

Installation and Setup Manual

020-102152-03

CP2208-LP



NOTICES

COPYRIGHT AND TRADEMARKS

Copyright © 2017 Christie Digital Systems USA Inc. All rights reserved.

All brand names and product names are trademarks, registered trademarks or trade names of their respective holders.

GENERAL

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

WARRANTY

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

- a. Problems or damage occurring during shipment, in either direction.
- b. Problems or damage caused by combination of a product with non-Christie equipment, such as distribution systems, cameras, DVD players, etc., or use of a product with any non-Christie interface device.
- c. Problems or damage caused by misuse, improper power source, accident, fire, flood, lightning, earthquake, or other natural disaster.
- d. 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.
- e. 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.
- f. Except where the product is designed for outdoor use, problems or damage caused by use of the product outdoors unless such product is protected from precipitation or other adverse weather or environmental conditions and the ambient temperature is within the recommended ambient temperature set forth in the specifications for such product.
- g. Defects caused by normal wear and tear or otherwise due to normal aging of a product.

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

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

PREVENTATIVE MAINTENANCE

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


REGULATORY

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

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

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

ENVIRONMENTAL

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

Content

Safety precautions.	5
Product labels.	5
General hazards.	5
Mandatory action.	6
Electrical labels.	6
Additional hazard labels.	6
Laser labels.	6
Important safeguards.	7
General safety precautions.	7
AC/power precautions.	8
Light intensity hazard distance.	8
Introduction.	11
Projector components (front).	11
Projector components (rear).	12
Installing and setting up.	13
Preparing the installation site.	13
Lifting and positioning the projector.	13
Adjusting tilt and leveling the projector.	14
Installing the touch panel controller.	15
Installing the lens.	16
Connecting power.	18
Turning the projector on.	19
Logging on to the projector.	19
Activating marriage.	20
Completing a full lens calibration.	21
Adjusting the image.	22
Adjusting the image to fit the screen.	22
Correcting vignetting.	23
Correcting the keystone effect.	23
Adjusting horizontal keystone.	23
Adjusting vertical keystone.	23
Adjusting boresight.	24

Calibrating screen brightness (fL). 26

Creating a new light source file. 26

Connecting devices to the projector and establishing communication. 28

 Projector connections. 28

 Connecting the projector to a computer. 30

 Adding or modifying projector communication settings. 30

 Playing content. 31

Test patterns. 32

 Adding or removing preferred test patterns. 32

 Turning a test pattern on or off. 32

 Displaying a full screen test pattern. 32

Specifications. 33

 Physical specifications. 33

 Power specifications. 33

 Environmental specifications. 34

 Display specifications. 34

 Control signal compatibility. 35

 Touch panel controller specifications. 36

 Accessories. 36

 Regulatory. 37

 Safety. 37

 Electro-magnetic compatibility. 37

 Environmental. 37

Safety precautions

Learn about the safety precautions related to the Christie CP2208-LP projector.

Product labels

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

General hazards



General hazard.



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



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



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



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



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



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



Not for household use.

Mandatory action



Disconnect all power sources before performing maintenance or service procedures.



Consult the user manual.



Consult the service manual.

Electrical labels



Indicates the presence of a protective earth ground.



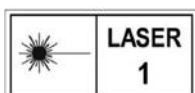
Indicates the presence of an earth ground.

Additional hazard labels



Indicates a light hazard. Do not look directly into the lens. The extreme high brightness can cause permanent eye damage. RG3 IEC 62471-5:2015

Laser labels



CLASS 1 LASER PRODUCT IEC 60825-1



FDA laser variance (US projectors only)

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.
- PERMANENT/TEMPORARY BLINDNESS HAZARD! No direct exposure to the beam must be permitted. RG3 IEC 62471-5:2015
- PERMANENT/TEMPORARY BLINDNESS HAZARD! Operators must control access to the beam within the hazard distance or install the product at the height (greater than or equal to 2.0 m or 2.5 m (US only) from the floor to the beam) that prevents exposure of spectators' eyes within the hazard distance.
- Possibly hazardous optical radiation emitted from this product. (Risk group 3 under IEC 62471-5:2015)
- For protection from ultraviolet radiation, keep all product housings intact during operation.
- FIRE AND SHOCK HAZARD! Use only the attachments, accessories, tools, and replacement parts specified by Christie.
- A minimum of four people or appropriately rated lift equipment is required to safely lift, install, or move the product.
- Always install safety straps when the frame and projector are installed overhead.
- Only Christie qualified technicians who are knowledgeable about the hazards associated with laser use, high-voltage, and high temperatures generated by the product are authorized to assemble, install, and service the Christie Laser Projection System.

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 power range, as specified on the license label.
- SHOCK HAZARD! The AC 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 moving, servicing, cleaning, removing components, or opening any enclosure. Inputs A and B must be removed prior to servicing.
- Install the product near an easily accessible AC receptacle.
- The appliance coupler and main power supply plug must be easily accessible for disconnecting the product from the power source.



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

- 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. Disconnect all power sources before opening the product.
- Only Christie qualified technicians are permitted to open product enclosures.

Light intensity hazard distance

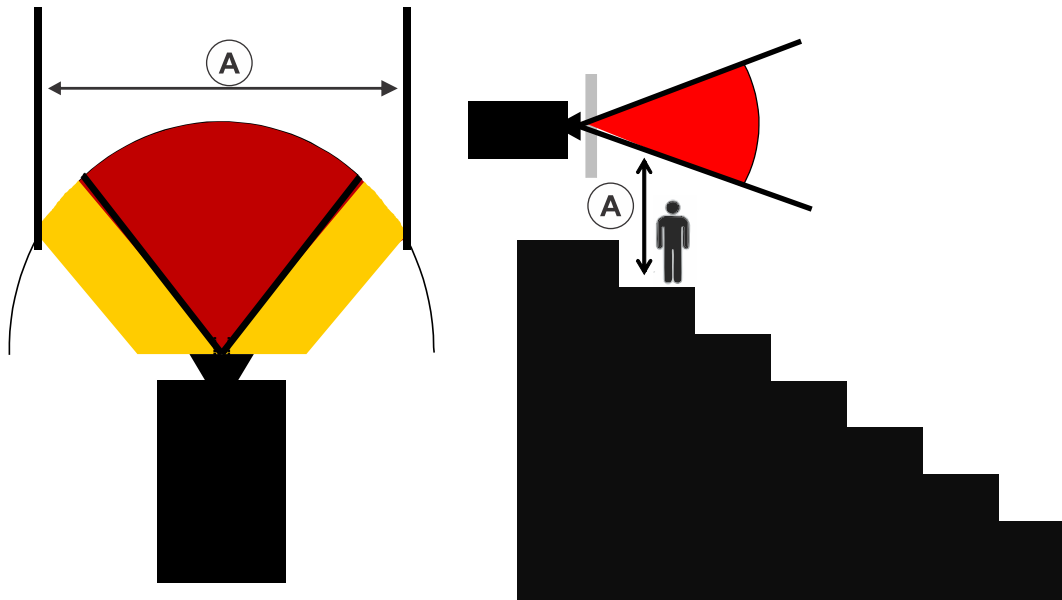
This projector has been classified as Risk Group 3 as per the IEC62471-5 standard due to possible hazardous optical and thermal radiation being emitted.



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

- PERMANENT/TEMPORARY BLINDNESS HAZARD! No direct exposure to the beam must be permitted. RG3 IEC 62471-5:2015
- PERMANENT/TEMPORARY BLINDNESS HAZARD! Operators must control access to the beam within the hazard distance or install the product at the height (greater than or equal to 2.0 m or 2.5 m (US only) from the floor to the beam) that prevents exposure of spectators' eyes within the hazard distance.
- EXTREME BRIGHTNESS! Do not place reflective objects in the product light path.

The following diagram and table show the zones for optical and thermal radiation hazard distances:



- Zone A—The light intensity may cause eye damage after a momentary or brief exposure (before a person can avert his or her eye away from the light source). The light may cause skin burns to occur.

Within Zone A, ensure the beam is at least 2.0 m, or 2.5 m (US only), above the floor where the audience is permitted to stand, with at least 1.0 m clearance below or lateral.

For US market only, hazard distances based upon FDA guidance document 1400056, *Classification and Requirements for Laser Illuminated Projectors (LIPs)*, dated February 18, 2015:

Projection lens	Part number	Zone A (m)
1.2-1.72:1, 0.69" DLPCine zoom lens	108-494108-XX	0 to 1.6
1.33-2.1:1, 0.69" DLPCine zoom lens	108-495109-XX	0 to 2.2
1.62-2.7:1, 0.69" DLPCine zoom lens	108-496100-XX	0 to 3.0
2.09-3.9:1, 0.69" DLPCine zoom lens	108-497101-XX	0 to 4.4

For all other markets, hazard distances based upon IEC 62471-5:2015, *Photobiological safety of lamps and lamp systems – Part 5: Image projectors*:

Projection lens	Part number	Zone A (m)
1.2-1.72:1, 0.69" DLPCine zoom lens	108-494108-XX	0 to 0.8
1.33-2.1:1, 0.69" DLPCine zoom lens	108-495109-XX	0 to 1.0
1.62-2.7:1, 0.69" DLPCine zoom lens	108-496100-XX	0 to 1.3

Projection lens	Part number	Zone A (m)
2.09-3.9:1, 0.69" DLPCine zoom lens	108-497101-XX	0 to 1.9

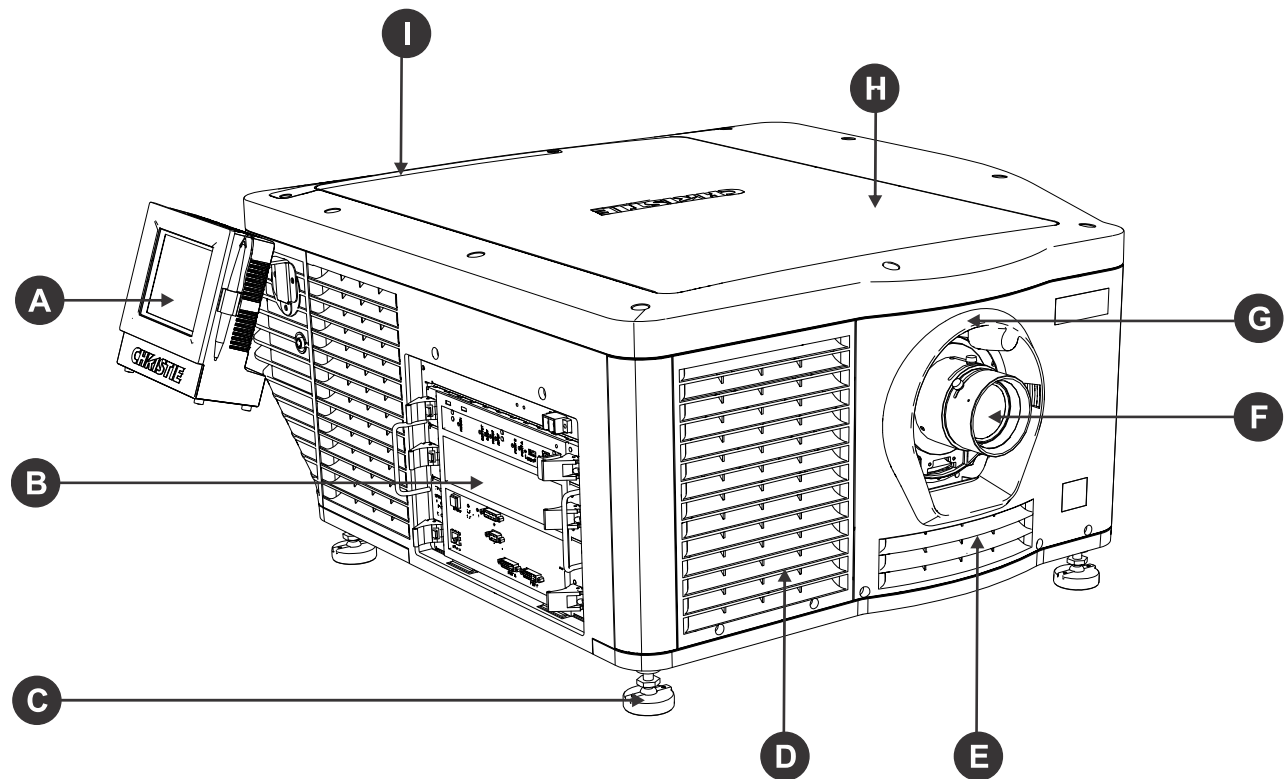
Introduction

This manual is intended for professionally trained operators of Christie high-brightness projection systems.

This manual provides setup instructions. For all other projector functions, refer to the *CP2208-LP User Manual (P/N: 020-102150-XX)*.

Projector components (front)

Learn about the components on the front of the projector.

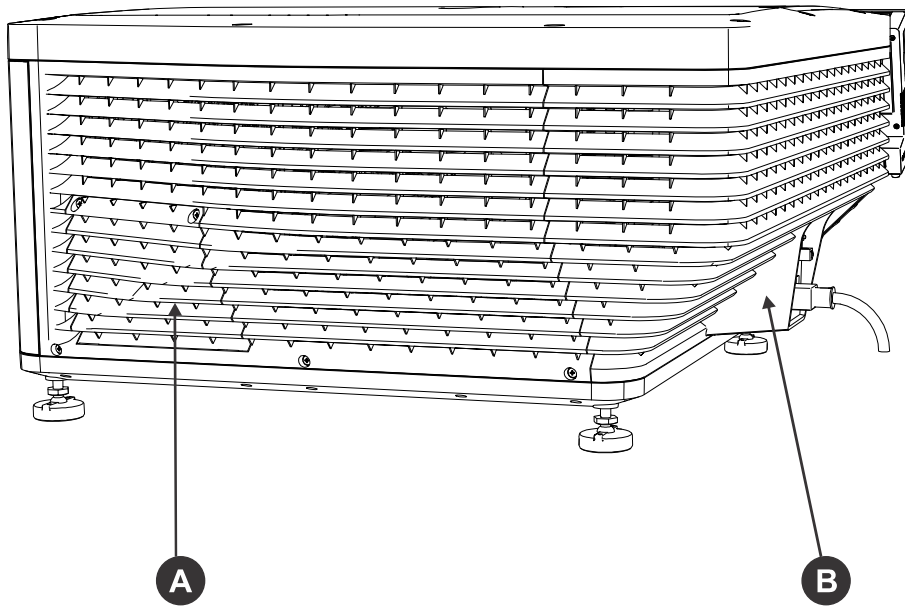


A	Touch panel controller (TPC) A touch-sensitive screen used to control the projector.
B	Communications panel External devices are <i>connected</i> (on page 28) here.

C	Adjustable feet Turn the <i>adjustable feet</i> (on page 14) to increase or decrease the projector height.
D	Air filter
E	Air intake with air filter behind it.
F	Projector lens A list of available lenses is available in the <i>projector specifications</i> (on page 33).
G	Lens surround
H	Top skin
I	Air filter

Projector components (rear)

Learn about the components on the back of the projector.



A	Service access door
B	Power cord and AC receptacle

Installing and setting up

Learn how to position and install the projector.

Preparing the installation site

Ensure the installation area is ready for the components.

1. Clear the installation area.
2. Post laser hazard warning signs at all entry doors.
3. Place each component near its installation location.

Lifting and positioning the projector

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



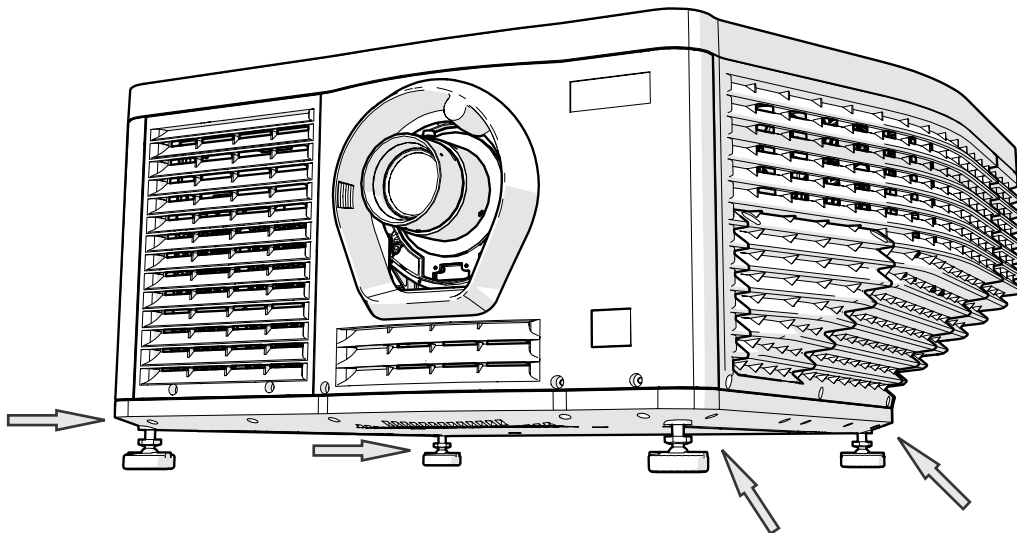
Warning! If not avoided, the following could result in death or serious injury.

- A minimum of four people or appropriately rated lift equipment is required to safely lift, install, or move the product.

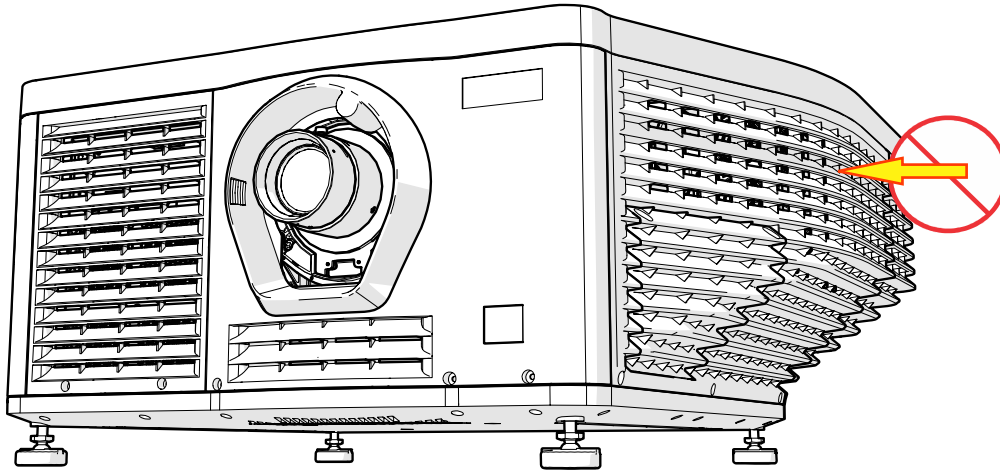


Before lifting and positioning the projector, *refer to the light intensity hazard distance clearance requirements* (on page 8).

1. Position each person at the corners of the projector.



- Place both hands under the corner, grasping the baseplate.
Do not lift the projector by inserting your fingers into the spaces in the skin and pulling on the skin louvers.



- Lift up the projector and move it to the location where it will be used.
- If you are installing the projector in the optional rack stand (P/N: 108-416102-XX), follow the instructions provided with the rack stand.
- Position the projector so it is centered and parallel with the theater screen. If space is limited, aim the projector slightly off-center and use lens offset to center the image on the screen.

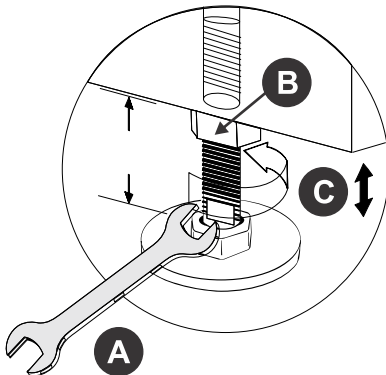
Adjusting tilt and leveling the projector

To ensure optimum performance, install the projector so it is centered and parallel with the screen. To compensate for tilt or offset, you can adjust the projector feet and the lens mount position.



The front-to-back tilt of the projector must not exceed 10°.

- To adjust the height of the projector, loosen the lock nut on the adjustable feet on the bottom of the projector.



A	19 mm (0.75 in.) wrench
---	-------------------------

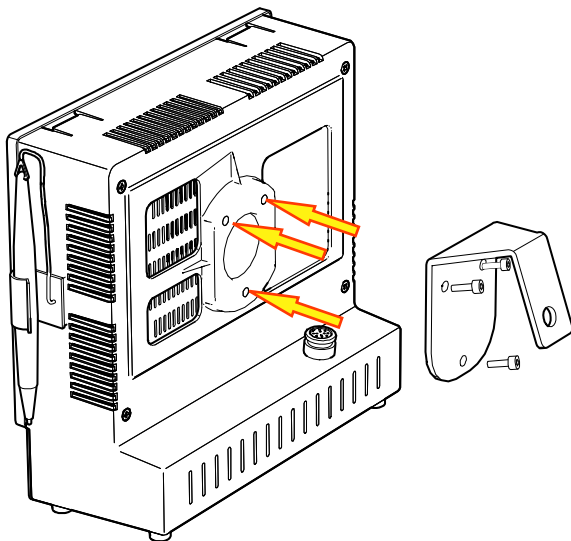
B	Lock
C	Turn to adjust height

2. Extend or retract the feet.
3. When the adjustment is correct, tighten the lock nut.

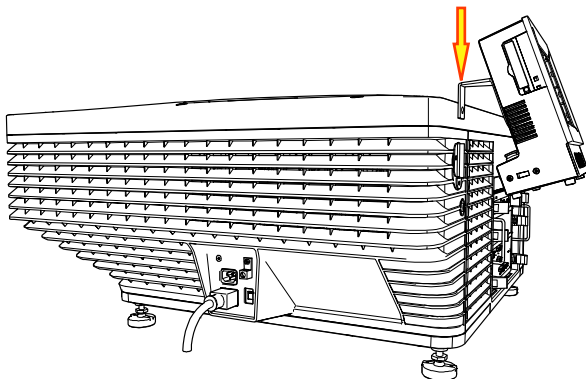
Installing the touch panel controller

Attach the touch panel controller to the projector.

1. Attach the mounting bracket to the touch panel controller using the three M4 screws and the 3 mm hex driver provided.



2. Slide the mounting bracket into the bracket support.



3. Connect the connector from the touch panel controller to the port on the side of the projector.

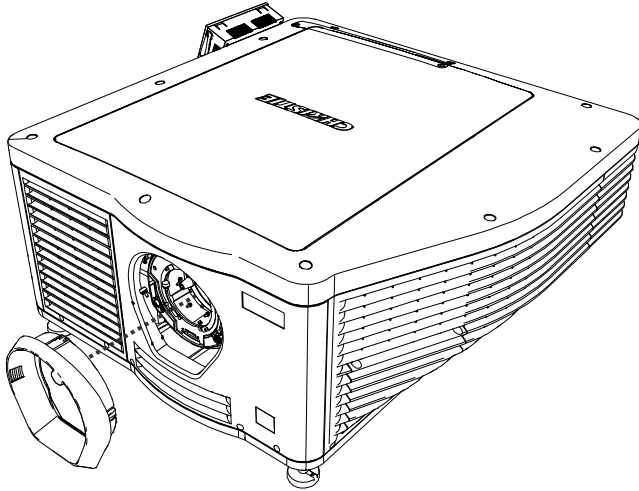
Installing the lens

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

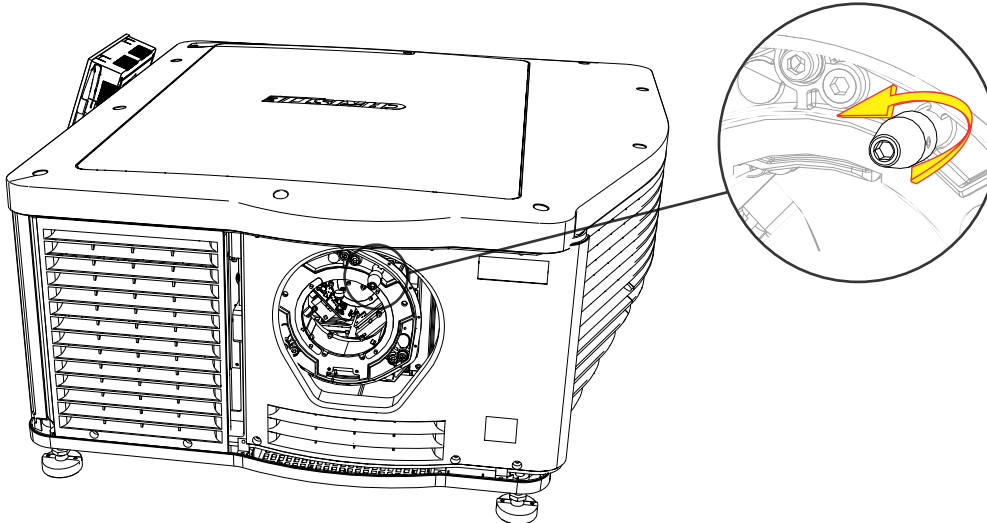
Before installing the lens, ensure that you turn off and unplug the projector.

Do not operate the projector without a lens installed. Install a lens plug when you install or transport the projector.

1. Remove the lens surround.



2. Turn the lens clamp on the front of the projector to the open position with a hex key.



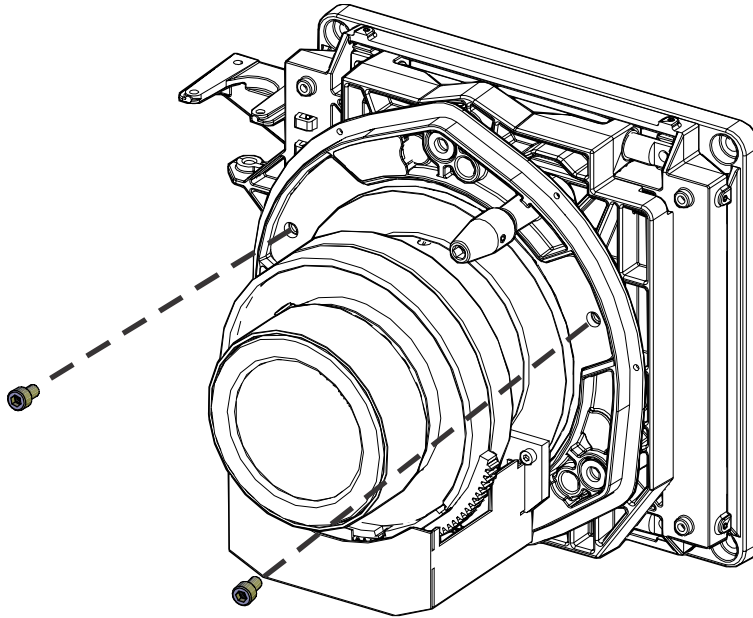
3. Position the lens so the lens retaining ring mounts align with the lens mount.
4. Remove the lens caps from the front and rear of the lens.



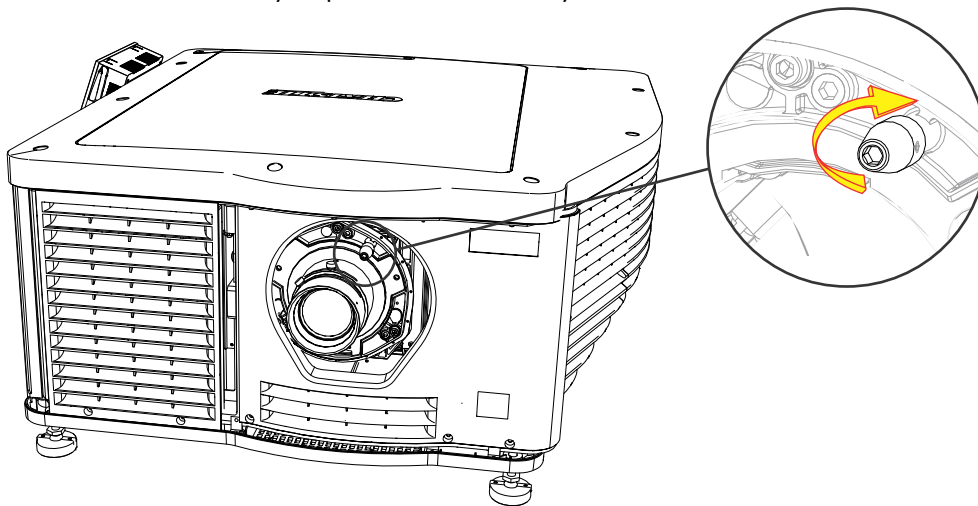
Lens caps must be removed or they can melt and damage the lens.

5. Insert the lens straight into the lens mount opening without turning. Magnets inside the lens mount help position the lens.

6. Insert and tighten the two lens mount hex screws shipped separately with the projector.



7. Lock the lens assembly in place with a hex key.



8. Replace the lens surround.

Connecting power

Connect the projector to the power source.



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

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



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

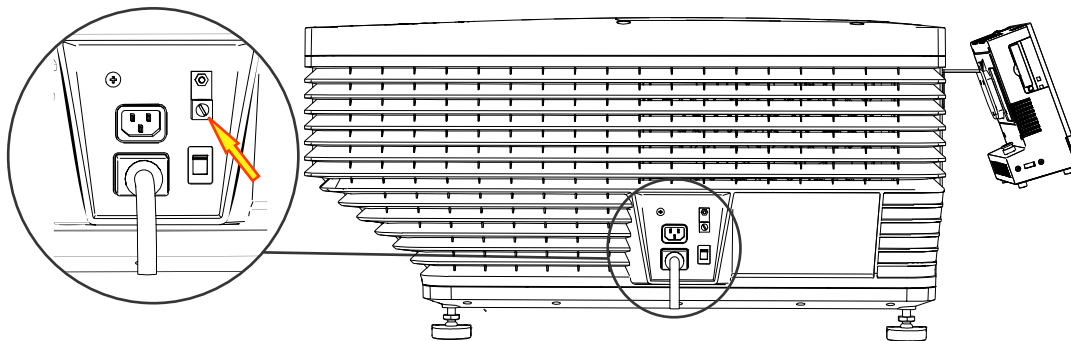
- Only Christie qualified technicians are permitted to open product enclosures.
- Install the product near an easily accessible AC receptacle.
- For products containing surge suppressors, you must adhere to the installation and power requirements.

Installation and Power Requirements

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

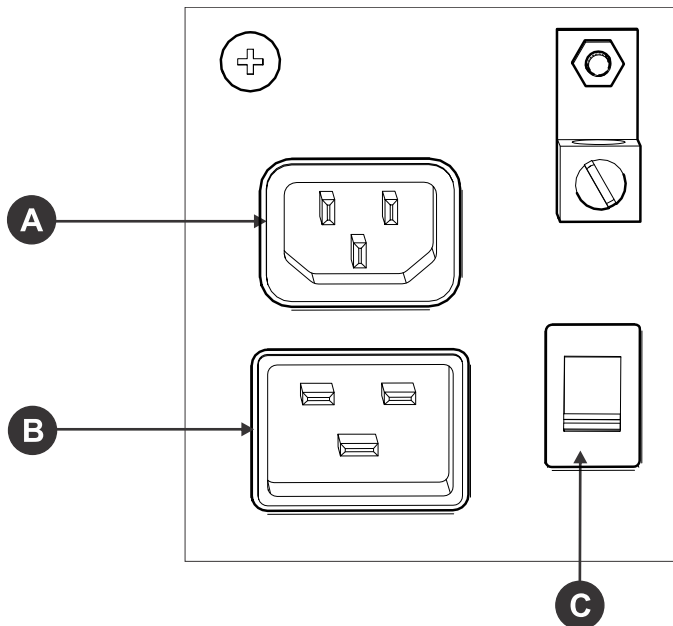
You must use a 20A branch circuit breaker for Input A.

1. If the projector is operating, turn it off and disconnect it from AC power.
2. Loosen the threaded bolt on the ground lug on the AC receptacle on the rear of the projector.



3. Remove 15 mm of insulated covering from both ends of the protected earth wire.
4. Insert a bare end of the protected earth wire into the hole on the top of the ground lug so it is beneath the threaded bolt.
5. Tighten the threaded bolt to 50 in-lb.

6. Connect the other bare end of the protected earth wire to the building ground.
7. Connect one end of the projector power cord to the AC receptacle on the lower-left rear corner of the projector and then connect the other end of the power cord to an AC receptacle.
8. If you are using an Uninterrupted Power Supply (UPS) to power the main electronics, move the AC switch to A + B and connect the power cord provided with the UPS to the B outlet.



A	100-240 V secondary inlet
B	200-240 V main inlet
C	AC switch

Turning the projector on

The projector is turned on using the touch panel controller (TPC).



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

- SHOCK HAZARD! Do not attempt operation if the AC supply is not within the specified voltage and power range, as specified on the license label.

1. Ensure that the circuit breaker for the projector is on.
2. On the TPC, tap and hold **Power On**.

Logging on to the projector

Log on to the projector to access the touch panel controller (TPC) functions.

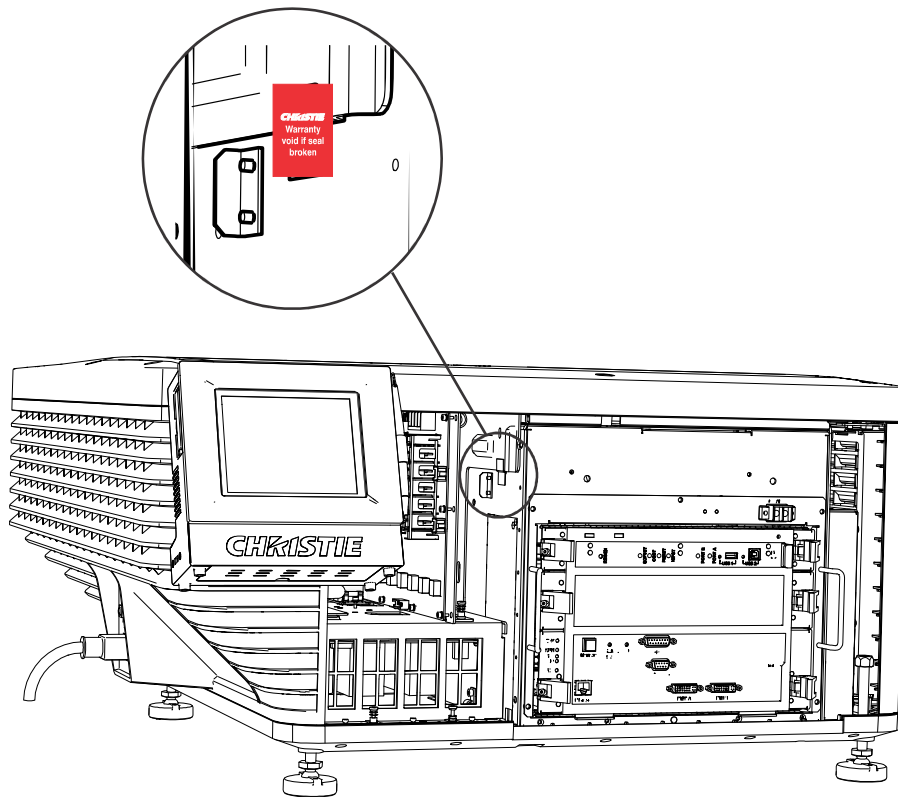
1. On the TPC, tap **Menu** > **Login**.
2. From the Username list, select a user name.
Each user account has set user access permissions.

3. In the Password field, type the password.
4. Tap **Login**.

Activating marriage

You must complete marriage to display encrypted content and to comply with Digital Cinema System Specification (the DCI specification).

You cannot complete marriage remotely. In addition, an authorized employee must be physically present to verify that the anti-tamper seal on the card firewall is unbroken, the projector is unaltered, and to tap the marriage button on the card cage faceplate.



1. On the touch panel controller (TPC), *log on to the projector* (on page 19) with marriage permissions.
2. Tap **Menu** > **Service Setup** > **IMB Marriage**.
3. Complete the Marriage wizard.
4. Tap **Finish**.
5. Verify that the marriage ring is installed correctly and an anti-tamper alarm does not appear on the TPC.

Completing a full lens calibration

Ensure the lens is calibrated before using the projector.

Complete this task whenever a projection lens is installed.






1. On the touch panel controller (TPC), tap **Menu > Advanced Setup > Lens Setup**.
2. From the Primary Lens list, select a lens.
3. In the Intelligent Lens System area, tap **Full Calibration**.
4. Tap **Yes**.

Adjusting the image

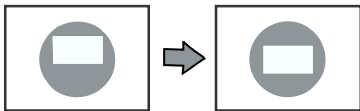
Learn how to adjust image geometry so it displays correctly.






Adjusting the image to fit the screen

This procedure must be completed before you complete a boresight adjustment.

1. Verify that the *projector is properly positioned relative to the screen* (on page 13).
2. *Display the RGB-12bit-Full Screen White test pattern* (on page 32).
3. On the main screen, tap the Lens Adjust () icon.
4. In the Offset area, tap the left () , right () , up () , or down () arrow icons

until the light created by the projector is centered on the screen.



5. *Display the DC2K Framing2 test pattern* (on page 32).
6. On the main screen, tap the Lens Adjust () icon.
7. In the Offset area, tap the left () , right () , up () , or down () arrow icons

to refine the position of the test pattern on the screen.

8. In the Zoom area, tap the positive and minus icons until the image fits your screen.
9. In the Focus area, tap the left and right focus icons until the test pattern details are in focus. When your adjustment is complete, the words and lines in the test pattern should be distinguishable uniformly across the screen and there should not be any sections that are out of focus.
10. With the framing test pattern displayed, re-check projector leveling so the top edge of the image is parallel to the top edge of the screen.
11. *Display the RGB-12bit-Full Screen White test pattern* (on page 32).
12. If the test pattern is focused and centered on the screen you do not need to complete further image adjustment. If the image is not focused and centered on the screen, complete one of these procedures:
 - a) If the image appears distorted and resembles a trapezoid, *correct the keystone effect* (on page 23).

- b) If the image is brighter at the center than it is at the sides, *correct vignetting* (on page 23).
- c) If the image cannot be focused uniformly on the screen with a focus adjustment, or if a large horizontal angular offset to the screen is required, *adjust boresight* (on page 24).

Correcting vignetting

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

If your image suffers from vignetting, the lens has reached the end of its offset travel range. If your installation does not allow the image to be centered with the center of the screen, move the entire projector in the direction of lens travel.

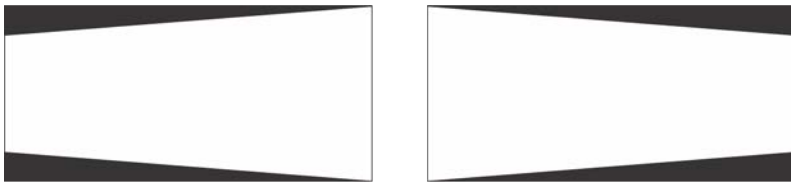
Correcting the keystone effect

The keystone effect occurs when you project an image onto the screen at an angle and the projector is not centered on the screen. As a result, the image appears distorted and resembles a trapezoid.

If the image suffers from slight keystone effect, it can be corrected with electronic cropping. If the keystone effect is severe, complete a horizontal or vertical keystone adjustment.

Adjusting horizontal keystone

Use horizontal keystone to correct a keystone image shape in which the left and right borders of the image are unequal in length, and the top and bottom are slanted to one of the sides.



- To correct the horizontal tilt of the projector, push the rear side of the projector left or right.

Adjusting vertical keystone

Use vertical keystone to correct a keystone image shape in which the top and bottom borders of the image are unequal in length, and both sides of the image are inclined toward the top or bottom edge.



- To correct the vertical tilt of the projector, *adjust the back feet up or down* (on page 14).

Adjusting boresight

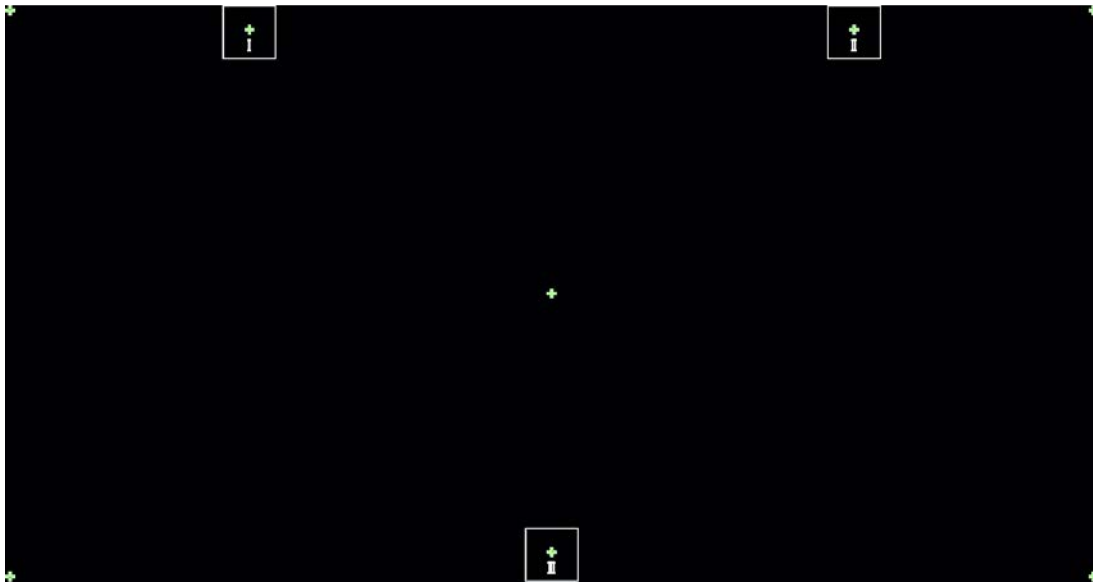
Perform a boresight adjustment when the image cannot be focused uniformly on the screen by aligning the projector to the screen and focusing the lens.

Ensure that the projector is perpendicular to the screen before adjusting boresight.

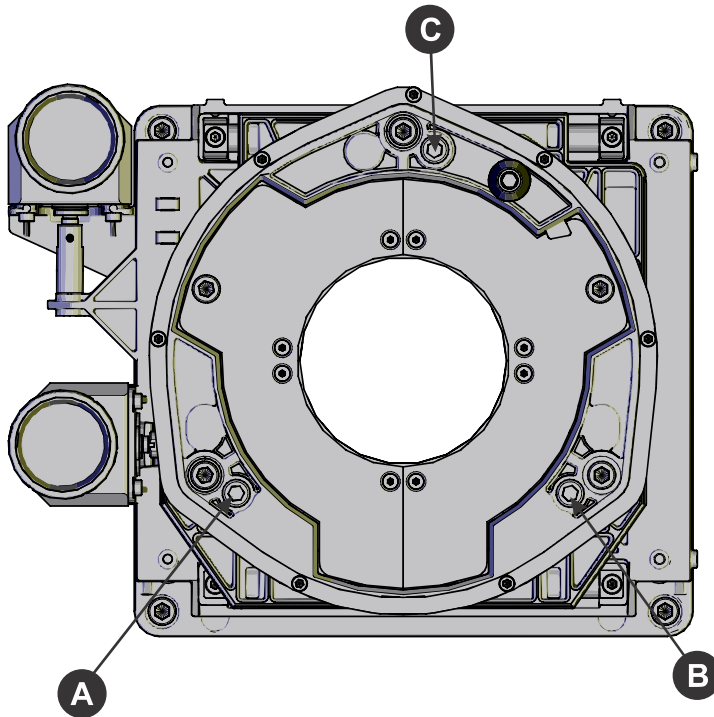
Ensure that the boresight set screws are adequately tightened. Not adequately tightening the screws can result in excessive on-screen image vibration. After adjusting boresight, evaluate the on-screen image vibration and re-adjust if needed.

1. Remove the lens surround.
2. *Display the DC2K Boresight test pattern (on page 32).*

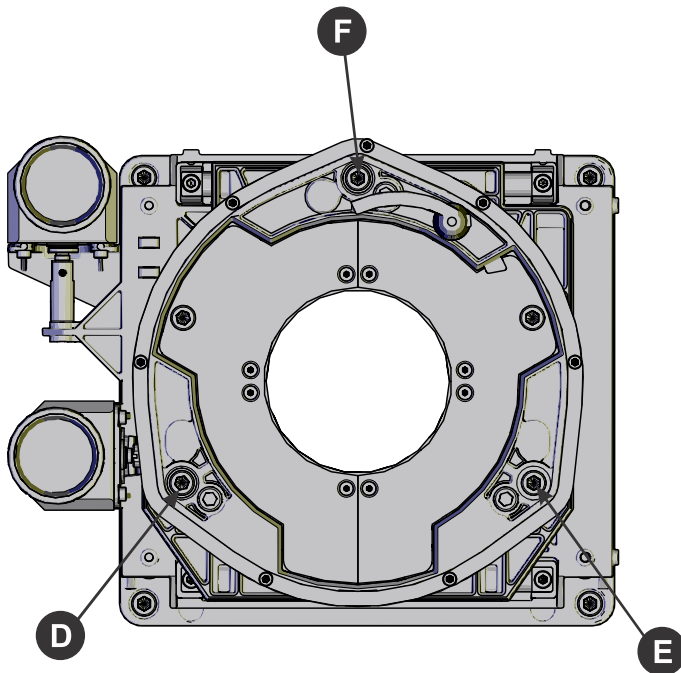
This test pattern assists with adjusting the boresight for the three focus points.



3. Set the zoom of the lens so the test pattern fills the screen size.
4. Set the lens focus to the middle of its range.
5. Loosen the three set screws (A, B, C).



6. To focus the position I boresight guide, adjust the bottom-left boresight cap screw (D).



7. To focus the position II boresight guide, adjust the bottom-right boresight cap screw (E).
8. To focus the position III boresight guide, adjust the top boresight cap screw (F).
Turning the screws in small amounts (1/4 to 1/8 of a turn) allows you to make precise adjustments.

9. To continue to refine the focus, repeat steps 6 to 8.
10. On the test pattern, check the center guide. If it is not in focus, adjust the focus on the lens.
11. Once all guides on the test pattern are in focus, tighten the set screws.
If the focus on the test pattern changes after tightening the set screws, adjust the lens focus again and adjust the three cap screws slightly.
12. Replace the lens surround.

Calibrating screen brightness (fL)

Use the **Foot Lamberts Calibration** wizard when calibrating screen brightness.

1. Turn the light source on and allow it to operate for 20 minutes.
2. On the touch panel controller, tap **Menu > Administrator Setup > Foot Lamberts Calibration**.
3. Complete the **Foot Lamberts Calibration** wizard.

Creating a new light source file

Create a light source file to store power settings for the light source.

A colorimeter is required to complete this procedure.



Do not take any on screen measurements while on the Light Power/LiteLOC Setup screen. The on-screen color is corrected and does not show the native output.

1. On the touch panel controller (TPC), tap **Menu > Advanced Setup > MCGD File Setup**.
2. To display the white test pattern, in the white area of the chromaticity image, tap the option button.
3. Using the colorimeter, measure the on-screen luminance at the center of the screen.
4. Write down the X and Y values.
5. Tap **Menu > Advanced Setup > Light Power/LiteLOC Setup**.

The following adjustable fields are available:

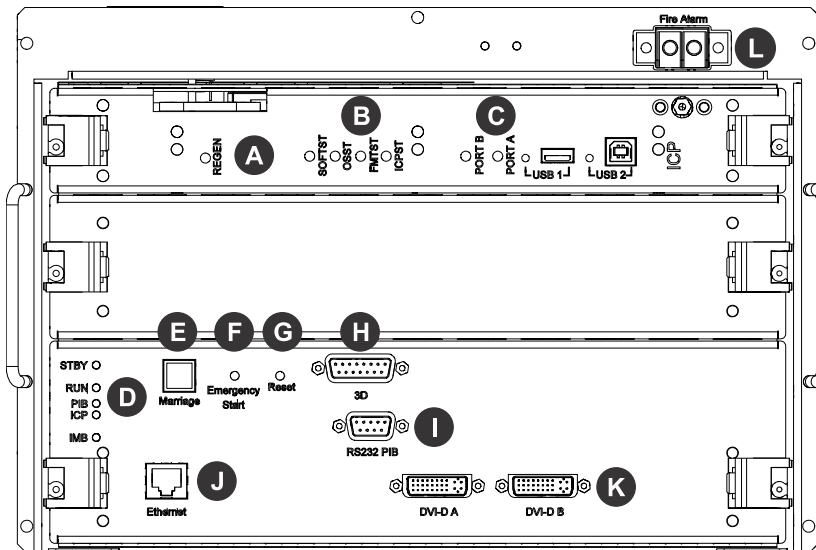
Field	Description
Power %	Sets the percentage of power to supply to the light source.
Advanced Power Adjust	Enables or disables advanced power adjust mode. When enabled, you can adjust the percentage of power to supply to the yellow laser and blue laser individually.
Enable LiteLOC™	Enables or disables LiteLOC™. LiteLOC™ is a power control algorithm that increases the power level to maintain brightness.
Light Meter - Set Target	Enables LiteLOC™ and maintains the current brightness level for as long as possible. The light meter value is an arbitrary unit of measure, not lumens or fL.

6. Adjust the value in the Power % field and repeat steps 1 to 4, until the measured luminance is close, but slightly higher than, the required luminance from the DCI specifications.
Tap **Save** and return to the MCGD File Setup screen each time an on-screen measurement is taken, to ensure uncorrected colors are being read.
Always set measured luminance value higher than the specified value prior to color correction, as color correction decreases light output.
7. Tap **Advanced Power Adjust**.
8. Individually adjust the Yellow and Blue power settings, returning to the MCGD File Setup screen after each adjustment to measure the uncorrected color on-screen.
9. On the Light Power/LiteLOC Setup screen, tap **Save As**.
10. In the Filename field, type a name for the light source file.
11. Tap **OK**.

Connecting devices to the projector and establishing communication

To display content, you must connect a device that is capable of storing or playing content to the projector.

Projector connections



Item	Description
A	Indicates the status of the regulator. A solid blue LED indicates the regulator is enabled. If the LED is not illuminated, the regulator is not enabled.

Item	Description
B	<ul style="list-style-type: none"> • SOFTST—(Software State) Indicates the state of the software application running on the integrated cinema processor (ICP). During normal operation, this LED blinks. During start up, the LED changes from off to blinking. • OSST—(Operating System State) Indicates the state of the ICP operating system. During normal operation, the LED is green. During start up, the LED changes from off to green. • FMTST—(FMT FPGA State) Indicates the state of the FMT FPGA circuit. During normal operation, the LED is green. When the power is turned on, the LED turns green immediately. • ICPST—(ICP FPGA State) Indicates the configured state of the ICP FPGA circuit. During normal operation, the LED is green. When the power is turned on, the LED turns green immediately.
C	<ul style="list-style-type: none"> • PORT B—Indicates the status of the USB port. A green LED indicates the port is active. If the LED is not illuminated, the port is inactive. • PORT A— Indicates the status of the USB port. A green LED indicates the port is active. If the LED is not illuminated, the port is inactive.
D	<ul style="list-style-type: none"> • STBY—The LED is green when the standby power supply is active. If the LED is not illuminated, the standby power supply has failed or the projector circuit breaker is off. • RUN—The LED flashes green when the projector is operating normally. If the LED is not illuminated or solid green, a communication, software, or hardware error has occurred. If the LED is yellow, the projector cannot communicate with the touch panel controller (TPC). • PIB—The LED is green when the projector intelligence board (PIB) is detected and operating correctly. A red LED indicates a communication error. A flashing red LED indicates the PIB is not installed correctly. If the LED is not illuminated, the PIB is inactive. • ICP—The LED is green when the ICP is operating correctly. A red LED indicates a communication issue. If the LED is not illuminated, the ICP is inactive. • IMB—The LED is green when the integrated media block (IMB) is operating correctly. A red LED indicates a communication issue. If the LED is not illuminated, the IMB is inactive.
E	<p>Indicates marriage status. In full power mode, a green LED indicates that the projector is properly married and encrypted content can be displayed. A red LED indicates marriage is broken and encrypted content cannot be displayed.</p>
F	<p>Turns the projector and the lasers on and opens the douser. Press and hold the button to close the douser, turn the lasers off, and keep the power on. We recommend that you use this button only when the TPC is unavailable.</p>
G	<p>Resets the projector electronics. After restarting, the projector returns to its previous power mode. You must turn on the light source manually.</p>
H	<p>Connects the projector to 3D devices.</p>
I	<p>Connects the projector to Christie or third-party automation equipment.</p>
J	<p>Connects the projector to a 10Base-T/100Base-TX Ethernet connection.</p>
K	<p>Connects the projector to high-definition cinema sources. The connectors can be used together to deliver Dual Link HD-SDI following the SMPTE 372M standard.</p>
L	<p>Connects the projector to the building fire alarm so the light source can be shut down in the event of a fire. If you are not using the connection, leave the factory installed jumper cable in place.</p>

Item	Description
	<p>Wire the fire alarm circuit on the projector to a normally closed, dry contact building fire alarm circuit. When the contacts open, the light source shuts down and cannot be turned back on until the circuit is closed and a light on command is sent to the projector.</p> <p>We recommend using twisted pair wiring, minimum 24 AWG. The circuit should be left floating, do not connect to ground.</p>

Connecting the projector to a computer

To display content from a computer, connect it to the projector.

1. Connect one end of an Ethernet or a RS232 cable to the Ethernet or the RS232 PIBS1 ports on the projector communications panel and the other end to your computer.
2. To communicate with the projector, add the projector to the same network as the computer.

Adding or modifying projector communication settings

To allow a computer or other devices to communicate with the projector, add the projector to a network. You can also modify the communication settings if any network information changes.

1. On the touch panel controller (TPC), *log on to the projector* (on page 19) with administrator or service permissions.
2. Tap **Menu** > **Administrator Setup** > **Communications Configuration**.
3. Complete these fields:

Field	Description
Device Name	The name of the projector.
IP Address	The IP address of the projector.
Subnet Mask	The subnet mask to which the address belongs.
Gateway	The IP address for the network gateway.
Apply	Applies Ethernet settings.
Serial Speed (Baud)	The baud rate of the serial port. The default is 115200.
Enable SNMP	Enables SNMP.
SNMP V2 / SNMP V3	The SNMP protocol type. Contact Christie for the SNMP V3 user ID and password.
Management IP	The IP address where SNMP information and notifications are sent.
Download MIB to USB	Sends the SNMP Management Information Base (MIB) file to a USB flash drive.
Apply	Applies SNMP settings.
Serial Access	Grants access to serial connections.

Field	Description
Ethernet Access	Grants access to Ethernet connections.

Playing content

You can play encrypted and unencrypted content on the projector.

1. To play unencrypted content:
 - a) Connect the projector to a device with an HDMI to DVI connection.
 - b) Connect the audio output cables to an audio processor.
See the documentation included with the audio processor for detailed set up instructions.
2. To play encrypted content:
 - a) Install an Integrated Media Block (IMB).
 - b) Connect the projector to a network-attached storage (NAS) or direct attached storage (DAS) device.

Test patterns

Use the projector to assist with configuration of the projector and to diagnose any issues that may occur.


Adding or removing preferred test patterns

Add or remove test patterns from the Preferred Test Patterns pane.

1. On the touch panel controller (TPC), *log on to the projector* (on page 19) with administrator or service permissions.
2. Tap **Menu** > **Administrator Setup** > **Preferred Test Pattern Setup**.
3. To add a test pattern to the Preferred Test Pattern pane, tap and drag a test pattern from the Unselected Patterns list to User Selected pane.
4. To remove a test pattern from the Preferred Test Pattern pane, tap and drag a test pattern from the User Selected pane to the recycle bin in the bottom right corner.


Turning a test pattern on or off

Test patterns are available to assist with the configuration of the projector and to diagnose any issues that may occur.

1. In the touch panel controller (TPC) task bar, tap the **Test Pattern** icon:

2. Tap **All Test Patterns**.
3. To turn a test pattern on, in the Preferred Test Patterns pane, tap the test pattern.
4. To turn the test pattern off, tap **Test Pattern Off**.

Displaying a full screen test pattern

Some test patterns fill the screen instead of a portion of it.

1. In the touch panel controller (TPC) task bar, tap the **Test Pattern** icon:

2. Tap **All Test Patterns**.
3. To turn the test pattern on, in the Preferred Test Patterns pane, double-tap the test pattern.
4. Tap **Full Screen (Ignore screen file settings)**.

Specifications

Learn about the product specifications. Due to continuing research, specifications are subject to change without notice.

Physical specifications

Learn the dimensions and weight of the projector.

Item	Description
Size (L x W x H) (without the lens, and with the feet at minimum length)	828 mm (32.6 inches) x 822 mm (32.4 inches) x 414 mm (16.3 inches)
Weight (with lens removed)	73 kg (161 lbs)
Shipping weight	101 kg (223 lbs)
Touch panel controller (W x H x D)	195 mm (7.68 inches) x 148 mm (5.83 inches) x 44.4 mm (1.75 inches)

Power specifications

Learn the power requirements for the projector.

AC input (A)

Item	Description
Voltage range	200 - 240 VAC
Line frequency	50/60 Hz
Inrush current	100 A maximum (at 240 VAC)
Current consumption	10 A maximum (at 200 VAC)
Power consumption	2000 W maximum
Current rating of AC input	IEC-320-C19/16 A of IEC inlet

UPS AC input (B)

Item	Description
Activation	Discrete switch
UPS inlet connector (rating for powering main electronics)	IEC-320-C13/10 A, 240 VAC
UPS type	Universal 100-240 VAC
Line frequency	50/60 Hz
Inrush current	100 A maximum (at 240 VAC)
Current consumption	3 A maximum (at 100 VAC)
Power consumption	300 W maximum

Environmental specifications

Learn about the environment requirements for the projector while operating and not operating.

Operating environment

Item	Description
Temperature	15°C to 35°C (59°F to 95°F) from 0 - 500 meters, 15°C to 28°C (59°F to 82°F) from 500 - 3000 meters
Humidity (non-condensing)	20% to 85%
Altitude	0 - 3000 meters

Non-operating environment

Item	Description
Temperature	-20°C to 60°C (-4°F to 140°F)
Humidity (non-condensing)	0% to 85%
Altitude	0 - 15000 meters

Display specifications

Learn the display specifications of the projector.

Panel resolution and refresh rate

Pixel format (H x V square pixels)	2048 x 1080
Processing path	23.97 - 240Hz

Achievable contrast ratio

400:1 ANSI
1700:1 Full Frame ON/OFF

Color and gray scale

Displayable colors	35.2 trillion
Gray scale resolution	45 bits total linear, 15 bits per RGB component

White point

Nominal White (full white, after calibration to telecine mode, theaters)	
x = 0.314 ± 0.006	
y = 0.351 ± 0.006	

Gamma

Theater (nominal)	2.6 ± 5%
-------------------	----------

Control signal compatibility

Learn the control signal compatibility for the projector.

Ethernet port

Interface	10Base-T/100-Base-TX
Connector	Female RJ-45
Bit Rate	10 Mbps or 100 Mbps half and full duplex

RS232-PIBS1

Interface	TIA-232
Connector	9-pin subminiature D, female
Bit Rate	115,200 (default) bps
Flow Control	Hardware (RTS/CTS)
Data Format	1 start bit, 8 data bits, 1 stop bit, no parity
Communication Protocol	Christie Serial Protocol

3D terminal

Interface	Proprietary 3D connector
Connector	15-pin subminiature D, female
Bit Rate	1,200 bps
Data Format	1 start bit, 8 data bits, 1 stop bit, no parity
Communication Protocol	RS232 and GPIO

Touch panel controller specifications

Learn the specifications of the touch panel controller.

Type of Display	Color VGA TFT LCD, backlit
Display Size	144.8 mm (5.7 inches) diagonal
Display Resolution (H x V pixels)	640 x 480
Maximum Dimensions (W x H x D)	195 mm x 148 mm x 44.4 mm
Integrated Operating System	Microsoft Windows® XPe
Communication Interface with Projector	10/100Base-T Ethernet
Power Requirement	1.02 A maximum at 24 VDC (+/- 10%)
Interface Connector	12-pin Circular connector (push-pull)

Accessories

Learn what accessories are available for the projector.

Standard (sold with product)

- Touch panel controller (TPC) with interface cable
- Product Safety Guide (with USB containing additional technical documentation)
- Power cord
- Air filters

Zoom lenses

- 1.2-1.72 .69" DLPCine Zoom (108-494108-XX)
- 1.33-2.1 .69" DLPCine Zoom (108-495109-XX)
- 1.62-2.7 .69" DLPCine Zoom (108-496100-XX)
- 2.09-3.9 .69" DLPCine Zoom (108-497101-XX)

Miscellaneous

- Rack stand (108-416102-XX)
- Ball joint and arm assembly (159-101103-XX)

Regulatory

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

Safety

- CAN/CSA C22.2 No. 60950-1
- ANSI/UL 60950-1
- IEC 60950-1
- EN 60950-1
- IEC 60825
- IEC 62471-5

Electro-magnetic compatibility

Emissions

- FCC CFR47, Part 15, Subpart B, Class A
- CAN ICES-3 (A) / NMB-3 (A)
- CISPR 22/EN 55022, Class A

Immunity

- CISPR 24/EN55024

Environmental

EU Directive (2011/65/EU) on the restriction of the uses of certain hazardous substances (RoHS) in electrical and electronic equipment and the applicable official amendment(s).

EU Regulation (EC) No. 1907/2006 on the registration, evaluation, authorization and restriction of chemicals (REACH) and the applicable official amendment(s).

EU Directive (2012/19/EU) on waste and electrical and electronic equipment (WEEE) and the applicable official amendment(s).

China Ministry of Information Industry (along with 7 other Government Agencies) Order No.32 (01/2016) on the control of pollution caused by electronic information products, hazardous substances concentration limits (GB/T 26572 - 2011), and the applicable product marking requirement (SJ/T 11364 - 2014)

Corporate offices

USA – Cypress
ph: 714-236-8610

Canada – Kitchener
ph: 519-744-8005

Consultant offices

Italy
ph: +39 (0) 2 9902 1161

Worldwide offices

Australia
ph: +61 (0) 7 3624 4888

Brazil
ph: +55 (11) 2548 4753

China (Beijing)
ph: +86 10 6561 0240

China (Shanghai)
ph: +86 21 6278 7708

Eastern Europe and
Russian Federation
ph: +36 (0) 1 47 48 100

France
ph: +33 (0) 1 41 21 44 04

Germany
ph: +49 2161 664540

India
ph: +91 (080) 6708 9999

Japan (Tokyo)
ph: 81 3 3599 7481

Korea (Seoul)
ph: +82 2 702 1601

Republic of South Africa
ph: +27 (0)11 510 0094

Singapore
ph: +65 6877-8737

Spain
ph: +34 91 633 9990

United Arab Emirates
ph: +971 4 3206688

United Kingdom
ph: +44 (0) 118 977 8000