648)		~XX59		4	~XX58	2			O	k	0~648
				Top Right	right (2688 ~ 3839)		~XX59		5	~XX58	3			O	k	2688~3839
					left (2688 ~ 3839)		~XX59		6	~XX58	3			O	k	2688~3839
					up (0 ~ 648)		~XX59		7	~XX58	4			O	k	0~648
					down (0 ~ 648)		~XX59		8	~XX58	4			O	k	0~648
				Bottom Left	right (0 ~ 1152)		~XX59		9	~XX58	5			O	k	0~1152
					left (0 ~ 1152)		~XX59		10	~XX58	5			O	k	0~1152
					up (1512 ~ 2159)		~XX59		11	~XX58	6			O	k	1512~2159
					down (1512 ~ 2159)		~XX59		12	~XX58	6			O	k	1512~2159
				Bottom Right	right (2688 ~ 3839)		~XX59		13	~XX58	7			O	k	2688~3839
					left (2688 ~ 3839)		~XX59		14	~XX58	7			O	k	2688~3839
					up (1512 ~ 2159)		~XX59		15	~XX58	8			O	k	1512~2159
					down (1512 ~ 2159)		~XX59		16	~XX58	8			O	k	1512~2159
		Advanced	Grid Color	Green			~XX143		1	~XX379	1			O	k	1
				Magenta			~XX143		2	~XX379	1			O	k	2
				Red			~XX143		3	~XX379	1			O	k	3
				Cyan			~XX143		4	~XX379	1			O	k	4
			Grid Background	Black			~XX145		1							
				Transparent			~XX145		2							
			Warp Setting	Grid Points	2x2		~XX144		1							
					3x3		~XX144		2							
					5x5		~XX144		3							
					9x9		~XX144		4							
					17x17		~XX144		5							
				Warp Inner	Off		~XX146		0							
					On		~XX146		1							
				Warp Sharpness	0 ~ 9		~XX148		0~9							
			Blend Setting	Blend Width												
				Overlap Grid Number	4		~XX169		1							
					6		~XX169		2							
					8		~XX169		3							
					10		~XX169		4							
					12		~XX169		5							
				Gamma	1.8		~XX170		1							
					1.9		~XX170		2							
					2.0		~XX170		3							
					2.1		~XX170		4							
					2.2		~XX170		5							
					2.3		~XX170		6							
					2.4		~XX170		7							

ADDITIONAL INFORMATION

							Write Command			Read Command						
							Command			Command						
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	n value	CMD	space	Set Para.	CMD	CMD Value		Pass			
Display Settings	Geometric Correction	Advanced	Black Level	Area	Bottom											
					Top											
				Enable	Off		~XX166		4/6							
					On		~XX166		3/5							
				Edit Area												
				Brightness			~XX263		1/2/3/4							
				Brightness	Red	0 ~ 255	~XX281 ~XX285		0~255	~XX272 ~XX273	1			O	k	nnn
					Green	0 ~ 255	~XX282 ~XX286		0~255	~XX272 ~XX273	2			O	k	nnn
					Blue	0 ~ 255	~XX283 ~XX287		0~255	~XX272 ~XX273	3			O	k	nnn
					Boundary	Off										
						On										
				Red	0 ~ 255											
				Green	0 ~ 255											
				Blue	0 ~ 255											
				Reset	Bottom		~XX167		3							
					Top		~XX167		5							
					All		~XX167		1							
		Memory	Save Memory	Memory 1 ~ Memory 5			~XX141		1~5							
			Apply Memory	Memory 1 ~ Memory 5			~XX147		1~5	~XX137	1			O	k	1~5
			Clear Memory				~XX174		1							
		Reset					~XX561		1							
	Edge Mask	0 ~ 10					~XX61		0~10	~XX378	1			O	k	0~10
	Freeze Screen (CLI Only)	Unfreeze					~XX04		0	~XX377	1			O	k	0
		Freeze					~XX04		1	~XX377	1			O	k	1
	PIP/PBP	Screen	Off				~XX302		0	~XX134	1			O	k	0
			PIP				~XX302		1	~XX134	1			O	k	1
			PBP				~XX302		2	~XX134	1			O	k	2
		Main Source	[no Signal]							~XX121	1			O	k	0
			HDMI 1				~XX12		1	~XX121	1			O	k	7
			HDMI 2				~XX12		15	~XX121	1			O	k	8
			DisplayPort				~XX12		20	~XX121	1			O	k	15
			HDBaseT				~XX12		21	~XX121	1			O	k	16
		Sub Source	[no Signal]							~XX131	1			O	k	0
			HDMI 1				~XX305		1	~XX131	1			O	k	7
			HDMI 2				~XX305		4	~XX131	1			O	k	8
			DisplayPort				~XX305		17	~XX131	1			O	k	15
			HDBaseT				~XX305		10	~XX131	1			O	k	16
		Swap					~XX306		1							
		Size	Small				~XX304		3	~XX134	2			O	k	3
			Medium				~XX304		2	~XX134	2			O	k	2
			Large				~XX304		1	~XX134	2			O	k	1
		Location	PBP, Main Left				~XX303		5	~XX134	3			O	k	5
			PBP, Main Top				~XX303		6	~XX134	3			O	k	6
			PBP, Main Right				~XX303		7	~XX134	3			O	k	7
			PBP, Main Bottom				~XX303		8	~XX134	3			O	k	8
			PIP, Bottom Right				~XX303		4	~XX134	3			O	k	4
			PIP, Bottom Left				~XX303		3	~XX134	3			O	k	3
			PIP, Top Left				~XX303		1	~XX134	3			O	k	1
			PIP, Top Right				~XX303		2	~XX134	3			O	k	2
	Reset						~XX173		1							
Device Setup	Test Pattern	Off					~XX195		0							
		Green Grid					~XX195		3							
		Magenta Grid					~XX195		4							
		White Grid					~XX195		1							
		White					~XX195		2							
		Black					~XX195		11							
		Red					~XX195		5							
		Green					~XX195		6							
		Blue					~XX195		7							
		Yellow					~XX195		8							
		Magenta					~XX195		9							
		Cyan					~XX195		10							
		ANSI Contrast 4x4					~XX195		14							
		Color Bars					~XX195		13							
		Full Screen					~XX195		16							
	Projection Orientation	Ceiling	Auto				~XX523		3	~XX370	1			O	k	3
			On				~XX523		1	~XX370	1			O	k	1
			Off				~XX523		0	~XX370	1			O	k	0
		Rear	Off				~XX524		0	~XX371	1			O	k	0
			On				~XX524		1	~XX371	1			O	k	1
	Language	English					~XX70		1	~XX299	1			O	k	1
		Čeština					~XX70		19	~XX299	1			O	k	19
		Dansk					~XX70		24	~XX299	1			O	k	24
		Nederlands					~XX70		8	~XX299	1			O	k	8
		Suomi					~XX70		11	~XX299	1			O	k	11
		Français					~XX70		3	~XX299	1			O	k	3
		Deutsch					~XX70		2	~XX299	1			O	k	2
		ελληνικά					~XX70		12	~XX299	1			O	k	12
		Magyar					~XX70		18	~XX299	1			O	k	18
		Bahasa Indonesia					~XX70		26	~XX299	1			O	k	26
		Italiano					~XX70		4	~XX299	1			O	k	4
		日本語					~XX70		15	~XX299	1			O	k	15
		한국어					~XX70		16	~XX299	1			O	k	16
		Norsk					~XX70		10	~XX299	1			O	k	10
		Polski					~XX70		7	~XX299	1			O	k	7
		Português					~XX70		6	~XX299	1			O	k	6
		Română					~XX70		27	~XX299	1			O	k	27
		Русский					~XX70		17	~XX299	1			O	k	17
		簡体中文					~XX70		14	~XX299	1			O	k	14
		Español					~XX70		5	~XX299	1			O	k	5
		Svenska					~XX70		9	~XX299	1			O	k	9
		ไทย					~XX70		21	~XX299	1			O	k	21
		繁體中文					~XX70		13	~XX299	1			O	k	13
		Türkçe					~XX70		22	~XX299	1			O	k	22
		Tiếng Việt					~XX70		25	~XX299	1			O	k	25

ADDITIONAL INFORMATION

							Write Command			Read Command						
							Command			Command						
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	n value	CMD	space	Set Para.	CMD	CMD Value			Pass		
Device Setup	Menu Settings	Menu Location	Top Left				~XX72		1	~XX382	2			O	k	1
			Top Right				~XX72		2	~XX382	2			O	k	2
			Center				~XX72		3	~XX382	2			O	k	3
			Bottom Left				~XX72		4	~XX382	2			O	k	4
			Bottom Right				~XX72		5	~XX382	2			O	k	5
		Menu Transparency	0 ~ 9				~XX526		0~9	~XX382	3			O	k	0~9
		Menu Timer	Off				~XX515		0	~XX382	1			O	k	0
			5s				~XX515		1	~XX382	1			O	k	1
			10s				~XX515		3	~XX382	1			O	k	3
			20s				~XX515		7	~XX382	1			O	k	7
			30s				~XX515		5	~XX382	1			O	k	5
			60s				~XX515		6	~XX382	1			O	k	6
		Information Hide	Off				~XX102		0	~XX383	1			O	k	0
			On				~XX102		1	~XX383	1			O	k	1
	High Altitude	Off					~XX101		0	~XX150	22			O	k	0
		On					~XX101		1	~XX150	22			O	k	1
	Lens Settings	Lens Type								~XX245	1			O	k	a=0 Undefined a=1 A11 "TR 0.78-0.9" a=2 A20 "TR 1.44-1.8" a=3 A21 "TR 1.8-2.4" a=4 A22 "TR 2.4-4.8" a=5 A23 "TR 4.8-8.6" a=7 A28 "TR0.34-0.37" a=9 A08 "TR 1.25-2.0" a=10 A10 "TR 0.5-0.65" a=11 A12 "TR 0.9-1.3"
		Focus	+				~XX308		1							
			-				~XX308		2							
		Zoom	+				~XX307		1							
			-				~XX307		2							
		Lens Function	Lock				~XX349		1	~XX545	4			O	k	0
			Unlock				~XX349		2	~XX545	4			O	k	1
		Lens Shift	Up				~XX84		3							
			Down				~XX84		4							
			Left				~XX84		5							
			Right				~XX84		6							
		Lens Calibration					~XX525		1							
		Lens Memory	Save Memory	Memory 1 ~ Memory 5			~XX360		1~5							
			Apply Memory	Memory 1 ~ Memory 5			~XX359		1~5	~XX384	1			O	k	1~5
			Clear Memory				~XX361		1							
		Reset					~XX175		1							
	Schedule	Date and Time								~XX243	1			O	K	YYYYMMDDhhmm (202107051750)
		Schedule Mode	Off				~XX284		0	~XX244	1			O	K	0
			On				~XX284		1	~XX244	1			O	K	1
		View Today	Monday / Tuesday / Wednesday / Thursday / Friday / Saturday / Sunday							~XX243	2			O	K	d=1=Monday d=2=Tuesday d=3=Wednesday d=4=Thursday d=5=Friday d=6=Saturday d=7=Sunday
		Monday Tuesday Wednesday Thursday Friday Saturday Sunday	Schedule Enable	Off			~XX284		0 ~n, n=0~6 Sun. to Saturday							
				On			~XX284		1 ~n							
			Event 01-16	Time	00:00 ~ 23:59		~XX471		dhhmmnn aabb							
				Function	Off		~XX471		dhhmmnn aabb							
					Power Settings		~XX471		dhhmmnn aabb							
					Input Source		~XX471		dhhmmnn aabb							
					Light Source Mode		~XX471		dhhmmnn aabb							
					Shutter		~XX471		dhhmmnn aabb							
				Event	Off		~XX471		dhhmmnn aabb							
				(Function = Power Settings)	Power On		~XX471		dhhmmnn aabb							
					Power Off		~XX471		dhhmmnn aabb							
				(Function = Input Source)	HDMI1		~XX471		dhhmmnn aabb							
					HDMI2		~XX471		dhhmmnn aabb							
					DisplayPort		~XX471		dhhmmnn aabb							
					HDBaseT		~XX471		dhhmmnn aabb							
				(Function = Light Source Mode)	Normal		~XX471		dhhmmnn aabb							
					Eco Mode		~XX471		dhhmmnn aabb							
					Custom Brightness		~XX471		dhhmmnn aabb							
				(Function = Shutter)	Shutter On		~XX471		dhhmmnn aabb							
					Shutter Off		~XX471		dhhmmnn aabb							
				Reset			~XX472		d ~nn, d=0~6, nn=01~16 ex. ~XX472 5 ~13= Reset Friday #13 event							

ADDITIONAL INFORMATION

							Write Command			Read Command						
							Command			Command						
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	n value	CMD	space	Set Para.	CMD	CMD Value		Pass			
Device Setup	Schedule	Monday Tuesday Wednesday Thursday Friday Saturday Sunday	Copy Events To	Monday			~XX473		1 ~n n=1~7 Mon. to Sunday ex. ~XX473 1 ~7=Copy Mon. event to Sunday							
				Tuesday			~XX473		2 ~n							
				Wednesday			~XX473		3 ~n							
				Thursday			~XX473		4 ~n							
				Friday			~XX473		5 ~n							
				Saturday			~XX473		6 ~n							
				Sunday			~XX473		7 ~n							
			Reset the Day				~XX471		9 ~n, n=1~7 Mon. to Sunday ex. ~XX471 9 ~5=Reset Friday schedule							
		Reset Schedule					~XX284		9							
	Date and Time	Clock Mode	Use NTP Server				~XX474		1							
			Manual				~XX474		3							
		Date	2000 ~ 2037 (Year)				~XX475		nnnn							
			01 ~ 12 (Month)				~XX476		nn							
			01 ~ 31 (Day)				~XX477		nn							
		Time	00 ~ 23 (Hour)				~XX478		nn							
			00 ~ 59 (Minute)				~XX479		nn							
		Daylight Saving Time	Off				~XX480		0							
			On				~XX480		1							
		NTP Server	time.google.com				~XX481		1							
			asia.pool.ntp.org				~XX481		2							
			europe.pool.ntp.org				~XX481		3							
			north-america.pool.ntp.org				~XX481		4							
		Time Zone	UTC+14:00				~XX482		1							
			UTC+13:00				~XX482		2							
			UTC+12:45				~XX482		3							
			UTC+12:00				~XX482		4							
			UTC+11:00				~XX482		5							
			UTC+10:30				~XX482		6							
			UTC+10:00				~XX482		7							
			UTC+09:30				~XX482		8							
			UTC+09:00				~XX482		9							
			UTC+08:45				~XX482		10							
			UTC+08:00				~XX482		11							
			UTC+07:00				~XX482		12							
			UTC+06:30				~XX482		13							
			UTC+06:00				~XX482		14							
			UTC+05:45				~XX482		15							
			UTC+05:30				~XX482		16							
			UTC+05:00				~XX482		17							
			UTC+04:30				~XX482		18							
			UTC+04:00				~XX482		19							
			UTC+03:30				~XX482		20							
			UTC+03:00				~XX482		21							
			UTC+02:00				~XX482		22							
			UTC+01:00				~XX482		23							
			UTC+00:00				~XX482		24							
			UTC-01:00				~XX482		25							
			UTC-02:00				~XX482		26							
			UTC-03:00				~XX482		27							
			UTC-03:30				~XX482		28							
			UTC-04:00				~XX482		29							
			UTC-05:00				~XX482		30							
			UTC-06:00				~XX482		31							
			UTC-07:00				~XX482		32							
			UTC-08:00				~XX482		33							
			UTC-09:00				~XX482		34							
			UTC-09:30				~XX482		35							
			UTC-10:00				~XX482		36							
			UTC-11:00				~XX482		37							
			UTC-12:00				~XX482		38							
		Update Interval	Hourly				~XX483		1							
			Daily				~XX483		3							
		Apply					~XX484		1							
	Power Settings	Direct Power On	Off				~XX105		0	~XX385	1			O	k	0
			On				~XX105		1	~XX385	1			O	k	1
		Signal Power On	Off				~XX113		0	~XX385	2			O	k	0
			On				~XX113		1	~XX385	2			O	k	1
		Auto Power Off (min.)	0, 2 ~ 180				~XX106		0~180	~XX387	1			O	k	0~180
		Sleep Timer (min.)	0 ~ 960				~XX107		0~960	~XX388	1			O	k	0~960
		Energy Saving	Off				~XX319		0	~XX249	1			O	k	0
			On				~XX319		1	~XX249	1			O	k	1
		Power Mode (Standby)	Eco				~XX114		0	~XX150	16			O	k	0
			Active				~XX114		1	~XX150	16			O	k	1
			Communication				~XX114		3	~XX150	16			O	k	3
		USB Power	Off				~XX520		0	~XX389	2			O	k	0
			On				~XX520		1	~XX389	2			O	k	1
		Reset					~XX177		1							
	OMS									~XX247	1			O	k	a=0 without bind a=1 Binded
	Shutter	Fade-In	0s ~ 5s				~XX267		0~10	~XX390	2			O	k	0~10
		Fade-Out	0s ~ 5s				~XX268		0~10	~XX390	3			O	k	0~10
		Startup	Shutter Off				~XX269		0	~XX390	1			O	k	0
			Shutter On				~XX269		1	~XX390	1			O	k	1
	Security	Security	Off				~XX78		0~nnnn	~XX391	1			O	k	0
			On				~XX78		1~nnnn	~XX391	1			O	k	1
		Security Timer	Month	0 ~ 35			~XX537		00~35	~XX544	1			O	k	00~35
			Day	0 ~ 29			~XX538		00~29	~XX544	2			O	k	00~29
			Hour	0 ~ 23			~XX539		00~23	~XX544	3			O	k	00~23
							~XX77		~MMDDHH							
		Change Password					~XX406		nnnn~nnnn							
	Keypad Lock	Off					~XX103		0	~XX392	1			O	k	0
		On					~XX103		1	~XX392	1			O	k	1

ADDITIONAL INFORMATION

							Write Command			Read Command						
							Command			Command						
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	n value	CMD	space	Set Para.	CMD	CMD Value			Pass		
Device Setup	Backlight	Keypad	Off				~XX362		0	~XX393	1			O	k	0
			On				~XX362		1	~XX393	1			O	k	1
		Power Key	Off				~XX362		3	~XX393	2			O	k	0
			On				~XX362		4	~XX393	2			O	k	1
	Startup Logo	Change Logo	Default				~XX82		1	~XX395	1			O	k	1
			Neutral				~XX82		3	~XX395	1			O	k	3
			User				~XX82		4	~XX395	1			O	k	4
		Delete Logo					~XX407		2							
	Background Color	None					~XX104		0	~XX396	1			O	k	0
		Blue					~XX104		1	~XX396	1			O	k	1
		Red					~XX104		3	~XX396	1			O	k	3
		Green					~XX104		4	~XX396	1			O	k	4
		Grey					~XX104		6	~XX396	1			O	k	6
		White					~XX104		5	~XX396	1			O	k	5
		Logo					~XX104		7	~XX396	1			O	k	7
	User Data	Save all settings	Memory 1 ~ Memory 5				~XX258		1~5							
		Load all settings	Memory 1 ~ Memory 5				~XX259		1~5	~XX397	1			O	k	1~5
	System Update	Auto	Off				~XX168		0	~XX158	1			O	k	0
			On				~XX168		1	~XX158	1			O	k	1
		Auto Download	Off				~XX168		3	~XX398	1			O	k	0
			On				~XX168		4	~XX398	1			O	k	1
		Update					~XX168		9							
	Device Reset	Reset OSD					~XX546		1							
		Reset All Settings					~XX112		1							
		Reset Selective	Image Settings				~XX509		1							
			Display Settings				~XX173		1							
			Device Setup				~XX179		1							
			Input Settings				~XX178		1							
			Control Settings				~XX181		1							
Input Settings	Auto Source	Off					~XX563		0	~XX372	1			O	k	0
		On					~XX563		1	~XX372	1			O	k	1
	Quick Resync	Off					~XX315		0	~XX373	1			O	k	0
		On					~XX315		1	~XX373	1			O	k	1
	Active Inputs	[None]								~XX121	1			O	k	0
		HDMI 1					~XX12		1	~XX121	1			O	k	7
		HDMI 2					~XX12		15	~XX121	1			O	k	8
		DisplayPort					~XX12		20	~XX121	1			O	k	15
		HDBaseT					~XX12		21	~XX121	1			O	k	16
	EDID Settings	HDMI 1 EDID	1.4				~XX236		1	~XX374	1			O	k	1
			2.0				~XX236		2	~XX374	1			O	k	2
		HDMI 2 EDID	1.4				~XX237		1	~XX375	1			O	k	1
			2.0				~XX237		2	~XX375	1			O	k	2
		HDBaseT EDID	1.4				~XX238		1	~XX376	1			O	k	1
			2.0				~XX238		2	~XX376	1			O	k	2
	HDMI Out	HDMI 1					~XX309		5							
		HDMI 2					~XX309		6							
	Reset						~XX178		1							
Control Settings	Device ID	0 ~ 99					~XX79		00~99	~XX558	1			O	k	00~99
	IR Function	Front	Off				~XX11		4	~XX542	1			O	k	0
			On				~XX11		5	~XX542	1			O	k	1
		Top	Off				~XX11		6	~XX542	2			O	k	0
			On				~XX11		7	~XX542	2			O	k	1
		Rear	Off				~XX11		8	~XX542	4			O	k	0
			On				~XX11		11	~XX542	4			O	k	1
		HDBaseT	Off				~XX11		10	~XX542	3			O	k	0
			On				~XX11		9	~XX542	3			O	k	1
	Remote Settings	Remote Code	0 ~ 99				~XX350		00~99	~XX138	1			O	k	00~99
		Quick Switch Code	Off				~XX314		0	~XX138	3			O	k	0
			1 ~ 9				~XX314		1~9	~XX138	3			O	k	1~9
		User 1	HDMI 1				~XX117		8	~XX394	1			O	k	8
			HDMI 2				~XX117		9	~XX394	1			O	k	9
			Color Matching				~XX117		13	~XX394	1			O	k	13
			Color Temperature				~XX117		4	~XX394	1			O	k	4
			Projection Orientation				~XX117		14	~XX394	1			O	k	14
			Light Source Mode				~XX117		15	~XX394	1			O	k	15
			Freeze Screen				~XX117		17	~XX394	1			O	k	17
			LAN				~XX117		20	~XX394	1			O	k	20
			Reset Selective				~XX117		21	~XX394	1			O	k	21
		User 2	HDMI 1				~XX118		8	~XX394	2			O	k	8
			HDMI 2				~XX118		9	~XX394	2			O	k	9
			Color Matching				~XX118		13	~XX394	2			O	k	13
			Color Temperature				~XX118		4	~XX394	2			O	k	4
			Projection Orientation				~XX118		14	~XX394	2			O	k	14
			Light Source Mode				~XX118		15	~XX394	2			O	k	15
			Freeze Screen				~XX118		17	~XX394	2			O	k	17
			LAN				~XX118		20	~XX394	2			O	k	20
			Reset Selective				~XX118		21	~XX394	2			O	k	21
	LAN	LAN Interface	RJ-45				~XX460		1	~XX386	1			O	k	1
			HDBaseT				~XX460		2	~XX386	1			O	k	2
		Network Status	(read only) Connected							~XX87	1			O	k	1
			(read only) Disconnected							~XX87	1			O	k	0
		MAC Address	(read only)							~XX555	1			O	k	nn:nn:nn:nn:nn:nn
		DHCP	Off				~XX461		0	~XX150	17			O	k	0
			On				~XX461		1	~XX150	17			O	k	1
		IP Address	- - - . - - - . - - - . - - -							~XX87	3			O	k	nnn.nnn.nnn.nnn
		Subnet Mask	- - - . - - - . - - - . - - -							~XX87	4			O	k	nnn.nnn.nnn.nnn
		Gateway	- - - . - - - . - - - . - - -							~XX87	5			O	k	nnn.nnn.nnn.nnn
		DNS 1	- - - . - - - . - - - . - - -							~XX87	6			O	k	nnn.nnn.nnn.nnn
		DNS 2	- - - . - - - . - - - . - - -							~XX87	7			O	k	nnn.nnn.nnn.nnn
		Apply					~XX462		9							
		Reset					~XX462		1							
	Control	Crestron	Off				~XX454		0	~XX441	1			O	k	0
			On				~XX454		1	~XX441	1			O	k	1
		PJ Link	Off				~XX456		0	~XX440	2			O	k	0
			On				~XX456		1	~XX440	2			O	k	1
		Extron	Off				~XX455		0	~XX442	1			O	k	0
			On				~XX455		1	~XX442	1			O	k	1
		AMX Device Discovery	Off				~XX457		0	~XX444	1			O	k	0
			On				~XX457		1	~XX444	1			O	k	1
		Telnet	Off				~XX458		0	~XX445	1			O	k	0
			On				~XX458		1	~XX445	1			O	k	1

ADDITIONAL INFORMATION

							Write Command			Read Command						
							Command			Command						
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	n value	CMD	space	Set Para.	CMD	CMD Value	Pass				
Control Settings	Control	HTTP	Off				~XX459		0	~XX446	1			O	k	0
			On				~XX459		1	~XX446	1			O	k	1
		Art-Net	Off				~XX452		0	~XX447	1			O	k	0
			On				~XX452		1	~XX447	1			O	k	1
			On(2.X.X.X)				~XX452		2	~XX447	1			O	k	2
			On(10.X.X.X)				~XX452		3	~XX447	1			O	k	3
	Art-Net	Net	0 ~ 127				~XX425		0~127	~XX226	1			O	k	0~127
		Subnet	0 ~ 15				~XX426		0~15	~XX226	2			O	k	0~15
		Universe	0 ~ 15				~XX427		0~15	~XX226	3			O	k	0~15
		Channel Settings	User 1				~XX429		1	~XX226	5			O	k	1
			User 2				~XX429		2	~XX226	5			O	k	2
		Edit Channel	User 1	1	Art-Net		~XX429		101a	~XX226	11			O	k	n01a(eg.Ok10101= User 1 Channel 01, 01 Artet)
				2	Light Source Settings		~XX429		102a	~XX226	12			O	k	n02a(eg.Ok10207= User 1 Channel 02, 07 Zoom
				3	Active Inputs		~XX429		103a	~XX226	13			O	k	n03a(eg.Ok10307= User 1 Channel 03, 07 Zoom
				4	Lens Shift (H)		~XX429		104a	~XX226	14			O	k	n04a(eg.Ok10407= User 1 Channel 04, 07 Zoom
				5	Lens Shift (V)		~XX429		105a	~XX226	15			O	k	n05a(eg.Ok10507= User 1 Channel 05, 07 Zoom
				6	Focus		~XX429		106a	~XX226	16			O	k	n06a(eg.Ok10607= User 1 Channel 06, 07 Zoom
				7	Zoom		~XX429		107a	~XX226	17			O	k	n07a(eg.Ok10707= User 1 Channel 07, 07 Zoom
				8	Lens Function		~XX429		108a	~XX226	18			O	k	n08a(eg.Ok10807= User 1 Channel 08, 07 Zoom
				9	Lens Control		~XX429		109a	~XX226	19			O	k	n09a(eg.Ok10907= User 1 Channel 09, 07 Zoom
				10	Lens Memory		~XX429		110a	~XX226	20			O	k	n10a(eg.Ok11007= User 1 Channel 10, 07 Zoom
				11	H Keystone		~XX429		111a	~XX226	21			O	k	n11a(eg.Ok11107= User 1 Channel 11, 07 Zoom
				12	V Keystone		~XX429		112a	~XX226	22			O	k	n12a(eg.Ok11207= User 1 Channel 12, 07 Zoom
				13	Power		~XX429		113a	~XX226	23			O	k	n13a(eg.Ok11307= User 1 Channel 13, 07 Zoom
				14	Shutter		~XX429		114a	~XX226	24			O	k	n14a(eg.Ok11407= User 1 Channel 14, 07 Zoom
				15	Freeze		~XX429		115a	~XX226	25			O	k	n15a(eg.Ok11507= User 1 Channel 15, 07 Zoom
				16	Test Pattern		~XX429		116a	~XX226	26			O	k	n16a(eg.Ok11607= User 1 Channel 16, 07 Zoom
				Reset			~XX429		11							
			User 1	1	None		~XX429		201a	~XX226	11			O	k	n01a(eg.Ok20101= User 2 Channel 01, 01 Artet)
				2	None		~XX429		202a	~XX226	12			O	k	n02a(eg.Ok20207= User 2 Channel 02, 07 Zoom
				3	None		~XX429		203a	~XX226	13			O	k	n03a(eg.Ok20307= User 2 Channel 03, 07 Zoom
				4	None		~XX429		204a	~XX226	14			O	k	n04a(eg.Ok20407= User 2 Channel 04, 07 Zoom
				5	None		~XX429		205a	~XX226	15			O	k	n05a(eg.Ok20507= User 2 Channel 05, 07 Zoom
				6	None		~XX429		206a	~XX226	16			O	k	n06a(eg.Ok20607= User 2 Channel 06, 07 Zoom
				7	None		~XX429		207a	~XX226	17			O	k	n07a(eg.Ok20707= User 2 Channel 07, 07 Zoom
				8	None		~XX429		208a	~XX226	18			O	k	n08a(eg.Ok20807= User 2 Channel 08, 07 Zoom
				9	None		~XX429		209a	~XX226	19			O	k	n09a(eg.Ok20907= User 2 Channel 09, 07 Zoom
				10	None		~XX429		210a	~XX226	20			O	k	n10a(eg.Ok21007= User 2 Channel 10, 07 Zoom
				11	None		~XX429		211a	~XX226	21			O	k	n11a(eg.Ok21107= User 2 Channel 11, 07 Zoom
				12	None		~XX429		212a	~XX226	22			O	k	n12a(eg.Ok21207= User 2 Channel 12, 07 Zoom
				13	None		~XX429		213a	~XX226	23			O	k	n13a(eg.Ok21307= User 2 Channel 13, 07 Zoom
				14	None		~XX429		214a	~XX226	24			O	k	n14a(eg.Ok21407= User 2 Channel 14, 07 Zoom
				15	None		~XX429		215a	~XX226	25			O	k	n15a(eg.Ok21507= User 2 Channel 15, 07 Zoom
				16	None		~XX429		216a	~XX226	26			O	k	n16a(eg.Ok21607= User 2 Channel 16, 07 Zoom
				Reset			~XX429		12							
	Baud Rate	9600								~XX153	1			O	k	9600
		19200								~XX153	1			O	k	19200
		38400								~XX153	1			O	k	38400
		57600								~XX153	1			O	k	57600
		115200								~XX153	1			O	k	115200
	Reset						~XX181		1							

ADDITIONAL INFORMATION

							Write Command			Read Command					
							Command			Command					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	n value	CMD	space	Set Para.	CMD	CMD Value	Pass			
Information	Regulatory									~XX151	3			O	k	nnnnnnnn
	Serial Number									~XX353	1			O	k	nnnnnnnnnnnnnnnn
	Source Info.	Source								~XX150	3			O	k	nnn..nn (e.g. OkHDMI)
		Resolution								~XX150	4			O	k	nnn..nn (e.g.Ok1920x1080)
		Signal Format								~XX150	5			O	k	a=nnnnnnnnnnnn (eg. BT.2020 HDR)
		Pixel Clock								~XX150	6			O	k	nnn..nn
		Refresh Rate								~XX150	19			O	k	string (e.g. Ok60Hz)
		Color Depth								~XX156	1			O	k	a=nbit nnn (e.g. 8bit RGB)
		Color Gamut								~XX156	3			O	k	a=string (e.g. BT.2020 HDR)
		Color Space								~XX295	1			O	k	a=2 RGB \ RGB (0-255)* a=3 YUV a=4 RGB(16 - 235)* a=5 Rec709 a=6 Rec601
		Picture Mode								~XX123	1			O	k	a = 0 None a = 2 Bright a = 3 Cinema a = 4 sRGB(Reference/ Standard) a = 5 User 1 a = 6 User 2 / 3D User a = 9 3D a = 10 DICOM SIM. a = 14 Vivid (Photo) a= 19 Blending a= 21 HDR a=25 HLG a = 26 User HDR a = 27 User HLG a = 32 User-Bright a = 33 User-Cinema a = 34 User-sRGB a = 35 User-DICOM SIM. a = 36 User-Blending
		Sub Source								~XX150	9			O	k	nnn..nn (e.g. Ok48C)
		Resolution								~XX150	10			O	k	nnn..nn (e.g. Ok48C)
		Signal Format								~XX150	11			O	k	a=nnnnnnnnnnnn (eg. BT.2020 HDR)
		Pixel Clock								~XX150	12			O	k	nnn..nn
		Refresh Rate								~XX150	24			O	k	nnn..nn
		Color Depth								~XX156	2			O	k	a=nbit nnn (e.g. 8bit RGB)
		Color Gamut								~XX156	3			O	k	a=string (e.g. BT.2020 HDR)
		Color Space								~XX295	2			O	k	a=2 RGB \ RGB (0-255)* a=3 YUV a=4 RGB(16 - 235)* a=5 Rec709 a=6 Rec601
	Light Source Mode															
	Device ID						~XX79		00~99	~XX558	1			O	k	00~99
	Remote Code						~XX350		00~99	~XX138	1			O	k	00~99
	System Status	Power Mode (Standby)								~XX150	16			O	k	a=1 Active a=0 Eco. a=3 Communication
		Projection Hours								~XX150	21			O	k	nnnnn (nnnnn= hour digits)
		Total Hours								~XX108	1			O	k	nnnnn (nnnnn= hour digits)
		Normal								~XX108	3			O	k	nnnnn (nnnnn= hour digits)
		Eco Mode								~XX108	4			O	k	nnnnn (nnnnn= hour digits)
		Custom Brightness								~XX108	7			O	k	nnnnn (nnnnn= hour digits)
		Ambient Temp.								~XX150	23			O	k	nnn..nn (e.g. Ok48)
		System Temp.								~XX150	18			O	k	nnn..nn (e.g. Ok48)
		Pressure(hPA)								~XX159	2			O	k	nnn..nn (e.g. Ok1122)
		Humidity								~XX159	3			O	k	nnn..nn (e.g. Ok50)
	Control	Crestron								~XX441	1			O	k	a=0 off ; a=1 On
		Extron								~XX442	1			O	k	a=0 off ; a=1 On
		PJ Link								~XX440	2			O	k	a=0 off ; a=1 On
		AMX Device Discovery								~XX444	1			O	k	a=0 off ; a=1 On
		Telnet								~XX445	1			O	k	a=0 off ; a=1 On
		HTTP								~XX446	1			O	k	a=0 off ; a=1 On
		Art-Net								~XX447	1			O	k	a=0 off ; a=1 On; a=2On(2.X.X.X) ; a=3 On(10.X.X.X)
		Art-Net Status	Channels	User 1						~XX226	5			O	k	1=User1, 2=User2
			1	Art-Net						~XX226	11			O	k	n01a(eg. Ok20101=User 2 Channel 01, 01 Artet)
			2	Light Source Settings						~XX226	12			O	k	n02a(eg. Ok20207=User 2 Channel 02, 07 Zoom
			3	Active Inputs						~XX226	13			O	k	n03a(eg. Ok20307=User 2 Channel 03, 07 Zoom
			4	Lens Shift (H)						~XX226	14			O	k	n04a(eg. Ok20407=User 2 Channel 04, 07 Zoom
			5	Lens Shift (V)						~XX226	15			O	k	n05a(eg. Ok20507=User 2 Channel 05, 07 Zoom
			6	Focus						~XX226	16			O	k	n06a(eg. Ok20607=User 2 Channel 06, 07 Zoom
			7	Zoom						~XX226	17			O	k	n07a(eg. Ok20707=User 2 Channel 07, 07 Zoom
			8	Lens Function						~XX226	18			O	k	n08a(eg. Ok20807=User 2 Channel 08, 07 Zoom
			9	Lens Control						~XX226	19			O	k	n09a(eg. Ok20907=User 2 Channel 09, 07 Zoom
			10	Lens Memory						~XX226	20			O	k	n10a(eg. Ok21007=User 2 Channel 10, 07 Zoom

ADDITIONAL INFORMATION

							Write Command			Read Command						
							Command			Command						
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	n value	CMD	space	Set Para.	CMD	CMD Value	Pass				
Information	Control	Art-Net Status	11	H Keystone						~XX226	21			O	k	n11a(eg. Ok21107=User 2 Channel 11, 07 Zoom
			12	V Keystone						~XX226	22			O	k	n12a(eg. Ok21207=User 2 Channel 12, 07 Zoom
			13	Power						~XX226	23			O	k	n13a(eg. Ok21307=User 2 Channel 13, 07 Zoom
			14	Shutter						~XX226	24			O	k	n14a(eg. Ok21407=User 2 Channel 14, 07 Zoom
			15	Freeze						~XX226	25			O	k	n15a(eg. Ok21507=User 2 Channel 15, 07 Zoom
			16	Test Pattern						~XX226	26			O	k	n16a(eg. Ok21607=User 2 Channel 16, 07 Zoom
	LAN	LAN Interface								~XX386	1			O	k	a=1 RJ45 ; a=2 HDBaseT
		MAC Address								~XX555	1			O	k	nn:nn:nn:nn:nn:nn
		Network Status								~XX87	1			O	k	a=0 Disconnected ; a=1 Connected
		DHCP								~XX150	17			O	k	0=off, 1=on
		IP Address								~XX87	3			O	k	nn:nn:nn:nn:nn:nn
		Subnet Mask								~XX87	4			O	k	nnn.nnn.nnn.nnn
		Gateway								~XX87	5			O	k	nnn.nnn.nnn.nnn
		DNS 1								~XX87	6			O	k	nnn.nnn.nnn.nnn
		DNS 2								~XX87	7			O	k	nnn.nnn.nnn.nnn
	FW Version									~XX122	1			O	k	Pnn.nn.nn
When projector in standby, RS232 have to support																
Power Off							~XX00		0	~XX124	1			O	k	0
Power On							~XX00		1	~XX124	1			O	k	1
Power On with password							~XX00		1 ~nnnn							
Information	Info String									~XX150	1			O	k	abbbbbccddddee (Note*1)
Light Source Hours										~XX108	1			O	k	nnnnn (nnnnn= hour digits)
Other Items																
Power Off							~XX00		0	~XX124	1			O	k	0
Power On							~XX00		1	~XX124	1			O	k	1
Power On with password							~XX00		1 ~nnnn							
Re-Sync							~XX01		1							
AV Mute	Off						~XX02		0	~XX355	1			O	k	0
	On						~XX02		1	~XX355	1			O	k	1
Freeze	Unfreeze						~XX04		0	~XX357	1			O	k	0
Zoom Plus	Freeze						~XX04		1	~XX357	1			O	k	1
3D Sync Out	To Emitter						~XX232		0							
	To Next Projector						~XX232		1							
3D Frame Delay	1 ~ 202						~XX233		1~nnn							
Output 3D state	2D									~XX130	1			O	k	0
	3D									~XX130	1			O	k	1
System Auto Send	Standby Mode											I	N	F	O	0
	Warming up											I	N	F	O	1
	Cooling Down											I	N	F	O	2
	Out of Range											I	N	F	O	3
	Light Source Fail (LED Fail)															
	Thermal Switch Error															
	Fan Lock															
	Over Temperature											I	N	F	O	7
	Light Source Hours Running Out															
	Cover Open											I	N	F	O	9
	Lightsource Ignite Fail															
	Format Board Power On Fail															
	Color Wheel Unexpected Stop											I	N	F	O	12
	FAN 1 Lock											I	N	F	O	14
	FAN 2 Lock											I	N	F	O	15
	FAN 3 Lock											I	N	F	O	16
	FAN 4 Lock											I	N	F	O	17
	FAN 5 Lock											I	N	F	O	18
	LAN fail then restart											I	N	F	O	19
	LD lower than 60%											I	N	F	O	20
	LD NTC (1) Over Temperature											I	N	F	O	21
	LD NTC (2) Over Temperature											I	N	F	O	22
	High Ambient Temperature											I	N	F	O	23
	System Ready											I	N	F	O	24
	FAN 8 Lock											I	N	F	O	28
	FAN 9 Lock											I	N	F	O	29
	FAN 10 Lock											I	N	F	O	30
System Temperature Level	Green/Normal									~XX155	1			O	k	1
	Orange/Notice									~XX155	1			O	k	2
	Red/Warning. About to trigger shutdown									~XX155	1			O	k	3
Fan Status Level	Green/Normal									~XX159	1			O	k	1
	Orange/Notice									~XX159	1			O	k	2
	Red/Warning. About to trigger shutdown									~XX159	1			O	k	3
Device Type	Projector									~XX149	1			O	k	1
Model Name	Optoma UHD									~XX151	1			O	k	6

ADDITIONAL INFORMATION

							Write Command			Read Command					
							Command			Command					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	n value	CMD	space	Set Para.	CMD	CMD Value	Pass			
OSD Lock	On						~XX239		1 ~nnnn	~XX229	1	O	k	1	
	Off						~XX239		2 ~nnnn	~XX229	1	O	k	0	
Regulatory Model										~XX151	3	O	k	nnn..nn (Regulatory Name)	
Software Version										~XX122	1	O	k	Pnn.nn.nn	
LAN FW version										~XX357	1	O	k	nnnnnnn (LAN FW version)	
Fan Speed	Fan 1 Speed	0000~9999								~XX351	0	O	k	0000~9999	
	Fan 2 Speed	0000~9999								~XX351	1	O	k	0000~9999	
	Fan 3 Speed	0000~9999								~XX351	2	O	k	0000~9999	
	Fan 4 Speed	0000~9999								~XX351	3	O	k	0000~9999	
	Fan 5 Speed	0000~9999								~XX351	4	O	k	0000~9999	
	Fan 6 Speed	0000~9999								~XX351	5	O	k	0000~9999	
	Fan 7 Speed	0000~9999								~XX351	6	O	k	0000~9999	
	Fan 8 Speed	0000~9999								~XX351	7	O	k	0000~9999	
	Fan 9 Speed	0000~9999								~XX351	8	O	k	0000~9999	
	Fan 10 Speed	0000~9999								~XX351	9	O	k	0000~9999	
System Temperature										~XX352	1	O	k	0000~9999	
Information	Info String									~XX150	1	O	k	abbbbbbcdddddee (Note*1)	
	Native Resolution									~XX150	2	O	k	nnn..nn (e.g. Ok1920x1080)	
	Main Source									~XX150	3	O	k	nnn..nn (e.g. OkHDMI)	
	- Resolution									~XX150	4	O	k	nnn..nn (e.g.Ok1920x1080)	
	- Signal Format									~XX150	5	O	k	nnn..nn	
	- Pixel Clock									~XX150	6	O	k	nnn..nn	
	- Horz Refresh									~XX150	7	O	k	nnn..nn	
	- Vert Refresh									~XX150	8	O	k	nnn..nn	
	Sub Source									~XX150	9	O	K	nnn..nn	
	- Resolution									~XX150	10	O	K	nnn..nn (e.g. Ok1920x1080)	
	- Signal Format									~XX150	11	O	K	nnn..nn (e.g. OkHDMI)	
	- Pixel Clock									~XX150	12	O	K	nnn..nn	
	- Horz Refresh									~XX150	13	O	K	nnn..nn	
	- Vert Refresh									~XX150	14	O	K	nnn..nn	
	Light Source Mode									~XX150	15	O	k	n	
	Standby Power Mode	Active								~XX150	16	O	k	1	
		Eco.								~XX150	16	O	k	0	
		Communication								~XX150	16	O	k	3	
	DHCP	Off								~XX150	17	O	k	0	
		On								~XX150	17	O	k	1	
	System Temperature									~XX150	18	O	k	nnn..nn (e.g. Ok48)	
	Refresh rate									~XX150	19	O	k	nnn..nn (e.g. Ok60Hz)	
Source Lock	On						~XX100		0						
	Off						~XX100		1						
Display message on the OSD							~XX210		nn…n (50 charactors)						
Filter Wheel Index							~XX528		0000~9999	~XX530	1	O	k	0000~9999	
Phosphor Wheel Index							~XX529		0000~9999	~XX531	1	O	k	0000~9999	
Light Sensor Calibration							~XX552		1						
Get Security password status										~XX544	5	O	K	a=0 Doesn't exist ; a=1 Existed	
Clear Security password (Service Only)							~XX406		1						

Remote Control Simulation															
Power							~XX140		1						
Power Off							~XX140		2						
Up							~XX140		10						
Left							~XX140		11						
Enter (for projection MENU)							~XX140		12						
Right							~XX140		13						
Down							~XX140		14						
V Keystone +							~XX140		15						
V Keystone -							~XX140		16						
Brightness							~XX140		19						
Menu							~XX140		20						
AV Mute							~XX140		24						
Contrast							~XX140		28						
Zoom +							~XX140		32						
Zoom -							~XX140		33						
Focus +							~XX140		34						
Focus -							~XX140		35						
Mode							~XX140		36						
info							~XX140		40						
Re-sync							~XX140		41						
HDMI 1							~XX140		42						
HDMI 2							~XX140		43						
Source							~XX140		47						
1							~XX140		51						
2							~XX140		52						
3							~XX140		53						
4							~XX140		54						
5							~XX140		55						
6							~XX140		56						
7							~XX140		57						
8							~XX140		58						
9							~XX140		59						
0							~XX140		60						
Gamma							~XX140		61						
PIP							~XX140		63						
Lens H(left)							~XX140		64						
Lens H(Right)							~XX140		65						
Lens V(left)							~XX140		66						
Lens V(Right)							~XX140		67						
H Keystone +							~XX140		68						
H Keystone -							~XX140		69						

ADDITIONAL INFORMATION

Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	n value	Write Command			Read Command						
							Command			Command						
							CMD	space	Set Para.	CMD	CMD Value	Pass				
Hot Key (user1)(F1)							~XX140		70							
Hot Key (user2)(F2)							~XX140		71							
Pattern							~XX140		73							
Exit							~XX140		74							
Mute							~XX140		77							
Return							~XX140		82							

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