Installation and Setup Manual

CP2208

CHRISTIE®

NOTICES

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GENERAL

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

WARRANTY

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

a. Problems or damage occurring during shipment, in either direction.

b. Projector lamps (See Christie's separate lamp program policy).

c. Problems or damage caused by use of a projector lamp beyond the recommended lamp life, or use of a lamp other than a Christie lamp supplied by Christie or an authorized distributor of Christie lamps.

d. Problems or damage caused by combination of a product with non-Christie equipment, such as distribution systems, cameras, DVD players, etc., or use of a product with any non-Christie interface device.

e. Problems or damage caused by the use of any lamp, replacement part or component purchased or obtained from an unauthorized distributor of Christie lamps, replacement parts or components including, without limitation, any distributor offering Christie lamps, replacement parts or components through the internet (confirmation of authorized distributors may be obtained from Christie).

f. Problems or damage caused by misuse, improper power source, accident, fire, flood, lightening, earthquake or other natural disaster.

g. Problems or damage caused by improper installation/alignment, or by equipment modification, if by other than Christie service personnel or a Christie authorized repair service provider.

h. Problems or damage caused by use of a product on a motion platform or other movable device where such product has not been designed, modified or approved by Christie for such use.

i. Problems or damage caused by use of a projector in the presence of an oil-based fog machine or laser-based lighting that is unrelated to the projector.

j. For LCD projectors, the warranty period specified in the warranty applies only where the LCD projector is in "normal use" which means the LCD projector is not used more than 8 hours a day, 5 days a week.

k. Except where the product is designed for outdoor use, problems or damage caused by use of the product outdoors unless such product is protected from precipitation or other adverse weather or environmental conditions and the ambient temperature is within the recommended ambient temperature set forth in the specifications for such product.

l. Image retention on LCD flat panels.

m. Defects caused by normal wear and tear or otherwise due to normal aging of a product.

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

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

PREVENTATIVE MAINTENANCE

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

REGULATORY

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

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

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

Environmental

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

Content

Installation and setup

This manual is intended for professionally trained operators of Christie high-brightness projection systems. These operators are qualified to replace the lamp and air filter, but should not attempt to install or service the projector.

Only accredited Christie technicians who are knowledgeable about the hazards associated with high-voltage, ultraviolet exposure, and the high temperatures generated by the projector lamp are authorized to assemble, install, and service the projector. In addition, only Christie accredited personnel are authorized to perform security procedures such as marriage.

This section provides information and procedures for positioning and installing the projector.

Safety precautions

When installing the projector, observe these important safety rules to avoid personal injury or damage to the projector:

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

- Never look directly into the projector lens or at the lamp. The extremely high brightness can cause permanent eye damage. For protection from ultraviolet radiation, keep all projector housings intact during operation. Protective safety clothing and safety goggles are recommended when servicing.
- FIRE HAZARD! Keep hands, clothes, and all combustible material away from the concentrated light beam of the lamp.

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

Position all cables where they cannot contact hot surfaces or be pulled or tripped over.

This projector must be operated in an environment that meets the operating range specification, as listed in *Projector specifications* on page 28.

AC/power precautions

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

- Use only the AC power cord that is provided with the projector. DO NOT attempt operation if the AC supply is not within the specified voltage and power range.
- As a safety feature the projector is equipped with a three-wire plug with a third (grounding) pin. If you are unable to insert the plug into the outlet, contact an electrician to have the outlet replaced. DO NOT defeat the safety purpose of the grounding-type plug.
- DO NOT attempt operation if the AC supply is not within the rated voltage range, as specified on the license label.
- Disconnect projector from AC before opening any enclosure.

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

- DO NOT allow anything to rest on the power cord. Locate the projector where the cord cannot be damaged by persons walking on it or objects rolling over it. Never operate the projector if the power cable appears damaged in any way.
- DO NOT overload power outlets and extension cords as this can result in fire or shock hazards.
- Only qualified service technicians are permitted to open projector enclosures and only if the projector is disconnected from AC power.

Power cords and attachments

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

- A power cord rated for your region is provided with each projector. Ensure that you are using a power cord, socket, and power plug that meets the appropriate local rating standards. Use only an AC power cord recommended by Christie.
- DO NOT attempt operation if the AC supply and cord are not within the specified voltage and power range.
- Use only the attachments and/or accessories recommended by Christie. Use of others may result in the risk of fire, shock and personal injury.

Lamp precautions

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

- EXPLOSION HAZARD! Lamp may explode causing bodily harm or death. Always wear protective clothing whenever lamp door is open or while handling lamp. Ensure those within the vicinity of the projector are also suited with protective clothing. Never attempt to access the lamp while the lamp is ON. Wait at least 15 minutes after the lamp turns OFF before powering down, disconnecting from AC and opening the lamp door.

- Never open the lamp door unless you are wearing protective clothing such as that included in a Christie Protective Clothing Safety Kit (P/N: 598900-095). Recommended protective clothing includes, but may not be limited to a polycarbonate face shield, protective gloves, and a quilted ballistic nylon jacket or a welder's jacket. Christie's protective clothing recommendations are subject to change. Any local or federal specifications take precedence over Christie recommendations.

- Never attempt to remove the lamp directly after use. Any lamp used in the CP2208 is under high pressure when hot or cold and may explode causing personal injury and /or property damage, and must be handled with great care at all times. Lamps may explode if dropped or mishandled.

Projector components - front

A	Touch panel controller (TPC) A touch-sensitive screen used to control the projector.	**E**	Air Filter Cover and Air Filter Located behind the air filter cover is a replaceable air filter. The air filter filters the intake air before it begins circulating in the front compartment to cool the main electronics.
B	Communications Panel External devices are connected here. See *Projector connections* on page 18.	**F**	Projector Lens See *Projector specifications* on page 28 for a list of available lenses.
C	Adjustable Feet Turn the adjustable feet to increase or decrease the projector height. See *Adjusting tilt and level the projector* on page 11.	**G**	Lens Surround
D	Air Filter	**H**	Top Lid

Projector components - rear
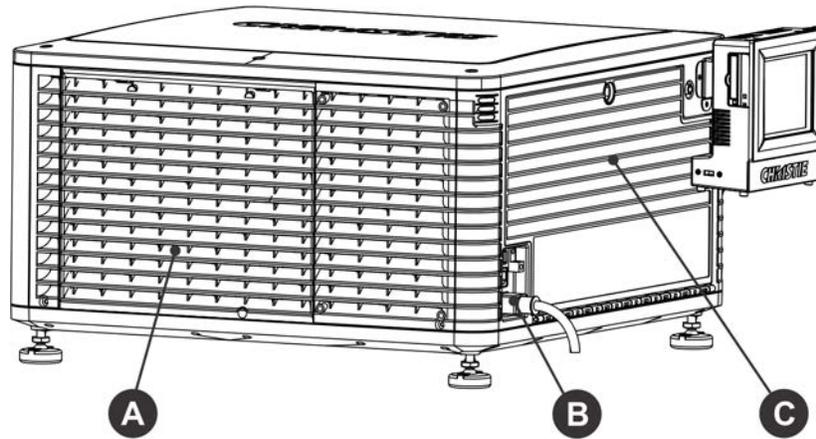
A	Service Access Door
B	Power Cord and AC Receptacle
C	Lamp Access Door

Positioning the projector

⚠ **Warning!** Failure to comply with the following could result in serious injury.
Two people are required to safely lift and install the projector.

⚠ **Caution!** Failure to comply with the following could result in minor or moderate injury.
Complete a lamp adjust whenever you move or level the projector or replace the lamp.

1. If you are installing the projector in the optional rack stand (P/N: 108-416102-XX) follow the instructions provided with the rack stand to install it.

2. Position the projector so it is centered and parallel with the theatre screen. If space is limited, aim the projector slightly off-center and use lens offset to center the image on the screen.

Stacking projectors

To stack CP2208 projectors, use the stacking kit provided with the projector. The CP2208 stacking kit includes these parts:
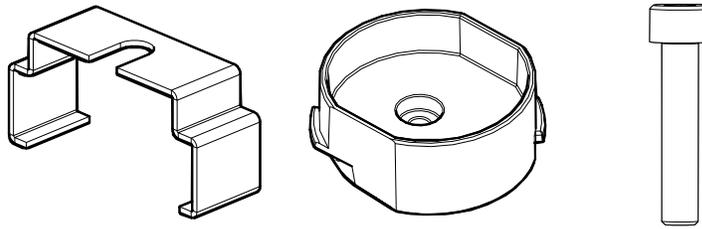
Locking Bracket x 4   Stacking Cup x 4   M6 Screw x 4

When stacking projectors, the optical axis of the projectors must be parallel to one another. The maximum tilt for stacked projectors is 13 degrees. When you install the stacked projectors in a rack stand or on a pedestal, the rack stand or the pedestal must remain horizontal. If you require tilt to align your images, you must tilt the projectors and not the rack stand or pedestal.

1. On the bottom projector, remove the four corner screws securing the top lid.
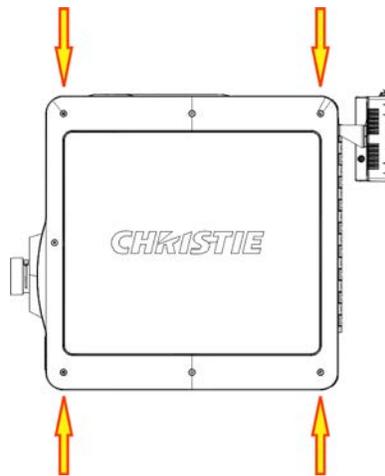
2. Position a single stacking cup (011-104349-XX) over one of the empty screw holes so the higher side of the cup faces outward and aligns with the projector skin.
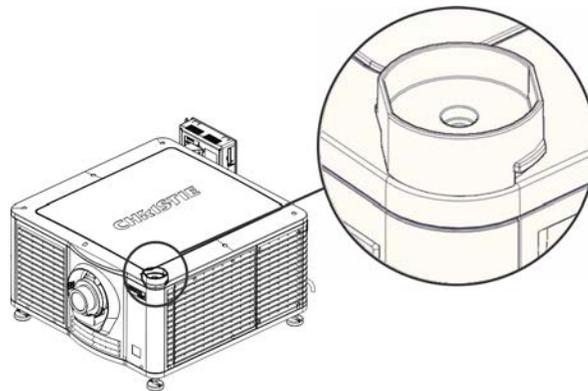
3. Insert an M6 screw (012-101132-XX) through the stacking cup mounting hole and into the projector.

4. With a torque wrench, tighten the M6 screw to 15 in-lb.

5. Repeat steps 3 to 5 to install the three remaining stacking cups.

6. With the assistance of another person, lift the second projector and position it on top of the bottom projector so each of its feet fit into a stacking cup. The lenses of both projectors must face the same direction and the optical axis of both projector lenses must be parallel (A) and align vertically (B).
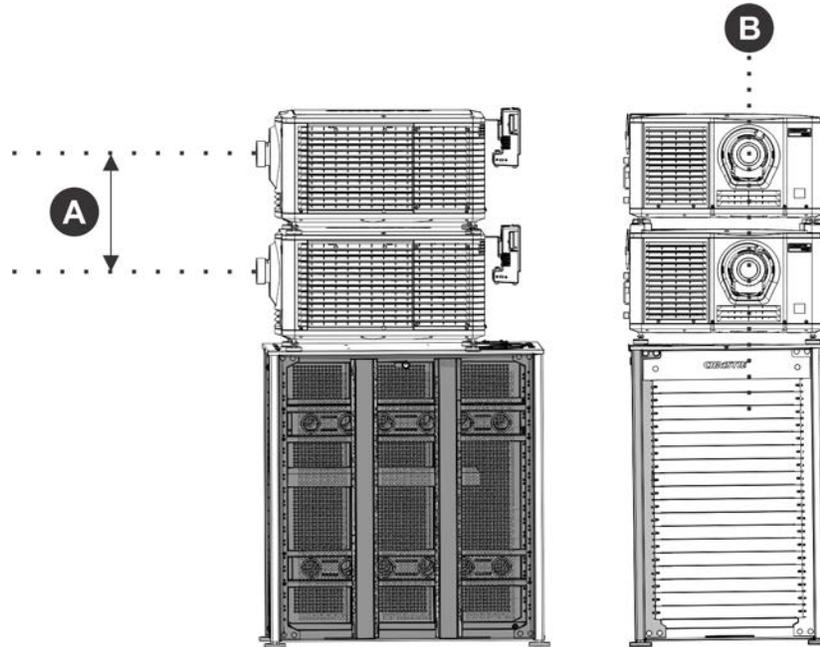
7. Complete the installation for both projectors, including:

   a. Install the touch panel controller. See *Installing the touch panel controller* on page 12.

   b. Install the lens. See *Installing the lens* on page 12.

   c. Install the lamp. See *Installing the lamp* on page 14.

   d. Connect devices to the projector. See *Connecting devices to the projector* on page 17.

   e. Connect power. See on page 20.

   f. Adjust the bottom projector image to fit the screen. For more information see the *CP2208 User Manual (P/N: 020-101916-XX)*.

   g. Align the top projector image to the bottom projector image. For more information see the *CP2208 User Manual (P/N: 020-101916-XX)*.

8. When both projectors are installed and aligned correctly, install the locking brackets on the feet of the top projector:

   a. Slide the locking bracket (011-104470-XX) over the flat sides of the stacking cup, so the notch in the locking bracket fits around the projector leg and above projector foot nut.

b. Turn the locking bracket so the flanges of the locking bracket fit tightly below the stacking cup tabs.

c. Repeat steps a and b to install the three remaining locking brackets.
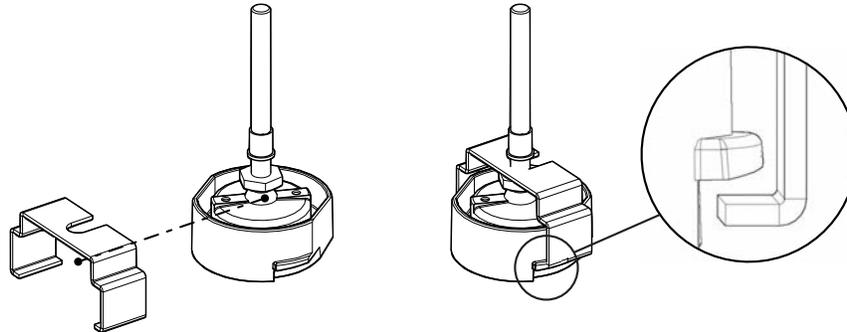
Adjusting tilt and level the projector
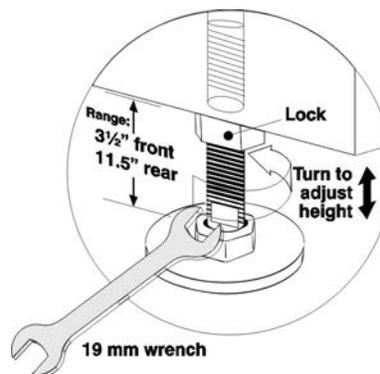
To ensure optimum performance of the projector, install the projector so it is centered and parallel with the screen. To compensate for tilt or offset, you can adjust the projector feet and the lens mount position.

To adjust the height of the projector, loosen the lock nut on the adjustable feet on the bottom of the projector and then extend or retract the feet. When the adjustment is correct, tighten the lock nut.

Use the lens mount to align the images of stacked projectors and not projector tilt. If tilt is required to fit the image to the screen, tilt only the lower projector.

The front-to-back tilt of the projector must not exceed 15°.

Installing the touch panel controller

1. Attach the mounting bracket to the touch panel controller using the three M4 screws and the 3 mm hex driver provided.
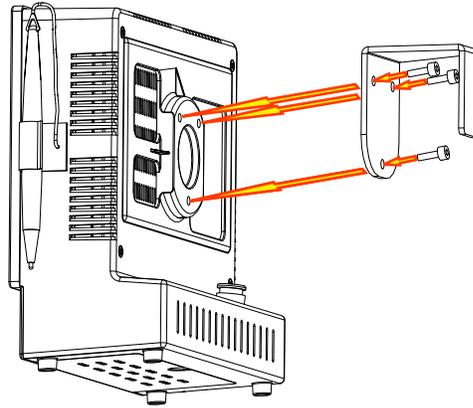
2. Slide the mounting bracket into the bracket support.
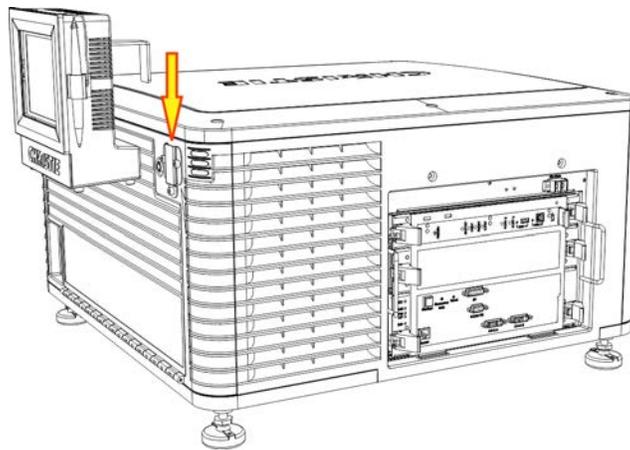
3. Connect the connector from the TPC to the port on the rear of the projector.

Installing the lens

The lens seals the projection head, preventing contaminants from entering the main electronics area. 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.
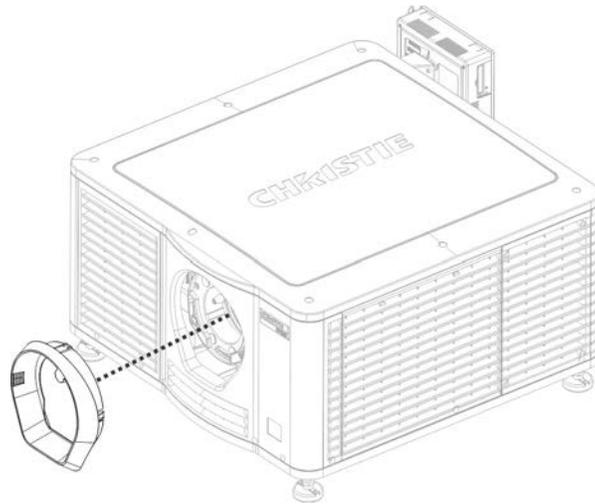
2. Turn the lens clamp on the front of the projector to the open position with a hex key.
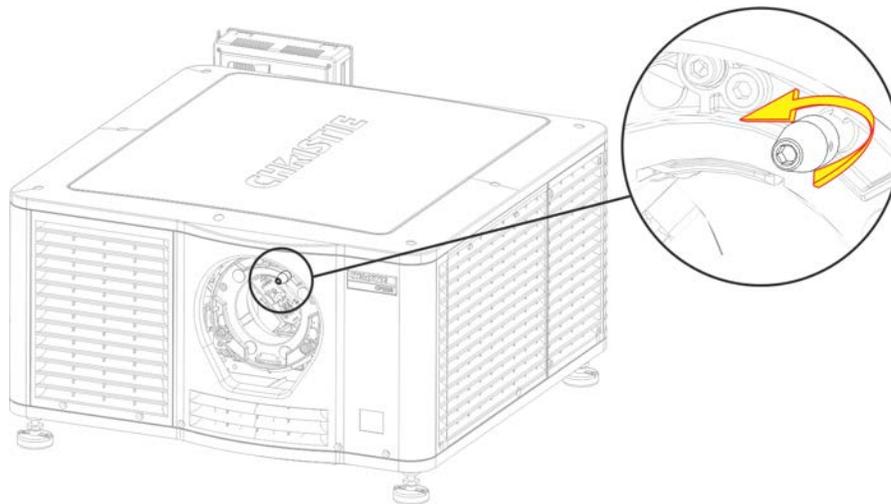
3. Position the lens so the lens retaining ring mounts align with the lens mount.

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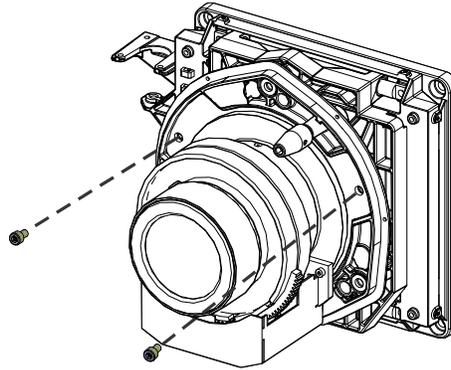
7. Lock the lens assembly in place with a hex key.
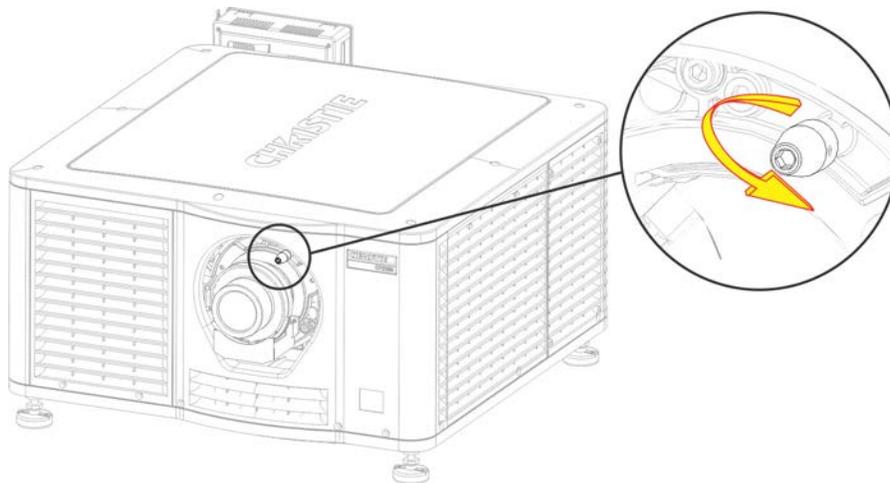
8. Replace the lens surround.

Installing the lamp

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

This procedure should only be performed by a Christie accredited technician. High-pressure lamp may explode if improperly handled. Always wear approved protective safety clothing whenever the lamp door is open or when handling the lamp.

1. If the projector is operating, turn it off and allow it to cool a minimum of 15 minutes.

2. Turn the breaker switch for the projector off.

3. Disconnect the projector from AC power.

4. Disconnect the touch panel controller (TPC) communication cable from the rear of the projector.

5. Remove the TPC from the rear of the projector.

6. Put on your protective clothing, face shield, and gloves.

7. Insert the key in the lamp door lock, turn the key, and then open the lamp door.

8. Loosen the two thumbscrews and open the fire wall door.
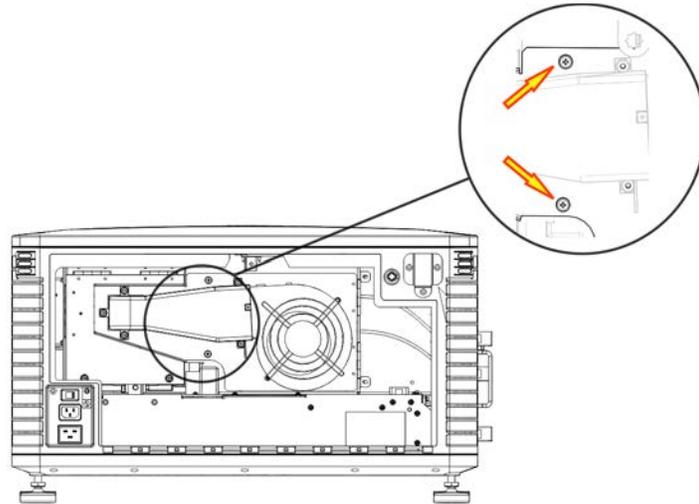
9. Loosen the two thumbscrews and open the lamp access door.
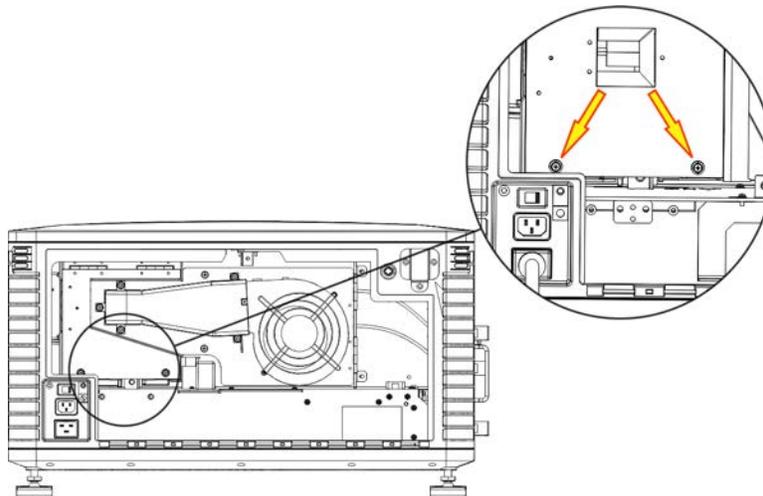
10. Loosen the cathode clamp with the 5 mm hex key attached to the lamp door.
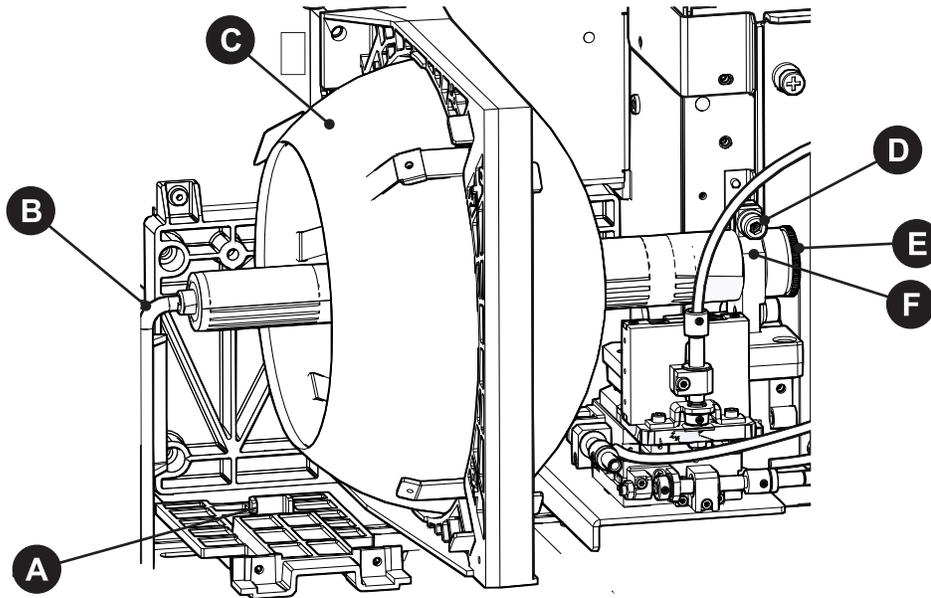
A	Anode Terminal
B	Anode Wire
C	Reflector
D	Cathode Screw
E	Cathode Nut
F	Cathode Clamp

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

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

   a. Install the lamp extension nut on the cathode clamp. To provide access to the locking screw on the extension nut, rotate the extension nut until the locking screw faces upward toward the projector lid.

   b. Tighten the cathode screw (D) with a hex key.

   c. Thread on and hand-tighten the cathode nut. Ensure the smooth portion of the nut is against the cathode clamp.

d. Hold the anode end of the new lamp in your left hand and angle it up through the hole in the back of the reflector assembly. Insert your right index and middle finger through the back of the reflector and thread the cathode end of the lamp into the extension nut. When threading the lamp into the extension nut, make sure the anode wire does not hit the reflector or the UV filter.

e. Tighten the extension nut screw.

f. Move to step 13.

12. **For CDXL-19SC or CDXL-21S1 lamps**:

a. Hold the anode end of the new lamp in your left hand and angle it up through the hole in the back of the reflector assembly. Insert your right index and middle finger through the back of the reflector and guide the lamp onto the cathode clamp. Be careful not to hit the lamp against the reflector

b. Thread on and hand-tighten the cathode nut. Ensure the smooth portion of the nut is against the cathode clamp.

c. Tighten the cathode screw (D) with a hex key.

13. Align the ring terminal on the anode wire with the mounting position ensuring the crimped side of the wire is facing out. Tighten the anode screw. Route anode lead away from nearby metal surfaces.

14. Close the lamp access door and tighten the two thumbscrews.

15. Close the fire wall door and tighten the two thumbscrews.

16. Close and lock the rear access door. Ensure the hex key is placed back into its holder before closing the rear access door.

Connecting devices to the projector

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.
B	• **SOFTST -** (Software State) Indicates the state of the software application running on the 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. 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. During normal operation, the LED is green. When the power is turned on, the LED turns green immediately.
C	• **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	• **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.

Item	Description
E	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.
F	Turns the projector and the lamp on and opens the douser. Press and hold the button to close the douser, turn the lamp off, and keep the power on. It is recommended that you use this button only when the TPC is unavailable.
G	Resets the projector electronics. After restarting, the projector returns to its previous power mode. You must strike the lamp manually.
H	Connects the projector to 3D devices such as MasterImage or RealD.
I	Connects the projector to Christie or third-party automation equipment. Utilizes the Christie-proprietary protocol.
J	Connects the projector to a 10Base-T/100Base-TX Ethernet connection.
K	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.

Connecting the projector to a computer

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. To communicate with the projector, the projector must be added to the same network as the computer.

For more information see the *CP2208 User Manual (P/N: 020-101916-XX)*.

Connecting devices to the 3D sync terminal

For information about connecting devices to the 3D sync terminal, see the *CP2208 User Manual (P/N: 020-101916-XX)*.

Connecting power

⚠ • In all countries with IT power distribution systems, a dedicated protected earth wire must be installed on the projector before it can be connected to power. To connect the projector to an IT power distribution system you must connect the building ground to the external ground lug next to the AC receptacle on the rear corner of the projector.
- The dedicated earth wire can only be installed by a Christie accredited service technician or an electrician. The protected earth wire must be green/yellow 12 AWG minimum. See *Power requirements* on page 30 for power requirements. Failure to comply could result in death or serious injury.

⚠ • Do not operate the projector if the AC power supply and cord are not within the specified voltage and power range. Only use the power cord supplied with the projector. Failure to comply could result in minor or moderate injury.A dedicated, protected earth wire must be installed on the projector before it can be connected to power. You must use a 20A branch circuit breaker for Input A. Install the projector near an AC receptacle that is easily accessible. Failure to comply could result in minor or moderate injury.

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 corner of the projector.
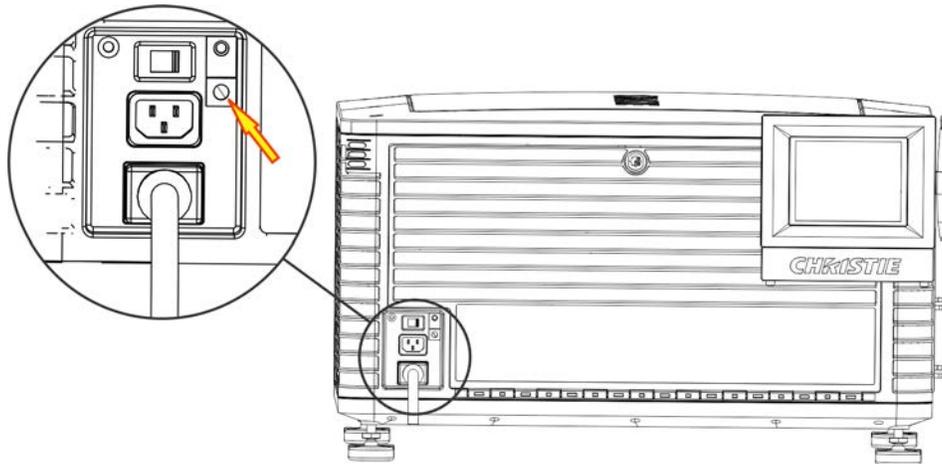
3. Remove 15 mm of insulated covering from both ends of the protected earth wire.

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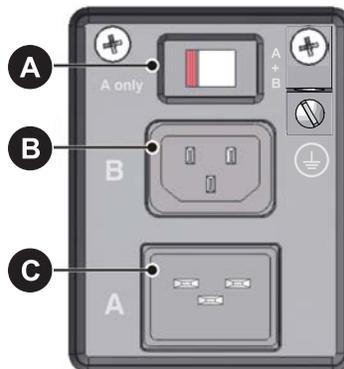
A	AC Switch
B	100-240V secondary inlet
C	200-240V main inlet

Operation

Turning the projector on

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

DO NOT attempt to turn the projector on if the AC supply is not within the specified voltage range. See *Projector specifications* on page 28 for power requirements.

1. Ensure the circuit breaker for the projector is on.
2. On the touch panel controller (TPC), tap and hold the green power (⏻) icon.

Logging on to the projector

1. On the touch panel controller (TPC), tap **Menu** > **Login**.
2. Select a user name in the **Username** list.
3. Enter your 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.
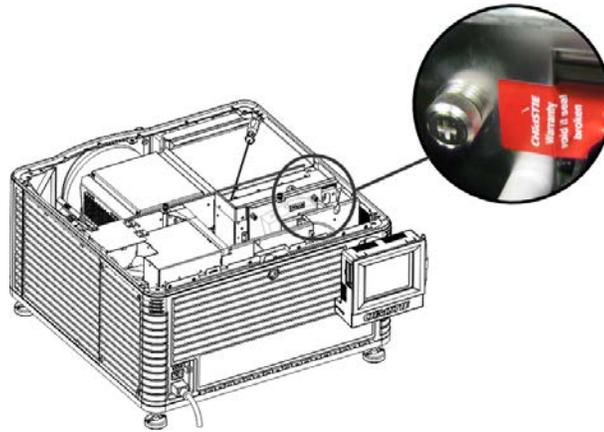
1. Log on to the projector with marriage permissions. See *Logging on to the projector* on page 21.

2. Tap **Menu** > **Service Setup** > **IMB Marriage**.

3. Complete the **Marriage** wizard.

4. Click **Finish**.

Adding the projector to a network

1. On the touch panel controller (TPC), tap **Menu** > **Login**.

2. Select an administrator account in the **Username** list.

3. Enter a password in the **Password** field and then tap **Login**.

4. Tap **Menu** > **Administrator Setup** > **Communications Configuration**.

5. 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.

Field	Description
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.
Ethernet Access	Grants access to Ethernet connections.

Adding the lamp information to the lamp history

1. If the lamp is on, tap the lamp off ( ) icon to turn it off.

2. Tap **Menu** > **Advanced Setup** > **Lamp Change Wizard**.

3. Tap **Next**.

4. Complete these fields:

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

5. Tap **Save**.

6. Tap **Next**.

Turning the lamp on

On the projector touch panel controller (TPC) tap the lamp on ( ) icon.

Aligning the lamp

1. Tap **Menu** > **Advanced Setup** > **Lamp Power**.

2. Verify the value in the **Power%** field is at a level suitable for your requirements.

3. Tap **Menu** > **Advanced Setup** > **Light Adjust**.

4. Record the number in the **Intensity** field.

5. Tap D**isplay Full Screen White Test Pattern**.

6. Complete a coarse lamp adjustment:

    a. Locate the Y axis adjustment label on the operator side of the projector.
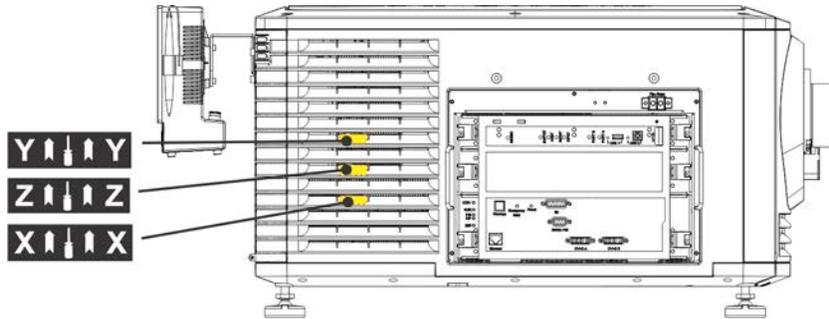
    b. Insert a 5 mm hex driver through the louvers at an angle below the Y axis adjustment label until it is firmly seated on the Y axis adjustment screw.
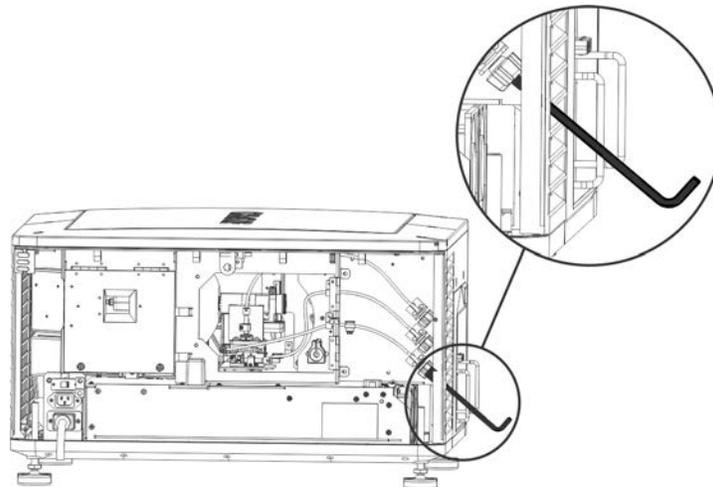
    c. Turn the screw clockwise or counterclockwise until the value in the **Intensity** field peaks and then reduces.

    d. Remove the hex driver and repeat steps a to c to adjust the Z and X axis.

7. Complete a fine lamp adjustment:

    a. Locate the Y axis adjustment label on the operator side of the projector.

    b. Insert a 5 mm hex driver through the louvers until it is firmly seated on the Y axis adjustment screw.

    c. Turn the screw slowly clockwise or counterclockwise until you determine the highest value.

    d. Remove the hex driver and repeat steps a to c to adjust the Z and X axis.

8. Verify the value in the **Intensity** field is greater or equal to the number you recorded in step 4. If value is lower, repeat steps 6 and Step 7.

Adjusting the image to fit the screen

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

1. Verify the projector is properly positioned relative to the screen. See *Positioning the projector* on page 8.

2. Display a RGB-12bit-Full Screen White test pattern and center the image:

    a. Tap the **Test Pattern** ( ) icon in the task bar.

    b. Tap **All Test Patterns**.

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

    d. On the projector touch panel controller (TPC), tap the **Lens Adjust** ( ) icon on the main screen and then tap the left ( ), right ( ), up ( ), or down ( ) arrow icons in the **Offset** area until the light created by the projector is centered on the screen.
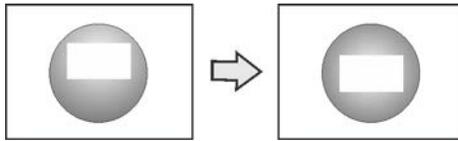
3. Display the DC2K Framing2 test pattern:

    a. On the projector TPC, tap the **Test Pattern** ( ) icon in the task bar.

    b. Tap **All Test Patterns**.

    c. Tap **DC2K Framing2**.

4. On the projector TPC, tap the **Lens Adjust** ( ) icon on the main screen and then tap the left ( ), right ( ), up ( ), or down ( ) arrow icons in the **Offset** area to refine the position of the test pattern on the screen.

5. In the **Zoom** area, tap the positive ( ) and minus ( ) icons until the image fits your screen.

6. 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.

7. 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.

8. Display a full white test pattern:

    a. On the TPC, tap the **Test Pattern** ( ) icon in the task bar.

    b. Tap **All Test Patterns**.

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

9. 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, see the *CP2208 User Manual (P/N: 020-101916-XX)* for more information.

Aligning dual projector images

1. Stack the projectors. For more information see the *CP2208 User Manual (P/N: 020-101916-XX)*.

2. On the bottom projector, adjust the image to fit the screen. See *Adjusting the image to fit the screen* on page 25*.*

3. On both projectors, turn the lamp on and open the douser. See *Turning the lamp on* on page 23*.*

4. On the top projector, display a RGB-12bit-Full Screen White test pattern and center the image:

   a. Tap the **Test Pattern** (![icon]) icon in the task bar.

   b. Tap **All Test Patterns**.

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

   d. On the projector touch panel controller (TPC), tap the **Lens Adjust** (![icon]) icon on the main screen and then tap the left (![icon]), right (![icon]), up (![icon]), or down (![icon]) arrow icons in the **Offset** area until the light created by the projector is centered on the screen.
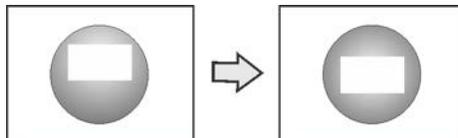

5. On the top projector, display the **DC2K Framing Green** test pattern. For more information see the *CP2208 User Manual (P/N: 020-101916-XX)*.

6. On the bottom projector, display the **DC2K Framing Red** test pattern. See pattern. For more information see the *CP2208 User Manual (P/N: 020-101916-XX)*.

7. Align the top projector image horizontally to the bottom projector:

   a. On the top projector, remove the locking brackets from the projector feet.

   b. Move the front or the rear of the top projector to the right or left so the projected image is aligned horizontally with the image of the bottom projector.
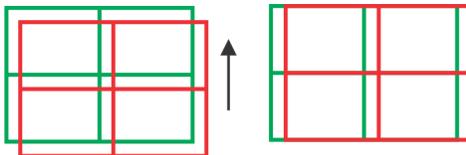
8. Align the top and bottom projector images vertically:

a. Raise or lower the rear feet of the top projector so the projected images of both projectors are vertically aligned. The lines appear yellow when the images are aligned correctly.
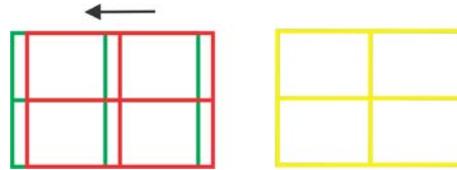
b. Reinstall the locking brackets removed in step 7.

9. 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, see the *CP2208 User Manual (P/N: 020-101916-XX)* for more information.

Playing content

You can play encrypted and unencrypted content on the Christie CP2208 projector.

Playing unencrypted content

To play unencrypted content, connect the projector to a device with an HDMI to DVI connection. For audio, connect the audio output cables to an audio processor. See the documentation included with the device for detailed set up instructions.

Playing encrypted content

To play encrypted cinema content, an Integrated Media Block (IMB) is required. If you install the optional IMB, you can connect the projector to a network-attached storage (NAS) or direct attached storage (DAS) device.

Projector specifications

This section provides detailed CP2208 specifications. Due to continuing research, specifications are subject to change without notice.

Display

Panel resolution and refresh rate

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

Achievable brightness (measured at screen center)

	Nominal	Maximum
1.4kW (CDXL-14M)	3,950 lumens	4,345 lumens
1.6kW (CDXL-16M)	5,350 lumens	5,850 lumens
1.9kW (CDXL-19SC)	7,000 lumens	7,700 lumens
2.1kW (CDXL-21S1)	9,000 lumens	9,900 lumens

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, Theatres)*
x = 0.314 ± 0.006
y = 0.351 ± 0.006

Gamma

Theater (nominal)	2.6 ± 5%

Control signal compatibility

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

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 58 mm
Integrated Operating System	Microsoft Windows® XPe
Communication Interface with Projector	10/1000Base-T Ethernet
Power Requirement	0.71A (typical)
Interface Connector	12-pin Circular connector (push-pull)

Power requirements

AC input (A)

Voltage Range	200 - 240 VAC
Line Frequency	50 Hz - 60 Hz nominal
Inrush Current	<110 A maximum
Current Consumption	16 A maximum (at 200 VAC)
Power Consumption	3200 W maximum
Current Rating of AC Input	IEC-320-C19/20 A

Below 200VAC, when the lamp is ignited, a 25 A input surge current might occur for three seconds.

UPS AC input (B)

Activation	Discrete switch above the power inlet cord(s)
UPS inlet connector *(rating for powering main electronics)*	IEC-320-C13/10A, 240VAC
UPS Type	Universal 100-240VAC
Ballast Power AC Plug Type/Current rating *(on projector)*	IEC-320-C19/20 A
Line Frequency	50 Hz - 60 Hz nominal
Current Consumption	4 A maximum (at 100 VAC)

Lamp

Type	Xenon Short Arc Lamp
Power (software adjustable)	
CDXL-14M (1.4kW)	700W min., 1430W nom., 1575W max.
CDXL-16M (1.6kW)	1000W min., 1600W nom., 1760W max.
CDXL-19SC	1260W min., 1900W nom., 1900W max.
CDXL-21S1 (2.1kW)	1260W min., 2100W nom., 2300W max.

The ballast is power regulated and has a maximum current of 97A. Therefore the maximum power specification for a given lamp may not be achievable until the lamp has aged, since lamp voltage increases with hours of use.

Projectors typically force a 10 minute cool down period. Ensure you do not re-strike the lamp any sooner than two minutes into this cool down period since hot re-strikes reduce lamp life. The period required to reach full brightness is 20 minutes (maximum).

Lamp expiry hours

This table specifies the maximum hours the projector lamp can operate before replacement:

Lamp Type	Expected Life
CDXL-14M	3500 hours
CDXL-16M	3500 hours
CDXL-19SC	1500 hours
CDXL-21S1	1500 hours

Physical specifications

Size (L x W x H): x 395 mm	688 mm (27.09 inches) x 685 mm (26.98 inches)
(without lens, with feet at minimum length)	(15.55 inches)
Weight:	
As installed with lens	53.75 kg (119 lbs)
Shipping (includes packaging)	77.2 kg (170 lbs)
Operating Position	
Rotation about projection axis	± 5 degrees maximum
Tilt of projection axis from horizontal	+ 15 degrees maximum, - 3 degrees maximum

Regulatory

This product conforms to the following regulations related to product safety, environmental requirements and electromagnetic compatibility (EMC). Due to continuing research, specifications are subject to change without notice.

Safety

- CAN/CSA C22.2 No. 60950-1
- UL 60950-1
- IEC 60950-1
- EN60950

Electro-magnetic compatibility

Item	Description
Emissions	• FCC CFR47, Part 15, Subpart B, Class A - Unintentional Radiators • CAN ICES-3 (A) / NMB-3 (A) • CISPR 22/EN 55022 Class A - Information Technology Equipment
Immunity	CISPR 24/EN55024 EMC Requirements - Information Technology Equipment

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 onthe 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 Order No.39 (02/2006) on the control of pollution caused by electronic information products, hazardous substances concentration limits (SJ/T11363-2006), and the applicable product marking requirements (SJ/T11364-2006).

Certification

The product is designed to comply with the rules and regulations required for the product to be sold in various regional markets, including USA/Canada, EU, Australia/New Zealand, Kuwait, China, Argentina, Brazil, Korea, Japan, Mexico, Norway, Turkey, Ukraine, Russia, India, South Africa, and Saudi Arabia.

Environment

Operating environment

Temperature	10°C to 35°C (50°F to 95°F)
Humidity (non-condensing)	20% to 80%
Altitude	0 - 3000 meters
Maximum ambient temperature	35°C

Non-operating environment

Temperature	-20°C to 60°C (-13°F to 149°F)
Humidity (non-condensing)	0% to 95%

Accessories

Standard (sold with product)

- Touch panel controller (TPC) with interface cable
- User Manual (with CD containing additional technical documentation)
- Power Cord
- Lamp
- Lens
- Air Filters
- Stacking Kit

Accessories

- Lenses
    - 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)
- Rack Stand (108-416102-XX)
- Replacement Lamps
    - CDXL-14M (003-003066-XX)
    - CDXL-16M (003-003900-XX)
    - CDXL-19SC (003-005366-XX)
    - CDXL-21S1 (003-004258-XX)
- Replacement Light Engine Air Filter (003-004460-XX)
- Replacement Air Filter (003-002311-XX)
- Replacement Light Engine Washable Air Filter (003-004654-XX)
- Replacement Card Cage Washable Air Filter (003-004655-XX)
- Extractor Adaptor Kit (119-103105-XX)

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