



Installation and Setup Guide  
020-103584-02

# CP2415-Xe

**CHRISTIE®**

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For the most current technical documentation and office contact information, visit <http://www.christiedigital.com>.

### Warranty

Products are warranted under Christie's standard limited warranty, the details of which are available at <https://www.christiedigital.com/help-center/warranties/> or by contacting your Christie dealer or Christie.

### PREVENTATIVE MAINTENANCE

Preventative maintenance is an important part of the continued and proper operation of your product. Failure to perform maintenance as required, and in accordance with the maintenance schedule specified by Christie, will void the warranty.

### ENVIRONMENTAL



The product is designed and manufactured with high-quality materials and components that can be recycled and reused. This symbol  means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from regular waste. Please dispose of the product appropriately and according to local regulations. In the European Union, there are separate collection systems for used electrical and electronic products.

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!

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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 16).

## 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

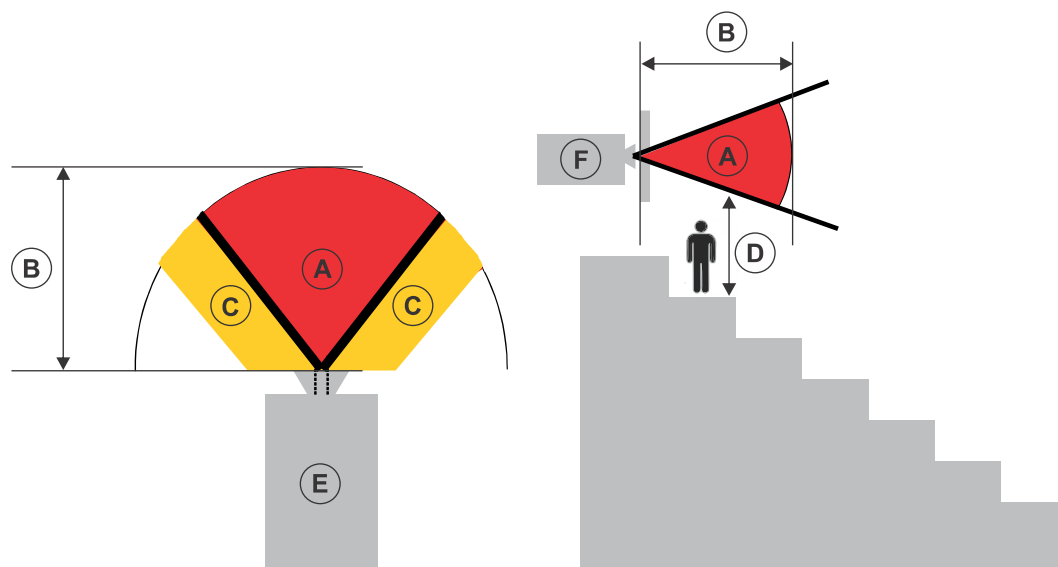
This projector has been classified as Risk Group 3 as per the IEC 62471-5:2015 standard due to possible hazardous optical and thermal radiation being emitted.



**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 (US installations) or 2.0 meters (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.

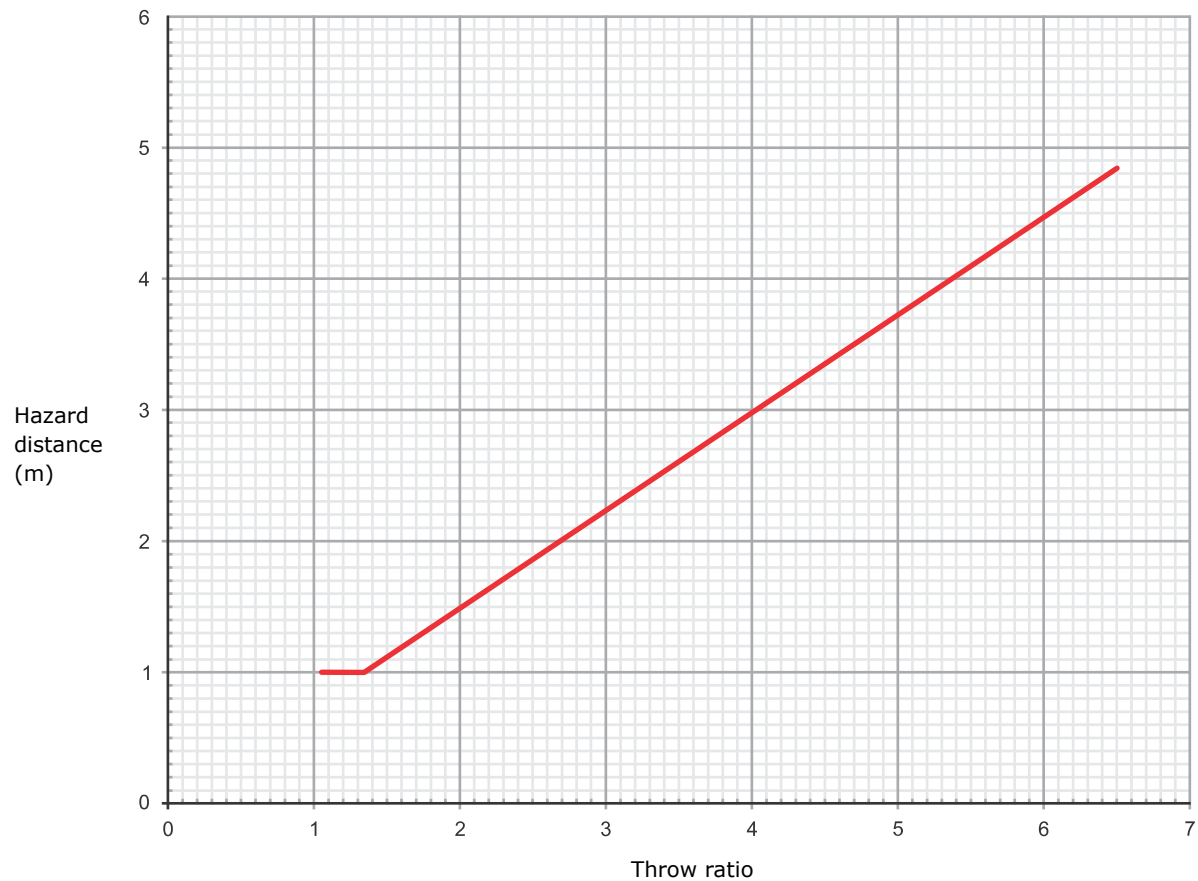


- A—Hazard zone. The region of space where the projection light from the projector is above emission limits for Risk Group 2. The light intensity may cause eye damage after a momentary or brief exposure (before a person can avert his or her eyes away from the light source). The light may cause skin burns 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.
- D—Vertical distance to hazard zone. The hazard zone must be no lower than 2.5 meters (US installations) or 2.0 meters (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   |
|--------------------------|---------------|
| 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 |

### CP2415-Xe hazard distances



Due to the requirements of IEC 62471-5, a minimum of 1 meter hazard distance must be maintained.

## 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 that is connected to power.

#### Fire and Shock Hazard



To prevent fire or shock hazards, do not expose this product to rain or moisture.  
Do not alter the power plug, overload the power outlet, or use it with extension cords.  
Do not remove the product enclosure.  
Only Christie qualified technicians are authorized to service the product.

#### Electrical Hazard



Risk of electric shock.  
Do not remove the product enclosure.  
Only Christie qualified technicians are authorized to service the product.



**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.

|                                                                                   |                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>Risk Group 3 / Groupe de risque 3 / 三类危害</b></p>                                                                                                                                                                                                                                            |
|                                                                                   | <p><b>WARNING:</b> Thermal Radiation emitted from this product may cause burns. Classified per IEC 62471-5<br/> <b>AVERTISSEMENT:</b> le rayonnement thermique émis par ce produit peut causer des brûlures. Classé par IEC 62471-5<br/> <b>警告:</b> 该产品的热辐射可能导致灼伤<br/>         按照IEC62471-5分类</p> |

**Risk Group 3 / Groupe de risque 3 / 三类危害**

**WARNING:** Possibly hazardous optical radiation emitted from this product. Classified per IEC 62471-5.

**AVERTISSEMENT:** Ce produit émet un rayonnement optique potentiellement dangereux. Classé par IEC 62471-5.

**警告:** 该产品可能会产生危害性的光。按照IEC62471-5分类。

|                                                                                                                                                                                                                                                                                                                                                |                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                               |  |
| <p><b>Warning</b> (危険) : You have the hazard, so don't use your exposure to the hazard in perpetuity.</p> <p>危険 (危険) : You have the hazard, so don't use it.</p> <p><b>Warning</b> (危険) : You have the hazard, so don't use it.</p>                                                                                                            |                                                                                   |
| <p><b>Prohibition</b> (禁止) : You are prohibited from using the hazard. You are prohibited from using the hazard.</p> <p>禁止 (禁止) : You are prohibited from using the hazard. You are prohibited from using the hazard.</p> <p><b>Prohibition</b> (禁止) : You are prohibited from using the hazard. You are prohibited from using the hazard.</p> |                                                                                   |
| <p><b>Warning</b> (危険) : You have the hazard, so don't use it.</p> <p>危険 (危険) : You have the hazard, so don't use it.</p> <p><b>Warning</b> (危険) : You have the hazard, so don't use it.</p>                                                                                                                                                   |                                                                                   |
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| <p><b>Prohibition</b> (禁止) : You are prohibited from using the hazard. You are prohibited from using the hazard.</p> <p>禁止 (禁止) : You are prohibited from using the hazard. You are prohibited from using the hazard.</p> <p><b>Prohibition</b> (禁止) : You are prohibited from using the hazard. You are prohibited from using the hazard.</p> |                                                                                   |

**ATTENTION - DANGER DE CHOC ÉLECTRIQUE.**

Ne touchez pas les bornes chaudes ou les fils dénudés pendant le processus de remplacement de la lampe. Les bornes chaudes peuvent provoquer des brûlures graves. Les fils dénudés peuvent provoquer un choc électrique. Laissez refroidir la lampe pendant 2 minutes avant de toucher les bornes chaudes ou les fils dénudés.

**WARNING - BURN HAZARD / ELECTRICAL SHOCK DANGER.**

Do not touch the hot terminals or exposed wires during the lamp replacement process. Hot terminals can cause severe burns. Exposed wires can cause electrical shock. Allow the lamp to cool down for 2 minutes before touching the hot terminals or exposed wires.



**⚠ WARNING/ AVERTISSEMENT/ 경고**

HIGH LEAKAGE CURRENT  
COURANT DE FUITE ÉLEVÉ  
高漏电流

Earth connection essential  
before connecting supply.  
La mise à la terre est essentielle  
avant de brancher l'alimentation  
接地電線前必須先接地

**⚠ DANGER!** Safety glasses required when servicing with top lid removed.  
**⚠ DANGER!** Lunettes de sécurité requises lors de l'entretien avec le haut du couvercle enlevé.

Indicates safety glasses are required when servicing the product with the top cover removed.

The CP2415-Xe is compatible with multiple IMB manufacturers and offers an expanded range of brightness to meet your specific theater needs. Based on .98" DLP Cinema® technology, the CP2415-Xe projector uses high efficiency, long lasting CDXL series Xenon lamps designed for long life and low power consumption.

## Key features

Understand the important features of the projector.

- 2K, Series 4 DLP Cinema® technology
- 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 |
| Liquid Coolant Service kit    | 003-001837-XX |
| Propylene Glycol 740 coolant  | 003-005179-XX |

## Other accessories

| Description                                                                     | Part number   |
|---------------------------------------------------------------------------------|---------------|
| Protective Clothing Safety kit—includes Kevlar gloves, flak jacket, face shield | 59-8900-095   |
| UPS Input Line Cord kit                                                         | 000-109529-XX |
| Rack stand                                                                      | 108-416102-XX |
| Bracket foot lock (for use with rack stand)                                     | 011-104194-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:<br>The serial number can be found on the license label located on the display panel. |
| 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    |

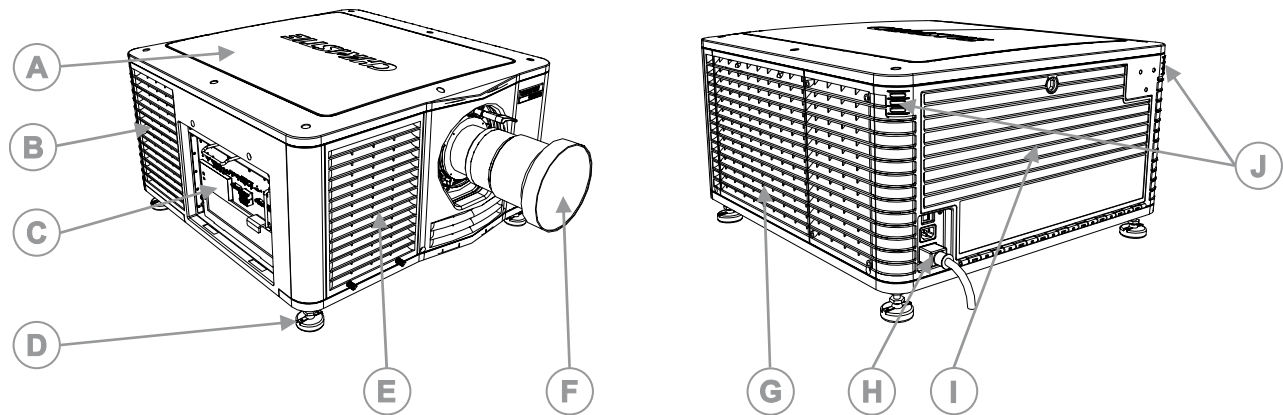
### UPS input

| 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

Ensure 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.

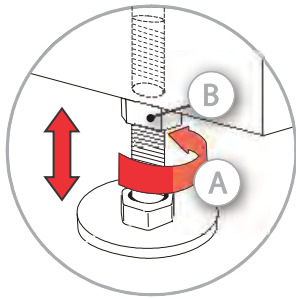
- TIP HAZARD! Always use the rear safety strap to prevent the cinema projector from tipping.
- TIP HAZARD! Do not over-extend the cinema projector's feet. make sure several threads from each foot remain engaged in the cinema projector's baseplate.



**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).



6. 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

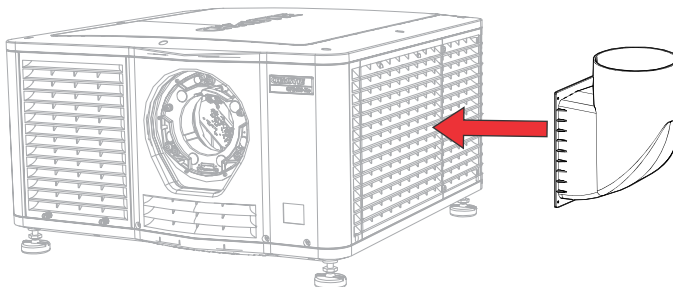
Connect the exhaust duct to provide ventilation for the projector.

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.

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



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

## Installing the lens

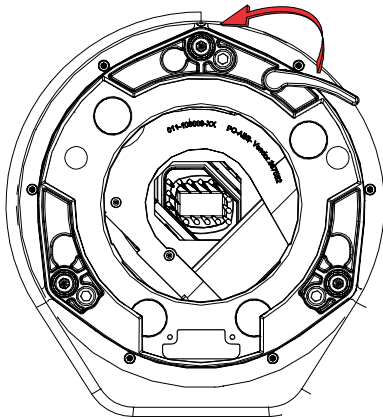
The lens seals the projection head, preventing contaminants from entering the main electronics area.



**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.

1. Turn off and unplug the projector.
2. On the front of the projector, move the lens clamp to the open position.

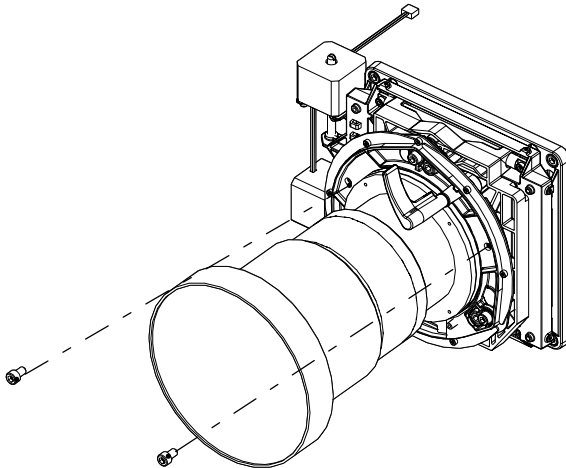


3. Position the lens so the lens retaining ring mounts align with the lens mount.
4. Remove the lens caps from the front and rear of the lens.

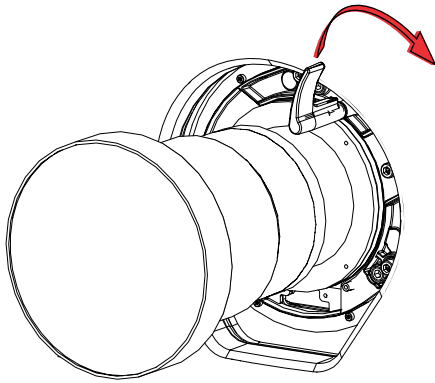


Lens caps must be removed or they can melt and damage the lens.

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.



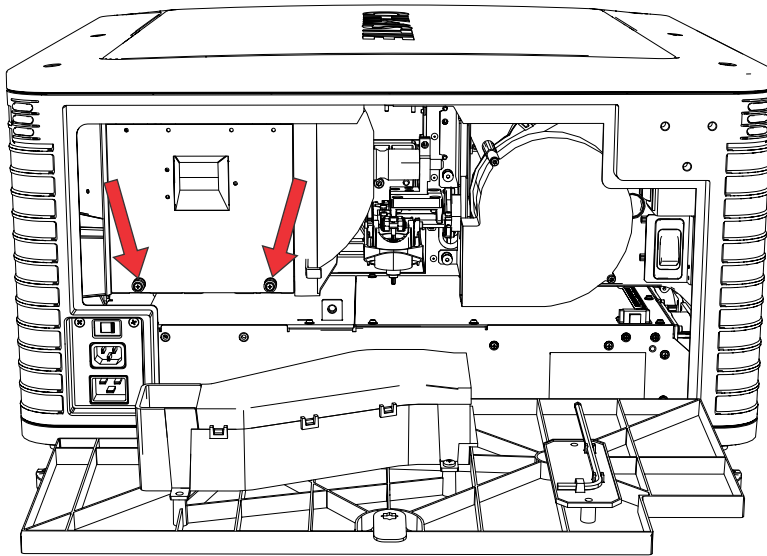
## Installing the lamp

Complete the following procedure to install the lamp.

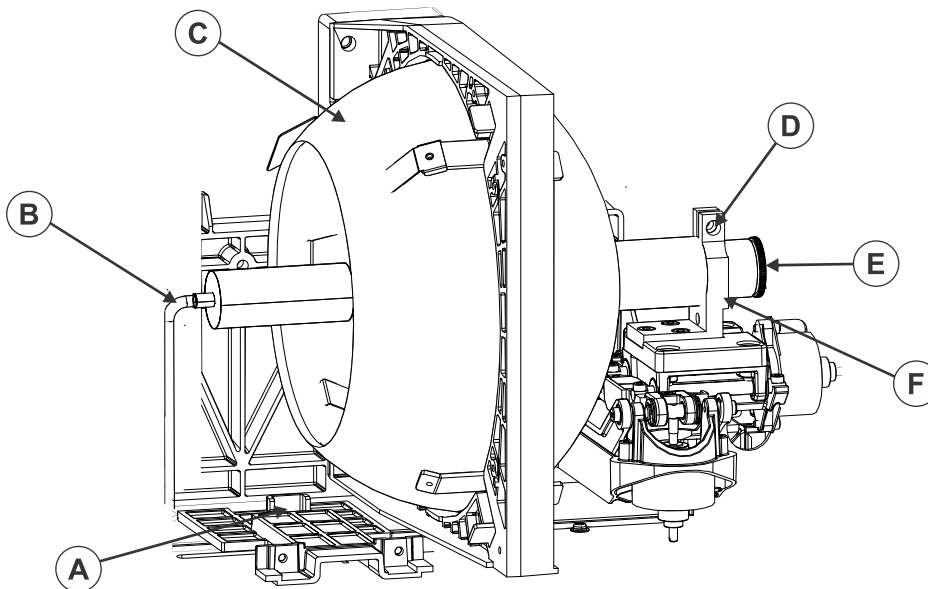


**Warning!** If not avoided, the following could result in death or serious injury.

- 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. Prepare the projector for service.
    - a) Turn off the lamp and projector.
    - b) Allow the projector to cool for a minimum of 15 minutes.
    - c) Disconnect the projector from AC power.
  2. Put on your protective clothing, face shield, and gloves.
  3. Insert the key in the lamp door lock, turn the key, and open the lamp door.
  4. Loosen the two screws and open the lamp access door.



5. 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  |

6. Remove the anode screw from the anode terminal (A in the image in image in step 5).
7. 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.

- Remove the tape from the ends of the protective case.
  - Remove the plastic packing material from the lamp.
  - Remove the cathode nut from the lamp before removing it from the case.
  - 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.
  - 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.
  - 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.
  - Tighten the cathode screw (D in the image in step 5) with a hex key.
  - 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.
  - Fasten in place with the anode screw removed in step 6.
  - Check all leads.  
Make sure the anode (+) lead does not touch any projector metal, such as the reflector or firewall.
- Close the lamp access door and tighten the two thumbscrews.
  - 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 IMB

Learn how to install the IMB.

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

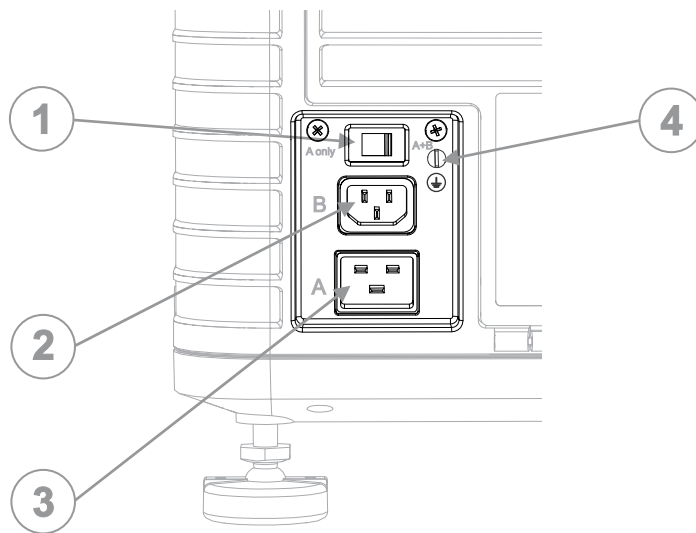
The protected earth wire must be green/yellow 12 AWG minimum.

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. If the projector is operating, turn it off 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 the projector on for the first time

Learn how to turn the projector on 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.

# Connecting devices and establishing communication

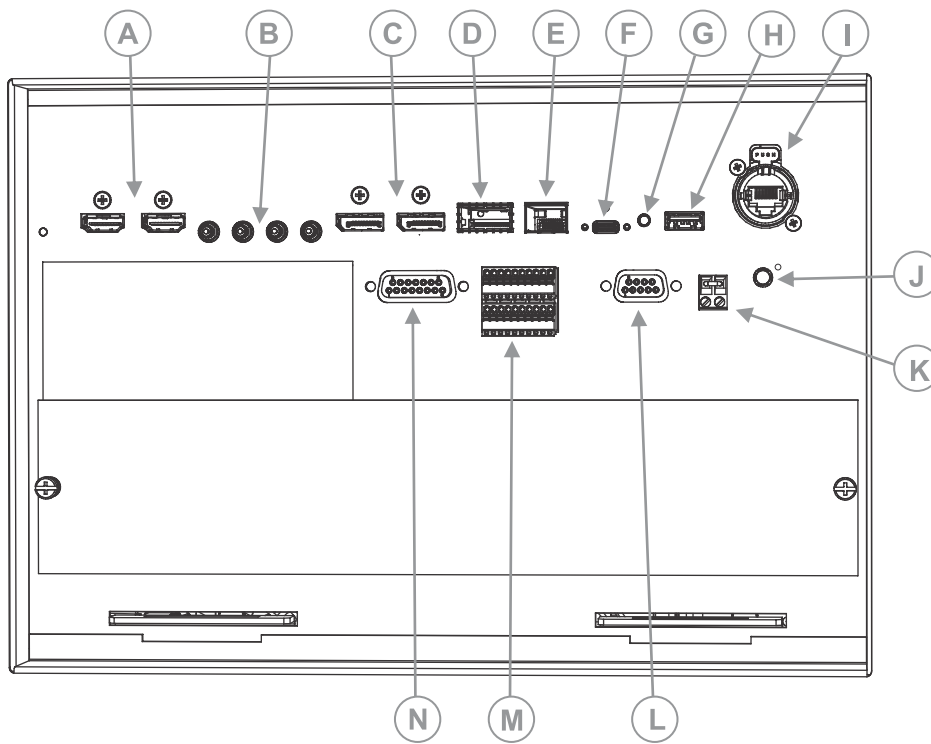
Learn how to connect input devices to the projector and establish communication with them.

To display content, you must connect a device capable of storing or playing content to the projector. The communication ports are accessible by removing the side source and communication access panel.

When connecting devices, route all cables along the channels located on the bottom of the projector and up through the opening in the frame to the communication connection port. Replace the access panel to ensure server and source connections remain secure.

## 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<br>HDMI v2.0 protocol 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<br>Multi-Rate SDI in accordance with SMPTE ST 259 (270Mb/s), ST 292-1 (1.5Gb/s), ST 424 (3.0Gb/s), ST 2081-1 (6Gb/s) and ST 2082-1 (12Gb/s)                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| C  | DisplayPort (DP1 and DP2)                              | Accepts digital video data from DisplayPort 1.2 input 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| G  | Recessed button                                        | Press 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 IMB marriage setup process. See Activating IMB marriage. <ul style="list-style-type: none"> <li>• Press and hold the button for 5 seconds to display the IP address and status information.</li> <li>• Press and hold the button for 30 seconds to reset the IP address to the default address.</li> </ul> <p>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.</p> |
| 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## Using the Remote user interface (UI)

Use the remote user interface (UI) to access projector functionality.

The Remote user interface (UI) is available as an accessory.

1. Log into the Remote UI.  
The default IP address is 192.168.206.110.
2. From the Remote UI default page, to access the main projector user interface, select the **Projector Control** tab.
3. To upload and download files from the projector, use the **File Menu**.  
Examples of items that can be uploaded include:
  - Projector upgrade packages
  - Backup packages to restore from
  - Rental files to license the projector for Rental mode
  - Test patterns (PNG files only)
  - Gamma files
Examples of items that can be downloaded include:
  - Projector backup files
  - Projector certificates (required for content decryption)
  - Interrogator files (for support and troubleshooting)
4. If the projector has a GDC IMB SR-1000 installed and configured, access the GDC IMB Web UI by using the **Media Block** tab.

## Turning the projector on or off

Turn on the projector to display content or turn off the projector to conserve energy or service the projector.

In the right toolbar, select and hold **Power**. 

If the light source is on when turning off the projector, the light source automatically enters a ten-minute cool-down period.

## Logging on to the projector

Log on to the projector to access projector menus.

1. Select **Login**.
2. In the User list, select a user name.
3. Enter your password.
4. Select **Login**.

## Turning the light source on or off

Turn the light source on to display content or view test patterns. Turn the light off to extend the life of the light source.

- To turn the light source on or off, in the right toolbar, select and hold **Light**. 

## Selecting IMB preferences

Choose from the available options to set the type of integrated media block (IMB).

1. To set the type of IMB, select **Service Setup > Preferences**.
2. Select **IMB**.
3. In the Type list, select from the available IMB models.
4. When the system prompts you to reboot the projector, select **Reboot**.
5. After the projector has restarted, log in with your user account.

## Activating marriage

After selecting the IMB type, you must install the IMB and complete marriage to display secure content and to comply with the Digital Cinema Initiatives (DCI) specification. You cannot complete marriage remotely.

For more information on marriage, refer to *CineLife+ User Guide (P/N: 020-103073-XX)*.

You cannot complete marriage remotely because you must be able to press the **Marriage** button on the input panel during the marriage process.

1. In the left navigation menu, select **Service Setup > Marriage Setup**.
2. Select **Start** and complete the Marriage Setup wizard.
3. Select **Finish**.
4. Verify the marriage ring is installed correctly and an anti-tamper alarm does not appear on the touch panel.

# Operation

Learn how to operate the projector.

## Turning the projector on

Learn how to turn the projector on.

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

## Turning the projector off

Learn how to turn the projector off.

1. Press and hold the Light Bulb icon to turn the lamp off.  
Perform this step if you want the light source off but to keep the projector powered on.  
Otherwise, proceed directly to step 2.
2. Press and hold the **Power** icon.  
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 press the Power and Lamp icons and the tail light status.

| Button pressed | Projector's current state                                       |                                                                    |                                                                   |                                                             |
|----------------|-----------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|
| —              | Enters Standby power mode<br>(Flashing green on the tail light) | Power is on and the lamp is off<br>(Solid green on the tail light) | Power is on and the lamp is on<br>(Solid green on the tail light) | Cool-down mode<br>(Yellow/green flashing on the tail light) |
| Power On       | Powers on to full power (boot delay)                            | No action                                                          | No action                                                         | Cancels 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                                                         | Cancels cool down and immediately turns on the lamp         |

| Button pressed | Projector's current state |           |                                |           |
|----------------|---------------------------|-----------|--------------------------------|-----------|
| 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 18).
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 ILS (Intelligent Lens System).

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.

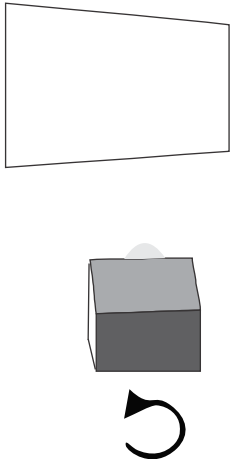
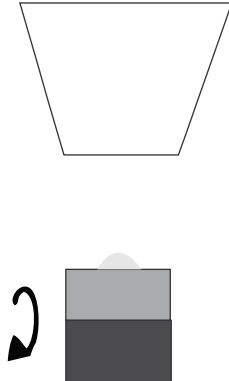
If your installation does not allow the image to be centered with the center of the screen, move the entire projector in the direction of lens travel.

## 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.

## Adjusting 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.



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.

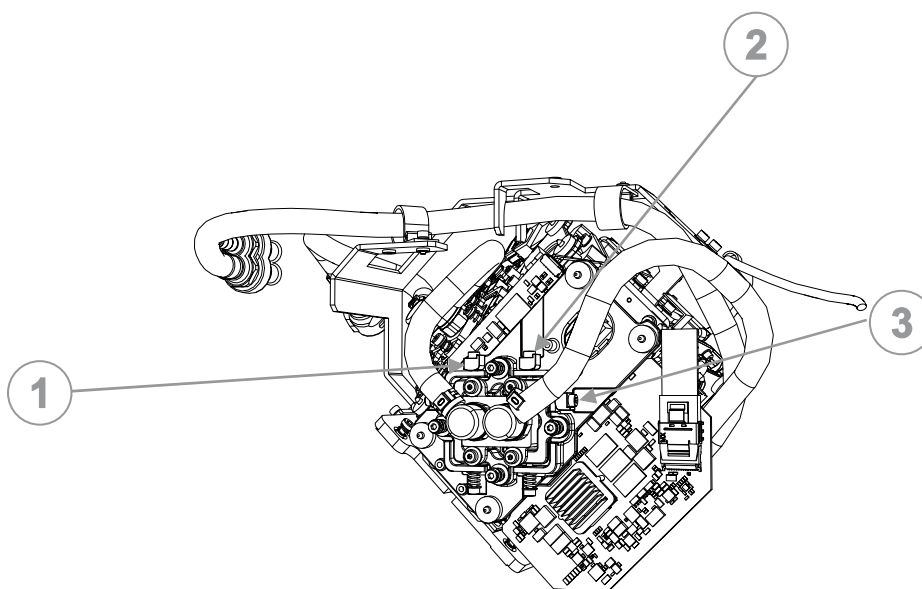
1. Before adjusting DMD convergence, make sure the projector has reached a steady operational state.

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.

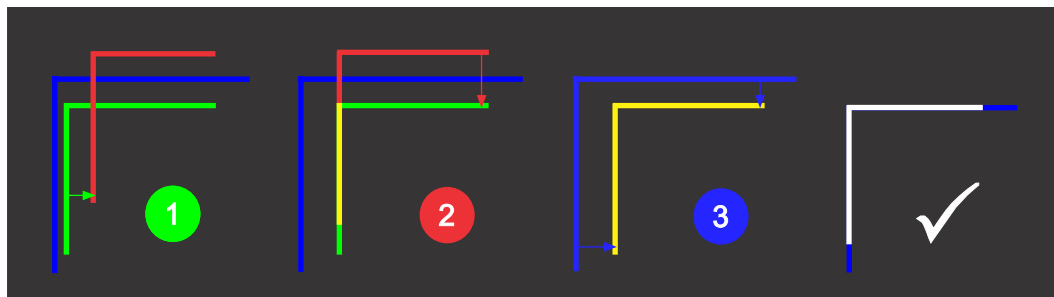
## Electronically adjusting convergence

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.

Adjusting the convergence 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.

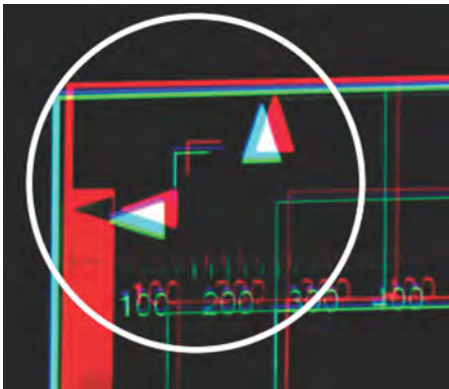


If you wear glasses with corrective lenses when performing this adjustment, make sure you are viewing the test pattern on a straight angle through the optical axis of your glasses and not from a tilted or angled perspective. This avoids a prismatic effect that can appear to shift convergence when viewing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

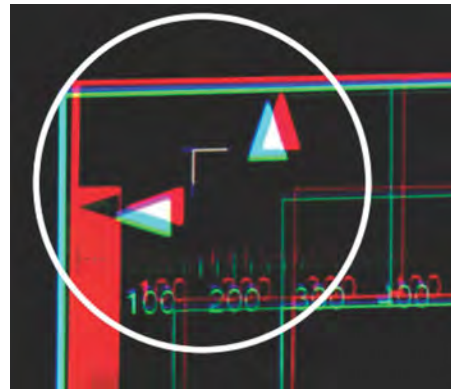
1. In the left navigation menu, select **Image Settings > ILS File Setup**.
2. Use the arrow to select an ILS file to store the ECC settings.
3. On the ILS File Setup page, select **ECC**. 

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.

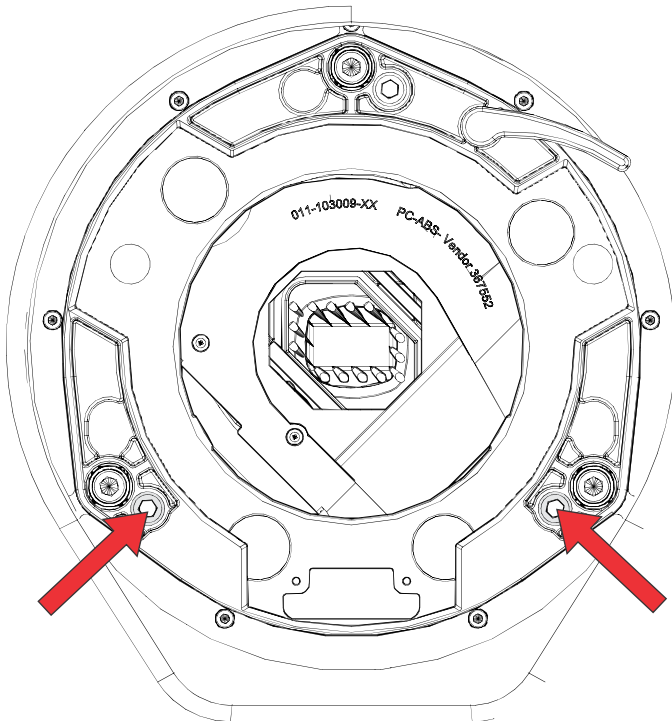


**Caution!** If not avoided, the following could result in minor or moderate injury.

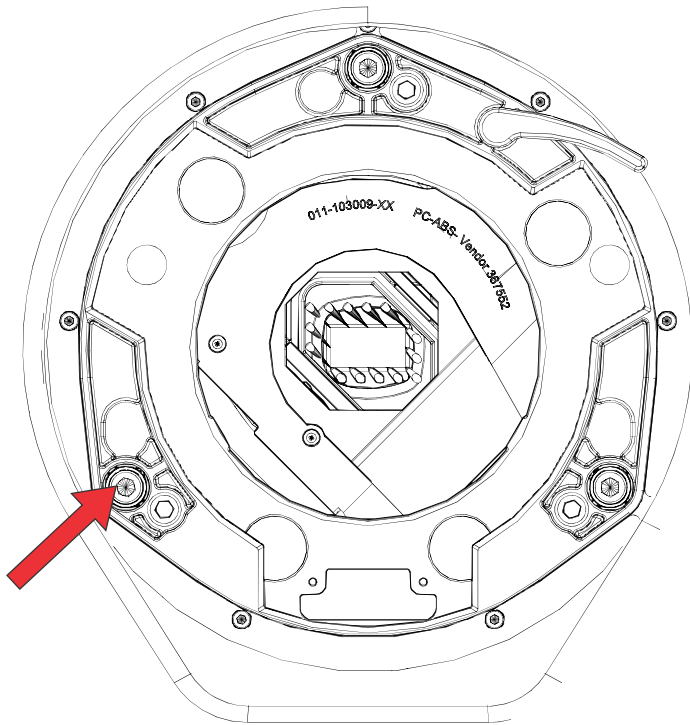
- Do not look directly into the lens when the light source is on. The extremely high brightness can cause permanent eye damage.

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.

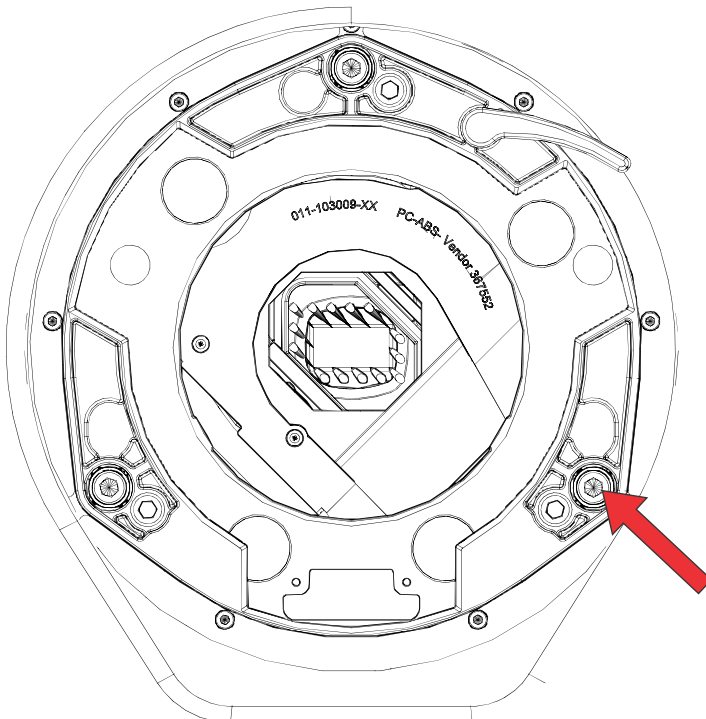
1. Remove the lens surround.
2. Display the Boresight test pattern.
3. Loosen the lock screws highlighted in the image below.



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

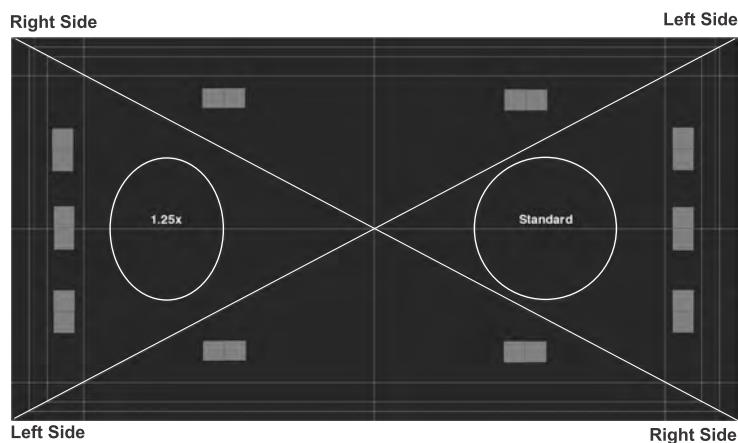


5. Adjust the left boresight screw equally in the opposite direction.



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.

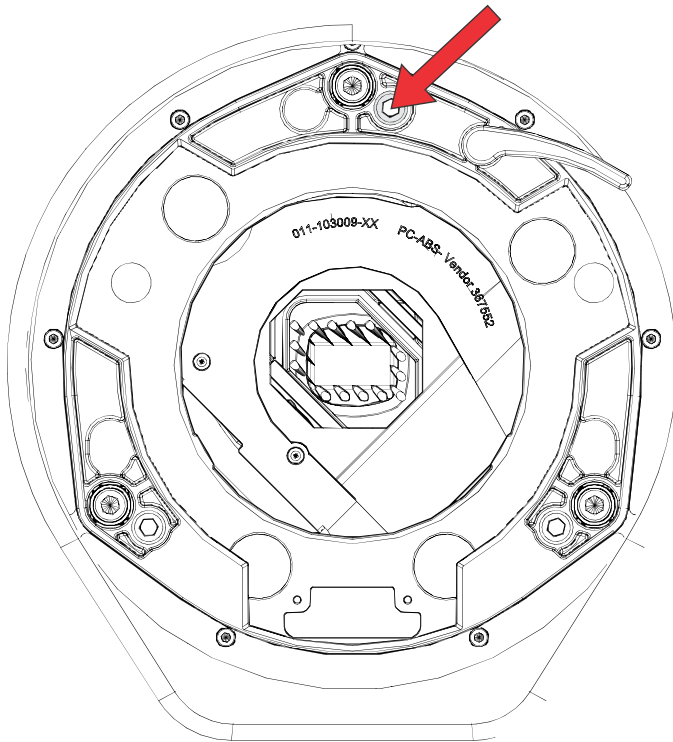
- This procedure must be performed by Christie qualified technicians.



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

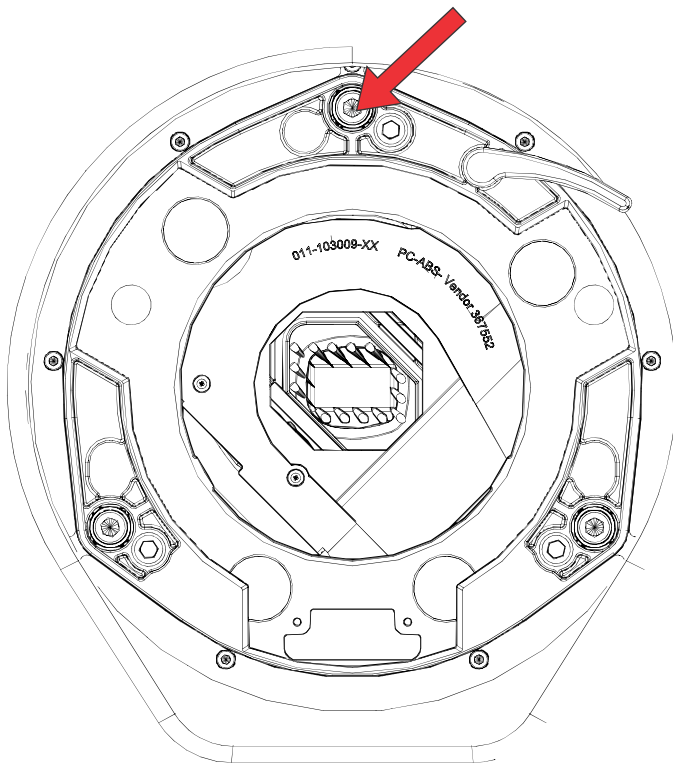
- Do not look directly into the lens when the light source is on. The extremely high brightness can cause permanent eye damage.

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

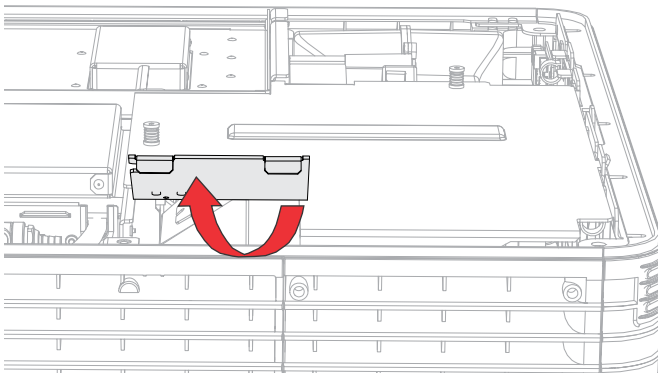
Whenever the integrator module is moved or replaced, rotate the integrator rod for proper focus and full illumination of the three digital micromirror devices (DMDs).



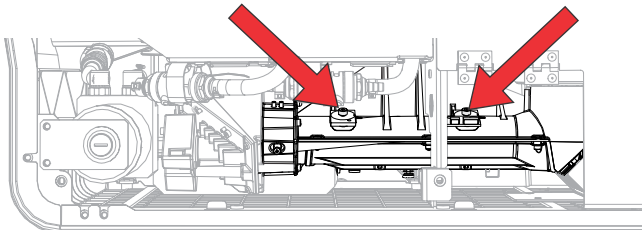
**Warning!** If not avoided, the following could result in death or serious injury.

- 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.

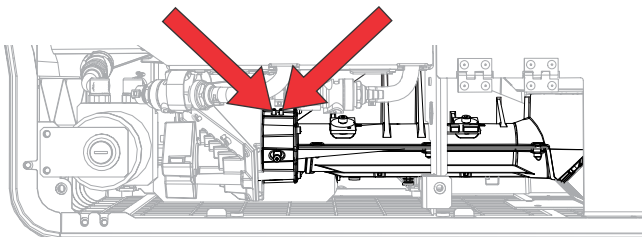
1. Display a full white field test pattern.
2. Remove the top cover.
3. Put on a pair of heat resistant gloves and UV resistant glasses.
4. Open the integrator rod access door.



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 44).

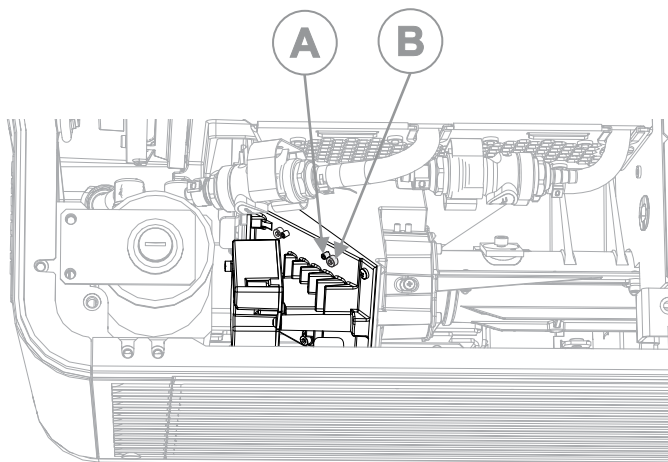
9. Tighten all of the integrator rod set screws.
10. Replace the top cover.

## Adjusting the fold mirror

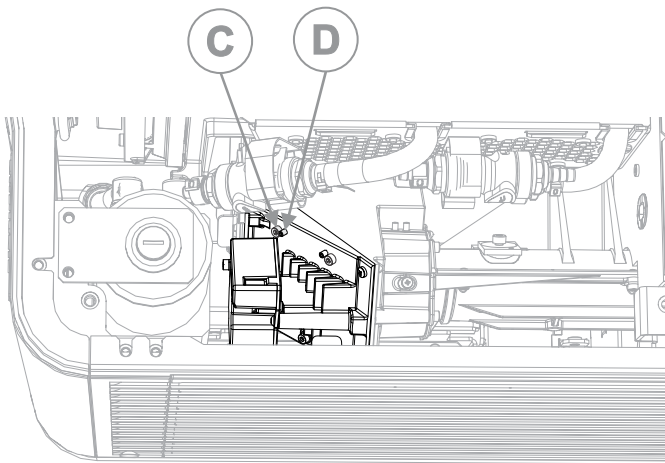
When properly aligned, the fold mirror directs light from the integrator fully and precisely onto the DMD pixels. If a corner or edge of an image is missing, the fold mirror might be misaligned with the optical system.

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).

