User Manual

020-101916-02

CP2208

CHRISTIE®

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NOTICES

COPYRIGHT AND TRADEMARKS

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. 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!

Table of Contents

Installing and Setting Up

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 99*.

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.

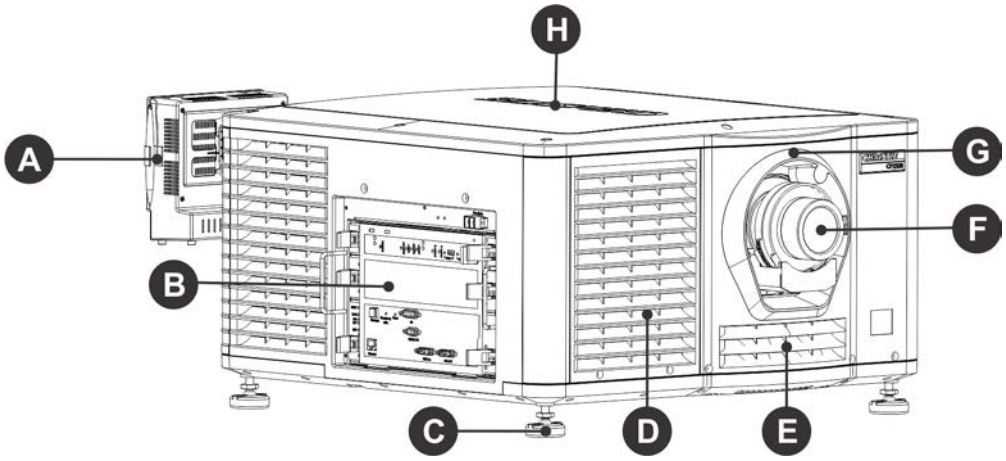
- A power cord rated for your region is provided with each projector. Ensure that you are using a power cord, socket, and power plug that meets the appropriate local rating standards. Use only an AC power cord recommended by Christie.
- DO NOT attempt operation if the AC supply and cord are not within 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.
- Position the projector where the appliance coupler or main supply plug on the power cord can be easily accessible.

Lamp precautions

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

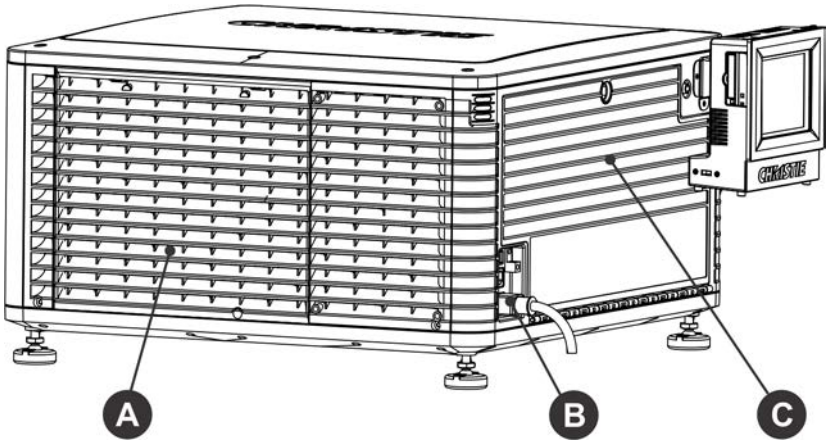
- EXPLOSION HAZARD! Lamp may explode causing bodily harm or death. Always wear protective clothing whenever lamp door is open or while handling lamp. Ensure those within the vicinity of the projector are also suited with protective clothing. Never attempt to access the lamp while the lamp is ON. Wait 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 24*.	**F**	Projector Lens See *Projector Specifications on page 99* 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 17*.	**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

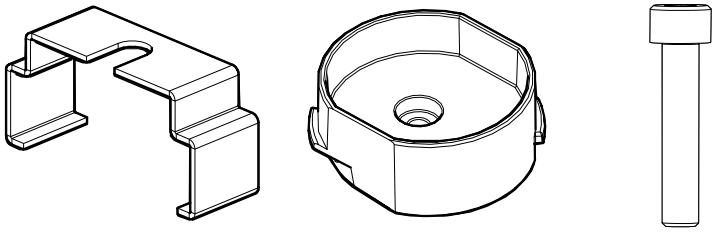
Warning! Failure to comply with the following could result in serious injury.
Two people are required to safely lift and install the projector.

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

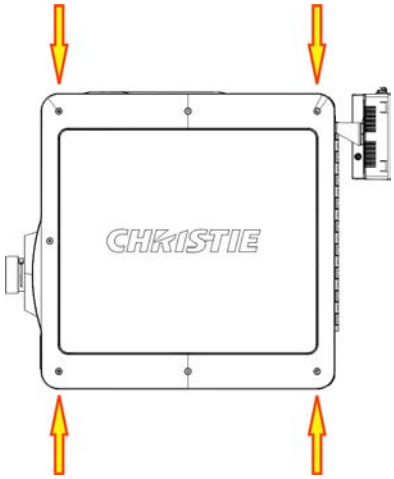
To stack CP2208 projectors, use the stacking kit provided with the projector. The CP2208 stacking kit includes these parts:



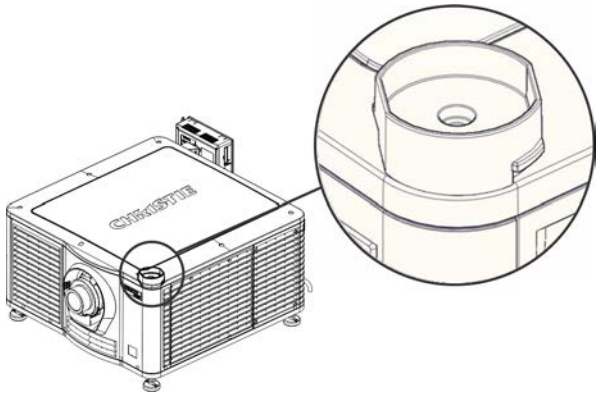
Locking Bracket x 4 Stacking Cup x 4 M6 Screw x 4

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.

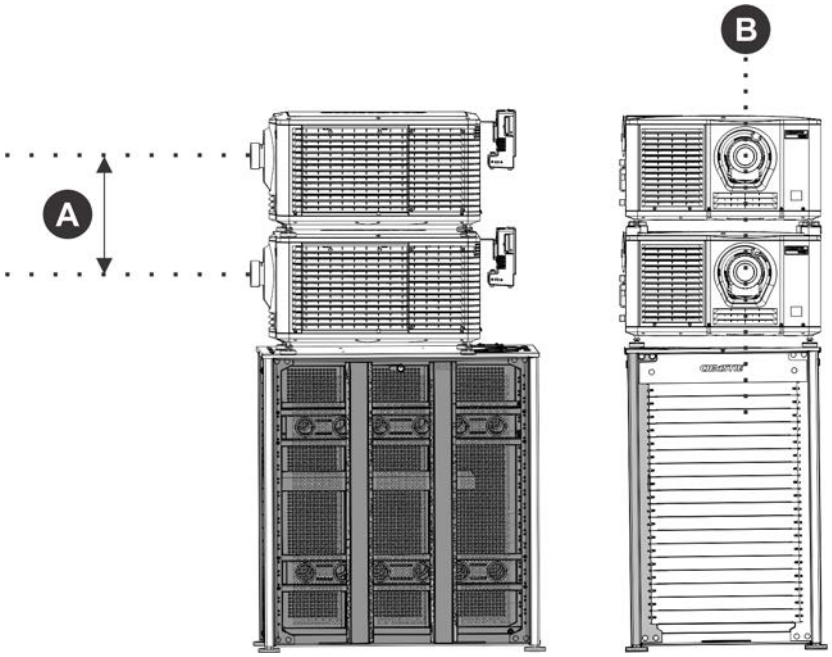
1. On the bottom projector, remove the four corner screws securing the top lid.



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.



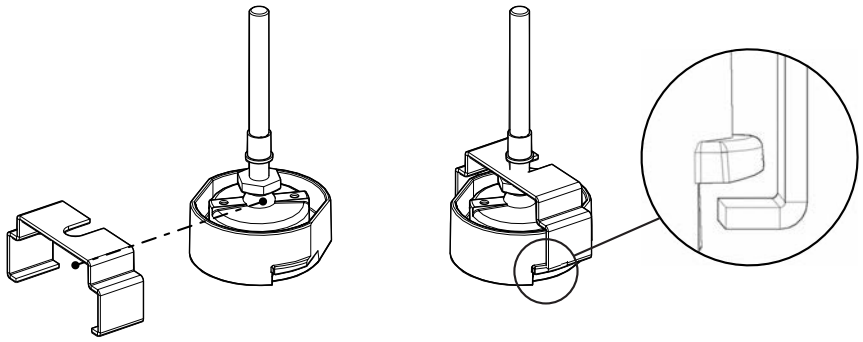
3. Insert an M6 screw (012-101132-XX) through the stacking cup mounting hole and into the projector.
4. With a torque wrench, tighten the M6 screw to 15 in-lb.
5. Repeat steps 3 to 5 to install the three remaining stacking cups.
6. With the assistance of another person, lift the second projector and 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).



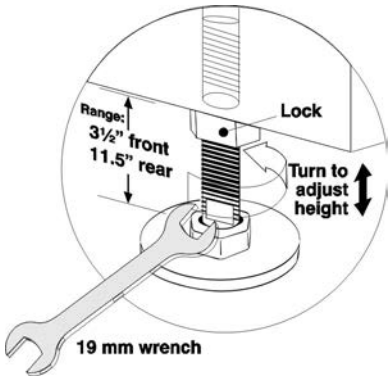
7. Complete the installation for both projectors, including:
    a. Install the touch panel controller. See *Installing the touch panel controller* on page 18.
    b. Install the lens. See *Installing the lens on page 18*.
    c. Install the lamp. See *Installing the lamp on page 20*.
    d. Connect devices to the projector. See *Connecting devices to the projector on page 23*.
    e. Connect power. See *Turning the projector on on page 27*.
    f. Adjust the bottom projector image to fit the screen. See *Adjusting the image to fit the screen on page 30*.
    g. Align the top projector image to the bottom projector image. See *Aligning dual projector images on page 32*.
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.

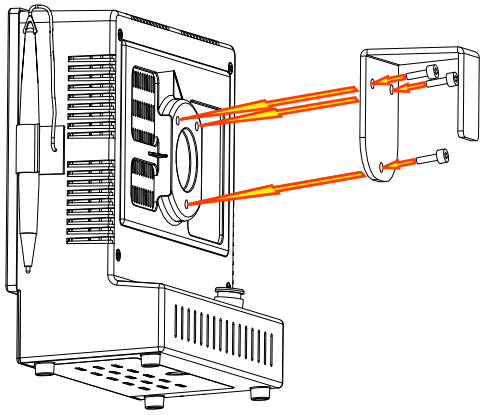
To adjust the height of the projector, loosen the lock nut on the adjustable feet on the bottom of the projector and then extend or retract the feet. When the adjustment is correct, tighten the lock nut.

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.

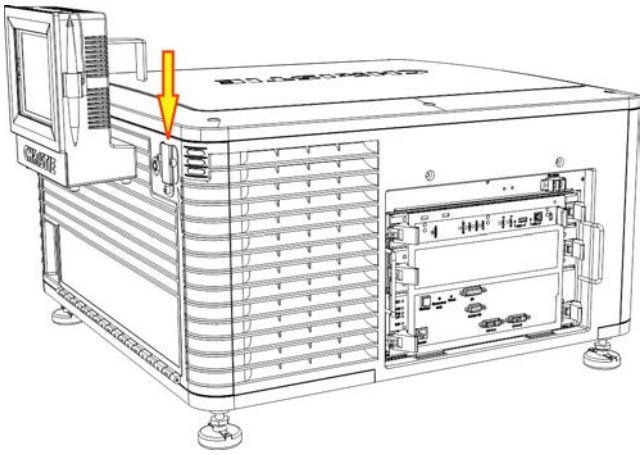
The front-to-back tilt of the projector must not exceed 15°.

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.

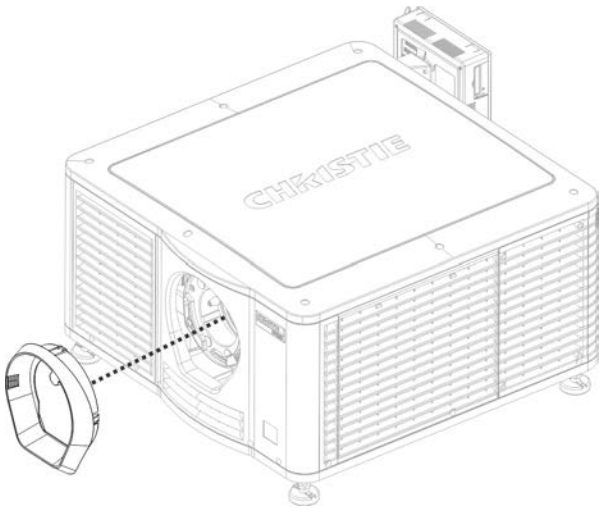


3. Connect the connector from the TPC to the port on the rear of the projector.

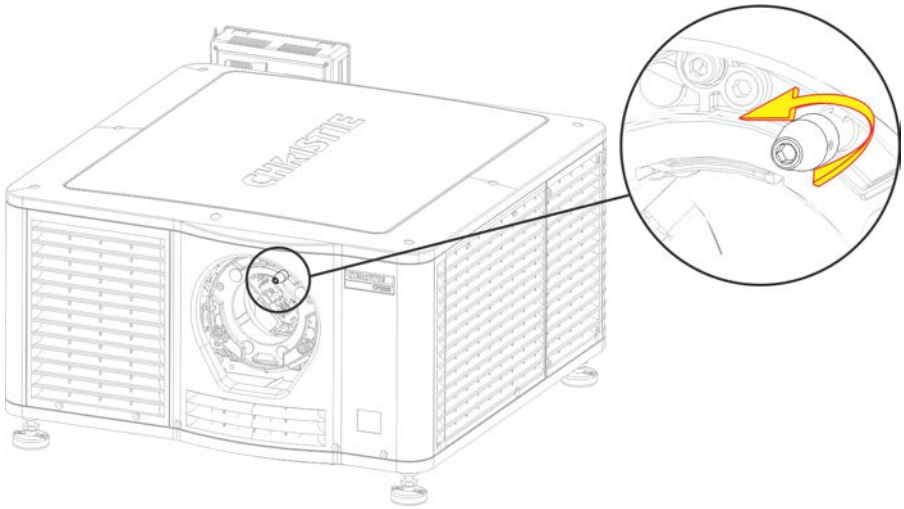
Installing the lens

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.



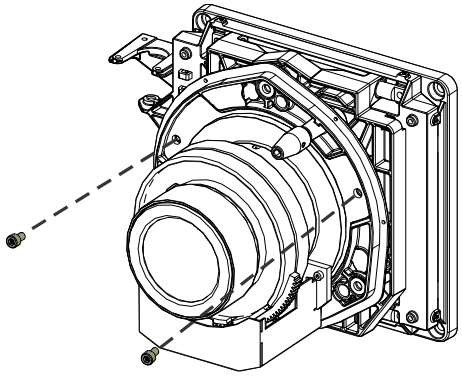
3. Position the lens so the lens retaining ring mounts align with the lens mount.
4. Remove the lens caps from the front and rear of the lens.

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

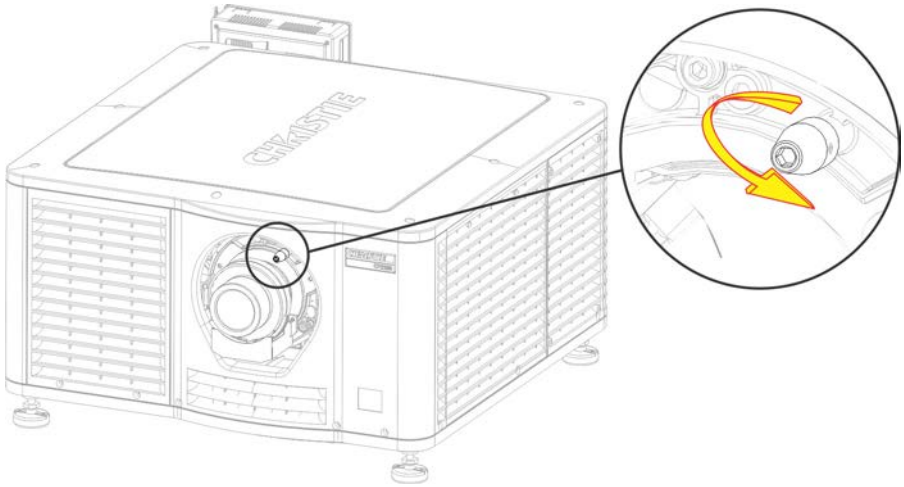
5. Insert the lens straight into the lens mount opening without turning.

   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.

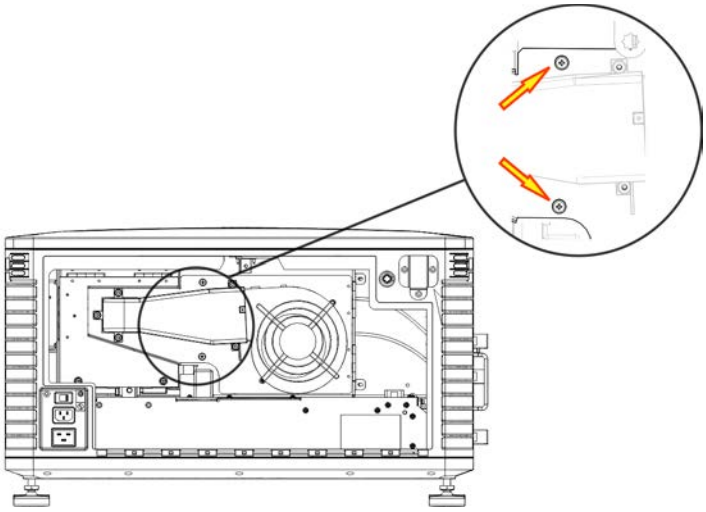
Installing the lamp

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

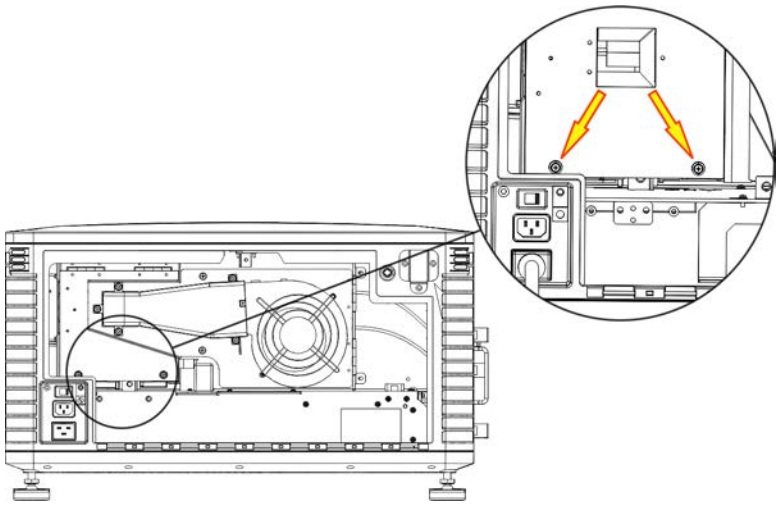
This procedure should only be performed by a Christie accredited technician. High-pressure lamp may explode if improperly handled. Always wear approved protective safety clothing whenever the lamp door is open or when handling the lamp.

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.

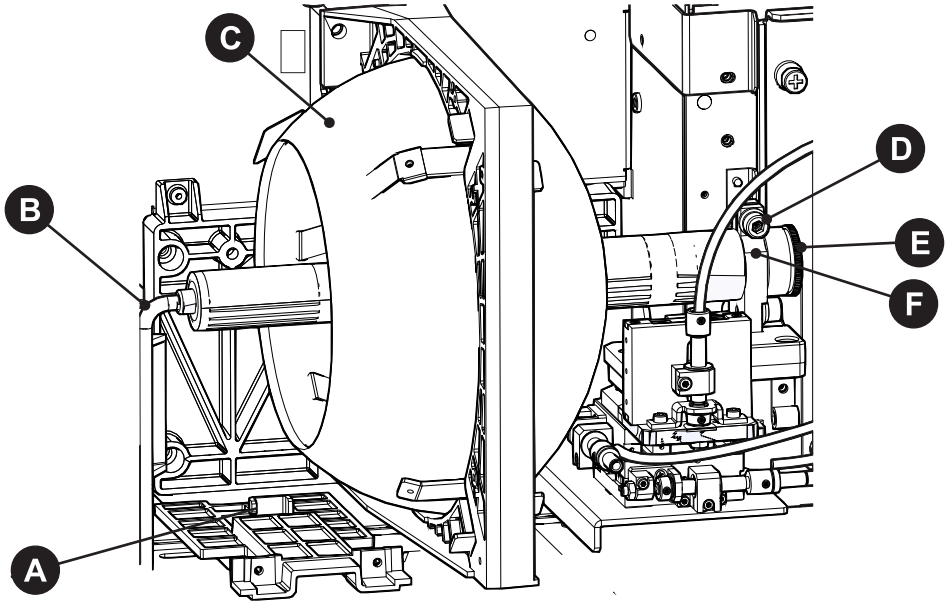
8. Loosen the two thumbscrews and open the fire wall door.



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.

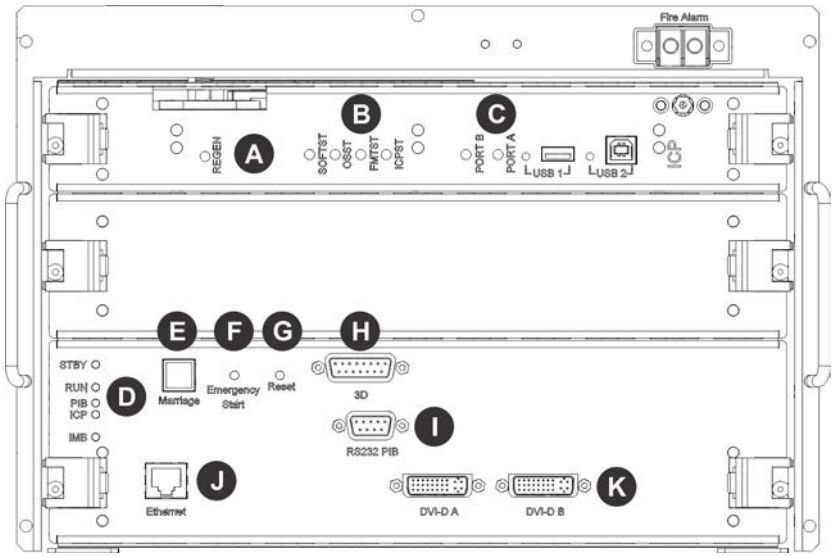
15. Close the fire wall door and tighten the two thumbscrews.

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. See *Adding the projector to a network on page 28*.

Connecting devices to the 3D sync terminal

See *Viewing 3D Content on page 76*.

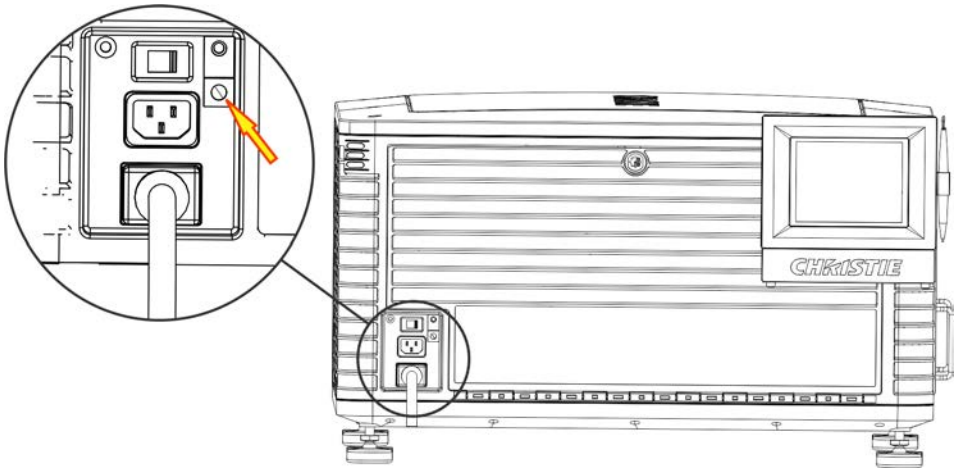
Connecting power

- 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 101 for power requirements. Failure to comply could result in death or serious injury.

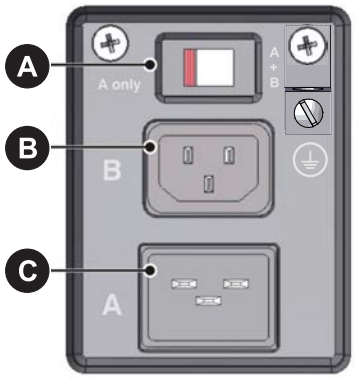
- Do not operate the projector if the AC power supply and cord are not within the specified voltage and power range. Only use the power cord supplied with the projector. Failure to comply could result in minor or moderate injury.A dedicated, protected earth wire must be installed on the projector before 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

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 99* for power requirements.

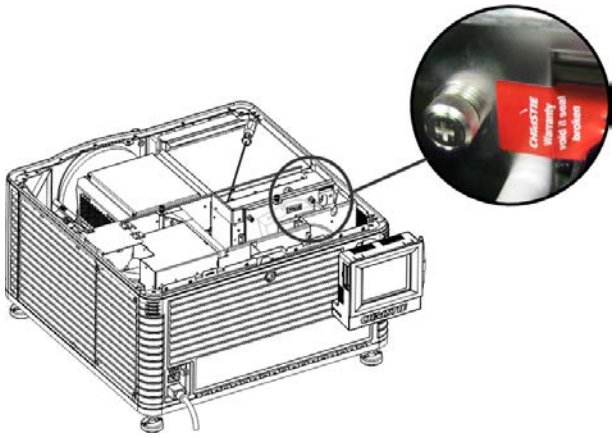
1. Ensure the circuit breaker for the projector is on.
2. On the touch panel controller (TPC), tap and hold the green power ( ) icon.

Logging on to the projector

1. On the touch panel controller (TPC), tap **Menu** > **Login**.
2. Select a user name in the **Username** list. To view the permissions associated with each account see *Interpreting user access permissions on page 70*.
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 27*.
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.
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.

Field	Description
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.

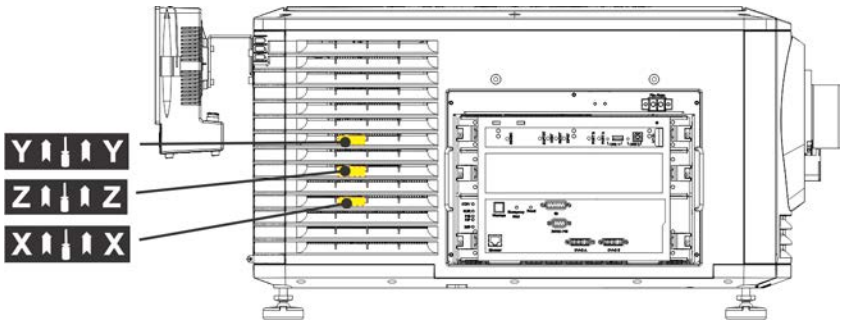
5. Tap **Save**.
6. Tap **Next**.

Turning the lamp on

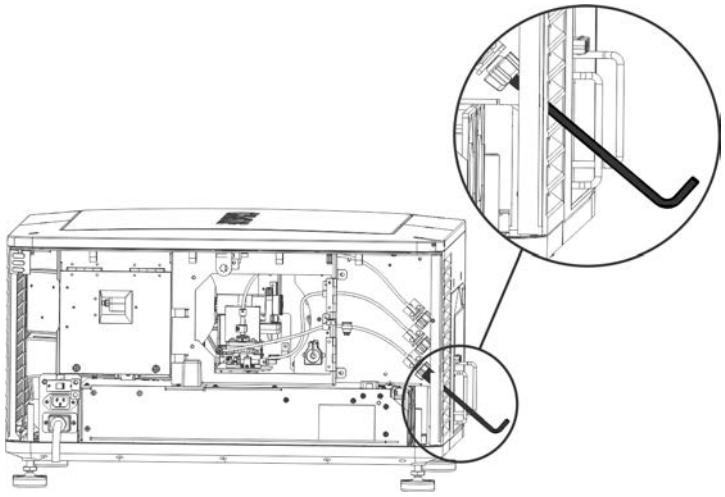
On the projector touch panel controller (TPC) tap the lamp on ( ) icon.

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.

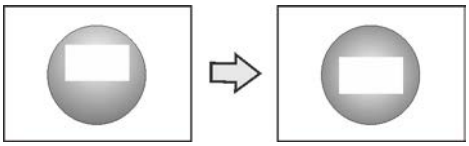
1. Verify the projector is properly positioned relative to the screen. See *Positioning the projector* on page 14.
2. Display a RGB-12bit-Full Screen White test pattern and center the image:

   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, complete one of these procedures:

   a. See *Correcting keystone effect* on page 34 if the image appears distorted and resembles a trapezoid.

   b. See *Correcting vignetting* on page 36 or *Aligning the lamp* on page 29 if the image is brighter at the center than it is at the sides.

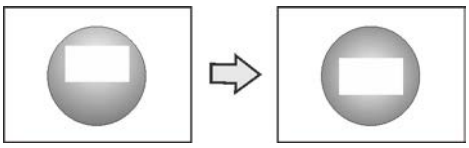
   c. See *Adjusting fold mirror* on page 40 if a corner or edge of an image is missing.

   d. See *Adjusting vertical boresight angle* on page 37 if the image cannot be focused uniformly on the screen with a focus adjustment.

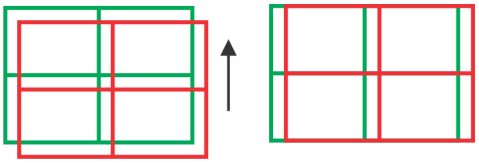
   e. See *Adjusting horizontal boresight* on page 38 if a large horizontal angular offset to the screen is required.

Aligning dual projector images

1. Stack the projectors. See *Stacking projectors* on page 15.
2. On the bottom projector, adjust the image to fit the screen. See *Adjusting the image to fit the screen on page 30*.
3. On both projectors, turn the lamp on and open the douser. See *Turning the lamp on* on page 29.
4. On the top projector, 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.

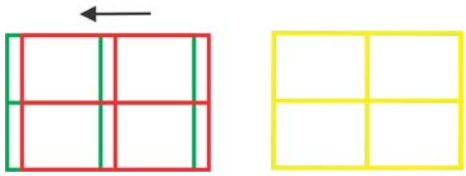


5. On the top projector, display the **DC2K Framing Green** test pattern. See *Turning a test pattern on or off* on page 75.
6. On the bottom projector, display the **DC2K Framing Red** test pattern. See pattern. See *Turning a test pattern on or off* on page 75.
7. Align the top projector image horizontally 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, complete one of these procedures:

   a. See *Correcting keystone effect* on page 34 if the image appears distorted and resembles a trapezoid.

   b. See *Correcting vignetting* on page 36 or *Aligning the lamp* on page 29 if the image is brighter at the center than it is at the sides.

   c. See *Adjusting fold mirror* on page 40 if a corner or edge of an image is missing.

   d. See *Adjusting vertical boresight angle* on page 37 if the image cannot be focused uniformly on the screen with a focus adjustment.

   e. See *Adjusting horizontal boresight* on page 38 if a large horizontal angular offset to the screen is required.

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

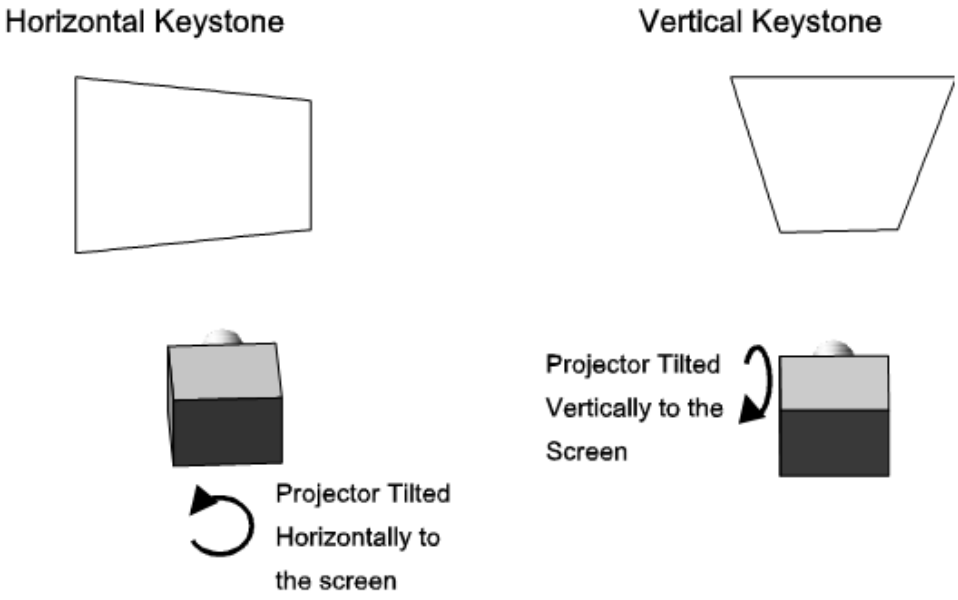
To play encrypted cinema content, an Integrated Media Block (IMB) is required. If you install the optional IMB, you can connect the projector to a network-attached storage (NAS) or direct attached storage (DAS) device.

Adjusting the Image

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

Correcting keystone effect

Keystone effect occurs when you project an image onto the screen at an angle and the projector is not centered on the screen. The image will appear distorted and resemble a trapezoid. This image identifies the different types of keystone effect:



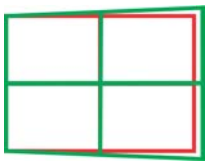
If the image suffers from slight keystone effect, it can be corrected with electronic cropping.

If the keystone effect is severe, you can unevenly adjust the feet to compensate for projector tilt. It is recommended that you use lens offset to align the center of the image to the center of the screen before you correct the keystone effect.

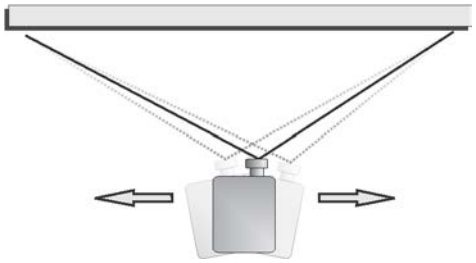
If one side of the image is longer than another, see *Adjusting tilt and level the projector on page 17*.

Correcting dual projector horizontal keystone

1. On both projectors, turn the lamp on and open the douser. See *Turning the lamp on* on page 29.
2. Align the dual projector images. See *Aligning dual projector images on page 32*.
3. On the top projector, display the **DC2K Framing Green** test pattern. See *Turning a test pattern on or off* on page 75.
4. On the bottom projector, display the **DC2K Framing Red** test pattern. See *Turning a test pattern on or off* on page 75.
5. Verify that both projectors are level. See *Adjusting tilt and level the projector on page 17*.
6. Identify which projector has the horizontal keystone issue. In this example, the top projector has the horizontal keystone issue:

   If both projectors have the horizontal keystone issue, correcting the image on the bottom projector should resolve the issue on both projectors.
7. On the top projector, remove the locking brackets from the projector feet.
8. Move the rear of the top projector to the right or left until the vertical lines are as equally offset as possible.

   
9. Reinstall the locking brackets removed in step 7.
10. On the projector touch panel controller (TPC), tap the **Lens Adjust** ( ) icon on the main screen and then tap the left ( ) or right ( ) arrow icons in the **Offset** area to bring the vertical lines closer together.
11. If required, on each projector, tap the Lens Adjust ( ) icon and then tap the left ( ) and right ( ) focus icons in the Focus area until both images are the same size and focused.

Correcting dual projector vertical keystone

1. On both projectors, turn the lamp on and open the douser. See *Turning the lamp on* on page 29.
2. Align the dual projector images. See *Aligning dual projector images on page 32*.
3. On the top projector, display the **DC2K Framing Green** test pattern. See *Turning a test pattern on or off* on page 75.
4. On the bottom projector, display the **DC2K Framing Red** test pattern. See *Turning a test pattern on or off* on page 75.
5. Identify which projector has the vertical keystone issue. In this example, the top projector has the vertical keystone issue:

   If both projectors have the horizontal keystone issue, correcting the image on the bottom projector should resolve the issue on both projectors.
6. On the top projector, remove the locking brackets from the projector feet.
7. Raise or lower the rear feet of the top projector until the projected images of both projectors are vertically aligned. The feet should be raised or lowered an equal amount.
8. Reinstall the locking brackets removed in step 6.
9. On the projector touch panel controller (TPC), tap the Lens Adjust ( ) icon on the main screen and then tap the forward ( ) or backward ( ) arrow icons in the Offset area to bring the horizontal lines closer together.
10. If required, on each projector, tap the Lens Adjust ( ) icon and then tap the left ( ) and right ( ) focus icons in the Focus area until both images are the same size and focused.

Correcting vignetting

The term vignetting applies to an image that is brighter at the center than it is at the sides. 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.

Adjusting vertical boresight angle

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

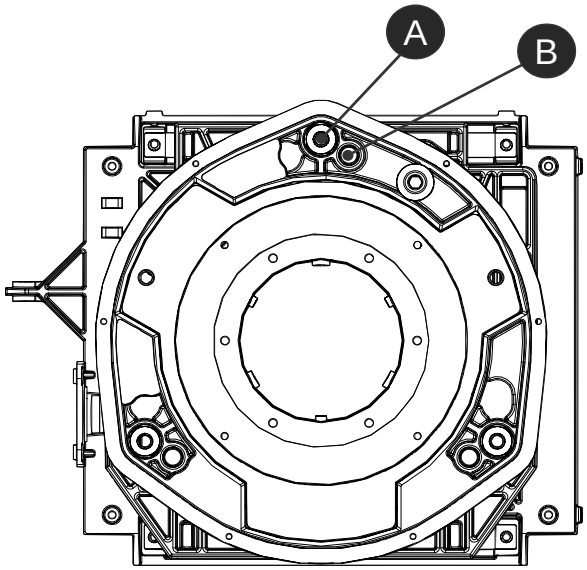
A boresight adjustment should only be made when the image cannot be focused uniformly on the screen by aligning the projector to the screen and focusing the lens. When adjusting boresight, you must maintain the boresight distance from the lens to the prism plane set by Christie. For example, when you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

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

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

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

1. Remove the lens surround.
2. Display the DC2K Framing2 test pattern:
   a. On the touch panel controller, tap the **Test Pattern** ( ) icon in the task bar.
   b. Tap **DC2K Framing 2**.
3. Loosen the set screw (B).



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

4. Turn the vertical cap screw (A) 1/8 of a turn counter-clockwise.
5. Adjust both left and right horizontal adjusters by half the number of turns, in the opposite direction of the vertical adjust. For example, if the vertical adjust cap screw was turned 1/8 of a

turn, the left and right horizontal cap screws should be turned 1/16 of a turn in the opposite direction.

6. Check the screen each time an adjustment is made. If the quality of the projected image has degraded, turn the vertical adjust cap screw 1/8 of turn clockwise. Ensure the left and right horizontal adjusters are adjusted equally in the opposite direction to correct axial focus. The 1/8 of a turn is a suggestion only and can be less if needed; however, it should never be exceeded. Always compensate both left and right horizontal adjustments according to the vertical adjustment.
7. Check the image after each adjustment. Continue to make adjustments until both top and bottom are equally sharp. To make sure the lens is in the same relative position, adjust the left and right horizontal adjusters in the opposite direction at the same time.
8. When the top and bottom of the image are equally in focus lock the set screw to hold it in position. Recheck the image.
9. If additional adjustment is required, see *Adjusting horizontal boresight* on page 38.
10. Replace the lens surround.

Adjusting horizontal boresight

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

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

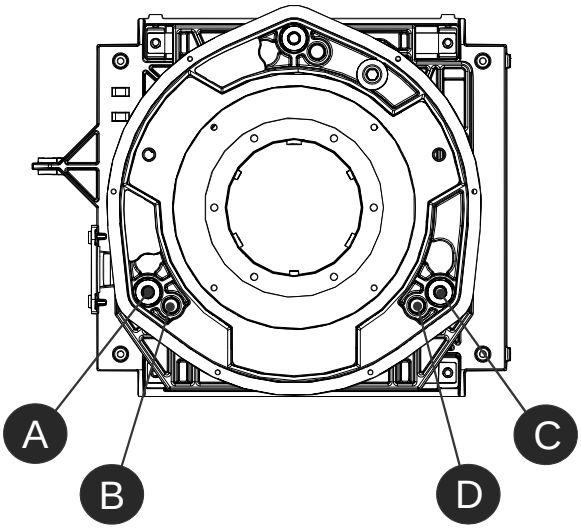
Caution! Failure to comply with the following could result in minor or moderate injury.

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

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

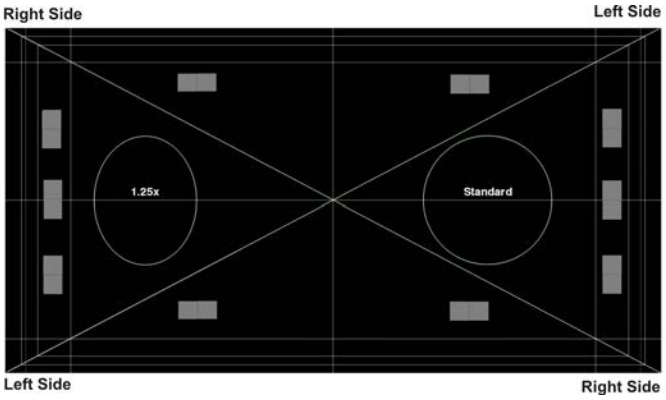
1. Remove the lens surround.
2. On the touch panel controller (TPC), tap the **Test Pattern** ( ) icon in the task bar.
3. Tap **All Test Patterns**.
4. Tap **DC2K Framing**.

5. Loosen the right boresight set screw (B).



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

6. Turn the right boresight cap screw (A) 1/16 of a turn clockwise.
7. Adjust the left boresight cap screw (C) equally in the opposite direction.
8. If the quality of the projected image has not improved, turn the right boresight cap screw 1/16 of turn counter-clockwise. Make sure the left adjuster is adjusted equally in the opposite direction.
9. Check the screen each time an adjustment is made. The right-side adjustments affect the top right and bottom left points on the screen. Once both cross hairs are in focus lock the set screw for right boresight.



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

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

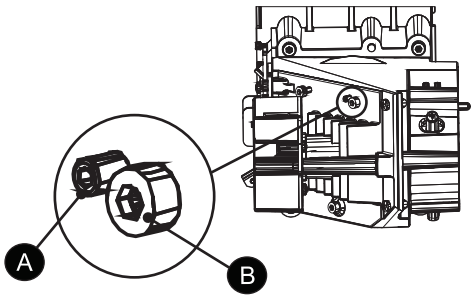
Adjusting DMD convergence

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

Adjusting fold mirror

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

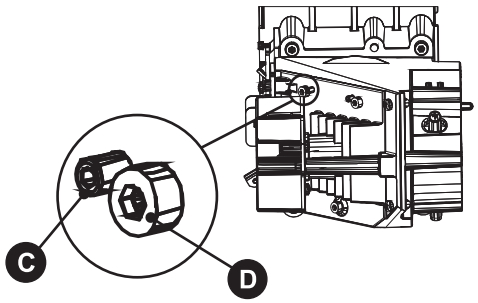
1. Remove the top lid and set it aside.
2. Display a full white test pattern:
   a. On the touch panel controller (TPC), tap the **Test Pattern** ( ) icon in the task bar.
   b. Tap **All Test Patterns**.
   c. Tap **RGB-12bit-Full Screen White**.
3. Insert a hex driver in the first set screw (A) and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



A	Set Screw (x2)
B	Cap Screw (x2)

4. Equally turn the set screw (A) and cap screw (B) in opposite directions until the black corner is removed.

5. If the black corner remains, insert a hex driver in the second set screw (C) and a hex driver in the second cap screw (D).



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

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

Color calibrating

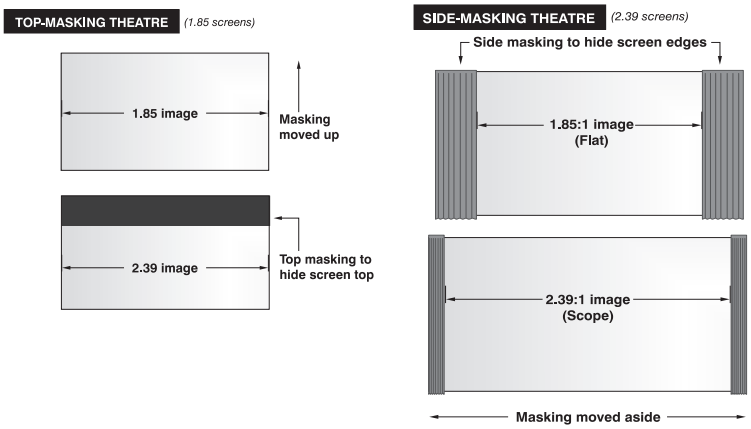
Create Measured Color Gamut Data (MCGD) files to correct on-screen colors. A colorimeter is required to complete this procedure. Measure the colors displayed on the screen from the center of the audience viewing location. See *Creating a MCGD file* on page 59.

Screen masking

You use masking to conceal the unused edges of a screen. These are the two most common types of screen masking:

- Top Masking – Movable flat black panels or curtains are installed along the top edge of the screen. You raise the curtain for flat images, and you lower the curtain for scope images.
- Side Masking – Movable flat black panels or curtains are installed on each side of the screen. You close the curtain for flat images, and open the curtain and zoom for scope images.

Typically, you install top and side masking to allow a greater range of adjustment.



Calibrating screen brightness (fL)

1. Turn the lamp 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.

Accessing the Projector and Running Diagnostics

This section describes how to access the projector and run projector diagnostic utilities.

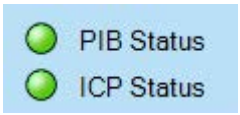
The touch panel controller

The touch panel controller (TPC) is a touch-sensitive screen that you use to control the projector. You can use the TPC to turn the projector and lamp on or off, select channels, and view status information. The TPC is mounted on the rear of the projector. You can tilt and turn the TPC to improve the viewing angle. Use the USB port on the side of the TPC to download log files and install software upgrades.

If the TPC fails or is disconnected, tap the emergency start button on the communications panel. This starts the projector, turns the lamp on, and opens the douser. When using the emergency start button, you cannot change channels.

Use the Main screen of the touch panel controller (TPC) to access power, lamp, douser, channel, and test pattern settings.

Control	Description
Status LED  Status Error Message 	Displays a green, yellow, or red LED. A green LED indicates that the projector is operating properly. If a monitored system falls below a normal reading, the LED is yellow or red. A yellow LED indicates a warning, and a red LED indicates a critical error that you must correct. Click the status LED to open the Status window and resolve issues.
Channel Buttons 	Displays custom projector settings.
All Channels Button	Displays 64 saved channels.
Power Power OFF Power ON  	Turns the projector on or off. Press off to place the projector in stand-by mode. To prevent accidental activation, you must press and hold the on or off buttons. A message displays in the title bar when the projector turns on or off.
Lamp Lamp OFF Lamp ON  	Turns the lamp on or off. To prevent accidental activation, you must press and hold the on or off buttons. A boot delay occurs if you select lamp on before pressing power on.

Control	Description
Douser Douser Closed Douser Opened 	Opens or closes the douser.
Lens Adjust 	Controls the Intelligent Lens System (ILS) lens motors. Tap to open the ILS File Setup window.
Douser Disable Pattern Select Test 	Selects or disables test patterns. Tap Select Test Pattern to open the Preferred Test Patterns window.
Operational Status 	Displays the status of projector functions including the Projector Intelligence Board (PIB), the Integrated Cinema Processor Board (ICP), Integrated Media Block (IMB), Standby Power, Main Power, Run, and Marriage. A green LED indicates the system is functioning correctly. A red LED indicates a critical error that you must correct. Click the status LED to open the Status window and resolve issues.
Menu Button  Status  Select Test Pattern 	Tap the **Menu** button to access projector menus. These icons change as these elements update from changes on the projector. The current time also displays. Tap the **Select Test Pattern** icon to open the **Preferred Test Patterns** window and select a test pattern to display.

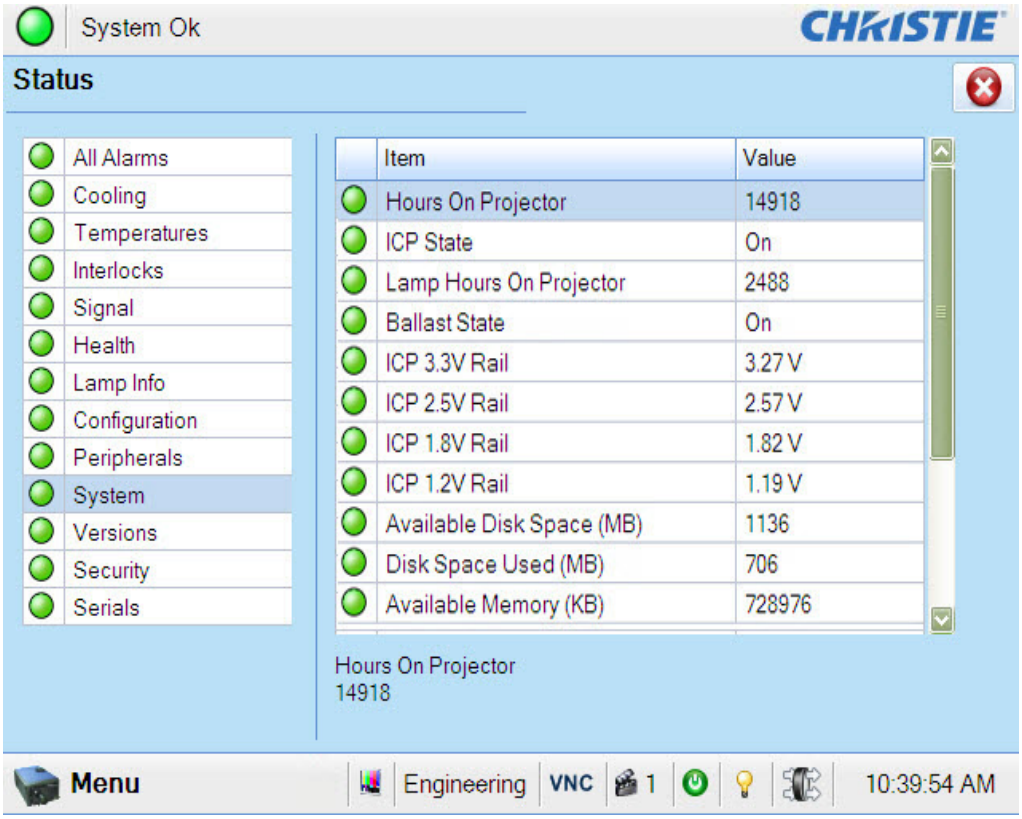
Logging on to the projector

1. Tap **Menu** > **Login**.
2. Select a user name in the **Username** list.
3. Enter the password in the **Password** field and then tap **Login**.

Viewing the status of projector components

Tap **Menu** > **Status**.

The Status window displays information about the status of projector components. The right pane lists projector components and their status. The left pane displays detailed information about individual projector items.



A green circle indicates the item is functioning correctly. A yellow circle is a warning that a projector item requires attention. A red LED indicates a projector item requires immediate attention.

If the **Item** or **Value** descriptions are too long for the cell, click the description to view the full description at the bottom of the window. To adjust the width of a column in the left pane, tap and drag the column border. When you close the Status window, the column widths return to their default size.

Running the projector interrogator

Image disruption can occur if you run the interrogator during a show.

The interrogator captures diagnostic information that you can use to assist Christie service personnel diagnose and correct projector issues. To access the Interrogator menu, you need Operator, Administrator, or Service permissions.

When you run the interrogator, you cannot modify projector settings.

Log files are compressed into a 7z or 7-zip file format. A tool for opening these archives can be downloaded from http://www.7-zip.org.

1. On the touch Tap **Menu** > **Diagnostics** > **Interrogator**.
2. Tap **Basic Mode**. A basic projector interrogation returns only projector log files.

   - or -

   Tap **Enhanced Mode**. An enhanced interrogation returns projector log files and registered batch files.
3. Tap **Yes**.
4. Insert a USB flash drive in the USB port on the side of the touch panel controller (TPC).
5. Tap **Download to USB**.

Retrieving system logs

System logs can help you identify and correct projector issues. To retrieve system logs you need Operator, Administrator, or Service permissions.

1. Tap **Menu** > **Diagnostics** > **System Logs**.
2. Select a start date for the logs in the **From** list.
3. Select an end date for the logs in the **To** list.
4. Select a log type in the **Type** list.
5. Select the severity type in the **Severity** list.
6. Tap **Retrieve Logs**.
7. To download the log files to a USB:
   a. Insert a USB flash drive in the USB port on the side of the touch panel controller (TPC).
   b. Tap **Download to USB**.

Running a server test

You can run a server test to search the subtitle and metadata .xml files for errors in content or in transmission from the server. You cannot use a server test to turn metadata or subtitling off or on.

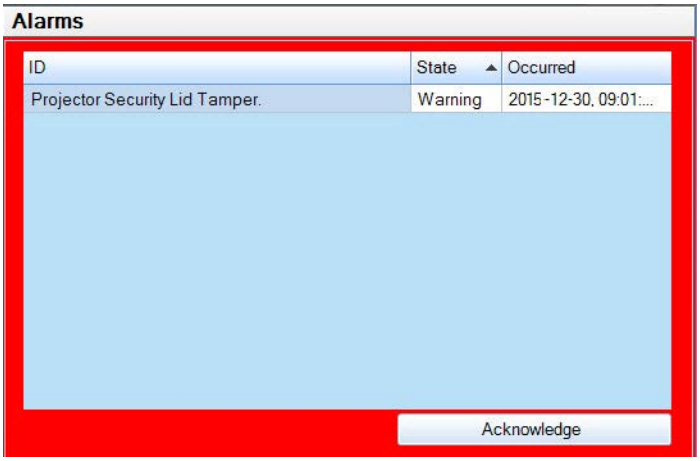
1. Tap **Menu** > **Diagnostics** > **Server Test**.
2. Enter the location of the metafile in the **Meta File URI** field.

   - or -

   Enter the location of the subtitle file in the **Subtitling URI** field.

Responding to alarms

When an alarm occurs, an Alarms window with a red border appears with a description of the alarm condition, state, and time and date of the alarm. The window only displays alarms you have not previously acknowledged. To acknowledge an alarm and remove it from the Alarms window, click **Acknowledge**. To view all alarms, tap **Menu** > **Status** > **All Alarms** in the left pane.



Turning the projector off

1. On the touch panel controller (TPC), tap and hold the light bulb ( ) icon to turn the lamp off.
2. On the TPC, tap and hold the red power icon. The projector enters a cool down mode and the fans and electronics stay on for 10 minutes. After this cool down period, the projector enters standby mode.
3. If you are servicing the projector, or removing the protective cover, disconnect AC and turn the breaker OFF.

Managing the DLP

This section provides procedures for managing the Integrated Cinema Processor (ICP) electronics. To access the DLP menus, you need Administrator or Service permissions

Stopping DLP communication

It is recommended that you stop DLP communication when you perform DLP maintenance.

1. Tap **Menu** > **Diagnostics** > **DLP Management**.
2. Tap **Stop DLP Communication**.
3. Tap **Acknowledge**.

Resetting the DLP

To remove image artifacts from the screen, try resetting the DLP before restarting the projector. Do not reset the DLP if content is playing.

1. Tap **Menu** > **Diagnostics** > **DLP Management**.
2. Tap **Reset DLP**.
3. Tap **Yes**.
4. Tap **Acknowledge** if an alarm appears.

Running a DLP self test

Run a DLP self test to test the functionality of the Integrated Cinema Processor (ICP) and DLP.

1. Tap **Menu** > **Diagnostics** > **DLP Management**.
2. Tap **DLP Self Test**.
3. Tap **Yes**.
4. Tap **Clear Results** to close the **Results** pane.

Downloading an ICP certificate

1. Insert a USB flash drive in the USB port on the side of the touch panel controller (TPC). If you do not insert a USB flash drive, the ICP certificate is saved to the FTP root directory.
2. Tap **Menu** > **Diagnostics** > **DLP Management**.
3. Tap **Download ICP Certificate**.
4. Tap **Close**.

Disabling the ICP signature test

Error messages that appear when the ICP is turned on and the ICP signature test is run can disrupt projector network monitoring. Use this procedure to disable the Signature Test.

1. Tap **Menu** > **Diagnostics** > **DLP Management**.
2. Tap **Bypass Signature Test**.
3. Tap **Yes**.

   To re-enable the ICP signature test, clear the **Bypass Signature Test** checkbox.

Managing Lamp Information

Creating a new lamp file

1. Tap **Menu** > **Advanced Setup** > **Lamp Power/LiteLOC Setup**.
2. Complete these fields:

Field	Description
Power%	The percentage of power to supply to the lamp.
Enable LiteLOC™	Enables or disables LiteLOC™. LiteLOC™ is a power control algorithm that increases the power level to maintain lamp brightness as the lamp ages.
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.
Amps	Lamp current in amperes.
Volts	Lamp voltage in volts.
Watts	Lamp power in watts.
~fL or ~cd/m^2	Approximate Foot Lamberts reading on the light sensor. This assumes a calibration was performed.
Hours	Number of hours the current lamp has operated.
Intensity	The current light sensor reading in arbitrary units-of -measure and does not represent actual lumens or fL.

3. Tap **Save As**.
4. Enter a name for the lamp file in the **Filename** field.
5. Tap **OK**.

Modifying an existing lamp file

1. Tap **Menu** > **Advanced Setup** > **Lamp Power/LiteLOC Setup**.
2. Select a lamp file in the **Current Lamp File** list.
3. Modify the lamp file settings.
4. Tap **Save**. If you want to revert your changes, tap **Revert** before you tap **Save**.

Enabling or disabling LiteLOC on a lamp file

LiteLOC™ is a power control algorithm that increases the power level to maintain lamp brightness as the lamp ages.

1. Tap **Menu** > **Advanced Setup** > **Lamp Power/LiteLOC Setup**.
2. Select a lamp file in the **Current Lamp File** list.
3. Tap **Enable LiteLOC** to enable LiteLOC.

   - or -

   Clear the **Enable LiteLOC** check box to disable LiteLOC.
4. Tap **Save**.

Adjusting lamp power

1. Tap **Menu** > **Advanced Setup** > **Lamp Power/LiteLOC Setup**.
2. Increase or decrease the **Power %** value.
3. Tap **Set Target**.
4. Select **Enable LiteLOC™.**

Changing the lamp power percentage

Entering a new Lamp Power percentage temporarily disables LiteLOC settings.

1. Tap **Menu** > **Advanced Setup** > **Lamp Power/LiteLOC Setup**.
2. Increase or decrease the **Power %** value.

Viewing lamp information

To view information about the lamps previously installed in the projector:

Tap **Menu** > **Advanced Setup** > **Lamp History**.

Receiving an alarm when a lamp reaches its expiry date

To receive an alarm when the lamp reaches its operational limit:

1. Tap **Menu** > **Administrator Setup** > **Preferences**.
2. Tap **Lamp Expiry** in the **Alarm Triggers** area.

Adding a lamp to the Lamp History

You cannot remove or modify a lamp after you add it.

1. Tap **Menu** > **Advanced Setup** > **Lamp History**.
2. Tap **Add Lamp**.
3. 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.
Hours Used	The number of hours the lamp has operated before installation.

4. Tap **Save**.

Verifying current lamp intensity

Tap **Menu** > **Advanced Setup** > **Lamp Power/LiteLOC Setup**.
The current light intensity value appears in the **Intensity** field.

Working with Channels

Create channels to store customized projector settings for different inputs. You can create a maximum of 64 channels.

Creating a new channel

You need Advanced, Administrator, or Service permissions to create or modify channel settings. You can create a maximum of 64 channels.

1. Tap **Menu** > **Channel Setup**.
2. Select a channel in the **Channel Name** list.
3. Tap the **Launch Dialog** () icon.
4. Enter a name for the channel and tap **Enter**.
5. Complete these fields on the Config 1 screen:

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

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

Field	Description
Measured Color	The Measured Color Gamut Data (MCGD) file used to calculate target color processing.
Target Color	The Target Color Gamut Data (TCGD) value. This option is not available when **Use PCF** is selected in the Config 1 screen.
Color Space	The method of color decoding for the current source. The default is YCbCr for all DVI sources. The default for all cinema sources is Unity RGB. This option is not available when **Use PCF** is selected.
Gamma	The gamma correction required for the proper tonal range of the source material. This option is not available when **Use PCF** is selected.
LUT_CLUT	Applies a 3D color cube for increased color accuracy. This option is not available when **Use PCF** is selected.
Scan Type	The video scan type. The default is **Progressive**.
Automatic Scan Type Detection	Automatically performs scan type detection. This feature is supported for PIBS1 inputs only.
Use PCT	Applies Christie Pureformity Color Technology (PCT) to the channel.
PCT File	Identifies the Christie Pureformity Color Technology (PCT) file associated with the channel.
HDMI EDID Type	Identifies the extended display identification data (EDID) type used by the channel when playing content from a device connected to the HDMI A/LEFT or HDMI B/RIGHT ports.
Enable 3D Dual Measured Color	Enables 3D Dual Measured Color on the channel. Select the color files for the left and right eyes.

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

Field	Description
Enable 3D	Enables 3D.
3D Test Patterns	Displays 3D test patterns.
3D Sync Input Mode	Specifies whether a specific frame of input data has left eye or right eye data. Select Use White Line Code (true and inverted) if you are using a single 3D input signal in which an embedded white line at the bottom of each frame identifies left and right, and an additional separate 3D stereo sync input at the GPIO port is not present. The bottom row of the left-eye sub-field should be pure white for the left-most 25% of the pixel row and pure black for the remainder of the row. The bottom row of the right-eye sub-field should be pure white for the left-most 75% of the pixel row and pure black for the remainder of the row. Select Use Line Interleave for 3D source data only. When specified, the ICP will de-interleave each line into the left image or right image in memory as specified. Line interleave can be used with PsF 3D data (left and right data for one field, then left and right data for second field).

Field	Description
L/R Display Reference	Specifies which frame of eye data to display during a specific display frame. This signal is referenced to the display frame rate which is specified by the Frame Rate N:M.
Frame Rate N:M	Sets how many frames to display per number of frames that form one complete image. Increase the display frame rate to reduce flicker from your source(s).
L/R Display Sequence	Defines the frame order (L-R or R-L) required for 3D perspective. This option only has meaning when the Frame Rate factor M is equal to 2. For this case, two input frames of data are required to constitute a complete frame of image data. This parameter tells the system which frames go together to make a complete image. When using Line Interleave as the 3D Sync Input Mode, ensure that Left (L1R1 L2R2) is selected.
3D Sync Polarity	Keeps 3D stereo sync output the same as input (true) or reversed (inverted). **True**: 3D L/R sync output from GPO will match L/R sync input. **Inverted**: 3D L/R sync output from GPO will be the opposite of sync input (left = right, right = left).
Dark Time	Creates a blank time interval between left and right frames to allow for LCD shutter glasses, Z screen, or rotating 3D wheel to synchronize the output. See Dark Time and Output Delay Notes below. Values between 0 and 65535 are accepted. Tap the **Launch Dialog** (---) icon to enter the dark time value.
Output Delay	The non-image time in Microseconds (µ). Offset 3D stereo sync output in relation to dark time interval. Acceptable values are between -32768 and 32767 are accepted where a positive offset = delay and negative offset = start early. Tap **Launch Dialog** to enter the output delay value.
Phase Delay	The degree of reference between the left and right sync output. Values between -180 and 180 are accepted. Tap **Launch Dialog** to enter the phase delay value.

8. Tap **Activate** to activate the channel.

Activating a channel

1. Tap **Menu** > **Channel Setup**.
2. Select a channel in the **Channel Name** list.
3. Tap **Activate**.

Restoring default channel settings

1. Tap **Menu** > **Channel Setup**.
2. Select a channel in the **Channel Name** list.
3. Tap **Defaults**.

4. Tap **Default Current Channel** to restore the default settings to the selected channel.

   - or -

   Tap **Default All Channels** to restore the default settings to all channels.

5. Tap **OK**.

Changing the channel icon

1. Tap **Menu** > **Channel Setup**.
2. Select a channel in the **Channel Name** list.
3. Tap **Icon**.
4. Tap an **Icon**.
5. Tap **OK**.

Adding or removing preferred channels from the Preferred Channels pane

You need Administrator or Service permissions to complete this procedure.

Use this procedure to add or remove channels from the Preferred Channels pane of the primary touch panel controller window.

1. Tap **Menu** >**Administrator Setup** > **Preferred Channel Setup**.
2. To add a channel to the Preferred Channels pane, tap and drag a channel from the **All Channels** list to the **Selected Channel Buttons (Drag and Drop)** pane.
3. To remove a channel from the Preferred Channels pane, tap and drag a channel from the **Selected Channel Buttons (Drag and Drop)** pane to the recycle bin in the bottom right corner.

Managing Projector Setting Files

Creating a source file

Create source files to store resolution, offset, and aspect ratio settings for input devices.

1. Tap **Menu** > **Advanced Setup** > **Source File Setup**.
2. Tap **Save As**.
3. Enter a name for the source file in the **Filename** field.
4. Tap **OK**.
5. Enter values in these areas:

Area	Description
Resolution	The X and Y resolution of the incoming signal. For example, 2048 (X) and 858 (Y) or 1920 (X) and 1080 (Y). The resolution must match the incoming signal format.
Offset	The amount of incoming data to discard. Set the values to zero to process all incoming data. The allowable X range is -4096 to 4096 pixels and Y range of -2160 to 2160 pixels.
Aspect Ratio	The aspect ratio for the incoming signal. The allowable range is 0 to 7.99.

6. Tap **Save**.

Modifying a source file

1. Tap **Menu** > **Advanced Setup** > **Source File Setup**.
2. Select a source file in the **Current Source File** list.
3. Modify the **Resolution**, **Offset**, or **Aspect Ratio** values.
4. Tap **Save**.

Creating a screen file

Use screen files to define the size of the display panel and image cropping. You can assign the same screen file to multiple input devices.

1. Tap **Menu** > **Advanced Setup** > **Screen File Setup**.
2. Tap **Save As**.
3. Enter a name for the source file in the **Filename** field.
4. Tap **OK**.
5. Complete these fields:

Field	Description
Letter Box	All image data is displayed and the aspect ratio is maintained.
Lens Factor	The amount to stretch an image horizontally. Allowable values can range from 0.00 to 7.99. Enter 1 if you are not using an anamorphic lens.
Presentation	The size and location of the image. By default, the projector uses a 2048 x 1080 panel.
Cropping	Hides unwanted image data.

6. Tap **Save**.

Modifying a screen file

1. Tap **Menu** > **Advanced Setup** > **Screen File Setup**.
2. Select a screen file in the **Current Screen File** list.
3. Modify the screen file settings.
4. Tap **Save**.

Creating a MCGD file

Create Measured Color Gamut Data (MCGD) files to correct on-screen colors. A colorimeter is required to complete this procedure.

1. Turn the lamp on and allow it to operate for 20 minutes.
2. Tap **Menu** > **Advanced Setup** > **MCGD File Setup**.
3. Tap **Save As**.
4. Enter a name for the MCGD file in the **Filename** field and then tap **OK**.
5. Tap the option button in the red area of the chromaticity image to display the red test pattern.
6. Measure the red chromaticity with the colorimeter.

7. Record the red chromaticity value.
8. Repeat steps 5 to 7 for the green, blue, white, and black chromaticity measurements. Select the test pattern that matches the color you are measuring.
9. Enter the chromaticity measurements you recorded in step 7 in the red, green, blue, white, and black **x** and **y** fields.
10. If the MCGD file will be associated with a 3D channel, tap **Enable 3D** and select a frame rate in the **Frame Rate N:M** list.
11. Tap **Save**.

Modifying a MCGD file

1. Tap **Menu** > **Advanced Setup** > **MCGD File Setup**.
2. Select a MCGD file in the **Current Measured (MCGD) File** list.
3. Modify the MCGD file settings.
4. Tap **Save**.

Creating a TCGD file

Typically, Target Color Gamut Data (TCGD) file settings are defined by your content provider.

1. Turn the lamp on and allow it to operate for 20 minutes.
2. Tap **Menu** > **Advanced Setup** > **TCGD File Setup**.
3. Tap **Save As**.
4. Enter a name for the TCGD file in the **Filename** field.
5. Tap **OK**.
6. Tap **Display Test Pattern**.
7. Tap the option button in the red area of the chromaticity image to display the red test pattern.
8. Measure the red chromaticity with the colorimeter.
9. Enter the red chromaticity values in the **x**, **y**, and **Gain** fields.
10. Repeat steps 6 to 8 for the magenta, blue, white, yellow, and green chromaticity measurements. Select the test pattern that matches the color you are measuring.
11. Tap **Save**.

Modifying a TCGD file

1. Tap **Menu** > **Advanced Setup** > **TCGD File Setup**.
2. Select a TCGD file in the **Current Target (TCGD) File** list.

3. Modify the TCGD file settings.
4. Tap **Save**.

Creating a new ILS file

1. Tap **Menu** > **Advanced Setup** > **ILS File Setup**
2. Tap **Save As**.
3. Enter a name for the ILS file in the **Filename** field.
4. Tap **OK**.
5. Tap the left or right icons in the **Focus** area to adjust the focus of the image on the screen.
6. Tap the positive or negative icons in the **Zoom** area to adjust the image focus.
7. Tap the forward, backward, left, or right arrow icons in the **Offset** area to move the position of the image on the screen.
8. Tap **Save**.

Editing an existing ILS file

1. Tap **Menu** > **Advanced Setup** > **ILS File Setup**.
2. Select an ILS file in the **Current ILS File** list.
3. Tap the left or right icons in the **Focus** area to adjust the focus of the image on the screen.
4. Tap the positive or negative icons in the **Zoom** area to adjust the image focus.
5. Tap the forward, backward, left, or right arrow icons in the **Offset** area to move the position of the image on the screen.
6. Tap **Save**.

Enabling automatic ILS adjustment on a channel

1. On the main screen of the TPC, tap a channel in the **Preferred Channels** pane.
2. Tap the **Lens Adjust** icon.
3. Select **Enable Automatic ILS**.
4. Tap **OK**.

Resetting ILS file settings

You must reset the Intelligent Lens System (ILS) when you move the lens, you have manually adjusted horizontal or vertical offset, focus, or zoom or when a power outage occurs during a channel change.

1. Tap **Menu** > **Advanced Setup** > **ILS File Setup**.
2. Select an ILS file in the **Current ILS File** list.
3. Tap **Quick Reset**.
4. Tap **Yes**.

Adding a lens serial number

1. Tap **Menu** > **Advanced Setup** > **Lens Setup**.
2. Select a lens in the **Primary Lens** list.
3. Tap the **Launch Dialog** (...) icon in the **Serial Number** field.
4. Enter the serial number for the lens and then tap **Enter**.
5. Tap **Save**.

Enabling automatic ILS on a lens

Use this procedure to move the lens to a position specified by the channel settings.

1. Tap **Menu** > **Advanced Setup** > **Lens Setup**.
2. Select a lens in the **Primary Lens** list.
3. Select **Enable Automatic ILS** in the **Intelligent Lens System** area.

Resetting the lens position on projector startup

1. Tap **Menu** > **Advanced Setup** > **Lens Setup**.
2. Select a lens in the **Primary Lens** list.
3. Select **Reset on Startup** in the **Intelligent Lens System** area.

Completing a full lens calibration

1. Tap **Menu** > **Advanced Setup** > **Lens Setup**.
2. Select a lens in the **Primary Lens** list.
3. Tap **Full Calibration** in the **Intelligent Lens System** area.
4. Tap **Yes**.

Resetting the ILS and the lens position

1. Tap **Menu** > **Advanced Setup** > **Lens Setup**.

2. Select a lens in the **Primary Lens** list.
3. Tap **Quick Reset** in the **Intelligent Lens System** area.
4. Tap **Yes**.

Working with the Scheduler

Use the scheduler to schedule when the projector turns on or off.

Scheduling the projector to turn on or off

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu** > **Administrator Setup** > **Scheduler**.
2. Tap **Enable Scheduler**.
3. Tap and drag the scroll bar to view the available dates.
4. Tap a square below the date and next to the time that you want the projector to turn on or off.
5. Tap **New**.
6. Tap **Power Off** to turn the projector off at a specific date and time,

   - or -

   Tap **Power On** to turn the projector on at a specific date and time.
7. Tap **Start** to enable or disable the scheduled event. New scheduled events are enabled by default.
8. Select a date and a time for the scheduled event.
9. Tap **Weekly** to have the scheduled event occur weekly and then select the days that you want the event to occur.

   - or -

   Tap **Once** to have the scheduled event occur once at a specific date and time.
10. Tap **Expire** and select the date you want a weekly event to expire.
11. Tap **Save**.
12. Tap **OK** to return to the calendar view.

Editing a scheduled event

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu** > **Administrator Setup** > **Scheduler**.
2. Tap and drag the scroll bar to view the available dates.
3. Tap the event you want to edit.
4. Tap **Edit**.
5. Adjust the settings for the event.
6. Tap **Save**.
7. Tap **OK** to return to the calendar view.

Deleting a scheduled event

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu** > **Administrator Setup** > **Scheduler**.
2. Tap and drag the scroll bar to view the available dates.
3. Tap the event you want to delete.
4. Tap **Delete**.
5. Tap **OK** to return to the calendar view.

Deleting all scheduled events

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu** > **Administrator Setup** > **Scheduler**.
2. Tap **Delete All**.
3. Tap **Yes**.

Turning off the scheduler

You need Administrator or Service permissions to complete this procedure.

1. Tap **Administrator Setup** > **Scheduler**.
2. Tap to clear the **Enable Scheduler** checkbox.

Viewing and Modifying Projector Settings

Use the procedures in this section to modify projector settings including the touch panel controller (TPC) language, TPC screen brightness, and time settings.

Setting projector and TPC preferences

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu** > **Administrator Setup** > **Preferences**.
2. Adjust these settings:

Field	Description
Temperature Units	Display temperature information in Celsius or Fahrenheit.
Image Orientation	The direction of the on screen image.
Luminance Units	Display luminance information in Foot Lamberts or Candela.
Language	The language for the TPC and online help.
Beep on Screen Press	When selected, a sound plays when you tap the TPC screen.
Enable Screen Saver / Screen Saver Delay	Enables a screen saver and determines the frequency that the screen saver appears.
Over Temperature, Fan Failure, Lamp Rotation, Lamp Expiry,	Opens an alarm window when a pre-defined event occurs.
Brightness	Adjusts the brightness of the touch screen display.
Calibrate Screen	Opens the Calibrate window and starts the TPC calibration.

Adjusting projector time settings

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu** > **Administrator Setup** > **Time Setup**.

2. Adjust these settings:

Field	Description
Time Zone	The time zone where the projector is installed.
24 Hour Time	Displays time in a 24-hour format.
Adjust for Daylight Savings Time	Automatically adjusts the time for daylight savings.
Time Offset	Increases or decreases the projector time.
Apply Time Adjustment	Applies time adjustment settings.

Modifying projector communication settings

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu** > **Administrator Setup** > **Communications Configuration**.
2. 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.
Ethernet Access	Grants access to Ethernet connections.

Adding a network device

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu** > **Administrator Setup** > **Network Devices Setup**.

2. Tap the check box. If the check box is not selected, the device does not appear in the **Network Devices** menu.
3. Tap the **Launch Dialog** ( ) icon in the **Device Name** field and enter a name for the network device.
4. Tap **Enter**.
5. Tap the **Launch Dialog** icon in the **URL** field and enter the URL for the network device.
6. Tap **Enter**.

Accessing a network device

Tap **Menu** > **Network Devices** > **Christie ACT**

To interact with the device tap  in the top right corner of the window.

Calibrating the internal light meter

To calibrate the internal light meter to Foot Lamberts you use the Foot Lamberts Calibration wizard. If content is playing when you run the Foot Lamberts Calibration wizard, playback stops. To run the Foot Lamberts Calibration wizard you need Administrator or Service permissions.

1. Tap **Menu** > **Administrator Setup** > **Foot Lamberts Calibration**.
2. Tap **Next** and complete the Foot Lamberts Calibration wizard.

Viewing the Microsoft Windows Task Manager

You use the Microsoft Task Manager to view information about programs or processes running on your projector. The Task Manager also provides performance measures for processes.

1. Tap **Menu** > **Service Setup** > **System Access**.
2. Tap **Task Manager**.
3. Tap **OK**.

Viewing the Microsoft Windows Computer Management console

You use the Microsoft Windows Computer Management console to manage local or remote computer settings.

1. Tap **Menu** > **Service Setup** > **System Access**.
2. Tap **Computer Management**.
3. Tap **OK**.

Viewing Microsoft Windows Explorer

Microsoft Windows Explorer displays the hierarchical structure of files, folders, and drives on your projector.

1. Tap **Menu** > **Service Setup** > **System Access**.
2. Tap **Windows Explorer**.
3. Tap **OK**.

Viewing the Microsoft Network Connections window

Use the Microsoft Network Connections to view and modify network connections.

1. Tap **Menu** > **Service Setup** > **System Access**.
2. Tap **Network Connections**.
3. Tap **OK**.

Viewing projector information

The About window provides projector information including the serial number, the current software version, the Digital Light Processing (DLP) version, the lens and lamp type.

Tap **Menu** > **About**.

Recording the lens serial number

1. Tap **Menu** > **Advanced Setup** > **Lens Setup**.
2. Select a lens type in the **Primary Lens** list.
3. Tap the **Launch Dialog** () icon and enter the lens serial number.
4. Tap **Enter**.
5. Tap **Save**.

Managing User Accounts

Interpreting user access permissions

This table lists the touch panel controller (TPC) permissions:

Permission	Description
Status	Can view basic projector status, diagnostic information and software version information. This is the default level for Serial Communication sessions.
Operator	Can activate channels and test patterns, view detailed diagnostic logs for in-depth troubleshooting and view server errors. This is the default level at the TPC.
Advanced	Can define all display setups such as source resolution, aspect ratio, image cropping, and color gamut information, optimize light output, record lamp changes, and define setup files as selectable choices for processing a variety of incoming signals.
Administrator	Can perform screen Foot Lambert calibration, define Ethernet settings (IP network address), restore backup files, and upgrade the system software. Administrators can add users and set user access rights from its own level and below only.
Service	Can access all windows on the TPC, except marriage.
Marriage	Can access all windows on the TPC, including marriage.

Adding a user account

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu** > **Administrator Setup** > **User Accounts**.
2. Tap **Add**.
3. Tap the **Launch Dialog** (---) icon in the **Username** field and enter the user name.
4. Tap **Enter**.
5. Repeat steps 3 and 4 for the **Password** and **Confirm Password** fields.
6. Select access permissions for the user in the **Permissions** list.
7. Tap **Accept**.

Changing a user account password or permissions

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu** > **Administrator Setup** > **User Accounts**.
2. Tap a user name in the **Username** list.
3. Tap **Edit**.
4. Change the password or the access permissions.
5. Tap **Accept**.

Deleting a user account

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu** > **Administrator Setup** > **User Accounts**.
2. Tap a user name in the **Username** list.
3. Tap **Delete**.
4. Tap **Yes**.

Backing up, Restoring, and Upgrading Projector Files

Adding an upgrade file

You need Administrator or Service permissions to complete this procedure.

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

Removing an upgrade file

You need Administrator or Service permissions to complete this procedure.

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

Installing an upgrade

You need Administrator or Service permissions to complete this procedure.

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

5. Select one of these options:

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

6. Tap **Next**.

Backing up projector settings and information

You need Service permissions to complete this procedure.

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

Restoring a file

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

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

Restoring factory default settings

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

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

Moving files to the projector

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

Deleting projector files

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

Test Patterns

Adding or removing test patterns from the preferred test patterns pane

You need Administrator or Service permissions to complete this procedure.

1. Tap **Menu** > **Administrator Setup** > **Preferred Test Pattern Setup**.
2. 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 (Drag and Drop)** pane.
3. To remove a test pattern from the Preferred Test Pattern pane, tap and drag a test pattern from the **User Selected (Drag and Drop)** pane to the recycle bin in the bottom right corner.

Turning a test pattern on or off

1. Tap the **Test Pattern** () icon in the task bar.
2. Tap **All Test Patterns**.
3. Tap a test pattern in the Preferred Test Patterns pane to turn it on.
4. Tap **Test Pattern Off** to turn the test pattern off.

Displaying a full screen test pattern

1. Tap the **Test Pattern** () icon in the task bar.
2. Tap **All Test Patterns**.
3. Double-tap a test pattern in the Preferred Test Patterns pane to turn it on.
4. Tap **Full Screen (Ignore screen file settings)**.

Viewing 3D Content

This section provides information and procedures for setting up and managing 3D presentations.

Display requirements

To display 3D images with the CP2208 projector, you require these items:

- A 3D hardware system:
  - Pi-Cell polarizer for display on a screen that has a silver polarization-preserving surface for use with passive glasses (RealD).
  - Rotating polarizing wheel (external) with passive circular polarizing glasses (MasterImage). Requires a silver screen.
  - IR emitter for controlling the left eye/right eye gating (switching) of active glasses (Xpand).
  - Dual projector 3D - passive glasses (circular or linear). Requires a silver screen.
- A 3D connection cable.
- Power supply for your synchronization output device. The 3D sync port can power output devices.

3D sync terminal pin map

The 3D Sync terminal is a 15-pin D-sub connector (female) located on the projector communications panel. This table lists the control functions available through the 3D connector.

Pin	Signal name	Direction	Description
1	+12V	Out	Power to 3D device. Maximum 1A (total between both +12V pins).
2	GND	/	Ground
3	GND	/	Ground
4	RS232_RX	In	Data to projector from 3D device. 1200 Baud, 8 bits, no parity. Currently unsupported.
5	RS232_TX	Out	Data to projector from 3D device. 1200 Baud, 8 bits, no parity. Currently unsupported.

Pin	Signal name	Direction	Description
6	CONN_3D_MODE+	Out	SYNC from projector. To projector GPO collector. Compatible with current projector GPIO requirements and restrictions. (24VDC max, 50mA max) 3D ON = Hi logic level = O/P transistor ON 3D OFF = Low logic level = O/P transistor OFF
7	CONN_SYNC+	Out	SYNC from projector. To projector GPO collector. Compatible with current projector GPIO requirements and restrictions. (24VDC max, 50mA max)
8	3D_INPUT_REFRERENCE+	In	3D L/R Input Reference (P) (Voltage Limit: 2 VDC to 12VDC)
9	+12V	Out	Power to 3D system. Maximum 1A (Total between both +12V pins)
10	3D_INPUT_REFRERENCE-	In	3D L/R Input Reference (N) (Voltage limit: 1.4VDC to 12VDC)
11	3D_DISPLAY_REFERENCE+	In	3D L/R Input Reference (P) (Voltage limit: 1.4VDC to 12VDC)
12	3D_DISPLAY_REFERENCE-	In	3D L/R Input Reference (P) (Voltage limit: 1.4VDC to 12VDC)
13	CONN_3D_MODE-	Out	3D mode state from projector. From projector GPO emitter. Compatible with current projector GPIO requirements and restrictions. (24VDC max, 50mA max)
14	CONN_SYNC-	Out	SYNC from projector. From projector GPO emitter. Compatible with current projector GPIO requirements and restrictions. (24DC max, 50mA max)
15	Not connected		

Setting up hardware

Use an infrared emitter to control gating in active glasses, a polarizing Z-screen (Pi-cell) with passive glasses or filter wheel with passive glasses.

	RealD Z-screen	RealD XL Box	Xpand	Master Image	Dual Projector
Installed/ Mounted Components	Z-screen mounted in front of the projection lens	XL box mounted in front of the projection lens	None	Wheel installed in front of the projector	Polarizing plates in front of lenses
Silver Screen	Yes	Yes	No	Yes	Yes

	RealD Z-screen	RealD XL Box	Xpand	Master Image	Dual Projector
3D Glasses	Polarizing circular glasses	Polarizing circular glasses	Active glasses	Circular polarized glasses	Polarizing circular or linear glasses

Creating a high frame rate 3D file

Use this procedure to create 24Hz, 48Hz, and 60Hz high frame rate 3D files. These files allow you to display content with different frame rates consecutively.

1. Tap **Menu** > **Advanced Setup** > **High Frame Rate 3D File Setup**.
2. Select a 3D frame rate file in the **Current 3D File** list.
3. Complete these fields:

Field	Description
3D Sync Input Mode	Specifies whether a specific frame of input data has left eye or right eye data. Select Use White Line Code (true and inverted) if you are using a single 3D input signal in which an embedded white line at the bottom of each frame identifies left and right, and an additional separate 3D stereo sync input at the GPIO port is not present. The bottom row of the left-eye sub-field should be pure white for the left-most 25% of the pixel row and pure black for the remainder of the row. The bottom row of the right-eye sub-field should be pure white for the left-most 75% of the pixel row and pure black for the remainder of the row. Select Use Line Interleave for 3D source data only. When specified, the ICP will de-interleave each line into the left image or right image in memory as specified. Line interleave can be used with PsF 3D data (left and right data for one field, then left and right data for second field).
L/R Display Reference	Specifies which frame of eye data to display during a specific display frame. This signal is referenced to the display frame rate which is specified by the Frame Rate N:M.
Frame Rate N:M	Sets how many frames to display per number of frames that form one complete image. Increase the display frame rate to reduce flicker from your source(s).
L/R Display Sequence	Defines the frame order (L-R or R-L) required for 3D perspective. This option only has meaning when the Frame Rate factor M is equal to 2. For this case, two input frames of data are required to constitute a complete frame of image data. This parameter tells the system which frames go together to make a complete image. When using Line Interleave as the 3D Sync Input Mode, ensure that Left (L1R1 L2R2) is selected.
3D Sync Polarity	Keeps 3D stereo sync output the same as input (true) or reversed (inverted). **True**: 3D L/R sync output from GPO will match L/R sync input. **Inverted**: 3D L/R sync output from GPO will be the opposite of sync input (left = right, right = left).

Field	Description
Dark Time	Creates a blank time interval between left and right frames to allow for LCD shutter glasses, Z screen, or rotating 3D wheel to synchronize the output. See Dark Time and Output Delay Notes below. Values between 0 and 65535 are accepted. Tap the **Launch Dialog** button ... to enter the dark time value.
Output Delay	The non-image time in Microseconds (µ). Offset 3D stereo sync output in relation to dark time interval. Acceptable values are between -32768 and 32767 are accepted where a positive offset = delay and negative offset = start early. Tap **Launch Dialog** to enter the output delay value.
Phase Delay	The degree of reference between the left and right sync output. Values between -180 and 180 are accepted. Tap Launch Dialog to enter the phase delay value.

4. Tap **Save**.

Editing the default 3D lamp file

For 3D images to display correctly, you must edit the default 3D lamp file to match the specifications of your 3D hardware.

1. Tap **Menu** > **Advanced Setup** > **Lamp Power / LiteLOC™ Setup**.
2. Select **Default 3D** in the **Current Lamp File** list.
3. Set the brightness percentage for the lamp in the **Power %** field.
4. Tap **Save**.

Defining a measured color gamut data file

For 3D images to display correctly, you must define an MCGD file to match the specifications of your 3D hardware.

1. Turn the lamp on and allow it to operate for 20 minutes.
2. Tap **Menu** > **Advanced Setup > MCGD File Setup**.
3. Hold a pair of 3D glasses in front of the light meter to determine the new x and y color coordinates for Red, Green, Blue, and White. Use the same light path that you use to display a show.
4. Enter the x and y values in the **Red**, **Green**, **Blue** and **White** fields.
5. Tap **Save As**.
6. Enter **3D Onsite** in the **File Name** field.
7. Tap **Save**.

Editing the 3D flat 1998 x 1080 channel

1. Tap **Menu** > **Channel Setup**.
2. Select **3D Flat 1998x1080** in the **Channel Name** list.
3. Tap **Config 1** in the left pane and edit these settings:
    a. Select **292-Dual** in the **Input** list.
    b. Select **YCrCb 4:2:2 10 bits x2** in the **Data Format** list.
    c. Select **1998x1080 1.85 Flat** in the **Source File** list.
    d. Select **Flat** in the **Screen File** list.
4. Tap **Config 2** in the left pane and edit these settings:
    a. Select **3D Onsite** in the **Measured Color** list. If this option is not available, see *Defining a measured color gamut data file* on page 79.
    b. Select **DC28_DCIXYZE_314_351** in the **Target Color** list.
    c. Select **YCxCz Inverse ICT** in the **Color Space** list.
    d. Select **Gamma 2.6** in the **Gamma** list.
    e. Select **Linear_9x9x9** in the **LUT-CLUT** list.
5. Tap **3D Control** in the left pane and edit these settings:
    a. Select **Line Interleave** in the **3D Sync Input Mode** list.
    b. Select a frame rate suitable to your 3D system in the **Frame Rate N:M** list. For example, for 24Hz 3D, select 2:2, 4:2, or 6:2 for single, double, and triple flash.
    c. Select **Left (L1R1 L2R2)** in the **L/R Display Sequence** list.
    d. Select **True** in the **3D Sync Polarity** list.
    e. Enter **430** in the **Dark Time** field or enter a value appropriate for your 3D hardware.
    f. Enter **-120** in the **Output Delay** field or enter a value appropriate for your 3D hardware.
    g. Enter **0** in the **Phase Delay** field or enter a value appropriate for your 3D hardware.

Editing the 3D scope 2048 x 858 channel

1. Tap **Menu** > **Channel Setup**.
2. Select **3D Scope 2048x858** in the **Channel Name** list.
3. Tap **Config 1** in the left pane and edit these settings:
    a. Select **292-Dual** in the **Input** list.
    b. Select **YCrCb 4:2:2 10 bits x2** in the **Data Format** list.
    c. Select **2048x858 2.39 Scope** in the **Source File** list.
    d. Select **Scope** in the **Screen File** list.

4. Tap **Config 2** in the left pane and edit these settings:
    a. Select **3D Onsite** in the **Measured Color** list. If this option is not available, see *Defining a measured color gamut data file* on page 79.
    b. Select **DC28_DCIXYZE_314_351** in the **Target Color** list.
    c. Select **YCxCz Inverse ICT** in the **Color Space** list.
    d. Select **Gamma 2.6** in the **Gamma** list.
    e. Select **Linear_9x9x9** in the **LUT-CLUT** list.
5. Tap **3D Control** in the left pane and edit these settings:
    a. Select **Line Interleave** in the **3D Sync Input Mode** list.
    b. Select **6:2** in the **Frame Rate N:M** list.
    c. Select **Left (L1R1 L2R2)** in the **L/R Display Sequence** list.
    d. Select **True** in the **3D Sync Polarity** list.
    e. Enter **430** in the **Dark Time** field or enter a value appropriate for your 3D hardware.
    f. Enter **-120** in the **Output Delay** field or enter a value appropriate for your 3D hardware.
    g. Enter **0** in the **Phase Delay** field or enter a value appropriate for your 3D hardware.

Displaying 3D diagnostic test patterns

You can use 3D test patterns to verify your 3D hardware is functioning correctly.

1. Tap **Menu** > **Channel Setup**.
2. Select a 3D channel in the **Channel Name** list.
3. Tap **3D Test Patterns**.
4. Tap a test pattern.
5. Put on a pair of 3D glasses.
6. Look at the on-screen image, and then close your left eye and look at the image through your right eye. Switch when the image alternates.

3D Test Pattern	Action
RGB-12bit -3D Dynamic Range	Alternates between two images.
RGB-12bit-3D Four Quadrant	Alternates between two images.
RGB-12bit-3D Full White	Alternates between two 100% white images.
RGB-12bit-3D Half Descending	Alternates between four images.
RGB-12bit-3D Horizontal Ramp	Alternates between two horizontal ramp images.
RGB-12bit-3D L-Pattern	Alternates between two images.

Verifying 3D cinema content

1. Put on a pair of 3D glasses.
2. Play the 3D content.
3. Verify the left and right eye display correctly.
4. If the image is reversed:
    a. Tap **Menu** > **Channel Setup** on the projector touch pad controller (TPC).
    b. Select a 3D channel in the **Channel Name** list.
    c. Select **Inverted** in the **3D Sync Polarity** list.

Troubleshooting 3D

In addition to the information provided in this topic, it is also recommend that you consult the documentation provided with your 3D hardware to help resolve issues.

Reversed 3D effect (Pseudo 3D)

1. Put your 3D glasses on upside down so the left lens is over your right eye and the right lens is over your right eye.
2. If the image appears correct:
    a. Tap **Menu** > **Channel Setup** on the projector touch pad controller (TPC).
    b. Select a 3D channel in the **Channel Name** list.
    c. Select **Inverted** or **True** in the **3D Sync Polarity** list.

Image Breakup

1. Tap **Menu** > **Channel Setup**.
2. Select a 3D channel in the **Channel Name** list.
3. Tap **3D Control** in the left pane.
4. Lower the **Dark Time** field value to match the values of your 3D system.

Image is too dark

The lamp power for 3D content is typically twice as high as for 2D content except when you are using a RealD XL device.

1. Tap **Menu** > **Advanced Setup** > **Lamp Power/LiteLOC™ Setup.**
2. Increase the value in the **Power %** field.

No 3D effect

1. Tap **Menu** > **Channel Setup**.
2. Select a 3D channel in the **Channel Name** list.
3. Tap **3D Control** in the left pane.
4. Verify **Enable 3D** is selected.

Ghosting / cross-talk

1. Tap **Menu** > **Channel Setup**.
2. Select a 3D channel in the **Channel Name** list.
3. Tap **3D Control** in the left pane.
4. Raise or lower the **Dark Time** field value.
5. Raise or lower the **Output Delay** field value to match the values of your 3D system.

Motion artifacts

1. Tap **Menu** > **Channel Setup**.
2. Select a 3D channel in the **Channel Name** list.
3. Tap **3D Control** in the left pane.
4. Select **Left (L1R1 L2R2)** in the **L/R Display Sequence** list.

Disturbing flashing in one eye

1. Tap **Menu** > **Channel Setup**.
2. Select a 3D channel in the **Channel Name** list.
3. Tap **3D Control** in the left pane.
4. Select **Left (L1R1 L2R2)** in the **L/R Display Sequence** list.

Maintenance

This section provides information and procedures for performing projector maintenance. You should read this section in its entirety before performing maintenance activities. When you perform projector maintenance, obey all warnings and precautions.

Inspecting ventilation

Vents and louvers in the projector covers provide ventilation, both for intake and exhaust. Never block or cover these openings. Do not install the projector near a radiator, heat register, or within an enclosure. To ensure adequate airflow around the projector, keep a minimum clearance of 50cm (19.69”) on the left and right sides of the projector.

It is recommended that you periodically check that the LVPS fan is operating. It is not monitored and a failure can cause damage to the projector.

Inspecting the lamp

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

Always disconnect from AC and wear authorized protective safety gear.

- Check the contact surfaces of the anode (positive) and the cathode (negative) connections for cleanliness.
- Clean electrical contact surfaces every 5000 hours or after two lamp changes to prevent contact resistance from scorching connectors. Use an approved contact cleaner.
- Verify that all electrical and lamp connections are secure.

Inspecting and cleaning optics

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

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

Safety precautions

Danger! ELECTRICAL SHOCK HAZARD! Always turn off, disconnect, and disengage all power sources to the projector before servicing. Failure to comply results in death or serious injury.

Caution! Only Christie accredited service technicians are permitted to open any enclosure on the projector and only if the AC power has been fully disconnected. Failure to comply could result in minor or moderate injury.

Notice.

- To prevent damage to electronic components by static electricity, wear an anti-static wrist strap and follow anti-static protocols.
- When cleaning projector optics, never touch an optical surface with your bare hands.
- Always wear powder free latex gloves when handling and cleaning projector optics.

Recommended service kit

- Powder free latex gloves
- Soft camel-hair brush
- Dust-free blower - air bulb or a canned air duster without additives such as Techspray 1671-10S Ultra-Pure Duster
- Lint-free lens tissue, such as Lensx 90 tissue or Newport Optics cleaning tissue
- Lens cleaning solution and a microfiber cloth (for the lens only)
- Optical grade cotton swabs with wooden stems
- A bright, portable illumination device such as an LED flashlight

Cleaning the lens

A small amount of dust or dirt on the lens has minimal effect on image quality-to avoid the risk of scratching the lens, clean the lens only if absolutely required.

Removing dust

1. Brush most of the dust off with a camelhair brush or use a dust-free blower.
2. Fold a microfiber cloth and wipe the remaining dust particles off the lens with the smooth portion of the cloth that has no folds or creases. Do not apply pressure with your fingers. Instead, use the tension in the folded cloth to remove the dust.
3. If significant dust remains on the lens surface, dampen a clean microfiber cloth with lens cleaning solution and wipe gently until clean.

Removing fingerprints, smudges, or oil

1. Brush most of the dust off with a camelhair brush or use a dust-free blower.

2. Wrap a lens tissue around a swab and soak it in lens cleaning solution. The tissue should be damp but not dripping.
3. Gently wipe the surface using a figure eight motion. Repeat until the blemish is removed.

Replacing the lamp

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

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

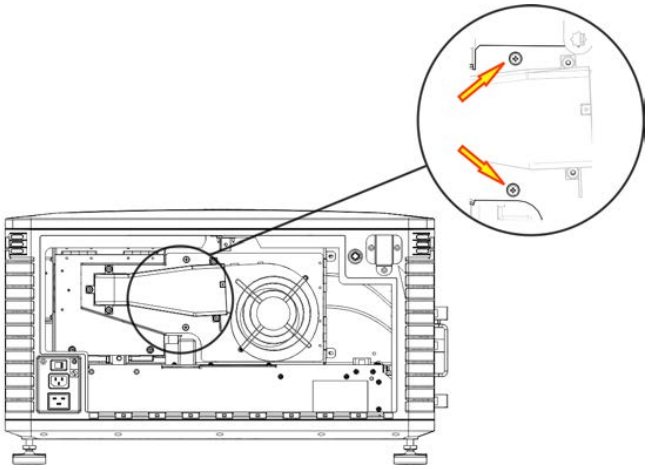
Warning! Failure to comply with the following could result in serious injury.

Improper installation of the lamp can damage the projector.

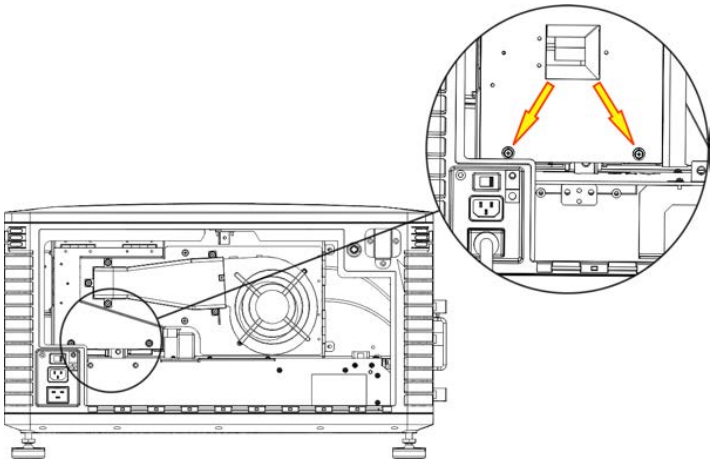
Removing the existing lamp

1. Tap and hold the red power button on the touch panel controller (TPC) **Main** panel to turn the lamp and projector off.
2. Allow the lamp to cool for a minimum of 15 minutes.
3. Unplug the projector.
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 and face shield.
7. Insert the key in the lock on the lamp door, turn the key, and then open the lamp door. Do not place heavy objects on the open lamp door.

8. Loosen the two thumbscrews and open the firewall door.

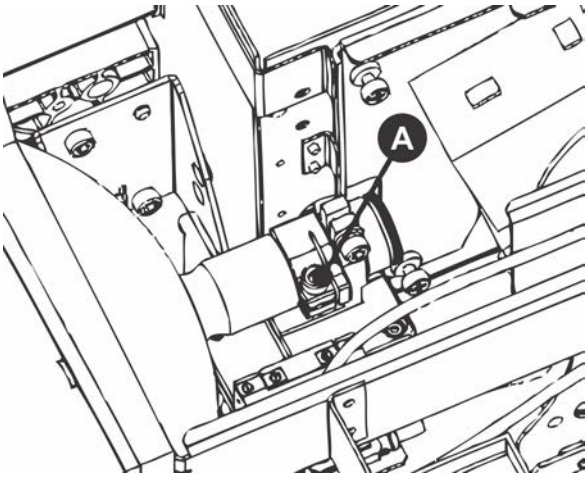


9. Loosen the two thumbscrews and open the lamp access door.



10. For CDXL-14 or CDXL-16 lamps:

a. Loosen the extension nut screw (A).

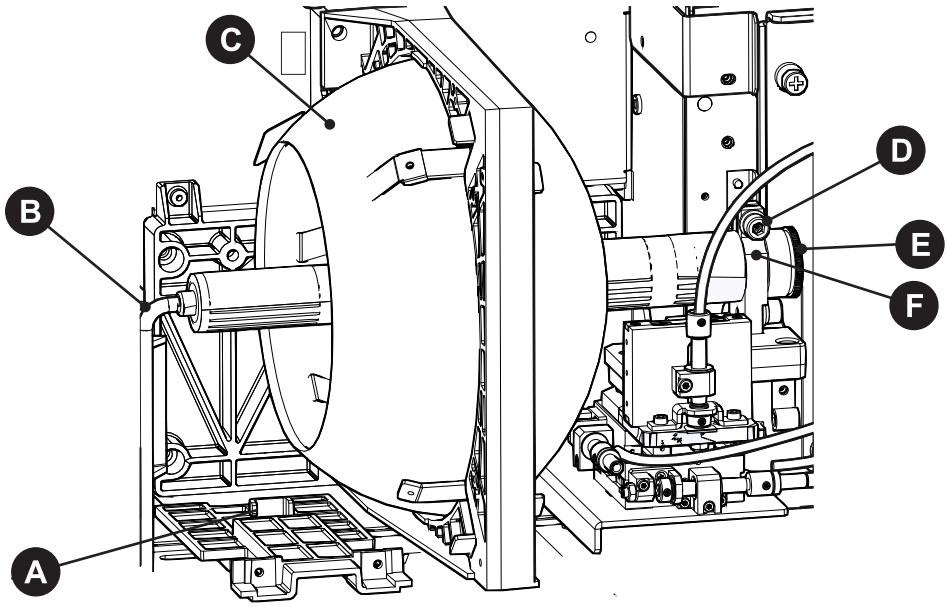


b. Hold the cathode end of the lamp with your right hand and the anode end with your left hand and carefully turn the lamp with your right hand so that it unthreads from the extension nut. Make sure the lamp does not contact the reflector or the UV filter.

c. With your left hand guide the cathode end of the lamp out of the reflector, on an angle through the lamp access door.

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

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



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

b. Hold the anode end of the lamp with your left hand and then carefully unscrew and remove the cathode nut with your right hand (E).

c. As you hold the anode end of the lamp, carefully guide the lamp through the reflector ensuring not to make contact with the reflector.

d. With your right hand guide the cathode end out of the reflector, on an angle through the lamp access door.

12. Open a protective lamp case and then place the old lamp into the case. Thread the cathode nut onto the lamp, close the protective case, and then place the lamp within the case, on the floor where it cannot fall or be bumped.

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

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

Installing the new lamp

Caution! 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.

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

back of the reflector and guide the lamp onto the cathode clamp. Be careful not to hit the lamp against the reflector.

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

f. Tighten the cathode clamp with a hex key.

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

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

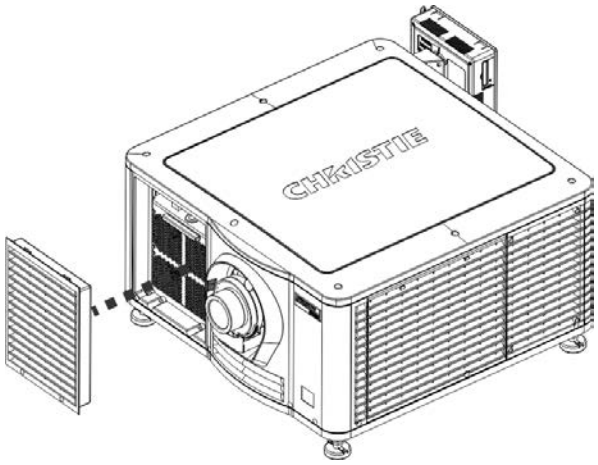
14. Tap **Save**.
15. Tap **Next**.
16. Align the lamp. See *Aligning the lamp* on page 29.

Inspecting the card cage filter

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

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

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



1. Loosen the two captive screws on the bottom of the filter cover.
2. Pull the cover out and down.
3. Slide the air filter out and inspect it.

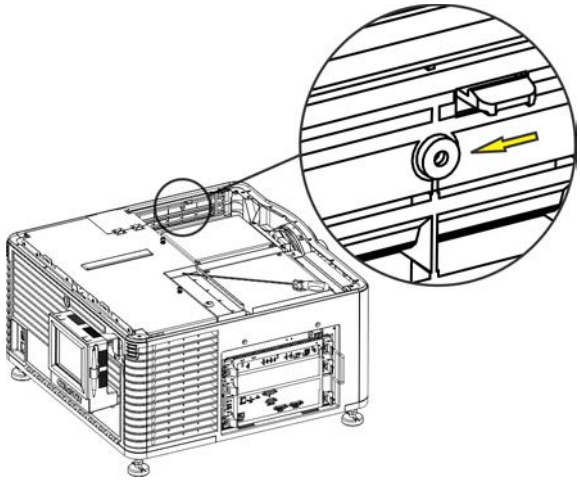
   If the filter appears dirty and you cannot see through it, replace it with a new paper filter, or clean it if it is a washable filter. See *Cleaning a washable filter* on page 93.

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

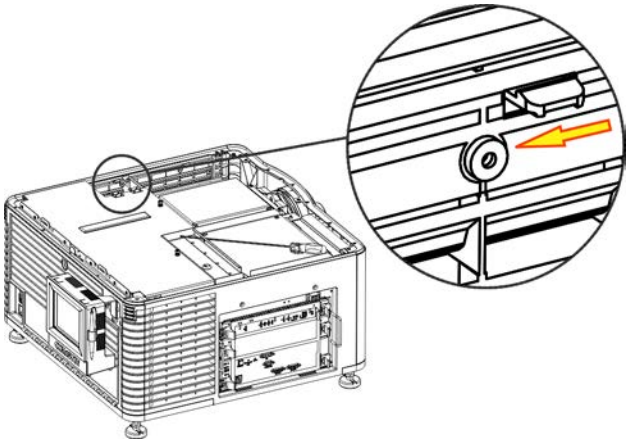
Inspecting the light engine compartment filter

1. Remove the top lid.

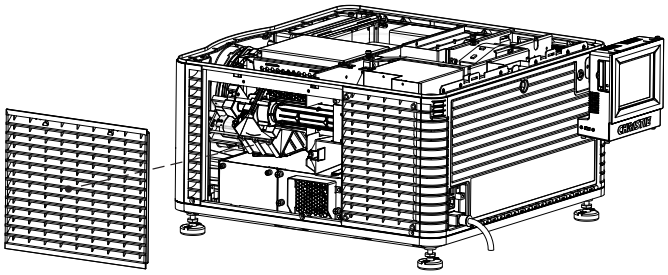
2. Reach into the projector and then loosen the first service panel screw.



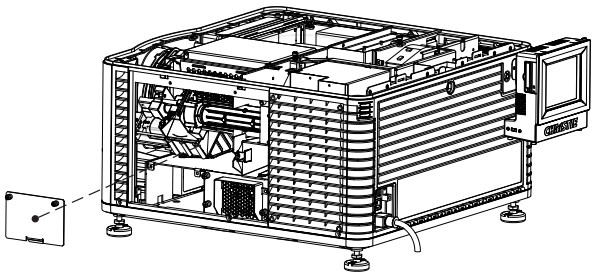
3. Open the integrator rod access door and loosen the second service panel screw.



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



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



6. Slide the air filter out and inspect it.

   If the filter appears dirty and you cannot see through it, replace it with a new paper filter, or clean it if it is a washable filter. See *Cleaning a washable filter* on page 93.

   If the filter appears clean, continue to step 7.

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

Cleaning a washable filter

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

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

The installation of a filter that has not been allowed to dry completely can cause an electrical short and damage the projector.

1. Hold the filter on an angle under warm running water so the water flows through the filter in the opposite direction of the air flow indicator on the side of the filter.
2. Rinse the filter thoroughly.
3. Submerge the filter for a minimum of 30 minutes in a container of warm water and two tablespoons of mild detergent or liquid dish soap.

   If the filter is extremely dirty, move the filter from side to side occasionally, or remove the excess dirt by brushing both sides of the filter with a soft brush.

4. Rinse the filter thoroughly by holding it on an angle under cool running water. The air flow arrow on the side of the filter should face down.
5. Repeat steps 3 and 4 if the filter still appears dirty.
6. Shake the filter over a container until most of the water is removed.
7. Place the filter on its edge on a flat, stable surface and allow it to dry thoroughly.

8. To confirm that the filter is dry, place it over a dry paper towel and shake it. If the paper towel remains dry, the filter can be installed in the projector.
9. Record the date the filter was cleaned.
10. Replace the filter following the instructions for the specific filter. See *Inspecting the card cage filter on page 91* or *Inspecting the light engine compartment filter* on page 91.

Replacing 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. Tap and hold the red power button  on the TPC **Main** panel to turn the lamp and projector off.
2. Allow the lamp to cool for a minimum of 15 minutes.
3. Disconnect the projector from AC power or turn the circuit breaker off.
4. Remove the lens surround.
5. Install the lens cap and turn the lens clamp to the open position with a hex key.
6. If necessary, remove the two cap screws securing the lens to the lens mount using a hex key.
7. Pull the lens out of the lens mount and then install a small lens cap on the rear of the lens.
8. Remove the small rear cap from the new lens. Keep the front cap on.
9. Align the tabs on the lens plate with the lens mount. Insert the lens until it connects with the magnets on the mount. When the lens contacts the magnetic plates it is seated correctly.
10. Secure the lens clamp by rotating it clockwise with a hex key.
11. Tighten the lens mount cap screws for added stability.
12. Replace the lens surround.
13. Remove the lens cap from the front of the lens.

Troubleshooting

This section provides information and procedures for resolving common projector issues.

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

Projector functionality

Projector does not turn on

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

Touch panel controller

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

Cannot establish communication with projector

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

Lamp functionality

Lamp does not ignite

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

Lamp suddenly turns off

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

LiteLOC™ not working

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

Display issues

Flicker, shadows, or dimness

- Ensure the douser is open.
- Align the lamp. See *Aligning the lamp* on page 29.

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

Blank screen, no display of cinema image

- Ensure the lens cap is not on either end of the lens.
- Ensure the lamp is **ON**.
- Confirm all power connections are still OK.
- Ensure the douser is **OPEN** by verifying the state of the douser on **Main** panel.
- Ensure any test pattern other than the full black test pattern displays properly.
- Verify the correct display file is selected.
- For cinema connections, verify the correct port is selected.

Severe motion artifacts

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

Image appears vertically stretched or squeezed into center of screen

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

Inaccurate display colors

Adjust the color, tint, color space, and color temperature settings of your input source. Tap **Menu** > **Channel Setup**. Tap **Config 1** in the left pane and verify the correct value is selected in the **PCF** list. Tap **Config 2** in the left pane and verify the correct value is selected in the **Color Space** field.

Display is not rectangular

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

Display is noisy

- Adjust the input source pixel tracking, phase, and filter.
- Verify the cables connecting the input device to the projector meet the minimum requirements.
- Add signal amplification or conditioning if the distance between the input device and the projector exceeds 25 feet.

Display has suddenly frozen

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

The projector is on, but alternate content does not display

- Make sure the lens cover is removed from the lens.
- Make sure the lamp is on.
- Make sure the douser is open.
- Tap  on the main TPC screen. If the lamp does not strike, see *Lamp functionality on page 96*.
- Tap **Menu** > **Channel Setup**. Verify the correct channel is selected and the settings are correct.
- Ensure an active source is connected properly. Check the cable connections and make sure the alternative source is selected.
- Verify you can select test patterns. If you can, check your source connections again.

The display is jittery or unstable

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

Portions of the display are cut off or warped to the opposite edge

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

Inconsistent picture quality

Verify the quality of the signal from the input source.

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

See also *3D sync terminal pin map on page 76*.

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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