The top half of the page features a complex, abstract background of overlapping, semi-transparent blue triangles and polygons in various shades of blue, creating a dynamic, crystalline effect. This pattern transitions into a clean white background at the bottom.

User Guide
020-101916-03

CP2208

CHRISTIE[®]

NOTICES

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


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Products are warranted under Christie's standard limited warranty, the details of which are available at <https://www.christiedigital.com/help-center/warranties/> or by contacting your Christie dealer or Christie.

PREVENTATIVE MAINTENANCE

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

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!

China RoHS compliance information

关于中国《电子信息产品污染控制管理法》的说明

- Environmentally Friendly Use Period

环保使用期限

	<p>The year number in the centre of the label indicates the Environmentally Friendly Use Period, which is required to mark on the electronic information product sold in China according to the China RoHS regulations.</p> <p>本标志中表示的年数是根据《电子信息产品有害物质限制使用管理法》（2016年1月21日）制定的、适用于在中国人民共和国境内销售的电子信息产品的环保使用期限。</p>
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- Material Concentration Values Table

有毒有害物质含量表

Part name	部件名称	Material Concentration (有毒有害物质或元素)					
		Pb	Hg	Cd	Cr 6+	PBB	PBDE
Backplane	底板	X	O	X	O	O	O
Ballast	流器	X	O	O	O	O	O
Blower/Fan	吹机/扇	X	O	O	O	O	O
Harness/cable	接口/口	X	O	O	O	O	O
Ignitor	点火器	X	O	O	O	O	O
Illumination optics system	照明光学系	X	O	X	O	O	O
Integrated Cinema Processor	集成理板	X	O	O	O	O	O
Internal Motor Control Board	内部机控制板	X	O	O	O	O	O
Lamp	灯泡	X	O	O	O	O	O
Line filter	波器	X	O	O	O	O	O
Low voltage power supply	低源	X	O	O	O	O	O
Mechanical enclosure*	机械附件	X	O	O	O	O	O
Motorized intelligent lens mount (optional)	智能架 (件)	X	O	O	O	O	O
Projection lens	投影	X	O	X	O	O	O
Projector Intelligence Board	智能板	X	O	O	O	O	O
Sensor	感器	O	O	O	O	O	O
Standby LVPS	用低源	X	O	O	O	O	O
Switch	开关	X	O	O	O	O	O
Touch Panel Controller	触摸控制屏	X	O	O	O	O	O

Note:

This table is prepared in accordance with the provisions of SJ/T 11364.

本表格依据 SJ/T 11364 的定制。

O: indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

表示□有害物□在□部件所有均□材料中的含有均在 GB/T 26572 □定的限量要求以下。

X: indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.

表示□有害物□至少在□部件的某一均□材料中的含有超出 GB/T 26572 □定的限量要求。

* This part uses metallic alloys, which may contain Lead. 因□部件使用金属合金材料，故可能含有□。

Content

Installing and setting up.	11
Safety precautions.	11
AC/power precautions.	12
Power cords and attachments.	12
Lamp precautions.	12
Projector components - front.	13
Projector components - rear.	13
Lifting and positioning the projector.	13
Stacking projectors.	13
Adjusting tilt and leveling the projector.	16
Installing the touch panel controller.	17
Installing the lens.	17
Installing the lamp.	17
Connecting power.	19
Connecting devices and establishing communication.	20
Projector connections.	20
Connecting the projector to a computer.	21
Turning the projector on.	22
Logging on to the projector.	22
Activating marriage.	22
Adding or modifying projector communication settings.	22
Adding the lamp information to the lamp history.	23
Turning the lamp on.	24
Aligning the lamp.	24
Adjusting the image to fit the screen.	24
Aligning dual projector images.	25
Playing content.	26
Adjusting the image.	28
Correcting keystone effect.	28
Correcting dual projector horizontal keystone.	28
Correcting dual projector vertical keystone.	29
Correcting vignetting.	30
Adjusting vertical boresight.	30

Adjusting horizontal boresight.	31
Adjusting digital micromirror device convergence.	32
Adjusting the fold mirror.	32
Calibrating the color.	32
Masking the screen edges.	32
Calibrating screen brightness (fL).	34
Accessing projector diagnostics.	35
The touch panel controller.	35
Logging on to the projector.	36
Viewing the status of projector components.	37
Running the projector interrogator.	37
Retrieving system logs.	37
Running a server test.	38
Responding to alarms.	38
Turning the projector off.	38
Managing the Digital Light Processing.	39
Stopping Digital Light Processing communication.	39
Resetting the Digital Light Processing.	39
Running a Digital Light Processing self test.	39
Downloading an integrated cinema processor certificate.	40
Disabling the integrated cinema processor signature test.	40
Managing lamp information.	41
Creating a new lamp file.	41
Modifying an existing lamp file.	42
Enabling or disabling LiteLOC on a lamp file.	42
Adjusting lamp power.	42
Changing the lamp power percentage.	42
Viewing lamp information.	42
Receiving an alarm when a lamp reaches its expiry date.	43
Adding a lamp to the Lamp History.	43
Verifying current lamp intensity.	43
Working with channels.	44
Creating a new channel.	44
Activating a channel.	47
Restoring default channel settings.	47

Changing the channel icon. 47

Adding or removing preferred channels. 47

Managing projector setting files. 49

 Creating a source file. 49

 Modifying a source file. 49

 Creating a screen file. 49

 Modifying a screen file. 50

 Creating a measured color gamut data file. 50

 Modifying a measured color gamut data file. 51

 Creating a target color gamut data file. 51

 Modifying a target color gamut data file. 51

 Creating a new intelligent lens system file. 51

 Editing an existing intelligent lens system file. 52

 Enabling automatic intelligent lens system adjustments on a channel. 52

 Resetting intelligent lens system file settings. 52

 Adding a lens serial number. 53

 Enabling an automatic intelligent lens system on a lens. 53

 Resetting the lens position on projector startup. 53

 Completing a full lens calibration. 53

 Resetting the intelligent lens system and the lens position. 54

Scheduling events. 55

 Scheduling the projector to turn on or off. 55

 Editing a scheduled event. 55

 Deleting a scheduled event. 56

 Deleting all scheduled events. 56

 Turning off the scheduler. 56

Viewing and modifying projector settings. 57

 Setting projector and touch panel controller preferences. 57

 Adjusting projector time settings. 57

 Adding or modifying projector communication settings. 57

 Adding a network device. 58

 Accessing a network device. 58

 Calibrating the internal light meter. 59

 Viewing processes and programs running on the projector. 59

 Viewing local or remote computer settings. 59

 Viewing the files on the projector. 59

Viewing and modifying network connections. 59

Viewing projector information. 60

Managing user accounts. 61

 Interpreting user access permissions. 61

 Adding a user account. 61

 Changing a user account password or permissions. 62

 Deleting a user account. 62

Backing up, restoring, and upgrading projector files. 63

 Adding an upgrade file. 63

 Removing an upgrade file. 63

 Installing an upgrade file. 63

 Backing up projector settings and information. 64

 Restoring a file. 64

 Restoring factory default settings. 64

 Moving files to the projector. 65

 Deleting projector files. 65

Test patterns. 66

 Adding or removing preferred test patterns. 66

 Turning a test pattern on or off. 66

 Displaying a full screen test pattern. 66

Viewing 3D content. 67

 Display requirements. 67

 3D sync terminal pin map. 67

 Setting up hardware. 68

 Creating a high frame rate 3D file. 69

 Editing the default 3D lamp file. 70

 Defining a measured color gamut data file. 70

 Editing the 3D flat 1998 x 1080 channel. 71

 Editing the 3D scope 2048 x 858 channel. 71

 Displaying 3D diagnostic test patterns. 72

 Verifying 3D cinema content. 72

 Troubleshooting 3D. 73

 Reversed 3D effect (Pseudo 3D). 73

 Image is too dark. 73

 No 3D effect. 74

Ghosting / cross-talk.	74
Motion artifacts.	74
Disturbing flashing in one eye.	74
Maintaining the projector.	75
Inspecting ventilation.	75
Inspecting and cleaning the lamp.	75
Replacing the lamp.	76
Removing the existing lamp.	76
Installing the new lamp.	76
Inspecting and cleaning optics.	77
Recommended service kit.	77
Cleaning the lens.	77
Inspecting the card cage filter.	78
Inspecting the light engine compartment filter.	78
Cleaning a washable filter.	80
Replacing the lens.	80
Troubleshooting.	82
Projector functionality.	82
Projector does not turn on.	82
Cannot establish communication with projector.	82
Lamp functionality.	82
Lamp does not ignite.	82
Lamp suddenly turns off.	83
LiteLOC™ not working.	83
Display issues.	83
Flicker, shadows, or dimness.	83
Blank screen with no display of cinema image.	83
Severe motion artifacts.	84
Image is vertically stretched or squeezed.	84
Inaccurate display colors.	84
Display is not rectangular.	84
Display is noisy.	84
Display has suddenly frozen.	85
Projector does not display alternate content.	85
Display is unstable.	85
Portions of the display are cut off.	85
Inconsistent picture quality.	85

Touch panel controller issues. 86

 Touch panel controller fails to initialize. 86

 Button presses on the touch panel controller are not registering correctly. 86

CP2208 Specifications. 87

 Physical specifications. 87

 Power specifications. 87

 Environmental specifications. 88

 Display specifications. 88

 Control signal compatibility. 89

 Touch panel controller specifications. 90

 Lamp specifications. 90

 Accessories. 91

 Regulatory. 92

 Safety. 92

 Electro-magnetic compatibility. 92

 Environmental. 92

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 Christie qualified 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.

Learn how to position and install the projector.

Safety precautions

Observe these important safety rules to avoid personal injury or damage to the projector.

This projector must be operated in an environment that meets the operating range, as listed in the *projector specifications* (on page 87).

General precautions



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

- TRIP OR FIRE HAZARD! Position all cables where they cannot contact hot surfaces, be pulled, be tripped over, or damaged by persons walking on or objects rolling over the cables.
- This product must be installed within a restricted access location not accessible by the general public.
- Only personnel who are trained on the precautions for the restricted access location can be granted entry to the area.
- ELECTRICAL and BURN HAZARD! Use caution when accessing internal components.
- High leakage current present when connected to IT power systems.
-
- For protection from ultraviolet radiation, keep all product housings intact during operation.
- UV EXPOSURE! Protective UV safety glasses with side shields and Christie approved protective safety clothing must be worn when performing optical adjustments or servicing the product.
- FIRE AND SHOCK HAZARD! Use only the attachments, accessories, tools, and replacement parts specified by Christie.
- A minimum of four people or appropriately rated lift equipment is required to safely lift, install, or move the product.

Power



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

- SHOCK HAZARD! Only use the AC power cord provided with the product or recommended by Christie.
- FIRE AND SHOCK HAZARD! Do not attempt operation unless the power cord, power socket, and power plug meet the appropriate local rating standards.
- SHOCK HAZARD! Do not attempt operation if the AC supply is not within the specified voltage and current, as specified on the license label.
-
- SHOCK HAZARD! Disconnect the product from AC before installing, moving, servicing, cleaning, removing components, or opening any enclosure.
- FIRE HAZARD! Do not use a power cord, harness, or cable that appears damaged.



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

- Only Christie qualified technicians are permitted to open product enclosures.
- Install the product near an easily accessible AC receptacle.

Lamp



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

- EXPLOSION HAZARD! Lamps and bare bulbs, even when packaged, may explode if dropped or mishandled.
- EXPLOSION HAZARD! Always wear manufacturer approved protective safety clothing (gloves, jacket, face shield) whenever the lamp door is open or when handling the lamp. Any local or federal specifications take precedence over Christie's protective clothing recommendations.
- Do not open the lamp door while the lamp is on.
- EXPLOSION HAZARD! Allow sufficient time for the lamp to cool down before powering down the product, disconnecting it from AC, and opening the lamp door.
- Do not look directly into the lens when the light source is on. The extremely high brightness can cause permanent eye damage.
- FIRE HAZARD! Keep hands, clothes, and all combustible material away from the concentrated light beam of the projector.

AC/power precautions

Power cords and attachments

Lamp precautions

Projector components - front

Learn about the components on the front of the projector.

A	Touch panel 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.
B	Communications panel External devices are connected here.	F	Projector lens A list of available lenses is available in the projector specifications.
C	Adjustable feet Turn the adjustable feet to increase or decrease the projector height.	G	Lens surround
D	Air Filter	H	Top lid

Projector components - rear

Learn about the components on the back of the projector.

A	Service access door
B	Power cord and AC receptacle
C	Light source access door

Lifting and positioning the projector

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



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

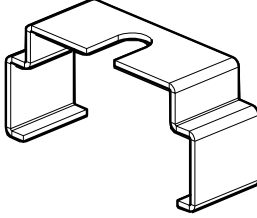
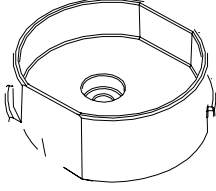

- Do not install or operate the projector in any position that does not meet the stated product specifications for alignment and orientation.

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

Stacking projectors

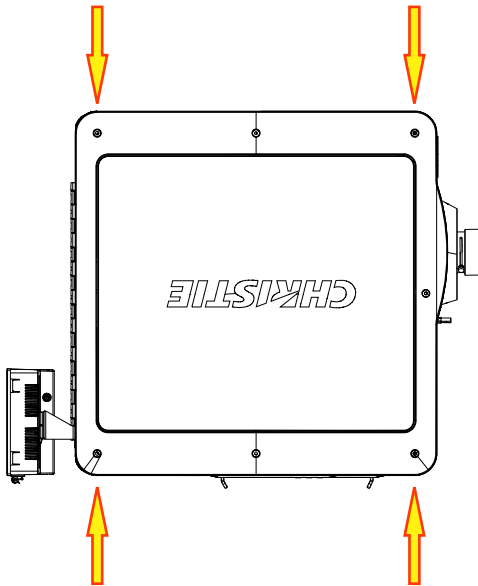
To stack CP2208 projectors, use the stacking kit provided.

The stacking kit includes these parts:

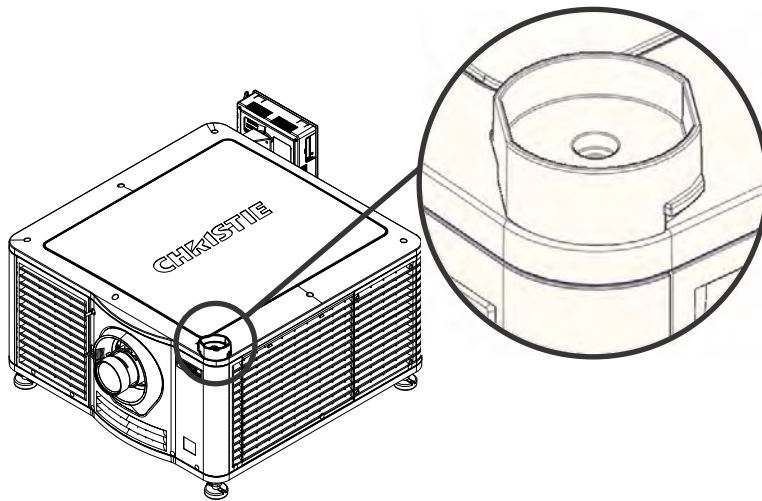
		
Locking bracket (quantity 4)	Stacking cup (quantity 4)	M6 screw (quantity 4)

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.

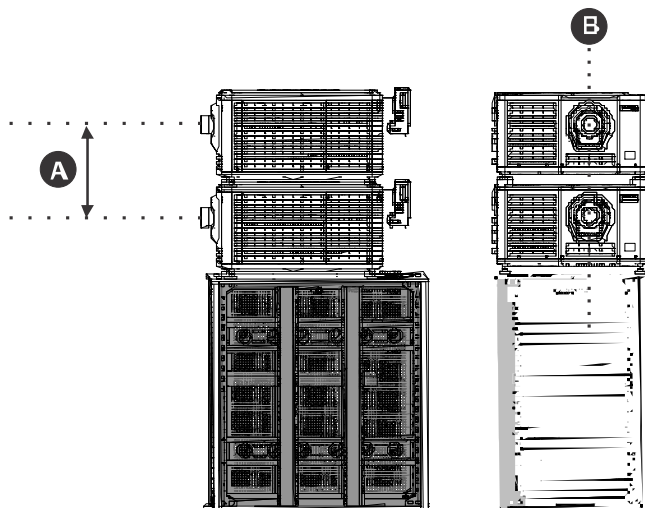
1. On the bottom projector, remove the four corner screws securing the top lid.



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.

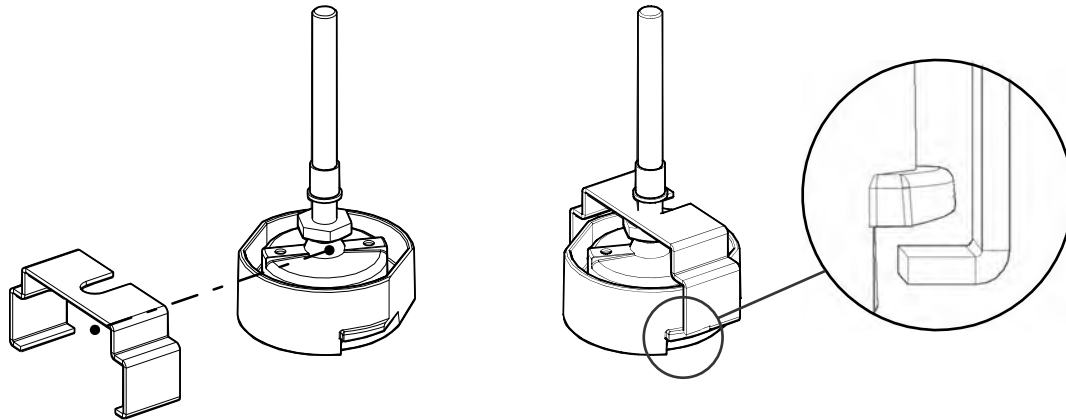


3. Insert an M6 screw (012-101132-XX) through the stacking cup mounting hole and into the projector.
4. With a torque wrench, tighten the M6 screw to 15 in-lb.
5. Repeat steps 3 to 5 to install the three remaining stacking cups.
6. With the assistance of another person, lift the second projector and 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. Install both projectors.
 - a) Install the touch panel controller.
 - b) Install the lens.
 - c) Install the lamp.
 - d) Connect devices to the projector.
 - e) Connect power.
 - f) Adjust the bottom projector image to fit the screen. .

- g) Align the top projector image to the bottom projector image. .
- 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.

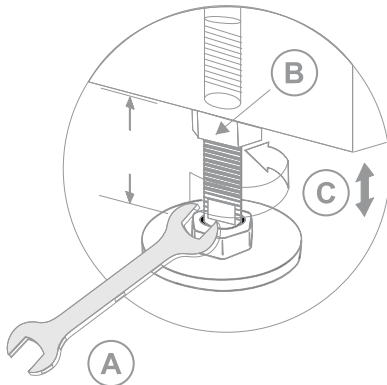


Adjusting tilt and leveling the projector

To ensure optimum performance, install the projector so it is centered and parallel with the screen.

To compensate for tilt or offset, you can adjust the projector feet and the lens mount position.

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



A	
B	Lock
C	Turn to adjust height

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

Installing the touch panel controller

Attach the touch panel controller to the projector.

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

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.

Installing the lamp

Complete the following procedure to install the lamp.



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

- This procedure must be performed by Christie qualified technicians.
 - EXPLOSION HAZARD! Always wear manufacturer approved protective safety clothing (gloves, jacket, face shield) whenever the lamp door is open or when handling the lamp. Any local or federal specifications take precedence over Christie's protective clothing recommendations.
 - Do not open the lamp door while the lamp is on.
 - EXPLOSION HAZARD! Allow sufficient time for the lamp to cool down before powering down the product, disconnecting it from AC, and opening the lamp door.
 - EXPLOSION HAZARD! Lamps and bare bulbs, even when packaged, may explode if dropped or mishandled.
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 communication cable from the rear of the projector.
 5. Remove the 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 firewall 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.

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



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

- EXPLOSION HAZARD! Handle a lamp by the cathode and anode end shafts only. Do not handle the lamp by the glass.
- EXPLOSION HAZARD! Do not over-tighten the lamp.
- EXPLOSION HAZARD! Do not stress the glass of a lamp or bare bulb in any way.

- 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.

The extension nut is only used with CDXL-14 and CDXL-16 lamps.

- b) Thread on and hand-tighten the cathode nut. Ensure the smooth portion of the nut is against the cathode clamp.
- c) 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. Check all leads. When threading the lamp into the extension nut, make sure the anode (+) wire does not touch any projector metal, such as the reflector or firewall.
- d) Tighten the extension nut screw.
- e) 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.
- b) 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.

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

14. Tighten the anode screw.

15. Route anode lead away from nearby metal surfaces.

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

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

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

Connecting power

Connect the projector to the power source.



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

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



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

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

Installation and Power Requirements

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

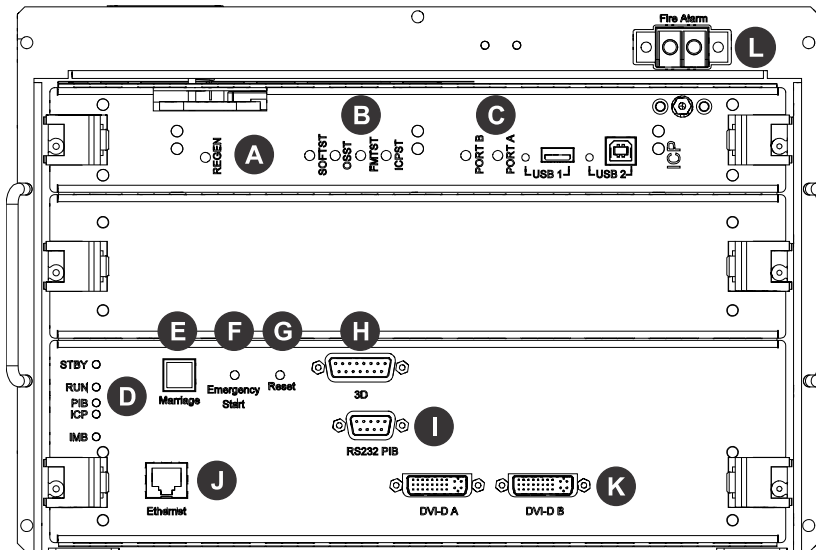
You must use a 20A branch circuit breaker for Input A.

1. If the projector is operating, turn it off and disconnect it from AC power.
2. Loosen the threaded bolt on the ground lug on the AC receptacle on the rear of the projector.
3. Remove 15 mm of insulated covering from both ends of the protected earth wire.
4. Insert a bare end of the protected earth wire into the hole on the top of the ground lug so it is beneath the threaded bolt.
5. Tighten the threaded bolt to 50 in-lb.
6. Connect the other bare end of the protected earth wire to the building ground.
7. Connect one end of the projector power cord to the AC receptacle on the lower-left rear corner of the projector and then connect the other end of the power cord to an AC receptacle.
8. If you are using an Uninterrupted Power Supply (UPS) to power the main electronics, move the AC switch to A + B and connect the power cord provided with the UPS to the B outlet.

Connecting devices and establishing communication

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

Projector connections



Item	Description
A	Indicates the status of the regulator. A solid blue LED indicates the regulator is enabled. If the LED is not illuminated, the regulator is not enabled.
B	<ul style="list-style-type: none"> • SOFTST—(Software State) Indicates the state of the software application running on the integrated cinema processor (ICP). During normal operation, this LED blinks. During start up, the LED changes from off to blinking. • OSST—(Operating System State) Indicates the state of the ICP operating system. During normal operation, the LED is green. During start up, the LED changes from off to green. • FMTST—(FMT FPGA State) Indicates the state of the FMT FPGA circuit. During normal operation, the LED is green. When the power is turned on, the LED turns green immediately. • ICPST—(ICP FPGA State) Indicates the configured state of the ICP FPGA circuit. During normal operation, the LED is green. When the power is turned on, the LED turns green immediately.
C	<ul style="list-style-type: none"> • PORT B—Indicates the status of the USB port. A green LED indicates the port is active. If the LED is not illuminated, the port is inactive. • PORT A— Indicates the status of the USB port. A green LED indicates the port is active. If the LED is not illuminated, the port is inactive.
D	<ul style="list-style-type: none"> • STBY—The LED is green when the standby power supply is active. If the LED is not illuminated, the standby power supply has failed or the projector circuit breaker is off.

Item	Description
	<ul style="list-style-type: none"> • RUN—The LED flashes green when the projector is operating normally. If the LED is not illuminated or solid green, a communication, software, or hardware error has occurred. If the LED is yellow, the projector cannot communicate with the touch panel controller (TPC). • PIB—The LED is green when the projector intelligence board (PIB) is detected and operating correctly. A red LED indicates a communication error. A flashing red LED indicates the PIB is not installed correctly. If the LED is not illuminated, the PIB is inactive. • ICP—The LED is green when the ICP is operating correctly. A red LED indicates a communication issue. If the LED is not illuminated, the ICP is inactive. • IMB—The LED is green when the integrated media block (IMB) is operating correctly. A red LED indicates a communication issue. If the LED is not illuminated, the IMB is inactive.
E	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 on and opens the douser. Press and hold the button to close the douser, turn the off, and keep the power on. We recommend 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 turn on the light source manually.
H	Connects the projector to 3D devices.
I	Connects the projector to Christie or third-party automation equipment.
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-DVI following the SMPTE 372M standard.
L	<p>Connects the projector to the building fire alarm so the light source can be shut down in the event of a fire. If you are not using the connection, leave the factory installed jumper cable in place.</p> <p>Wire the fire alarm circuit on the projector to a normally closed, dry contact building fire alarm circuit. When the contacts open, the light source shuts down and cannot be turned back on until the circuit is closed and a light on command is sent to the projector.</p> <p>We recommend using twisted pair wiring, minimum 24 AWG. The circuit should be left floating, do not connect to ground.</p>

Connecting the projector to a computer

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

- 1.
2. To communicate with the projector, add the projector to the same network as the computer.

Turning the projector on

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



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

- **SHOCK HAZARD!** Do not attempt operation if the AC supply is not within the specified voltage and current, as specified on the license label.
1. Ensure that the circuit breaker for the projector is on.
 2. On the TPC, select and hold **Power On**.

Logging on to the projector

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

1. On the TPC, tap **Menu** > **Login**.
2. From the Username list, select a user name.
Each user account has set user access permissions.
3. In the Password field, type the password.
4. Tap **Login**.

Activating marriage

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

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

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with marriage permissions.
2. Tap **Menu** > **Service Setup**.
3. Complete the Marriage wizard.
4. Tap **Finish**.
5. Verify that the marriage ring is installed correctly and an anti-tamper alarm does not appear on the TPC.

Adding or modifying projector communication settings

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

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu** > **Administrator Setup** > **Communications Configuration**.

3. Complete these fields:

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

Adding the lamp information to the lamp history

1. If the lamp is on, select **Lamp Off** to turn it off.



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

3. Select **Next**.

4. Complete these fields:

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

5. Select **Save**.

6. Select **Next**.

Turning the lamp on

To complete the remaining setup procedures, turn the lamp on.

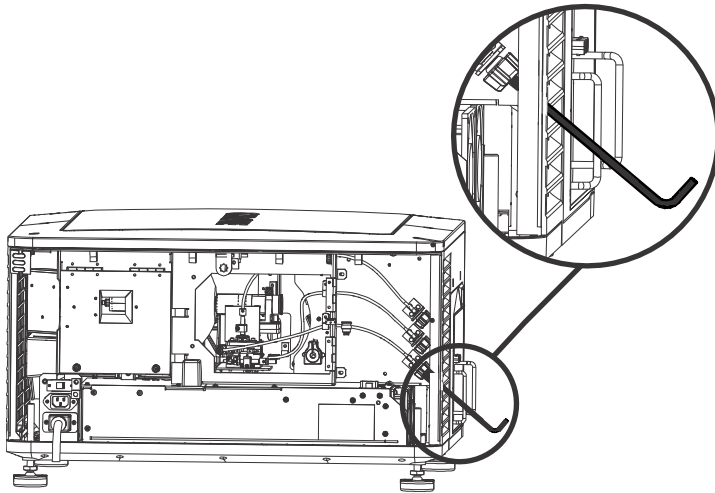
On the projector touch panel controller (TPC), tap **Lamp On**.



Aligning the lamp

Complete the following procedure to align the lamp.

1. 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.
2. 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 at an angle below the Y axis adjustment label 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.

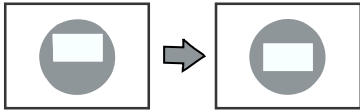
Adjusting the image to fit the screen






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

1. Verify that the *projector is properly positioned relative to the screen* (on page 13).
2. *Display the RGB-12bit-Full Screen White test pattern* (on page 66).

3. On the main screen, tap the Lens Adjust () icon.
4. In the Offset area, tap the left () , right () , up () , or down () arrow icons

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









5. *Display the DC2K Framing2 test pattern* (on page 66).
6. On the main screen, tap the Lens Adjust () icon.
7. In the Offset area, tap the left () , right () , up () , or down () arrow icons

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

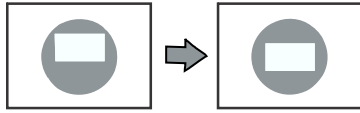
8. In the Zoom area, tap the positive and minus icons until the image fits your screen.
9. In the Focus area, tap the left and right focus icons until the test pattern details are in focus. When your adjustment is complete, the words and lines in the test pattern should be distinguishable uniformly across the screen and there should not be any sections that are out of focus.
10. With the framing test pattern displayed, re-check projector leveling so the top edge of the image is parallel to the top edge of the screen.
11. *Display the RGB-12bit-Full Screen White test pattern* (on page 66).
12. If the test pattern is focused and centered on the screen you do not need to complete further image adjustment. If the image is not focused and centered on the screen, complete one of these procedures:
 - a) If the image appears distorted and resembles a trapezoid, correct the keystone effect.
 - b) If the image is brighter at the center than it is at the sides, correct vignetting.

Aligning dual projector images

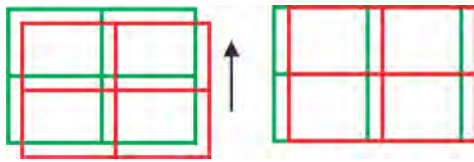
After stacking projectors, adjust both images.

1. *Stack the projectors* (on page 13).
2. On the bottom projector, *adjust the image to fit the screen* (on page 24).
3. On both projectors, *turn the lamp on* (on page 24) and open the douser.
4. Display a RGB-12bit-Full Screen White test pattern and center the image.
 - a) Select the **Test Pattern** () icon in the task bar.
 - b) Select **All Test Patterns**.
 - c) Select **RGB-12bit-Full Screen White**.
 - d) On the projector touch panel controller (TPC), select the Lens Adjust () icon on the main screen and then select the left () , right () , up () , or down ()

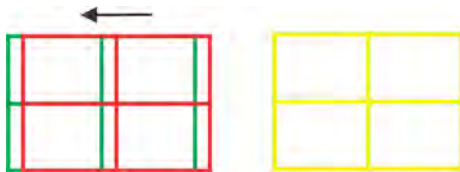
arrow icons in the Offset area until the light created by the projector is centered on the screen.



5. On the top projector, *display the DC2K Framing Green test pattern* (on page 66).
6. On the bottom projector, *display the DC2K Framing Red test pattern* (on page 66).
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) If the image appears distorted and resembles a trapezoid, *correct the keystone effect* (on page 28).
 - b) If the image is brighter at the center than it is at the sides, *correct vignetting* (on page 30) or *align the lamp* (on page 24).
 - c) If a corner or edge of an image is missing, *adjust the fold mirror* (on page 32).
 - d) If the image cannot be focused uniformly on the screen with a focus adjustment, *adjust the vertical boresight angle* (on page 30).
 - e) If a large horizontal angular offset to the screen is required, *adjust horizontal boresight* (on page 31).

Playing content

You can play encrypted and unencrypted content on the projector.

1. To play unencrypted content:
 - a) Connect the projector to a device with an HDMI to DVI connection.
 - b) Connect the audio output cables to an audio processor.

See the documentation included with the audio processor for detailed set up instructions.

2. To play encrypted content:
 - a) Install an Integrated Media Block (IMB).
 - b) Connect the projector to a network-attached storage (NAS) or direct attached storage (DAS) device.

Adjusting the image

Learn how to adjust image geometry so it displays correctly.

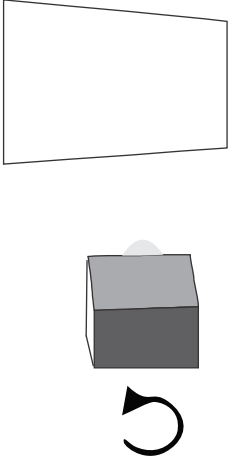
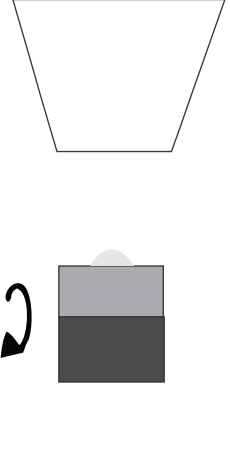
Correcting keystone effect

Learn how to adjust the image to correct keystone effect.

Keystone effect occurs when you project an image onto the screen at an angle. As a result, the image appears distorted and resembles a trapezoid.



When making the adjustments, set the light source to minimum power.

Horizontal keystone	Vertical keystone
	
Projector skewed horizontally to the screen	Projector tilted vertically to the screen

1. If the image suffers from slight keystone effect, it can be corrected with electronic cropping.
2. 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.

3. If one side of the image is longer than another, adjust the tilt and level of the projector.

Correcting dual projector horizontal keystone

Learn how to correct horizontal keystone.

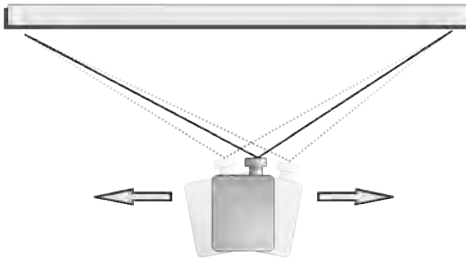
1. On both projectors, *turn the light source on and open the douser* (on page 24).

2. *Align the dual projector images* (on page 25).
3. On the top projector, *display the DC2K Framing Green test pattern* (on page 66).
4. On the bottom projector, *display the DC2K Framing Red test pattern* (on page 66).
5. Verify that both projectors are level.
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.

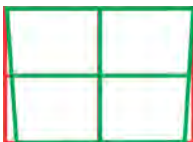


9. Reinstall the locking brackets removed in step 7.
10. On the touch panel, select the **Lens Adjust** icon on the main screen and then select the **left** or **right arrow** icons in the Offset area to bring the vertical lines closer together.
11. If required, on each projector, select the **Lens Adjust**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

Correcting dual projector vertical keystone

Learn how to correct vertical keystone.

1. On both projectors, *turn the light source on and open the douser* (on page 24).
2. *Align the dual projector images.* (on page 25)
3. On the top projector, *display the DC2K Framing Green test pattern.* (on page 66)
4. On the bottom projector, *display the DC2K Framing Red test pattern.* (on page 66)
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 touch panel, select the **Lens Adjust** icon on the main screen and then select the **forward** or **backward arrows** in the Offset area to bring the horizontal lines closer together.
 10. If required, on each projector, select the **Lens Adjust** icon and then select the **left focus** and **right focus** icons in the Focus area until both images are the same size and focused.

Correcting vignetting

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

If your image suffers from vignetting, the lens has reached the end of its offset travel range.

If your installation does not allow the image to be centered with the center of the screen, move the entire projector in the direction of lens travel.

Adjusting vertical boresight

Perform a top and bottom boresight adjustment to fix image focus issues that cannot be corrected by aligning the projector to the screen and focusing the lens.



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

- This procedure must be performed by Christie qualified technicians.

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

Christie recommends that you complete a top and bottom boresight adjustment before adjusting the horizontal boresight.

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.

Ensure that the boresight lockdown screws are adequately tightened. Inadequately tightening the boresight screws can result in excessive onscreen image vibration. After adjusting boresight, evaluate the onscreen image vibration and re-adjust if needed.

1. Remove the lens surround.
2. Display the DC2K Boresight test pattern.
3. Loosen the set screw .
4. Turn the vertical cap screw 1/8 of a turn counter-clockwise.

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 you count each turn of the cap screws to ensure accurate adjustment.

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, try adjusting horizontal boresight.
10. Replace the lens surround.

Adjusting horizontal boresight

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



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

- This procedure must be performed by Christie qualified technicians.

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

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.

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.

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

1. Remove the lens surround.
2. Display the DC2K Boresight test pattern.
3. Loosen the right boresight set screw .
4. Turn the right boresight cap screw 1/16 of a turn clockwise.
5. Adjust the left boresight cap screw equally in the opposite direction.
6. 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.

7. 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.
8. Repeat steps 5 to 7 for the left side.
9. Verify that each corner of the screen is equally in focus.
If this is not the case, repeat vertical boresight.

Adjusting digital micromirror device convergence

A digital micromirror device (DMD) 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 the fold mirror

Learn how to align the fold mirror with the optical system to correct an image with missing or shadowy corners or edges.

1. Remove the top cover.
2. Display the RGB-12bit-Full Screen White test pattern.
3. Insert a hex driver in the first set screw and a hex driver in the first cap screw.
4. Equally turn the set screw and cap screw in opposite directions until the black corner is removed.
5. If the black corner remains, insert a hex driver in the second set screw and a hex driver in the second cap screw.
6. Equally turn the set screw and cap screw in opposite directions until the black corner is removed.
7. Replace the top cover.

Calibrating the color

Learn how to create Measured Color Gamut Data (MCGD) files to correct on-screen colors.

Using a colorimeter, measure the colors displayed on the screen from the center of the audience viewing location.

Masking the screen edges

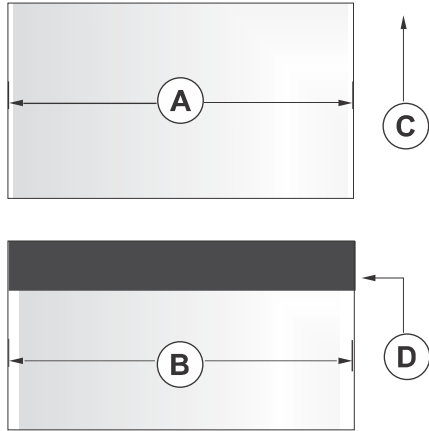
Conceal the unused edges of a screen with top or side masking.

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

1. To create top masking:

- a) Install movable flat black panels or curtains along the top edge of the screen.
- b) Raise the curtain for flat images or lower the curtain for scope images.

Top masking theater (1.85 screens)

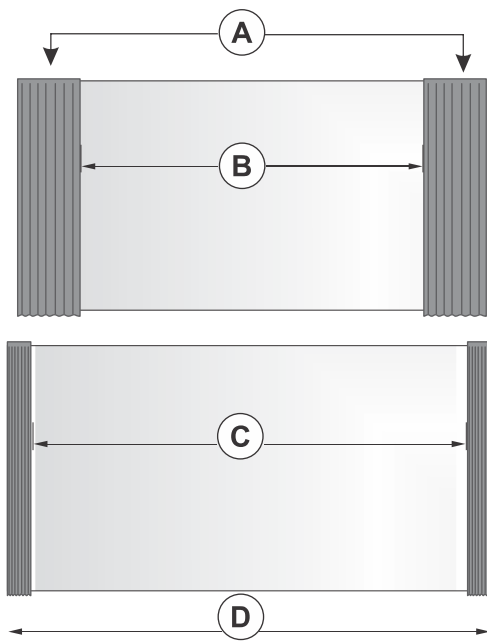


A	1.85 image
B	2.39 image
C	Masking moved up
D	Top masking to hide screen top

2. To create side masking:

- a) Install movable flat black panels or curtains along each side of the screen.
- b) Close the curtain for flat images or open the curtain and zoom for scope images.

Side masking theater (2.39 screens)



Side masking theater (2.39 screens)	
A	Side masking to hide screen edges
B	1.85:1 image (flat)
C	2.39:1 image (scope)
D	Masking moved aside

Calibrating screen brightness (fL)

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

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

Accessing projector diagnostics








Learn how to access projector system logs and run 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 on or off, select channels, and view status information. The TPC is mounted on the of the projector. 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, select the emergency start button on the communications panel. This starts the projector, turns the on, and opens the douser. When using the emergency start button, you cannot change channels.

Use the main screen of the TPC to access power, , douser, channel, and test pattern settings.

Control	Image	Description
System status		
Status LED		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. Select the status LED to open the Status window and resolve issues.
Preferred channels		
Channel buttons		Displays custom projector settings.
All channels button		Displays 64 saved channels.
Power		
Power off		Turns the projector on or off. Select off to place the projector in stand-by mode. To prevent accidental activation, select and hold the on or off buttons. A message displays in the title bar when the projector turns on or off.
Power on		
off		Turns the on or off. To prevent accidental activation, select and hold the on or off buttons. A boot delay occurs if you turn the on before turning on the projector power.
on		

Control	Image	Description
Douser		
Douser closed		Opens or closes the douser.
Douser opened		
Lens adjust		
Lens adjust		Controls the Intelligent Lens System (ILS) lens motors. Select to open the ILS File Setup window.
Test pattern		
Disable pattern		Selects or disables test patterns.
Select test pattern		
Operational status		
Status LED		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. Select the status LED to open the Status window and resolve issues.
Bottom bar		
Menu		Select the Menu button to access projector menus.
Status icons		These icons change as these elements update from changes on the projector. The current time also displays.
Select test pattern		Select the Select Test Pattern icon to open the Preferred Test Patterns window and select a test pattern to display.

Logging on to the projector

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

1. On the TPC, tap **Menu** > **Login**.
2. From the Username list, select a user name.
Each user account has set user access permissions.
3. In the Password field, type the password.
4. Tap **Login**.

Viewing the status of projector components

The Status window displays information about the status of projector components.

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

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



If the Interlocks status LED is yellow or red, contact Christie technical support.

1. On the touch panel controller (TPC), select **Menu > Status**.
2. Select an item in the left pane to view its detailed information.
If the Item or Value descriptions are too long for the cell, select the description to view the full description at the bottom of the window. To adjust the width of a column in the left pane, select and drag the column border. When you close the Status window, the column widths return to their default size.

Running the projector interrogator

The interrogator captures diagnostic information that you can use to assist Christie service technicians diagnose and correct projector issues.

Image disruption can occur if you run the interrogator during a show. 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 panel controller (TPC), *log on to the projector* (on page 22) with operator, administrator, or service permissions.
2. Select **Menu > Diagnostics > Interrogator**.
3. Select one of the following options:
 - **Basic Mode**—A basic projector interrogation that returns only projector log files.
 - **Enhanced Mode**—An enhanced interrogation that returns projector log files and registered batch files.
4. Select **Yes**.
5. Insert a USB flash drive into the TPC USB port.
6. Select **Download to USB**.

Retrieving system logs

System logs can help you identify and correct projector issues.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with operator, administrator, or service permissions.
2. Select **Menu > Diagnostics > System Logs**.
3. From the From list, select a start date for the logs.

4. From the To list, select an end date for the logs.
5. From the Type list, select a log type.
6. From the Severity list, select the severity type.
7. Select **Retrieve Logs**.
8. Insert a USB flash drive into the TPC USB port.
9. Select **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.

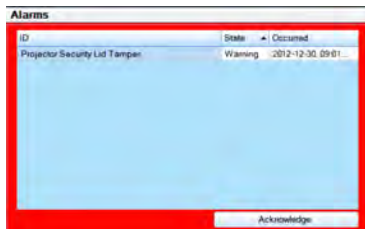
You cannot use a server test to turn metadata or subtitling off or on.

1. On the touch panel controller (TPC), select **Menu > Diagnostics > Server Test**.
2. If you are searching a metadata file, in the Meta File URI field, enter the location of the file.
3. If you are searching a subtitle file, in the Subtitling URI field, enter the location of the file.

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.



1. To acknowledge an alarm and remove it from the Alarms window, select **Acknowledge**.
2. To view all alarms, in the left pane select **Menu > Status > All Alarms**.

Turning the projector off

Complete the following procedure to turn off the projector.

1. On the touch panel controller (TPC), to turn off the , select and hold **Off**. 
2. Select and hold **Power Off**. 

The projector enters a cool down mode and the fans and electronics stay on for minutes. After this cool down period, the projector enters standby mode.
3. If you are servicing the projector or removing the protective cover, disconnect the AC power and turn the breaker off.

Managing the Digital Light Processing

Learn how to manage the integrated cinema processor (ICP) electronics.

To access the Digital Light Processing (DLP) menus, you need administrator or service permissions.

Stopping Digital Light Processing communication

Stop Digital Light Processing (DLP) communication when you perform DLP maintenance.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Diagnostics > DLP Management**.
3. Select **Stop DLP Communication**.
4. Select **Acknowledge**.

Resetting the Digital Light Processing

To remove image artifacts from the screen, try resetting the Digital Light Processing (DLP) before restarting the projector.

Do not reset the DLP if content is playing.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Diagnostics > DLP Management**.
3. Select **Reset DLP**.
4. Select **Yes**.
5. If an alarm appears, select **Acknowledge**.

Running a Digital Light Processing self test

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

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Diagnostics > DLP Management**.

3. Select **DLP Self Test**.
4. Select **Yes**.
5. To close the results pane, select **Clear Results**.

Downloading an integrated cinema processor certificate

The integrated cinema processor (ICP) certificate is used in the creation of key delivery messages (KDM) for the integrated media block (IMB). The ICP certificate represents the projector identity, and is included in the trusted device list portion of the KDM.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Insert a USB flash drive into the touch panel controller (TPC) USB port.
3. Select **Menu > Diagnostics > DLP Management**.
4. Select **Download ICP Certificate**.
5. Select **Close**.

Disabling the integrated cinema processor signature test

Error messages that appear when the integrated cinema processor (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. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Diagnostics > DLP Management**.
3. Select **DLP Self Test**.
4. Select **Yes**.
To re-enable the ICP signature test, clear the **Bypass Signature Test** check box.

Managing lamp information

Learn how to set up and work with a lamp.

This section provides information and procedures for optimizing lamp performance. Optimizing lamp performance is recommended to make sure you receive the brightest, most uniform image possible for the life of the lamp.

Creating a new lamp file

Define the lamp used in the projector.

1. Select **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/m2	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. Select **Save As**.
4. Enter a name for the lamp file in the **Filename** field.
5. Select **OK**.

Modifying an existing lamp file

Change any of the settings previously defined for a lamp.

1. Select **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. Select **Save**. If you want to revert your changes, select **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. Select **Menu > Advanced Setup > Lamp Power / LiteLOC Setup**.
2. From the Current Lamp File list, select a lamp file.
3. Do one of the following:
 - To enable LiteLOC, select **Enable LiteLOC**.
 - To disable LiteLOC, clear the **Enable LiteLOC** check box.
4. Select **Save**.

Adjusting lamp power

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

Changing the lamp power percentage

Entering a new Lamp Power percentage temporarily disables LiteLOC settings.

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

Viewing lamp information

View the information collected on previously used lamps.

1. Select **Menu Advanced Setup Lamp History**.
2. Review the information displayed in the history.

Receiving an alarm when a lamp reaches its expiry date

Set a trigger to receive an alarm when the lamp reaches its operational limit.

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

Adding a lamp to the Lamp History

Add advanced lamp information to Lamp History.

Once added, a lamp entry cannot be removed or modified.

1. Tap **MenuAdvanced SetupLamp 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

Check the current lamp intensity value.

1. Select **Menu > Advanced Setup > Lamp Power/LiteLOC Setup**.
2. Review the current light intensity value displayed in the Intensity field.

Working with channels

Create channels to store customized projector settings for different inputs.


Creating a new channel

You can create a maximum of 64 channels.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with advanced, administrator, or service permissions.
2. Select **Menu > Channel Setup**.
3. From the Channel Name list, select a channel.
4. Select the **Launch Dialog** icon:



5. Enter a name for the channel and select **Enter**.
6. On the Config 1 screen, complete the following fields:


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.
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. To edit ILS file settings, select the Launch Dialog icon:  Any changes made to the ILS file settings are applied to all channels that use this ILS file.

7. In the left pane, select **Config 2**.
8. Complete the following 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 in the Config 1 screen.
Gamma	The gamma correction required for the proper tonal range of the source material. This option is not available when Use PCF is selected in the Config 1 screen.
LUT_CLUT	Look up table (LUT) or color look up table (CLUT). Applies a 3D color cube for increased color accuracy. This option is not available when Use PCF is selected in the Config 1 screen.
Scan Type	The video scan type. The default is Progressive .
Automatic Scan Type Detection	Automatically performs scan type detection. This feature is supported for 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.

9. If the channel is being created to display 3D content, select **3D Control** in the left pane.
10. Complete the following 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.

Field	Description
	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).
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 Output Delay information below. Values between 0 and 65535 are accepted. To enter the dark time value, select the Launch Dialog icon: 
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. To enter the output delay value, select the Launch Dialog icon: 
Phase Delay	The degree of reference between the left and right sync output. Values between -180 and 180 are accepted. To enter the phase delay value, select the Launch Dialog icon: 

11. To activate the channel, select **Activate**.

Activating a channel

To use the customized projector settings saved in a channel, activate the required channel.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with advanced, administrator, or service permissions.
2. Select **Menu > Channel Setup**.
3. From the Channel Name list, select a channel.
4. To activate the channel, select **Activate**.

Restoring default channel settings

Complete the following procedure to restore default channel settings.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with advanced, administrator, or service permissions.
2. Select **Menu > Channel Setup**.
3. From the Channel Name list, select a channel.
4. Select **Defaults**.
5. Do one of the following:
 - To restore the default settings to the selected channel, select **Default Current Channel**.
 - To restore the default settings to all channels, select **Default All Channels**.
6. Select **OK**.

Changing the channel icon

Complete the following procedure to change the channel icon.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with advanced, administrator, or service permissions.
2. Tap **Menu > Channel Setup**.
3. From the Channel Name list, select a channel.
4. Tap **Icon**.
5. Tap an icon.
6. Tap **OK**.

Adding or removing preferred channels

Complete the following procedure to add or remove channels from the Preferred Channels pane.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Preferred Channel Setup**.

3. To add a channel to the Preferred Channels pane, select and drag a channel from the **All Channels** list to the **Selected Channel Buttons (Drag and Drop)** pane.
4. To remove a channel from the Preferred Channels pane, select 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

Learn how to create and modify the projector settings files.

Creating a source file

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

1. On the touch panel controller (TPC), select **Menu > Advanced Setup > Source File Setup**.
2. Select **Save As**.
3. In the **Filename** field type a name for the source file.
4. Select **OK**.
5. Enter values in these areas:
 - **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. Select **Save**.

Modifying a source file

You can change the settings in a source file after it is created.

1. On the touch panel controller (TPC), select **Menu > Advanced Setup > Source File Setup**.
2. From the Current Source File list, select the source file to edit.
3. Modify the **Resolution**, **Offset**, or **Aspect Ratio** values.
4. Select **Save**.

Creating a screen file

Use screen files to define the size of the display panel and image cropping.

The same screen file can be assigned to multiple input devices.

1. On the touch panel controller (TPC), select **Menu > Advanced Setup > Screen File Setup**.
2. Select **Save As**.

3. In the **Filename** field type a name for the screen file.
4. Select **OK**.
5. Enter values in these areas:
 - **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. Type 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. Select **Save**.

Modifying a screen file

You can change the settings in a screen file after it is created.

1. On the touch panel controller (TPC), select **Menu > Advanced Setup > Screen File Setup**.
2. From the Current Screen File list, select the screen file to edit.
3. Modify the screen file settings.
4. Select **Save**.

Creating a measured color gamut data file

Create measured color gamut data (MCGD) files to correct on-screen colors.

A colorimeter is required to complete this procedure.

1. Turn on the light source and allow it to operate for 20 minutes.
2. On the touch panel controller (TPC), select **Menu > Advanced Setup > MCGD File Setup**.
3. Select **Save As**.
4. In the **Filename** field type a name for the MCGD file.
5. Select **OK**.
6. To display the red test pattern, in the red area of the chromaticity image select the option button.
7. Measure the red chromaticity with the colorimeter.
8. Record the red chromaticity value.
9. Repeat steps 6 to 8 for the green, blue, white, and black chromaticity measurements. Select the test pattern that matches the color you are measuring.
10. Enter the chromaticity measurements you recorded in step 7 in the red, green, blue, white, and black **x** and **y** fields.
11. If the MCGD file will be associated with a 3D channel, select **Enable 3D** and select a frame rate.
12. Select **Save**.

Modifying a measured color gamut data file

You can change the settings in a measured color gamut data (MCGD) file after it is created.

1. On the touch panel controller (TPC), select **Menu > Advanced Setup > MCGD File Setup**.
2. From the Current Measured (MCGD) File list, select the MCGD file to edit.
3. Modify the MCGD file settings.
4. Select **Save**.

Creating a target color gamut data file

Create a target color gamut data (TCGD) file with the settings defined by your content provider.

A colorimeter is required to complete this procedure.

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

Modifying a target color gamut data file

You can change the settings in a target color gamut data (TCGD) file after it is created.

1. On the touch panel controller (TPC), select **Menu > Advanced Setup > TCGD File Setup**.
2. From the Current Target (TCGD) File list, select the TCGD file to edit.
3. Modify the TCGD file settings.
4. Select **Save**.

Creating a new intelligent lens system file

Create a new file for the intelligent lens system (ILS).

1. On the touch panel controller (TPC), select **Menu > Advanced Setup > ILS File Setup**.
2. Select **Save As**.

3. In the **Filename** field, enter a name for the ILS file.
4. Select **OK**.
5. To adjust the focus of the image on the screen, in the Focus area, select the left or right icons.
6. To adjust the image size, in the Zoom area, select the positive or negative icons.
7. To move the position of the image on the screen, in the Offset area, select the forward, backward, left, or right arrow icons.
8. Select **Save**.

Editing an existing intelligent lens system file

You can change an existing intelligent lens system (ILS) file if required.

1. On the touch panel controller (TPC), select **Menu > Advanced Setup > ILS File Setup**.
2. From the Current ILS File list, select an ILS file.
3. To adjust the focus of the image on the screen, in the Focus area, select the left or right icons.
4. To adjust the image focus, in the Zoom area, select the positive or negative icons.
5. To move the position of the image on the screen, in the Offset area, select the forward, backward, left, or right arrow icons.
6. Select **Save**.

Enabling automatic intelligent lens system adjustments on a channel

Enable or disable automatically adjusting the intelligent lens system (ILS) on a channel.

1. On the main screen of the touch panel controller (TPC), in the Preferred Channels pane, select a channel.
2. Select **Lens Adjust**.
3. Select **Enable Automatic ILS**.
4. Select **OK**.

Resetting intelligent lens system file settings

Reset the intelligent lens system (ILS) file settings to the default settings.

You must reset the 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. On the touch panel controller (TPC), select **Menu > Advanced Setup > ILS File Setup**.
2. From the Current ILS File list, select an ILS file.
3. Select **Quick Reset**.
4. Select **Yes**.

Adding a lens serial number

Add the serial number for the lens to help identify it.

1. On the touch panel controller (TPC), select **Menu > Advanced Setup > Lens Setup**.
2. From the Primary Lens list, select a lens.
3. In the Serial Number field, select the **Launch Dialog** (ⓘ) icon.
4. Enter the serial number for the lens.
5. Select **Enter**.
6. Select **Save**.

Enabling an automatic intelligent lens system on a lens

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

1. On the touch panel controller (TPC), select **Menu > Advanced Setup > Lens Setup**.
2. From the Primary Lens list, select a lens.
3. In the Intelligent Lens System area, select **Enable Automatic ILS**.

Resetting the lens position on projector startup

You can reset the lens position to a default location each time the projector starts up.

We recommend performing this task daily to reduce the risk of large variations in image position and quality.

1. On the touch panel controller (TPC), select **Menu > Advanced Setup > Lens Setup**.
2. From the Primary Lens list, select a lens.
3. In the Intelligent Lens System area, select **Reset on Startup**.

Completing a full lens calibration

Ensure the lens is calibrated before using the projector.

Complete this task whenever a projection lens is installed.

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

Resetting the intelligent lens system and the lens position

Reset the intelligent lens system (ILS) and the lens to the default position.

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

Scheduling events

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

Scheduling the projector to turn on or off

Set up an automatic schedule for when the projector turns on or off.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Scheduler**.
3. Select **Enable Scheduler**.
4. To view the available dates, select and drag the scroll bar.
5. Select a square below the date and next to the time that you want the projector to turn on or off.
6. Select **New**.
7. Determine when the projector turns on or off.
 - To turn the projector off at a specific date and time, select **Power Off**.
 - To turn the projector on at a specific date and time, select **Power On**.
8. To enable or disable the scheduled event, select **Start**.
New scheduled events are enabled by default.
9. Select a date and a time for the scheduled event.
10. To determine when the event occurs, do one of the following:
 - To have the scheduled event occur weekly, select **Weekly** and then select the days that you want the event to occur.
 - To have the scheduled event occur once at a specific date and time, select **Once**.
11. Select **Expire**.
12. Select the date you want a weekly event to expire.
13. Select **Save**.
14. To return to the calendar view, select **OK**.

Editing a scheduled event

You can change a an event after it has been scheduled.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Scheduler**.

3. To view the available dates, select and drag the scroll bar.
4. Select the event you want to edit.
5. Select **Edit**.
6. Adjust the settings for the event.
7. Select **Save**.
8. To return to the calendar view, select **OK**.

Deleting a scheduled event

Delete a scheduled event if it is no longer required.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Scheduler**.
3. To view the available dates, select and drag the scroll bar.
4. Select the event you want to delete.
5. Select **Delete**.
6. To return to the calendar view, select **OK**.

Deleting all scheduled events

If all of the scheduled events are no longer required, you can delete them.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Scheduler**.
3. Select **Delete All**.
4. Select **Yes**.

Turning off the scheduler

Turn off scheduler if you do not plan to use this feature.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. On the touch panel controller (TPC), select **Menu > Administrator Setup > Scheduler**.
3. Select to clear the **Enable Scheduler** check box.

Viewing and modifying projector settings

Learn how to modify projector settings including the touch panel controller (TPC) language, TPC screen brightness, and time settings.

Setting projector and touch panel controller preferences

You can adjust various administrator preferences for the projector and touch panel controller (TPC).

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Preferences**.
3. Adjust the following settings as required:

Adjusting projector time settings

You can adjust various time settings for the projector.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Time Setup**.
3. Adjust the following settings as required:

Adding or modifying projector communication settings

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

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Communications Configuration**.
3. Complete these fields:

Field	Description
Device Name	The name of the projector.

Field	Description
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

Learn how to add a network device.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Network Devices Setup**.
3. Select the check box.
If the check box is not selected, the device does not appear in the **Network Devices** menu.
4. Select the **Launch Dialog** (☐) icon in the **Device Name** field and type a name for the network device.
5. Select **Enter**.
6. Select the **Launch Dialog** icon in the URL field and type the URL for the network device.
7. Select **Enter**.

Accessing a network device

Learn how to interact with network devices.

1. On the touch panel controller (TPC), select **Menu > Network Devices > Christie ACT**.
2. To interact with the device select  in the top-right corner of the window.

Calibrating the internal light meter

Calibrate the internal light meter to Foot Lamberts with the Foot Lamberts Calibration wizard.

If content is playing when you run the Foot Lamberts Calibration wizard, playback stops.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu** > **Administrator Setup** > **Foot Lamberts Calibration**.
3. Select **Next** and complete the Foot Lamberts Calibration wizard.

Viewing processes and programs running on the projector

Use the Microsoft Task Manager to view information about performance measures and programs or processes running on your projector.

1. On the touch panel controller (TPC), select **Menu** > **Service Setup** > **System Access**.
2. Select **Task Manager**.
3. Select **OK**.

Viewing local or remote computer settings

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

1. On the touch panel controller (TPC), select **Menu** > **Service Setup** > **System Access**.
2. Select **Computer Management**.
3. Select **OK**.

Viewing the files on the projector

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

1. On the touch panel controller (TPC), select **Menu** > **Service Setup** > **System Access**.
2. Select **Windows Explorer**.
3. Select **OK**.

Viewing and modifying network connections

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

1. On the touch panel controller (TPC), select **Menu** > **Service Setup** > **System Access**.
2. Select **Network Connections**.

3. Select **OK**.

Viewing projector information

The About window provides projector information including the serial number, the current software version, the digital light processing (DLP) version, and the lens type.

- On the touch panel controller (TPC), select **Menu > About**.

Managing user accounts

You can add, delete, and modify 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 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 can create a new user account.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > User Accounts**.
3. Select **Add**.
4. In the Username field, select the **Launch Dialog** icon:



5. Enter the user name and select **Enter**.

6. Repeat steps 3 and 4 for the Password and Confirm Password fields.
7. In the Permissions list, select **access permissions for the user**.
8. Select **Accept**.

Changing a user account password or permissions

You can update the password or access permissions of a user account.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > User Accounts**.
3. From the Username list, select a user name.
4. Select **Edit**.
5. Change the password or the access permissions.
6. Select **Accept**.

Deleting a user account

You can delete a user account when it is no longer needed.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > User Accounts**.
3. From the Username list, select a user name.
4. Select **Delete**.
5. Select **Yes**.

Backing up, restoring, and upgrading projector files

Learn how to manage projector files.

Adding an upgrade file

You can add an upgrade file to the projector.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Upgrade**.
3. Select **Upload**.
4. In the Drive Letter list, select the location of the upgrade file.
5. In the Folder list, browse to the location of the upgrade file.
6. Select the upgrade file and then tap **Open**.

Removing an upgrade file

You can remove an upgrade file if it is not required.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Upgrade**.
3. In the Available Upgrade Files list, select an upgrade file.
4. Select **Remove**.

Installing an upgrade file

Complete the following procedure to install an upgrade file.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Upgrade**.
3. In the Available Upgrade Files list, select an upgrade file.

4. Select **Next**.
5. In the Component list, select a component.
6. 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.

7. Select **Next**.

Backing up projector settings and information

You can back up the current projector settings in case you must restore these settings at a later time.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with service permissions.
2. Select **Menu > Service Setup > File Management**.
3. Select **Backup**.

Restoring a file

You can restore configuration, preference, channel, user, and ICP files.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with service permissions.
2. Select **Menu > Service Setup > File Management**.
3. To the right of the **File to restore** field, select **Browse**.
4. In the Drive Letter list, select the location of the upgrade file.
5. In the Folder list, browse to the location of the upgrade file.
6. Select the upgrade file and then select **Open**.
7. In the Select type list, select the type of file to restore.
8. Select **Restore**.
9. Select **Yes**.

Restoring factory default settings

You can restore configuration, reference, channel, and user files.

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with service permissions.
2. Select **Menu > Service Setup > File Management**.

3. In the Select type list, select a file type to restore.
4. Select **Reset Defaults**.
5. Select **Yes**.

Moving files to the projector

You can move files onto the projector from a USB flash drive.

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

Deleting projector files

You can delete files when required.

1. On the touch panel controller (TPC), select **Menu > Service Setup > File Maintenance**.
2. In the File Type list, select a file type.
3. Select and drag a file from the **Projector Files** pane to the trash can icon.
4. Select **Yes**.

Test patterns


Adding or removing preferred test patterns

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

1. On the touch panel controller (TPC), *log on to the projector* (on page 22) with administrator or service permissions.
2. Select **Menu > Administrator Setup > Preferred Test Pattern Setup**.
3. To add a test pattern to the Preferred Test Pattern pane, select and drag a test pattern from the Unselected Patterns list to User Selected pane.
4. To remove a test pattern from the Preferred Test Pattern pane, select and drag a test pattern from the User Selected pane to the recycle bin in the bottom right corner.


Turning a test pattern on or off

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

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

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

Displaying a full screen test pattern

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

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

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

Viewing 3D content

Configure the hardware and software for viewing 3D presentations.

Display requirements

To display 3D images with the CP2208 projector, you require the following 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.
6	CONN_3D_MODE+	Out	SYNC from projector. To projector GPO collector. Compatible with current projector

Pin	Signal name	Direction	Description
			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_REFERENCE+	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_REFERENCE-	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. (24VDC 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	Primary 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	Primary 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. Select **Menu > Advanced Setup > High Frame Rate 3D File Setup**.
2. From the Current 3D File list, select a 3D frame rate file.
3. Complete these fields:

Field	Description
3D Sync Input Mode	<p>Specifies whether a specific frame of input data has left eye or right eye data.</p> <p>Select Use White Line Code (true and inverted) if you are using a single 3D input signal in which an embedded white line at the bottom of each frame identifies left and right, and an additional separate 3D stereo sync input at the GPIO port is not present. The bottom row of the left-eye sub-field should be pure white for the left-most 25% of the pixel row and pure black for the remainder of the row. The bottom row of the right-eye sub-field should be pure white for the left-most 75% of the pixel row and pure black for the remainder of the row.</p> <p>Select Use Line Interleave for 3D source data only. When specified, the ICP 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).</p>
L/R Display Reference	Specifies which frame of eye data to display during a specific display frame. This signal is referenced to the display frame rate which is specified by the Frame Rate N:M.
Frame Rate N:M	Sets how many frames to display per number of frames that form one complete image. Increase the display frame rate to reduce flicker from your source(s).
L/R Display Sequence	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	<p>Keeps 3D stereo sync output the same as input (true) or reversed (inverted).</p> <p>True: 3D L/R sync output from GPO will match L/R sync input.</p> <p>Inverted: 3D L/R sync output from GPO will be the opposite of sync input (left = right, right = left).</p>

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. To enter the dark time value, tap the Launch Dialog icon: 
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. Select 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. Select Launch Dialog to enter the phase delay value.

4. Select **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. Select **Menu > Advanced Setup > Lamp Power / LiteLOC™ Setup**.
2. From the Current Lamp File list, select **Default 3D**.
3. In the Power % field, set the brightness percentage for the lamp.
4. Select **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 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. In the Red, Green, Blue and White fields, enter the x and y values.
5. Select **Save As**.
6. In the File Name field, enter **3D Onsite**.
7. Select **Save**.

Editing the 3D flat 1998 x 1080 channel

Edit the projector settings in the 3D channels to ensure the 3D content is displayed correctly.

1. Select **Menu** > **Channel Setup**.
2. From the Channel Name list, select **3D Flat 1998x1080**.
3. In the left pane, select **Config 1** and edit these settings:
 - a) From the Input list, select **292-Dual**.
 - b) From the Data Format list, select **YCrCb 4:2:2 10 bits x2**.
 - c) From the Source File list, select **1998x1080 1.85 Flat**.
 - d) From the Screen File list, select **Flat**.
4. In the left pane, tap **Config 2** and edit these settings:
 - a) From the Measured Color list, select **3D Onsite**.
If this option is not available, *define a measured color gamut data file* (on page 70).
 - b) From the Target Color list, select **DC28_DCIXYZE_314_351**.
 - c) From the Color Space list, select **YCrCb Inverse ICT**.
 - d) From the Gamma list, select **Gamma 2.6**.
 - e) From the LUT-CLUT list, select **Linear_9x9x9**.
5. In the left pane, tap **3D Control** and edit these settings:
 - a) From the 3D Sync Input Mode list, select **Line Interleave**.
 - b) From the Frame Rate N:M list, select a frame rate suitable to your 3D system.
For example, for 24Hz 3D, select 2:2, 4:2, or 6:2 for single, double, and triple flash.
 - c) From the L/R Display Sequence list, select **Left (L1R1 L2R2)**.
 - d) From the 3D Sync Polarity list, select **True**.
 - e) In the Dark Time field, enter **430** or a value appropriate for your 3D hardware.
 - f) In the Output Delay field, enter **-120** or a value appropriate for your 3D hardware.
 - g) In the Phase Delay field, enter **0** or a value appropriate for your 3D hardware.

Editing the 3D scope 2048 x 858 channel

Edit the projector settings in the 3D channels to ensure the 3D content is displayed correctly.

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

- If this option is not available, *define a measured color gamut data file* (on page 70).
- b) From the Target Color list, select **DC28_DCIXYZE_314_351**.
 - c) From the Color Space list, select **YCxCz Inverse ICT**.
 - d) From the Gamma list, select **Gamma 2.6**.
 - e) From the LUT-CLUT list, select **Linear_9x9x9**.
5. In the left pane, select **3D Control** and edit these settings:
 - a) From the 3D Sync Input Mode list, select **Line Interleave**.
 - b) From the Frame Rate N:M list, select **6:2**.
 - c) From the L/R Display Sequence list, select **Left (L1R1 L2R2)**.
 - d) From the 3D Sync Polarity list, select **True**.
 - e) In the Dark Time field, enter **430** or a value appropriate for your 3D hardware.
 - f) In the Output Delay field, enter **-120** or a value appropriate for your 3D hardware.
 - g) In the Phase Delay field, enter **0** or 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. Select **Menu > Channel Setup**.
2. From the Channel Name list, select a 3D channel.
3. Select **3D Test Patterns**.
4. Select 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

Check the 3D content to verify that it displays correctly.

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) Select **Menu** > **Channel Setup** on the TPC.
 - b) From the Channel Name list, select a 3D channel.
 - c) From the 3D Sync Polarity list, select **Inverted**.

Troubleshooting 3D

In addition to the information provided in the troubleshooting topics, we recommend that you consult the documentation provided with your 3D hardware to help resolve issues.

Reversed 3D effect (Pseudo 3D)

The 3D effect looks reversed or broken up.

Resolution

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. Select **Menu** > **Channel Setup**.
 - b. From the Channel Name list, select a 3D channel.
 - c. From the 3D Sync Polarity list, select **Inverted** or **True**.
3. If you see image breakup:
 - a. Select **Menu** > **Channel Setup**.
 - b. From the Channel Name list, select a 3D channel.
 - c. In the left pane, select **3D Control**.
 - d. 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.

Resolution

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

No 3D effect

When viewing 3D content, I cannot see the 3D effect.

Resolution

1. Select **Menu > Channel Setup**.
2. From the Channel Name list, select a 3D channel.
3. In the left pane, select **3D Control**.
4. Verify that **Enable 3D** is selected.

Ghosting / cross-talk

When viewing 3D content, I see blurred edges and misaligned images.

Resolution

1. Select **Menu > Channel Setup**.
2. From the Channel Name list, select a 3D channel.
3. In the left pane, select **3D Control**.
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

When viewing 3D content, I see motion artifacts.

Resolution

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

Disturbing flashing in one eye

When viewing 3D content, I see distracting flashing in one eye.

Resolution

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

Maintaining the projector

Learn the information and procedures for performing projector maintenance.

Read through this section in its entirety before performing maintenance activities. When performing projector maintenance, obey all warnings and precautions.



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

- SHOCK HAZARD! Disconnect the product from AC before installing, moving, servicing, cleaning, removing components, or opening any enclosure.

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

- Christie products must be installed and serviced by Christie qualified technicians.
- Only Christie qualified technicians are permitted to open product enclosures.



Notice. If not avoided, the following could result in property damage.

- Observe all electrostatic precautions. Use a grounded wrist strap and insulated tools when handling, servicing, or cleaning electronic assemblies.
- Always wear clean, powder-free latex gloves when handling optical components.

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 sides of the projector.

Inspecting and cleaning the lamp

Inspect the contact surfaces of the lamp connections.



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

- SHOCK HAZARD! Disconnect the product from AC before installing, moving, servicing, cleaning, removing components, or opening any enclosure.
- EXPLOSION HAZARD! Always wear manufacturer approved protective safety clothing (gloves, jacket, face shield) whenever the lamp door is open or when handling the lamp. Any local or federal specifications take precedence over Christie's protective clothing recommendations.

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

Replacing the lamp

Removing the existing lamp

Remove an old lamp from the projector adhering to all steps and safety precautions.

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. Remove the touch panel.
5. Put on your protective clothing, face shield, and gloves.
6. Open the lamp door with the lamp door key.
7. Loosen the two thumbscrews and open the firewall door.
8. Loosen the two thumbscrews and open the lamp access door.
9. For CDXL-14 or CDXL-16 lamps, loosen the extension nut screw.
 - a) 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.
 - b) With your left hand guide the cathode end of the lamp out of the reflector, on an angle through the lamp access door.
10. For CDXL-19SC or CDXL-21S1 lamps, loosen the cathode screw on the cathode clamp.
 - a) Hold the anode end of the clamp with your left hand then carefully unscrew and remove the cathode nut with your right hand.
 - b) As you hold the anode end of the lamp, carefully guide the lamp through the reflector ensuring not to make contact with the reflector.
 - c) With your right hand, guide the cathode end out of the reflector on an angle through the lamp access door.
11. 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.

Installing the new lamp

Inspecting and cleaning optics

Inspect and clean optical components such as the projection lens to ensure optimum image display. Unnecessary cleaning of optics can increase the risk of degrading delicate coatings and surfaces. 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.

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.



Notice. If not avoided, the following could result in property damage.

- Christie products must be installed and serviced by Christie qualified technicians.
- Do not reuse lens tissues.
- Always handle optics by their edges.

Recommended service kit

Use the following recommended tools to clean the optics.

- 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

To avoid the risk of scratching the lens, clean the lens only if absolutely required.

Removing dust from the projection lens

Remove dust from the projection lens to ensure optimum image display.

1. Brush most of the dust off with a camel-hair 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 finger pressure. 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, smudge, or oil from the projection lens

Remove fingerprints, smudges, or oil from the projection lens to ensure optimum image display.

Clean the lens only if absolutely required.

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. Do not use a cleaning solvent that contains ammonia. Avoid lens contact with Xylene and Ether.
3. Gently wipe the surface using a figure eight motion.
4. Repeat until the blemish is removed.

Inspecting the card cage filter

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.

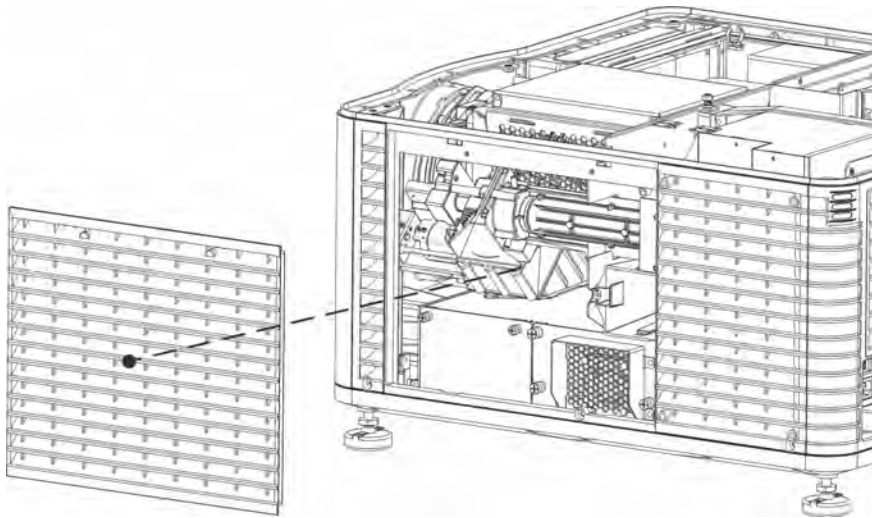
The filter is located on the left side of the projector behind the air filter cover. Use only high efficiency Christie approved filters.

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, *clean it* (on page 80).
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.

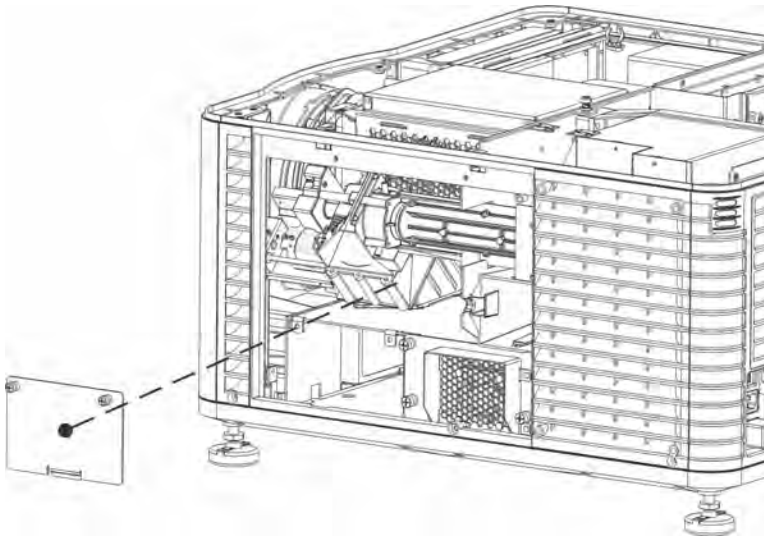
Inspecting the light engine compartment filter

The filter is located on the right side of the projector behind the service access panel.

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.
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.



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

- Install dry filters only. Wet or damp filters can cause an electrical short and damage the product.
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. If the filter still appears dirty, repeat steps 3 and 4.
 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.

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. On the touch panel Main screen, tap and hold the power button to turn off the projector.
2. Allow the projector to cool for a minimum of 15 minutes.
3. Disconnect the projector from AC power or turn the circuit breaker off.
4. Install the lens cap and turn the lens clamp to the open position.
5. If necessary, remove the two cap screws securing the lens to the lens mount using a hex key.
6. Pull the lens out of the lens mount and then install a small lens cap on the rear of the lens.
7. Remove the small rear cap from the new lens.
Keep the front cap on.
8. Align the tabs on the lens plate with the lens mount.
9. 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.

11. Tighten the lens mount cap screws for added stability.
12. Remove the lens cap from the front of the lens.

Troubleshooting

The following topics cover common projector issues and their solutions. If an issue cannot be resolved, contact a Christie qualified technician.

Projector functionality

The following topics cover common projector issues and their solutions.

Projector does not turn on

When I attempt to power on the projector, it does not turn on.

Resolution

- 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.

Cannot establish communication with projector

The input devices cannot communicate with the projector.

Resolution

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

Lamp functionality

The following topics cover common lamp issues and their solutions.

Lamp does not ignite

The projector is powered on but the lamp does not ignite.

Resolution

- 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

The lamp unexpectedly turned off.

Resolution

- Replace the lamp.

LiteLOC™ not working

Brightness settings are not being displayed at a constant level.

Resolution

- 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

The following topics cover common display issues and their solutions.

Flicker, shadows, or dimness

The projected image flickers, contains shadows, or is dim.

Resolution

Related information

Aligning the lamp (on page 24)

Blank screen with no display of cinema image

When the projector is turned on, nothing is displayed.

Resolution

- Ensure the lens cap is not on either end of the lens.
- Confirm all power connections are still good.
- 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

The displayed image has artifacts such as smearing and double image perception.

Resolution

- 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 is vertically stretched or squeezed

The image appears vertically stretched or squeezed into the center of the screen.

Resolution

Inaccurate display colors

The colors in the image are not what I expected to see.

Resolution

1. In the left navigation menu, select **Channel Setup**.
2. In the **Color Space** field, verify that correct value is selected.

Display is not rectangular

The shape of the display is not correct.

Resolution

Display is noisy

The projected image contains noise.

Resolution

- Verify that the cables connecting the input device to the projector meet the minimum requirements and are undamaged.
- Add signal amplification or conditioning if the distance between the input device and the projector exceeds 25 feet.
- Turn the projector off and then on again.

Display has suddenly frozen

The image on the screen has frozen.

Resolution

Projector does not display alternate content

The projector is on, but alternate content does not display

Resolution

- Verify that the lens cover is removed from the lens.
- Verify that the douser is open.
- Verify that the correct channel is selected and the settings are correct by selecting .
- Verify that an active source is connected properly. Check the cable connections and make sure the alternative source is selected.
- Verify that you can select test patterns. If you can, check your source connections again.

Display is unstable

The display is jittery or unstable.

Resolution

- 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

Parts of the image do not appear on the screen.

Resolution

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

Inconsistent picture quality

The quality of the projected image keeps changing.

Resolution

Verify the quality of the signal from the input source.

Touch panel controller issues

The following topics cover common touch panel controller issues and their solutions.

Touch panel controller fails to initialize

The touch panel controller does not start up successfully.

Resolution

- Restart the projector.
- Make sure the compact flash on the left side is installed correctly.
- Make sure the touch panel controller is connected to the projector.

Button presses on the touch panel controller are not registering correctly

Pressing buttons on the touch panel controller behave as if a different button was pressed.

Details

If the location of button presses on the screen are not interpreted correctly, the TPC screen may need recalibrating.

Resolution

1. Select **Menu > Administrator Setup > Preferences**.
2. Select **Calibrate Screen** and follow the onscreen instructions.

CP2208 Specifications

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

Physical specifications

Learn the dimensions and weight of the projector.

Item	Description
Size (L x W x H) (without the lens, and with the feet at minimum length)	
Weight—installed with the lens	53.75 kg (119 lbs)
Shipping weight	77.2 kg (170 lbs)
Touch panel (W x H x D)	

Power specifications

Learn the power requirements for the projector.

AC input (A)

Item	Description
Voltage range	200 - 240 VAC
Line frequency	nominal
Inrush current	
Current consumption	16 A maximum (at 200 VAC)
Power consumption	3200 W maximum
Current rating of AC input	IEC-320-C19/20 A

UPS AC input (B)

Item	Description
Activation	Discrete switch above the power inlet cord(s)
UPS inlet connector (rating for powering main electronics)	IEC-320-C13/10 A, 240 VAC

Item	Description
UPS type	Universal 100-240 VAC
Line frequency	nominal
Current consumption	4 A maximum (at 100 VAC)

Environmental specifications

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

Operating environment

Item	Description
Temperature	
Humidity (non-condensing)	20% to 80%
Altitude	0 - 3000 meters
Maximum ambient temperature	35°C

Non-operating environment

Item	Description
Temperature	
Humidity (non-condensing)	0% to 95%

Display specifications

Learn the display specifications of the projector.

Panel resolution and refresh rate

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

Achievable brightness (measured at screen center)

Achievable contrast ratio

400:1 ANSI

Color and gray scale

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

White point

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

Gamma

Theater (nominal)	2.6 ± 5%
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Control signal compatibility

Learn the control signal compatibility for the projector.

Ethernet port

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

RS232-PIBS1

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

3D terminal

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

Communication Protocol	RS232 and GPIO
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Related information

3D sync terminal pin map (on page 67)

Touch panel controller specifications

Learn the specifications of the touch panel controller.

Type of Display	Color VGA TFT LCD, backlit
Display Size	144.8 mm (5.7 inches) diagonal
Display Resolution (H x V pixels)	640 x 480
Maximum Dimensions (W x H x D)	195 mm x 148 mm x 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)

Lamp specifications

Learn the specifications of the lamp.

Type: Xenon Short Arc Lamp

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).

Power (software adjustable)

Item	Description
CDXL-16M (1.6kW)	1000 W min., 1600 W nom., 1760 W max.
CDXL-21S1 (2.1kW)	1260 W min., 2100 W nom., 2300 W max.

The ballast is power regulated and has a maximum current of 97 A. 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.

Lamp expiry hours

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

Lamp Type	Expected Life
CDXL-14M	3500 hours

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

Accessories

Learn what accessories are available for the projector.

Standard (sold with product)

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

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)

Replacement lamps

- CDXL-14M (003-003066-XX)
- CDXL-16M (003-003900-XX)
- CDXL-19SC (003-005366-XX)
- CDXL-21S1 (003-004258-XX)

Air filters

- 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)

Miscellaneous

- Rack Stand (108-416102-XX)

- Extractor Adapter Kit (119-103105-XX)

Regulatory

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

Safety

Electro-magnetic compatibility

Emissions

Immunity

Environmental

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