

# Service Manual

020-101917-01

## CP2208



## NOTICES

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### GENERAL

Every effort has been made to ensure accuracy, however in some cases changes in the products or availability could occur which may not be reflected in this document. Christie reserves the right to make changes to specifications at any time without notice. Performance specifications are typical, but may vary depending on conditions beyond Christie's control such as maintenance of the product in proper working conditions. Performance specifications are based on information available at the time of printing. Christie makes no warranty of any kind with regard to this material, including, but not limited to, implied warranties of fitness for a particular purpose. Christie will not be liable for errors contained herein or for incidental or consequential damages in connection with the performance or use of this material. Canadian manufacturing facility is ISO 9001 and 14001 certified.

### WARRANTY

Products are warranted under Christie's standard limited warranty, the complete details of which are available by contacting your Christie dealer or Christie. In addition to the other limitations that may be specified in Christie's standard limited warranty and, to the extent relevant or applicable to your product, the warranty does not cover:

- a. Problems or damage occurring during shipment, in either direction.
- b. Projector lamps (See Christie's separate lamp program policy).
- c. Problems or damage caused by use of a projector lamp beyond the recommended lamp life, or use of a lamp other than a Christie lamp supplied by Christie or an authorized distributor of Christie lamps.
- d. Problems or damage caused by combination of a product with non-Christie equipment, such as distribution systems, cameras, DVD players, etc., or use of a product with any non-Christie interface device.
- e. Problems or damage caused by the use of any lamp, replacement part or component purchased or obtained from an unauthorized distributor of Christie lamps, replacement parts or components including, without limitation, any distributor offering Christie lamps, replacement parts or components through the internet (confirmation of authorized distributors may be obtained from Christie).
- f. Problems or damage caused by misuse, improper power source, accident, fire, flood, lightning, earthquake or other natural disaster.
- g. Problems or damage caused by improper installation/alignment, or by equipment modification, if by other than Christie service personnel or a Christie authorized repair service provider.
- h. Problems or damage caused by use of a product on a motion platform or other movable device where such product has not been designed, modified or approved by Christie for such use.
- i. Problems or damage caused by use of a projector in the presence of an oil-based fog machine or laser-based lighting that is unrelated to the projector.
- j. For LCD projectors, the warranty period specified in the warranty applies only where the LCD projector is in "normal use" which means the LCD projector is not used more than 8 hours a day, 5 days a week.
- k. Except where the product is designed for outdoor use, problems or damage caused by use of the product outdoors unless such product is protected from precipitation or other adverse weather or environmental conditions and the ambient temperature is within the recommended ambient temperature set forth in the specifications for such product.
- l. Image retention on LCD flat panels.
- m. Defects caused by normal wear and tear or otherwise due to normal aging of a product.

The warranty does not apply to any product where the serial number has been removed or obliterated. The warranty also does not apply to any product sold by a reseller to an end user outside of the country where the reseller is located unless (i) Christie has an office in the country where the end user is located or (ii) the required international warranty fee has been paid.

The warranty does not obligate Christie to provide any on site warranty service at the product site location.

### PREVENTATIVE MAINTENANCE

Preventative maintenance is an important part of the continued and proper operation of your product. Please see the Maintenance section for specific maintenance items as they relate to your product. Failure to perform maintenance as required, and in accordance with the maintenance schedule specified by Christie, will void the warranty.


### REGULATORY

The product has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a commercial environment. The product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of the product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user's own expense.

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

이 기기는 업무용 (A 급) 으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이점을 주의하시기 바라며 , 가정 외의 지역에서 사용하는 것을 목적으로 합니다 .

#### **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. Please help us to conserve the environment we live in!

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# Introduction

This manual provides technical information for assisting qualified Christie authorized service technicians in the servicing and repair of CP2208 projectors.

Every effort has been made to make sure the information in this manual is accurate and complete. However, due to continuing research all information is subject to change without notice. Christie assumes no responsibility for omissions or inaccuracies.

For Christie Integrated Media Block (IMB) operational procedures, see Christie Integrated Media Block User Manual (P/N: 020-100845-XX).

## Safety information

### Projector skins



**Warning!** Failure to comply with the following could result in death or serious injury.

- **UV HAZARD!** When servicing the projector with the top lid removed anyone within the immediate vicinity must wear safety glasses with side shields and Christie approved protective safety clothing (P/N: 598900-095).
- Never operate the projector or the fans without all the covers installed.

Durable covers protect the components within the projector. Several removable covers (also called skins) let you access serviceable components without disassembling the projector completely.

### Lamp



**Danger!** Failure to comply with the following results in death or serious injury.

- **EXPLOSION HAZARD!** Only service technicians trained specifically by Christie on lamp replacement and lamp safety may handle the lamp. High-pressure lamp may explode if improperly handled. Always wear Christie approved protective safety clothing whenever the internal lamp door is open.
- **EXPLOSION HAZARD!** Lamp replacement must be performed by Christie trained personnel only. Wear authorized protective clothing (P/N: 598900-095) whenever the lamp door is opened and when handling the lamp. Never apply a twisting or bending force to the quartz lamp body. Use the correct wattage lamp supplied by Christie. Make sure those within the facility of the projector are also wearing protective safety clothing.
- **HOT SURFACE!** Never attempt to remove the lamp when it is hot. The lamp is pressurized when hot and may explode, causing personal injury or death and/or property damage. Allow the lamp to cool completely.

Never exceed the warranted lamp lifetime by more than 20% because an old lamp becomes increasingly fragile and more prone to sudden failure or even explosion. To see how many hours

have been logged on the current lamp, check the **Advanced Setup: Lamp Power/LiteLOC Setup window** on the TPC.

## Lamp power supply (LPS)



**Danger!** Failure to comply with the following results in serious injury.

This power supply is non-serviceable. Never attempt to open or service this module - serious injury may result. A faulty supply must be replaced.

The LPS is located at the rear of the projector. The LPS supplies the lamp with power.

## Power



**Warning!** Failure to comply with the following could result in serious injury.

DO NOT attempt operation if the AC supply is not within the voltage range specified on the license label on the back of the projector. Always turn the projector off before you unplug the AC power cord. Wait 15 minutes for the main exhaust fan to turn OFF and for the lamp to cool before you unplug the projector.



**Danger!** Failure to comply with the following results in serious injury.

High voltages may be exposed—Qualified personnel only. Always power down and unplug the projector prior to disassembly.

Power supplies **are not** serviceable. Any faulty power supply module must be replaced. Never open or attempt to service a power supply. Contact Technical Support for a replacement.



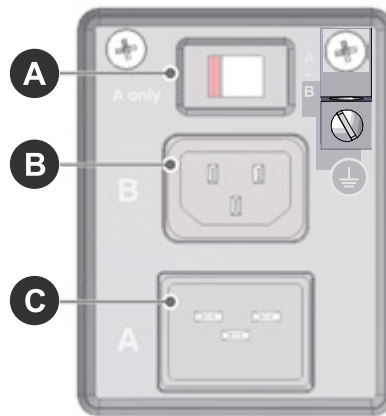
**Warning!** Failure to comply with the following could result in serious injury.

A dedicated earth wire must be installed on the projector before it can be connected to power. The dedicated earth wire can only be installed by a Christie accredited service technician or an electrician. All installations must meet the electrical codes for your area. The protected earth wire must be green/yellow 12 AWG minimum. See [Specifications](#) on page 81 for power requirements.

Power remains available to the projector even after lamp shutdown (STANDBY mode) so that online monitoring and software upgrades can be performed. The projector is powered by 200–240VAC power from the theater. The switching LPS (lamp power supply) provides a well-regulated DC current up to 97 amps with a maximum LPS power of 2.3kW. The power output from the LPS is controlled by the PCM through a dedicated 'RS232' connection from the backplane to the LPS. A secondary 100–240VAC inlet can be selected using a switch, which allows the main electronics to be powered separately through a universal 100–240VAC UPS. The main LPS is powered through the main 200–240VAC inlet. A discrete AC switch above the two inlets lets you select how the main electronics are powered.

- From the main inlet: **A only**, which requires only one power cord to supply the entire unit.

- From the secondary inlet supplied by the UPS: **A+B** using an additional power cord (not provided).



<b>A</b>	AC Switch
<b>B</b>	100-240V secondary inlet
<b>C</b>	200-240V main inlet

## UV light



**Danger!** Failure to comply with the following results in serious injury.

UV HAZARD! Never look directly into the lens or into an open projector. The extreme light output could cause permanent eye damage. Wear ultraviolet-blocking eye wear with side-guards if servicing with the lamp ON.

The projector lamp is an intense source of light and heat. One component of the lamp light is ultraviolet (UV) light, which can produce the same effect on the skin and eyes as sunlight. Avoid exposure to UV radiation by keeping the lamp fully enclosed when you operate the projector and by wearing authorized protective clothing (P/N: 598900-095) before opening the lamp door. DO NOT operate the lamp without the lamp door in place.



**Notice.** Failure to comply with the following may result in property damage.

- The American Conference of Governmental Industrial Hygienists (ACGIH) recommends that occupational UV exposure for an 8-hour day be less than 0.1 microwatts per square centimeters of effective UV radiation. An evaluation of your workplace is advised to Make sure that employees are not exposed to cumulative radiation levels exceeding the government guidelines for your area.
- Be aware that some medications are known to increase sensitivity to UV radiation.

This projector must be operated in an environment that meets the operating range specifications.

## High temperature



**Danger!** Failure to comply with the following results in serious injury.

Only Christie-authorized service technicians trained specifically on lamp replacement and lamp safety may handle the lamp. A high-pressure lamp may explode if improperly handled. Always wear Christie approved protective safety clothing whenever the lamp door is open or while handling the lamp. Never attempt to access the lamp while it is running. Wait at least 15 minutes after turning the lamp OFF before powering down, disconnecting from AC, and opening the lamp door.

The projector lamp operates at very high temperatures and pressures. If you do not let the bulb cool sufficiently prior to handling, the lamp could explode and cause personal injury and/or property damage. After powering the lamp OFF, you must **wait at least 15 minutes** before disconnecting AC and opening the lamp door. This practice provides enough time for the internal lamp cooling fans to cool the bulb. Always cool the bulb **completely** before handling. **Always** wear Christie-approved protective safety gear (P/N: 598900-095) before opening the lamp door.

## Power cord



**Warning!** Failure to comply with the following could result in serious injury.

DO NOT attempt operation if the AC supply is not within the specified voltage and power range. Refer to the Specifications section. Always power down the projector before unplugging the AC power cord. The appropriate ratings for the projector are listed on the license label (located on the back of the projector). Wait 15 minutes for the main exhaust fan to turn OFF and for the lamp to cool sufficiently before unplugging the projector.

Use only the power cord provided with the projector. DO NOT compromise safety by using other connectors.

## Lead dress

Before you service the projector, always observe the original lead dress carefully. Take extra precautions to secure all harnessing properly, especially in the high voltage circuitry areas (that is, lamp cables). Replace any wire that appears to have damaged insulation. Always replace ground connections.

## Ground/earth connections



**Danger!** Failure to comply with the following results in death or serious injury.

**ELECTRICAL SHOCK HAZARD!** Never defeat the ground/earth connection of the projector for any reason. This poses an electric shock hazard that could potentially lead to bodily harm or DEATH.

After you service a projector, it is a critical safety requirement to make sure that all ground/earth connections are properly connected before powering up. Failure to ground/earth the projector properly can allow a potentially hazardous current to pass from any exposed metal on the product through the human body. Maintain the ground/earth connection of the projector during all operations.

## Cleaning



**Danger!** Failure to comply with the following results in serious injury.

ELECTRICAL SHOCK HAZARD! Make sure that the projector is completely powered down and disconnected from AC before the lens or any of the projection head covers or doors are loosened and removed. Wear gloves when handling internal components.

You must keep all internal components clean during any service procedure. In particular, all of the projector's optics must remain free of contaminants to perform at the level specified for the projector. Even a small amount of dust or a fingerprint can degrade the image or cause a noticeable reduction of brightness. When you service the projector, take all necessary measures to avoid touching or contaminating optical surfaces. Always wear gloves (provided) when you handle internal components. Make sure that the projector is **OFF** and **disconnected from AC** before you clean it.

If you follow the proper precautions, a **minimum** amount of cleaning (**typically none**) is required during and after servicing.

## Technical support

For immediate assistance with common problems, see Troubleshooting.

If you are unable to resolve your issue, contact Christie support. In order that a support representative can better assist you, have the model and serial number of your projector ready. For contact information for your region, see the back cover of this document.



# Adjusting the Image

This section provides information and procedures for adjusting the projector image.


## Rotating the integrator rod



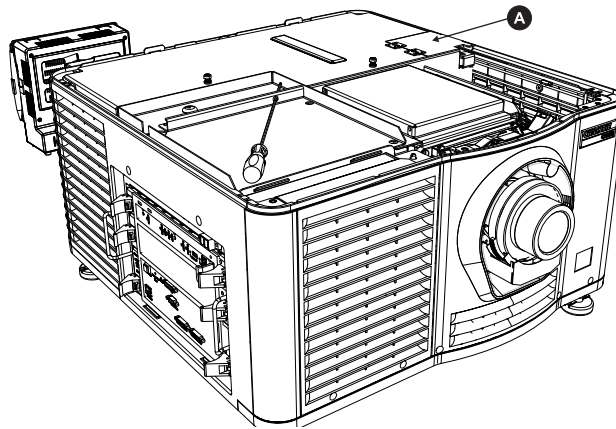
**Warning!** Failure to comply with the following could result in serious injury.

- Never operate the projector or the fans without all the covers installed.
- UV HAZARD! When servicing the projector with the top lid removed anyone within the immediate vicinity must wear safety glasses with side shields.

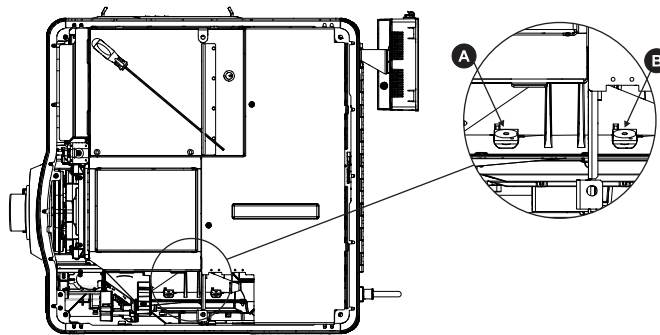
Whenever the integrator module is moved or replaced, its rotation must be corrected for proper focus and full illumination of the three digital micromirror devices (DMDs).

1. Display a full white field test pattern:
  - a. On the touch panel controller (TPC), tap the **Test Pattern** icon (  ) in the task bar.
  - b. Tap **All Test Patterns**.
  - c. Tap **RGB-12bit-Full Screen White**.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Put on a pair of heat resistant gloves and UV resistant glasses.

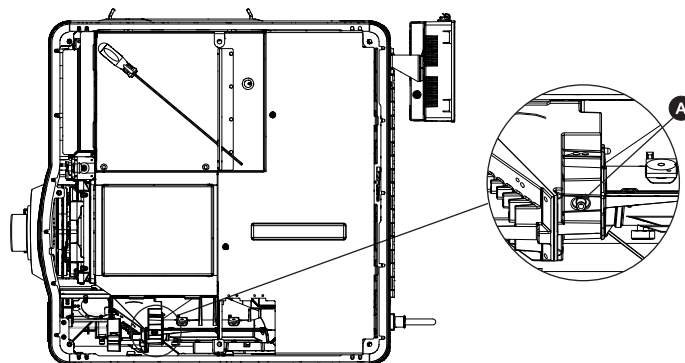
4. Open the integrator rod access door (A).



5. Loosen the two integrator rod set screws (A) and (B).



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 set screws on the end of the optical housing and then move the handle (A) attached to the lens backward and forward.




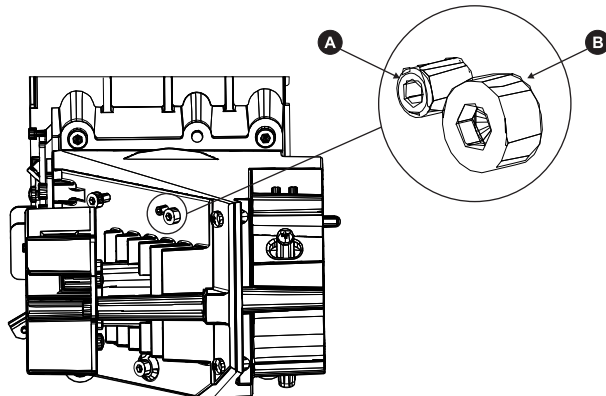
8. Verify there are no shadows on the screen. If shadows appear, see [Aligning the fold mirror](#) on page 15.
9. Tighten all of the integrator rod set screws.

10. Replace the top lid.

## Aligning the fold mirror

If a corner or edge of an image is missing, the fold mirror might be misaligned with the optical system. To correct this issue:

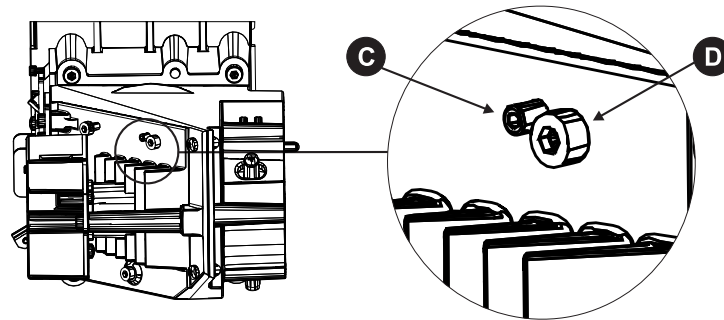
1. Remove the top lid and set it aside. See [Removing the top lid](#) on page 33.
2. Display a full white test pattern:
  - a. On the touch panel controller (TPC), tap the **Test Pattern** icon (  ) in the task bar.
  - b. Tap **All Test Patterns**.
  - c. Tap **RBG-12bit-Full Screen White**.
3. Insert a hex driver in the first set screw (A) and a hex driver in the first cap screw (B).



<b>A</b>	Set screw (x2)
<b>B</b>	Cap screw (x2)

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 (C) and a hex driver in the second cap screw (D).



<b>C</b>	Set screw (x2)
<b>D</b>	Cap screw (x2)

6. Equally turn the set screw (A) and cap screw (B) in opposite directions until the black corner is removed.
7. Replace the top lid.

## Adjusting the vertical boresight angle



**Warning!** Failure to comply with the following could result in serious injury.


A boresight adjustment should only be made when the image cannot be focused uniformly on the screen by aligning the projector to the screen and focusing the lens. When adjusting boresight, you must maintain the boresight distance from the lens to the prism plane set by Christie. For example, when you move the top screw outward, turn the bottom two boresight screws to maintain the overall distance.



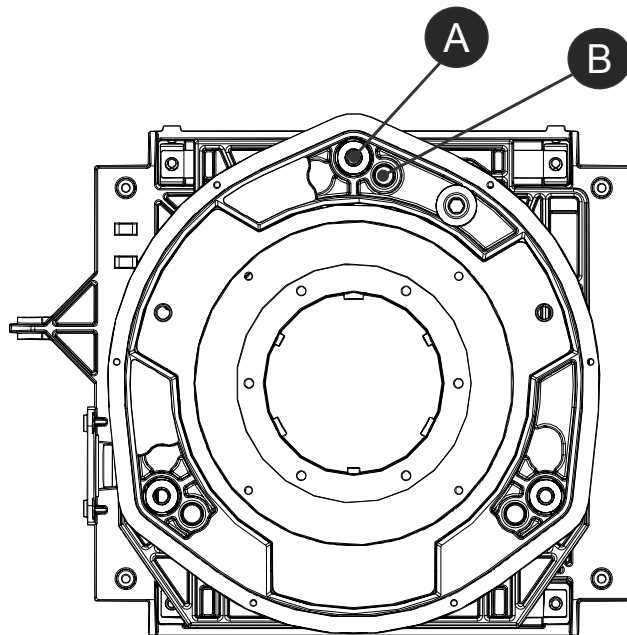
**Caution!** Failure to comply with the following could result in minor or moderate injury.

Only adjust vertical boresight 1/8 of a turn or less at one time to maintain optimal lens performance (i.e. factory setup of absolute lens distance to the prism). It is critical that each turn of the cap screws is tracked to ensure adjustments are accurate.

It is recommended that you complete a top and bottom boresight adjustment before adjusting the horizontal boresight.

1. Remove the lens surround.
2. Display the DC2K Framing2 test pattern:
  - a. On the touch panel controller (TPC), tap the **Test Pattern** icon (  ) in the task bar.
  - b. Tap **All Test Patterns**.
  - c. Tap **DC2K Framing 2**.

3. Loosen the set screw (B).



<b>A</b>	Cap screw—adjusts top and bottom boresight
<b>B</b>	Set screw—locks or unlocks the cap screw

4. Turn the vertical cap screw (A) 1/8 of a turn counter-clockwise.
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 cap screw 1/8 of turn clockwise. Ensure 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, it should never be exceeded. Always compensate both left and right horizontal adjustments according to the vertical adjustment.

7. Check the image after each adjustment. Continue to make adjustments until both 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.
8. When the top and bottom of the image are equally in focus lock the set screw to hold it in position. Recheck the image.
9. If additional adjustment is required, see [Adjusting the horizontal boresight](#) on page 18.
10. Replace the lens surround.

# Adjusting the horizontal boresight



**Warning!** Failure to comply with the following could result in serious injury.


A boresight adjustment should only be made when the image cannot be focused uniformly on the screen by aligning the projector to the screen and focusing the lens. When adjusting boresight, you must maintain the boresight distance from the lens to the prism plane set by Christie. For example, when you move the top screw outward, turn the bottom two boresight screws to maintain the overall distance.

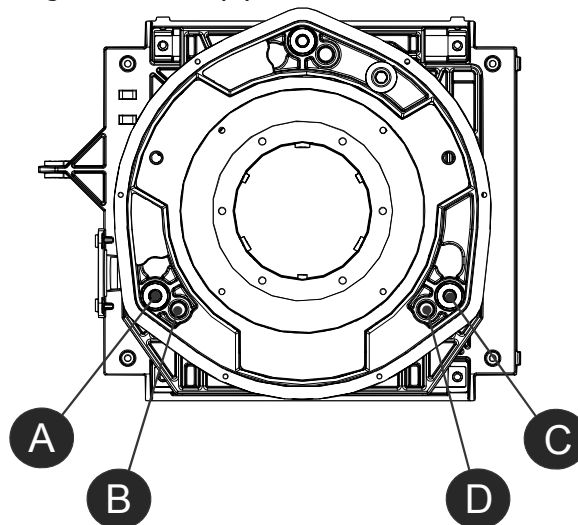


**Caution!** Failure to comply with the following could result in minor or moderate injury.

Only adjust horizontal boresight 1/8 of a turn or less at one time to maintain optimal lens performance (i.e. factory setup of absolute lens distance to the prism). It is critical that you count each turn of the cap screws to ensure accurate adjustment.

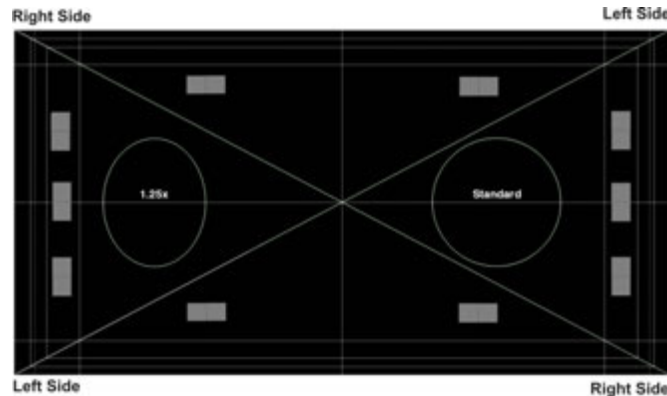
Typically, horizontal boresight does not require adjustment. It should only be adjusted if a large horizontal angular offset to the screen is required.

1. Remove the lens surround.
2. Display the DC2K Framing test pattern:
  - a. On the touch panel controller (TPC), tap the **Test Pattern** icon (  ) in the task bar.
  - b. Tap **All Test Patterns**.
  - c. Tap **DC2K Framing**.
3. Loosen the right boresight set screw (B).



<b>A</b>	Right boresight cap screw
<b>B</b>	Right boresight set screw
<b>C</b>	Left boresight cap screw
<b>D</b>	Left boresight set screw

4. Turn the right boresight cap screw (A) 1/16 of a turn clockwise.
5. Adjust the left boresight cap screw (C) equally in the opposite direction.
6. If the quality of the projected image has not improved, turn the right boresight cap screw 1/16 of 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. Once both cross hairs are in focus lock the set screw for right boresight.



8. Repeat steps 5 to 7 for the left-side.
9. Each corner of the screen should be equally in focus when horizontal boresight is completed correctly. If necessary, repeat vertical boresight. Only adjust vertical boresight 1/8 of a turn or less at one time to maintain optimal lens performance (i.e. factory setup of absolute lens distance to the prism). It is critical that each turn of the cap screws is tracked to ensure adjustments are accurate.

## Calibrating the yellow notch filter color




**Warning!** Failure to comply with the following could result in serious injury.

UV HAZARD! When servicing the projector with the top lid removed anyone within the immediate vicinity must wear safety glasses with side shields.

Complete this procedure whenever the yellow notch filter is moved or replaced, or when a new IOS (Illumination Optics System) is installed.

1. Set up a spectroradiometer in front of the viewing screen and aim it at the center of the screen.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the screw holding the yellow notch filter cover.
4. Loosen the lock screw and move the yellow notch filter backward or forward.
5. Create an MCGD file:
  - a. Tap **Menu > Advanced Setup > MCGD File Setup**.

- b. Tap **Save As**.
  - c. Enter a name for the MCGD file in the **Filename** field and then tap **OK**.
  - d. Tap the option button in the red area of the chromaticity image to display the red test pattern.
  - e. Measure the red chromaticity with a spectroradiometer.
  - f. Record the red chromaticity value.
  - g. Repeat steps 5 to 7 for the green, blue, and white chromaticity measurements. Select the test pattern that matches the color you are measuring.
  - h. Enter the chromaticity measurements you recorded in step 7 in the red, green, blue, white, and black x and y fields.
  - i. If the MCGD file will be associated with a 3D channel, tap **Enable 3D** and select a frame rate in the **Frame Rate N:M** list.
  - j. Tap **Save**.
6. Create a channel that includes the new MCGD file:
- a. Tap **Menu > Channel Setup**.
  - b. Select a channel in the **Channel Name** list.
  - c. Tap the **Launch Dialog**  icon.
  - d. Enter a name for the channel and tap **Enter**.
  - e. Complete these fields on the Config 1 screen:

Field	Description
Icon	The icon associated with the channel.
Input	The location or connection for the current input.
Data Format	The source color depth (8-10-12 bit) for the channel.
Source File	The resolution and aspect ratio for the channel.
Screen File	The screen type, masking, cropping, and lens settings for the channel.
Use PCF	Associates the channel with a Projector Configuration File (PCF) and prevents Channel adjustments.
PCF	The PCF file associated with the channel.
Lamp File	The lamp file associated with the channel. Tap the <b>Launch Dialog</b> icon to edit the lamp file settings. Any changes made to the Lamp File settings are applied to all channels that use this lamp file.

- f. Tap Config 2 in the left pane and then complete these fields:


Field	Description
Measured Color	The name of the Measured Color Gamut Data (MCGD) file you created in step 5.




Field	Description
Target Color	The Target Color Gamut Data (TCGD) value. Select <b>Color Verification</b> .
Color Space	The method of color decoding for the current source. The default is YCbCr for all DVI sources. The default for all cinema sources is Unity RGB. This option is not available when <b>Use PCF</b> is selected.
Gamma	The gamma correction required for the proper tonal range of the source material. This option is not available when <b>Use PCF</b> is selected.
LUT_CLUT	Applies a 3D color cube for increased color accuracy. This option is not available when <b>Use PCF</b> is selected.
Scan Type	The video scan type. The default is <b>Progressive</b> .
Automatic Scan Type Detection	Automatically performs scan type detection. This feature is supported for PIBS1 inputs only.
Use PCT	Applies Christie Pureformity Color Technology (PCT) to the channel.
PCT File	Identifies the Christie Pureformity Color Technology (PCT) file associated with the channel.

- g. Tap **3D Control** in the left pane if the channel will be used to display 3D content. Complete these fields:

Field	Description
Enable 3D	Enables 3D.
3D Test Patterns	Displays 3D test patterns.
3D Sync Input Mode	<p>Specifies whether a specific frame of input data has left eye or right eye data.</p> <p>Select Use White Line Code (true and inverted) if you are using a single 3D input signal in which an embedded white line at the bottom of each frame identifies left and right, and an additional separate 3D stereo sync input at the GPIO port is not present. The bottom row of the left-eye sub-field should be pure white for the left-most 25% of the pixel row and pure black for the remainder of the row. The bottom row of the right-eye sub-field should be pure white for the left-most 75% of the pixel row and pure black for the remainder of the row.</p> <p>Select Use Line Interleave for 3D source data only. When specified, the ICP will de-interleave each line into the left image or right image in memory as specified. Line interleave can be used with PsF 3D data (left and right data for one field, then left and right data for second field).</p>
L/R Display Reference	Specifies which frame of eye data to display during a specific display frame. This signal is referenced to the display frame rate which is specified by the Frame Rate N:M.
Frame Rate N:M	Sets how many frames to display per number of frames that form one complete image. Increase the display frame rate to reduce flicker from your source(s).

Field	Description
L/R Display Sequence	Defines the frame order (L-R or R-L) required for 3D perspective. This option only has meaning when the Frame Rate factor M is equal to 2. For this case, 2 input frames of data are required to constitute a complete frame of image data. This parameter tells the system which frames go together to make a complete image. When using <b>Line Interleave</b> as the <b>3D Sync Input Mode</b> , ensure that <b>Left (L1R1 L2R2)</b> is selected.
3D Sync Polarity	Keeps 3D stereo sync output the same as input (true) or reversed (inverted). <b>True:</b> 3D L/R sync output from GPO will match L/R sync input. <b>Inverted:</b> 3D L/R sync output from GPO will be the opposite of sync input (left = right, right = left).
Dark Time	Creates a blank time interval between left and right frames to allow for LCD shutter glasses, Z screen, or rotating 3D wheel to synchronize the output. See Dark Time and Output Delay below. Values between 0 and 65535 are accepted. Tap the <b>Launch Dialog</b> button  to enter the dark time value.
Output Delay	The non-image time in Microseconds ( $\mu$ ). Offset 3D stereo sync output in relation to dark time interval. Acceptable values are between -32768 and 32767 are accepted where a positive offset = delay and negative offset = start early. Tap <b>Launch Dialog</b> to enter the output delay value.
Phase Delay	The degree of reference between the left and right sync output. Values between -180 and 180 are accepted. Tap <b>Launch Dialog</b> to enter the phase delay value.

- h. Tap **Activate** to activate the channel.
7. Display a RGB-12bit-Full Screen White test pattern:
  - a. On the touch panel controller (TPC), tap the **Test Pattern** icon (  ) in the task bar.
  - b. Tap **All Test Patterns**.
  - c. Tap **RBG-12bit-Full Screen White**.
8. Measure the color point of the pattern with the spectroradiometer and verify that the values are within these tolerances:

Color	X	Tolerance	Y	Tolerance
Red	0.640	+/- 0.002	0.320	+/- 0.002
Green	0.280	+/- 0.002	0.640	+/- 0.002
Blue	0.160	+/- 0.002	0.100	+/- 0.002
White	0.314	+/- 0.002	0.351	+/- 0.002



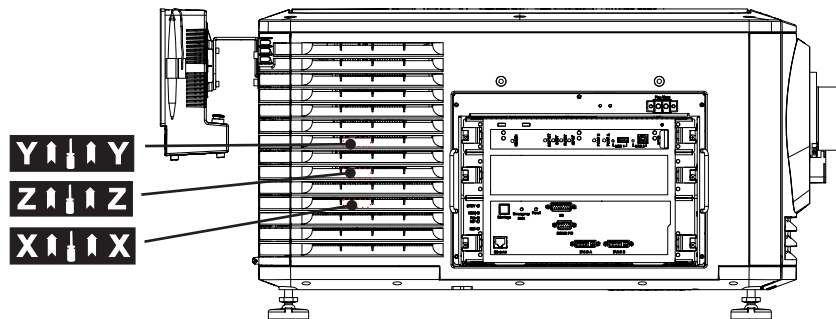
If the values are outside the tolerances, check the MCGD values are correct, the channel was created correctly, or reposition the yellow notch filter. If these corrective measures do not work, replace the yellow notch filter. Repeat the entire procedure for each corrective action you attempt.

9. Repeat steps 7 and 8 for the RBG-12bit-Full Screen Red, Green, and Blue test patterns.
10. Replace the yellow notch filter cover.
11. Replace the top lid.

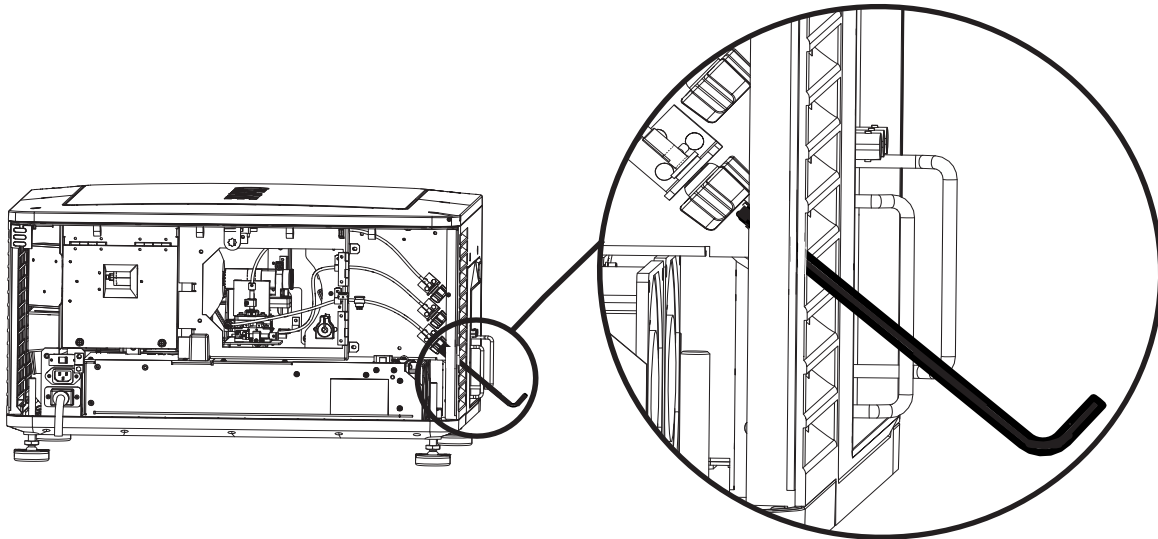
## Aligning the lamp

You must adjust the lamp position whenever you install a lamp. Before you adjust the lamp, turn the lamp on, open the douser, and allow it to warm for a minimum of 10 minutes.

1. Tap **Menu > Advanced Setup > Lamp Power**.
2. Verify the value in the **Power%** field is at a level suitable for your requirements.
3. Tap **Menu > Advanced Setup > Light Adjust**.
4. Record the number in the **Intensity** field.
5. Tap **Display Full Screen White Test Pattern**.
6. Complete a coarse lamp adjustment:
  - a. Locate the Y axis adjustment label on the operator side of the projector.



- b. Insert a 5 mm hex driver through the louvers at an angle below the Y axis adjustment label until it is firmly seated on the Y axis adjustment screw.



- c. Turn the screw clockwise or counterclockwise until the value in the **Intensity** field peaks and then reduces.
  - d. Remove the hex driver and repeat steps a to c to adjust the Z and X axis.
7. Complete a fine lamp adjustment:
- a. Locate the Y axis adjustment label on the operator side of the projector.
  - b. Insert a 5 mm hex driver through the louvers until it is firmly seated on the Y axis adjustment screw.
  - c. Turn the screw slowly clockwise or counterclockwise until you determine the highest value.
  - d. Remove the hex driver and repeat steps a to c to adjust the Z and X axis.
8. Verify the value in the **Intensity** field is greater or equal to the number you recorded in step 4. If value is lower, repeat steps 6 and Step 7.

## Adjusting the DMD convergence



**Caution!** Failure to comply with the following could result in minor or moderate injury.

Do not wear an ESD strap when performing convergence on a live unit. Frequently contact a bare metal surface to prevent static build-up.



**Notice.** Failure to comply with the following may result in property damage.


- This procedure should only be performed by Christie accredited technicians.
- To prevent overheating of the Satellite Formatter Board FPGA's and DMDs, do not run the projector with the light engine blower duct removed.

The projector uses three separate DMD panels to produce three separate red, green and blue image components. To ensure the most accurate color representation across the whole image it is essential the three panels are perfectly aligned so that all pixels line up. Read this section in its entirety before performing a convergence adjustment.

## Preparation

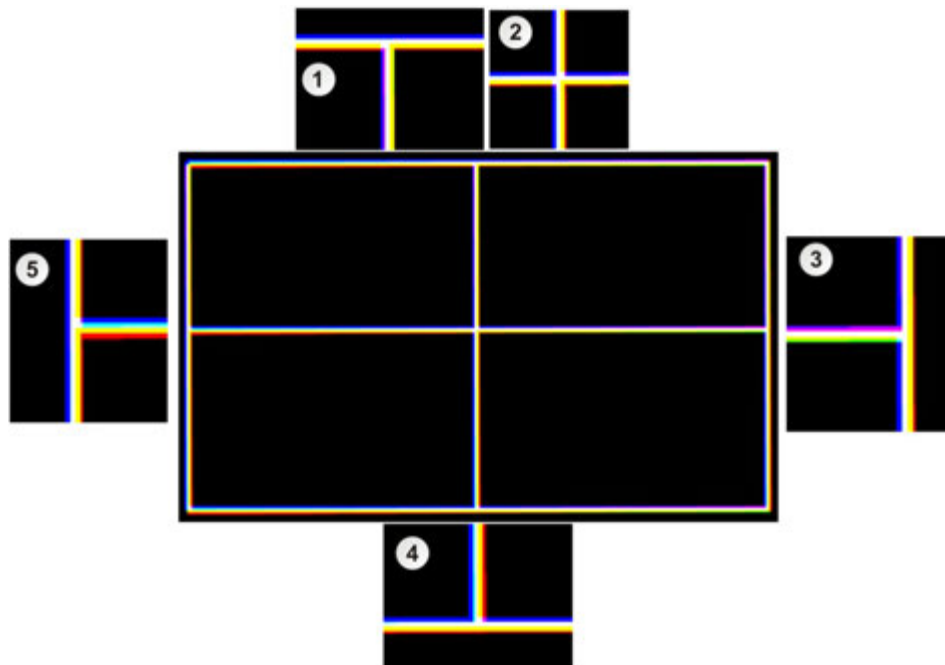
- Reset the red, green, and blue digital micromirror device (DMD) values to their default settings:
  - Tap **Menu > Service Setup > Digital Convergence > Default**
- Make sure the projected image is centered and focused on the screen. If it is not, a boresight alignment might be required. See [Adjusting the vertical boresight angle](#) on page 16.
- Make sure a prime lens is installed. Do not use an anamorphic or Wide Converter Lens (WCL) lens when adjusting convergence.
- Configure the projector for maximum usable brightness for the installed application:
  - 14FL for Standard 2D
  - ~25-30FL for Single Projector 3D with a silver screen
  - 25FL per projector for Dual Projector 3D
- Allow the projector to operate for 15 minutes or longer.
- Monitor the prism temperature during the convergence adjustment and keep it within a few degrees of the nominal temperature. Lower the lamp power to reduce the temperature.
- The active screen file should be 2048 x 1080 no crop to prevent any scaling of your reference test pattern.
- Use a 2.5 mm driver with heat-shrink tubing (2.0 inch and 6.5 inch lengths).
- The red image component is used as the fixed reference; no adjustment is required. The recommended convergence adjustments are from green to red and blue to green.
- Complete the vertical and rotation adjustment first and then the horizontal adjustment.

## Evaluating the convergence

1. Display the DC2K Framing test pattern:
  - a. On the touch panel controller (TPC), tap the **Test Pattern** icon (  ) in the task bar.
  - b. Tap **All Test Patterns**.
  - c. Tap **DC2K Framing**.
2. Turn the zoom adjustment ring on the lens until the entire outer edge of the test pattern frame fits the screen.
3. Verify one color at a time.

Look for “twist” using the center vertical and horizontal lines – scan from one side of the screen to the other, observing any change in vertical position of the color in question relative to the point

where you started. In this poor convergence (pattern simplified) example, red is twisted counter-clockwise and blue is high and to the left with no apparent twist.



1. **Top Center:** Note Yellow to the right, Magenta/Blue to the left and Yellow in the middle. This shows that Blue is separated from Green to the left. Blue above shows that Blue is higher than both Green and Red.

2. **Center:** Shows that Blue is high and to the left and Red is twisted.

3. **Right Side:** Note Blue to the left, Yellow to the right and White in the middle. This shows that Blue is separated from Green to the left. Compare to Left Side, where Magenta is to the top on the right, Red is on the Bottom to the left. This is evidence of counter-clockwise twist in Red and that Blue is high.

4. **Bottom Center:** Note Blue to left, Yellow/Red to the right, Cyan in the middle. This shows that Blue is separated from Green to the left and upward. Compare to Top Center where Red is to the right on the bottom, to the left on the top. This is evidence of counter-clockwise twist.

5. **Left Side:** Note Blue to the left, Yellow/Red to the right and White in the middle. This shows that Blue is separated from Green to the left. Compare to the Right Side where Red is to the bottom on the left, Magenta is on the top to the right. This is evidence of counter-clockwise twist in Red and that Blue is high.

## Adjusting the red/green/blue formatter convergence



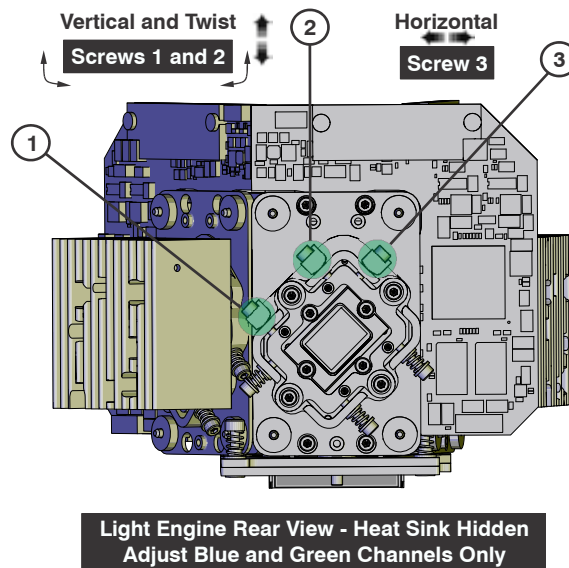
**Caution!** Failure to comply with the following could result in minor or moderate injury. Remove all jewelry before you adjust convergence.



Do not apply excessive force on the adjustment screws. This might cause the convergence adjustment to become misaligned after you remove the adjustment tool.

The Red and Green Formatters are identical in design and adjuster function, but Red cannot be adjusted due to space limitations. The Blue formatter board physical design is different, but the

adjustment functions are the same. The vertical and twist adjustments work together on the horizontal axis.



Screen/Screw	1	2	3
↻	↻	↻	N/A
↻	↻	↻	N/A
↑	↻	↻	N/A
↓	↻	↻	N/A
←	N/A	N/A	↻
→	N/A	N/A	↻

The physical layout of the Formatter boards determines the behavior of the Twist and Vertical adjustments:

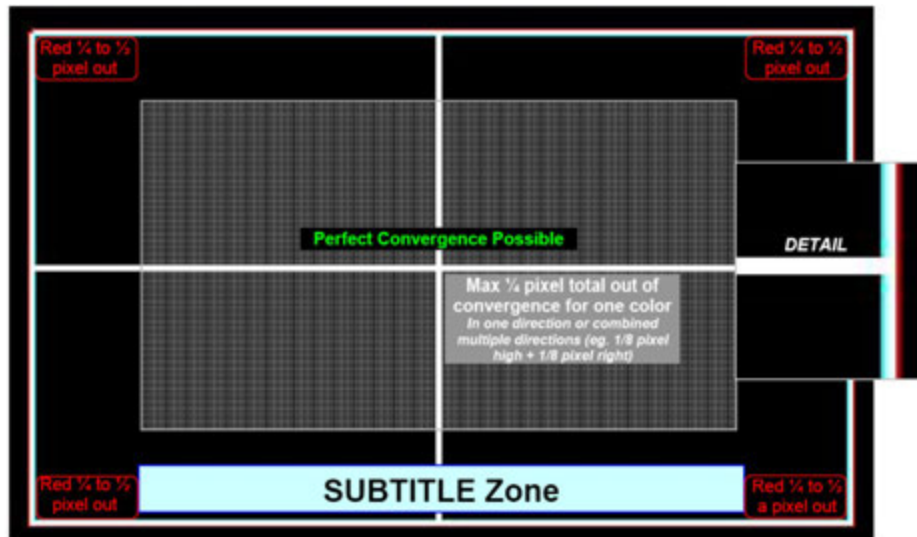
- The vertical adjustment screw and twist adjustment screw interact with each other such that if one is turned in the opposite direction of the other, the twist is affected.
- If both screws are turned equal amounts in the same direction, the image moves vertically.
- The horizontal adjustment screw is independent of the vertical and twist adjustments.

You do not always have to turn the screws simultaneously. However, if you adjust one screw at a time you will need to complete an equal or equal and opposite turn on the other screw to prevent binding and to achieve the correct adjustment.

## Evaluating the convergence adjustments

When your convergence adjustment is complete, the test pattern should have these characteristics:

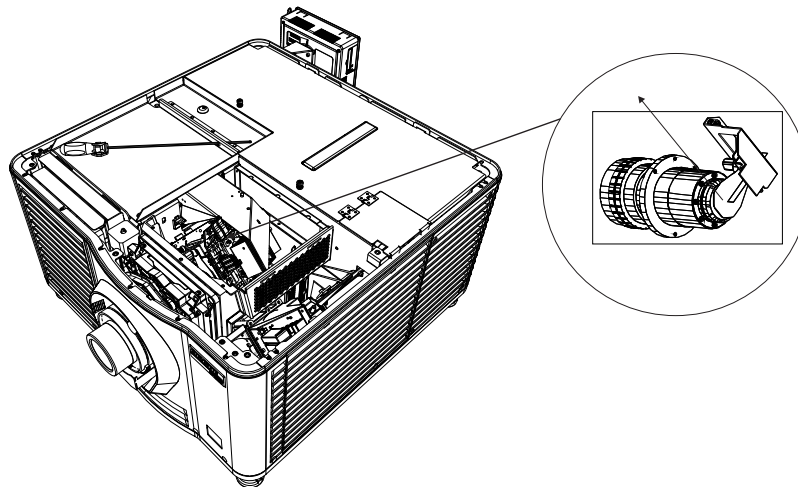
- The center area should be perfectly aligned and display solid white pixels.
- The Red should be evenly 1/4 to 1/2 a pixel out all the way around the outer area and display cyan (green+blue) toward the center of the screen.
- Green and Blue should always be perfectly aligned to each-other (to within 1/4 pixel total in one or a combination of directions.)



## Manually overriding the shutter

Use this procedure to override the shutter when it remains partially open or closed. When time permits, replace the shutter assembly.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid.
3. Remove the high security lid.
4. Manually open or close the shutter.





5. Replace the high security lid and the top lid.
6. Replace the lens.
7. Reconnect the projector to AC power and turn it on.

# Parts and Module Replacement

When you order replacement parts, provide the information found on the product license label on the rear of the projector.

- Projector Model
- Projector Serial Number
- Manufacture Date

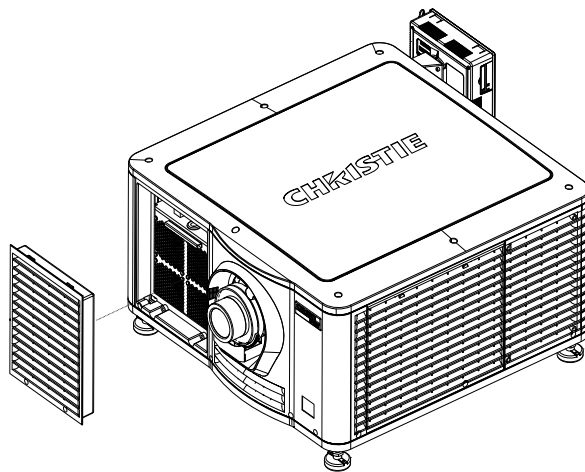
## Inspecting the card cage filter



**Caution!** Failure to comply with the following could result in minor or moderate injury.

Use only high efficiency Christie approved filters. Never operate the projector without the filter installed. Always discard used air filters.

You should check the condition of the card cage air filter monthly. Clean or replace the card cage air filter sooner if you are operating the projector in a dusty or dirty environment. The filter is located on the left side of the projector behind the air filter cover.



1. Loosen the two captive screws on the bottom of the filter cover.

2. Pull the cover out and down.
3. Slide the air filter out and inspect it.

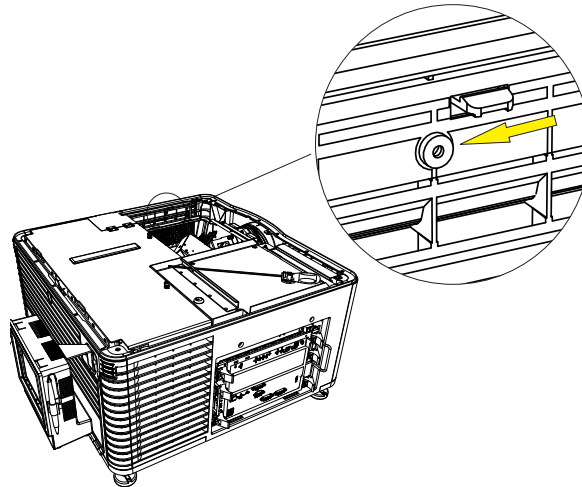
If the filter appears dirty and you cannot see through it, replace it with a new paper filter, or clean it if it is a washable filter. See [Cleaning a washable filter](#) on page 32.

If the filter appears clean, continue to step 4.

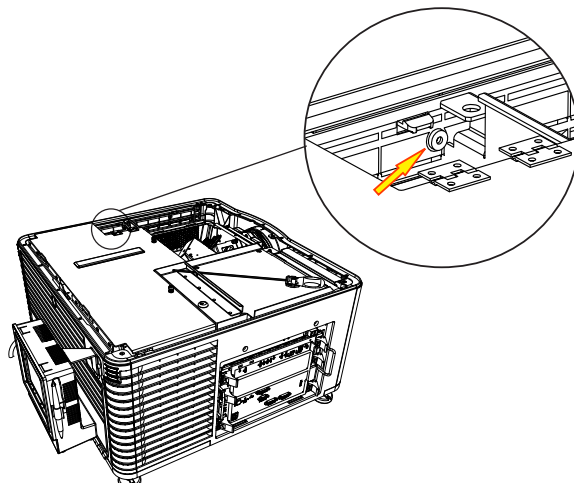
4. Replace the air filter with the airflow indicator facing toward the projector.
5. Install the air filter cover by inserting the two bottom tabs and then pushing the cover closed.
6. Tighten the two captive screws.

## Inspecting the light engine compartment filter

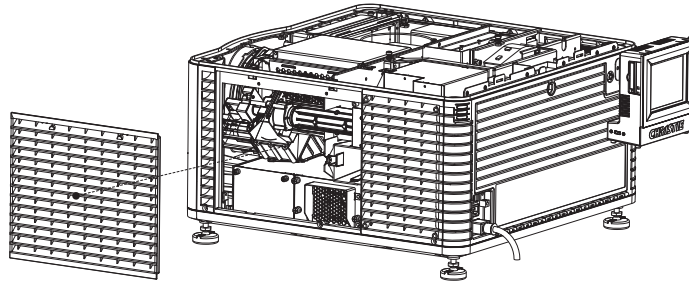
1. Remove the top lid.
2. Reach into the projector and then loosen the first service panel screw.



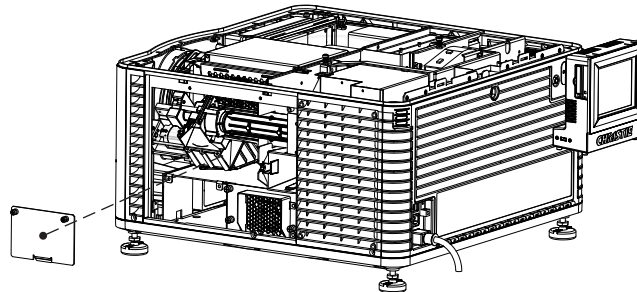
3. Open the integrator rod access door and loosen the second service panel screw.



4. Push the clips on the top of the service panel down and out to remove the service panel.



5. Loosen the two captive screws on the cap plate and then remove it.



6. Slide the air filter out and inspect it.

If the filter appears dirty and you cannot see through it, replace it with a new paper filter, or clean it if it is a washable filter. See [Cleaning a washable filter](#) on page 32.

If the filter appears clean, continue to step 7.

7. Replace the air filter with the airflow indicator facing toward the projector.
8. Install the cap plate and tighten the two captive screws.
9. Install the service panel and then tighten the two screws.
10. Install the top lid.

## Cleaning a washable filter



- Use only high efficiency Christie approved filters. Never operate the projector without the filter installed.
- Use of any other part other than the ones specified by the manufacturer can result in fire, electric shock or risk of personal injury and irreparable equipment damage.
- The installation of a filter that has not been allowed to dry completely can cause an electrical short and damage the projector.

Washable filters (P/N 003-004654-XX Replacement Light Engine Washable Air Filter and P/N 003-004655-XX Replacement Card Cage Washable Air Filter) can be air cleaned or washed.

For filter removal, see [Inspecting the card cage filter](#) on page 30, and [Inspecting the light engine](#)

*compartment filter* on page 31.

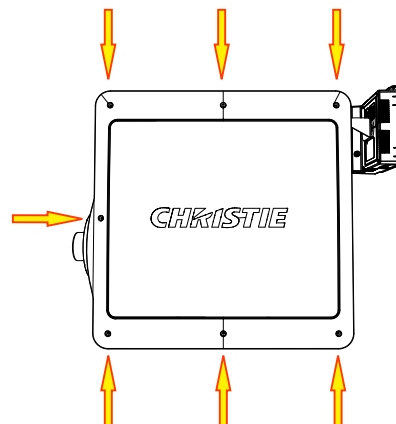
If the amount of dirt on the filter is minimal, use a vacuum or compressed air to remove it. If you use compressed air, the air must move through the filter in the opposite direction of the air flow indicator on the side of the filter.

If amount of dirt is more than minimal, wash the washable filter.

1. Hold the filter on an angle under warm running water so the water flows through the filter in the opposite direction of the air flow indicator on the side of the filter.
2. Rinse the filter thoroughly.
3. Submerge the filter for a minimum of 30 minutes in a container of warm water and two tablespoons of mild detergent or liquid dish soap.
4. If the filter is extremely dirty, move the filter from side to side occasionally, or remove the excess dirt by brushing both sides of the filter with a soft brush.
5. Rinse the filter thoroughly by holding it on an angle under cool running water. The air flow arrow on the side of the filter should face down.
6. Repeat steps 3 and 4 if the filter still appears dirty.
7. Shake the filter over a container until most of the water is removed.
8. Place the filter on its edge on a flat, stable surface and allow it to dry thoroughly.
9. To confirm that the filter is dry, place it over a dry paper towel and shake it. If the paper towel remains dry, the filter can be installed in the projector.
10. Record the date the filter was cleaned.
11. Replace the filter. See *Inspecting the card cage filter* on page 30, or *Inspecting the light engine compartment filter* on page 31.

## Removing the top lid

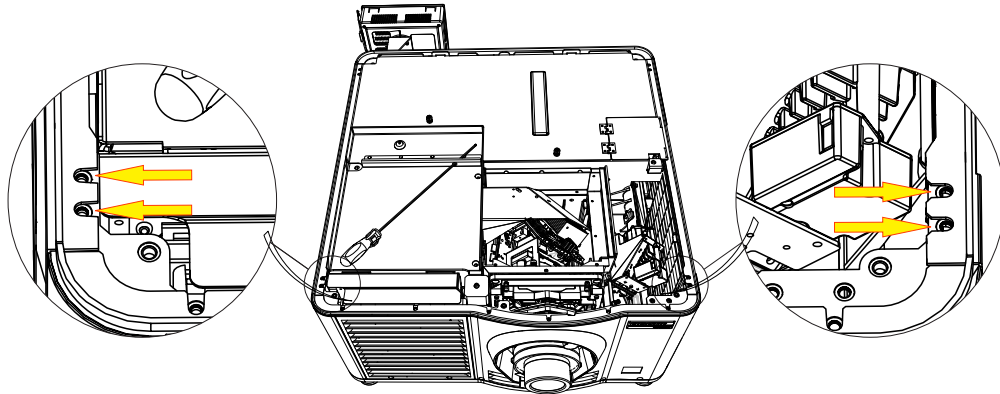
1. Loosen the seven screws that secure the top lid to the projector.



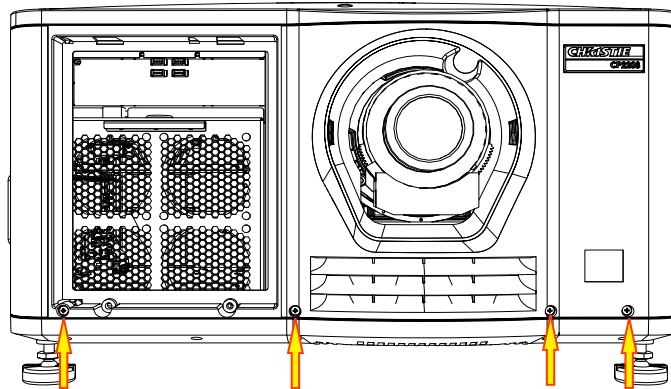
2. Lift the lid up from the rear of the projector.

## Removing the front skin

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the card cage intake air filter cover. See [Inspecting the card cage filter](#) on page 30.
4. Remove the lens surround.
5. Remove the four screws that secure the skin to the projector structure.



6. Remove the set screws from the horizontal and vertical lens adjustment knobs and then pull the knobs off.
7. Remove the three screws from the front skin and the one screw behind the filter cover.

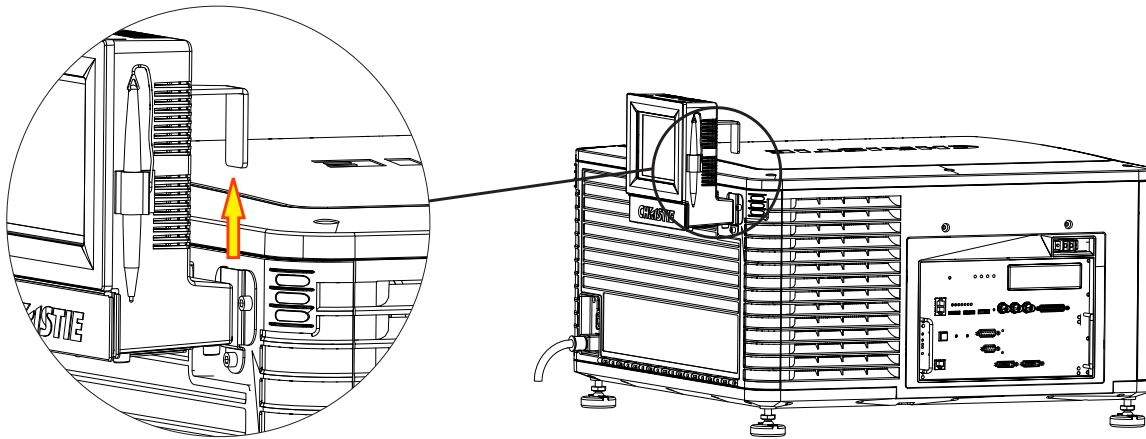


8. Pull the front skin forward to remove it.

## Removing the touch panel controller

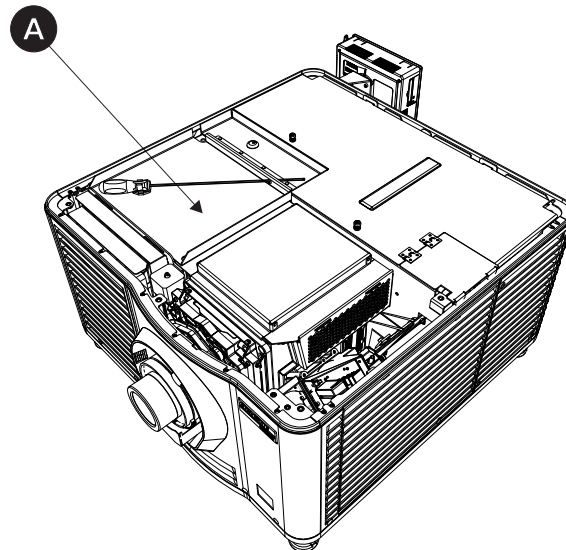
1. Disconnect the touch panel controller (TPC) harness.
2. Slide the TPC mounting bracket out of the bracket support.

3. Disconnect the TPC harness from the bracket support.



## Removing the high security and light engine lid

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Unlock the high security (A) lid with the high security key.



4. Lift the lid up and out.
5. Remove the two screws securing the light engine lid to the center structure and then lift the lid up and out of the projector.

## Removing the high security interlock switch

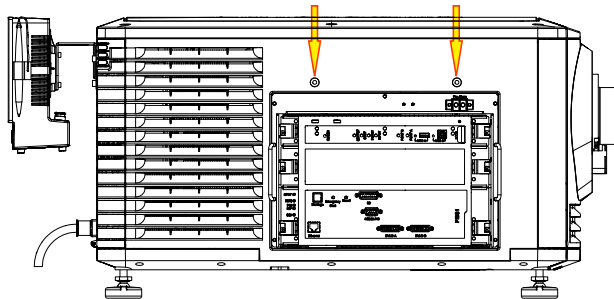
The Lamp Door Interlock is located at the rear of the projector and is activated when you open the firewall door.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the high security lid. See [Removing the high security and light engine lid](#) on page 35.
4. Disconnect the red and black leads from the switch.
5. Remove the two nuts securing the switch to the frame and then remove the interlock switch.

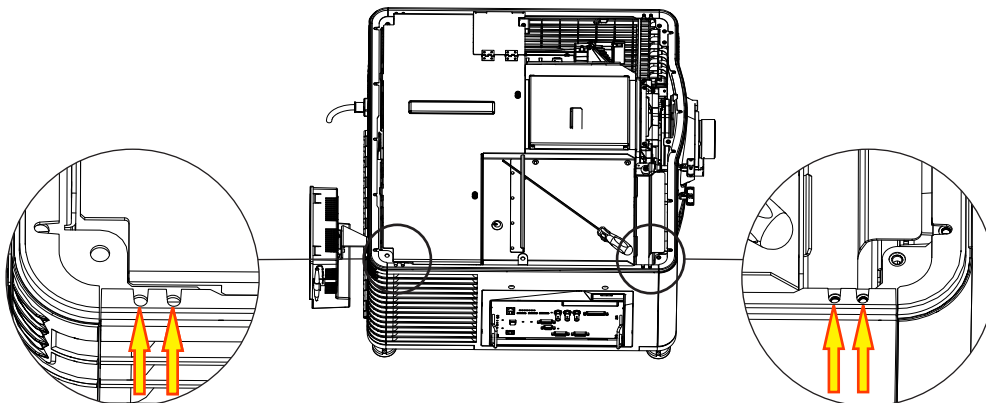
## Removing the card cage skin

This card cage skin should never need to be removed unless it is damaged and requires replacement. From the rear of the projector, the card cage skin is on the right-side of the projector.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the two screws from above the card cage.

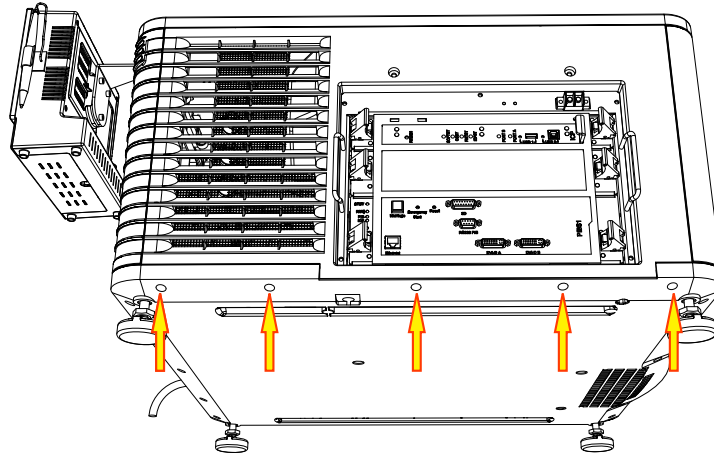


4. Remove the card cage. See [Removing the card cage](#) on page 54.
5. Remove the four screws that secure the skin to the corner brackets.





6. Remove the five screws from the bottom edge of the skin.

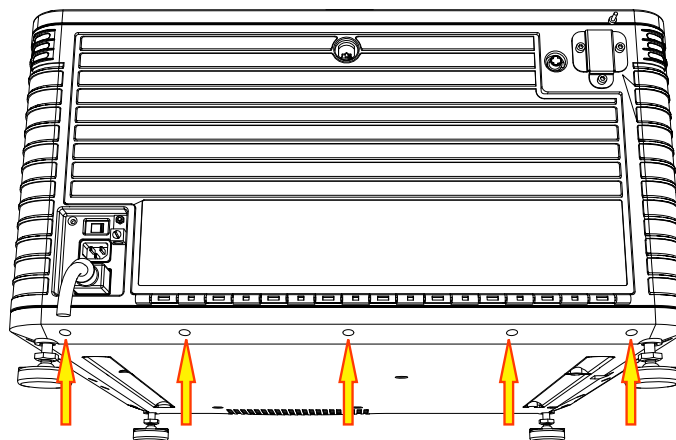


7. Pull the card cage panel out.

## Removing the rear skin

The rear access frame interlocks with the side skins.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the touch panel controller (TPC). See [Removing the touch panel controller](#) on page 34.
4. Remove the safety shield. See [Removing the safety shield](#) on page 39.
5. Remove the two screws securing the TPC harness to the rear skin.
6. Remove the five screws from the bottom edge of the skin.



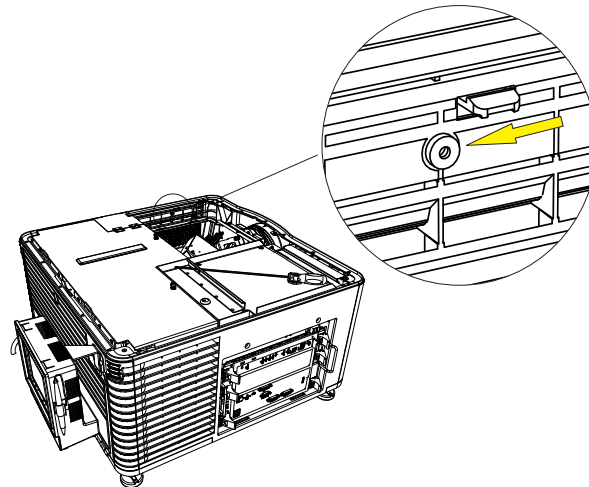
7. Remove the screw from the AC receptacle.

8. Remove the nut and washer securing the ground lug to the projector and then remove the ground lug.
9. Open the lamp door.
10. Loosen the five top skin screws.
11. Pull the skin forward and out.

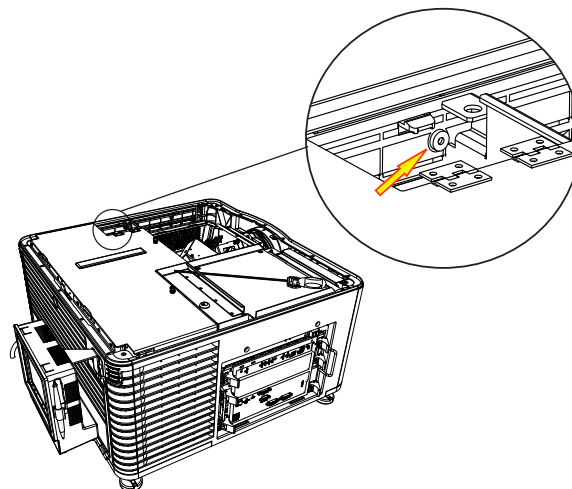
## Removing the service door

The side skin service door allows access to the Low Voltage Power Supply (LVPS), integrator, fold mirror, and light engine air filter.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Reach into the projector and then loosen the first service panel screw.



4. Open the integrator rod access door and loosen the second service panel screw.



5. Push the clips on the top of the service panel down and out to remove the service panel.

## Removing the exhaust panel skin

The exhaust panel is located on the left when facing the rear of the projector. The exhaust panel skin includes the service panel that you can remove separately to access to optical components. The exhaust panel skin rarely needs to be replaced because you can remove the side skin service door to access internal components.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the service door. See [Removing the service door](#) on page 38.
4. Loosen the three screws from the bottom of the exhaust panel skin.
5. Remove the top four hex screws.
6. Pull the skin forward and out.

## Removing the safety shield

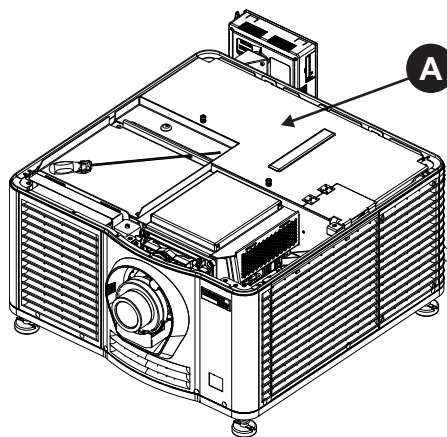


**Warning!** Failure to comply with the following could result in serious injury.

UV HAZARD! Always wear protective safety clothing and a face shield when performing service with the safety shield removed and a lamp installed.

The safety shield is positioned above the lamp reflector and is used to block UV light.

1. Turn the projector off and then disconnect it from AC power
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Loosen the two captive screws.
4. Pull the safety shield (A) up and outward from the locking tabs.



## Replacing the lamp



**Danger!** Failure to comply with the following results in serious injury.

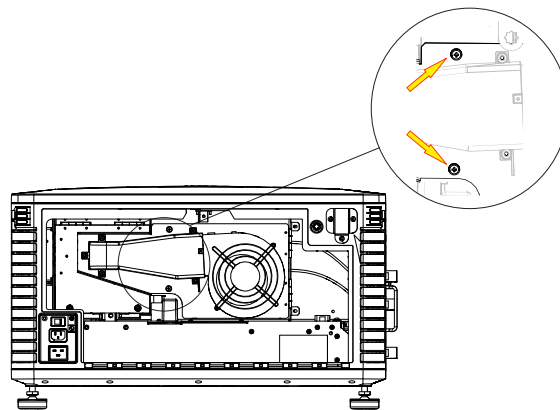
1) Lamp replacement must be performed by a qualified service technician. 2) EXPLOSION HAZARD. Wear authorized protective clothing whenever the lamp door is open and when handling the lamp. Never twist or bend the quartz lamp body. Use the correct wattage lamp supplied by Christie. 3) Ensure those within the vicinity of the projector are also wearing protective safety clothing including a full face shield, Kevlar gloves, and a ballistic nylon jacket. 4) Never attempt to remove the lamp when it is hot. The lamp is under pressure when hot and may explode, causing personal injury, death, or property damage. Allow the lamp to cool completely before replacing it.



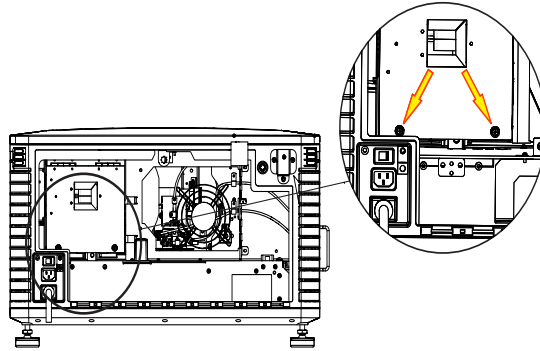
**Warning!** Improper installation of the lamp can damage the projector.

## Removing the existing lamp

1. If the projector is operating, turn it off and allow it to cool a minimum of 15 minutes.
2. Turn the breaker switch for the projector off.
3. Disconnect the projector from AC power.
4. Remove the TPC. See [Removing the touch panel controller](#) on page 34.
5. Put on your protective clothing, face shield, and gloves.
6. Open the lamp door with the lamp door key.
7. Loosen the two thumbscrews and open the firewall door.



8. Loosen the two thumbscrews and open the lamp access door.



**9. For CDXL-14 or CDXL-16 lamps:**

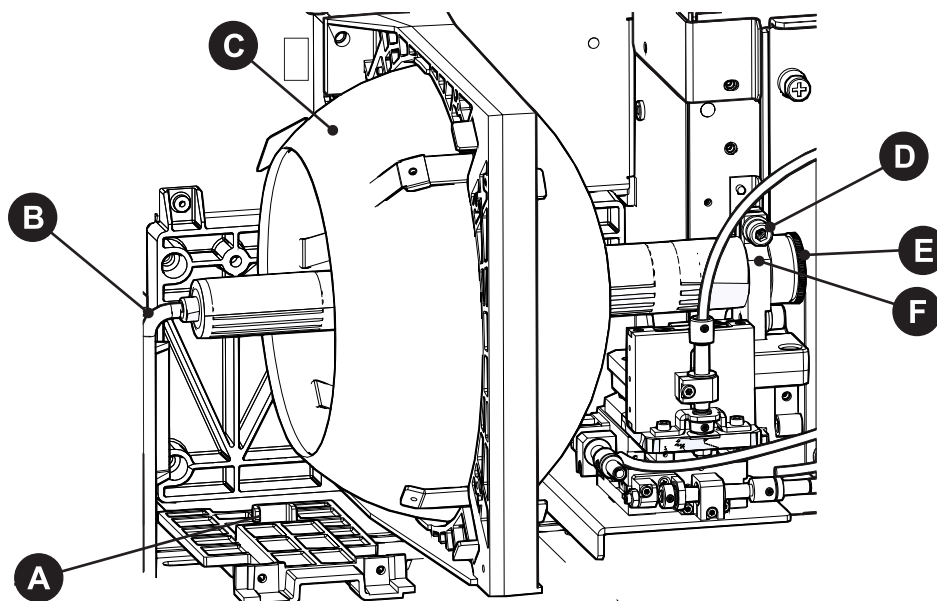
- a. Loosen the extension nut screw (A).



- b. Hold the cathode end of the lamp with your right hand and the anode end with your left hand and carefully turn the lamp with your right hand so that it unthreads from the extension nut. Make sure the lamp does not contact the reflector or the UV filter.
- c. With your left hand guide the cathode end of the lamp out of the reflector, on an angle through the lamp access door.

10. For CDXL-19SC or CDXL-21S1 lamps:

- a. Loosen the cathode screw (D) on the cathode clamp (F).



<b>A</b>	Anode Terminal
<b>B</b>	Anode Wire
<b>C</b>	Reflector
<b>D</b>	Cathode Screw
<b>E</b>	Cathode Nut
<b>F</b>	Cathode Clamp

- b. Hold the anode end of the lamp with your left hand and then carefully unscrew and remove the cathode nut with your right hand (E).
- c. As you hold the anode end of the lamp, carefully guide the lamp through the reflector ensuring not to make contact with the reflector.
- d. With your right hand guide the cathode end out of the reflector, on an angle through the lamp access door.
11. Open a protective lamp case and then place the old lamp into the case. Thread the cathode nut onto the lamp, close the protective case, and then place the lamp within the case, on the floor where it cannot fall or be bumped.



**Warning!** Failure to comply with the following could result in serious injury.

Handle the protective case with extreme caution - the lamp is hazardous even when packaged. Dispose of lamp box according to local area safety regulations.

## Installing the new lamp



**Caution!** Handle the lamp by the cathode/anode end shafts only, never the glass. DO NOT over-tighten. DO NOT stress the glass in any way. Check leads. Ensure the anode (+) lead between the lamp and igniter is well away from any projector metal, such as the reflector or fire wall.


1. Remove the tape from the ends of the protective case.
2. Remove the plastic packing material from the lamp.
3. Remove the cathode nut from the lamp before removing it from the case.
4. **For CDXL-14 or CDXL-16 lamps:**
  - a. Install the lamp extension nut on the cathode clamp. To provide access to the locking screw on the extension nut, rotate the extension nut until the locking screw faces upward toward the projector lid.
  - b. Tighten the cathode screw with a hex key.
  - c. Thread on and hand-tighten the cathode nut. Ensure the smooth portion of the nut is against the cathode clamp.
  - 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. Insert your right index and middle finger through the back of the reflector and thread the cathode end of the lamp into the extension nut. When threading the lamp into the extension nut, make sure the anode wire does not hit the reflector or the UV filter.
  - e. Tighten the extension nut screw.
  - f. Move to step 6.
5. **For CDXL-19SC or CDXL-21S1 lamps:**
  - a. 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
  - b. Thread on and hand-tighten the cathode nut. Ensure the smooth portion of the nut is against the cathode clamp.
  - c. Tighten the cathode screw with a hex key.
  - 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. 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.
  - e. Thread on and hand-tighten the cathode nut. Ensure the smooth portion of the nut is against the cathode clamp.
  - f. Tighten the cathode clamp with a hex key.

6. Align the ring terminal on the anode wire with the mounting position ensuring the crimped side of the wire is facing out. Tighten the anode screw. Route anode lead away from nearby metal surfaces.
7. Close the lamp access door and tighten the two thumbscrews.
8. Close the firewall door and tighten the two thumbscrews.
9. Close and lock the rear access door. Ensure the hex key is placed back into its holder before closing the rear access door.
10. Connect the projector to AC power and then turn the projector on.
11. Tap **Menu > Advanced Setup > Lamp Change Wizard**.
12. Tap **Next**.
13. Complete these fields:

Field	Description
Type	The lamp type.
Serial Number	The lamp serial number.
Reason for Change	The reason the lamp was changed.
Lamp Expiry (Hours)	The number of hours the lamp can operate before replacement. This field is auto-populated.
Hours Used	The number of hours the lamp has operated before installation.

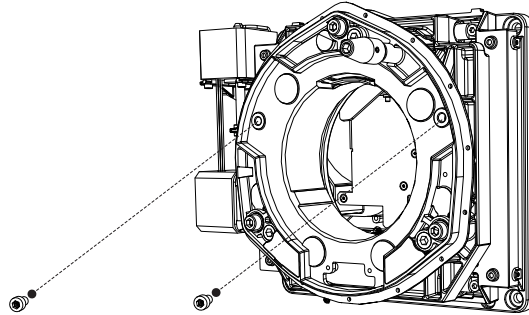
14. Tap **Save**.
15. Tap **Next**.
16. Align the lamp. See [Aligning the lamp](#) on page 23.

## Removing the lens

1. Tap and hold the red power button  on the TPC **Main** panel to turn the lamp and projector off.
2. Allow the lamp to cool for a minimum of 15 minutes.
3. Disconnect the projector from AC power or turn the circuit breaker off.
4. Remove the lens surround.
5. Install the lens cap and turn the lens clamp to the open position with a hex key.



6. If necessary, remove the two cap screws securing the lens to the lens mount using a hex key.



7. Pull the lens out of the lens mount and then install a small lens cap on the rear of the lens.
8. Remove the small rear cap from the new lens. Keep the front cap on.
9. Align the tabs on the lens plate with the lens mount. Insert the lens until it connects with the magnets on the mount. When the lens contacts the magnetic plates it is seated correctly.
10. Secure the lens clamp by rotating it clockwise with a hex key.
11. Install the lens mount cap screws for added stability.
12. Replace the lens surround.
13. Remove the lens cap from the front of the lens.

## Removing the anode lamp firewall

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the lamp and place it into a protective case and reinstall the cathode nut. See [Removing the existing lamp](#) on page 40.
4. Remove the safety shield. See [Removing the safety shield](#) on page 39.
5. Remove the two screws from the top firewall bracket and then remove the bracket.
6. Remove the two screws holding the firewall to the cathode blower assembly.
7. Disconnect the fan1 harness from the firewall.
8. Lift the firewall up and out of the top of the projector.

## Replacing the standby power supply

The standby power supply is installed next to the low voltage power supply (LVPS).

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. When the cooling fans stop, turn the projector off and then disconnect it from AC power.
3. Remove the LVPS. See [Replacing the light engine](#) on page 49.

4. Loosen the two captive screws at the bottom of the card cage air filter cover.
5. Pull the cover out and down from the projector housing.
6. Remove the card cage. See [Removing the card cage](#) on page 54.
7. Disconnect the standby power supply inline connector.
8. Remove the two screws from the standby power supply bracket and then remove the bracket and set it aside.
9. Remove the standby power supply.

## Removing the low voltage power supply

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the service door. See [Removing the service door](#) on page 38.
4. Loosen the four thumbscrews to remove the front plate, and then disconnect the fan from the front plate.
5. Disconnect all of the wires that are attached to the LVPS.
6. Remove the LVPS and the standby power supply.
7. Disconnect the standby power supply cable.
8. Remove the four screws that secure the LVPS to the mounting plate.
9. Remove the screw securing the cable clamp.

## Removing the projector feet

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. When the cooling fans stop, turn the projector off and then disconnect it from AC power.
3. Prop up the appropriate end of the projector, or shift the projector off of the table or pedestal to create enough clearance.  
  
To remove the front feet, 6in. (15 cm) of clearance is required. To remove the rear feet, 9in. (23cm) of clearance is required.
4. Remove the rear skin to remove the rear feet or remove the front skin to remove the front feet. See [Removing the rear skin](#) on page 37 or [Removing the front skin](#) on page 34.
5. Hold the top nut with a ratchet and then turn the locking nut on the foot to remove it.
6. Remove the foot.

## Removing the lamp door interlock

The lamp door interlock is located at the rear of the projector. The interlock is activated when the low security key is used to open the lamp door.

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. When the cooling fans stop, turn the projector off and then disconnect it from AC power.
3. Unlock and then open the lamp door.
4. Remove the two screws from the anode firewall.
5. Remove the two nuts from the switch.
6. Disconnect the two switch wires.

## Replacing the lamp power supply

The LPS comes with the lamp igniter built in. The LPS is located at the rear of the projector, attached to the base plate.

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. When the cooling fans stop, turn the projector off and then disconnect it from AC power.
3. Remove the lamp. See [Removing the existing lamp](#) on page 40.
4. Remove the rear skin. See [Removing the rear skin](#) on page 37.
5. Remove the anode blower firewall. See [Removing the anode lamp firewall](#) on page 45.
6. Remove the cathode lamp blower. See [Removing the anode lamp firewall](#) on page 45.
7. Remove the reflector assembly. See [Removing the reflector assembly](#) on page 48.
8. Remove the lamp adjust assembly. See [Removing the lamp adjust assembly](#) on page 47.
9. Remove the three screws securing the LPS to the projector base.
10. Remove the screw securing the LPS to the center structure.
11. Remove the four screws from the LPS AC harness.
12. Disconnect the AC power and communication harnesses.
13. Tilt the LPS up and slide it out of the lamp door.

## Removing the lamp adjust assembly

The lamp adjust assembly is located at the rear of the projector between the reflector assembly and the lamp blower.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the lamp. See [Removing the existing lamp](#) on page 40.
3. Remove the anode lamp firewall. See [Removing the anode lamp firewall](#) on page 45.

4. Remove the two screws securing the lamp adjust assembly to the center structure.
5. Disconnect the X Y Z cables from the lamp adjust assembly.
6. Disconnect the cathode lead connector from the lamp power supply.
7. Tip the lamp adjust assembly toward the front of the projector and then slide it past the reflector and out of the lamp access door.
8. Disconnect the cathode lead connector from the lamp adjust assembly and set it aside. You will reuse the cable when you install the new lamp adjust assembly.

## Removing the reflector assembly



Wear clean, lint-free gloves when removing the reflector assembly.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the lamp. See [Removing the existing lamp](#) on page 40.
4. Remove the touch panel controller (TPC). See [Removing the touch panel controller](#) on page 34.
5. Remove the anode blower and firewall. See [Removing the anode lamp firewall](#) on page 45.
6. Remove the two screws securing the fire warning sensor.
7. Remove the two P-clips from the fire warning sensor bracket and push the bracket aside.
8. Remove the four screws that secure the reflector module. Three of these screws are located on the bracket outside the reflector. The fourth screw is located inside the casing below the reflector.
9. Carefully lift the reflector assembly straight up and out of the projector; do not touch the UV filter glass or the reflector.

## Replacing the UV filter

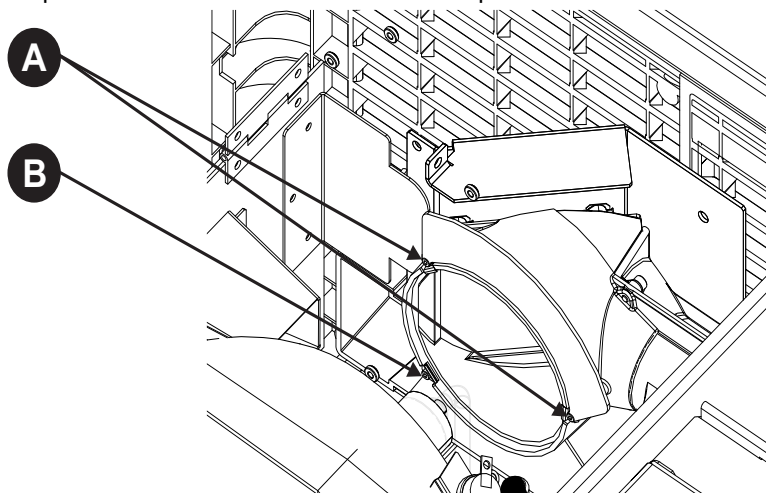


Wear clean, lint-free gloves, and handle the UV filter by its edges.

The UV filter is secured to the end of the light tube. If a lamp explodes, the UV filter must be replaced.

1. Turn the projector off and then disconnect it from AC power.
2. Open the lamp access door.
3. Remove the top lid. See [Removing the top lid](#) on page 33.

4. Remove the lamp. See [Removing the existing lamp](#) on page 40.
5. Remove the reflector assembly. See [Removing the reflector assembly](#) on page 48.
6. Remove the top two screws and the attached clamps from the UV filter housing.



<b>A</b>	Top screws
<b>B</b>	Bottom screw

7. Slowly loosen the bottom screw until you can remove the UV filter.
8. To reinstall the UV filter, perform the steps in reverse order. Make sure that the filter is installed with the arrow indicator on the edge of the filter pointing towards the lamp.

## Replacing the light engine

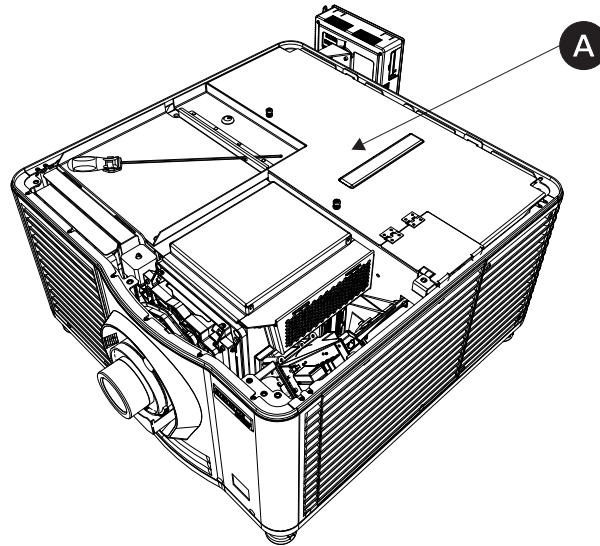


**Caution!** Failure to comply with the following could result in minor or moderate injury.  
Wear gloves and an electro-static bracelet when working with the light engine.

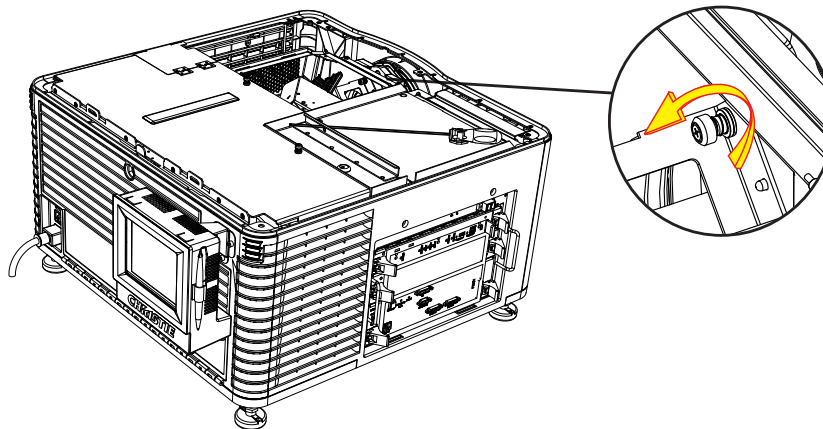
The light engine can be removed as an assembly with the harnesses still attached. Removing the light engine this way reduces the risk of damage to other projector components.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the lens. See [Removing the lens](#) on page 44.
3. Remove the top lid. See [Removing the top lid](#) on page 33.
4. Remove the high security lid. See [Removing the high security and light engine lid](#) on page 35.

5. Remove the two screws that secure the light engine cover (A).

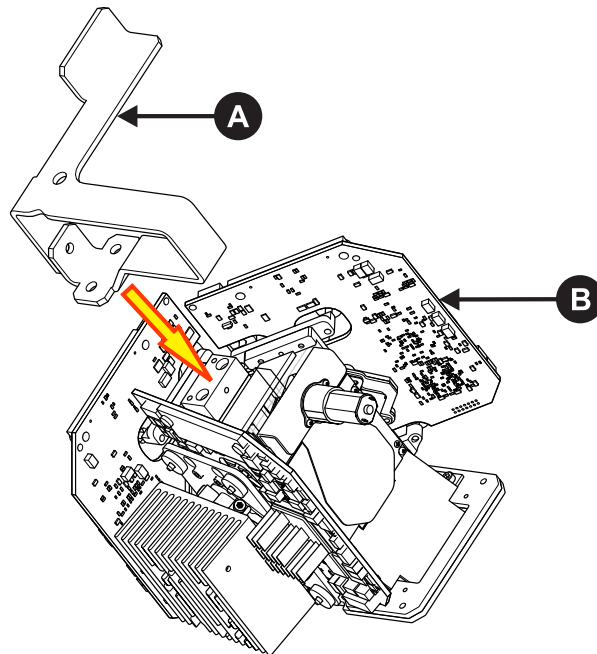


6. Remove the light engine blower.
7. Remove the light dump.
  - a. Disconnect the douser cable.
  - b. Loosen the captive screw securing the light dump and then lift the light dump up and out of the projector.



8. Disconnect the LVDS cables from the backplane.
9. Remove the LVDS cables from the harness clips holding them to the center structure.

10. Attach the handle (A) included with the service assembly to the light engine (B).



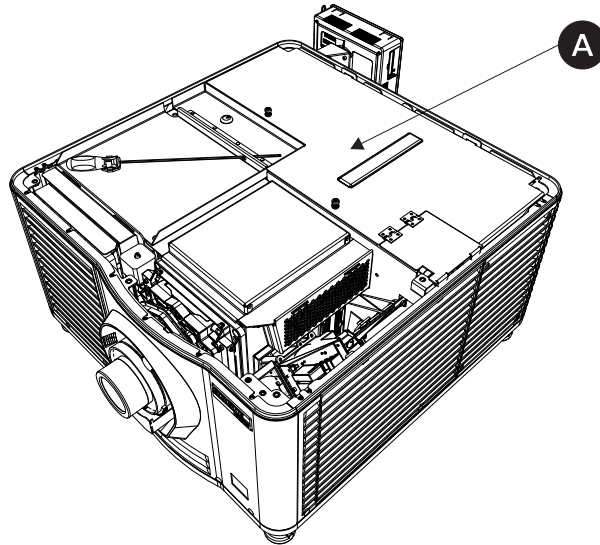
11. Loosen the three captive screws securing the light engine to the light tube with a 3 mm hex key.
12. Remove the light engine from the projector.
13. Remove the two screws securing the douser bracket to the new light engine and then remove the douser.
14. Cover the light engine with an electro-static protective cover.

## Replacing the douser assembly

The douser is attached to the light engine prism. It can be removed on its own, or with the light engine.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the high security lid. See [Removing the high security and light engine lid](#) on page 35.

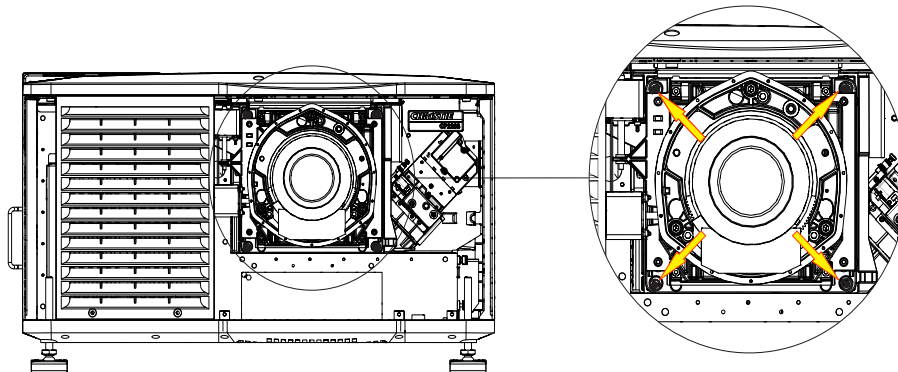
4. Remove the two screws that secure the light engine cover (A).



5. Remove the light engine blower. See [Removing the light engine blower \(fan 3\)](#) on page 58.
6. Remove the two screws that secure the douser to the light engine.
7. Lift the douser on an angle up and out of the projector.

## Removing the lens mount

1. Turn the projector off and then disconnect it from AC power.
2. Remove the lens surround.
3. Remove the lens. See [Removing the lens](#) on page 44.
4. Remove the top lid. See [Removing the top lid](#) on page 33.
5. Remove the front skin. See [Removing the front skin](#) on page 34.
6. Remove the four lens mount screws. It might be necessary to adjust the horizontal or vertical position of the lens to access the screws.



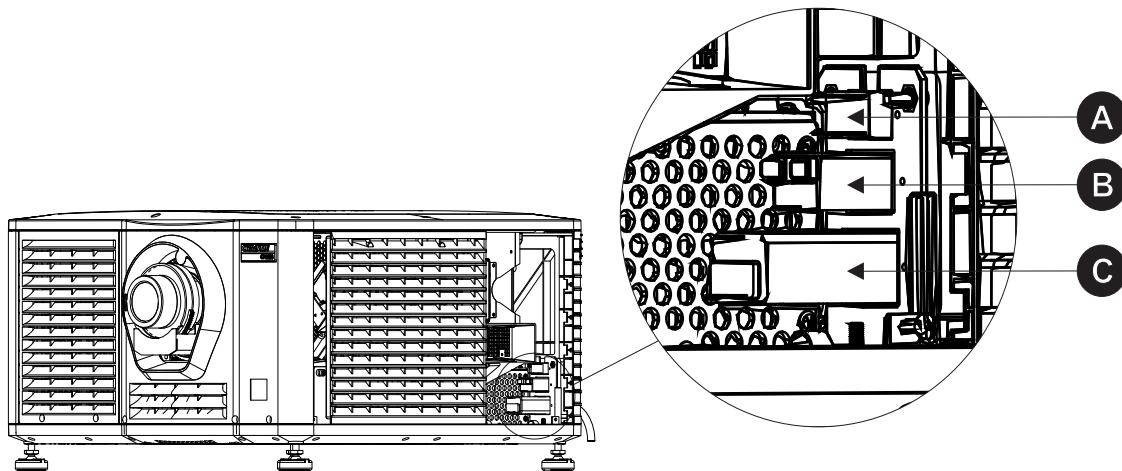
7. Remove the lens mount.



## Removing the AC line filters

The AC line filters and A/C selector switch are located at the rear-left corner of the projector.

- The 110V filter is for the optional UPS hookup. Use the UPS to keep the projector's electronics powered ON in the event of a power loss so that the lamp can be struck as soon as full power is reapplied without having to wait for the electronics to restart.
- The 220V filter is required to power the LPS and strike the lamp.
- The A/C selector switch is used to select between the 110V and 220V power source.



<b>A</b>	A/C selector switch
<b>B</b>	110V filter
<b>C</b>	220V filter

### 110V AC line filter

1. Turn the projector off and then disconnect it from AC power.
2. Remove the lamp. See [Removing the existing lamp](#) on page 40.
3. Remove the side and rear projector skins. See [Removing the exhaust panel skin](#) on page 39 and [Removing the rear skin](#) on page 37.
4. Remove the two screws that secure the AC line filter to the bracket.
5. Disconnect the two harnesses from the 110V AC line filter.

## 220V AC Line filter



**Warning!** Failure to comply with the following could result in serious injury.

UV HAZARD! Always wear protective safety clothing and a face shield when performing service with the safety shield removed and a lamp installed.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the lamp. See [Removing the existing lamp](#) on page 40.
3. Remove the side and rear projector skins. See [Removing the exhaust panel skin](#) on page 39 and [Removing the rear skin](#) on page 37.
4. Remove the two screws that secure the AC line filter to the bracket.
5. Disconnect the two harnesses from the 220V AC line filter.

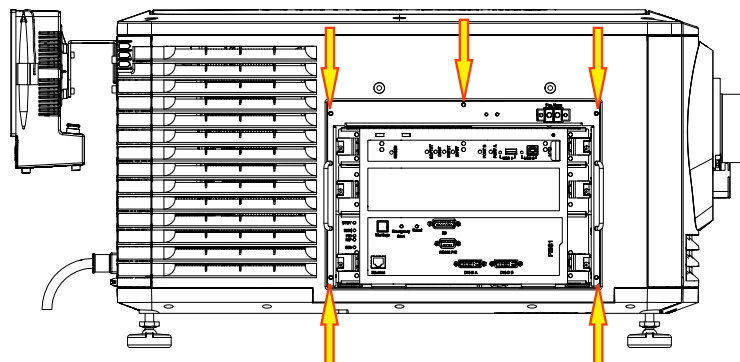
## Card cage and LVPS compartment

Only Christie authorized service technicians should open the high security lid or access the electronics inside the card cage.

### Removing the card cage

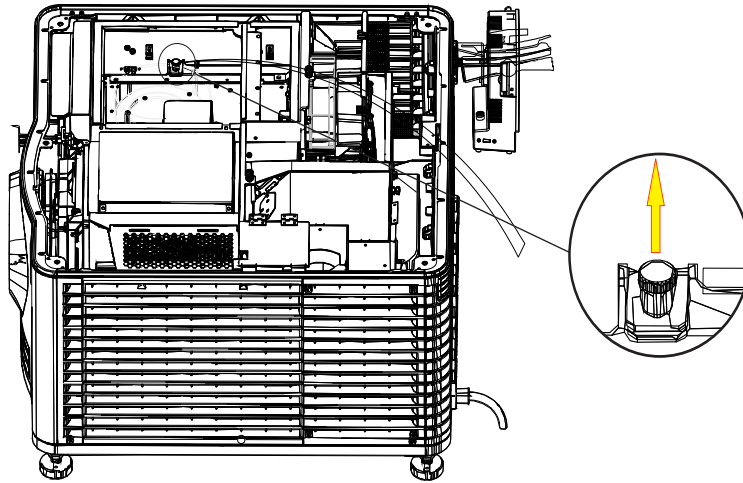
The card cage module consists of the PIBS1, ICP, and Backplane.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the high security lid. See [Removing the high security and light engine lid](#) on page 35.
4. Remove the light engine blower. See [Removing the light engine blower \(fan 3\)](#) on page 58.
5. Reach into the top of the projector and disconnect the three light engine harnesses and the backplane harness.
6. Remove the five screws that secure the card cage.



7. Remove the fire alarm interlock jumper.

8. Pull up the release screw on the top of the card cage and then slide the card cage out along the guides.



9. Tilt the card cage up and out to remove it.

## Removing the Projector Intelligence Board

The PIBS1 is located in the card cage on the operator side of the projector. It is the main controller for alternative content.

- The marriage status light on the PIBS1 lights up when the high security lid is unlocked. To remarry the PIB use the TPC menus.
- The system files (for examples, serial number, channel setting, hours, and so on) are stored on three modules: the PIB, ICP, and TPC.
- All of the internal processor components have fixed IP addresses. This simplifies board configuration, as well as component swapping between projectors.

When boards are replaced, the system stores a copy of the latest software version on the projector so that it can be selected through the TPC and updated.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the high security lid. See [Removing the high security and light engine lid](#) on page 35.
4. Open the marriage/security ring.
5. Remove the PIBS1 from the card cage by using the ejectors.
6. Disconnect the communication cable between PIBS1 and PIBc.
7. Remove the four screws from the serial ports and 3D Sync connectors.
8. Remove the four screws securing the PIBc to the faceplate.
9. Remove the PIBS1 from the front faceplate.

When reinstalling the PIBS1 and faceplate you must perform Marriage so you can continue to play encrypted content.

## Removing the Projector Intelligence faceplate board

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the high security lid. See [Removing the high security and light engine lid](#) on page 35.
4. Open the marriage/security ring.
5. Remove the ICP from the card cage by using the ejectors.
6. Remove the four screws RS232 PIBS1 and 3D Sync.
7. Disconnect the P20 communication cable.
8. Remove the four hex screws securing the PIBS1 to the faceplate.
9. Remove the PIBS1 faceplate board.

When reinstalling the PIBS1 and PIBS1 faceplate board you must perform Marriage so you can continue to play encrypted content.

## Removing the Integrated Cinema Processor

The ICP is located in the card cage on the operator side of the projector. The ICP is the image processing electronics for incoming video signals.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the high security lid. See [Removing the high security and light engine lid](#) on page 35.
4. Open the marriage/security ring.
5. Remove the ICP from the card cage by using the ejectors.

When reinstalling the ICP, you must perform Marriage so you can continue to play encrypted content.

## Removing the backplane

The backplane is located at the back of the card cage. The PIBS1 and ICP board are connected directly to the backplane.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the card cage. See [Removing the card cage](#) on page 54.
3. Remove the ICP. See [Removing the Integrated Cinema Processor](#) on page 56.
4. Remove the PIBS1 from the card cage by using the ejectors. See [Removing the Projector Intelligence Board](#) on page 55.
5. Remove the 18 screws securing the backplane to the card cage.
6. Slide the backplane out of the card cage.

When reinstalling the backplane, you must perform Marriage so you can continue to play encrypted content.

## Fans

### Removing the anode lamp blower (fan 1)



**Warning!** Failure to comply with the following could result in serious injury.

EXPLOSION HAZARD! Always wear protective safety clothing and a face shield when performing service with the service safety shield removed and a lamp installed.

The anode lamp blower is located at the rear of the projector, behind the lamp access door.

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. When the cooling fans stop, turn the projector off and then disconnect it from AC power.
3. Put on your protective clothing and face shield, and then unlock the lamp door—the safety interlock switch on the lamp door turns lamp power OFF and prevents it from being turned ON when the door is open. The interlock wiring connects directly to the LPS.



DO NOT place heavy objects on the open rear access door.

4. Unlock and then open the lamp door.
5. Remove the two screws holding the blower to the anode firewall door.
6. Disconnect the anode blower harness.
7. Remove the anode blower through the lamp door opening.

### Removing the cathode lamp blower (fan 2))



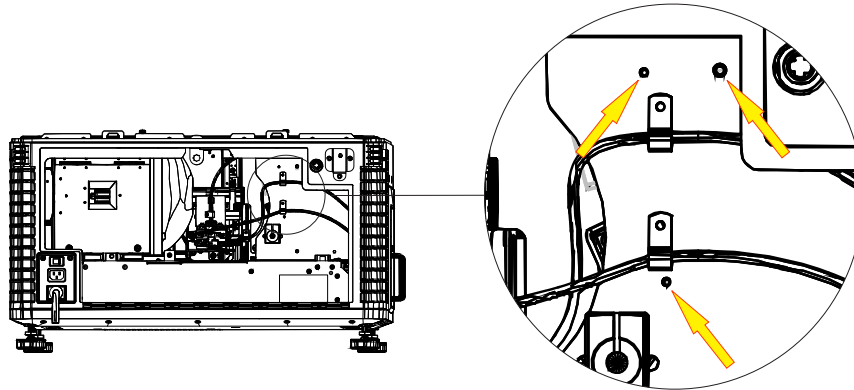
**Warning!** Failure to comply with the following could result in serious injury.

EXPLOSION HAZARD! Always wear protective safety clothing and a face shield when performing service with the service safety shield removed and a lamp installed.

The cathode lamp blower is located at the rear of the projector, behind the lamp access door.

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. When the cooling fans stop, turn the projector off and then disconnect it from AC power.
3. Remove the anode blower firewall. See [Removing the anode lamp firewall](#) on page 45.

4. Remove the three screws holding the lamp adjust cable plate to the blower.



5. Loosen the set screws securing the flexible shafts to the lamp adjust and then disconnect the flexible shafts.
6. Remove the two screws securing the internal touch panel controller (TPC) harness.
7. Disconnect the cathode blower fan harness.
8. Loosen the three thumbscrews securing the cathode to the center structure.
9. Remove the cathode blower assembly through the top of the projector.
10. Remove the four screws holding the bracket plate and duct.
11. Remove the two screws holding the blower to the duct.

## Removing the light engine blower (fan 3)



**Danger!** Failure to comply with the following results in serious injury.

Use caution when working in and around fan assemblies. Fingers can get caught in fan blades.

The light engine intake fan draws filtered air through the front air filter.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the service door. See [Removing the service door](#) on page 38.
4. Loosen the two captive screws securing the filter access door and then remove the filter access door.
5. Remove the two captive screws securing the fan to the center structure.

Remove the card cage. See [Removing the card cage](#) on page 54..

6. Disconnect the number three fan harness.
7. Lift the fan up and away from the rubber isolators.

## Replacing the light engine blower (fan 4)

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the high security lid. See [Removing the high security and light engine lid](#) on page 35.
4. Disconnect the harness.
5. Remove the four screws securing the top blower assembly.
6. Remove the top blower assembly.
7. Remove the three screws securing the blower duct.
8. Remove the two screws securing the light engine blower.

## Removing the fan pack (fans 5, 6, 7, and 8)



**Danger!** Failure to comply with the following results in serious injury.

Use caution when working in and around fan assemblies. Fingers can get caught in fan blades.

The fan pack is located directly behind the air filter on the front of the projector and consists of four fans. If one fan fails, the entire fan pack must be changed.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the card cage air intake filter cover and filter. See [Inspecting the card cage filter](#) on page 30.
4. Remove the front skin. See [Removing the front skin](#) on page 34.
5. Remove the high security lid. See [Removing the high security and light engine lid](#) on page 35.
6. Disconnect the four inline connectors from the fan power harnesses.
7. Pull the release located in the high security compartment to release the fan pack.
8. Remove the fan pack.

Remove a fan and then install its replacement with the airflow directional arrow facing the correct direction—use needle nose pliers to pull the rubber isolators through the fan mounting holes.

## Removing the low voltage power supply fan (fan 9)



**Danger!** Failure to comply with the following results in serious injury.

Use caution when working in and around fan assemblies. Fingers can get caught in fan blades.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the service door. See [Removing the service door](#) on page 38.

4. Loosen the four screws securing the LVPS cover.
5. Disconnect the fan harness.
6. Remove the fan and the mounting plate.
7. Pull up on the four rubber isolators to separate the fan from the mounting plate.
8. To reinstall the fan, perform the steps in reverse order. When reinstalling the fan, make sure the air flow directional arrow is facing up.

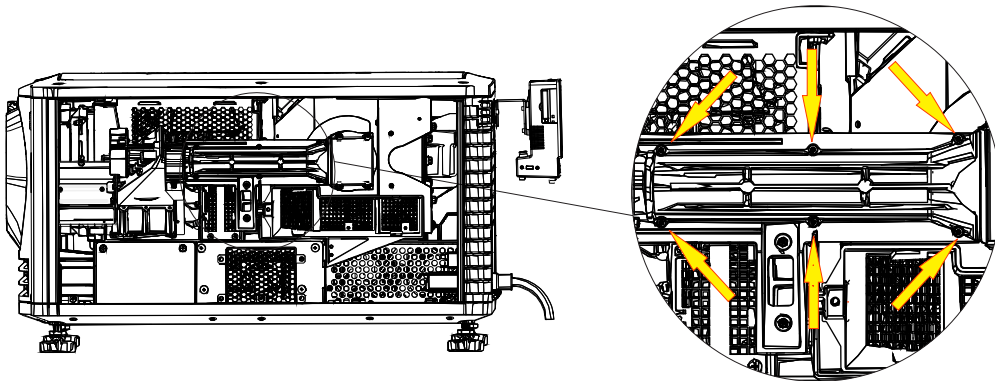
## Integrator assembly



The integrator rod glass should be flush with the output aperture with the black finish. If the glass is damaged, contact Christie Technical Support staff immediately. Always wear gloves when you handle the integrator assembly.

The integrator assembly is mounted in the light tube of the IOS. It runs through a firewall cutout that separates the lamp housing from the light engine.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the service door. See [Removing the service door](#) on page 38.
4. Remove the six integrator housing screws.



5. Remove the housing.
6. Remove the two rotational integrator adjustment screws.
7. Slide the integrator rod back and tilt it to remove it from the casting.

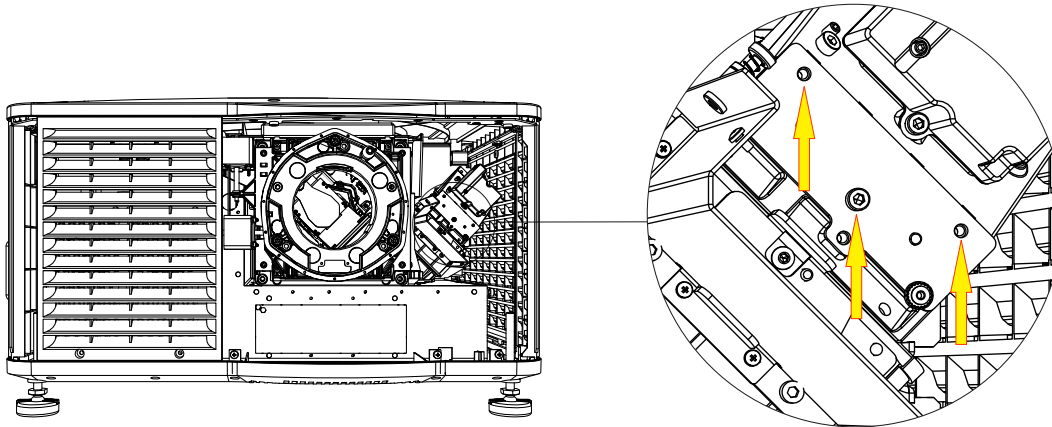
## Removing the contrast aperture

The contrast aperture is located after the fold mirror in the light path within the IOS.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.



3. Remove the lens surround.
4. Remove the front skin. See [Removing the front skin](#) on page 34.
5. Remove the yellow notch filter. See [Yellow Notch Filter \(YNF\)](#) on page 64.
6. Remove the three screws that secure the contrast aperture to the IOS.

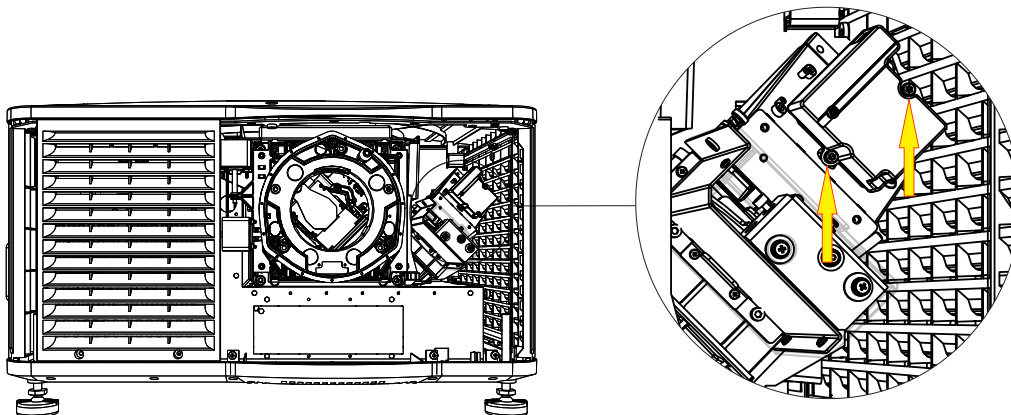


7. Slide the aperture out along the slotted tracks inside the IOS.

## Removing the light sensor module

The light sensor module, mounted to the side of the IOS, is orientated to sample the light coming through the fold mirror.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the front skin. See [Removing the front skin](#) on page 34.
4. Disconnect the harness from the light sensor module.
5. Remove the two screws that secure the sensor to the IOS—the middle screw is used to adjust light tolerances.



When reinstalling the light sensor module, recalibrate the footLambert (fL) readings for minimum and maximum power. See the CP2208 User Manual (020-101916-xx).

## Removing the cold mirror



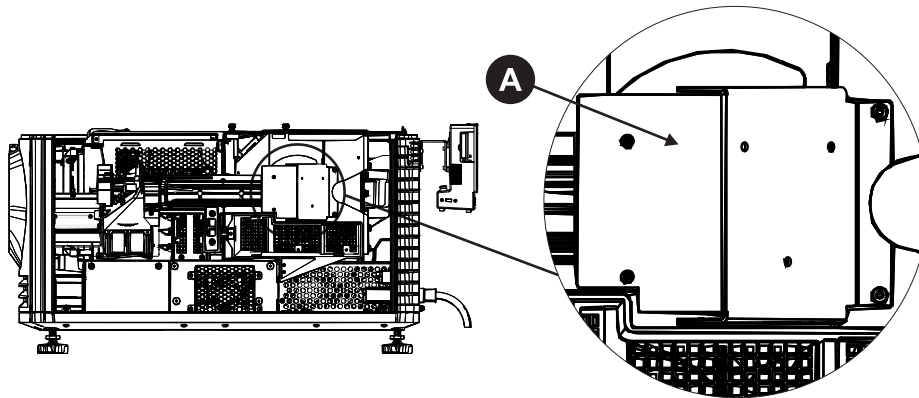
**Warning!** Failure to comply with the following could result in serious injury.

UV HAZARD! Always wear protective safety clothing and a face shield when performing service with the safety shield removed and a lamp installed.



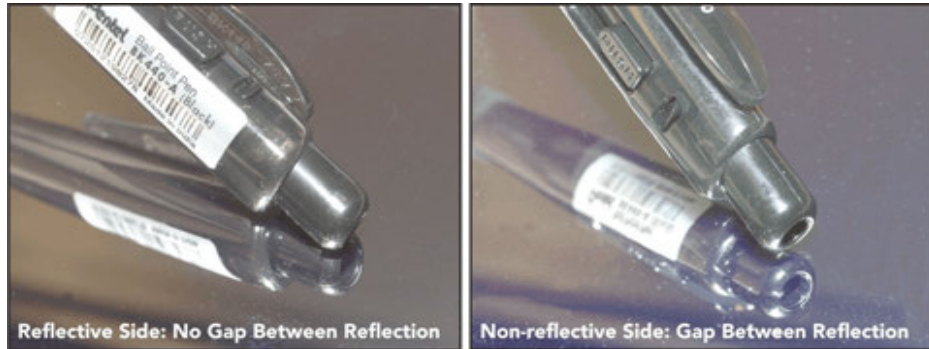
Wear gloves when you handle the cold mirror.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the lamp. See [Replacing the lamp](#) on page 40.
3. Remove the side projector skin. See [Removing the exhaust panel skin](#) on page 39.
4. Remove the four cold mirror heat sink plate screws and then remove the heat sink **(A)**.



5. Remove the top two hex screws and clips holding the cold mirror.
6. Loosen the bottom two hex screws holding the cold mirror.

7. Grasp the top corners of the mirror, and then pull it up and out. When reinstalling the cold mirror, make sure that the reflective surface faces inwards. Also, you must recalibrate MCGD. See the CP2208 User Manual (P/N: 020-101916-xx).



## Fold mirror

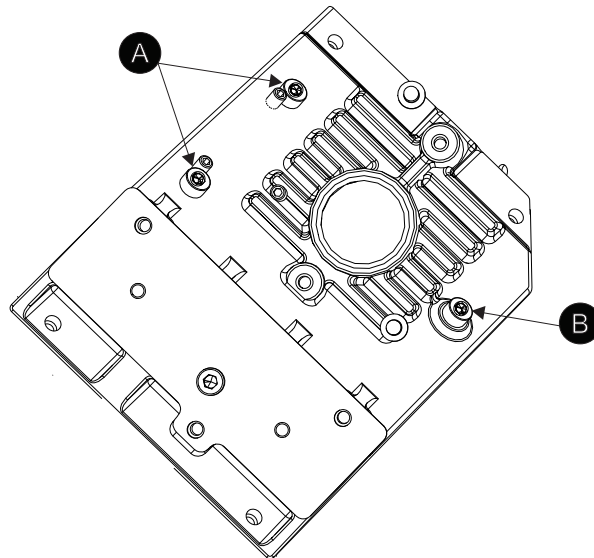


Wear gloves when you handle the fold mirror.

Fold Mirror 1 is accessed from the front left-corner of the projector. The alignment screws are positioned along the top of the light tube, which allows them to be easily adjusted.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the side skin. See [Removing the exhaust panel skin](#) on page 39.
4. Remove the contrast aperture. See [Removing the contrast aperture](#) on page 60.
5. Remove the light sensor module and move it aside.

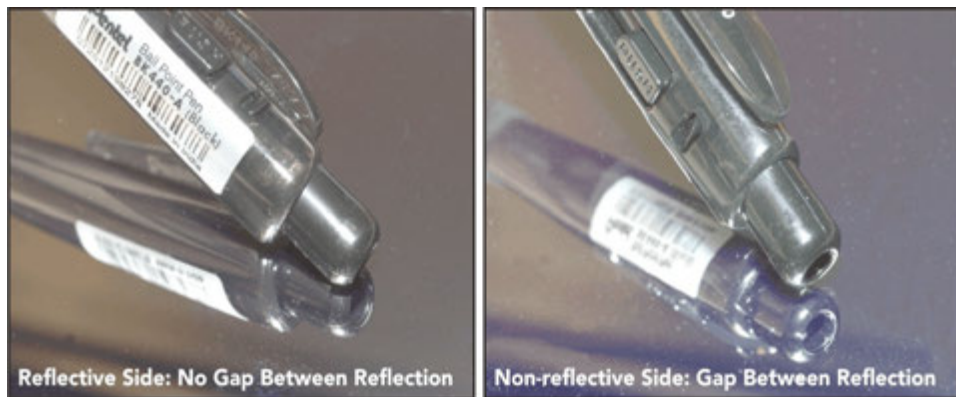
6. Loosen the 2.5mm locking hex screw and remove the 2 2.5mm hex screws that secure the fold mirror to the bracket.



<b>A</b>	Hex screw (1 of 2)
<b>B</b>	2.5mm Locking hex screw

7. Remove the fold mirror.

When reinstalling the fold mirror, make that the reflective surface faces inwards. Also, you must recalibrate MCGD. See the CP2208 User Manual (P/N: 020-101916-xx)



## Yellow Notch Filter (YNF)

The YNF is located in the light path just after the contrast aperture.

**(40 minutes; includes 30 minute calibration)**

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the front skin. See [Removing the front skin](#) on page 34.
4. Remove the screw from the yellow notch filter cover and then remove the cover.
5. Remove the hex screw inside the yellow notch filter connecting it to the IOS.
6. Remove the two hex screws that secure the yellow notch filter to the IOS. If necessary, loosen the center nut.
7. Carefully pull the filter out of the IOS.

When reinstalling the yellow notch filter, recalibrate MCGD and green primary. See the CP2208 User Manual (P/N: 020-101916-xx).

## Removing the Illumination Optic System



**Warning!** Failure to comply with the following could result in serious injury.

UV HAZARD! Always wear protective safety clothing and a face shield when performing service with the safety shield removed and a lamp installed.

The IOS is a magnesium frame that holds the light engine. The light tube and most optical components are fastened to the IOS. All components except the second fold mirror can be removed on their own; therefore, the need to replace the IOS is low.

1. Turn the projector off and then disconnect it from AC power.
2. Remove the top lid. See [Removing the top lid](#) on page 33.
3. Remove the two screws that secure the light engine cover.
4. Remove the light engine blower.
5. Remove the light engine. See [Replacing the light engine](#) on page 49.
6. Remove the reflector assembly. See [Table on page 48](#).
7. Remove the lamp adjust. See [Removing the lamp adjust assembly](#) on page 47.
8. Remove the two screws that secure the firewall that separates the lamp housing from the light engine.
9. Remove the four screws from the bottom of the IOS.
10. Lift the IOS out of the projector housing.

When reinstalling the IOS, you must complete these tasks:

- a. Adjust the aperture shadows.
- b. Reshoot the MCGD.
- c. Verify the TCGD correction.
- d. Create new screen files.
- e. Verify the brightness uniformity.

# Cleaning Projector Optics

This section provides information and procedures for cleaning optical components in the Christie projectors identified in the products list. Only these optical components can be cleaned:

- Reflector
- Light Engine Prism
- UV Filter
- Integrator
- Projection Lens

The procedures must be performed by service personnel trained by Christie following consultation with Christie support. Failure to follow this recommendation could result in damage to the projector and void the warranty.

Typically, optical components do not need to be cleaned frequently if they are installed and operated in a location that meets or exceeds the environmental standard recommended by Christie. Christie recommends that all cinema projectors are installed and operated in an environment that meets or exceeds Underwriters Laboratories (UL) standard 609.50 Pollution Degree 2 and ISO Class 9 Standard for Office Environments.

## Safety precautions



**Danger!** Failure to comply with the following results in death or serious injury.

ELECTRICAL SHOCK HAZARD! Always turn off, disconnect, and disengage all power sources to the projector before servicing.



**Caution!** Failure to comply with the following could result in minor or moderate injury.

Only Christie accredited service technicians are permitted to open any enclosure on the projector and only if the AC power has been fully disconnected.



**Notice.** Failure to comply with the following may result in property damage.

- To prevent damage to electronic components by static electricity, wear an anti-static wrist strap and follow anti-static protocols.
- Cleaning procedures should be performed in a clean, well lit, and dust-free environment that meets or exceeds Underwriters Laboratories (UL) standard 609.50 and ISO Class 9 Standard for Office Environments..
- When cleaning projector optics, never touch an optical surface with your bare hands.
- Always wear powder free latex gloves when handling and cleaning projector optics.

## Recommended service kit

- Powder free latex gloves
- Soft camel-hair brush
- Dust-free blower - air bulb or a canned air duster without additives such as Techspray 1671-10S Ultra-Pure Duster
- Lint-free lens tissue, such as Lensx 90 tissue or Newport Optics cleaning tissue
- Lens cleaning solution and a microfiber cloth (for the lens only)
- Isopropyl Alcohol Reagent Grade (ACS) 99.9%
- Acetone Reagent Grade (ACS)
- Optical grade cotton swabs with wooden stems
- Sticklers Fiber Optic Cleaner (can be used on all optical components)
- A bright, portable illumination device such as an LED flashlight

## Cleaning projector optics

If the recommended cleaning supplies described in the procedures are unavailable in your area, contact Christie service. For improving brightness and contrast, the procedures are organized from most to least effective.



**Notice.** Failure to comply with the following may result in property damage.

- Always wear powder free latex gloves when handling and cleaning projector optics.
- Handling optics increases the risk of damage. You should only clean optics when necessary.
- Only use solvents if dirt remains after dusting with compressed air.
- Do not reuse lens tissues. Use a clean tissue for each cleaning attempt.
- Handle optics by their edges.
- When using Techspray 1671-10S do not shake the can prior to use.

## Preparing the projector for service

1. Turn the lamp and projector off.
2. Allow the projector to cool for a minimum of fifteen minutes.
3. Disconnect the projector from AC power.

## Cleaning the light engine prism

If the entire light engine requires cleaning, contact Christie support.

If you cannot access additive free compressed air, use an air bulb or a camel hair brush to remove dust and debris. If you have questions about the cleaning methodology, contact Christie.

1. Prepare the projector for service. See [Preparing the projector for service](#) on page 68.
2. Remove the light engine and set it on a clean, lint free cloth. See [Replacing the light engine](#) on page 49.

The prism is easily damaged. Handle with care.

3. Clean the prism with Techspray 1671-10S:
  - a. Firmly attach the red output tube to the output nozzle on the Techspray 1671-10S canister.
  - b. While pointing the output tube away from the prism, press the trigger rapidly 3 times to clear contaminants from the output tube.
  - c. Press the trigger of the Techspray 1671-10S canister rapidly 3 times 6 inches above the optical component.

You must hold the Techspray 1671-10S canister vertically. Holding the canister at an angle can release liquid refrigerant and contaminate the projector optics.
4. If the prism still appears dirty:
  - a. Put on a pair of powder free latex gloves.



- b. Dampen a clean, folded lint free cloth with Acetone Reagent Grade and wipe the surface of the prism carefully with the smooth portion of the cloth that has no folds or creases. Do not apply pressure with your fingers. Use the tension in the folded cloth.
  - c. Inspect the prism surface with a bright light and verify it is streak free. If streaks are present, repeat step b.
5. Reassemble the light engine and the projector.
6. Connect the projector to AC power.

## Cleaning the UV filter

If you cannot access additive free compressed air, use an air bulb or a camel hair brush to remove the debris. If you have questions about the cleaning methodology, contact Christie.

1. Prepare the projector for service. See [Preparing the projector for service](#) on page 68.
2. Remove the lamp. See [Replacing the lamp](#) on page 40..
3. Put on a pair of powder free latex gloves.
4. Remove the UV filter and set on a clean, lint free cloth. See [Replacing the UV filter](#) on page 48.  
If the filter is yellow, replace it.
5. Clean the UV filter with Techspray 1671-10S:
  - a. Firmly attach the red output tube to the output nozzle on the Techspray 1671-10S canister.
  - b. While pointing the output tube away from the UV filter, press the trigger rapidly 3 times to clear contaminants from the output tube.
  - c. Hold the UV filter by its edges and press the trigger of the Techspray 1671-10S canister rapidly 3 times 6 inches above the UV filter.  
You must hold the Techspray 1671-10S canister vertically. Holding the canister at an angle can release liquid refrigerant and contaminate the UV filter.
6. Turn the UV filter over and repeat step 4.
7. If the UV filter still appears dirty:
  - a. Place the filter on a clean and dry lint free cloth.
  - b. Dampen a clean, folded lint free cloth with acetone and wipe the surface carefully. Do not apply pressure with your fingers. Use the tension in the folded cloth.
  - c. Allow the solvent to dry.
  - d. Turn the UV filter over and repeat step b.
8. Reassemble the projector and connect it to AC power.  
When replacing the UV filter make sure the directional arrow on the filter faces the reflector.

## Cleaning the projection lens

If you cannot access additive free compressed air, use an air bulb or a camel hair brush to remove dust and debris. If you have questions about the cleaning methodology, contact Christie.

1. Prepare the projector for service. See [Preparing the projector for service](#) on page 68.
2. Put on a pair of powder free latex gloves.
3. Remove the projection lens from the projector and place it on a flat, stable surface. See [Removing the lens](#) on page 44.
4. Clean the input end of the lens with Techspray 1671-10S:
  - a. Firmly attach the red output tube to the output nozzle on the Techspray 1671-10S canister.
  - b. While pointing the output tube away from the input end of the lens, press the trigger rapidly 3 times to clear contaminants from the output tube.
  - c. Press the trigger of the Techspray 1671-10S canister rapidly 3 times 6 inches above the optical component.

You must hold the Techspray 1671-10S canister vertically. Holding the canister at an angle can release liquid refrigerant and contaminate the projector optics.
5. If the input end of the lens still appears dirty:
  - a. Dampen a clean, folded lint free cloth with Acetone Reagent Grade and wipe the surface of the input end of the lens carefully with the smooth portion of the cloth that has no folds or creases.
  - b. Inspect the input end of the lens with a bright light and verify no streaks appear. If streaks are present, repeat step a.
6. Reinstall the lens.
7. Press the trigger of the Techspray 1671-10S canister rapidly 3 times 6 inches above the surface of the output end of the lens.

You must hold the Techspray 1671-10S canister vertically. Holding the canister at an angle can release liquid refrigerant and contaminate the projector optics.
8. If the output end of the lens still appears dirty:
  - a. Dampen a clean, folded lint free cloth with Acetone Reagent Grade and wipe the surface of the output end of the lens carefully with the smooth portion of the cloth that has no folds or creases.
  - b. Inspect the output end of the lens with a bright light and verify no streaks appear. If streaks are present, repeat step a.
9. Reassemble the projector and connect it to AC power.

## Cleaning the reflector

The reflector must be cleaned with Isopropyl Alcohol Reagent Grade (ACS) 99.9%. Other solvents can damage the reflective coating on the reflector. Clean the reflector with care. The reflector is fragile and is easily damaged.

If you cannot access additive free compressed air, use an air bulb or a camel hair brush to remove the debris. If you have questions about the cleaning methodology, contact Christie.

1. Prepare the projector for service. See [Preparing the projector for service](#) on page 68.
2. Remove the lamp. See [Replacing the lamp](#) on page 40.
3. Remove the reflector. See [Removing the reflector assembly](#) on page 48.
4. Put on a pair of powder free latex gloves.
5. Clean the reflector with Techspray 1671-10S:
  - a. Firmly attach the red output tube to the output nozzle on the Techspray 1671-10S canister.
  - b. While pointing the output tube away from the projector optics, press the trigger rapidly 3 times to clear contaminants from the output tube.
  - c. Press the trigger of the Techspray 1671-10S canister rapidly multiple times 6 inches above the optical component.

You must hold the Techspray 1671-10S canister vertically. Holding the canister at an angle can release liquid refrigerant and contaminate the projector optics.
6. If the reflector still appears dirty:
  - a. Fold a lint free cloth and wipe the remaining dust particles off the inside of the reflector with the smooth portion of the cloth that has no folds or creases. Do not apply pressure with your fingers. Instead, use the tension in the folded cloth to remove the dust.
  - b. If significant dust remains on the reflector surface, dampen a clean lint free cloth with Isopropyl Alcohol Reagent Grade (ACS) 99.9% and wipe the surface carefully. Fold a clean, dry lint free cloth and wipe the remaining alcohol off the reflector with the smooth portion of the cloth that has no folds or creases.
7. Reassemble the projector and connect it to AC power.

## Cleaning the integrator

Clean the integrator with care. The integrator is fragile and is easily damaged. This procedure must be performed by trained Christie service personnel.

If you cannot access additive free compressed air, use an air bulb or a camel hair brush to remove the debris. If you have questions about the cleaning methodology, contact Christie.

1. Prepare the projector for service. See [Preparing the projector for service](#) on page 68.
2. Remove the integrator. See [Integrator assembly](#) on page 60.
3. Put on a pair of powder free latex gloves.
4. Clean the input end of the integrator with Techspray 1671-10S:

- a. Firmly attach the red output tube to the output nozzle on the Techspray 1671-10S canister.
  - b. While pointing the output tube away from the projector optics, press the trigger rapidly 3 times to clear contaminants from the output tube.
  - c. Press the trigger of the Techspray 1671-10S canister rapidly 3 times 6 inches above the optical component.  
  
You must hold the Techspray 1671-10S canister vertically. Holding the canister at an angle can release liquid refrigerant and contaminate the projector optics.
5. If the input end of the integrator still appears dirty:
  - a. Remove the input aperture.
  - b. Dampen a clean, folded lint free cloth with Acetone Reagent Grade and wipe the surface of the input end of the integrator carefully with the smooth portion of the cloth that has no folds or creases.
  - c. Inspect the input end of the integrator with a bright light and verify no streaks appear. If streaks are present, repeat step b.
  - d. Carefully place the input aperture on the integrator rod and make sure there is enough room around the integrator rod and aperture to prevent damage to the corners.
6. Reassemble the projector and connect it to AC power.
7. Align the integrator.

# Backup, Restore, and Upgrade Projector Files

## Adding an upgrade file

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu > Administrator Setup > Upgrade**.
2. Tap **Upload**.
3. Select the location of the upgrade file in the **Drive Letter** list.
4. Browse to the location of the upgrade file in the **Folder** list.
5. Tap the upgrade file and then tap **Open**.

## Removing an upgrade file

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu > Administrator Setup > Upgrade**.
2. Tap an upgrade file in the **Available Upgrade Files** list.
3. Tap **Remove**.

## Installing an upgrade

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu > Administrator Setup > Upgrade**.
2. Tap an upgrade file in the **Available Upgrade Files** list.
3. Tap **Next**.
4. Tap a component in the **Component** list.

5. Select one of these options:

Option	Description
Upgrade Different Components Only	Upgrades system components that are newer or older than the currently installed version.
ICP Only Force Install	Forces an ICP install regardless of what current version is installed.
Force Upgrade All	Upgrades all components in the upgrade package.
Factory Install	Removes all configurations and upgrades all components.

6. Tap **Next**.

## Backing up projector settings and information

You need Service permissions to complete this procedure.

1. Tap **Menu > Service Setup > File Management**.
2. Tap **Backup**.

## Restoring a file

You need Service permissions to complete this procedure. You can restore configuration, preference, channel, user, and ICP files.

1. Tap **Menu > Service Setup > File Management**.
2. Tap **Browse** to the right of the **File to restore** field.
3. Select the location of the upgrade file in the **Drive Letter** list.
4. Browse to the location of the upgrade file in the **Folder** list.
5. Tap the upgrade file and then tap **Open**.
6. Select the type of file to restore in the **Select type** list.
7. Tap **Restore**.
8. Tap **Yes**.

## Restoring factory default settings

You need Service permissions to complete this procedure. You can restore configuration, preference, channel, and user files.

1. Tap **Menu > Service Setup > File Management**.
2. Select a file type to restore in the **Select type** list.
3. Tap **Reset Defaults**.

4. Tap **Yes**.

## Moving files to the projector

You need Service permissions to complete this procedure.

1. To move files from a USB Flash drive, insert the USB flash drive into the USB port on the side of the touch panel controller (TPC).
2. Tap **Menu > Service Setup > File Maintenance**.
3. Select a file type in the **File Type** list.
4. Tap and drag a file from the **TPC Files** pane to the **Projector Files** pane.

## Deleting projector files

You need Service permissions to complete this procedure.

1. Tap **Menu > Service Setup > File Maintenance**.
2. Select a file type in the **File Type** list.
3. Tap and drag a file from the **Projector Files** pane to the trash can icon.
4. Tap **Yes**.

# Troubleshooting

This section provides information and procedures for resolving common projector issues. If you cannot resolve a projector issue, contact Christie support. In order that a support representative can better assist you, have the model and serial number of your projector ready. For contact information for your region, see the back cover of this document.

## Projector functionality

### Projector does not turn on

- Verify the power cord is connected to the projector and the AC power supply correctly and the input selector switch is in the correct position.
- Verify the wall circuit breaker is on. If there is a problem with the wall circuit breaker turning off, contact a certified electrician.
- Verify the touch panel controller (TPC) is on and the LEDs on the input panel are illuminated. If the TPC is off and there are no LEDs illuminated, verify the AC outlet to which the projector is connected is working and the TPC is connected to the projector. If the AC outlet is working and the TPC is connected to the projector, contact Christie support.
- If the TPC is connected to the projector and the LEDs on the input panel are illuminated, on the TPC, verify in the **Operational Status** region of the **Main** panel does not indicate a PIBS1 failure.

### Touch panel controller

- If the TPC fails to initialize, restart the projector.
- If the TPC fails to initialize, make sure the compact flash on the left side is installed correctly.
- Make sure the TPC is connected to the projector.
- If the location of button presses on the screen are not interpreted correctly, the TPC screen may need recalibrating. Tap **Menu > Administrator Setup > Preferences**. Tap **Calibrate Screen** and follow the on screen instructions.

### Cannot establish communication with projector

Verify all input devices have the same subnet mask and gateway and unique IP addresses.



## Projector does not move from standby to full power mode

- Check the touch panel controller (TPC) for error messages.
- If a failure with PIB communications exists, reseal the board.
- Check the Ethernet status LED on the rear of the TPC.
- Verify that the internal fans are operating.
- Look through the rear right side grille and verify that the upper right LVPS (Low Voltage Supply) and the lower left main input LEDs are on. If the green LEDs are not on, check the breaker wiring to the terminal strip.
- Check all of the harness connections between LVPS and backplane.
- Replace the LVPS.

## DMD over-temperature warning

- Tap **Menu** > **Status** and then **Temperatures** in the left pane. Verify if the DMD temperatures are too high. If the temperatures are too high, cool the projector.
- Check the condition of the air filters and clean them if they appears to be dirty.
- Verify that all fans are operating.

## Lamp functionality

### Lamp does not ignite

- Tap **Menu** > **Advanced Setup** > **Lamp History** and verify the number of hours the lamp has operated. Replace a lamp nearing the end of its operational life.
- Tap **Menu** > **Status** and then **Interlocks** in the left pane. Check and correct all interlock failures.
- Tap **Menu** > **Status** and then **All Alarms** in the left pane. If a ballast communication error has occurred, restart the projector and turn the lamp on.
- Tap **Menu** > **Status** and then **Temperatures** in the left pane. Verify if the DMD temperatures are too high. If the temperatures are too high, cool the projector. Ensure the projector is properly ventilated and the air filters are not blocked.
- Listen for a clicking noise that indicates the ballast is attempting to strike the lamp. If you do not hear a clicking noise, there might be a problem with the ballast. Contact a Christie accredited service technician to resolve the issue.
- If you hear a brief clicking noise, but the lamp does not ignite, replace the lamp.

### Lamp suddenly turns off

- Tap **Menu** > **Advanced Setup** > **Lamp Power/LiteLOC Setup**. Increase the lamp power.

- Tap **Menu** > **Status** and then **Interlocks** in the left pane. Review and correct all interlock failures.
- Tap **Menu** > **Status** and then **Temperatures** in the left pane. Verify if the DMD temperatures are too high. If the temperatures are too high, cool the projector. Ensure the projector is properly ventilated and the air filters are not blocked.
- Replace the lamp.

## LiteLOC™ not working

- Tap **Menu** > **Advanced Setup** > **LampPower/LiteLOC™ Setup**. Tap **Enable LiteLOC™**.
- If the lamp power is at the maximum setting to maintain a LiteLOC™ setting, LiteLOC™ is automatically disabled. Reduce the LiteLOC™ setting, or install a new lamp.

## Display issues

### No image appears

- Make sure the lamp is on.
- Make sure the douser is open.
- Make sure a white test pattern is selected.
- Make sure the service doors are closed.
- Verify the marriage icon on the main window of the touch panel controller (TPC) is green.
- Make sure the marriage ring is secure.

### Flicker, shadows, or dimness

- Ensure the douser is open.
- Align the lamp.
- Tap **Menu** > **Advanced Setup** > **LampPower/LiteLOC™ Setup**. Monitor the **Power %** field to determine if the power is consistent or if it varies. Increase the lamp power. Lamps which are near end of service may not operate reliably at a lower power setting.
- Fold mirror misalignment. Contact your Christie accredited service technician to resolve the issue.
- Integrator rod misalignment. Contact your Christie accredited service technician to resolve the issue.

### Blank screen, no display of cinema image

- Ensure the lens cap is not on either end of the lens.
- Ensure the lamp is **ON**.

- Confirm all power connections are still OK.
- Ensure the douser is **OPEN** by verifying the state of the douser on **Main** panel.
- Ensure any test pattern other than the full black test pattern displays properly.
- Verify the correct display file is selected.
- For cinema connections, verify the correct port is selected.

## Severe motion artifacts

Verify if there is a synchronization problem with reversed 3-2 pull-down in the 60Hz-to-24Hz film-to-digital conversion and correct it at the source.

## Image appears vertically stretched or squeezed into center of screen

Open the Source File Setup window and verify the resolution and aspect ratio settings. Open the Screen File Setup window and verify the lens factor settings

## Inaccurate display colors

Tap **Menu** > **Channel Setup**. Tap **Config 1** in the left pane and verify the correct value is selected in the **PCF** list. Tap **Config 2** in the left pane and verify the correct value is selected in the **Color Space** field.

## Display is not rectangular

- Verify the projector is level and the lens surface and screen are parallel to one another.
- Tap **Menu** > **Advanced Setup** > **Screen File Setup** and verify the settings for the screen file are correct.

## Display is noisy


- Verify the cables connecting the input device to the projector meet the minimum requirements.
- Add signal amplification or conditioning if the distance between the input device and the projector exceeds 25 feet.
- Turn the projector off and then on again.

## Display has Suddenly Frozen

Turn off the projector and unplug the power cord from the power source. Plug the projector power cord into a power source and turn the projector on.

## The projector is on, but alternate content does not display

- Make sure the lens cover is removed from the lens.

- Make sure the lamp is on.
- Make sure the douser is open.
- Tap  on the main TPC screen.
- Tap **Menu** > **Channel Setup**. Verify the correct channel is selected and the settings are correct.
- Ensure an active source is connected properly. Check the cable connections and make sure the alternative source is selected.
- Verify you can select test patterns. If you can, check your source connections again.

## The display is jittery or unstable

- Verify that the input device is connected properly. If the input device is not connected properly, the projector repeatedly attempts to display an image.
- The horizontal or vertical scan frequency of the input signal may be out of range for the projector.
- The sync signal may be inadequate. Correct the source problem.

## Portions of the display are cut off

If you have resized the image, adjust the resizing settings until the entire image is visible and centered.

## Inconsistent picture quality

Verify the quality of the signal from the input source.

# Specifications

Because of continuing research, specifications are subject to change without notice.

## Available replacement parts and modules

The tables in this section list the parts and accessories that are available for the CP2208 projector.

### Lamp and filter assemblies

Part Name / Description	Christie Service Part #
Air Filter (5 filters per kit)	003-002311-xx
Air Filter (washable)	003-004655-xx
Lamp CDXL-14M (1.4 kW Xenon)	003-003066-xx
Lamp CDXL-16M (1.6 kW Xenon)	003-003900-xx
Lamp CDXL-19SC (1.9 kW Xenon)	003-005366-xx
Lamp CDXL-21S1 (2.1 kW Xenon)	003-004258-xx
Lamp Engine Blower	003-110862-xx

### Light engine

Part Name / Description	Christie Service Part #
Harness Kit - LVDS SFB to CBP	003-111832-xx
Light Engine Assembly	003-102958-xx
Light Engine Filter (5PK)	003-004460-xx
Light Engine Filter (washable)	003-004654-xx

## Lamp power supply, igniter, and power supplies

Part Name / Description	Christie Service Part #
Lamp Power Supply (LPS)	003-120704-xx
Low Voltage Power Supply	003-120705-xx
Low Voltage Power Supply 60W (Standby)	003-120509-xx

## Optical assemblies

Part Name / Description	Christie Service Part #
Cold Mirror	003-004459-xx
Fold Mirror #1	003-001979-xx
Fold Mirror #2	003-001980-xx
Integrator Assembly (includes holder and rod; frame and cover are	003-103096-xx
IOS (does not include integrator and LiteLOC™)	003-103267-xx
UV Filter	003-004458-xx
Yellow Notch Filter (1 filter and disposable Nitrile gloves)	003-103098-xx

## Card cage assemblies

Part Name / Description	Christie Service Part #
Backplane PCB	003-111666-xx
ICP	003-101342-xx
Light Sensor Assembly	003-111904-xx
PIBS1 Kit	003-105826-xx

## Fan assemblies

Part Name / Description	Christie Service Part #
Fan 12V 1.6A 4-wire 150mm (Fans 1,2)	003-110862-xx
Fan 12V 0.5A 4-wire 92mm (Fans 3,5,6,7,8)	003-110827-xx
Fan 12V 0.45A 4-wire 60mm (Fan 9)	003-111709-xx

## Miscellaneous

Part Name / Description	Christie Service Part #
AC Line Filter 15A	003-004457-xx
AC Line Filter 20A	003-004456-xx
ASSY Temperature Sensor	003-100618-xx

Part Name / Description	Christie Service Part #
Feet (4x adjustable/front feet 120mm and back feet 203mm)	003-002146-xx
Flexible Shaft X- Lamp Adjust	003-103248-xx
Flexible Shaft Y- Lamp Adjust	003-103249-xx
Flexible Shaft Z- Lamp Adjust	003-103250-xx
Interlock Switch	003-001559-xx
Lock - High Security	003-001526-xx
Lamp Adjust Module	003-103111-xx
Lamp Temperature Sensor	003-111458-xx
Lens Mount	003-103553-xx
Lens Mount Lockdown Handle	003-004461-xx
LVDS Harness	003-111832-xx
Reflector/Lamp Housing (includes sheet metal housing and lint free	003-103082-xx
Shutter Assembly	003-102988-xx
TPC	003-102075-xx
TPC Mounting Hardware	003-005427-xx
TPC Harness	003-111169-xx
TPC Storage Device Memory Card 4GB	003-004660-xx

## Optional accessories

Part Name / Description	Christie Service Part #
Convergence Tool Kit	003-000078-xx
Exhaust duct	119-103105-xx
Foot Brackets	119-100101-xx
Protective Clothing Safety Kit (Kevlar gloves, ballistic nylon jacket,	598900-095
Rack Stand Full	108-272101--xx

## Optional lenses

Part Name / Description	Christie Service Part #
1.2 - 1.72.69" DLPCine Zoom Lens	108-494108-xx
1.33 - 2.1.69" DLPCine Zoom Lens	108-495109-xx
1.62 - 2.7.69" DLPCine Zoom Lens	108-496100-xx
2.09 - 3.9.69" DLPCine Zoom Lens	108-497101-xx

## Security roles

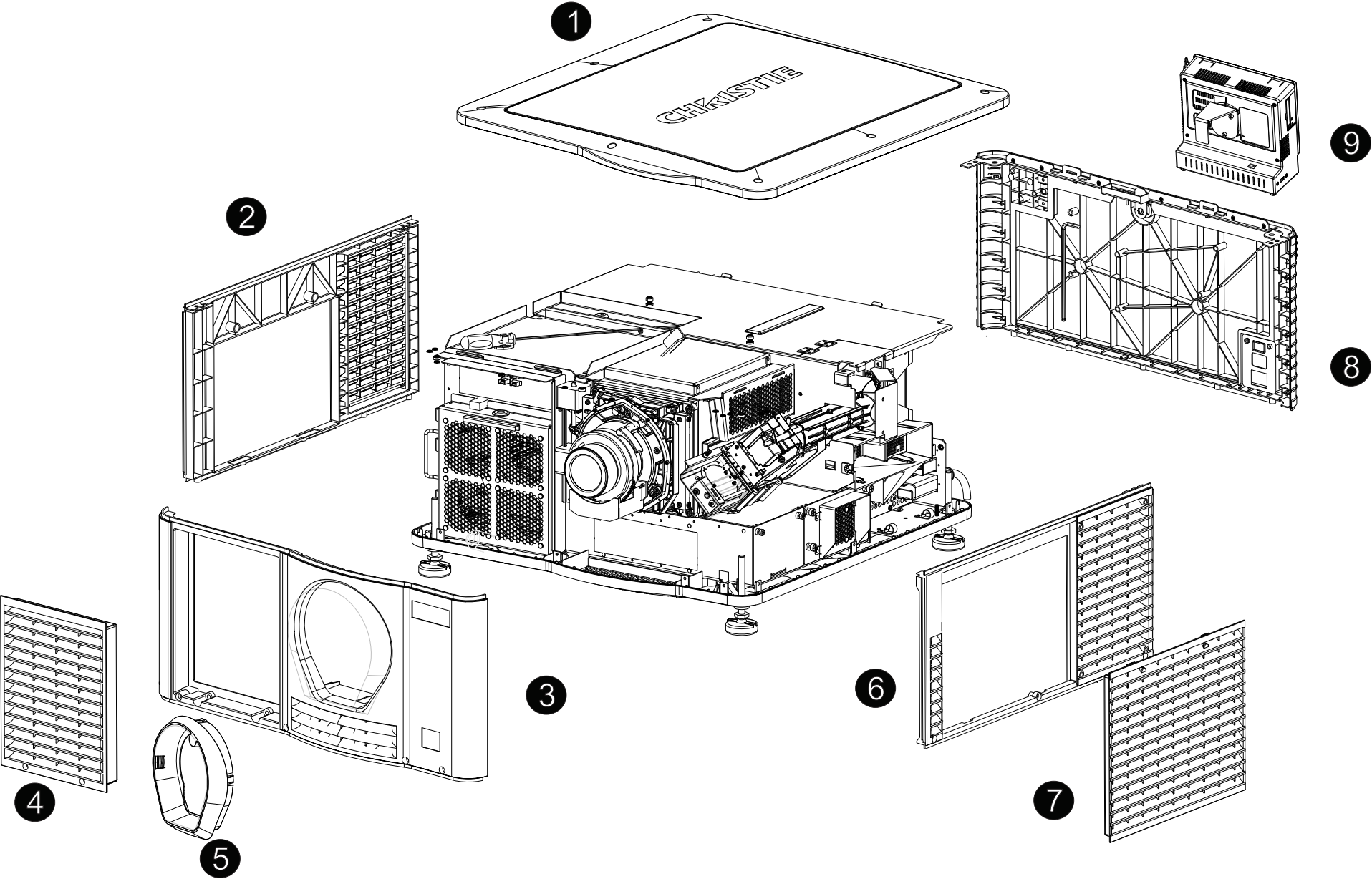
Only Christie authorized service technicians should perform field repair and service to the unit. Marriage must also only be performed by Christie authorized service technicians. Theater personnel may only perform diagnostic functions, such as running the Interrogator

# Exploded Views

The following exploded views have been provided to assist in identifying the various serviceable parts in the projector.

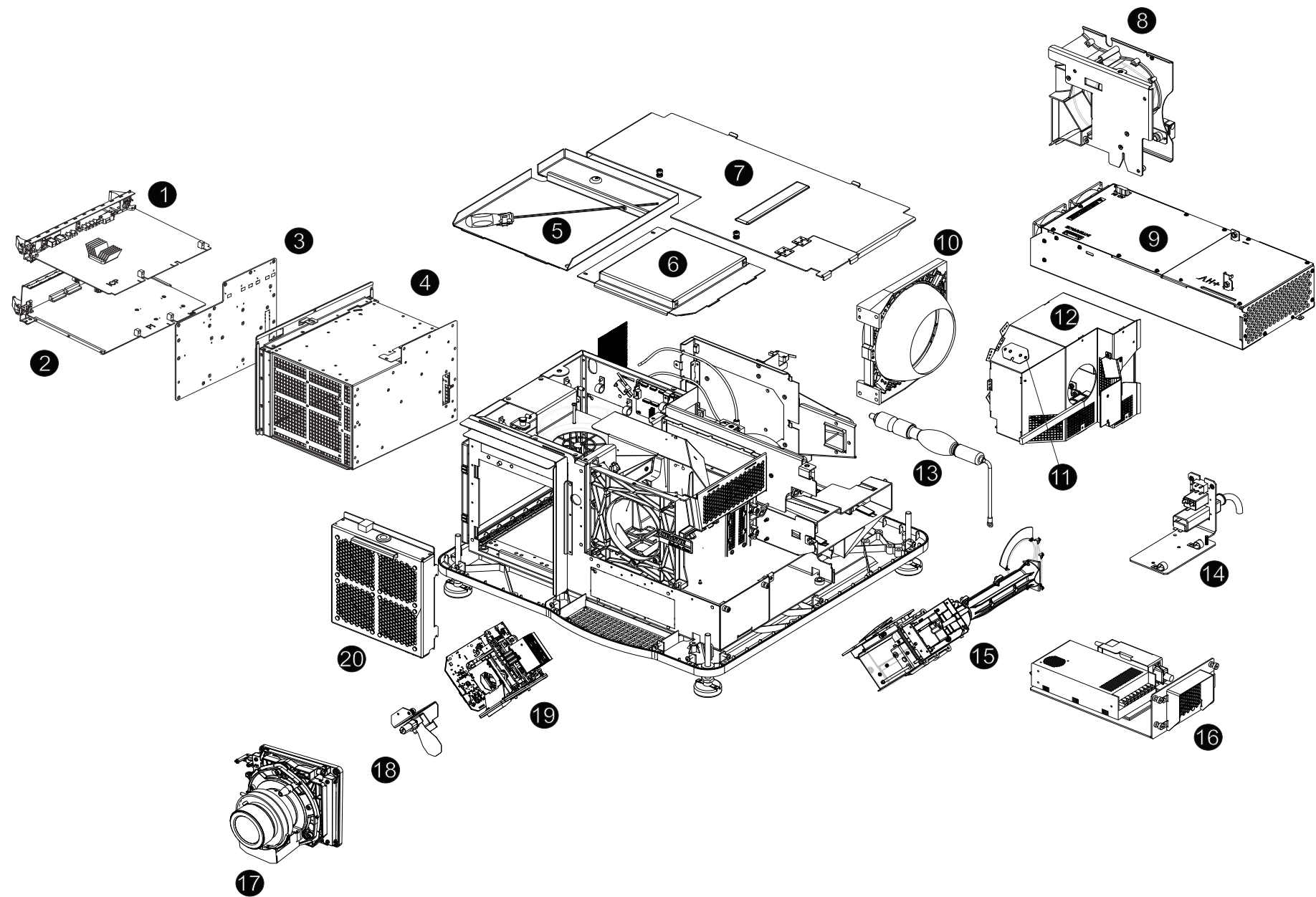


External view



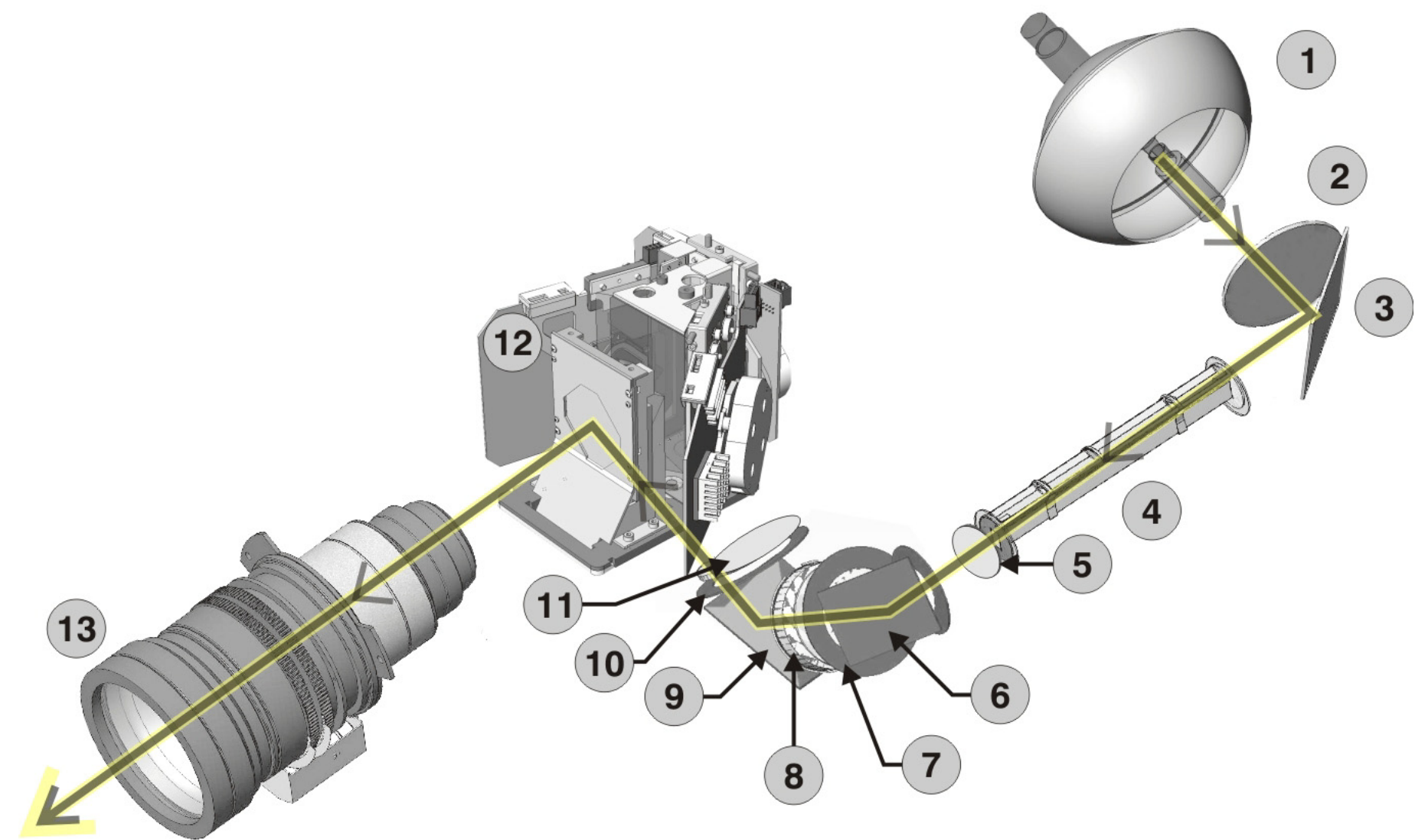
Label	Description	Label	Description
1	Top lid	6	Exhaust panel skin
2	Card cage panel skin	7	Service door
3	Front face skin	8	Rear lamp door
4	Air filter cover	9	Touch Panel Controller (TPC)
5	Lens surround		

Internal view



Label	Description	Label	Description	Label	Description	Label	Description
1	Integrated cinema processor (ICP)	6	High security lid	11	Lamp temperature sensor	16	Power supply tray
2	Projector Intelligence Board (PIB)	7	Safety shield	12	Lamp housing	17	Lens mount
3	Backplane	8	Lamp blower assembly	13	Lamp	18	Douser assembly
4	Card cage	9	Ballast	14	AC line filters	19	Light engine
5	Light engine cover	10	Reflector	15	IOS assembly	20	Card cage fan pack assembly

Light path



Label	Description	Label	Description
1	Reflector/lamp	9	Fold mirror 2
2	UV filter	10	Vignetting aperture
3	Cold mirror	11	Lens 5
4	Integrator rod	12	Light engine
5	Lens 1	13	Lens
6	Fold mirror 1	8	Yellow notch filter/lens 2
7	Contrast aperture	9	Fold mirror 2
8	Yellow notch filter/lens 2	10	Vignetting aperture



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