



Installation and Setup Guide  
020-103584-03

# CP2415-Xe

**CHRISTIE®**

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CAN ICES-3 (A) / NMB-3 (A)

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If printing this document, consider printing only the pages you need and select the double-sided option.

Please help us to conserve the environment we live in!

### Notation

Learn the hazard and information symbols used in the product documentation.



Danger messages indicate a hazardous situation which, if not avoided, results in death or serious injury.



Warning messages indicate a hazardous situation which, if not avoided, could result in death or serious injury.



Caution messages indicate a hazardous situation which, if not avoided, could result in minor or moderate injury.



Notice messages indicate a hazardous situation which, if not avoided, may result in equipment or property damage.



Information messages provide additional information, emphasize or provide a useful tip.

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# Introduction

This manual is intended for qualified installers and trained operators of Christie CP2415-Xe projection systems.

## Product documentation

For installation, setup, and user information, see the product documentation available on the Christie website. Read all instructions before using or servicing this product.

To access the documentation from the Christie website:

- Go to this URL: <https://bit.ly/3vxrm4Y> or <https://www.christiedigital.com/products/cinema/projection/cinelife-plus-series/>.
- Scan the QR code using a QR code reader app on a smartphone or tablet.



- On the product page, select the model and switch to the **Downloads** tab.

## Related documentation

Additional information on this product is available in the following documents.

- *CP2415-Xe Product Safety Guide (P/N: 020-103673-XX)*
- *CineLife+ User Guide (P/N: 020-103073-XX)*
- *CineLife+ Serial Commands Guide (P/N: 020-103075-XX)*
- *CP2415-Xe Service Guide (P/N: 020-103582-XX)*

## Safety precautions

When installing the projector, observe these important safety rules to avoid personal injury or damage to the projector.

This projector must be operated in an environment that meets the operating range specified in the *environmental specifications* (on page 17).

## General precautions

Read all safety and warning guidelines before installing or operating the projector.



**Warning!** If not avoided, the following could result in death or serious injury.

- FIRE HAZARD! Keep hands, clothes, and all combustible material away from the concentrated light beam of the projector.
- TRIP OR FIRE HAZARD! Position all cables where they cannot contact hot surfaces, be pulled, be tripped over, or damaged by persons walking on or objects rolling over the cables.
- This product must be installed within a restricted access location not accessible by the general public.
- Only personnel who are trained on the precautions for the restricted access location can be granted entry to the area.
- Install the product so users and the audience cannot enter the restricted area at eye level.
- ELECTRICAL and BURN HAZARD! Use caution when accessing internal components.
- High leakage current present when connected to IT power systems.
- FIRE AND SHOCK HAZARD! Use only the attachments, accessories, tools, and replacement parts specified by Christie.
- Do not install or operate the projector in any position that does not meet the stated product specifications for alignment and orientation.
- Do not look directly into the lens when the light source is on. The extremely high brightness can cause permanent eye damage.
- UV EXPOSURE! For protection from harmful radiation, keep all product housings intact during operation.
- Protective safety gear and goggles are recommended when servicing.

## AC power precautions

Read all safety and warning guidelines before connecting to AC power.

If you cannot insert the plug into the existing outlet, contact an electrician to have the outlet replaced.



**Warning!** If not avoided, the following could result in death or serious injury.

- SHOCK HAZARD! Only use the AC power cord provided with the product or recommended by Christie.
- FIRE AND SHOCK HAZARD! Do not attempt operation unless the power cord, power socket, and power plug meet the appropriate local rating standards.
- SHOCK HAZARD! Do not attempt operation if the AC supply is not within the specified voltage and current, as specified on the license label.
- SHOCK HAZARD! The optional UPS power cord must be inserted into an outlet with grounding.
- SHOCK HAZARD! Disconnect the product from AC before installing, moving, servicing, cleaning, removing components, or opening any enclosure.
- SHOCK HAZARD! A dedicated, protected ground or earth wire must be installed on the product by Christie qualified technicians or electricians before it can be connected to power.
- TRIP OR FIRE HAZARD! Position all cables where they cannot contact hot surfaces, be pulled, be tripped over, or damaged by persons walking on or objects rolling over the cables.
- FIRE OR SHOCK HAZARD! Do not overload power outlets and extension cords.
- Install the product near an easily accessible AC receptacle.



**Caution!** If not avoided, the following could result in minor or moderate injury.

- Only Christie qualified technicians are permitted to open product enclosures.
- FIRE HAZARD! Do not use a power cord, harness, or cable that appears damaged.
- FIRE OR SHOCK HAZARD! Do not overload power outlets and extension cords.
- SHOCK HAZARD! Power supply uses double pole/neutral fusing.

## Lamp precautions

Before opening the lamp door or handling the lamp, make sure that everyone within the vicinity of the projector is wearing the required protective clothing.



**Warning!** If not avoided, the following could result in death or serious injury.

- EXPLOSION HAZARD! Always wear protective safety clothing (gloves, jacket, face shield) approved by the manufacturer whenever the lamp door is open or when handling the lamp. Any local or federal specifications take precedence over Christie's protective clothing recommendations.
- Do not open the lamp door while the lamp is on.
- EXPLOSION HAZARD! Allow sufficient time for the lamp to cool down before powering down the product, disconnecting it from AC, and opening the lamp door.
- EXPLOSION HAZARD! Lamps and bare bulbs, even when packaged, may explode if dropped or mishandled.

## Light intensity hazard distance

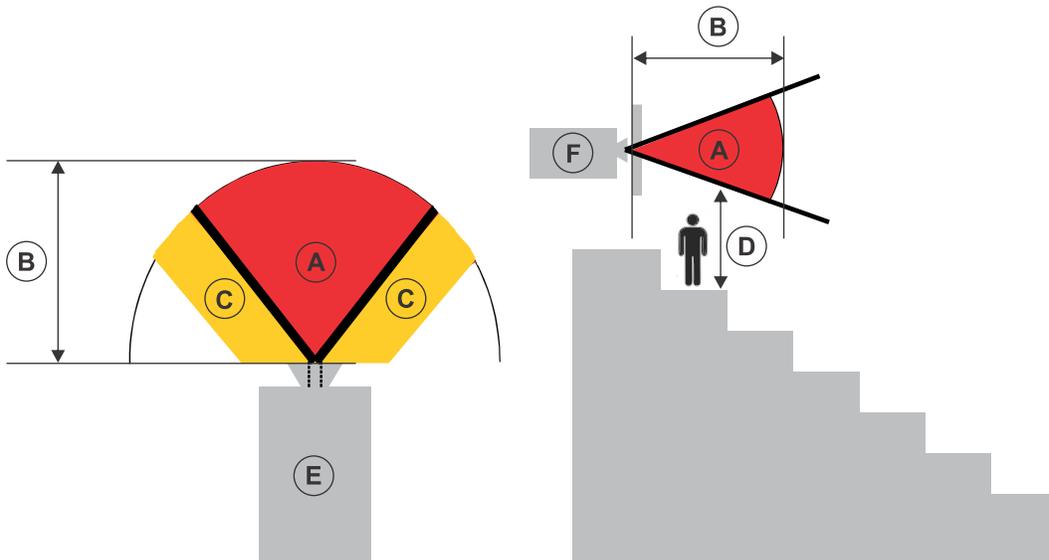
This projector has been classified as Risk Group 3 as per the IEC 62471-5:2015 standard due to possible hazardous optical and thermal radiation being emitted.



**Warning!** If not avoided, the following could result in serious injury.

- PERMANENT/TEMPORARY BLINDNESS HAZARD! No direct exposure to the beam must be permitted.
- PERMANENT/TEMPORARY BLINDNESS HAZARD! Operators must control access to the beam within the hazard distance or install the product at the height that prevents exposure of spectators' eyes within the hazard distance. The hazard zone must be no lower than 2.5 meters/8.2 feet (US installations) or 2.0 meters/6.6 feet (global installations) above any surface upon which any persons are permitted to stand and the horizontal clearance to the hazard zone must be a minimum 1.0 meters.
- EXTREME BRIGHTNESS! Do not place reflective objects in the product light path.

The following show the zones for ocular and skin hazard distances.

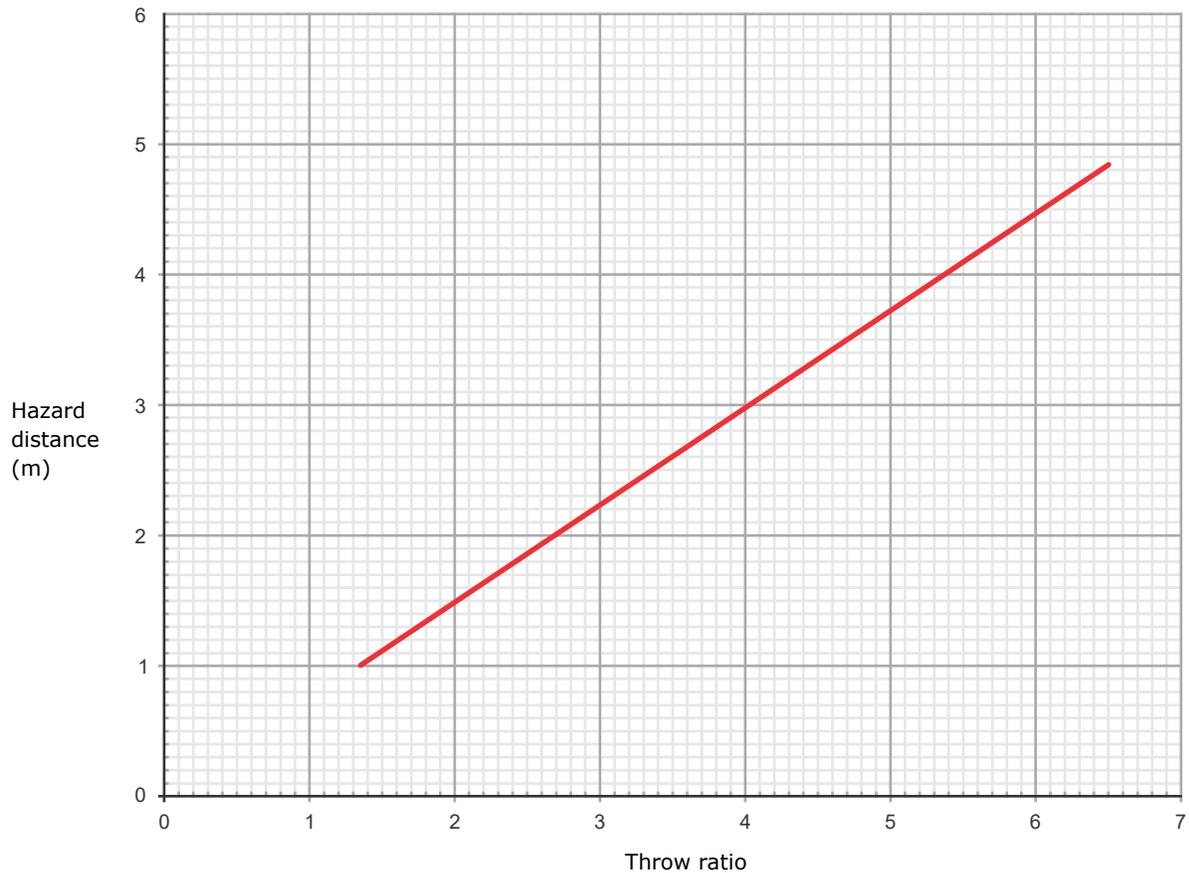


- A—Hazard zone. The region of space where the projection light from the projector is above emission limits for Risk Group 2. The light intensity may cause eye damage after a momentary or brief exposure (before a person can avert their eyes away from the light source). The light may cause skin burns to occur.
- B—Hazard distance. Operators must control access to the beam within the hazard distance or install the product preventing potential exposure of the spectators' eyes from being in the hazard distance.
- C—No access zone. Horizontal clearance of the no access zone must be a minimum of 1.0 meters (3.3 feet).
- D—Vertical distance to hazard zone. The hazard zone must be no lower than 2.5 meters/8.2 feet (US installations) or 2.0 meters/6.6 feet (global installations) above any surface upon which any persons are permitted to stand.  
If the vertical distance to hazard zone requirement (Zone D) is satisfied, the horizontal clearance distance (Zone C) is not needed.
- E—Represents the top view of the projector.

- F—Represents the side view of the projector.

Projection lens	Part number	Hazard distance (m)	Category
1.05:1 DLP CINE zoom	108-319104-XX	N/A	RG2
1.2-1.75:1 DLP CINE zoom	108-350109-XX	See hazard distance graph below	RG3
1.39-1.9:1 DLP CINE zoom	108-327103-XX		
1.5-2.2:1 DLP CINE zoom	108-329105-XX		
1.75-2.4:1 DLP CINE zoom	108-321107-XX		
1.9-3.0:1 DLP CINE zoom	108-328104-XX		
2.4-3.9:1 DLP CINE zoom	108-322108-XX		
3.9-6.5:1 DLP CINE zoom	108-323109-XX		

**CP2415-Xe hazard distances**



## Product labels

Learn about the labels that may be used on the product. Labels on your product may be yellow or black and white.

### General hazards

Hazard warnings also apply to accessories once they are installed in a Christie product connected to power.

Fire and Shock Hazard	
	<p>To prevent fire or shock hazards, do not expose this product to rain or moisture.</p> <p>Do not alter the power plug, overload the power outlet, or use it with extension cords.</p> <p>Do not remove the product enclosure.</p> <p>Only Christie qualified technicians are authorized to service the product.</p>
Electrical Hazard	
	<p>Risk of electric shock.</p> <p>Do not remove the product enclosure.</p> <p>Only Christie qualified technicians are authorized to service the product.</p>



**Warning!** If not avoided, the following could result in death or serious injury.



Electric shock hazard. To avoid personal injury, disconnect all power sources before performing maintenance or service.



Electrocution hazard. To avoid personal injury, always disconnect all power sources before performing maintenance or service procedures.



Explosive material hazard. To avoid personal injury, disconnect all power sources before performing maintenance or service, and wear Christie-approved protective clothing.



Optical radiation hazard. To avoid personal injury, never look directly at the light source.



Voltage hazard. To avoid personal injury, always disconnect all power sources before performing maintenance or service procedures.



**Caution!** If not avoided, the following could result in minor or moderate injury.



Hot surface hazard. To avoid personal injury, allow the product to cool for the recommended cool down time before touching or handling for maintenance or service.



Burn hazard. To avoid personal injury, allow the product to cool for the recommended cool down time before handling for maintenance or service.



Moving parts hazard. To avoid personal injury, keep hands clear and loose clothing tied back.



Moving fan blades. To avoid personal injury, keep hands clear and loose clothing tied back. Always disconnect all power sources before performing maintenance or service procedures.



**Notice.** If not avoided, the following could result in property damage.



General hazard.



Not for household use.

### Mandatory action



**Caution!** If not avoided, the following could result in minor or moderate injury.



Consult the service manual.



SHOCK HAZARD! Disconnect all power sources before performing maintenance or service procedures.

### Electrical labels



Indicates the presence of a protective earth ground.



Indicates the presence of an earth ground.



## Key features

Understand the important features of the projector.

- 2K, Series 4 DLP Cinema® technology
- Digital Cinema Initiative (DCI) compliant
- 3D ready
- Standard support for HDCP and SNMP
- Split power operation for use with UPS
- Local control using an optional touch panel controller (TPC)
- Full access from anywhere through a web-based graphical user interface
- One-piece compact design for flexible mounting and installation
- Rear access for quick lamp changes
- New Intelligent Lens System™ (ILS), custom designed for cinema, for reliable motorized lens operation in its standard configuration

## List of components

Verify all components were received with the projector.

- High security key to open the projector service access door
- Main Input Line Cord kit (P/N: 000-201858-XX)

Optional accessories such as an UPS inlet power cord or touch panel are also available.

## Accessories

Learn about the accessories (sold separately) available for the projector.

### Lenses

Projection lens	Part number
1.05:1 DLP CINE zoom	108-319104-XX
1.2-1.75:1 DLP CINE zoom	108-350109-XX
1.39-1.9:1 DLP CINE zoom	108-327103-XX
1.5-2.2:1 DLP CINE zoom	108-329105-XX
1.75-2.4:1 DLP CINE zoom	108-321107-XX
1.9-3.0:1 DLP CINE zoom	108-328104-XX
2.4-3.9:1 DLP CINE zoom	108-322108-XX
3.9-6.5:1 DLP CINE zoom	108-323109-XX

### Lamps

Description	Part number
CDXL-14M	003-003066-XX
CDXL-16M	003-003900-XX
CDXL-18SD	003-002742-XX
CDXL-20SD	003-001976-XX
CDXL-23S	003-004769-XX

### Filters and coolant

Description	Part number
Card cage air filter—Washable	003-004655-XX
Radiator filter—Washable	003-006428-XX
Propylene Glycol 740 coolant	003-005179-XX

### Other accessories

Description	Part number
Protective Clothing Safety kit—includes Kevlar gloves, flak jacket, face shield	598900-095
Rack stand	108-416102-XX
S2K Foot Support Bracket kit	003-108907-XX
Locking Feet Bracket Set kit	003-006954-XX
Touch panel control	163-151108-XX
Exhaust duct	119-103105-XX

## CineMaster cinema calculator tool

The CineMaster cinema calculator tool helps you calculate and configure the optimal cinema set up. Use this tool to help determine the right projector, lens, and lamp based on the unique needs of your installation, as well as your preferred projector type, screen configuration, and brightness requirements.

<https://cinemaster.christiedigital.com/>

## Contact your dealer

Record the information about your installation and keep this information with your records to assist with any servicing of your product. If you encounter a problem, contact your dealer.

Purchase record
Dealer:
Dealer or Christie Sales/Service contact phone number:
Serial number: The serial number can be found on the license label.
Purchase date:
Installation date:

## Technical support

Technical support for Christie Cinema products is available at:

- [Support.cinema@christiedigital.com](mailto:Support.cinema@christiedigital.com)
- +1-877-334-4267
- Christie Professional Services: +1-800-550-3061 or [NOC@christiedigital.com](mailto:NOC@christiedigital.com)

# Installation and setup

Learn how to install, connect, and optimize the projector.  
This section provides detailed information on projector setup.

## Site requirements

To safely install and operate the CP2415-Xe projectors, the installation location must meet these minimum requirements.

### Physical operating environment

- Ambient temperature (operating) 10 to 35°C (50 to 95°F)
- Humidity (non-condensing) 10% to 80%
- Operating altitude 0 to 3000 meters (0 to 9843 feet) at 10 to 25°C (50 to 77°F)

### External exhaust ducting

The installation site must provide sufficient external exhaust airflow to make sure adequate cooling of the Xenon arc lamp.

- At 25°C (77°F) ambient or less and below 915 meters (3,000 feet), a minimum of 450 CFM is required.
- Above 25°C (77°F) or above 915 meters (3,000 feet), a minimum of 600 CFM is required.

## Power specifications

Learn the power requirements for the projector.

### Main input

Item	Description
Voltage range	200-240 VAC
Maximum current	16 A
Line frequency	50/60 Hz

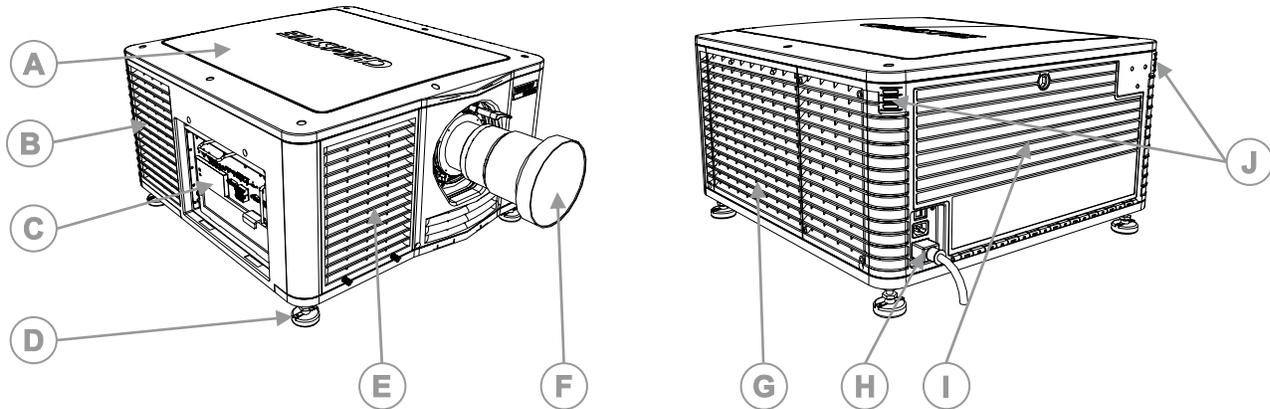
### UPS input

Item	Description
Voltage range	100-240 VAC
Maximum current	4 A

Item	Description
Line frequency	50/60 Hz

## Projector components

Learn about the projector components.



ID	Component	Description
A	Top cover	Provides access to components in the projector.
B	Air intake	Provides cool air to the projector.
C	Communications panel	Provides access to Input connections.
D	Adjustable feet (x4)	Adjust the tilt of the projector.
E	Air filter cover and air filter	Provides access to the air filter, which removes particles from the intake air before it circulates in the front compartment to cool the main electronics.
F	Projection lens	A variety of lenses can be used with this cinema projector.
G	Service access door	The service access door provides access to components in the projector.
H	Power cord and AC receptacle	Provides power to the projector.
I	Rear cover	Provides access to internal components of the projector.
J	Tail light board	Provides information about the status of the projector.

## Preparing the installation site

Make sure the installation area is ready for the components.

1. Clear the installation area.
2. Place each component near its installation location.

## Required tools and components

The following tools and components are required for installation.

- 12" screwdrivers: Phillips #2 (magnetic) and flat
- Wrenches: 19 mm and 7/8"
- Allen keys: 5 mm and other assorted (metric)
- Heat extractor—Required when the projector is operating at 25°C (77°F) at an elevation of 914 meters (3,000 feet) or less.
- Lamp
- Protective safety clothing approved by Christie
- Lens cleaning tissue and solution

## Lifting and positioning the projector

Safely lift and position the projector in the location where it will be used.



**Warning!** If not avoided, the following could result in death or serious injury.

- Do not install or operate the projector in any position that does not meet the stated product specifications for alignment and orientation.

Position the projector so it is centered and parallel with the theater screen.

If space is limited, aim the projector slightly off-center and use lens offset to center the image on the screen.

## Adjusting the projector tilt and level

Adjust the projector tilt to fill the maximum amount of screen while minimizing keystone. Lens offset can be used to center the image in the center of the screen.



**Warning!** If not avoided, the following could result in death or serious injury.

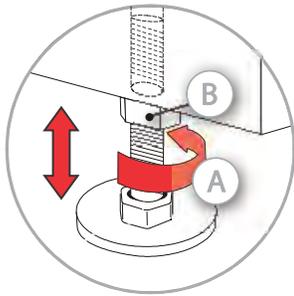
- TIP HAZARD! Always use the rear safety strap to prevent the cinema projector from tipping.
- TIP HAZARD! Do not over-extend the cinema projector's feet. make sure several threads from each foot remain engaged in the cinema projector's baseplate.



**Notice.** If not avoided, the following could result in property damage.

- Do not tilt the product more than  $\pm 15$  degrees.

1. Secure a safety lifting strap rated to handle the projector weight at the rear of the projector.
2. Hoist up the projector.
3. Center the lens parallel with the screen to make sure optimum lens performance with minimal offset.  
If this position is not possible, Christie recommends relying on offset rather than extra tilt.
4. Use a protractor to measure the degree of screen tilt and extend or retract the projector feet to match this angle.
5. To adjust the vertical or horizontal position of the projector, extend or retract the adjustable feet on the bottom of the projector (A in the image below).



- Once the required adjustment is made, tighten the lock nut against the bottom of the projector (B in the image in step 5).

## Optionally connecting the exhaust duct

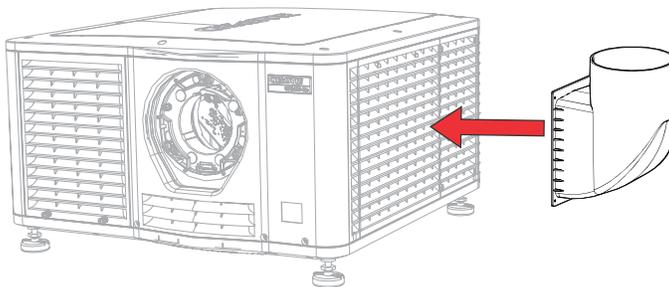
Connect the exhaust duct to provide ventilation for the projector.

Install the optional duct (P/N: 119-103105-XX) if an air volume of 9,000 BTU (per hour) cannot be ventilated from the room in which the projector is installed.

When using an external duct, the duct must include a heat extractor and blower that maintains a minimum of 450 cubic feet per minute (CFM) at the projector exhaust opening when the projector is operating at 25°C (77°F) at an elevation of 914 meters (3,000 feet) or less.

If insufficient airflow exists, add an extractor or a booster. Do not mount the extractor on the projector as this may introduce vibration into the image.

- Align the duct with mounting holes on the side of the projector.



- Hold the duct in position and secure it to the projector with four screws.

## Installing the lens

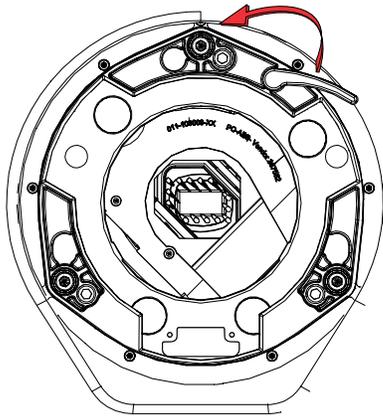
The lens seals the projection head, preventing contaminants from entering the main electronics area.



**Caution!** If not avoided, the following could result in minor or moderate injury.

- Do not operate the product without a lens installed.
- Always use a lens plug when installing or moving the product. This prevents contaminants from entering the product.

- Turn off the projector and disconnect it from AC power.
- On the front of the projector, move the lens clamp to the open position.

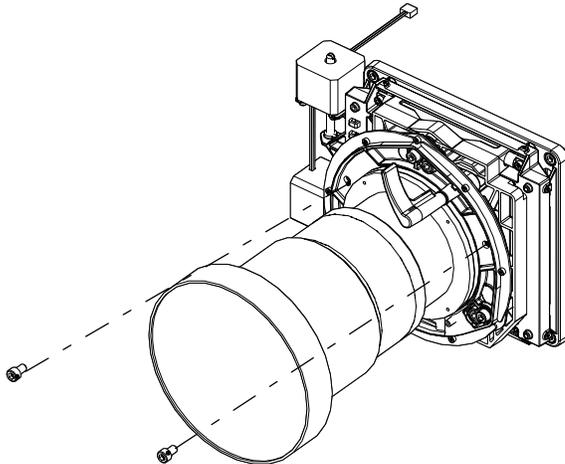


3. Position the lens so the lens retaining ring mounts align with the lens mount.
4. Remove the lens caps from the front and rear of the lens.

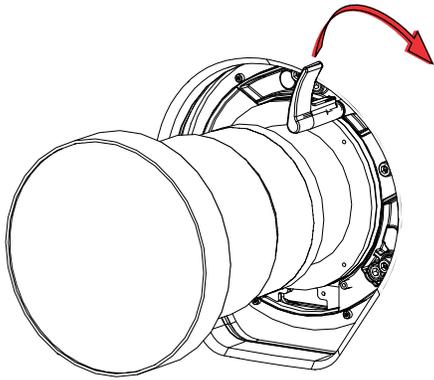


Lens caps must be removed or they can melt and damage the lens.

5. Insert the lens straight into the lens mount opening without turning. Magnets inside the lens mount help position the lens.
6. Insert and tighten the two lens mount screws (P/N: (012-101028-XX) shipped separately with the projector.



7. Lock the lens assembly in place by rotating the lens clamp downward.



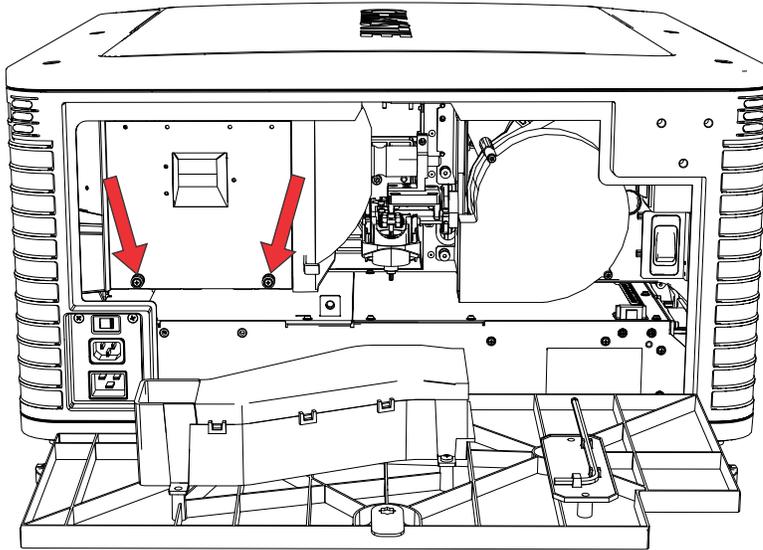
## Installing the lamp

Complete the following procedure to install the lamp.

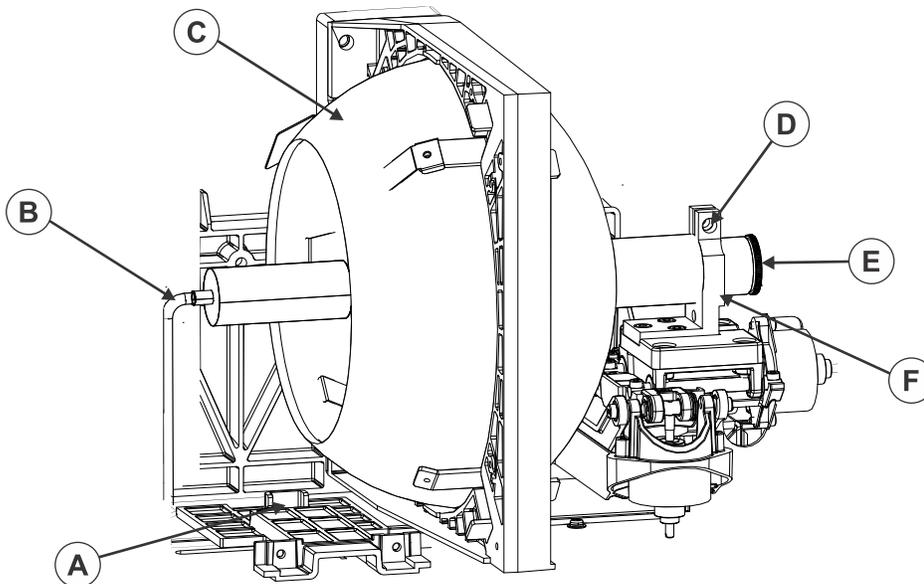


**Warning!** If not avoided, the following could result in death or serious injury.

- This procedure must be performed by Christie qualified technicians.
  - **EXPLOSION HAZARD!** Always wear protective safety clothing (gloves, jacket, face shield) approved by the manufacturer whenever the lamp door is open or when handling the lamp. Any local or federal specifications take precedence over Christie's protective clothing recommendations.
  - Do not open the lamp door while the lamp is on.
  - **EXPLOSION HAZARD!** Allow sufficient time for the lamp to cool down before powering down the product, disconnecting it from AC, and opening the lamp door.
  - **EXPLOSION HAZARD!** Lamps and bare bulbs, even when packaged, may explode if dropped or mishandled.
1. Turn off the light source and cool the projector for at least 15 minutes.
  2. Turn off the projector and disconnect it from AC power.
  3. Put on your protective clothing, face shield, and gloves.
  4. Insert the key in the lamp door lock, turn the key, and open the lamp door.
  5. Loosen the two screws and open the lamp access door.



- Loosen the cathode screw (D in the image below) with the 5 mm hex key attached to the lamp door.



A	Anode terminal
B	Anode wire
C	Reflector
D	Cathode screw
E	Cathode nut
F	Cathode clamp

- Remove the anode screw from the anode terminal (A in the image in image in step 5).
- Install the lamp:



**Warning!** If not avoided, the following could result in death or serious injury.

- EXPLOSION HAZARD! Handle a lamp by the cathode and anode end shafts only. Do not handle the lamp by the glass.
- EXPLOSION HAZARD! Do not over-tighten the lamp.
- EXPLOSION HAZARD! Do not stress the glass of a lamp or bare bulb in any way.



**Caution!** If not avoided, the following could result in minor or moderate injury.

- Incorrect lamp power supply and igniter connections can damage the product.

- a) Remove the tape from the ends of the protective case.
  - b) Remove the plastic packing material from the lamp.
  - c) Remove the cathode nut from the lamp before removing it from the case.
  - d) Hold the anode end of the new lamp in your left hand and angle it up through the hole in the back of the reflector assembly.
  - e) Insert your right index and middle finger through the back of the reflector and guide the lamp onto the cathode clamp. Be careful not to hit the lamp against the reflector.
  - f) Hand-tighten the cathode nut (E in the image in step 5).  
Make sure the smooth portion of the nut is against the cathode clamp.
  - g) Tighten the cathode screw (D in the image in step 5) with a hex key.
  - h) On the anode wire (B in the image in step 5), align the ring terminal with the mounting position on the anode terminal (A in the image in step 5), making sure the crimped side of the wire is facing out.
  - i) Fasten in place with the anode screw removed in step 6.
  - j) Check all leads.  
Make sure the anode (+) lead does not touch any projector metal, such as the reflector or firewall.
9. Close the lamp access door and tighten the two thumbscrews.
  10. Close and lock the rear access door.  
Make sure the hex key is placed back into its holder before closing the rear access door.

## Installing the Integrated Media Block (IMB)

Learn how to install the Integrated Media Block (IMB).

1. Release and remove the marriage ring.  
The marriage ring is located on the front face of the card cage.
  - a) Locate the plunger under the security cover on the top-left of the card cage.
  - b) Pull out the plunger to release the lock.
  - c) Remove the marriage ring.
2. Install the IMB.  
For information on how to install the IMB, refer to the manufacturer's product documentation.
3. Re-install the marriage ring.

# Connecting power

Connect the projector to the power source.



**Warning!** If not avoided, the following could result in death or serious injury.

- SHOCK HAZARD! A dedicated, protected ground or earth wire must be installed on the product by Christie qualified technicians or electricians before it can be connected to power.
- SHOCK HAZARD! Only use the AC power cord provided with the product or recommended by Christie.
- FIRE AND SHOCK HAZARD! Do not attempt operation unless the power cord, power socket, and power plug meet the appropriate local rating standards.
- SHOCK HAZARD! The optional UPS power cord must be inserted into an outlet with grounding.
- SHOCK HAZARD! Do not attempt operation if the AC supply is not within the specified voltage and current, as specified on the license label.
- SHOCK HAZARD! Disconnect the product from AC before installing, moving, servicing, cleaning, removing components, or opening any enclosure.
- The appliance coupler and main power supply plug must be easily accessible for disconnecting the product from the power source.



**Caution!** If not avoided, the following could result in minor or moderate injury.

- Only Christie qualified technicians are permitted to open product enclosures.
- Install the product near an easily accessible AC receptacle.
- For products containing surge suppressors, you must adhere to the installation and power requirements.

## Installation and power requirements

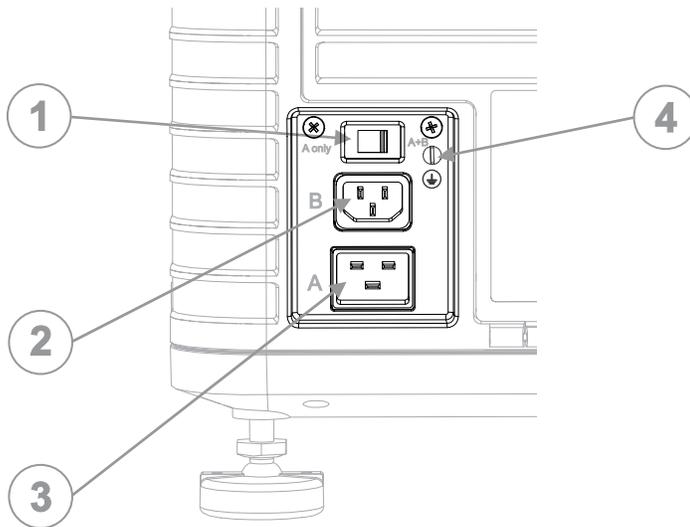
The protected earth wire must be green/yellow 12 AWG minimum.

Use a 20A branch circuit breaker for Input A or 200-240 V main inlet.

The dedicated protected earth wire can only be installed by a Christie accredited service technician or an electrician.

In all countries with IT power distribution systems, a dedicated protected earth wire must be installed on the projector before it can be connected to power. To connect the projector to an IT power distribution system, the building ground must be connected to the external ground lug next to the AC receptacle on the rear corner of the projector.

1. Turn off the projector and disconnect it from AC power.
2. Connect one end of the projector power cord to the AC receptacle on the lower-left rear corner of the projector and then connect the other end of the power cord to an AC receptacle.
3. If using an Uninterrupted Power Supply (UPS) to power the main electronics, move the AC switch to A+B mode and connect the power cord provided with the UPS to the B outlet.



- 1 AC switch
- 2 100-240 V secondary inlet
- 3 200-240 V main inlet
- 4 Grounding lug nut

## Turning on the projector for the first time

Learn how to turn on the projector for the first time. Use this procedure to ensure successful communication with input devices and to align the lamp.

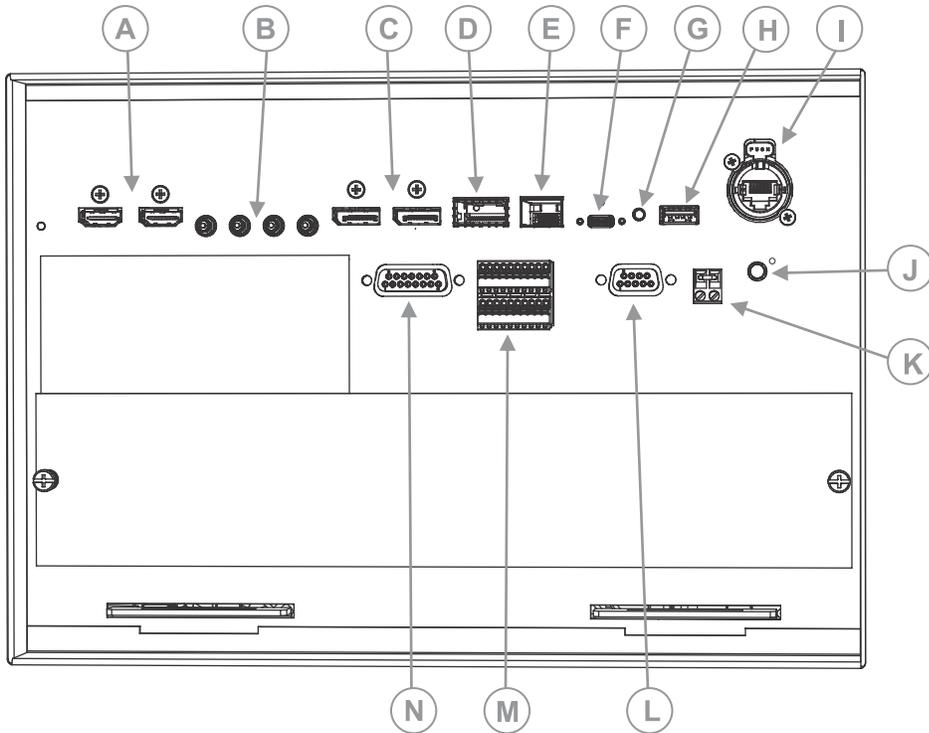
1. Assign the projector a unique IP address:
  - a) In the left navigation menu, select **Service Setup > Network Settings**.
  - b) On the Ethernet tab, either **Obtain the IP address automatically** or enter the IP address for the projector in the **IP Address** field.
2. Enter the lamp information.
  - a) In the left navigation menu, select **Lamp Settings > Lamp History**.
  - b) Select **+ New Lamp**.
  - c) Complete the fields in the **New Lamp** dialog.
  - d) Select **Add**.
3. Select and hold the Power button to turn on the projector.
4. Complete a LampLOC™ alignment on the new lamp.
  - a) In the left navigation menu, select **Lamp Settings > LampLOC**.
  - b) Select **Auto Align**.

## Disposing of the product packaging

Once the product has been installed and set up, Christie recommends reusing or recycling the product packaging according to your local regulations.

# Video Input panel

The Video Input panel, located on the projector side input panel (operator side), has a variety of ports that can supply alternative video content to the projector.



ID	Port	Description
A	HDMI input 1 and HDMI input 2	Type A connector Accepts digital video data from HDMI v2.0 input supporting EDID 1.3 with HDCP v1.4 and 2.2 support.
B	SDI input 1, SDI input 2, SDI input 3, and SDI input 4	75 ohm Micro-BNC Connector Multi-Rate SDI in accordance with SMPTE ST 259 (270 Mb/s), ST 292-1 (1.5 Gb/s), ST 424 (3.0 Gb/s), ST 2081-1 (6 Gb/s) and ST 2082-1 (12 Gb/s)
C	DisplayPort (DP1 and DP2)	Accepts digital video data from DisplayPort 1.2 input supporting EDID 1.3 with HDCP 1.3 support.
D	Christie Link port	Not used.
E	Software-Defined Video over Ethernet (SDVoE) port	Not used.
F	USB-C port	Connects the projector touch panel.

ID	Port	Description
G	Recessed button	Select the button to transition the projector from Standby mode to Power ON mode.
H	USB port	Connects to external memory device for import and export of projector software, configuration files, and status information.
I	Management port	Connects to the local network and can send CineLife+ serial commands and used for Remote UI access.
J	Marriage button	Used during the Integrated Media Block (IMB) marriage setup process. <ul style="list-style-type: none"> <li>• Select and hold the button for 5 seconds to display the IP address and status information.</li> <li>• Select and hold the button for 30 seconds to reset the IP address to the default address.</li> </ul> The marriage status LED indicator is located to the right of the Marriage button. In full power mode, a green LED indicates the projector is properly married and encrypted content can be displayed. A red LED indicates marriage is broken and encrypted content cannot be displayed.
K	Fire alarm connection	Connects to the Theater Fire Management system for automatic shut down in emergency situations.
L	RS232 communication port	Not used.
M	GPIO port	Connects the projector to external automation or automation devices.
N	3D sync connector	Connects the projector to 3D devices.

## HDMI video source

For the projector to accept digital video data from HDMI sources, plug the HDMI source directly into the Video Input panel.

The input configurations listed below are supported.

Input configuration	Description
Single-input	Accepts connection of one HDMI cable. Supports both 2D and 3D frame-packed, top and bottom. In this configuration, the HDMI input supplies the entire video raster.
Dual-input	Enables connection of two HDMI cables in support of 3D LR, where HDMI Input 1 = left eye and HDMI Input 2 = right eye.

## HDMI video formats

The following image formats are supported by the two HDMI inputs.



Fractional 1/1.001 frame rates, 1920 x 1080 (HD), and 3840 x 2160 (UHD) formats are also supported.

### Single-input 2D 2K and 4K HDMI 2.0 image formats

Each HDMI input supports the following single-input (one cable) 2D 2K and 4K HDMI 2.0 image formats.

	Format	Cables	Frame rate (Hz)	Sampling	Bit-depth
2K	2048x1080	1	24, 25, 30, 50, 60, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12 bpc
4K	4096x2160	1	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12 bpc
	4096x2160	1	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8 bpc
	4096x2160	1	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12 bpc

### Single-input 2D HD HDMI 2.0 image formats

Each HDMI input supports the following single-input (one cable) 2D HD HDMI 2.0 image formats.

	Format	Cables	Frame rate (Hz)	Sampling	Bit-depth	Notes
HD	1280x720	1	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12 bpc	-
	1920x1080i	1	25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12 bpc	2048x1080 interlaced (50/60 Hz field rate)

### Single-input 2D HDMI 2.0 PC image formats

Each HDMI input supports the following single-input 2D HDMI 2.0 PC image formats.

	Format	Cables	Frame rate (Hz)	Sampling	Bit-depth
PC	1280x800	1	60	RGB	8 bpc
	1280x960	1	60	RGB	8 bpc
	1280x1024	1	60	RGB	8 bpc
	1440x900	1	60	RGB	8 bpc
	1680x1050	1	60	RGB	8 bpc
	1600x1200	1	60	RGB	8 bpc
	2048x1200	1	60	RGB	8 bpc

### Single-input 3D 2K/HD HDMI 2.0 image formats

Each HDMI input supports the following single-input (one cable) 3D 2K/HD HDMI 2.0 image formats.

	Format	Cables	Frame rate (Hz)	Sampling	Bit-depth	Notes
3D	1280x720	1	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12 bpc	Frame-packing/ top-and-bottom
	2048x1080	1	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12 bpc	Frame-packing

### Dual-input 3D 2K/4K HDMI 2.0 image formats

The following dual-input 3D 2K/4K HDMI 2.0 image formats are supported, where HDMI Input 1 = left eye and HDMI Input 2 = right eye. Frame rate is expressed per eye in the following table.

	Format	Cables	Frame rate (Hz)	Sampling	Bit-depth
2K	2048x1080	2	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12 bpc
4K	4096x2160	2	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12 bpc
	4096x2160	2	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8 bpc
	4096x2160	2	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12 bpc

## SDI video source

For the projector to accept digital video data from 12G, 6G, 3G, or HD/SD SDI video source, plug the source directly into the Video Input panel.

The input configurations listed below are supported.

Input configuration	Description
Single-link	Accepts connection of 12G, 6G, 3G, and HD/SD SDI input standards.
Dual-link	Accepts connection of dual-link 6G, 3G, and HD SDI input standards.
Quad-link	Accepts connection of quad-link 6G or 3G SDI input standards.

## SDI video formats

Each of the SDI inputs supports the following single-Link 2D SD and HD image formats, single-link 2D HD and UHD/4K image formats, dual-link 2D SDI image formats, and quad-link 2D image formats.



Fractional 1/1.001 frame rates, 1920 x 1080 (HD), and 3840 x 2160 (UHD) formats are also supported.

### Single-link 2D: SD, 720p and 1080i image formats

The following SDI inputs support the following single-link (one cable) 2D SD, 720p, and 1080i image formats.

	Format	Cables	Frame rate (Hz)	Sampling	Bit-depth	Notes
SD	720x480	1	30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10 bpc	SD interlaced component at 270 Mb/s (ST 259 level C) interlaced (60 Hz field rate)
	720x576	1	25	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10 bpc	SD interlaced component at 270 Mb/s (ST 259 level C) interlaced (50 Hz field rate)
HD	1280x720	1	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10 bpc	HD 720p Y'C <sub>B</sub> C <sub>R</sub> component at 1.5 Gb/s (ST 292-1)
	1280x720	1	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:4:4(4)	10 bpc	HD 720p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 3.0 Gb/s (ST 425-1) level A
2K	2048x1080	1	25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10 bpc	HD 1080i component at 1.5 Gb/s (ST 292-1) interlaced (50/60 Hz field rate)

### Single-link 2D: 2K and 4K HD/UHD

The following SDI inputs support the following single-link (one cable) 2D HD and UHD/4K image formats.

	Format	Cables	Frame rate (Hz)	Sampling	Bit-depth	Notes
2K	2048X1080	1	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10 bpc	HD 1080p component at 1.5 Gb/s (ST 292-1)
	2048X1080	1	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10 bpc	HD 1080p component at

Format	Cables	Frame rate (Hz)	Sampling	Bit-depth	Notes
					3.0 Gb/s (ST 425-1) level A
2048X1080	1	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	12 bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 3.0 Gb/s (ST 425-1) level A
2048X1080	1	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2(4)	12 bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> component at 3.0 Gb/s (ST 425-1) level A
2048X1080	1	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10 bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 6.0 Gb/s (ST 2081-10) mode 2 structure II
2048X1080	1	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12 bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 6.0 Gb/s (ST 2081-10) mode 2 structure III
4K	4096X2160	1	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	2160p Y'C <sub>B</sub> C <sub>R</sub> component at 6.0 Gb/s (ST 2081-10) mode 1 structure 1
	4096X2160	1	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	2160p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 12.0 Gb/s (ST 2082-10) mode 1 structure 2
	4096X2160	1	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	2160p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 12.0 Gb/s (ST 2082-10) mode 1 structure 3

Format	Cables	Frame rate (Hz)	Sampling	Bit-depth	Notes
4096X2160	1	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2(4)	12 bpc	2160p Y'C <sub>B</sub> C <sub>R</sub> component at 12.0 Gb/s (ST 2082-10) mode 1 structure 4

**Dual-link 2D: 2K and 4K HD/UHD**

The following dual-link (two cable) 2D HD and UHD/4K image formats are supported. Dual-link SDI is a fixed configuration.

- SDI 1 = link 1 of input 1
- SDI 2 = link 2 of input 1
- SDI 3 = link 1 of input 2
- SDI 4 = link 2 of input 2



Fractional 1/1.001 frame rates, 1920x1080, and 3840x2160 (UHD) formats are also supported.

Format	Cables	Frame rate (Hz)	Sampling	Bit-depth	Notes	
2K	2048x1080	2	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10 bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at dual-link 3 Gb/s (ST 425-3) level A structure II
	2048x1080	2	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12 bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at dual-link 3 Gb/s (ST 425-3) level A structure III
	2048x1080	2	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	12 bpc	Y'C <sub>B</sub> C <sub>R</sub> component at dual-link 3 Gb/s (ST 425-3) level A structure IV
	2048x1080	2	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2:4	12 bpc	Y'C <sub>B</sub> C <sub>R</sub> component at dual-link 3 Gb/s (ST 425-3) level A structure IV
4K	4096X2160	2	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10 bpc	Y'C <sub>B</sub> C <sub>R</sub> component at

Format	Cables	Frame rate (Hz)	Sampling	Bit-depth	Notes
					dual-link 6 Gb/s (ST 2081-11) mode 1
4096X2160	2	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10 bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at dual-link 6 Gb/s (ST 2081-11) mode 1
4096X2160	2	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12 bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at dual-link 6 Gb/s (ST 2081-11) mode 1
4096X2160	2	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	12 bpc	Y'C <sub>B</sub> C <sub>R</sub> component at dual-link 6 Gb/s (ST 2081-11) mode 1
4096X2160	2	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2:4	12 bpc	Y'C <sub>B</sub> C <sub>R</sub> component at dual-link 6 Gb/s (ST 2081-11) mode 1

### Quad-link 2D: 4K UHD

The following quad-link (four cable) 2D image formats are supported. The quad-link SDI is a fixed configuration.

- SDI 1 = link 1
- SDI 2 = link 2
- SDI 3 = link 3
- SDI 4 = link 4



Fractional 1/1.001 frame rates and 3840x2160 (UHD) formats are also supported.

Format	Cables	Frame rate (Hz)	Sampling	Bit-depth	Notes
4K	4	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10 bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at quad-link 3 Gb/s (ST

Format	Cables	Frame rate (Hz)	Sampling	Bit-depth	Notes
					425-5) level A structure 2
4096x2160	4	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12 bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at quad-link 3 Gb/s (ST 425-5) level A structure 3
4096x2160	4	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2(4)	12 bpc	Y'C <sub>B</sub> C <sub>R</sub> component at quad-link 3 Gb/s (ST 425-5) level A structure 4
4096x2160	4	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	12 bpc	Y'C <sub>B</sub> C <sub>R</sub> component at quad-link 3 Gb/s (ST 425-5) level A structure 4
4096x2160	4	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10 bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at quad-link 6 Gb/s (ST 2081-12) mode 2 structure III
4096x2160	4	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12 bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at quad-link 6 Gb/s (ST 2081-12) mode 2 structure III
4096x2160	4	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2:4	12 bpc	Y'C <sub>B</sub> C <sub>R</sub> component at quad-link 6 Gb/s (ST 2081-12) mode 2 structure IV

## DisplayPort video source

For the projector to accept digital video data, plug the DisplayPort source directly into the Video Input panel.

The input configurations listed below are supported.

Input configuration	Description
Single-input	Enables connection of one DisplayPort cable. Supports both 2D and 3D frame sequential transmission format. In this configuration the DisplayPort input supplies the entire video raster.
Dual-input	Enables connection of two DisplayPort cables. Supports both 2D and 3D frame sequential transmission format.

## DisplayPort video formats

The following image formats are supported by the DisplayPort inputs.



Frame rates also include fractional 1/1.001 frame rates.

### Single-input DisplayPort 1.2 image formats

The following single-input DisplayPort 1.2 image formats are supported on each of the DP 1.2 inputs.

	Format	Cables	Frame rate (Hz)	Sampling	Bit-depth
HD	1280x720	1	24, 25, 30, 50, 60, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10/12bpc
	1920x1080	1	24, 25, 30, 50, 60, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10/12bpc
	2048x1080	1	24, 25, 30, 50, 60, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10/12bpc
4K	3840x2160	1	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc
	4096x2160	1	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc

### Single-input 3D DisplayPort 1.2 image formats

The following single-input 3D DisplayPort image formats are supported in frame sequential transmission format. Frame rate is expressed per eye in the following table.

	Format	Cables	Frame rate (Hz)	Sampling	Bit-depth
HD	1280x720	1	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10/12bpc
	1920x1080	1	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10/12bpc
	2048x1080	1	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10/12bpc
4K	3840x2160	1	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc
	4096x2160	1	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc

### Dual-input 3D DisplayPort 1.2 image formats

The following dual-input 3D DisplayPort 1.2 image formats are supported. Frame rate is expressed per eye in the following table.

	Format	Cables	Frame rate (Hz)	Sampling	Bit-depth
HD	1280x720	2	24, 25, 30, 50, 60	Y'C'B'C'R/RGB/4:4:4	8/10/12bpc
	1920x1080	2	24, 25, 30, 50, 60	Y'C'B'C'R/RGB/4:4:4	8/10/12bpc
	2048x1080	2	24, 25, 30, 50, 60	Y'C'B'C'R/RGB/4:4:4	8/10/12bpc
4K	3840x2160	2	24, 25, 30, 50, 60	Y'C'B'C'R/RGB/4:4:4	8/10bpc
	4096x2160	2	24, 25, 30, 50, 60	Y'C'B'C'R/RGB/4:4:4	8/10bpc

### Single-link DisplayPort PC image formats

The following single-link DisplayPort PC image formats are supported.

	Format	Cables	Frame rate (Hz)	Sampling	Bit-depth
PC	1280x800	1	60	RGB	8bpc
	1280x960	1	60	RGB	8bpc
	1280x1024	1	60	RGB	8bpc
	1440x900	1	60	RGB	8bpc
	1680x1050	1	60	RGB	8bpc
	1600x1200	1	60	RGB	8bpc
	1920x1200	1	60	RGB	8bpc

## Integrated Media Block (IMB) video source

Connect a compatible device to either the S2 or S4 interface of the projector to send digital video data from an Integrated Media Block (IMB) to the projector.

The IMB input configurations listed below are supported.

Input configuration	Description
S2 or S4 IMB	Enables connection of MPEG-2 video formats.
	Enables connection of MPEG-2 MXF interop video formats.
	Enables connection of SMPTE-compatible 2D and 3D video formats

Contact Christie Technical Support to learn which S2 and S4 IMB devices are compatible with Christie projectors.

## Series 2 Integrated Media Block (IMB) video formats

S2 Integrated Media Block (IMB) video format support is determined by the IMB make and model. Refer to the associated IMB documentation to understand which of the following video signals are supported.

All MPEG-2 content is converted in the media block to RGB 4:4:4 8-bit before play out.

### MPEG image formats

Format	Resolution	Max frame rate 2D	Max frame rate 3D	Min frame rate	Bit-depth
VGA	640x480	120.0	120.0	23.0	8-bits
4CIF	704x576	120.0	120.0	23.0	8-bits
525 SD	720x480	120.0	120.0	23.0	8-bits
625 SD	720x568	120.0	120.0	23.0	8-bits
XGA	1024x768	79.6	79.6	23.0	8-bits
720p HD	1280x720	68.0	68.0	23.0	8-bits
4VGA	1280x960	51.0	51.0	23.0	8-bits
SXGA	1280x1024	47.8	N/A	23.0	8-bits
525 16SIF	1408x960	46.3	N/A	23.0	8-bits
16CIF	1408x1152	38.6	N/A	23.0	8-bits
4SVGA	1600x1200	32.6	N/A	23.0	8-bits
1080 HD	2048x1080	30.0	N/A	23.0	8-bits

### MPEG-2 MXF interop 2D image formats

Format	Resolution	Max frame rate 2D	Max frame rate 3D	Min frame rate	Bit-depth
VGA	640x480	120.0	120.0	23.0	8-bits
525 4SIF	704x480	120.0	120.0	23.0	8-bits
525 SD	720x480	120.0	120.0	23.0	8-bits
4CIF	704x576	120.0	120.0	23.0	8-bits
625 SD	800x600	120.0	120.0	23.0	8-bits
SVGA	1024x768	79.6	79.6	23.0	8-bits
XGA	1024x768	79.6	79.6	23.0	8-bits
720p HD	1280x720	68.0	68.0	23.0	8-bits
4VGA	1280x960	51.0	51.0	23.0	8-bits
SXGA	1280x1024	47.8	N/A	23.0	8-bits
525 16SIF	1408x960	46.3	N/A	23.0	8-bits

Format	Resolution	Max frame rate 2D	Max frame rate 3D	Min frame rate	Bit-depth
16CIF	1408x1152	38.6	N/A	23.0	8-bits
4SVGA	1600x1200	32.6	N/A	23.0	8-bits
1080 HD	2048x1080	30.0	N/A	23.0	8-bits

**SMPTTE-compatible 2D (JPEG 2000) cinema image formats**

Specification	Resolution	Frame rate	Color format	Bit-depth
SMPTTE 428-1-2019	2048x1080	24.0	X'Y'Z' (4:4:4)	12-bits
SMPTTE 428-11-2013	2048x1080	25.0	X'Y'Z' (4:4:4)	12-bits
SMPTTE 428-11-2013	2048x1080	30.0	X'Y'Z' (4:4:4)	12-bits
SMPTTE 428-1-2019	2048x1080	48.0	X'Y'Z' (4:4:4)	12-bits
SMPTTE 428-11-2013	2048x1080	50.0	X'Y'Z' (4:4:4)	12-bits
SMPTTE 428-11-2013	2048x1080	60.0	X'Y'Z' (4:4:4)	12-bits
SMPTTE 428-1-2019	4096x2160	24.0	X'Y'Z' (4:4:4)	12-bits
SMPTTE 428-11-2013	4096x2160	25.0	X'Y'Z' (4:4:4)	12-bits
SMPTTE 428-11-2013	4096x2160	30.0	X'Y'Z' (4:4:4)	12-bits

**SMPTTE-compatible 3D (JPEG 2000) cinema image formats**

Specification	Resolution	Frame rate (per eye)	Color format	Bit-depth
SMPTTE 428-1-2019	2048x1080	24.0x2	X'Y'Z' (4:4:4)	12-bits
SMPTTE 428-1-2019	2048x1080	48.0x2	X'Y'Z' (4:4:4)	12-bits
SMPTTE 428-11-2013	2048x1080	60.0x2	X'Y'Z' (4:4:4)	12-bits

**Series 4 Integrated Media Block (IMB) video formats**

S4 Integrated Media Block (IMB) video format support is determined by the IMB make and model. Refer to the associated IMB documentation to understand which of the following video signals are supported.

All MPEG-2 content is converted in the media block to RGB 4:4:4 8-bit before play out.

**MPEG image formats**

Format	Resolution	Max frame rate 2D	Max frame rate 3D	Min frame rate	Bit depth
VGA	640x480	120.0	120.0	23.0	8-bits
525 4SIF	704x480	120.0	120.0	23.0	8-bits

Format	Resolution	Max frame rate 2D	Max frame rate 3D	Min frame rate	Bit depth
525 SD	720x480	120.0	120.0	23.0	8-bits
4CIF	704x576	120.0	120.0	23.0	8-bits
625 SD	800x600	120.0	120.0	23.0	8-bits
SVGA	1024x768	79.6	79.6	23.0	8-bits
XGA	1024x768	79.6	79.6	23.0	8-bits
720p HD	1280x720	68.0	68.0	23.0	8-bits
4VGA	1280x960	51.0	51.0	23.0	8-bits
SXGA	1280x1024	47.8	N/A	23.0	8-bits
525 16SIF	1408x960	46.3	N/A	23.0	8-bits
16CIF	1408x1152	38.6	N/A	23.0	8-bits
4SVGA	1600x1200	32.6	N/A	23.0	8-bits
1080 HD	2048x1080	30.0	N/A	23.0	8-bits

**MPEG-2 MXF interop 2D image formats**

Format	Resolution	Max frame rate 2D	Max frame rate 3D	Min frame rate	Bit depth
VGA	640x480	120.0	120.0	23.0	8-bits
525 4SIF	704x480	120.0	120.0	23.0	8-bits
525 SD	720x480	120.0	120.0	23.0	8-bits
625 SD	720x568	120.0	120.0	23.0	8-bits
4CIF	704x576	120.0	120.0	23.0	8-bits
XGA	1024x768	79.6	79.6	23.0	8-bits
720p HD	1280x720	68.0	68.0	23.0	8-bits
4VGA	1280x960	51.0	51.0	23.0	8-bits
SXGA	1280x1024	47.8	N/A	23.0	8-bits
525 16SIF	1408x960	46.3	N/A	23.0	8-bits
16CIF	1408x1152	38.6	N/A	23.0	8-bits
4SVGA	1600x1200	32.6	N/A	23.0	8-bits
1080 HD	2048x1080	30.0	N/A	23.0	8-bits

**SMPTÉ-compatible 2D (JPEG 2000) cinema image formats**

Specification	Resolution	Frame rate	Color format	Bit depth
SMPTÉ 428-1-2019	2048x1080	24.0	X'Y'Z' (4:4:4)	12-bits

Specification	Resolution	Frame rate	Color format	Bit depth
SMPTE 428-11-2013	2048x1080	25.0	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	2048x1080	30.0	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-1-2019	2048x1080	48.0	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	2048x1080	50.0	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	2048x1080	60.0	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	2048x1080	96.0	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	2048x1080	100.0	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	2048x1080	120.00	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-1-2019	4096x2160	24.0	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	4096x2160	25.0	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	4096x2160	30.0	X'Y'Z' (4:4:4)	12-bits
SMPTE 2048-1-2011 Am1:2016	4096x2160	48	X'Y'Z' (4:4:4)	12-bits
SMPTE 2048-1-2011 Am1:2016	4096x2160	50	X'Y'Z' (4:4:4)	12-bits
SMPTE 2048-1-2011 Am1:2016	4096x2160	60	X'Y'Z' (4:4:4)	12-bits
SMPTE 2048-1-2011 Am1:2016	4096x2160	96	X'Y'Z' (4:4:4)	12-bits
SMPTE 2048-1-2011 Am1:2016	4096x2160	100	X'Y'Z' (4:4:4)	12-bits
SMPTE 2048-1-2011 Am1:2016	4096x2160	120	X'Y'Z' (4:4:4)	12-bits

**SMPTE-compatible 3D (JPEG 2000) cinema image formats**

Specification	Resolution	Frame rate (per eye)	Color format	Bit depth
SMPTE 428-1-2019	2048x1080	24.0x2	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	2048x1080	25.0x2	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	2048x1080	30.0x2	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-1-2019	2048x1080	48.0x2	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	2048x1080	50.0x2	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	2048x1080	60.0x2	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-1-2019	4096x2160	24.0x2	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	4096x2160	25.0x2	X'Y'Z' (4:4:4)	12-bits
SMPTE 428-11-2013	4096x2160	30.0x2	X'Y'Z' (4:4:4)	12-bits

Specification	Resolution	Frame rate (per eye)	Color format	Bit depth
SMPTE 2048-1-2011 Am1:2016	4096x2160	48.0x2	X'Y'Z' (4:4:4)	12-bits
SMPTE 2048-1-2011 Am1:2016	4096x2160	50.0x2	X'Y'Z' (4:4:4)	12-bits
SMPTE 2048-1-2011 Am1:2016	4096x2160	60.0x2	X'Y'Z' (4:4:4)	12-bits

## HDMI video source connection from an Integrated Media Block (IMB)

The projector can accept digital video data from HDMI sources connected to applicable Integrated Media Block (IMB) devices. The input configurations supported are determined by the IMB device directly.

Contact Christie Technical Support to learn which IMB devices provide HDMI source selection from the projector user interface.

HDMI input selection directly from the IMB may also be possible using the IMB user interface. The input configurations supported are determined by the IMB make and model.

## SDI video source connection from an Integrated Media Block (IMB)

The projector can accept digital video data from SDI sources connected to applicable Integrated Media Block (IMB) devices.

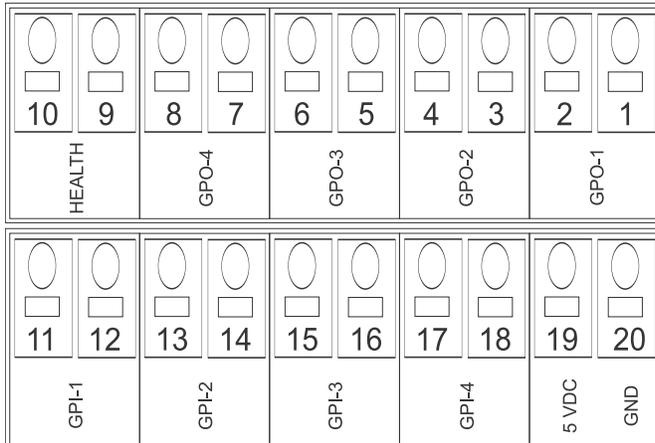
The input configurations supported are determined by the IMB device directly. Contact Christie Technical Support to learn which IMB devices provide SDI source selection from the projector user interface.

SDI input selection directly from the IMB may also be possible using the IMB user interface. The input configurations supported are determined by the IMB make and model.

## GPIO connector

The Generic Purpose Input Output (GPIO) connector provides a flexible method of interfacing with the projector. 18 GPIO pins are available on the GPIO connector. Two other pins are reserved for ground and power.

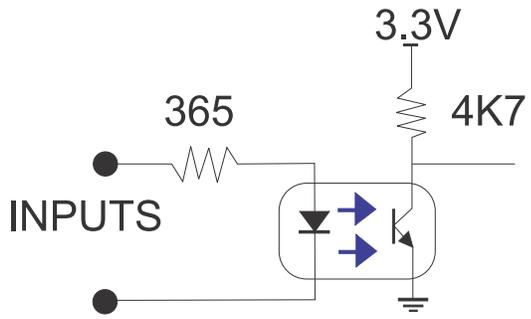
The GPIO connector is located on the input panel (*M in the Video Input panel image (on page 27)*).



Pin number	Signal name	Direction
Pin 1	GPO1_POS	Out
Pin 2	GPO1_NEG	Out
Pin 3	GPO2_POS	Out
Pin 4	GPO2_NEG	Out
Pin 5	GPO3_POS	Out
Pin 6	GPO3_NEG	Out
Pin 7	GPO4_POS	Out
Pin 8	GPO4_NEG	Out
Pin 9	HEALTH_POS	Out
Pin 10	HEALTH_NEG	Out
Pin 11	GPI1_POS	In
Pin 12	GPI1_NEG	In
Pin 13	GPI2_POS	In
Pin 14	GPI2_NEG	In
Pin 15	GPI3_POS	In
Pin 16	GPI3_NEG	In
Pin 17	GPI4_POS	In
Pin 18	GPI4_NEG	In
Pin 19	+5V	—
Pin 20	GND	—

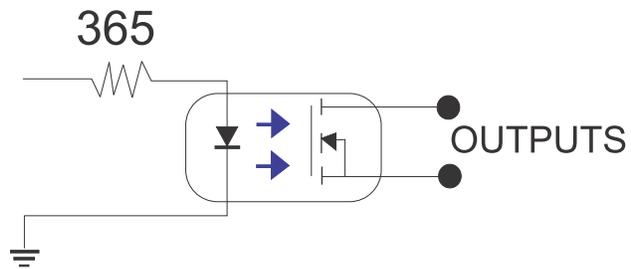
### GPIO inputs

The 5 VDC (pin 19 and pin 20) is intended for use to supply the inputs.



**GPIO outputs**

Outputs are solid state relays with a 1 A AC/DC rating at up to 48 V.



# Operation

Learn how to operate the projector.

## Turning on the projector

Learn how to turn on the projector.

1. Turn on the circuit breaker for the projector.
2. Select and hold **Power**.
3. To ignite the lamp, select and hold the **Light Bulb** icon.

## Turning off the projector

Learn how to turn off the projector.

1. Select and hold the **Light Bulb** icon to turn off the lamp.  
Perform this step if you want the light source off but to keep the projector powered on. Otherwise, proceed directly to step 2.
2. Select and hold **Power**.  
The projector enters a cool-down mode and the fans and electronics stay on for 10 minutes. After this cool-down period, the projector enters Standby mode.

## Projector states

Learn what occurs when you select the Power and Lamp icons and the tail light status.

Button pressed	Projector's current state			
—	Enters Standby power mode (Flashing green on the tail light)	Power is on and the lamp is off (Solid green on the tail light)	Power is on and the lamp is on (Solid green on the tail light)	Cool-down mode (Yellow/green flashing on the tail light)
Power On	Powers on to full power (boot delay)	No action	No action	Cancel cool down and goes to full power
Power Off	No action	Powers off immediately	Turns the lamp off immediately; enter cool-down mode	No action
Lamp On	Power is on and turns on the lamp (boot delay)	Immediately turns on the lamp	No action	Cancel cool down and immediately turns on the lamp

<b>Button pressed</b>		<b>Projector's current state</b>		
Lamp Off	No action	No action	Immediately turns off the lamp	No action

# Adjusting the image

Learn how to adjust image geometry so it displays correctly.

## Maximizing light output

To make sure optimal operation and peak screen brightness, use LampLOC™ to adjust the lamp position when you install a new lamp.

Before running LampLOC™, verify the following:

- The anode yoke is in the correct position for the lamp type.
- The lamp is on and the douser is open.

When you complete the LampLOC™ adjustment, the lamp is centered and is the correct distance from the illumination system.

1. In the left navigation menu, select **Lamp Settings > LampLOC**.
2. Select **Auto LampLOC**.

## Calibrating the Intelligent Lens System

On CP2415-Xe projectors, the Intelligent Lens System (ILS) is activated by default.

Use the Auto Calibrate feature of the ILS to find and compensate for motor backlash, and to determine the movement range for the currently installed lens.

1. In the left navigation menu, select **Image Settings > ILS File Setup**.
2. From the ILS File list, select an available ILS file.
3. Select **Auto Calibrate**.
4. Select **Continue**.  
The system performs the lens calibration.

## Aligning the image

Aligning the image ensures when it is reflected from the digital micromirror device (DMD) it is parallel and centered with the lens and screen.

You must complete this procedure before completing a boresight adjustment.

1. Verify the projector is *properly positioned relative to the screen* (on page 19).
2. Display a test pattern to analyze image focus and geometry.  
Christie recommends using the Framing test pattern.
3. Perform a preliminary focus and, if available, a zoom adjustment with the primary lens.  
Focus the center of the image first.

4. Ideally, the image should be centered on the lens and if it is not aligned to the screen in case, start by physically moving the projector; however, if not possible, use the lens shift.
5. With the Framing test pattern on screen, re-check the projector leveling so the top edge of the image is parallel to the top edge of the screen.

## Adjusting offset by using an ILS

Learn how to adjust the offset by using an Intelligent Lens System™ (ILS).

Always adjust the offset before adjusting boresight.



As boresight is adjusted, the lens offset may require additional minor adjustments.

1. Project an image with the primary lens.
2. Make sure lens calibration is completed before creating the ILS file.
3. Select **Test Patterns** and select a framing test pattern.
4. In the left navigation menu, select **Image Settings > ILS File Setup**.
5. Select the directional arrows in the Offset area.

For best optical performance, make sure to minimize keystone error by using the offset more than aiming to center the image in an off-axis installation. Avoid extreme tilts or offsets.

Corner vignettes on a white test pattern indicates extreme offset that should be corrected by using mechanical alignment.

## Correcting vignetting

An image that is brighter at the center than it is at the sides needs vignetting correction.

If your image suffers from vignetting, the lens has reached the end of its offset travel range.

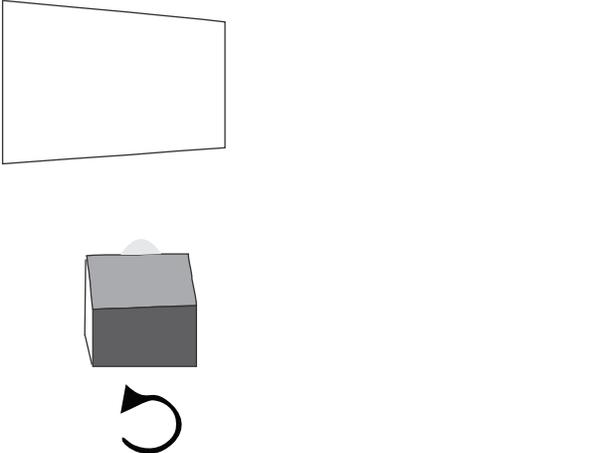
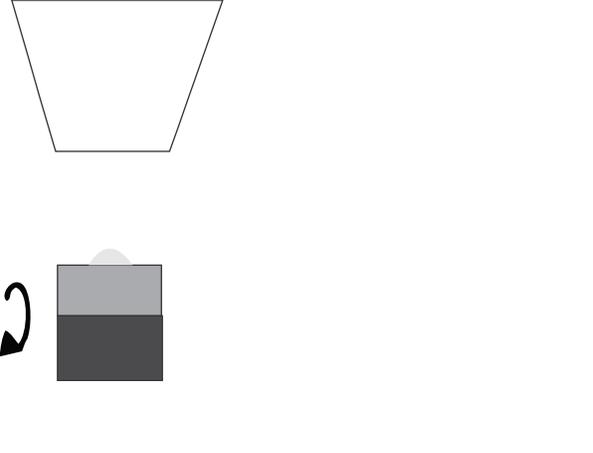
If your installation does not allow the image to be centered with the center of the screen, move the entire projector in the direction of lens travel.

## Correcting keystone effect

Keystone effect occurs when you project an image onto the screen at an angle. As a result, the image appears distorted and resembles a trapezoid.



When making the adjustments, set the light source to minimum power.

Horizontal keystone	Vertical keystone
	
Projector skewed horizontally to the screen	Projector tilted vertically to the screen

1. If the image suffers from slight keystone effect, it can be corrected with electronic cropping.
2. If the keystone effect is severe, unevenly adjust the feet to compensate for projector tilt. Christie recommends using the lens offset to align the center of the image to the center of the screen before correcting the keystone effect.
3. If one side of the image is longer than another, adjust the tilt and level of the projector.

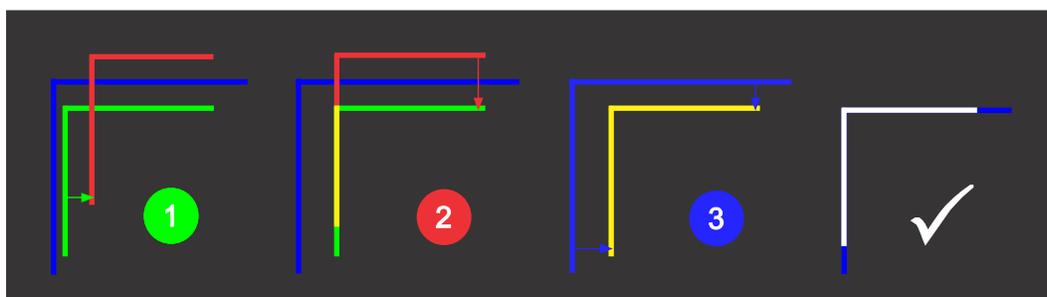
## Electronic Color Correction (ECC)

A lateral convergence error occurs when the red, green, and blue (RGB) primary colors are not converged through projected lenses and is most noticeable at the edges of the screen. To address this, use ECC.

Electronic Color Correction (ECC) is accomplished by aligning a red, green, and blue sprite, which is displayed at the four corners of the displayed image. For electronic convergence all three colors can be adjusted.

Always align the color components of the sprite to the inner most line color (for each axis). When converged, the three colors should overlap to form white lines. Applying the sprite alignment settings to the screen results in the three colors overlapping to form white lines throughout the image.

One or more poorly converged individual colors may appear adjacent to some or all of the lines.





If you wear glasses with corrective lenses when performing this adjustment, make sure you are viewing the test pattern on a straight angle through the optical axis of your glasses and not from a tilted or angled perspective. This avoids a prismatic effect that can appear to shift convergence when viewing at an angle.

## Mechanically adjusting digital micromirror device (DMD) convergence

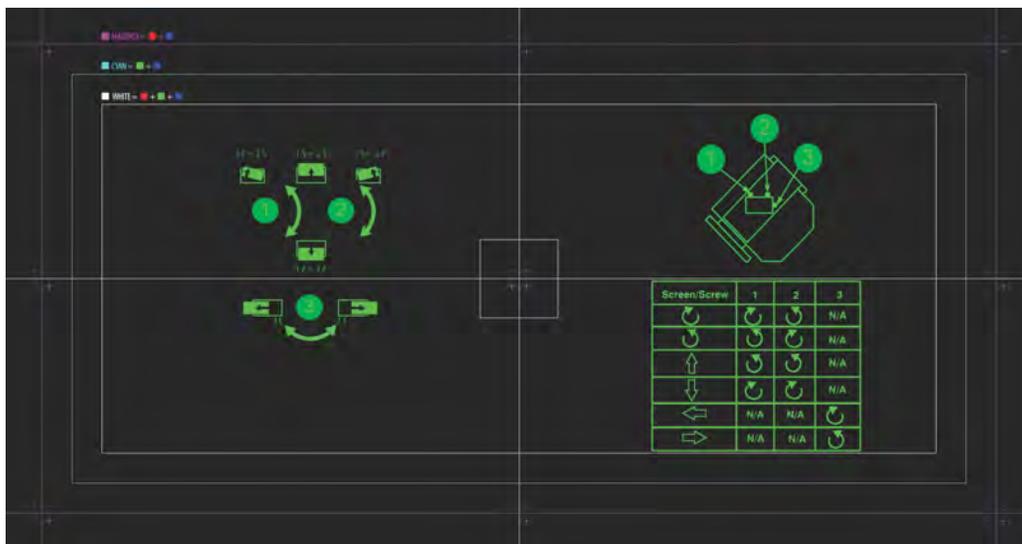
A convergence problem can be identified when one or more projected colors (red, green, and blue) appears misaligned when examined with a convergence test pattern.

The physical layout of the green and blue formatter boards dictates the behavior of the twist and vertical adjustments:

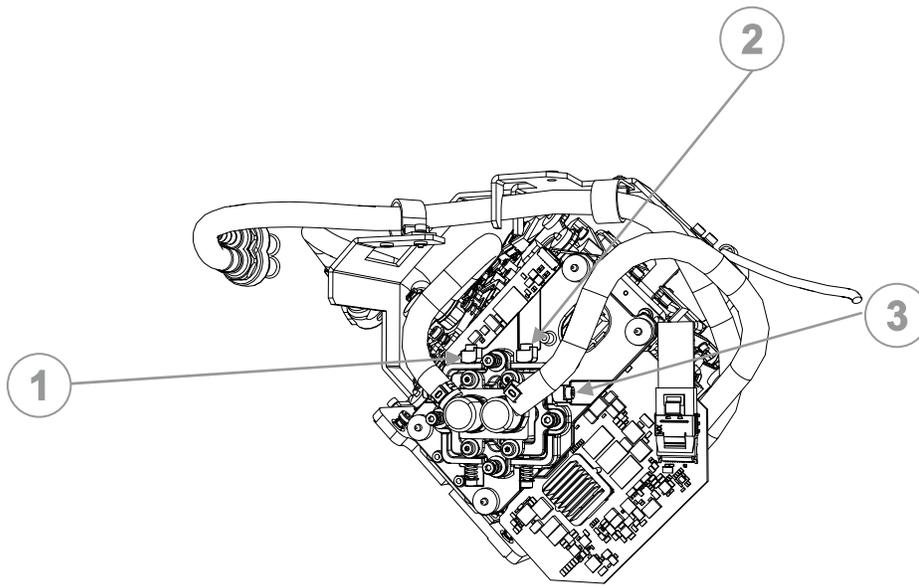
- The adjustment of the two is more like a twist with the left-side of the screen as a sliding hinge point to allow vertical travel.
  - The vertical adjustment screw and twist adjustment screw interact with each other so if one is turned in the opposite direction of the other, the twist is affected.
  - If both screws are turned equal amounts in the same direction, the image moves vertically.
1. Before adjusting digital micromirror device (DMD) convergence, make sure the projector has reached a steady operational state.

If switching from a white or bright test pattern to a dark convergence test pattern or if warming up the projector after a shutdown, allow 15 minutes for stabilization so the optics can reach a steady state.

2. In the right toolbar, select **Test Patterns**. 
3. Select the **RGB-2K-Convergence** test pattern and display it full screen.



4. Access the screws on the light engine.



5. Use the Convergence test pattern to assist with adjusting the horizontal and vertical lines.
6. Locate the shorter blade 2.5 mm driver on adjusting screw #2 and use the longer blade 2.5 mm driver for screw #1 and horizontal (screw #3).  
Do not apply excessive force on the adjustment screws. This can cause the convergence adjustment to become misaligned once you remove the adjustment tool.
7. Locate the twist adjustment screw with the 2.5 mm Allen driver and leave it in place, resting against the lens mount/formatter board.  
You do not always have to turn the screws simultaneously; however, adjusting one at a time causes the need for an equal or equal and opposite turn on the other to prevent binding to achieve the required adjustment. If attempting to adjust the twist and increased resistance is encountered on the twist adjustment screw, do the following:

Screen/screw	1	2	3
↶	↶	↷	—
↷	↷	↶	—
↑	↷	↷	—
↓	↶	↶	—
←	—	—	↶
→	—	—	↷

8. Insert and remove a second driver to adjust the horizontal/twist adjustment screw or the vertical adjustment screw.

## Electronically adjusting convergence

Use the electronic convergence feature in the menu to adjust convergence. Only perform electronic convergence when satisfied with the position of the image on the screen.

1. In the left navigation menu, select **Image Settings > ILS File Setup**.
2. Use the arrow to select an ILS file to store the ECC settings.
3. On the ILS File Setup page, select **ECC**. 

Each corner of the screen displays three separate sprites, one for each primary color. The user interface displays the Test Pattern controls.

4. Set the Screen Type to **Flat** or **Scope**.

This sets the test pattern and the location of the sprites on the screen. Each sprite appears as the letter L.

5. Set the Sprite Color to **Move** and **Show**.

When first opening the ECC, all Show and all Move colors are selected, so all three sprites are displayed and all three sprites are moved by the directional pad.

6. Select a **Step Size** to control the granularity of the steps from coarse (1/8 pixel per step) to fine (1/64 pixel per step) when using the directional pad.

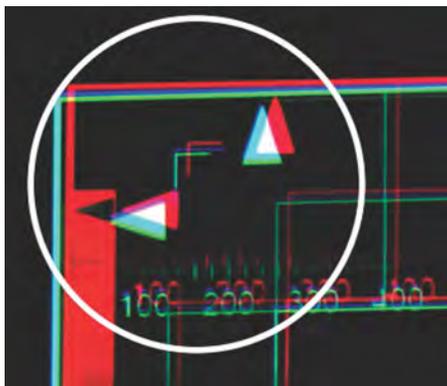
Sprites can be moved a maximum of 20 pixels.

7. Choose a corner by selecting the circle at a corner of the dashed rectangle.

The selected corner is indicated by a green circle. The X/Y pixel offset (from no correction) displays in red, green, and blue text corresponding to each sprite.

8. Use the directional pad to move the sprites towards the center of the screen.
9. Adjust each sprite so they overlap to create a single white sprite.

In the example below, the red sprite (in image 1 below) was moved down and the blue sprite (in image 1 below) was moved to the right so they overlap to create the single white sprite (image 2 below).



1



2

10. To set the convergence for that corner of the screen, select **Apply**.



11. Repeat steps 7 to 10 for the remaining corners.
12. If necessary, reset the correction back to zero (no correction) or the previously saved correction by selecting **Reset**.  
In the Reset dialog, reset the current corner or all four corners. When the locations and value are set, select **Reset**.
13. To save the current ECC settings, when the convergence is complete, select **Save** beside the ILS file named at the top of the panel.

## Adjusting the left and right boresight

Learn how to adjust the left and right (horizontal) boresight.



**Warning!** If not avoided, the following could result in death or serious injury.

- This procedure must be performed by Christie qualified technicians.

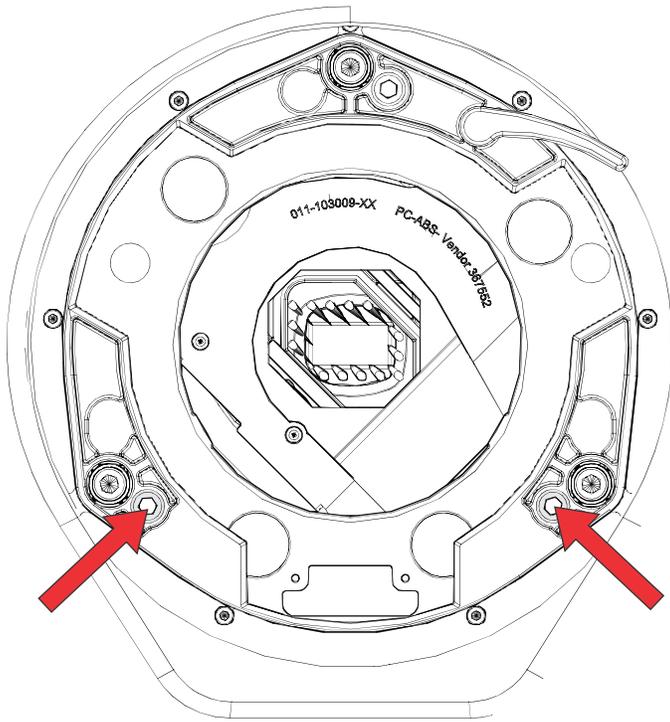


**Caution!** If not avoided, the following could result in minor or moderate injury.

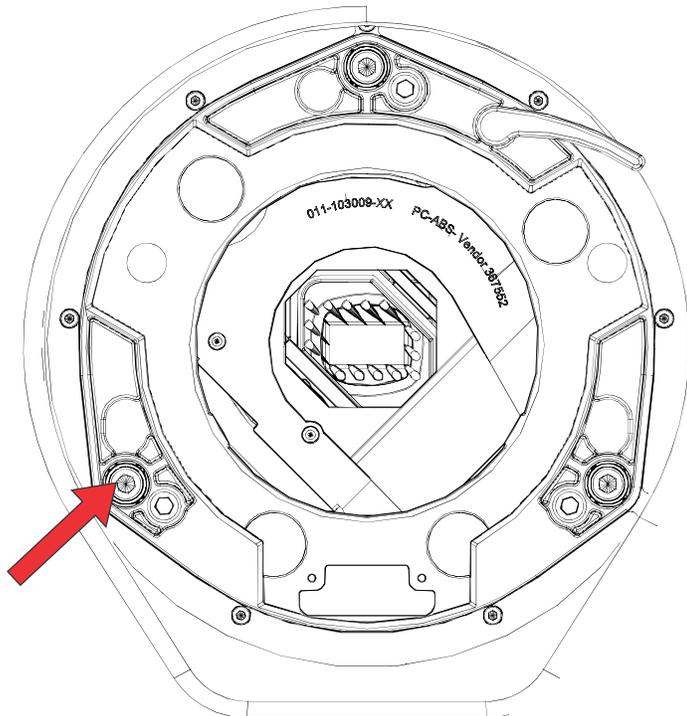
- Do not look directly into the lens when the light source is on. The extremely high brightness can cause permanent eye damage.

When performing boresight adjustments, the goal is to balance the tilt of the lens mount to compensate for screen-to-projector tilt but also to precisely maintain the original factory settings of the lens mount axial position.

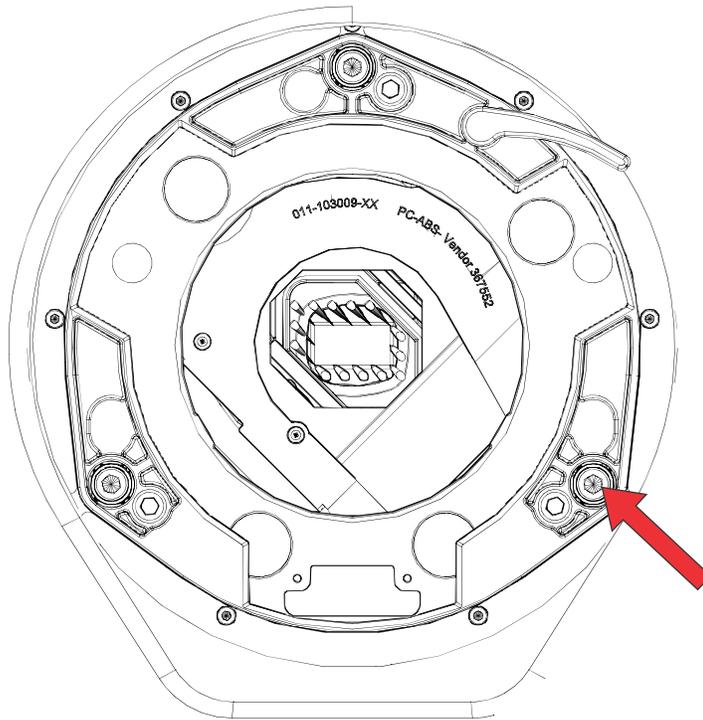
1. Remove the lens surround.
2. Display the Boresight test pattern.
3. Loosen the lock screws highlighted in the image below.



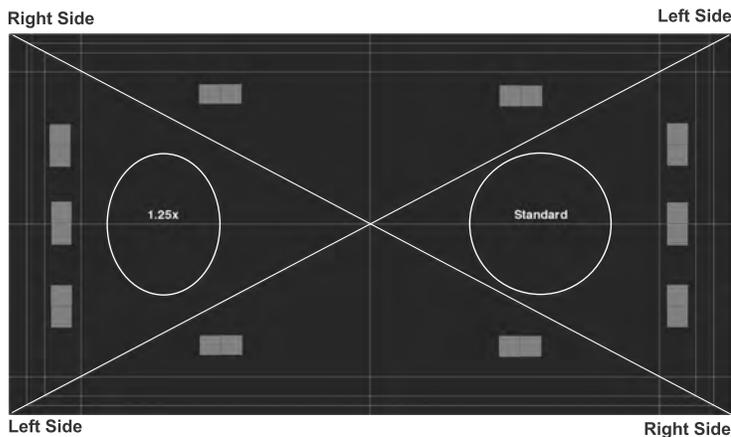
4. Turn the right boresight screw 1/16 of a turn clockwise.



5. Adjust the left boresight screw equally in the opposite direction.



6. If the quality of the projected image has not improved, turn the right boresight screw 1/16 of a turn counter-clockwise.  
Make sure the left adjuster is adjusted equally in the opposite direction.
7. Check the screen each time an adjustment is made.  
The right-side adjustments affect the top right and bottom left points on the screen.



8. Once both cross hairs are in focus, tighten the lock screw for the right boresight.
9. Repeat steps 5 to 8 for the left side.
10. Verify each corner of the screen is equally in focus.  
If this is not the case, try adjusting vertical boresight.

## Adjusting the top and bottom boresight

Learn how to adjust the top and bottom (vertical) boresight.



**Warning!** If not avoided, the following could result in death or serious injury.

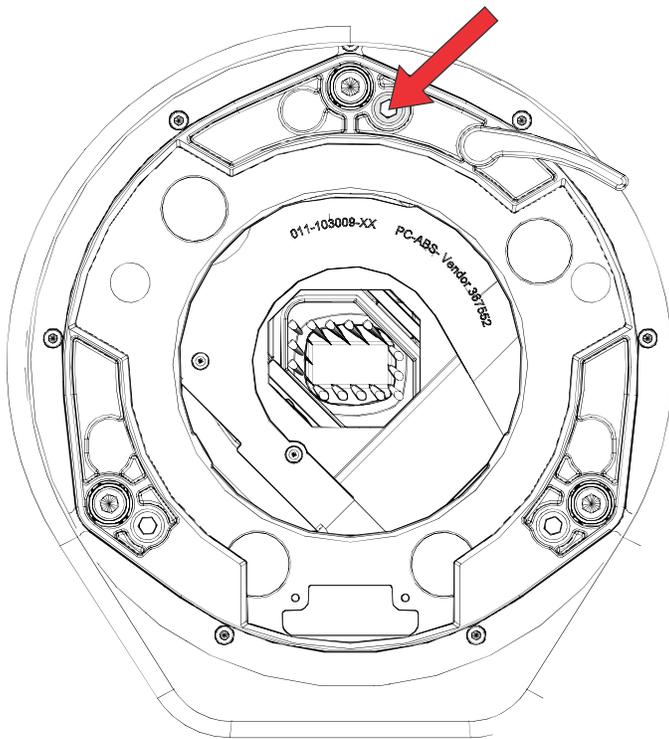
- This procedure must be performed by Christie qualified technicians.



**Caution!** If not avoided, the following could result in minor or moderate injury.

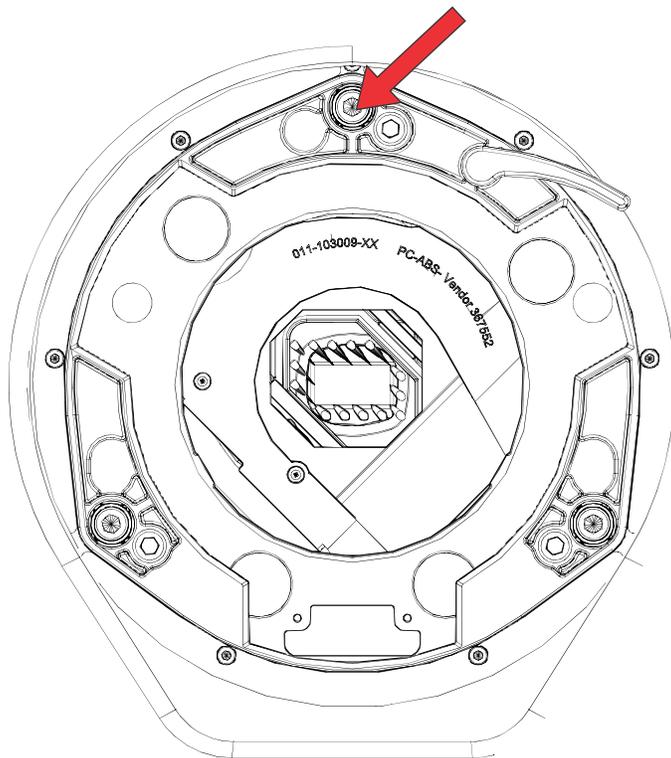
- Do not look directly into the lens when the light source is on. The extremely high brightness can cause permanent eye damage.

1. Remove the lens surround.
2. Display the Boresight test pattern.
3. Loosen the lock screw highlighted in the image below.



4. Turn the vertical screw 1/8 of a counter-clockwise turn.

Only adjust the vertical boresight screw 1/8 of a turn or less at one time to maintain optimal lens performance (factory setup of absolute lens distance to the prism). Count each turn of the screw to make sure accurate adjustment.



5. Adjust both left and right horizontal adjusters by half the number of turns, in the opposite direction of the vertical adjust.  
For example, if the vertical adjust cap screw was turned  $1/8$  of a turn, the left and right horizontal cap screws should be turned  $1/16$  of a turn in the opposite direction.
6. Check the screen each time an adjustment is made.  
If the quality of the projected image has degraded, turn the vertical adjust screw  $1/8$  of a turn clockwise.  
Make sure the left and right horizontal adjusters are adjusted equally in the opposite direction to correct axial focus. The  $1/8$  of a turn is a suggestion only and can be less if needed; however, never exceed it. Always compensate both left and right horizontal adjustments according to the vertical adjustment.
7. Check the image after each adjustment.
8. Continue to make adjustments until both the top and bottom are equally sharp.  
To make sure the lens is in the same relative position, adjust the left and right horizontal adjusters in the opposite direction at the same time.
9. When the top and bottom of the image are equally in focus tighten the lock screw to hold it in position.
10. Recheck the image.
11. If additional adjustment is required, try adjusting horizontal boresight.
12. Replace the lens surround.

## Rotating the integrator rod

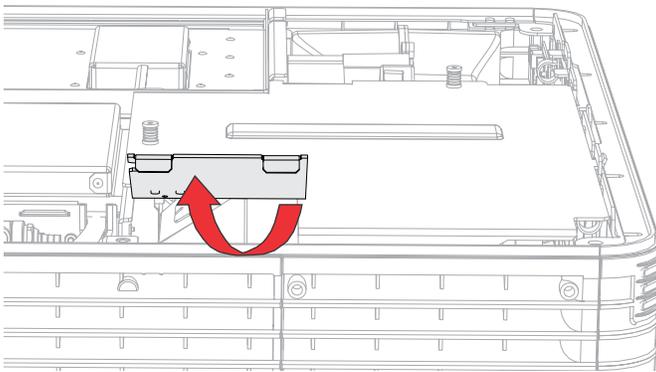
Whenever the integrator module is moved or replaced, rotate the integrator rod for proper focus and full illumination of the three digital micromirror devices (DMDs).



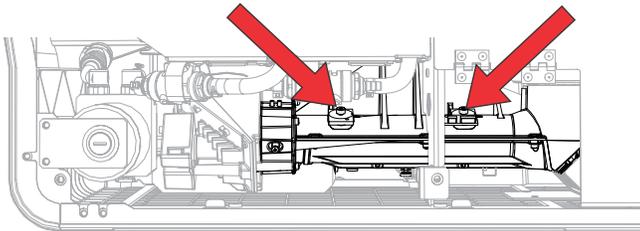
**Warning!** If not avoided, the following could result in death or serious injury.

- UV EXPOSURE! Protective UV safety glasses with side shields and protective safety clothing approved by Christie must be worn when performing optical adjustments or servicing the product.

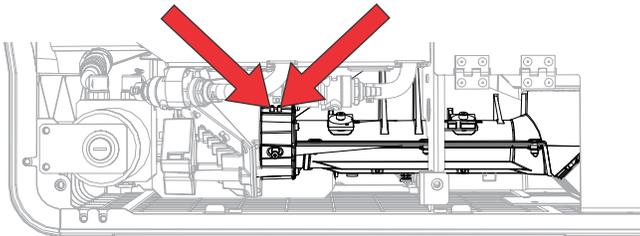
1. Display a full white field test pattern.
2. Remove the top cover.
3. Put on a pair of heat resistant gloves and UV resistant glasses.
4. Open the integrator rod access door.



5. Loosen the two integrator rod screws.



6. If the image is not parallel to the screen, rotate the integrator rod.
7. If the edges of the image are not in focus, loosen the two screws on the end of the optical housing and then move the handle attached to the lens backward and forward.



8. Verify no shadows exist on the screen.  
If shadows appear, *align the fold mirror* (on page 59).

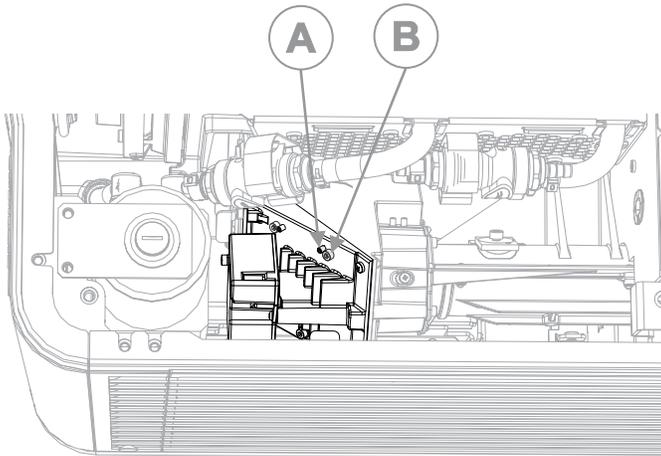
9. Tighten all of the integrator rod set screws.
10. Replace the top cover.

## Adjusting the fold mirror

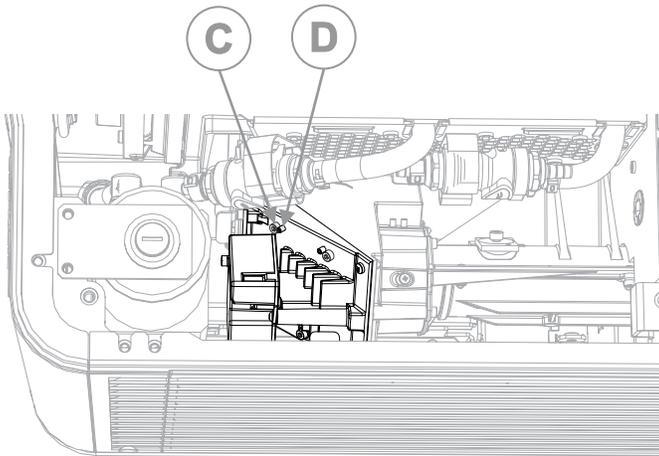
When properly aligned, the fold mirror directs light from the integrator fully and precisely onto the digital micromirror device (DMD) pixels. If a corner or edge of an image is missing, the fold mirror might be misaligned with the optical system.

After moving or replacing the fold mirror, check for consistent light over-spill around the perimeter of a full white or black field—if the shadows vary or disappear completely along any edge or corner, the fold mirror is cropping light from the DMDs and must be realigned. When corrected, the shadows cast by the integrator edges form an even perimeter around the full active display area without interfering with the image and all of the image is displayed.

1. Remove the top cover.
2. Display a full white test pattern.
3. Insert a hex driver in the first set screw (A) and a hex driver in the first cap screw (B).



4. Equally turn the set screw (A) and cap screw (B) in opposite directions until the black corner is removed.
5. If the black corner remains, insert a hex driver in the second set screw (D) and a hex driver in the second cap screw (C).



6. Equally turn the set screw (C) and cap screw (D) in opposite directions until the black corner is removed.
7. Replace the top cover.

## Calibrating the color

Use Measured Color Gamut Data (MCGD) files to correct on-screen colors.

1. Using a colorimeter, measure the colors displayed on the screen from the center of the audience viewing location to determine the Measured Color Gamut Data (MCGD) value.
2. In the left navigation menu, select **Color Settings > MCGD File Setup** and enter the color values in the x and y fields for the different colors.
3. Select **Save**.
4. Update the relevant channel settings to use the MCGD file created.
5. Select the TCGD file suitable for the content played while the channel is active.

# Regulatory

This product conforms to the latest regulations and standards related to product safety, environmental, and electromagnetic compatibility (EMC) requirements.

## Safety

- IEC 60950-1 – Information Technology Equipment – Safety – Part 1: General Requirements
- IEC 62368-1: 2014 – Audio/video, information and communication technology equipment - Part 1: Safety requirements
- EN 62368-1:2014 + A11:2017 – Audio/video, information and communication technology equipment - Part 1: Safety requirements
- UL 62368-1: 2014 – Audio/video, information and communication technology equipment - Part 1: Safety requirements
- CAN/CSA-C22.2 No. 62368-1: 2014 – Audio/video, information and communication technology equipment - Part 1: Safety requirements
- IEC/EN 62471-5 – Photobiological Safety of Lamps and Lamp Systems – Part 5: Image projectors

## Electro-magnetic compatibility

### Emissions

- CAN ICES-003 (A)/NMB-003 (A) – Information Technology Equipment (Including Digital Apparatus) – Limits and Methods of Measurement
- CISPR 32/EN 55032, Class A – Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements
- FCC CFR47, Part 15, Subpart B, Class A – Unintentional Radiators

### Immunity

- CISPR 35/EN55035 Electromagnetic Compatibility of Multimedia Equipment - Immunity Requirements

## California law on security

- California Law Requiring Internet Connected Devices To Include Reasonable Security Features (California Civil Code Section 1798.91.04)

## Environmental

- China Ministry of Information Industry (along with 7 other Government Agencies) Order No.32 (01/2016) on the control of pollution caused by electronic information products, hazardous substances concentration limits (GB/T 26572 - 2011), and the applicable product marking requirement (SJ/T 11364 - 2014).
- EU Directive (2011/65/EU) on the restriction of the uses of certain hazardous substances (RoHS) in electrical and electronic equipment and the applicable official amendment(s).
- EU Directive (2012/19/EU) on waste and electrical and electronic equipment (WEEE) and the applicable official amendment(s).
- Regulation (EC) No. 1907/2006 on the registration, evaluation, authorization and restriction of chemicals (REACH) and the applicable official amendment(s).

International packaging recycling mark requirements.

- EU Directive (94/62/EC) on packaging and packaging waste
- China packaging recycling mark standard (GB18455-2010)
- EU Directive (2012/19/EU) on waste and electrical and electronic equipment (WEEE) and the applicable official amendment(s).

