

CP2215

Service Manual

020-101226-04

CP2215

SERVICE MANUAL

020-101226-04

NOTICES

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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)

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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.

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!

Canadian manufacturing facility is ISO 9001 and 14001 certified.

GENERAL WARRANTY STATEMENTS

For complete information about Christie's limited warranty, please contact your Christie dealer. In addition to the other limitations that may be specified in Christie's limited warranty, 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 supplied by a supplier other than Christie.
- d. Problems or damage caused by combination of a Product with non-Christie equipment, such as distribution systems, cameras, video tape recorders, 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.
- j. For LCD projectors, the warranty period specified applies only where the LCD projector is in "normal use." "Normal use" means the LCD projector is not used more than 8 hours a day, 5 days a week. For any LCD projector where "normal use" is exceeded, warranty coverage under this warranty terminates after 6000 hours of operation.
- k. Image retention on LCD flat panels.
- l. Failure due to normal wear and tear.

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.

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Introduction

This manual provides technical information for assisting qualified Christie authorized service technicians in the servicing and repair of the Christie CP2215 projector.

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.

Safety Information

Projector Skins

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

WARNING

- When servicing the projector and the top lid is removed, everyone within the immediate vicinity must wear safety glasses with side shields and Christie approved protective safety clothing (598900-95). Failure to comply results in death or serious injury
- Never operate the projector or the fans without all the covers installed. Failure to comply could result in death or serious injury.

Lamp

DANGER

- Only service technicians trained specifically by Christie on lamp replacement and lamp safety may handle the lamp. The high-pressure lamp may explode if improperly handled. Always wear Christie approved protective safety clothing (598900-95) whenever the internal lamp door is open. Failure to comply results in death or serious injury.
- **EXPLOSION HAZARD!** Lamp replacement must be performed by Christie trained personnel only. Wear authorized protective clothing (598900-95) 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. Failure to comply results in death or serious injury.
- Never attempt to remove the lamp when it is hot. The lamp is pressurized when hot and may explode. Allow the lamp to cool completely. Failure to comply results in death or serious injury.

WARNING

- Replace the lamp when it reaches its warranted lifetime. An older lamp becomes increasingly fragile and more susceptible to sudden failure or explosion. To determine how many hours the lamp has been operating, on the projector touch panel controller (TPC) tap the status icon in the top left corner and then tap Lamp Info in the left pane. The number of lamp operational hours is displayed in the Total Hours on Installed Lamp field. Failure to comply could result in death or serious injury.

Lamp Power Supply



The lamp power supply (LPS) is located at the rear of the projector. The LPS supplies the lamp with power. The LPS is cannot be serviced. Never attempt to open or service the LPS. A faulty supply must be replaced. Failure to comply results in death or serious injury.

Power Supplies



High voltages may be exposed—Qualified personnel only. Always turn the projector off and disconnect it from AC power prior to disassembly. Failure to comply results in death or serious injury



- Do not operate the projector 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. Failure to comply could result in death or 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. Failure to comply could result in death or serious injury.

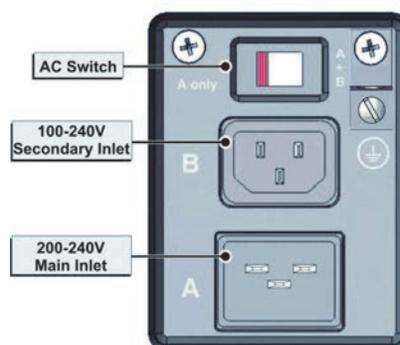


Power supplies are not serviceable. Any faulty power supply module must be replaced. Never open or attempt to service a power supply. Contact Technical Support for a replacement. Failure to comply could result in minor or moderate injury.

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 PIB 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 2 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 projector.

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



UV Light

DANGER

- 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. Failure to comply results in death or serious injury.
- 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 (598900-95) before opening the lamp door. Do not operate the lamp without the lamp door in place. Failure to comply results in death or serious injury.

NOTICE

- The projector must be operated in an environment that meets the operating range specifications.
- 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.
- Some medications are known to increase sensitivity to UV radiation.

High Temperatures

DANGER

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 (598900-95) 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 turning the projector off, disconnecting it from AC, and opening the lamp door. Failure to comply results in death or serious injury.

CAUTION

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 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 (598900-095) before opening the lamp door. Failure to comply could result in minor or moderate injury.

Power Cord

WARNING

- Do not operate the projector if the AC supply is not within the specified voltage and power range. Power rating information for the projector is provided on the license label on the back of the projector. Always power down the projector before unplugging the AC power cord. Wait 15 minutes for the main exhaust fan to turn off and for the lamp to cool sufficiently before unplugging the projector. Failure to comply could result in death or serious injury.
- Use only the power cord provided with the projector. Do not compromise safety by using other connectors. Failure to comply could result in death or serious injury.

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. Failure to comply results in death or serious injury.

Ground/Earth Connections



Never defeat the ground/earth connection of the projector for any reason. Failure to comply results in death or serious injury.

NOTICE

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

Cleaning



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

NOTICE

- You must keep all internal components clean during any service procedure. In particular, all of the projector 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 is required during and after servicing.

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

Technical Support

For immediate assistance with common problems, see *Troubleshooting, on page 5-1*.

If you cannot resolve your issue, contact Christie support:

North and South America: +1-800-221-8025 or tech-support@christiedigital.com

Europe, Middle East, and Africa: +44 (0) 1189 778111 or techsupport-emea@christiedigital.com

Asia Pacific: tech-asia@christiedigital.com

Have the model and serial number of your projector ready so a support representative can better assist you.

Adjust the Image

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

Rotate the Integrator Rod

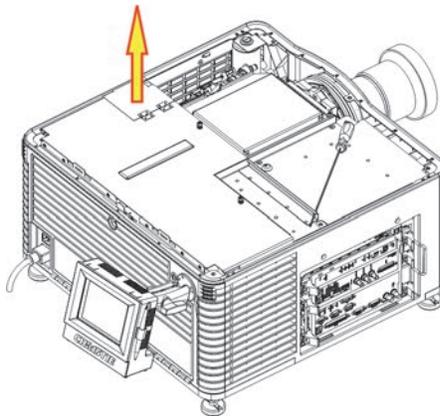


UV HAZARD! When servicing the projector with the top lid removed anyone within the immediate vicinity must wear ultraviolet (UV) glasses with side shields. Failure to comply results in death or serious injury.

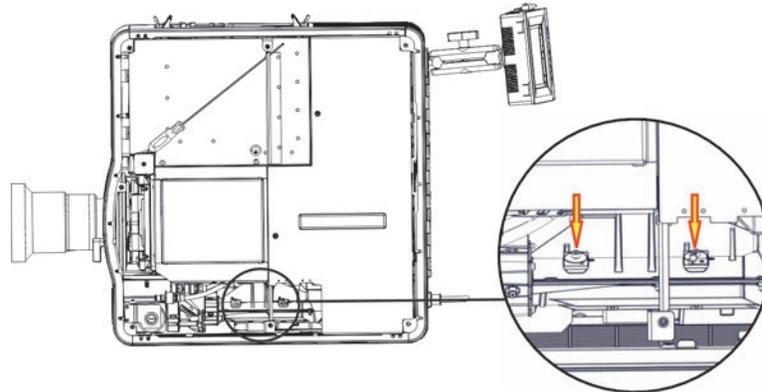
NOTICE

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).

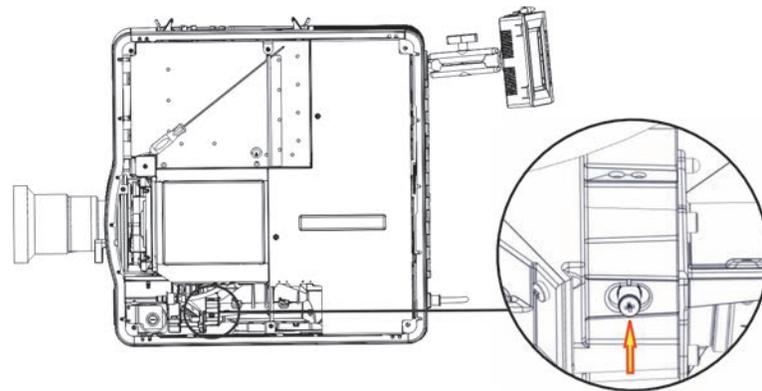
1. Display a full white field test pattern:
 - a. On the touch panel controller (TPC), tap the **Test Pattern** icon () in the taskbar.
 - b. Tap **All Test Patterns**.
 - c. Tap **RGB-12bit-Full Screen White**.
2. Remove the top lid. See [Remove the Top Lid](#) on page 21.
3. Put on a pair of heat resistant gloves and UV resistant glasses.
4. Open the integrator rod access door.



- Loosen the 2 integrator rod set screws.



- If the image is not parallel to the screen, rotate the integrator rod.
- 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 attached to the lens backward and forward.



- Verify no shadows are on the screen. If shadows appear, see [Align the Fold Mirror](#) on page 7.
- Tighten all of the integrator rod set screws.
- Replace the top lid.

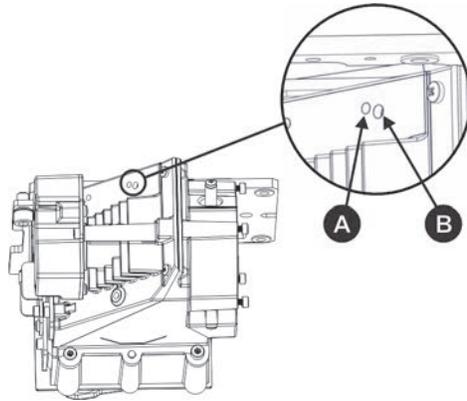
Align the Fold Mirror

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

- Remove the top lid and set it aside. See [Remove the Top Lid](#) on page 21.
- Display a full white test pattern:
 - On the touch panel controller (TPC), tap the **Test Pattern** icon () in the taskbar.
 - Tap **All Test Patterns**.

c. Tap **RBG-12bit-Full Screen White**.

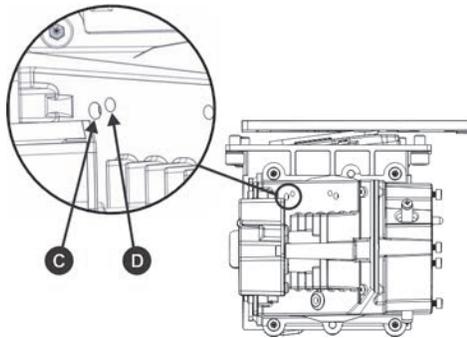
3. Insert a hex driver in the first set screw (A) and a hex driver in the first cap screw (B).



A	Set Screw (x2)
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 (D) and a hex driver in the second cap screw (C).



C	Cap Screw (x2)
D	Set Screw (x2)

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

7. Replace the top lid.

Adjust Vertical Boresight Angle

⚠ WARNING

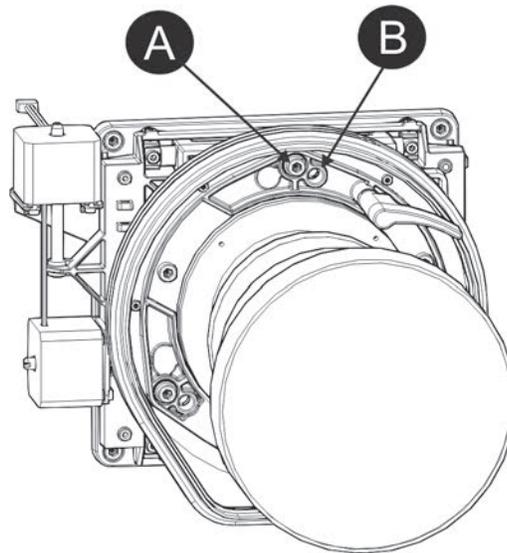
A boresight adjustment should only be made when the image cannot be focused uniformly on the screen by aligning the projector to the screen and focusing the lens. When adjusting boresight, you must maintain the boresight distance from the lens to the prism plane set by Christie. For example, when you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

⚠ CAUTION

Only adjust vertical boresight 1/8 of a turn or less at one time to maintain optimal lens performance (such as factory setup of absolute lens distance to the prism). Each turn of the cap screws must be tracked to ensure adjustments are accurate.

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

1. Display the DC2K Framing2 test pattern:
 - a. On the touch panel controller (TPC), tap the **Test Pattern** icon () in the taskbar.
 - b. Tap **All Test Patterns**.
 - c. Tap **DC2K Framing 2**.
2. Loosen the set screw (B).



A	Cap Screw - Adjusts top and bottom boresight
B	Set Screw - Locks or unlocks the cap screw

3. Turn the vertical cap screw (A) 1/8 of a turn counter-clockwise.
4. 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.

5. 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 reduced if needed; it should never be exceeded. Always compensate both left and right horizontal adjustments according to the vertical adjustment.

6. 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.
7. When the top and bottom of the image are equally in focus lock the set screw to hold it in position. Recheck the image.
8. If additional adjustment is required, see [Adjust Horizontal Boresight](#) on page 10.

Adjust Horizontal Boresight

WARNING

A boresight adjustment must 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.

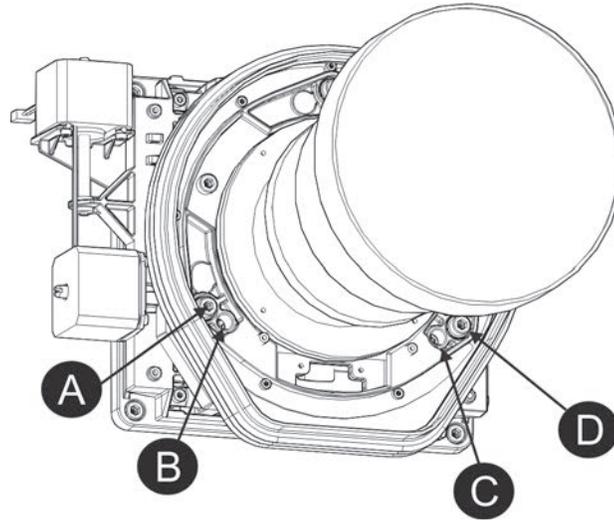
CAUTION

Only adjust horizontal boresight 1/8 of a turn or less at one time to maintain optimal lens performance (such as factory setup of absolute lens distance to the prism). You must 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.

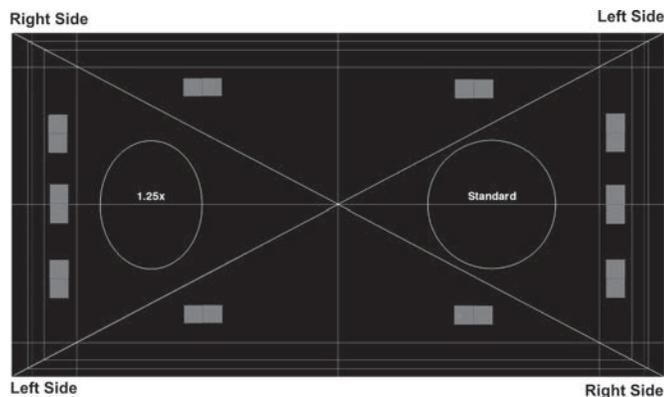
1. Display the DC2K Framing test pattern:
 - a. On the touch panel controller (TPC), tap the **Test Pattern** icon () in the taskbar.
 - b. Tap **All Test Patterns**.
 - c. Tap **DC2K Framing**.

- Loosen the right boresight set screw (B).



A	Right Boresight Cap Screw
B	Right Boresight Set Screw
C	Left Boresight Set Screw
D	Left Boresight Cap Screw

- Turn the right boresight cap screw (A) 1/16 of a turn clockwise.
- Adjust the left boresight cap screw (D) equally in the opposite direction.
- If the quality of the projected image has not improved, turn the right boresight cap screw 1/16 of a turn counter-clockwise. Make sure the left adjuster is adjusted equally in the opposite direction.
- 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.



- Repeat Steps 5 to 7 for the left-side.

8. Each corner of the screen should be equally in focus when horizontal boresight is completed correctly. If necessary, repeat vertical boresight. See [Adjust Vertical Boresight Angle](#) on page 9. Only adjust vertical boresight 1/8 of a turn or less at one time to maintain optimal lens performance (such as factory setup of absolute lens distance to the prism). Each turn of the cap screws must be tracked to ensure adjustments are accurate.

Yellow Notch Filter Color Calibration



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

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

1. Set up a spectroradiometer in front of the viewing screen and aim it at the center of the screen.
2. 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 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 d to f 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 f 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**.
3. 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 Launch Dialog 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.
Target Color	The Target Color Gamut Data (TCGD) value. Select Color Verification .
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 Use PCF is selected.
Gamma	The gamma correction required for the proper tonal range of the source material. This option is not available when Use PCF is selected.
LUT_CLUT	Applies a 3D color cube for increased color accuracy. This option is not available when Use PCF is selected.
Scan Type	The video scan type. The default is Progressive .
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 de-interleaves 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).
L/R Display Sequence	<p>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.</p> <p>When using Line Interleave as the 3D Sync Input Mode, ensure that Left (L1R1 L2R2) is selected.</p>
3D Sync Polarity	<p>Keeps 3D stereo sync output the same as input (true) or reversed (inverted).</p> <p>True: 3D L/R sync output from GPO will match L/R sync input.</p> <p>Inverted: 3D L/R sync output from GPO will be the opposite of sync input (left = right, right = left).</p>
Dark Time	<p>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. Values between 0 and 65535 are accepted. Tap the Launch Dialog button  to enter the dark time value.</p>

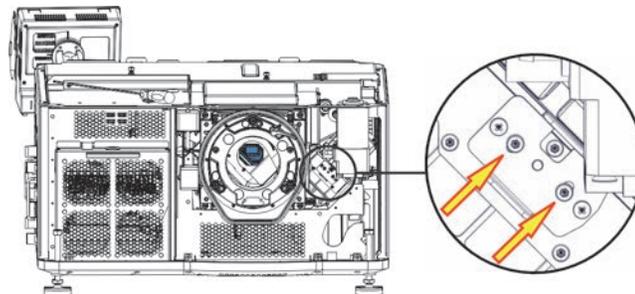
Field	Description
Output Delay	The non-image time in Microseconds (μ). Offset 3D stereo sync output in relation to dark time interval. Acceptable values are between -32768 and 32767. A positive offset adds a delay and a negative offset starts playback early. Tap Launch Dialog to enter the output delay value.
Phase Delay	The degree of reference between the left and right sync output. Values between -180 and 180 are accepted. Tap Launch Dialog to enter the phase delay value.

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

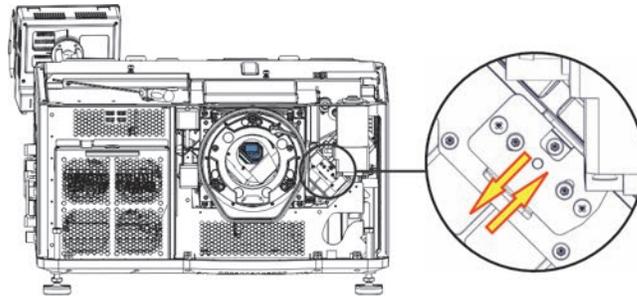
Color	X	Tolerance	Y	Tolerance
Red	0.640	+/- 0.002	0.320	+/- 0.002
Green	0.280	+/- 0.002	0.640	+/- 0.002
Blue	0.160	+/- 0.002	0.100	+/- 0.002
White	0.314	+/- 0.002	0.351	+/- 0.002

If the values are outside the tolerances:

- a. Remove the top lid. See [Remove the Top Lid](#) on page 21.
- b. Remove the front skin. See [Remove the Front Skin](#) on page 21.
- c. Loosen the 2 adjustment screws on the yellow notch filter.



- d. Rotate the yellow notch filter with the handle until you reach the correct angle. Tighten the adjustment screws when the adjustment is complete.



- e. Repeat steps 4 and 5. Replace the yellow notch filter if these corrective measures do not work.
 - f. Replace the front skin.
 - g. Replace the top lid.
6. Repeat steps 4 and 5 for the RBG-12bit-Full Screen Red, Green, and Blue test patterns.

Align the Lamp with LampLOC

To ensure optimal lamp performance and peak brightness at the screen for the life of the lamp, use LampLOC to adjust the lamp position when you install a new lamp in the projector. After making the adjustment, the lamp is well-centered and at the correct distance from the illumination system.

1. Turn the lamp on and open the douser.
2. Tap **Menu > Advanced Setup > LampLOC Setup**.
3. Tap **Display Full Screen White Test Pattern**.
4. Tap **Do Auto**.

Adjust DMD Convergence

A convergence problem occurs when one or more projected colors (red, green, blue) appears misaligned when examined with a convergence test pattern. Normally, the three colors should overlap precisely to form pure white lines throughout the image and one or more poorly converged individual colors may appear adjacent to some or all of the lines. Contact your Christie accredited service technician to correct DMD convergence issues.

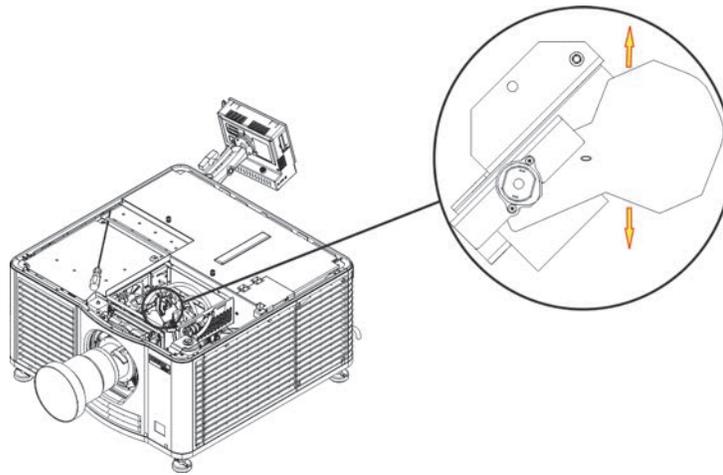
Manually Override the Shutter

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

1. Turn the lamp off and allow the projector to cool for 15 minutes.
2. Remove the lens. See [Remove the Lens](#) on page 30.
3. Reach through the lens opening and move the shutter up and down 3 times.
4. Tap the douser open and close icons on the touch panel controller and determine if the douser is operating.

If the douser is not operating:

- a. Turn the projector off and then disconnect it from AC power.
- b. Remove the top lid. See [Remove the Top Lid](#) on page 21.
- c. Remove the high security lid. See [Remove the High Security and Light Engine Lid](#) on page 23.
- d. Disconnect the douser from the IMCB.
- e. Move the douser to the open or closed position.



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 this information found on the product license label on the rear of the projector.

- Projector Model
- Projector Serial Number
- Manufacture Date

Inspect the Card Cage Filter



Use only high efficiency Christie approved filters. Never operate the projector without the filter installed. Failure to comply could result in minor or moderate injury.

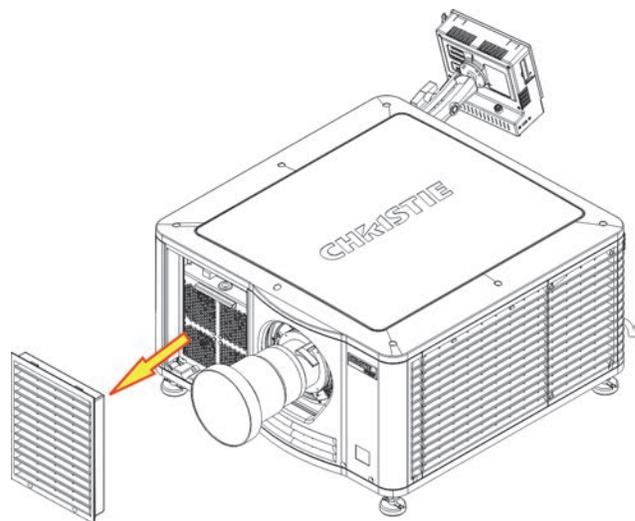
Check the condition of the card cage air filter monthly. Clean or replace the card cage air filter sooner if you are operating the projector in a dusty or dirty environment. The filter is located on the left side of the projector behind the air filter cover.

1. Loosen the 2 captive screws on the bottom of the filter cover.
2. Pull the cover up and then 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 [Clean a Washable Filter](#) on page 20 for cleaning instructions.

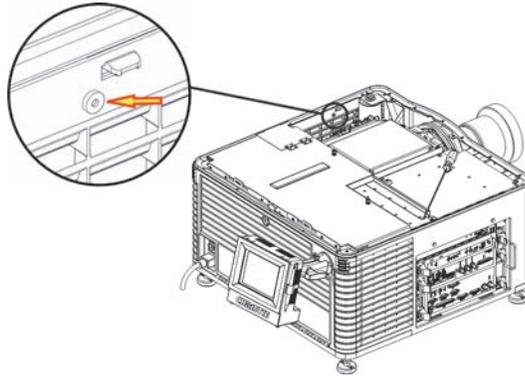
If the filter appears clean, continue to step 4.

4. Replace the air filter with the airflow indicator label facing toward the projector.
5. Install the air filter cover by inserting the 2 bottom tabs and then pushing the cover closed.
6. Tighten the 2 captive screws.

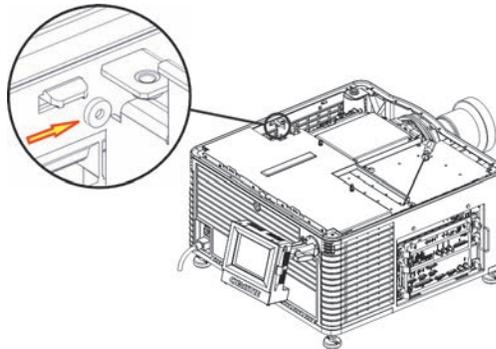


Remove the Service Panel

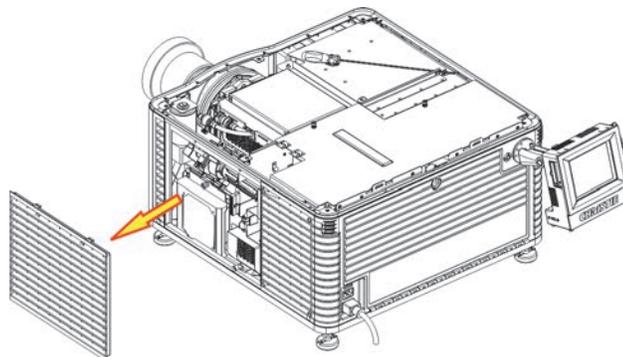
1. Remove the top lid. See *Remove the Top Lid* on page 21.
2. Reach into the projector and then loosen the first service panel screw.



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



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



Clean a Washable Filter

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.

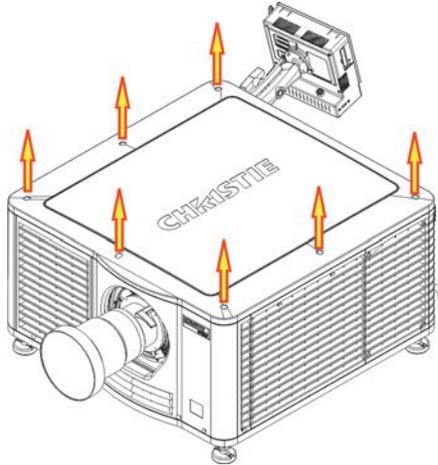
⚠ WARNING

The installation of a filter that has not dried completely can cause an electrical short and damage the projector. Failure to comply could result in death or serious injury.

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 following the instructions for the specific filter. See [Inspect the Card Cage Filter](#) on page 18 or [Remove the Service Panel](#) on page 19.

Remove the Top Lid

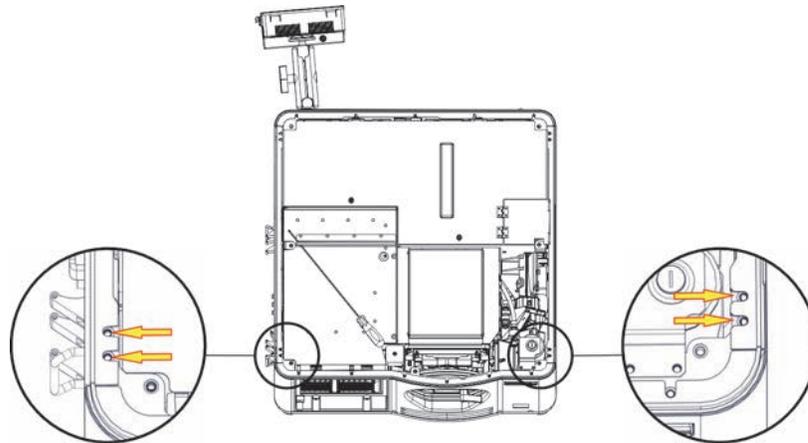
1. Loosen the 7 screws that secure the top lid to the projector.



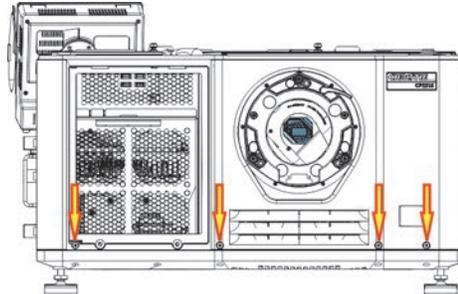
2. Lift the lid up from the rear of the projector.

Remove the Front Skin

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the lens. See [Remove the Lens](#) on page 30.
4. Remove the top lid. See [Remove the Top Lid](#) on page 21.
5. Remove the card cage intake air filter cover. See [Inspect the Card Cage Filter](#) on page 18.
6. Remove the 4 screws that secure the skin to the projector structure.



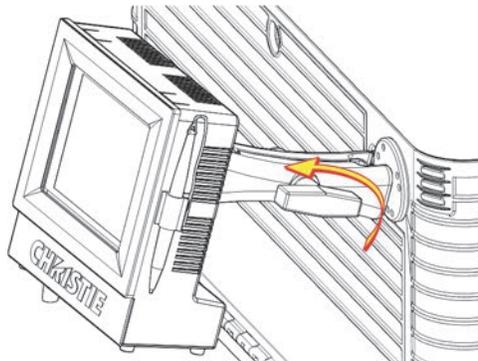
7. Remove the 2 screws securing the coolant reservoir bracket. Rest the reservoir against the center structure.
8. Loosen the 3 captive screws from the front skin and the 1 screw behind the filter cover.



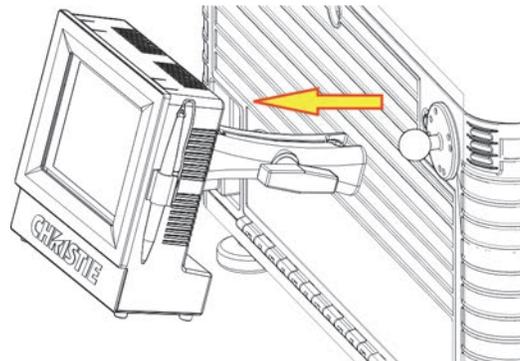
9. Pull the front skin forward to remove it.

Remove the Touch Panel Controller

1. Loosen the clamp holding the extension arm to the touch panel controller (TPC) ball joint.



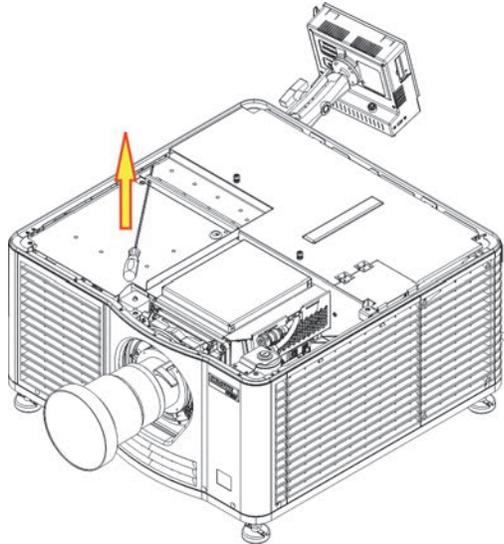
2. Pull the TPC outward and away from the extension arm.



3. Disconnect the TPC harness.
4. Remove the 3 screws securing the ball mount to the projector and then remove the ball mount.

Remove the High Security and Light Engine Lid

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Unlock the high security lid with the high security key.

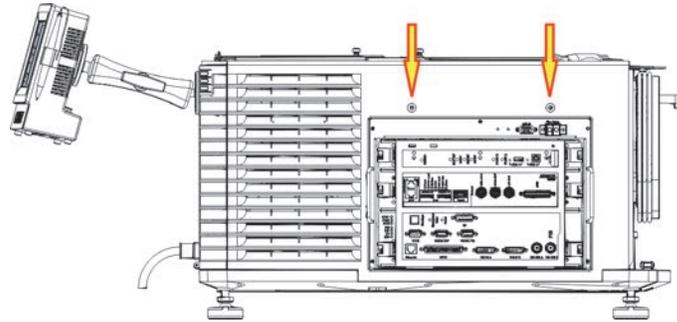


5. Lift the lid up and out.
6. Remove the 2 screws securing the light engine lid to the center structure and then lift the lid up and out of the projector.

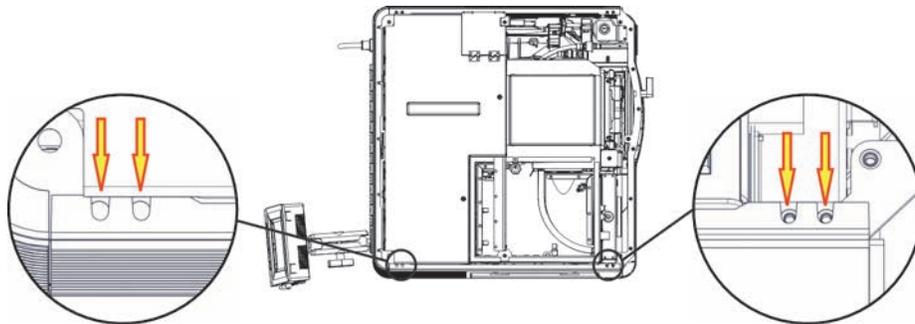
Remove the Card Cage Skin

This card cage skin should never need replacement 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.

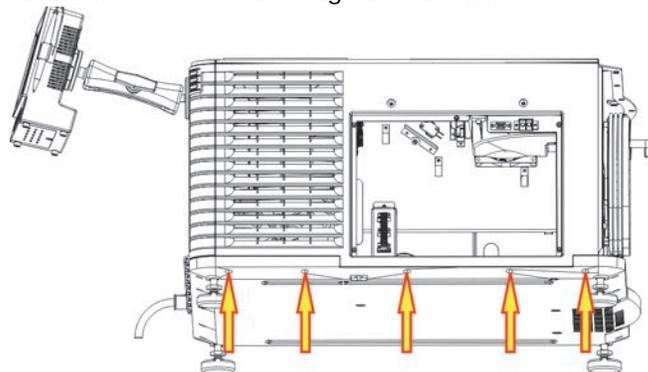
1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the front skin. See [Remove the Front Skin](#) on page 21.
5. Remove the 2 screws above the card cage.



6. Remove the card cage. See [Remove the Card Cage](#) on page 40.
7. Remove the four screws that secure the skin to the corner brackets.



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



9. Pull the card cage panel out.

Remove the Rear Skin

The rear access frame interlocks with the side skins.

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the touch panel controller (TPC). See [Remove the Touch Panel Controller](#) on page 22.
5. Remove the safety shield. See [Remove the Safety Shield](#) on page 26.
6. Remove the 5 screws from the bottom edge of the skin.
7. Remove the 2 screws from the AC receptacle.
8. Open the lamp door.
9. Remove the 4 screws securing the rear skin to the projector chassis.
10. Remove the standby cable harness from the 6 P-clips.
11. Loosen the spring screw holding the standby power supply to the rear skin.
12. Disconnect the AC harness connector.
13. Remove the standby power supply and set it on the top of the projector.
14. Carefully pull the top of the rear skin outward so it clears the tabs.
15. Disconnect the 2 lamp door switch connectors.
16. Remove the interlock harness from the 2 P-clips.
17. Disconnect the LED harnesses and remove them from the P-clips.
18. Remove the 2 screws securing the standby power supply bracket to the rear skin.
19. Remove the 2 screws securing the TPC harness to the rear skin.
20. Remove the TPC harness from the 4 P-clips.
21. Carefully pull the top of the skin outward and remove the screw from the cable clip.
22. Remove the nut and washer securing the ground lug to the projector and then remove the ground lug.
23. Pull the skin forward and out.

Remove 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 door that you can remove it separately to access to optical components. The exhaust panel skin rarely needs replacement because you can remove the side skin service door to access internal components.

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the front skin. See [Remove the Front Skin](#) on page 21.
5. Remove the service door. See [Remove the Exhaust Panel Skin](#) on page 25.
6. Loosen the 3 screws from the bottom of the exhaust panel skin.
7. Remove the 4 screws that secure the skin to the corner brackets.
8. Pull the skin forward and out.

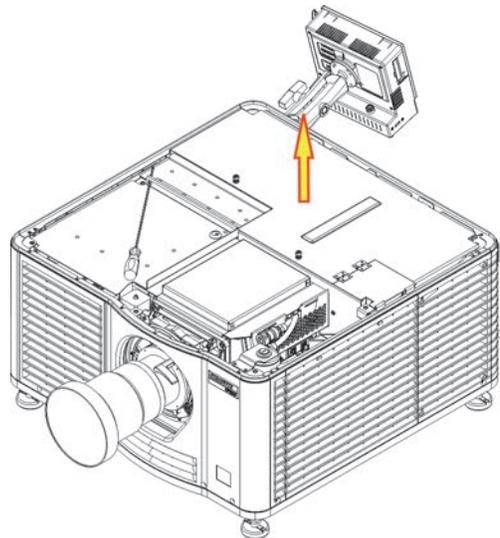
Remove the Safety Shield



EXPLOSION HAZARD! Wear Christie approved protective clothing (598900-95) when the safety shield is open and handling the lamp. Failure to comply results in death or serious injury.

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

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Loosen the 2 captive screws.
5. Pull the safety shield up and outward from the locking tabs.



Replace the Lamp



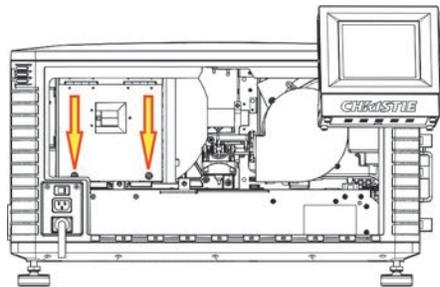
- Lamp replacement must be performed by a qualified service technician. Failure to comply results in death or serious injury.
- EXPLOSION HAZARD. Wear authorized protective clothing whenever the lamp door is open and when handling the lamp. Never twist or bend the quartz lamp body. Use the correct wattage lamp supplied by Christie. Failure to comply results in death or serious injury.
- 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. Failure to comply results in death or serious injury.
- 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. Failure to comply results in death or serious injury.



Improper installation of the lamp can damage the projector. Failure to comply could result in death or serious injury

Remove the Existing Lamp

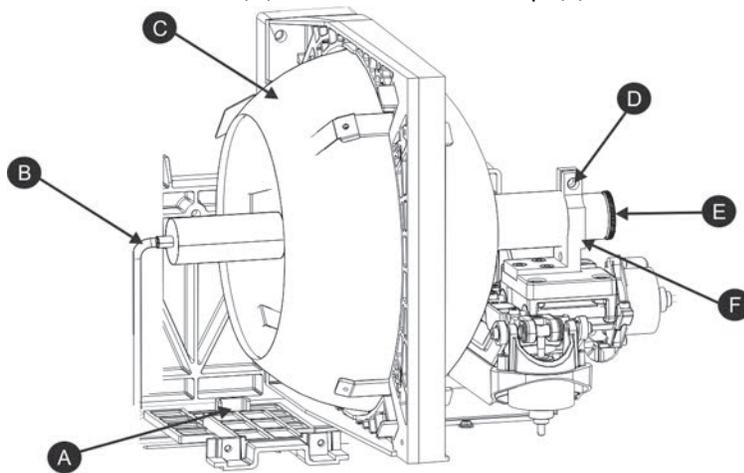
1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Put on your protective clothing and face shield.
4. Insert the key in the lock on the lamp door, turn the key, and then open the lamp door. Do not place heavy objects on the open lamp door.
5. Loosen the two thumbscrews and open the lamp access door.



6. Remove the screw securing the anode wire. It is recommended that you use a 5 mm magnetized ball driver.

7. Remove the lamp:

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



A	Anode Terminal
B	Anode Wire
C	Reflector
D	Cathode Screw
E	Cathode Nut
F	Cathode Clamp

- b. Hold the anode end of the lamp with your left hand and then carefully unscrew and remove the cathode nut (E) with your right hand.
 - 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.
8. 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, in a location where it cannot fall or be bumped.



Handle the box with extreme caution. The lamp is hazardous even when packaged. Dispose of lamp box according to local area safety regulations. Failure to comply could result in death or serious injury.

9. Install the new lamp. See [Install the New Lamp](#) on page 29.

Install the New Lamp



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. Failure to comply could result in minor or moderate injury.

1. Remove the existing lamp. See [Remove the Existing Lamp](#) on page 27.
2. Open the box containing the new lamp and then remove the tape from the ends of the protective case.
3. Remove the plastic packing material from the lamp.
4. Remove the cathode nut from the lamp before removing it from the case.
5. 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
6. Thread on and hand-tighten the cathode nut. Ensure the smooth portion of the nut is against the cathode clamp.
7. Tighten the cathode screw (D) with a hex key.
8. Align the ring terminal on the anode wire (B) with the mounting position ensuring the crimped side of the wire is facing out. Tighten the anode screw.
 Make sure you route the anode lead away from nearby metal surfaces.
9. Close the lamp access door and tighten the 2 thumbscrews.
10. Place the hex key into its holder and then close and lock the rear access door.
11. Add the lamp to the lamp history. See [Add the Lamp to the Lamp History](#) on page 29.

Add the Lamp to the Lamp History

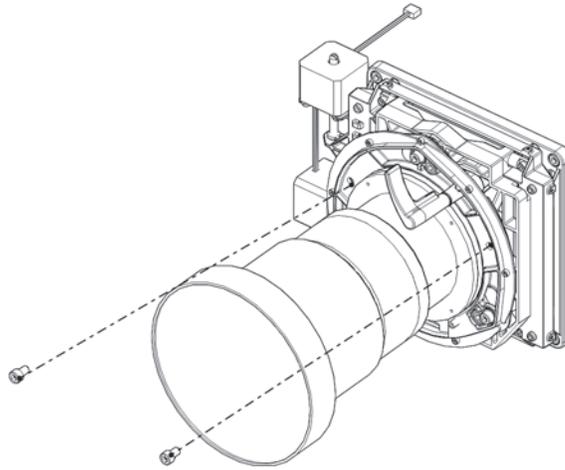
1. Connect the projector to AC power and then turn the projector on.
2. Tap **Menu > Advanced Setup > Lamp Change Wizard**.
3. Tap **Next**.
4. Complete these fields:

Field	Description
Type	Lamp type.
Serial Number	Lamp serial number.
Reason for Change	Reason the lamp was changed.
Lamp Expiry (Hours)	Number of hours the lamp can operate before replacement.
Hours Used	Number of hours the lamp has operated before installation.

5. Tap **Save**.
6. Tap **Next**.
7. Align the lamp. See [Align the Lamp with LampLOC](#) on page 16.

Remove the Lens

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Install the lens cap and turn the lens clamp to the open position.
4. If necessary, remove the 2 cap screws securing the lens to the lens mount using a hex key.



5. Pull the lens out of the lens mount and then install a small lens cap on the rear of the lens.
6. Remove the small rear cap from the new lens. Keep the front cap on.
7. 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.
8. Turn the lens clamp by to the right to lock it.
9. Install the lens mount cap screws for added stability.
10. Remove the lens cap from the front of the lens.

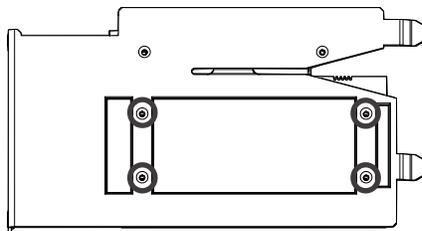
Replace the Standby Power Supply

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the lamp. See [Replace the Lamp](#) on page 27.
4. Remove the top lid. See [Remove the Top Lid](#) on page 21.

5. Remove the safety shield. See [Remove the Safety Shield](#) on page 26.
6. Remove the service door. See [Remove the Exhaust Panel Skin](#) on page 25.
7. Remove the top bracket by loosening the captive screw.
8. Remove the AC power cord from the bottom of the standby power supply.
9. Remove the power supply harness from the 6 P-clips on the back of the rear skin.
10. Remove 1 screw from the clip clamp holding the harness to the rear skin.
11. Remove the harness from the P-clip on the base of the projector.
12. Disconnect the standby inline connector.
13. Remove the standby power supply.

Remove the Low Voltage Power Supply

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the service door. See [Remove the Exhaust Panel Skin](#) on page 25.
5. Loosen the 4 captive screws securing the LVPS cover.
6. Disconnect the 4 DC harnesses.
7. Disconnect the LVPS harness connected to the relay.
8. Remove the tray with the LVPS from the projector.
9. Remove the 4 screws that secure the LVPS to the mounting plate.



10. Disconnect the line ground and neutral connectors.

Remove the Projector Feet

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. 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 [Remove the Rear Skin](#) on page 25 or [Remove the Front Skin](#) on page 21.
5. Hold the top nut with a ratchet and then turn the locking nut on the foot to remove it.
6. Remove the foot.

Remove 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. Turn the projector off and then disconnect it from AC power.
3. Unlock and then open the lamp door.
4. Remove the 2 nuts from the interlock.
5. Disconnect the two interlock wires.

Replace 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. Turn the projector off and then disconnect it from AC power.
3. Remove the lamp. See [Remove the Existing Lamp](#) on page 27.
4. Remove the rear skin. See [Remove the Rear Skin](#) on page 25.
5. Remove the cathode and anode lamp blower assembly. See [Remove the Cathode and Anode Blowers \(Fans 1 and 2\)](#) on page 45.
6. Remove the reflector assembly. See [Remove the Reflector Assembly](#) on page 33.
7. Remove the lamp adjust assembly. See [Remove the Lamp Adjust Assembly](#) on page 33.
8. Remove the 3 screws securing the LPS to the projector base.
9. Remove the screw securing the LPS to the center structure.
10. Remove the P-clips securing the AC harness to the LPS.
11. Disconnect the AC power and communication harnesses.
12. Tilt the LPS up and slide it out of the projector.

Remove 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 lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the lamp. See [Remove the Existing Lamp](#) on page 27.
4. Remove the top lid. See [Remove the Top Lid](#) on page 21.
5. Remove the safety shield. See [Remove the Safety Shield](#) on page 26.
6. Remove the card cage. See [Remove the Card Cage](#) on page 40.
7. Remove the 2 screws securing the lamp adjust assembly to the center structure.
8. Disconnect the motor control harnesses from the IMCB control board.
9. Disconnect the cathode lead connector from the lamp power supply. You will reuse the cable when you install the new lamp adjust assembly.
10. Disconnect the screw securing the ground connection to the card cage firewall.
11. 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.
12. Remove the cathode lead connector and the ground wire from the assembly and transfer to the new lamp adjust assembly.

Remove the Reflector Assembly

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

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the lamp. See [Remove the Existing Lamp](#) on page 27.
5. Remove the 2 screws securing the lamp over temperature sensor.
6. Remove the 2 P-clips from the lamp over temperature sensor bracket and push the bracket aside.
7. Remove the 4 screws that secure the reflector module.

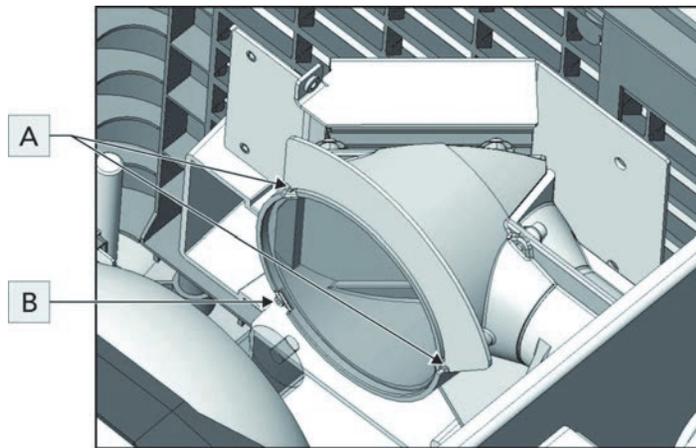
Three of these screws are located on the bracket outside the reflector. The fourth screw is located inside the casing below the reflector.
8. Carefully lift the reflector assembly straight up and out of the projector; do not touch the UV filter glass or the reflector.

Replace 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 lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the lamp. See [Remove the Existing Lamp](#) on page 27.
5. Remove the reflector assembly. See [Remove the Reflector Assembly](#) on page 33.
6. Remove the top 2 screws and the attached clamps from the UV filter housing.



A	Top screws
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.

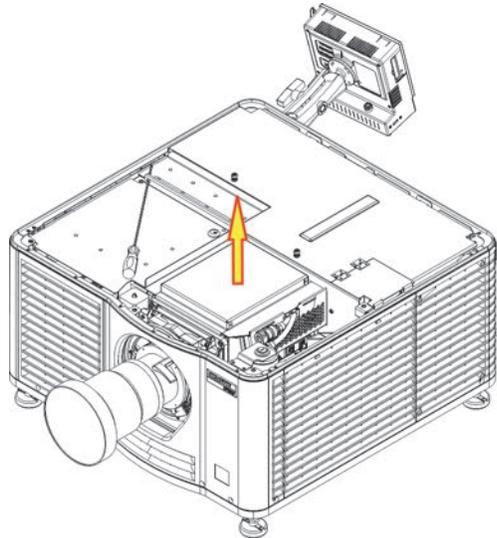
Replace the Light Engine

NOTICE

Wear gloves and an electro-static bracelet when working with the light engine.

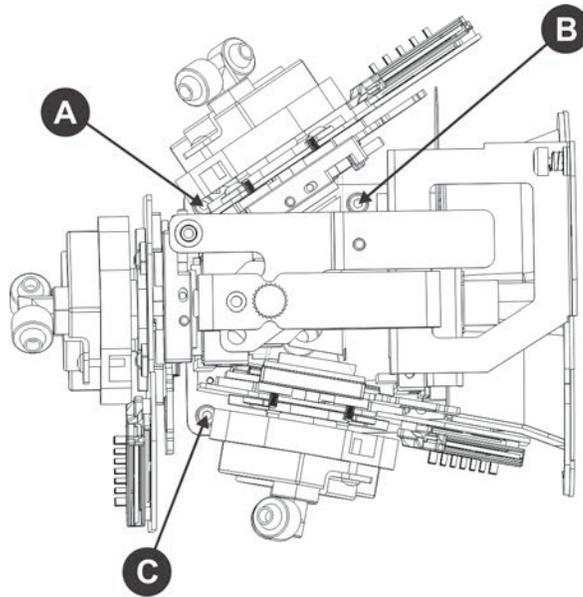
The light engine can be removed as an assembly with the harnesses still attached. Removing the light engine this way reduces the risk of damage to other projector components.

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the lens. See [Remove the Lens](#) on page 30.
4. Remove the top lid. See [Remove the Top Lid](#) on page 21.
5. Remove the high security lid. See [Remove the High Security and Light Engine Lid](#) on page 23.
6. Remove the 2 screws that secure the light engine cover and then remove it and set it aside.



7. Remove the douser assembly. See [Replace the Douser Assembly](#) on page 36.
8. Reach into the top of the projector and disconnect the LEQD:
 - a. Loosen the thumbscrew on the top the LEQD.
 - b. Pull the two LEQD ejector latches outward.
9. Disconnect the thermal sensor harness (J40) from the environmental board (EVB).
10. Disconnect the two quick disconnect hoses to the light engine.
11. Lift the bracket securing the coolant hoses up and away from the projector structure.

12. Loosen the 3 captive screws (A, B, and C) securing the light engine to the light tube with a hex key.



When loosening screw A, make sure you do not contact the capacitor with the hex key. If you damage the capacitor, the light engine must be returned to Christie.

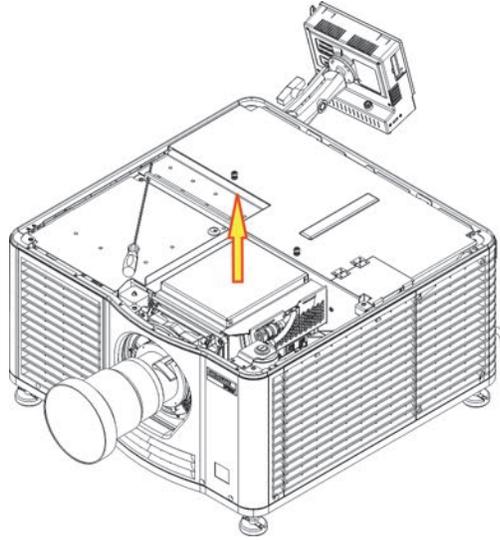
13. Remove the light engine from the projector.
14. Cover the light engine with an electro-static protective cover.

Replace 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 lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the high security lid. See [Remove the High Security and Light Engine Lid](#) on page 23.

5. Remove the 2 screws that secure the light engine cover.



6. Disconnect the J53 connector from the integrated motor control board (IMCB).
7. Loosen the captive screws securing the light dump and then lift the light dump up and out of the projector
8. Remove the 2 screws that secure the douser to the light engine.
9. Lift the douser on an angle up and out of the projector.

Remove the Integrated Motor Control Board

Two IMCBs are installed in the card cage. One IMCB controls the lamp adjust for lamp alignment and the other controls the lens.

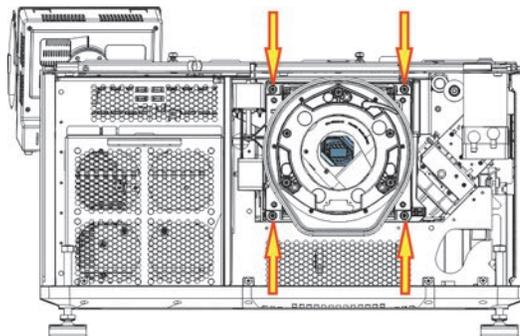
1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the high security lid. See [Remove the High Security and Light Engine Lid](#) on page 23.
5. Disconnect the 10 harnesses for the lens IMCB.
- or -
Disconnect the 11 harnesses for the lamp IMCB.
6. Loosen the captive screw.
7. Slide the IMCB toward the operator side of the projector to disengage the locking pins.
8. Lift the IMCB through the top of the projector.

Remove the Environmental Board

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the high security lid. See [Remove the High Security and Light Engine Lid](#) on page 23.
5. Disconnect the 8 harness connectors.
6. Loosen the captive screw securing the environmental board.
7. Lift the environmental board through the top of the projector.

Remove the Lens Mount

1. Center the lens to make sure the lens mount screws are accessible.
2. Turn the lamp off and cool the projector for at least 15 minutes.
3. Turn the projector off and then disconnect it from AC power.
4. Remove the lens. See [Remove the Lens](#) on page 30.
5. Remove the top lid. See [Remove the Top Lid](#) on page 21.
6. Remove the plate between the lens mount and the blower intake.
7. Remove the front skin. See [Remove the Front Skin](#) on page 21.
8. Remove the high security lid. See [Remove the High Security and Light Engine Lid](#) on page 23.
9. Remove the card cage. See [Remove the Card Cage](#) on page 40.
10. Disconnect the 9 IMCB connectors.
11. Remove the 2 screws securing the light engine intake duct.
12. Remove the intake duct.
13. Disengage the IMCB harness assembly from the cable clamps and remove the assembly through the front of the projector.
14. Remove the 4 lens mount screws.

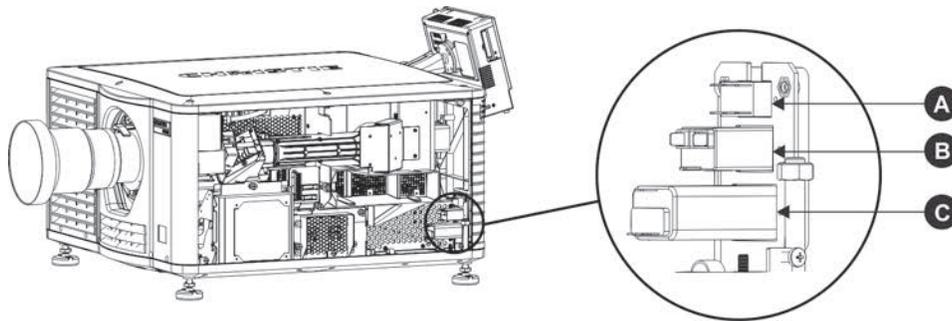


- 15. Remove the lens mount.

Remove 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.



A	A/C Selector Switch
B	110V Filter
C	220V Filter

110V AC Line Filter

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the lamp. See [Remove the Existing Lamp](#) on page 27.
4. Remove the exhaust panel and rear projector skins. See [Remove the Exhaust Panel Skin](#) on page 25 and [Remove the Rear Skin](#) on page 25.
5. Remove the 2 screws that secure the AC line filter to the bracket.
6. Disconnect the 2 harnesses from the 110V AC line filter.

220V AC Line Filter

1. Turn the lamp off and cool the projector for at least 15 minutes.

2. Turn the projector off and then disconnect it from AC power.
3. Remove the lamp. See [Remove the Existing Lamp](#) on page 27.
4. Remove the exhaust panel and rear projector skins. See [Remove the Exhaust Panel Skin](#) on page 25 and [Remove the Rear Skin](#) on page 25.
5. Remove the 2 screws that secure the AC line filter to the bracket.
6. Disconnect the 2 harnesses from the 220V AC line filter.

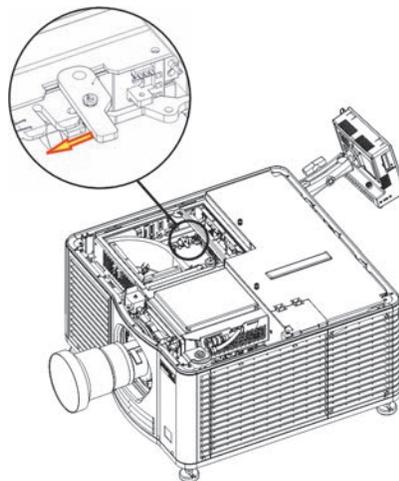
Card Cage

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

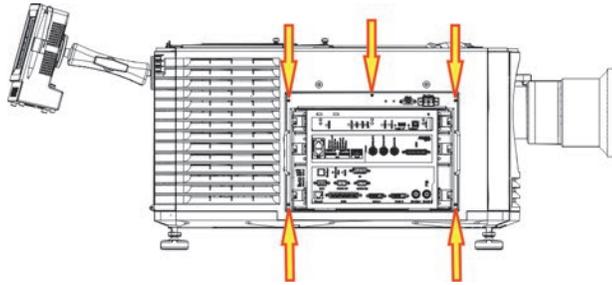
Remove the Card Cage

The card cage module consists of the PIB, PIB faceplate board, ICP and backplane.

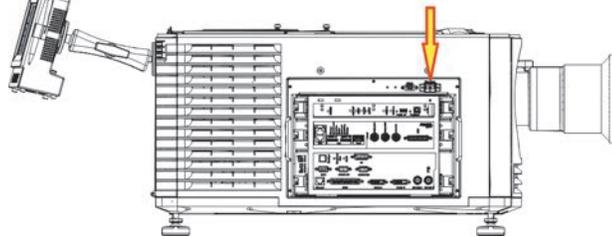
1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the high security lid. See [Remove the High Security and Light Engine Lid](#) on page 23.
5. Reach into the top of the projector and disconnect the LEQD:
 - a. Loosen the thumbscrew on the top the LEQD.
 - b. Pull the two LEQD ejector latches outward.
 - c. Pull the LEQD and cables up and place them on the top of the light engine compartment.
6. Disconnect the 6 backplane connectors (P10, P8, P11, P9, P14).
7. Reach into the projector and pull the lever to release the security ring.



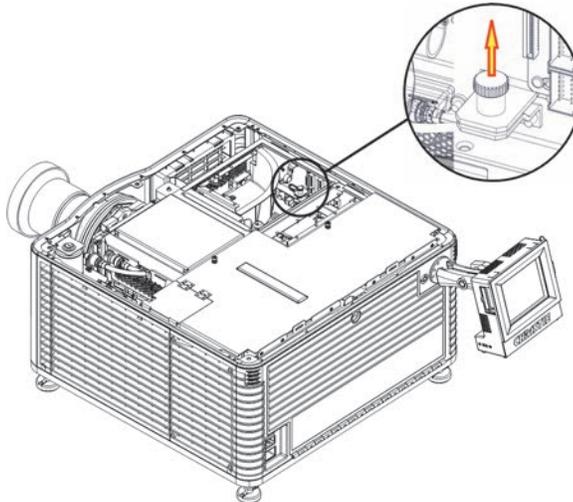
- Remove the 5 screws that secure the card cage.



- Remove the fire alarm interlock jumper.



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



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

Remove the Projector Intelligence Board

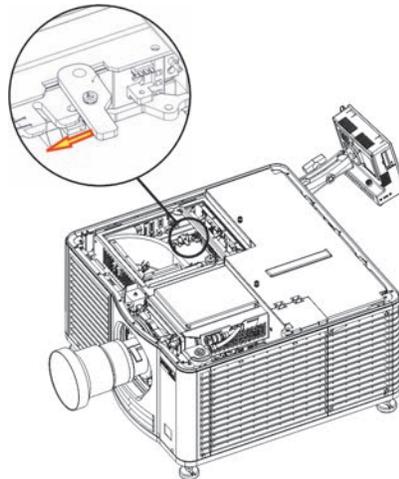
The PIB is located in the card cage on the operator side of the projector. It is the main controller for alternative content.

- The marriage status light on the PIB lights up when the high security lid is unlocked. To remarry the projector, see *Activate Marriage* in the CP2215 User manual.

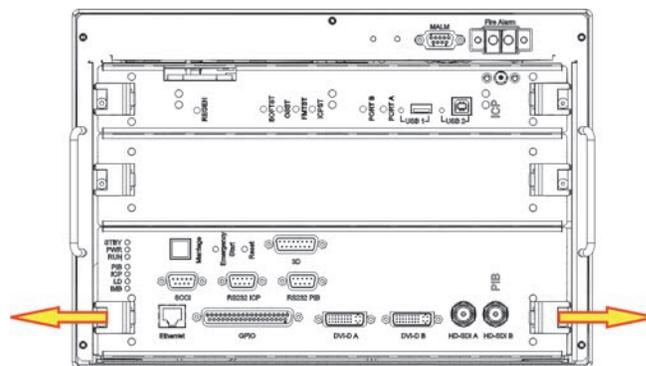
- The system files (for examples, serial number, channel setting, hours, and so on) are stored on three modules: PIB, ICP, and TPC.
- All of the internal processor components have fixed IP addresses. This simplifies board configuration, as well as component swapping between projectors.

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 lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the high security lid. See [Remove the High Security and Light Engine Lid](#) on page 23.
5. Reach into the projector and pull the lever to release the security ring.



6. Pull the ejectors on the PIB outward.

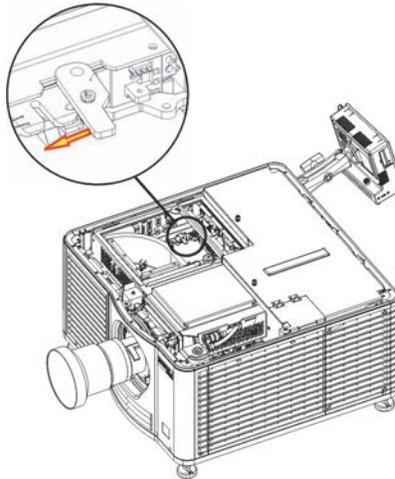


7. Pull the PIB outward out of the card cage.

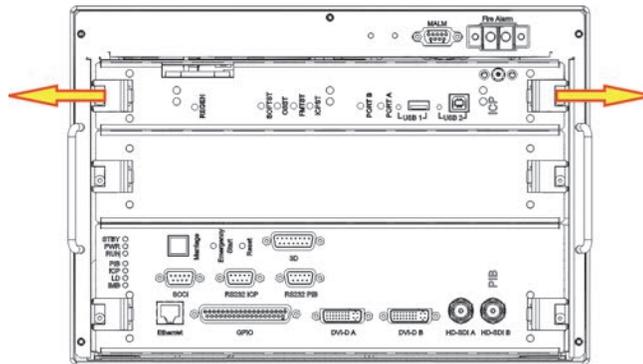
When reinstalling the PIB you must perform Marriage so you can continue to play encrypted content. See [Activate Marriage](#) in the CP2215 user manual.

Remove the Integrated Cinema Processor

1. Back up your screen configuration and MCGD files.
2. Turn the lamp off and cool the projector for at least 15 minutes.
3. Turn the projector off and then disconnect it from AC power.
4. Remove the top lid. See [Remove the Top Lid](#) on page 21.
5. Remove the security lid. See [Remove the High Security and Light Engine Lid](#) on page 23.
6. Reach into the projector and pull the lever to release the security ring.



7. Pull the ejectors on the ICP outward.



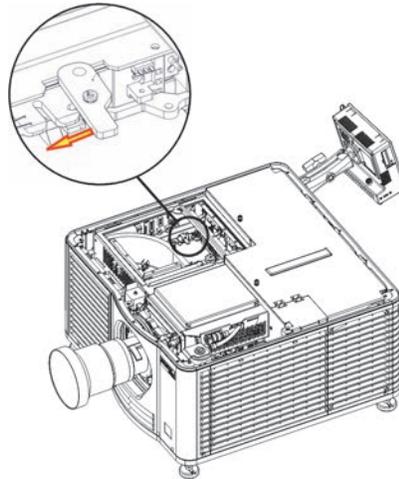
8. Pull the ICP outward out of the card cage.

When reinstalling the PIB you must perform Marriage so you can continue to play encrypted content. See *Activate Marriage* in the CP2215 user manual.

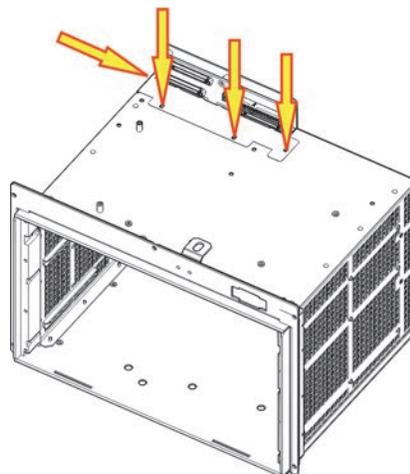
Remove the Backplane

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

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the card cage. See [Remove the Card Cage](#) on page 40.
4. Pull the lever to release the card cage security ring.



5. Remove the PIB. See [Remove the Projector Intelligence Board](#) on page 41.
6. Remove the ICP. See [Remove the Integrated Cinema Processor](#) on page 43.
7. Remove the IMB faceplate.
8. Remove the 4 screws securing the EMI shield to the top of the card cage and then remove the EMI shield and set it aside.



9. Disconnect the marriage interlock switch (P12) connector from the backplane.

10. Remove the 18 screws securing the backplane to the card cage.
11. Slide the backplane on an angle out of the card cage so that it does not contact the card cage.
12. When reinstalling the backplane, you must perform Marriage so you can continue to play encrypted content. See *Activate Marriage* in the CP2215 user manual.

Replace the Marriage Interlock Switch

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the ICP.
4. Remove the IMB cover plate.
5. Disconnect the marriage interlock switch (P12) connector from the backplane.
6. Remove the marriage interlock switch (P12) from the 3 P-clips.
7. Loosen and remove the 2 screws securing the marriage interlock switch to the backplane.
8. Remove the marriage interlock switch from the housing.

Fans

This section provides instructions for removing the fans from the projector.

Remove the Cathode and Anode Blowers (Fans 1 and 2)



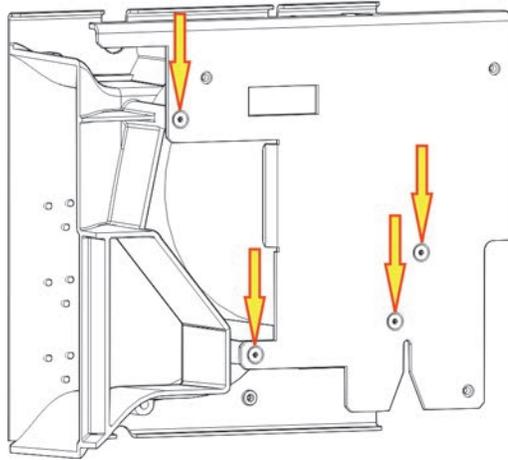
EXPLOSION HAZARD! Always wear protective safety clothing and a face shield when performing service with the service safety shield removed and a lamp installed. Failure to comply results in death or serious injury.

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

When replacing the cathode lamp blower, you must replace the anti-tamper label on the side of the lamp blower assembly.

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the lamp. See [Remove the Existing Lamp](#) on page 27.
4. Remove the top lid. See [Remove the Top Lid](#) on page 21.
5. Remove the safety shield. See [Remove the Safety Shield](#) on page 26.
6. Loosen the 3 captive screws on the fan shroud.
7. Lift the lamp blower assembly up and then disconnect the two lamp blower harnesses.

8. For the cathode blower, remove the 4 screws holding the bracket plate and duct.



9. Remove the 2 screws holding the blower to the duct.

Remove the Radiator Fan (Fan 3)

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the service door. See [Remove the Exhaust Panel Skin](#) on page 25.
5. Loosen the captive screw securing the radiator air filter door.
6. Tilt the radiator and fan assembly down.
7. Pull the filter upward and out of the radiator housing.
8. Disconnect the inline fan connector.
9. Remove the 4 screws securing the fan to the mounting bracket.
10. Remove and clean the fan and then install its replacement with the airflow directional arrow facing the direction of the airflow.

Remove the Light Engine Fan (Fan 4)



Use caution when working in and around fan assemblies. Fingers can get caught in fan blades. Failure to comply results in death or serious injury.

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.

4. Remove the high security lid. See [Remove the High Security and Light Engine Lid](#) on page 23.
5. Disconnect the harness.
6. Remove the 3 screws securing the intake duct.
7. Remove the intake duct.
8. Lift the light engine fan up and off the 4 rubber mounts.

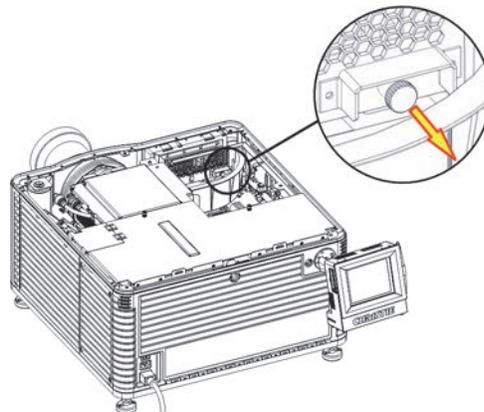
Remove the Fan Pack (Fans 5, 6, 7, and 8)



Use caution when working in and around fan assemblies. Fingers can get caught in fan blades. Failure to comply results in death or serious injury.

The fan pack is located directly behind the air filter on the front of the projector and consists of four fans.

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the high security lid. See [Remove the High Security and Light Engine Lid](#) on page 23..
5. Remove the card cage air intake filter cover and filter. See [Inspect the Card Cage Filter](#) on page 18.
6. Remove the front skin. See [Remove the Front Skin](#) on page 21.
7. Disconnect the 4 fan inline connectors.
8. Pull the release located in the high security compartment to release the fan pack.



9. Remove the fan pack.
10. Remove a fan and then install its replacement with the airflow directional arrow facing the direction of the airflow identified on the label.

Use needle nose pliers to pull the rubber isolators through the fan mounting holes.

Remove the Radiator Filter

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the service door. See [Remove the Exhaust Panel Skin](#) on page 25.
5. Loosen the captive screw securing the radiator air filter door.
6. Tilt the radiator and fan assembly down.
7. Pull the filter upward and out of the radiator housing.
8. Clean and replace the filter. See [Clean a Washable Filter](#) on page 20.

Remove the Liquid Cooling Assembly

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the front skin. See [Remove the Front Skin](#) on page 21.
5. Remove the service panel skin. See [Remove the Exhaust Panel Skin](#) on page 25.
6. Loosen the captive screw securing the radiator air filter door.
7. Tilt the radiator and fan assembly down.
8. Disconnect the pump harness connector.
9. Disconnect the radiator fan connector.
10. Disconnect the two quick disconnect hoses to the light engine.
11. Remove the 2 screws securing the reservoir to the projector frame.
12. Pull the liquid cooling assembly (including the radiator) out of the projector.

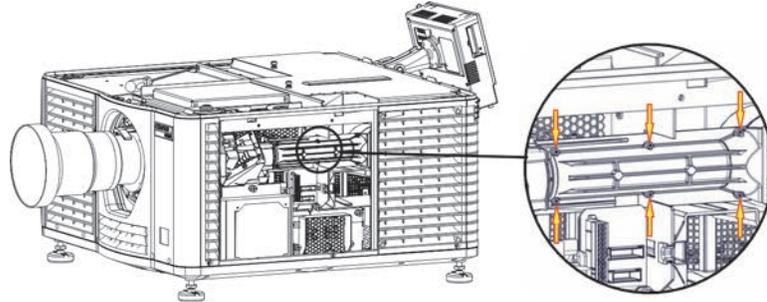
Integrator Assembly

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 lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.

3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the service door. See [Remove the Exhaust Panel Skin](#) on page 25.
5. Remove the integrator temperature sensor.
6. Disconnect the thermal harness from the light sensor.
7. Remove the 6 integrator housing screws.



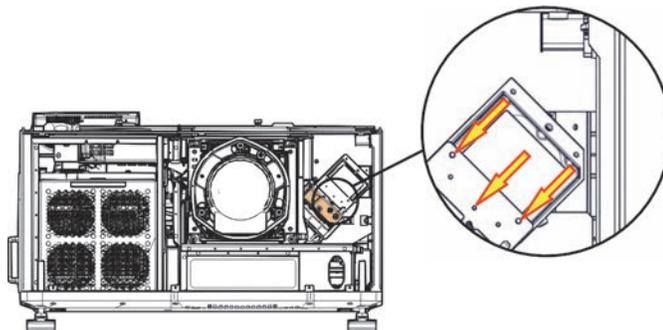
8. Remove the housing.
9. Remove the 2 rotational integrator adjustment screws.
10. Slide the integrator rod back and tilt it to remove it from the casting.

When replacing an integrator assembly, you must adjust the integrator, relay lens, and fold mirror for proper aperture focus.

Remove the Contrast Aperture Plate

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

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the front skin. See [Remove the Front Skin](#) on page 21.
5. Remove the yellow notch filter. See [Remove the Yellow Notch Filter \(YNF\)](#) on page 52.
6. Remove the 3 screws that secure the contrast aperture plate to the IOS.

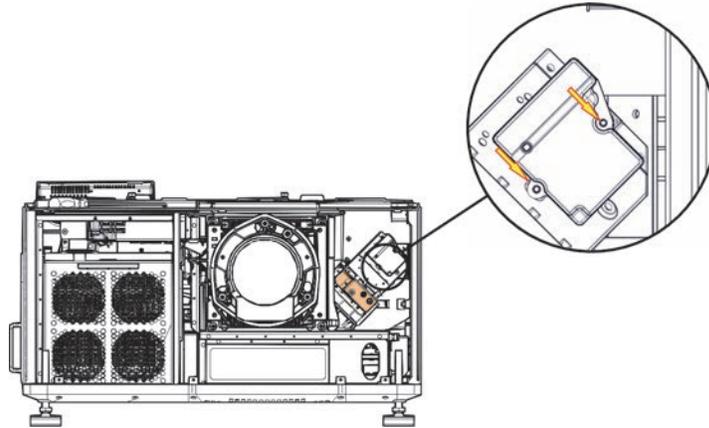


7. Slide the aperture plate out along the slotted tracks inside the IOS.

Remove the Light Sensor Module

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

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the front skin. See [Remove the Front Skin](#) on page 21.
5. Disconnect the harness from the light sensor module.
6. Remove the 2 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 CP2215 User manual.

Remove the Cold Mirror

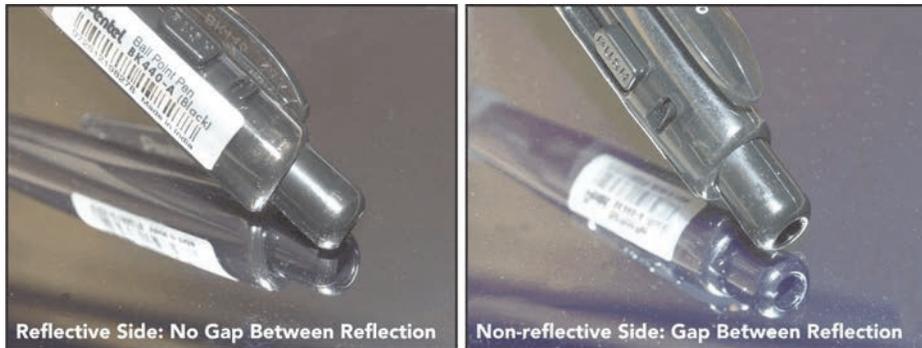


UV HAZARD! Always wear protective safety clothing and a face shield when performing service with the safety shield removed and a lamp installed. Failure to comply could result in death or serious injury.

Wear gloves when you handle the cold mirror.

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the lamp. See [Replace the Lamp](#) on page 27.
4. Remove the service panel skin. See [Remove the Exhaust Panel Skin](#) on page 25.

5. Open the lamp firewall door and then remove the 4 cold mirror heat sink plate screws.
6. Remove the heat sink and bracket.
7. Remove the top 2 hex screws and clips holding the cold mirror.
8. Loosen the bottom 2 hex screws holding the cold mirror.
9. Hold the top corners of the mirror, and then pull it up and out. When reinstalling the cold mirror, make sure the reflective surface faces inward.



10. Recalibrate the Measured Color Gamut Data (MCGD) settings. See the CP2215 User manual.

Remove Fold Mirror 1

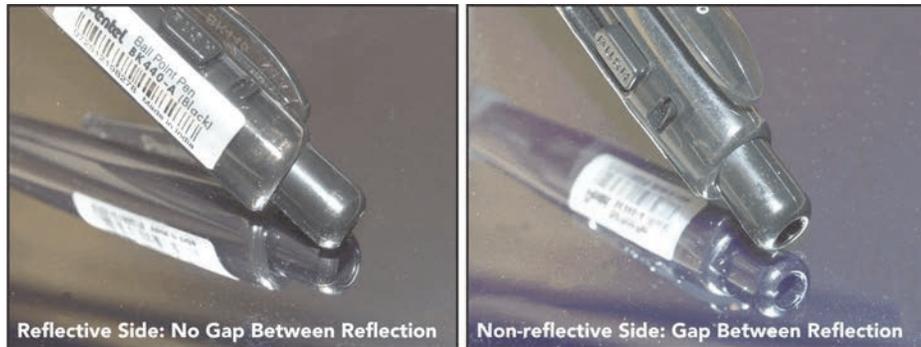
Wear gloves when you handle the fold mirror.

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 adjusted.

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the front skin. See [Remove the Front Skin](#) on page 21.
5. Remove the exhaust panel skin. See [Remove the Exhaust Panel Skin](#) on page 25.
6. Disconnect the 2 quick connectors that connect the cooling assembly to the light engine.
7. Remove the contrast aperture. See [Remove the Contrast Aperture Plate](#) on page 49.
8. Remove the light sensor module and move it aside. See [Remove the Light Sensor Module](#) on page 50.
9. Remove the 4 hex screws that secure the fold mirror to the IOS.
10. Remove the 3 2.5 mm hex screws.
11. Loosen the 4 screws and the mounting clips from the fold mirror mounting bracket.

12. Remove the fold mirror.

When reinstalling the fold mirror, make sure the reflective surface faces inward.



13. Recalibrate the Measured Color Gamut Data (MCGD) settings. See the CP2215 user manual.

Remove Fold Mirror 2

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the IOS.
5. Remove one of the 2.5mm screws from each of the three tabs on fold mirror 2.
6. Loosen the remaining 2.5mm screws from each of the three tabs.
7. Hold the mirror in place and swing the tabs out to the side.
8. Carefully lower the mirror to remove it.

Remove the Yellow Notch Filter (YNF)

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

1. Turn the lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the front skin. See [Remove the Front Skin](#) on page 21.
5. Loosen and remove the 2 screws securing the yellow notch filter to the IOS.
6. Carefully pull the yellow notch filter away from the IOS toward the front of the projector.

When reinstalling the yellow notch filter, recalibrate MCGD and green primary. See [Yellow Notch Filter Color Calibration](#) on page 12.

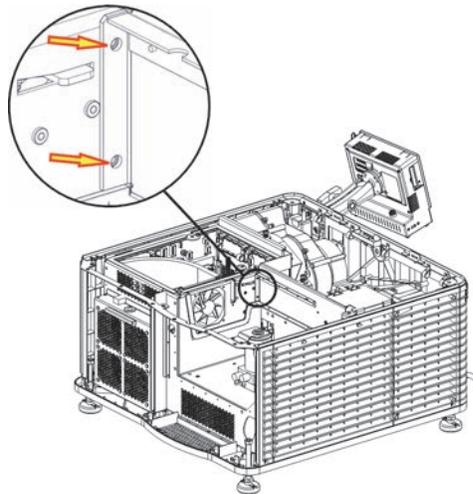
Remove the Illumination Optic System



UV HAZARD! Always wear protective safety clothing and a face shield when performing service with the safety shield removed and a lamp installed. Failure to comply could result in death or serious injury.

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 lamp off and cool the projector for at least 15 minutes.
2. Turn the projector off and then disconnect it from AC power.
3. Remove the top lid. See [Remove the Top Lid](#) on page 21.
4. Remove the light engine lid. See [Remove the High Security and Light Engine Lid](#) on page 23.
5. Remove the light engine. See [Replace the Light Engine](#) on page 35.
6. Remove the reflector assembly. See [Remove the Reflector Assembly](#) on page 33.
7. Remove the lens mount. See [Remove the Lens Mount](#) on page 38.
8. Remove the 2 screws that secure the firewall that separates the lamp housing from the light engine.



9. Remove the 3 screws from the bottom of the IOS.
10. Remove the 4 screws securing the light engine exhaust bracket to the projector structure and then remove the bracket.
11. Remove the 3 screws securing the firewall between the light engine and lamp compartment and then remove the firewall.
12. Lift the light engine enclosure and the IOS out of the projector housing.

Cleaning Projector Optics

This section provides information and procedures for cleaning optical components. 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

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

Clean 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

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.

Prepare 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.

Clean 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 [Prepare the Projector for Service](#) on page 55.
2. Remove the light engine and set it on a clean, lint free cloth. See [Replace the Light Engine](#) on page 35.

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.

Clean 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 [Prepare the Projector for Service](#) on page 55.
2. Remove the lamp. See [Replace the Lamp](#) on page 27.
3. Put on a pair of powder free latex gloves.
4. Remove the UV filter and set on a clean, lint free cloth. See [Replace the UV Filter](#) on page 34.
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.

Clean 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 [Prepare the Projector for Service](#) on page 55.
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 [Remove the Lens](#) on page 30.
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.

Clean 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 [Prepare the Projector for Service](#) on page 55.
2. Remove the lamp. See [Replace the Lamp](#) on page 27.
3. Remove the reflector. See [Remove the Reflector Assembly](#) on page 33.
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.

Clean 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 [Prepare the Projector for Service](#) on page 55.
2. Remove the integrator. See [Integrator Assembly](#) on page 48.

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. See the projector service manual for alignment procedures.

Manage Projector Files

Add 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**.

Remove 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**.

Install 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**.

Back up Projector Settings and Information

You need Service permissions to complete this procedure.

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

Restore 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**.

Restore 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**.

Move 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.

Delete 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 Technical Support. Have the model and serial number of your projector ready so a support representative can better assist you. For contact information see *Technical Support* on page 5.

Projector Functionality

Issue	Resolution
Projector does not turn on	<ul style="list-style-type: none"> • 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 no LEDs are 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 Technical 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	<ul style="list-style-type: none"> • Make sure the TPC is connected to the projector. • If the TPC fails to initialize, make sure the compact flash on the left side is installed correctly. • If the TPC fails to initialize, restart 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	<p>Verify all input devices have the same subnet mask and gateway and unique IP addresses.</p>
Projector does not move from standby to full power mode	<ul style="list-style-type: none"> • 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 service panel and verify that the green LED is lit. This indicates the LVPS is operating. • Check all of the harness connections between LVPS and backplane. Pay particular attention to the small, white connector on the LVPS. • Replace the LVPS.
DMD over-temperature warning	<ul style="list-style-type: none"> • Tap Menu > Status and then Temperatures in the left pane. Verify if the DMD temperatures are too high. If the temperatures are too high, turn the lamp off and allow the cooling fans to cool the projector. • Check the condition of the air filters and clean or replace them if they appear to be dirty. • Verify that all fans are operating.

Lamp Functionality

Issue	Resolution
Lamp does not ignite	<ul style="list-style-type: none"> • 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, turn the lamp off and allow the cooling fans to 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	<ul style="list-style-type: none"> • 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, turn the lamp off and allow the cooling fans to cool the projector. Ensure the projector is properly ventilated and the air filters are not blocked. • Replace the lamp.
LiteLOC™ not working	<ul style="list-style-type: none"> • 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

Issue	Resolution
No image appears	<ul style="list-style-type: none"> • 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.

Issue	Resolution
Flicker, shadows, or dimness	<ul style="list-style-type: none"> • 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. • Align the fold mirror. See Align the Fold Mirror on page 7. • Rotate the integrator rod. See Rotate the Integrator Rod on page 6.
Blank screen, no display of cinema image	<ul style="list-style-type: none"> • Ensure the lens cap is not on either end of the lens. • Ensure the lamp is on. • Confirm all power connections are fine. • On the Main TPC screen, make sure the douser is open. • Make sure 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	<p>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.</p>
Image appears vertically stretched or squeezed into the center of the screen	<p>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.</p>
Inaccurate display colors	<ol style="list-style-type: none"> 1. Tap Menu > Channel Setup. 2. Tap Config 1 in the left pane and verify the correct value is selected in the PCF list. 3. Tap Config 2 in the left pane and verify the correct value is selected in the Color Space field.
Display is not rectangular	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<p>Turn the projector off and unplug the power cord from the power source. Plug the projector power cord into a power source and turn the projector on.</p>

Issue	Resolution
The projector is on, but alternate content does not display	<ul style="list-style-type: none"> • 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 unstable	<ul style="list-style-type: none"> • 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.

Available Replacement Parts and Modules

The tables in this section list the parts and accessories that are available for the CP2215 projector.

Lamp and Filter Assemblies

Description	Part Number
Replacement Card Cage Paper Air Filter	003-002311-XX
Replacement Card Cage Washable Air Filter	003-004655-XX
Lamp CDXL-14M (1.4 kW Xenon)	003-003066-XX
Lamp CDXL-16M (1.6KW Xenon)	003-003900-XX
Lamp CDXL-18SD (1.8 kW Xenon)	003-002742-XX
Lamp CDXL-20SD (2.0 kW Xenon)	003-001976-XX
Lamp CDXL-23S (2.3 kW Xenon)	003-004769-XX
Light Engine Blower Assembly	003-110862-XX

Light Engine

Description	Part Number
Harness Kit - HARN LVDS TWINAX	003-111236-XX
Light Engine Assembly	003-101463-XX

Lamp Power Supply, Igniter, and Power Supplies

Description	Part Number
Lamp Power Supply (LPS)	003-120704-XX
Low Voltage Power Supply	003-120508-XX
Low Voltage Power Supply 60W (Standby)	003-120509-XX

Optical Assemblies

Description	Part Number
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 separate)	003-100929-XX
IOS (does not include integrator and LiteLOC™)	003-104029-XX
UV Filter	003-004458-XX
Yellow Notch Filter	003-104193-XX

PCB Assemblies

Description	Part Number
Backplane PCB	003-111469-XX
ICP PCB	003-101342-XX
Light Sensor Assembly	003-111904-XX
Projector Intelligence Board (PIB)	003-101341-XX
LEQD PCB	003-101360-XX
EVB PCB	003-111059-XX
IMCB2 PCB	003-111426-XX

Fan Assemblies

Description	Part Number
Fan 12V 1.6A 4-wire 150mm (Fans 1,2)	003-110862-XX
Fan 12V 0.5A 4-Wire 120mm (Fan 3)	003-120453-XX
Fan 12V 0.5A 4-wire 92mm (Fans 4,5,6,7,8)	003-110827-XX

Miscellaneous

Description	Part Number
AC Line Filter 15A	003-004457-XX
AC Line Filter 20A	003-004456-XX

Description	Part Number
ASSY Temperature Sensor	003-100618-XX
Feet (4x adjustable/front feet 120mm and back feet 203mm)	003-002146-XX
Interlock Switch	003-001559-XX
Key - High Security	003-001526-XX
Lamp Adjust	003-104049-XX
Lens Mount	003-101775-XX
Lens Mount Stepper Motor	003-100702-XX
IMCB	003-111426-XX
Lens Mount Lockdown Handle	003-002141-XX
LVDS Harness	003-111832-XX
Reflector/Lamp Housing (includes sheet metal housing and lint free gloves)	003-101965-xx
Shutter Assembly (Douser Assembly)	003-101797-XX
TPC	003-102075-XX
TPC Mounting Hardware	003-003326-XX
TPC Harness	003-111169-XX

Optional Accessories

Description	Part Number
Exhaust duct	119-103105-XX
Foot Brackets	119-100101-XX
Protective Clothing Safety Kit (Kevlar gloves, ballistic nylon jacket, face shield)	598900-095
Rack Stand Full	108-416102-XX
Dual Polarizer Frame Kit	108-462103-XX

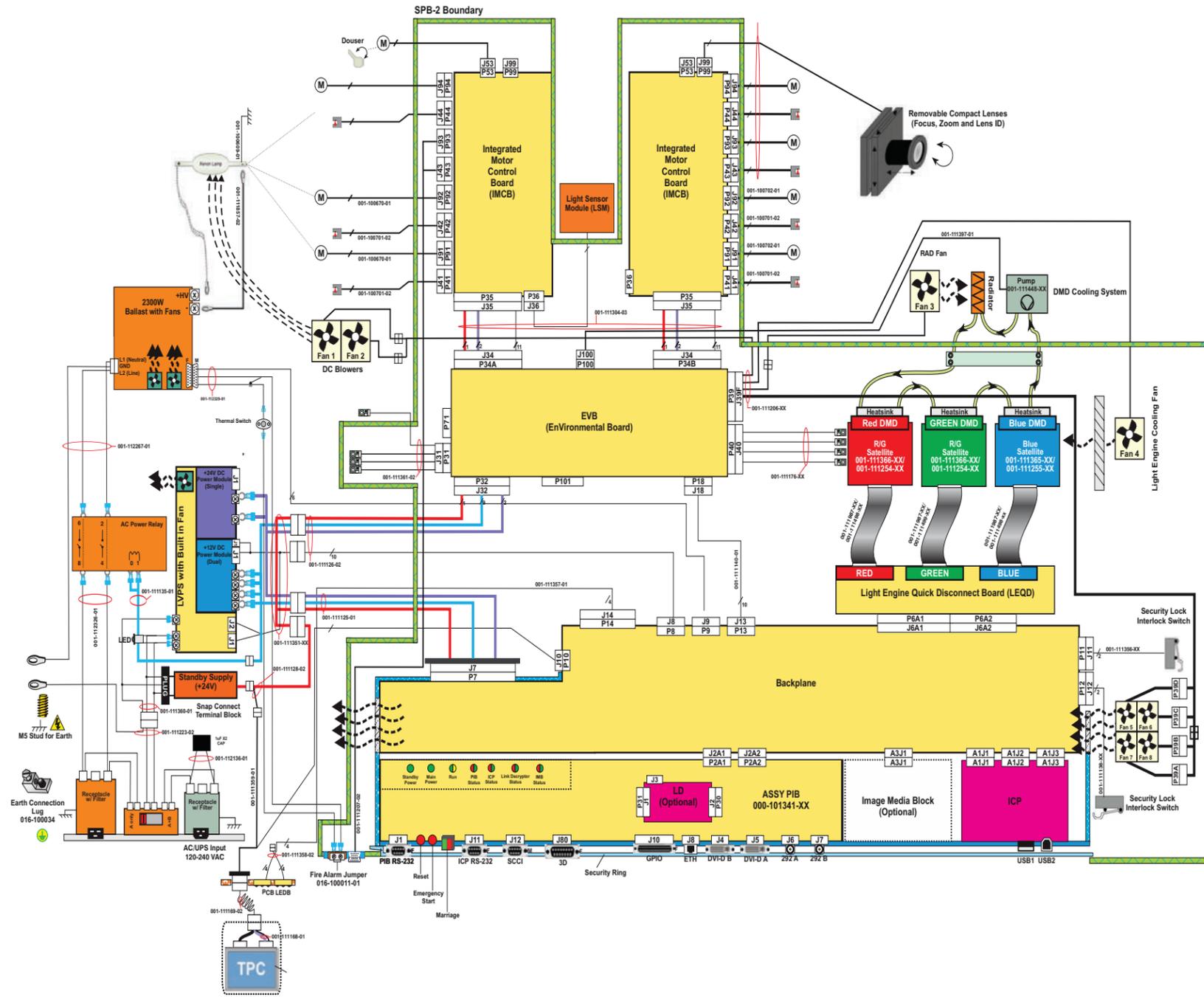
Optional Lenses

Description	Part Number
1.2-1.75" DLPCine Zoom	108-350109-XX
1.3-1.75" DLPCine Zoom	108-320106-XX
1.39-1.9" DLPCine Zoom	108-327103-XX
1.5-2.2" DLPCine Zoom	108-329105-XX
1.75-2.4" DLPCine Zoom	108-321107-XX

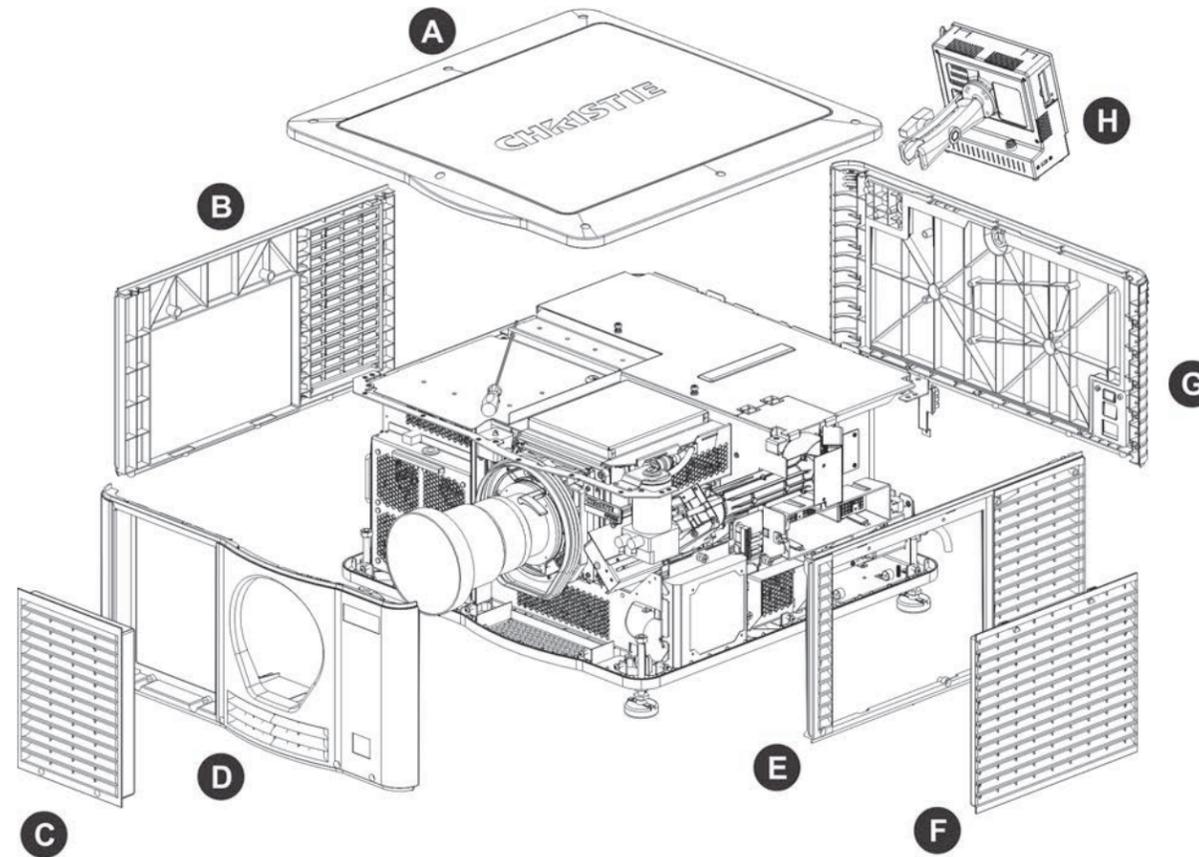
Description	Part Number
1.9-3.0" DLPCine Zoom	108-328104-XX
2.4-3.9" DLPCine Zoom	108-322108-XX
3.9-6.5" DLPCine Zoom	108-323109-XX

Interconnections

The interconnect drawing illustrates the path of electrical connections between modules.

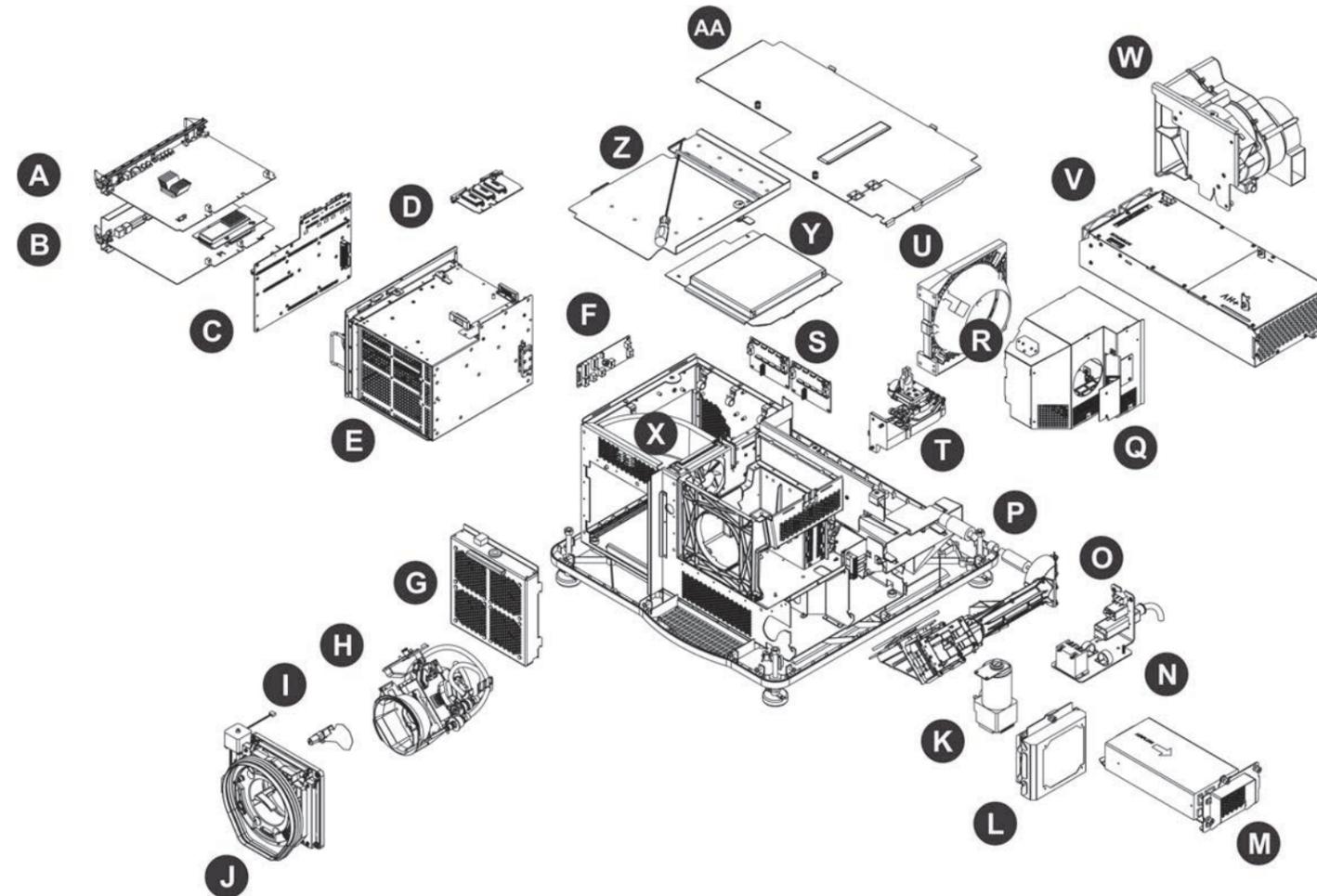


Exploded Views



Label	Description
A	Top lid
B	Card Cage skin
C	Air filter cover
D	Front skin
E	Exhaust panel skin
F	Service door
G	Rear lamp door and skin
H	touch panel controller (TPC)

Internal View



Label	Description	Label	Description	Label	Description	Label	Description
A	Integrated Cinema Processor (ICP)	H	Light Engine	O	Integrator Assembly	V	Lamp Power Supply
B	Projector Intelligence Board (PIB)	I	Shutter Assembly	P	Lamp	W	Lamp Blower Assembly
C	Backplane	J	Lens Mount	Q	Lamp Cover	X	Intake Duct
D	Light Engine Quick Disconnect (LEQD)	K	Liquid Cooling Assembly	R	Lamp Temperature Sensor	Y	Light Engine Cover
E	Card Cage	L	Radiator Assembly	S	Internal Motor Control Board (IMCB) x2	Z	High Security Lid
F	Environmental Board (EVB)	M	Low Voltage Power Supply (LVPS)	T	Lamp Adjust Assembly	AA	Safety Shield
G	Light Engine Intake Fans # 5, 6, 7, 8	N	AC Line Filters	U	Reflector		

Corporate offices

USA – Cypress
ph: 714-236-8610
Canada – Kitchener
ph: 519-744-8005

Worldwide offices

United Kingdom
ph: +44 118 977 8000
France
ph: +33 (0) 1 41 21 00 36
Germany
ph: +49 2161 664540

Eastern Europe
ph: +36 (0) 1 47 48 100
Middle East
ph: +971 (0) 4 299 7575
Spain
ph: + 34 91 633 9990

Singapore
ph: +65 6877-8737
Beijing
ph: +86 10 6561 0240
Shanghai
ph: +86 21 6278 7708

Japan
ph: 81-3-3599-7481
South Korea
ph: +82 2 702 1601

