

# Replacing the CP4325- RGB coupling elbow

These instructions provide details for properly replacing the CP4325-RGB LOS coupling elbow.

## Affected products

The following products are affected.

- Christie CP4325-RGB (P/N: 163-001102-XX)

## Required components

The following components are required to replace the LOS coupling elbow.

- Coupling Elbow with Depolarizer service kit (P/N: 003-006597-XX)

## Important safeguards

To prevent personal injury and to protect the device from damage, read and follow these safety precautions.

### General safety precautions

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



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

- TRIP OR FIRE HAZARD! Position all cables where they cannot contact hot surfaces, be pulled, be tripped over, or damaged by persons walking on or objects rolling over the cables.
- This product must be installed within a restricted access location not accessible by the general public.
- Only personnel who are trained on the precautions for the restricted access location can be granted entry to the area.
- Install the product so users and the audience cannot enter the restricted area at eye level.
- ELECTRICAL and BURN HAZARD! Use caution when accessing internal components.
- High leakage current present when connected to IT power systems.
- FIRE AND SHOCK HAZARD! Use only the attachments, accessories, tools, and replacement parts specified by Christie.
- FIRE HAZARD! Do not use a power cord, harness, or cable that appears damaged.
- A minimum of four people or appropriately rated lift equipment is required to safely lift, install, or move the product.
- Do not install or operate the projector in any position that does not meet the stated product specifications for alignment and orientation.



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

- Only Christie qualified technicians are permitted to open product enclosures.

### Laser safety precautions

Read all safety and warning guidelines before operating the projector laser.



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

- Do not operate the cinema projector without all of its covers in place.
- LASER RADIATION HAZARD! This projector has a built-in Class 4 laser module. Never attempt to disassemble or modify the laser module.
- Do not look directly into the lens when the light source is on. The extremely high brightness can cause permanent eye damage.
- Possible hazardous optical radiation emitted from this product. (Risk group 3)

## AC/power precautions

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



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

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



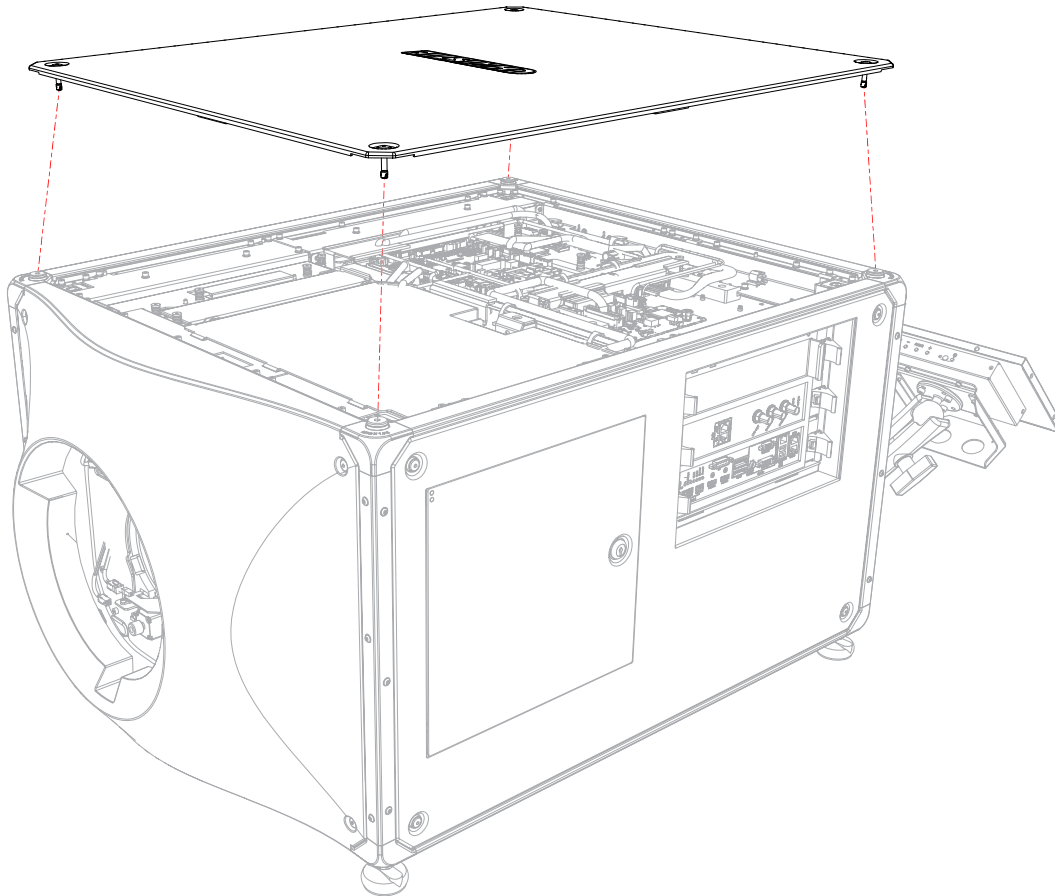
**Caution!** If not avoided, the following could result in minor or moderate injury.

- FIRE HAZARD! Do not use a power cord, harness, or cable that appears damaged.
- FIRE OR SHOCK HAZARD! Do not overload power outlets and extension cords.
- SHOCK HAZARD! Power supply uses double pole/neutral fusing.

## Removing the top cover

The top cover provides access to the light engine, electronics, and various other internal components.

1. Loosen the four captive screws securing the top cover.

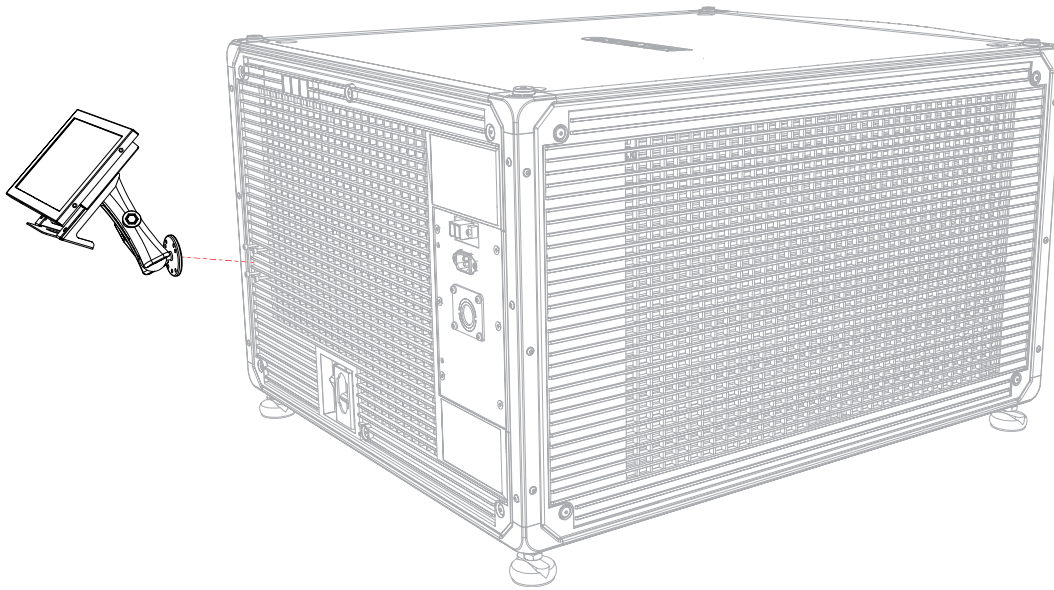


2. Use the high security key to open the projector service access door.
3. Disengage the top cover lock pin by pulling on the pin and lift up the top cover to remove it.

## Removing the touch panel

The touch panel is a touch-sensitive screen used to control the projector, manage sources, adjust the display, and view status information.

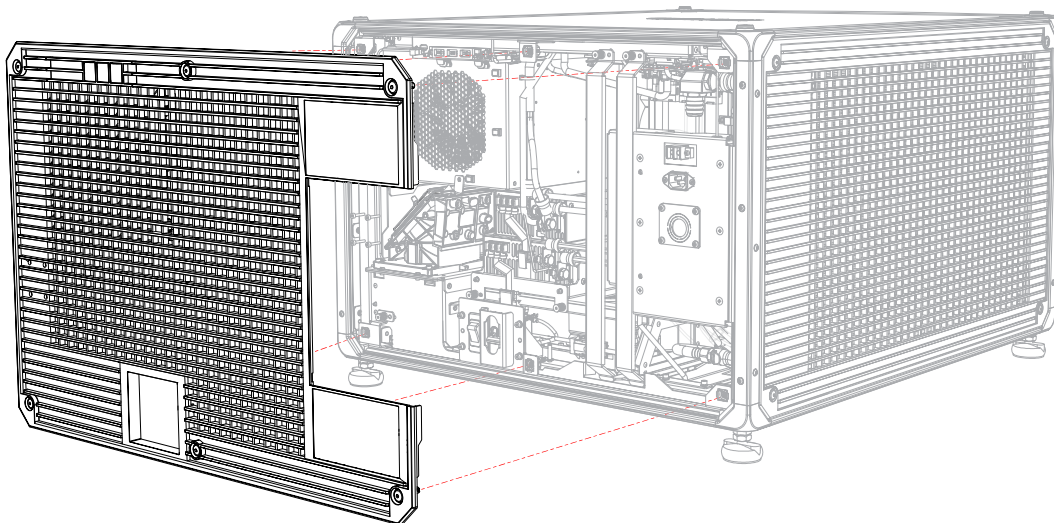
1. Disconnect the three harnesses from the card cage input panel.
2. Loosen the clamp knob.
3. Remove the touch panel from the projector.



## Removing the rear cover

The rear cover provides access to the power supplies and other components allowing removal of the integrator assembly.

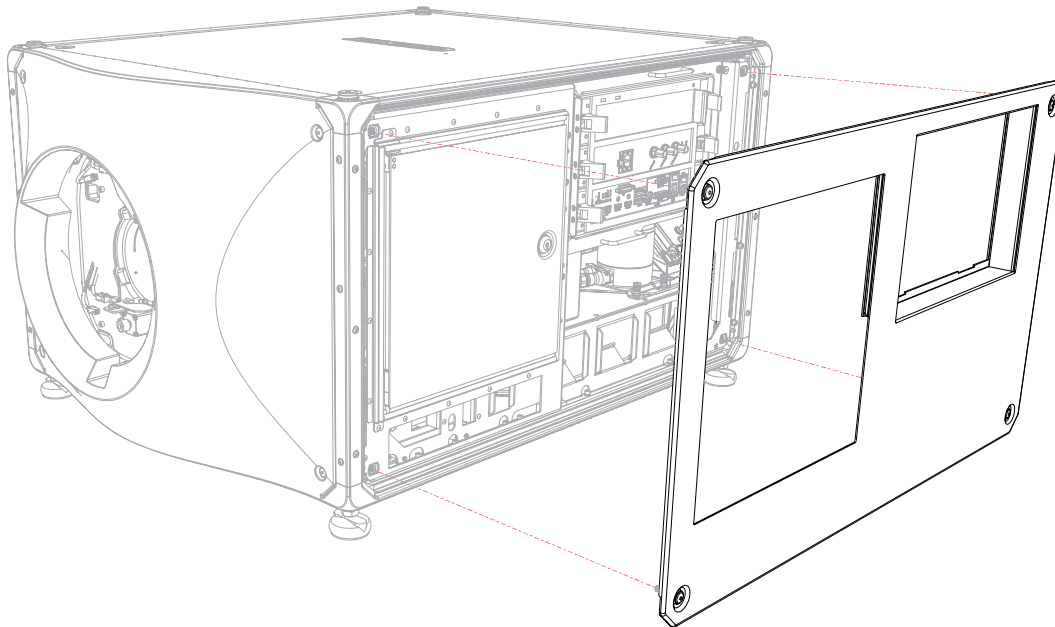
1. Loosen the six captive screws securing the rear cover.
2. Remove the rear cover.



## Removing the electronics-side cover

The electronics-side cover provides access to the card cage.

1. Loosen the four captive screws securing the electronics-side cover.

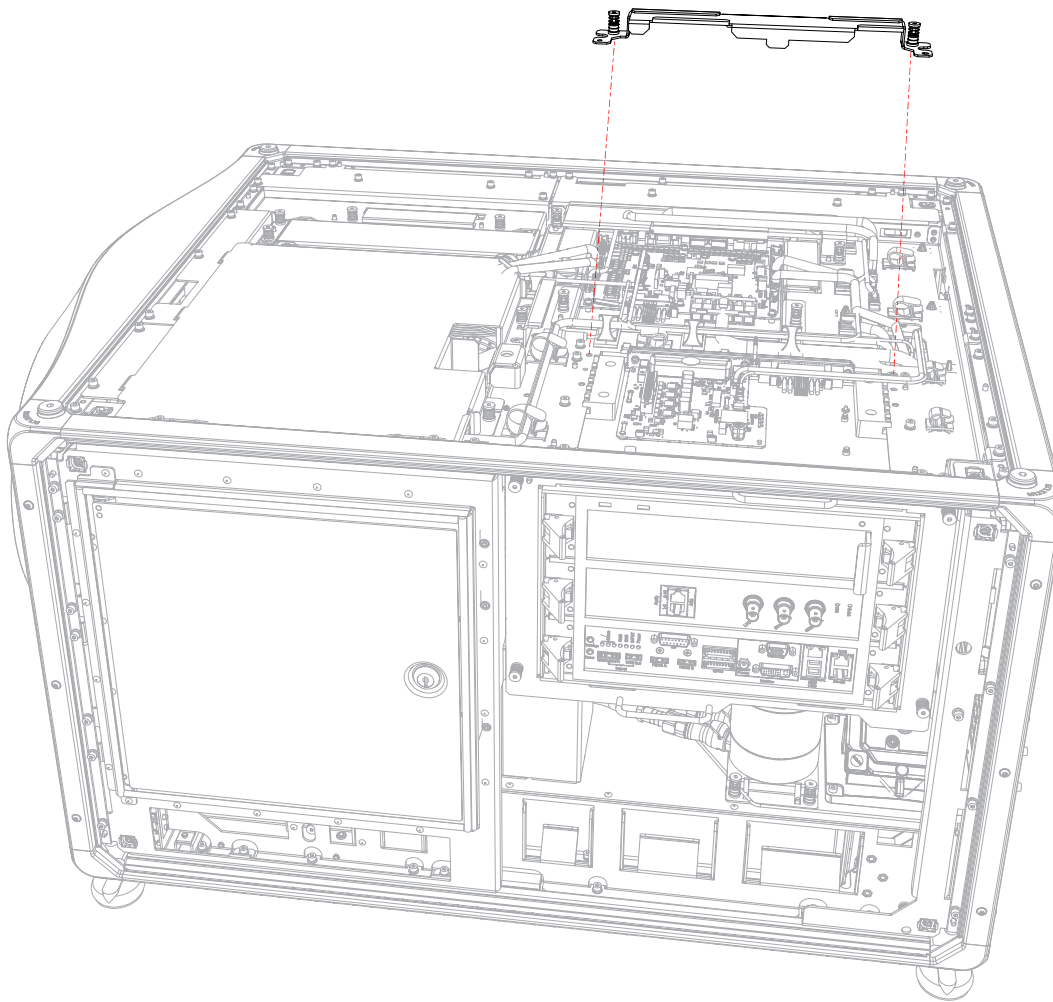


2. Remove the electronics-side cover.

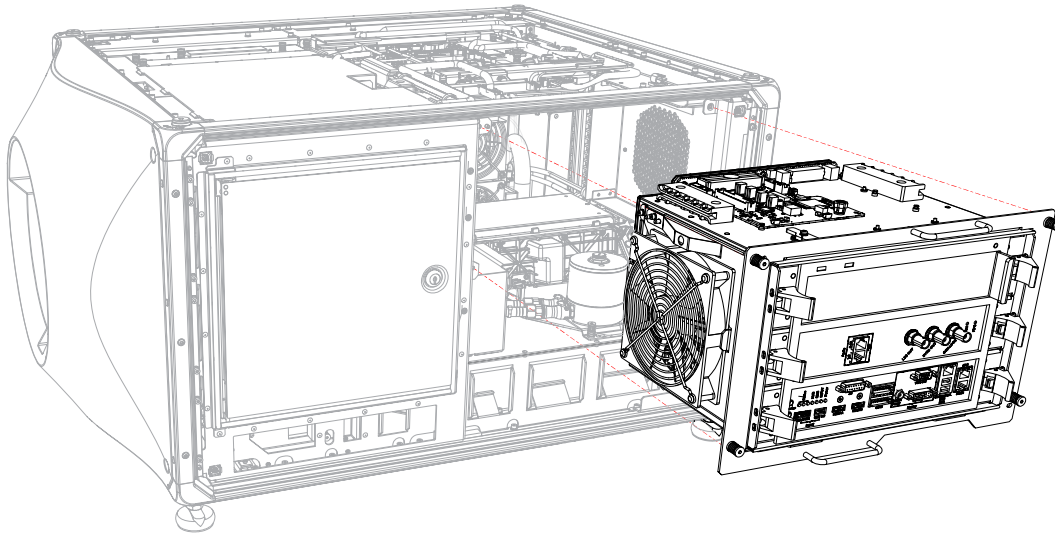
## Removing the card cage

The card cage contains the projector intelligence board, integrated media block, integrated cinema processor, integrated motor control board, and marriage interlock switch.

1. Disconnect all external card cage connections.
2. *Remove the top cover* (on page 3).
3. *Remove the electronics-side cover* (on page 5).
4. Remove the two screws securing the electronics bracket and remove bracket.



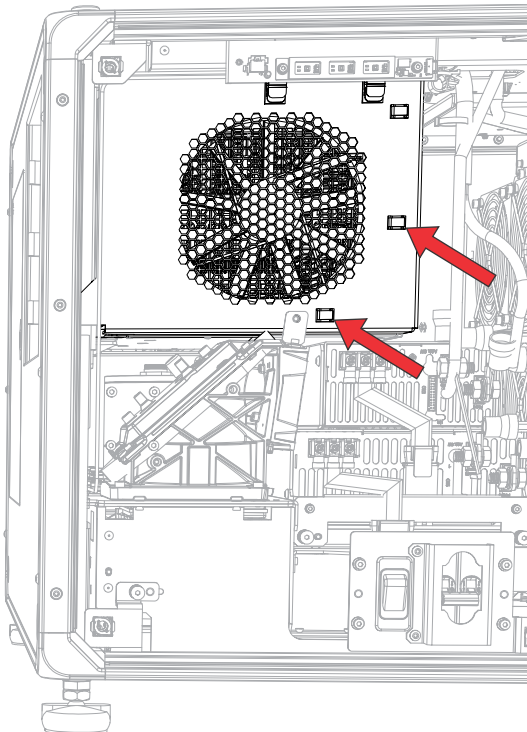
5. Disconnect the red, green, and blue mini-SAS harnesses from the card cage through the projector service access door.
6. Disconnect the three harnesses (J5, J7, J87) from the SSCB.
7. Disconnect the two harnesses (J17, J18) from the backplane board.
8. Loosen the four captive screws securing the card cage.



9. Pull on the locking pin and slide the card cage out along the guides.

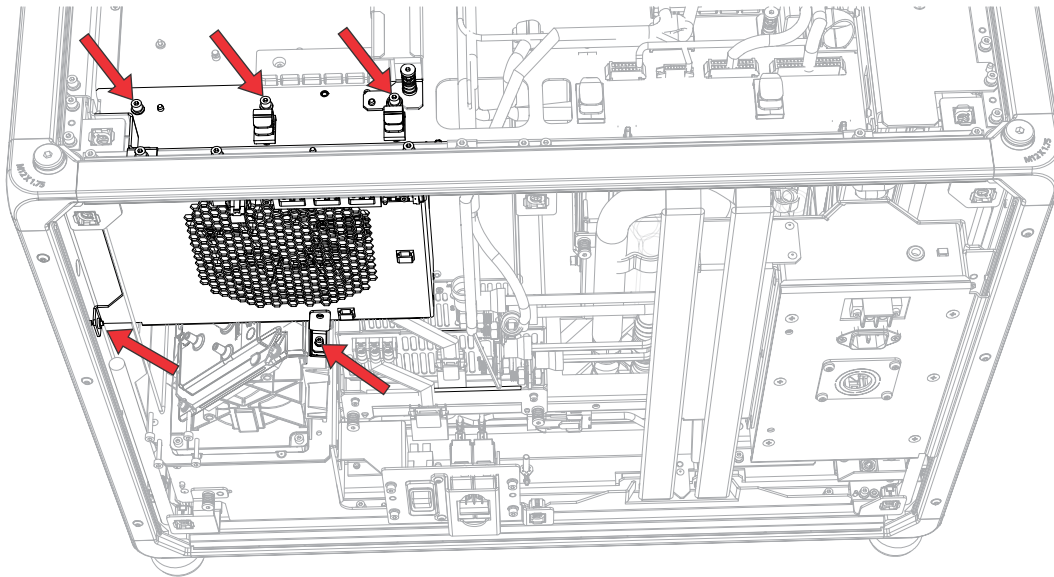
## Replacing the LOS coupling elbow

1. Release the diffuser harness (J135) from the rear card cage security bracket clips.

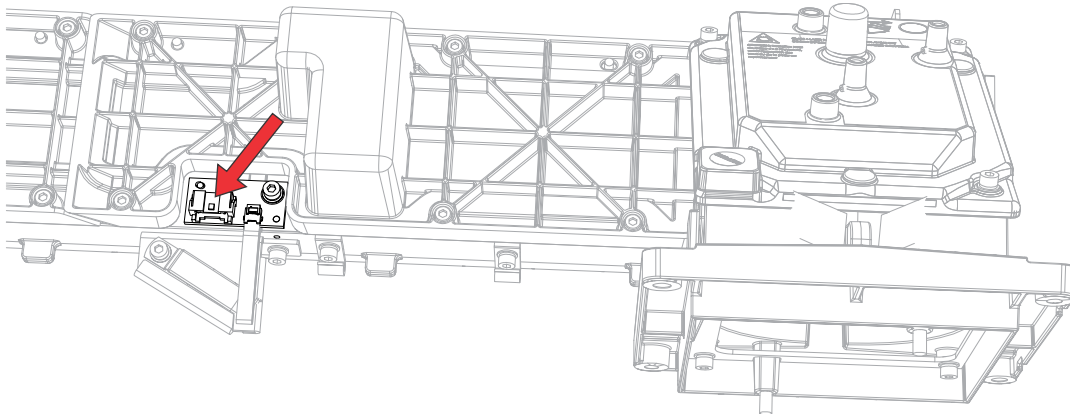


2. Remove the five screws securing the rear card cage security bracket.

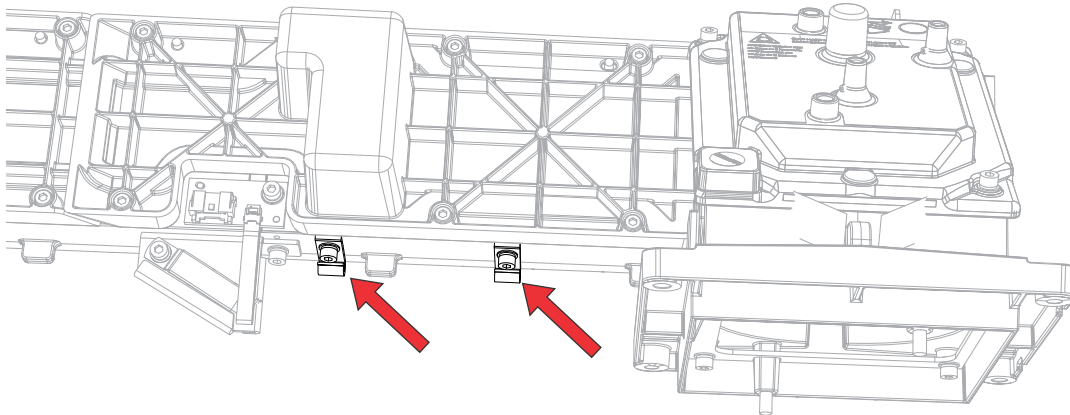




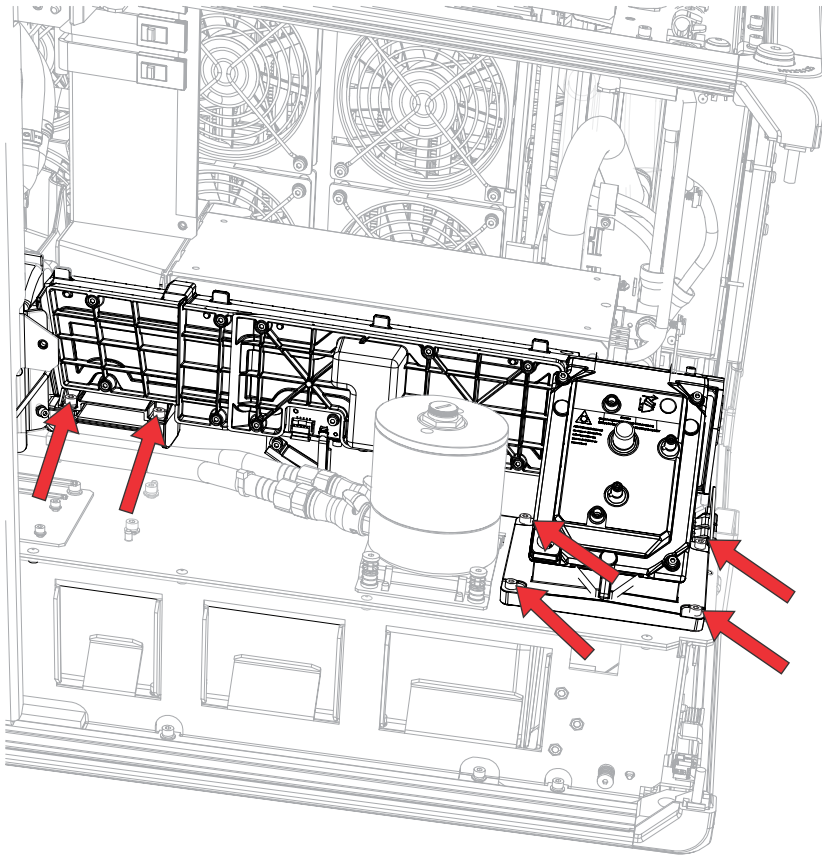
3. Remove the bracket.
4. Disconnect the diffuser harness (J135) from the diffuser interface board (DIB).



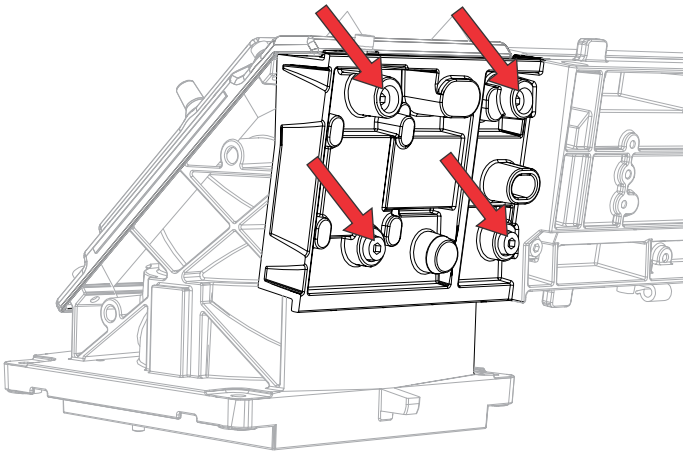
5. Remove the harness from the two diffuser harness clips.



6. Remove the six screws securing the integrator assembly.



7. Vertically, pull out the integrator assembly and place on a flat surface. Christie recommends covering the LOS opening to keep dust and other contaminants out.
8. Remove the four screws securing the coupling elbow.



9. Install the new coupling elbow on the integrator assembly.
10. To re-install these components, follow these steps in reverse order. Ensure the card cage and top cover locking pins are engaged when re-installing.

## Adjusting the LOS coupling mirror

Understand how to adjust the LOS coupling mirror.

1. On a tripod in front of the lens, set up an illuminance meter (such as a T10) aimed at the center of the screen.  
The illuminance meter must be facing the lens.
2. Decrease the red laser power to low (30% to 40%).  
To access the laser power settings, in the left navigation pane, tap **Laser Settings > Laser Power/LiteLOC Setup**.
3. Set the green and blue laser power levels to 0.
4. Turn on the light source.
5. Wait 15 minutes for the lasers to stabilize.
6. Adjust the LOS coupling mirror to maximize the lux reading on the illuminance meter.
7. To set the white point to DCI white, increase the green and blue power levels.  
Make sure the red laser power is still set to low.
8. Visually check for uniformity and fine tune the elbow mirror adjustment.
9. Once the adjustment is complete, adjust the laser power to the required level.
10. *Proceed to adjusting the integrator rod and fold mirror (on page 11).*

## Adjusting the integrator rod and fold mirror


Understand how to adjust the integrator rod and fold mirror to control the illumination spot on the DMD.

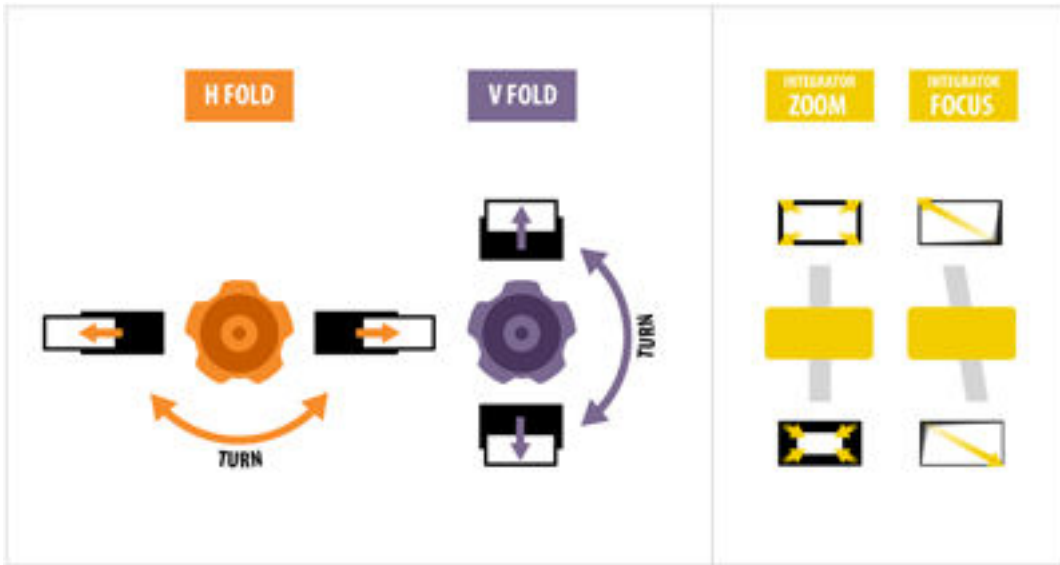
Extreme misalignment of projection optics can cause permanent damage to critical optical components. Only Christie qualified technicians can perform internal optical adjustments.

The integrator rod and fold mirror adjustments are set by Christie. Make adjustments only if screen shadows are visible.



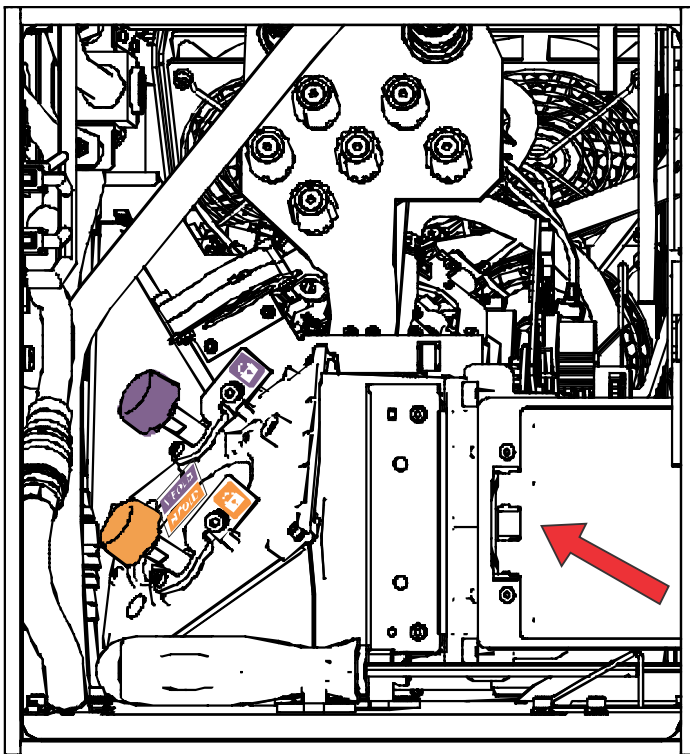
When adjusting the fold mirror, set the light source to minimum power.

1. In the right toolbar, tap **Test Patterns**. 
2. Select the **RGB-4K-Integrator Rod** test pattern and display it full screen.

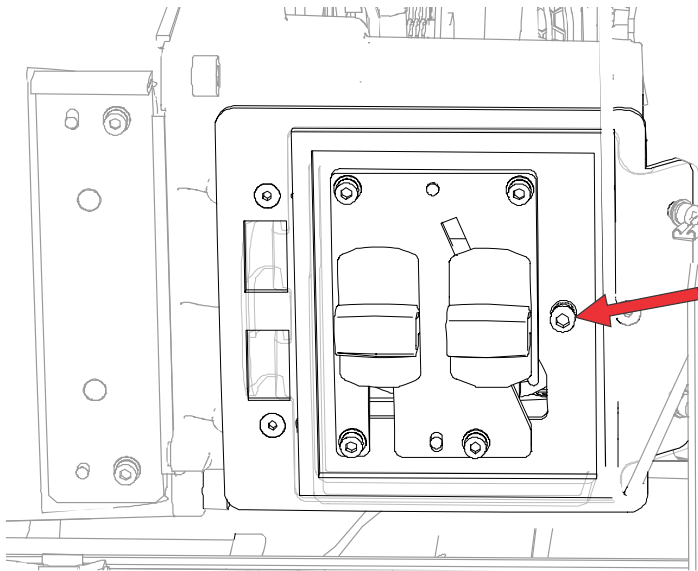


Refer to the test pattern for guidance on making the adjustments. The right panel of the test pattern provides information about the integrator zoom and focus adjustments. The left panel provides information about the fold mirror adjustments.

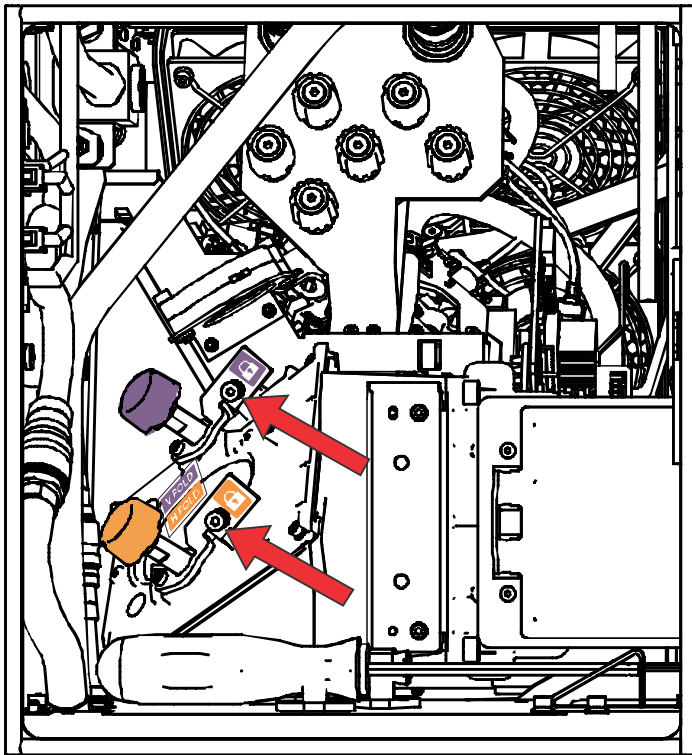
3. Open the Service door on the side the projector.
4. To use the integrator rod optical controls, open the access door for the Zoom and Focus paddles.



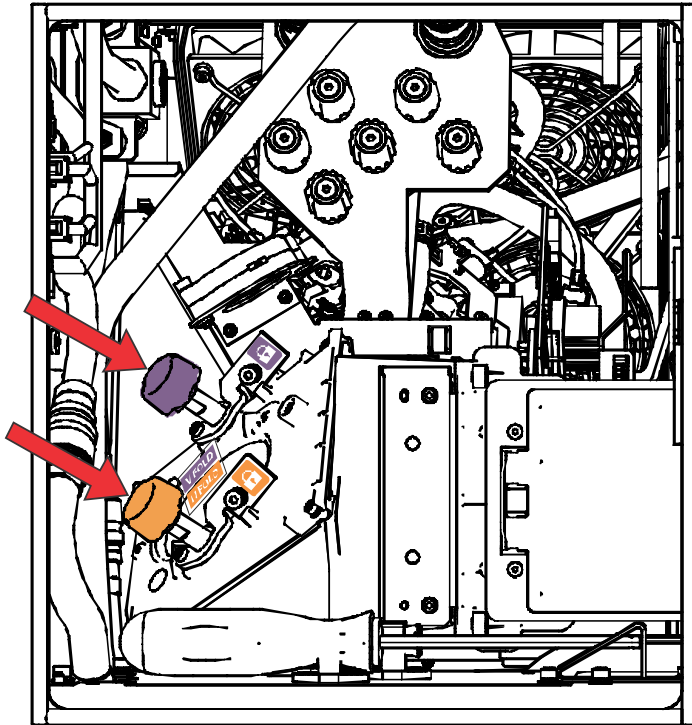
5. Loosen the lock screw for the Zoom and Focus paddles.



6. Set the integrator rod Zoom paddle to the minimum.
7. Loosen the fold mirror screws to unlock the fold mirror adjustment knobs.



8. To make horizontal adjustments on the fold mirror, use the orange adjustment knob.  
To make vertical adjustments on the fold mirror, use the purple adjustment knob.



9. Adjust the fold mirror until either the top left edge or the bottom right edge of the illumination spot becomes visible on the DMD.
10. Adjust the integrator rod Focus paddle to optimize focus for one of the following:
  - Along the top edge of the image, approximately one-third across the image from the left.
  - Along the bottom edge of the image, approximately one-third across the image from the right.
11. Adjust the fold mirror to center the image on the DMD array.
12. Use the integrator rod Zoom paddle to increase the zoom until the entire active area is filled, with no dark areas at the edges or corners.  
Ensure that overfill is minimized to improve DMD life and system optical efficiency for brightness.
13. Once the adjustments are complete, tighten the lock screw for the Zoom and Focus paddles, and the two fold mirror screws.
14. Close the access door for the Zoom and Focus paddles.

## Technical support

Technical support for Christie products is available at:

- North and South America: +1-800-221-8025 or [Support.Americas@christiedigital.com](mailto:Support.Americas@christiedigital.com)
- Europe, Middle East, and Africa: +44 (0) 1189 778111 or [Support.EMEA@christiedigital.com](mailto:Support.EMEA@christiedigital.com)
- Asia Pacific: +65 6877-8737 or [Support.APAC@christiedigital.com](mailto:Support.APAC@christiedigital.com)
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