

Installation and Setup Guide  
020-103483-02

# Christie M 4K RGB Series

**CHRISTIE®**



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For the most current technical documentation and office contact information, visit <http://www.christiedigital.com>.

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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.

### REGULATORY


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

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### 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!



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# Introduction

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



The illustrations in this document are for representation only and may not depict your projector model exactly.

Only Christie qualified technicians who are knowledgeable about the hazards associated with laser use, high-voltage, and the high temperatures generated by the projector lasers are authorized to assemble, install, and service the projector.

For complete Christie M 4K RGB Series product documentation and technical support, go to [www.christiedigital.com](http://www.christiedigital.com).

## Product documentation

For installation, setup, and user information, see the product documentation available on the Christie website. Read all instructions before using or servicing this product.

1. Access the documentation from the Christie website:
  - Go to this URL: <https://bit.ly/3Af8x7X> or <https://www.christiedigital.com/products/projectors/all-projectors/m4k-series/>
  - Scan the QR code using a QR code reader app on a smartphone or tablet.



2. On the product page, select the model and switch to the **Downloads** tab.

## Related documentation

Additional information on this product is available in the following documents.

- *Christie M 4K RGB Series Product Safety Guide (P/N: 020-103482-XX)*
- *Christie TruLife+ User Guide (P/N: 020-103315-XX)*
- *Christie TruLife+ Status System Guide (P/N: 020-103327-XX)*
- *Christie TruLife+ Serial Commands Guide (P/N: 020-103316-XX)*
- *Christie M 4K RGB Series Service Guide (P/N: 020-103484-XX)*



## Model names

The Christie M 4K RGB Series consists of the following models:

- Christie M 4K25 RGB

## Important safeguards

To prevent personal injury and to protect the device from damage, read and follow these safety precautions. This projector is intended for use in a non-cinema environment.

### Safety and warning guidelines

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

This projector must be operated in an environment that meets the operating range specification. Use only the attachments and/or accessories recommended by Christie. Use of others may result in the risk of fire, shock, or personal injury.



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

- This product must be operated in an environment that meets the operating range as specified in this document.
- FIRE HAZARD! Keep hands, clothes, and all combustible material away from the concentrated light beam of the projector.
- Keep fingers and other body parts away from the moving parts in the product. Tie back long hair, and remove jewelry and loose clothing before manually adjusting the product.
- FIRE AND SHOCK HAZARD! Use only the attachments, accessories, tools, and replacement parts specified by Christie.
- FIRE AND SHOCK HAZARD! Use only the attachments, accessories, tools, and replacement parts specified by Christie.



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



## Installation safety and warning guidelines

Read all safety and warning guidelines before installing the projector.



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

- Possible hazardous optical radiation emitted from this product. (Risk group 3)
- Christie products must be installed and serviced by Christie qualified technicians.
- Do not operate the product without all of its covers in place.
- Always install safety straps when the frame and projector are installed overhead.
- Observe load ratings and applicable local safety codes.
- When installing the projector in portrait mode, the rigging device must have a sufficient load rating, as identified in this manual.
- Do not stack more than three projectors in landscape orientation.
- This product must be installed within a restricted access location not accessible by the general public.
- Install the product so users and the audience cannot enter the restricted area at eye level.
- Only personnel who are trained on the precautions for the restricted access location can be granted entry to the area.
- Only Christie qualified technicians are permitted to open product enclosures.



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

- ELECTRICAL and BURN HAZARD! Use caution when accessing internal components.
- Only Christie qualified technicians are authorized to use the tools provided in the toolbox.

## AC power precautions

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



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

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



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

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



## Laser safety precautions

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



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

- PERMANENT/TEMPORARY BLINDNESS HAZARD! No direct exposure to the beam must be permitted. Class 1 Laser Product - Risk Group 3 according to IEC 60825-1:2014 and IEC 62471-5:2015.
- Possible hazardous optical radiation emitted from this product. (Risk group 3)
- Only Christie qualified technicians who are knowledgeable about the hazards associated with laser use, high-voltage, and high temperatures generated by the product are authorized to assemble, install, and service the Christie Laser Projection System.
- Do not look directly into the lens when the light source is on. The extremely high brightness can cause permanent eye damage.
- Do not operate the product without all of its covers in place.

## Light intensity hazard distance

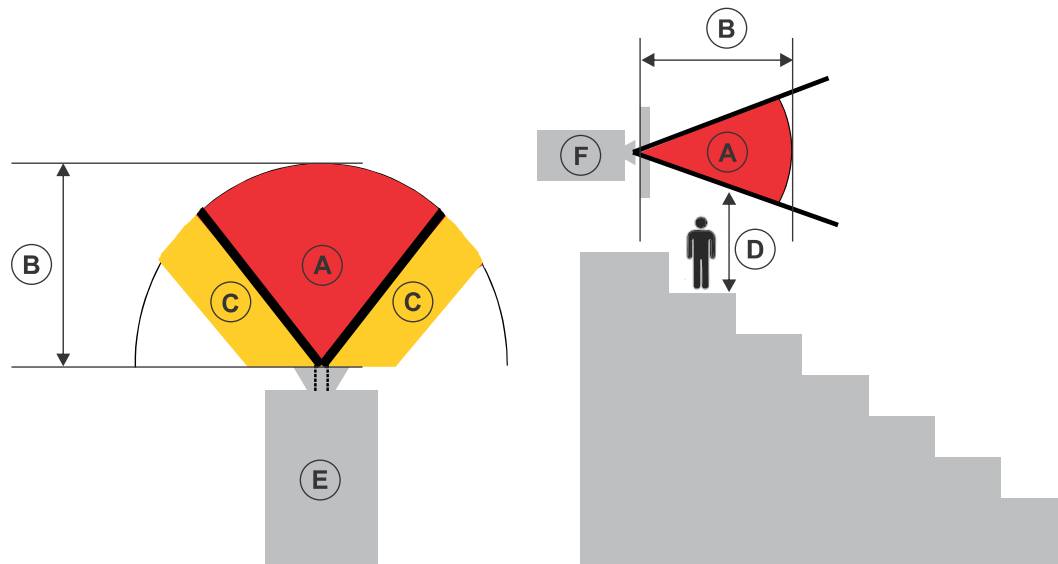
This projector has been classified as Risk Group 3 as per the IEC 62471-5 standard due to possible hazardous optical and thermal radiation being emitted.



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

- PERMANENT/TEMPORARY BLINDNESS HAZARD! No direct exposure to the beam must be permitted. Class 1 Laser Product - Risk Group 3 according to IEC 60825-1:2014 and IEC 62471-5:2015.
- PERMANENT/TEMPORARY BLINDNESS HAZARD! Operators must control access to the beam within the hazard distance or install the product at the height that prevents exposure of spectators' eyes within the hazard distance. The hazard zone must be no lower than 3.0 meters above the floor and the horizontal clearance to the hazard zone must be a minimum 2.5 meters.
- EXTREME BRIGHTNESS! Do not place reflective objects in the product light path.

The following show the zones for ocular and skin hazard distances.





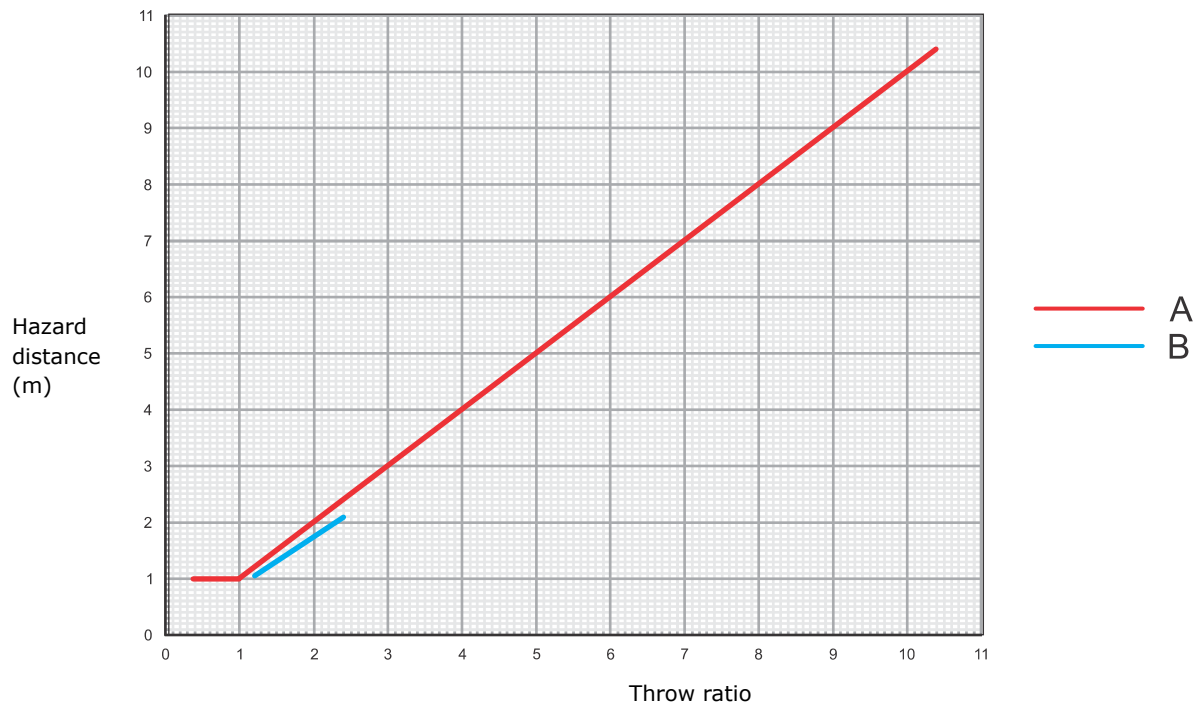
- A—Hazard zone. The region of space where the projection light from the projector is above emission limits for Risk Group 2. The light intensity may cause eye damage after a momentary or brief exposure (before a person can avert his or her eyes away from the light source). The light may cause skin burns to occur.
- B—Hazard distance. Operators must control access to the beam within the hazard distance or install the product preventing potential exposure of the spectators' eyes from being in the hazard distance.
- C—No access zone. Horizontal clearance of the no access zone must be a minimum of 2.5 meters.
- D—Vertical distance to hazard zone. The hazard zone must be no lower than 3.0 meters above the floor.  
If the vertical distance to hazard zone requirement (Zone D) is satisfied, the horizontal clearance distance (Zone C) is not needed.
- E—Represents the top view of the projector.
- F—Represents the side view of the projector.

The following table lists the hazard distance for the Christie projector lens with the zoom adjusted to its most hazardous position.

<b>Projection Lens</b>	<b>Christie M 4K RGB Series effective lens throw</b>	<b>Part Number</b>
<b>High brightness—red line in graph (A)</b>		
0.37:1 ultra short throw - ILS1	—	118-131106-XX
0.67:1 fixed - ILS1	—	118-100110-XX
0.8-1.16:1 zoom - ILS1	—	118-130105-XX
1.1:1 HD fixed - ILS1	—	118-100117-XX
1.16-1.49:1 zoom - ILS1	—	118-100111-XX
1.4-1.8:1 zoom - ILS1	—	118-100112-XX
1.8-2.6:1 zoom - ILS1	—	118-100113-XX
2.6-4.1:1 zoom - ILS1	—	118-100114-XX
4.1-6.9:1 zoom - ILS1*	—	118-100115-XX
6.9-10.4:1 zoom - ILS1*	—	118-100116-XX
<b>Ultra high contrast—blue line in graph (B)</b>		
1.2-1.75 .98" DLP zoom	1.28-1.87:1	163-165103-XX
1.39-1.9:1 DLP zoom	1.48-2.03:1	163-152109-XX
1.5-2.2 .98" DLP zoom	1.6-2.35:1	163-166104-XX
1.75-2.4:198 DLP zoom	1.87-2.56:1	163-153100-XX

\* Requires a lens hood extension to use with this product. The 4.1-6.9:1 zoom lens requires a 100 mm lens hood extension (P/N: 163-168106-XX) and the 6.9-10.4:1 zoom lens requires a 360 mm lens hood extension (P/N: 163-167105-XX).





Due to the requirements of IEC 62471-5, a minimum of 1 meter hazard distance must be maintained.

### For Installations in the United States

The following must be in place for laser-illuminated projector installations in the United States:

- Any human access to the hazard zone, if applicable, must be restricted by barriers to enforce the no access zone.
- Permanent show installations containing Risk Group 3 laser-illuminated projectors must meet the following conditions:
  - Installed by Christie or by Christie-authorized and trained installers.  
Refer to the EXTERNAL - Laser safety awareness training (Course code: CS-ELSA-01) on the <http://www.christieuniversity.com> site.
  - Performed according to instructions provided by Christie.
  - Ensure the projection system is securely mounted or immobilized to prevent unintended movement or misalignment of the projections.
- A copy of the FDA variance approval letter must be with the operator or other responsible individual.
- Temporary show installations containing Risk Group 3 laser-illuminated projectors may be installed by Christie or sold or leased only to valid laser light show variance holders (laser light show manufacturers) for image projection applications. Such manufacturers may currently hold a valid variance for production of Class IIb and IV laser light shows and/or for incorporation of the Risk Group 3 laser-illuminated projectors into their shows. This requirement applies also to dealers and distributors of these laser-illuminated projectors.



- For temporary installations, the FDA variance holder must maintain complete records of all show itineraries with dates, locations, operator name, and contact information clearly and completely identified.
- The Christie Laser Projection System Installation Checklist must be fully completed after the installation and sent to [lasercompliance@christiedigital.com](mailto:lasercompliance@christiedigital.com). A copy can remain on-site. This checklist can be found as a separate document in the accessory box with the manual.
- Certain US states have additional laser regulatory requirements. Contact [lasercompliance@christiedigital.com](mailto:lasercompliance@christiedigital.com) for additional regulatory requirements.

## Product labels

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

## General hazards

Hazard warnings also apply to accessories once they are installed in a Christie product that is connected to power.

### Fire and Shock Hazard



To prevent fire or shock hazards, do not expose this product to rain or moisture.  
Do not alter the power plug, overload the power outlet, or use it with extension cords.  
Do not remove the product enclosure.  
Only Christie qualified technicians are authorized to service the product.

### Electrical Hazard



Risk of electric shock.  
Do not remove the product enclosure.  
Only Christie qualified technicians are authorized to service the product.





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



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



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



Optical radiation hazard. To avoid personal injury, never look directly at the light source.



Laser hazard. To avoid personal injury, avoid eye or skin exposure to direct or scattered radiation.



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



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



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



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



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



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



Cut hazard. To avoid personal injury, keep hands clear or wear protective gloves.



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



General hazard.



Not for household use.



## Mandatory action



**SHOCK HAZARD!** Disconnect all power sources before performing maintenance or service procedures.



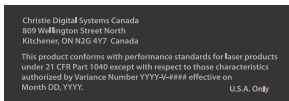
Consult the service manual.

## Electrical labels



Indicates the presence of a protective earth ground.

## Laser labels



FDA laser variance (US projectors only)

This product is in conformity with performance standards for laser products under 21 CFR 1040, except with respect to those characteristics authorized by Variance Number 2018-V-3898 effective on November 21, 2018.



Indicates a light hazard. Do not look directly into the lens. The extreme high brightness can cause permanent eye damage. Class 1 Laser Product - Risk Group 3 according to IEC 60825-1: 2014 and IEC 62471-5:2015



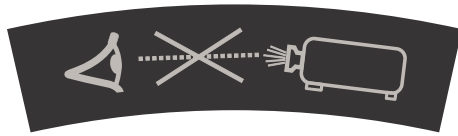
Indicates Class 4 laser radiation when open. Avoid eye or skin exposure to direct or scattered radiation.



Indicates Class 4 laser radiation when open. Avoid eye or skin exposure to direct or scattered radiation.



## Additional safety hazards



Do not look directly into the lens. The extremely high brightness can cause permanent eye damage.



Indicates high leakage current. Earth connection essential before connecting the power supply.



Indicates the lens must be supported when locking it.

## Projector overview

Learn about the Christie M 4K RGB Series projector.

Christie M 4K RGB Series is a professional quality, easy-to-use 3DLP® RGB laser projector. The medium-brightness Christie M 4K RGB Series is designed to meet the special demands found in large venues, live events, and high-usage environments. With reliable Christie RealLaser™ illumination integrated in a small form and ultra-fast processing of Christie TruLife+™ electronics, the Christie M 4K RGB Series is the go-to solution for demanding, large venue events and applications.

## Contact your dealer

Record the information about your projector and keep this information with your records to assist with the servicing of your projector. If you encounter a problem with your Christie projector, contact your dealer.

Purchase record	
Dealer:	
Dealer or Christie Sales/Service contact phone number:	
Projector serial number:	
The serial number can be found on the license label located on the display panel	
Purchase date:	
Installation date:	

Ethernet settings	
Default gateway:	
Projector IP address:	
Subnet mask:	



## Key features

Understand the important features of the projector.

- Long lasting, reliable Christie RealLaser™ RGB laser illumination
- Compact form with direct-coupled laser source integrated in a small form factor
- LiteLOC™ feature for constant image brightness and color
- Easily adjusted electronic convergence using the remote control to maintain a perfect image
- Omnidirectional operation for unrestricted design and installation flexibility
- Christie TruLife+™ electronics for ultra-high resolution, high frame rate video up to 120 frames per second
- Simple integration and connectivity
- Compatible with Christie Mystique and Twist
- Compatible with existing suite of 2K/4K fixed and zoom lenses
- Full-color LCD display to provide information at-a-glance
- Integrated keypad control interface
- Dynamic fan control for quiet operation
- Field adjustable boresight and optical path

## List of components

Verify all components were received with the projector.

- Power cord
- IR remote keypad
- Tools

## Accessories

Learn about the accessories (sold separately) available for the projector.

### Lenses

Projection lens	Part number	Notes
<b>Fixed high brightness</b>		
0.37:1 ultra short throw fixed ILS1	118-131106-XX	
0.67:1 fixed - ILS1 (.73:1 SXGA+)	118-100110-XX	
1.1:1 fixed - ILS1 (.1.25:1 SXGA+)	118-100117-XX	
<b>Zoom high brightness</b>		
0.8-1.16:1 zoom - ILS1	118-130105-XX	
1.16-1.49:1 zoom - ILS1 (1.25-1.6:1 SXGA+)	118-100111-XX	



Projection lens	Part number	Notes
1.4-1.8:1 zoom - ILS1 (1.5-2.0 SXGA+)	118-100112-XX	
1.8-2.6:1 zoom - ILS1 (2.0-2.8 SXGA+)	118-100113-XX	
2.6-4.1:1 zoom - ILS1 (2.8-4.5:1 SXGA+)	118-100114-XX	
4.1-6.9:1 zoom - ILS1 (4.5-7.5:1 SXGA+)	118-100115-XX	Requires a 100 mm lens hood extension (P/N: 163-168106-XX) to use with this product.
6.9-10.4:1 zoom - ILS1 (6.9-11.25 SXGA+)	118-100116-XX	Requires a 360 mm lens hood extension (P/N: 163-167105-XX) to use with this product.
<b>Zoom ultra-high contrast</b>		
1.2-1.75 .98" DLP (1.28-1.87:1 on M 4K25 RGB)	163-165103-XX	
1.39-1.9:1 .98"DLP (1.48-2.03:1 on M 4K25 RGB)	163-152109-XX	
1.5-2.2 .98" DLP (1.6-2.35:1 on M 4K25 RGB)	163-166104-XX	
1.75-2.4:1 .98"DLP (1.87-2.56:1 M 4K25 RGB)	163-153100-XX	

## Filters and coolant

Description	Part number
Air intake filter—6 pack	003-007152-XX
Coolant Propylene Glycol 740	003-005179-XX

## High line operation for 200-240 VAC only line cords

Description	Part number
250V/10A C13L 3.1M cord—Australia	108-593108-XX
250V/10A C13L 3.1M black cord—China	108-587101-XX
250V/10A C13L 3.1M cord—Europe	108-590105-XX
250V/10A C13L 3.1M cord—India	108-591106-XX
250V/15A C13L 3.1M black cord —Japan	108-588102-XX
250V/10A C13L 3.1M cord—Korea	108-590105-XX
250V/10A C13L 3.1M cord—New Zealand	108-593108-XX
250V/15A C13L 3.1M black cord—North America	108-586100-XX



Description	Part number
250V/10A C13L cord—South Africa	108-592107-XX
250V/10A C13L 3.1M black cord—United Kingdom	108-589103-XX

### Optional AC Limited mode line cords

Description	Part number
125V/15A C13 2.50M cord—Japan	108-507103-XX
125V/15A C13 2.0m cord—North America	108-383105-XX

### Other accessories

Description	Part number
IR remote	003-120918-XX
Christie Mystique	900-100285-XX 900-100286-XX 900-100274-XX 900-100275-XX
Christie Twist Premium	156-002103-XX 156-102104-XX
Christie Twist Pro	156-001102-XX 156-101103-XX
Driver set	003-007010-XX
Rigging frame	118-100107-XX

## Technical support

Technical support for Christie Enterprise products is available at:

- North and South America: +1-800-221-8025 or [Support.Americas@christiedigital.com](mailto:Support.Americas@christiedigital.com)
- Europe, Middle East, and Africa: +44 (0) 1189 778111 or [Support.EMEA@christiedigital.com](mailto:Support.EMEA@christiedigital.com)
- Asia Pacific ([support.apac@christiedigital.com](mailto:support.apac@christiedigital.com)):
  - Australia: +61 (0)7 3624 4888 or [tech-Australia@christiedigital.com](mailto:tech-Australia@christiedigital.com)
  - China: +86 10 6561 0240 or [tech-supportChina@christiedigital.com](mailto:tech-supportChina@christiedigital.com)
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# Installation and setup

Learn how to install, connect, and optimize the projector display.

## Site requirements

To safely install and operate the Christie M 4K RGB Series projectors, the installation location must meet these minimum requirements.

### Physical operating environment

- Ambient temperature (operating) 5°C to 40°C (41°F to 104°F) up to 457.2 meters (1500 feet)
- Humidity (non-condensing) 10% to 80%
- Operating altitude 0 to 3000 meters (0 to 9843 feet) at 5°C to 25°C (41°F to 77°F) ambient

### Physical non-operating environment

- Storage temperature range -40°C to 70°C (-40°F to 158°F)

### Product ventilation

Sufficient ventilation is required around the projector to regulate the temperature of the internal laser module.

The installation site must provide an airflow 450 cubic feet per minute (CFM) at 1 to 1000 meters (3.3 to 3280.8 feet) elevation, and must accommodate a heat load of 3000 W.



For each additional 1000 meters (3280.8 feet) above sea level, increase the airflow (CFM) value by 15%. If the increased airflow requirements cannot be met by the building's HVAC system, the operating temperature range is restricted to 5°C to 25°C (41°F to 77°F) at a maximum altitude of 3000 meters (9843 feet).

### Power connection

Connect to AC power using the power cord provided with the projector.



This product is suitable for connection to an IT power distribution system.

## Power requirements

Learn the power requirements for Christie M 4K RGB Series.

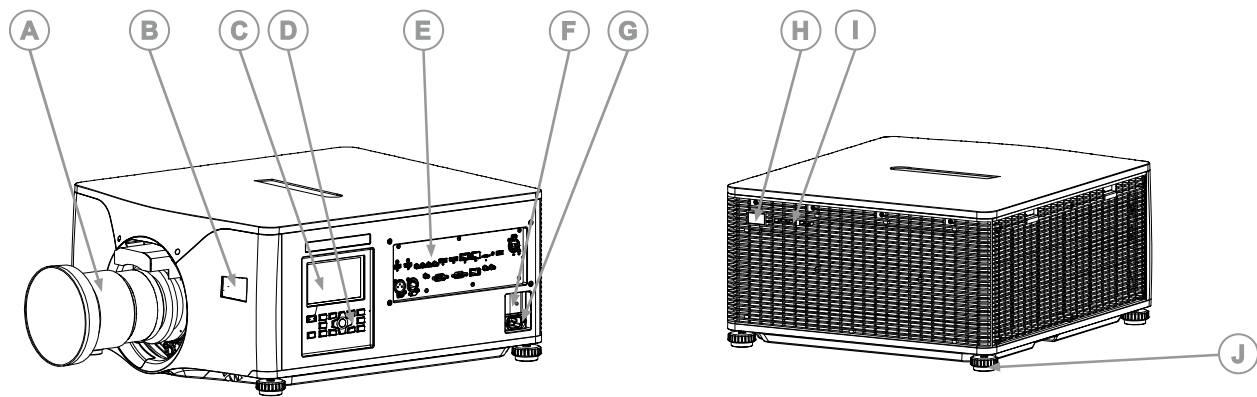
Parameter	Requirement
Rated voltage	100-120 VAC single phase 200-240 VAC single phase



Parameter	Requirement
Rated current	12 A at 100-120 VAC 9 A at 200 to 240 VAC
Line frequency	50/60 Hz
Maximum power draw	1800 W
AC limited voltage	100-120 VAC achieves 60% brightness

## Projector components

Identify the main components of the projector.

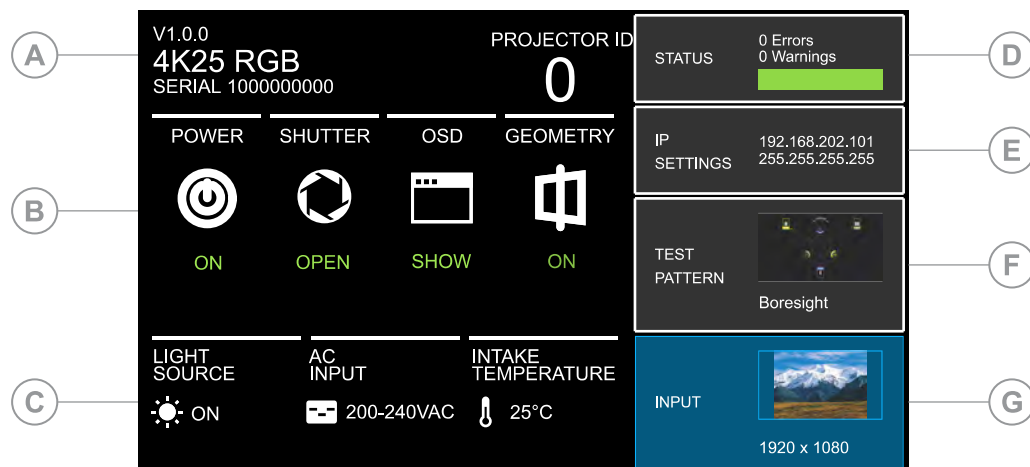


ID	Component	Description
A	Projection lens	A variety of lenses can be used with the projector. Available lenses are listed in the <i>Accessories</i> (on page 16) topic.
B	Front IR	Receives transmissions from the IR remote.
C	Display panel	Displays the projector menus and status.
D	Keypad interface	Controls the projector.
E	Communication and input panel	Connects media sources to the Video Input panel.
F	Power on/off switch	Switch to power the projector on or off.
G	AC input	For use with projector power cord.
H	Rear IR	Receives transmissions from the IR remote.
I	LED and shutter LED status indicator	Indicates power status and shutter status.
J	Adjustable feet	Raise or lower these feet when positioning the projector. Make sure the projector is level on all sides and the displayed image appears rectangular without any keystone.



## Display panel components

Identify the main components of the display panel (also known as the home page).



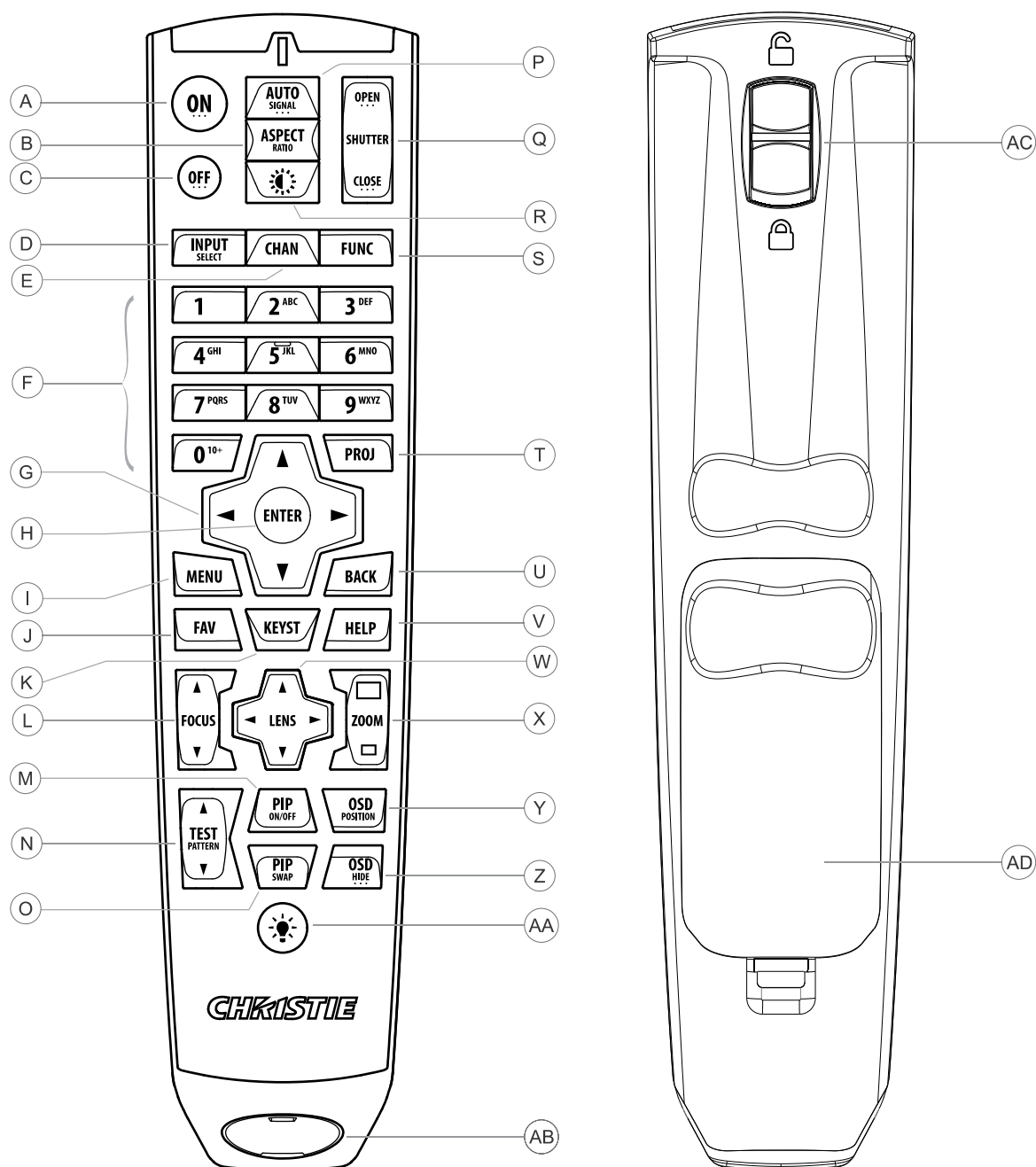
ID	Component	Description
A	Projector Information	Provides information about the projector such as the projector name, serial number, software version, and projector ID.
B	Projector and Component Controls	Indicates the states of the projector and its components.
C	Power and Temperature	Indicates the light source mode, power mode, and intake temperature.
D	Status	Contains information about the health of the projector including the number of warnings and errors. Provides access to the status system.
E	IP Settings	Displays the IP address and subnet values. Provides access to changing the IP settings.
F	Test Pattern	Displays the currently selected test pattern. If no test pattern is selected, Off is displayed. Provides access to the list of test patterns.
G	Input	Displays the signal for the currently selected input. Provides access to the list of input signals.

## IR/wired remote keypad

The IR/wired remote keypad controls the projector by way of either wireless communications from a battery-powered infrared (IR) transmitter or a wired interface.

To use the IR remote, direct the keypad toward the projector's front or rear IR sensor and press a function key. One of the two IR sensors on the projector detect the signal and relay the commands for internal processing. The remote also offers a connector for wired connections to the projector.





Button	Description
A	Powers on the projector light source.
B	Opens the aspect ratio dialog.
C	Turns off the light source and puts the projector in standby.
D	Selects an active or inactive input on any slot.
E	Not supported.



Button	Description
F	Enter a number, such as menu, item index or value.
G	Use the arrows to navigate within a menu or to adjust settings.
H	Selects a highlighted menu item and changes or accepts a value.
I	Toggles the menus on/off.
J	Not supported.
K	Opens the keystone dialog.
L	Adjusts the lens focus.
M	Not supported.
N	Displays a test pattern.
O	Not supported.
P	Optimizes the image automatically.
Q	Opens or closes the shutter.
R	Not supported.
S	Initiates a custom action when a number is selected.
T	Selects a projector in multi-projector installations.
U	Returns to the previous menu level or exits menus if at the top level.
V	Displays context-sensitive help.
W	Arrows adjust the lens offset.
X	Adjust the lens zoom.
Y	Opens the on-screen display position menu.
Z	Shows or hides the on-screen display menus.
AA	Turns the remote backlight on.
AB	Male 3-pin XLR connector for wired option.
AC	Lock/unlock the keypad.
AD	Battery door.

### Related information

*Enabling the wired remote keypad (on page 67)*

## Required tools

Make sure the following tools are available during the installation.

- 12 in. screwdrivers: Phillips #2 (magnetic) and flat
- 2.5mm, 3mm, and 5mm hex drivers (provided with the projector)
- Adjustable wrench



- Step stool
- Powder-free N-DEX gloves
- Clean dry air (CDA)

## Preparing the installation site

Ensure the installation area is ready for the components.

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

## Lifting and positioning the projector

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



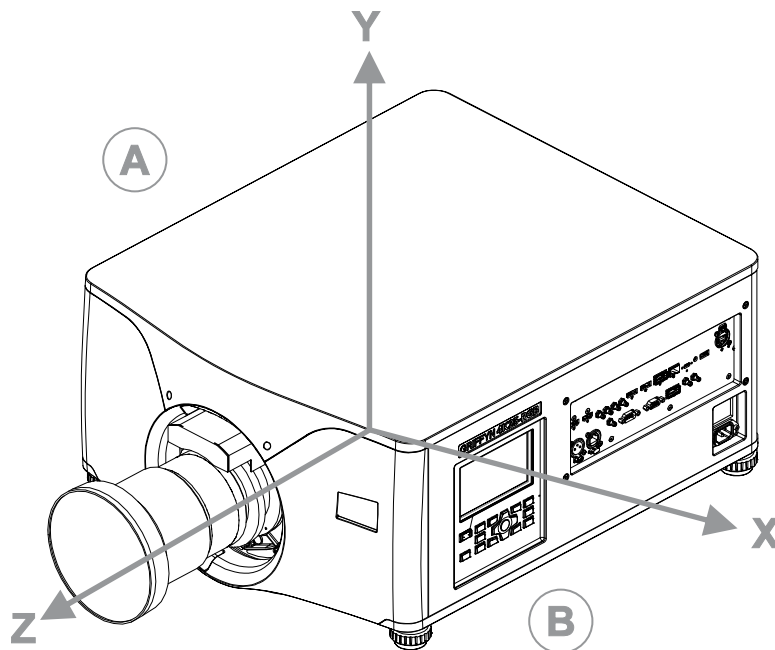
**Warning!** If not avoided, the following could result in death or serious injury.

- Do not install or operate the projector in any position that does not meet the stated product specifications for alignment and orientation.
- Do not stack more than three projectors in landscape orientation.

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

## Projector sides

While standing behind the projector and facing towards the screen, the right side (A) of the projector is on the right and the left side (B) is on the left.





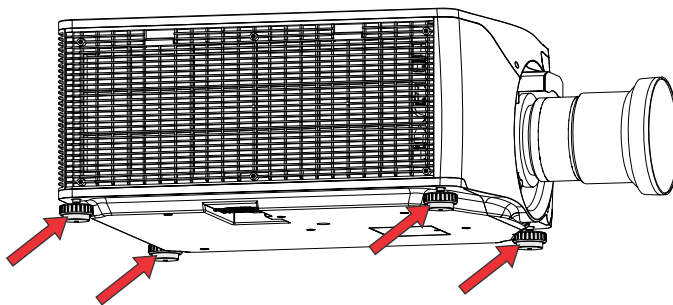
- Z-direction: projection axis originates at the center of the image plane
- X-direction: horizontal left/right with respect to the image plane
- Y-direction: vertical up/down with respect to the image plane

## Leveling the projector

Use the projector feet to level the projector.

To adjust the vertical position of the projector, extend or retract the adjustable feet on the bottom of the projector using the adjustable knobs on the feet.

Christie recommends adjusting the feet from the side or rear of the projector and not the front to avoid exposure to the output light.



## Installing a projection lens

The projection lens, shipped separately from the projector, must be installed prior to setting up the projector.



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

- Always use a lens plug when installing or moving the product. This prevents contaminants from entering the product.
- Do not insert the lens into the product at an angle. This can damage the lens and the optical components inside the product.
- Always place the lens cap onto the lens when moving the projector to avoid scratching the lens.
- Remove the lens cap before turning the product on to avoid damaging the lens.

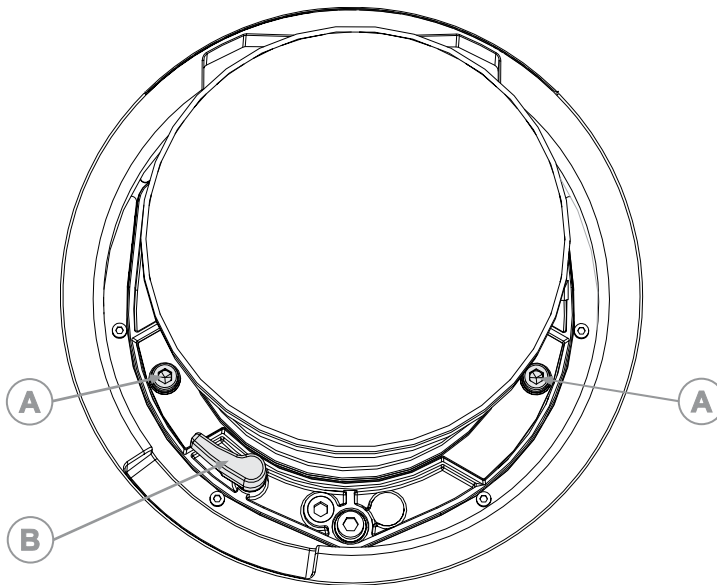
The projector includes a motorized lens mount that allows automated lens control and adjustment: vertical and horizontal offsets, zoom, and focus. The projection lens is shipped separately from the projector. Use the lens cap when transporting the lens to avoid scratching and damaging the lens, which could affect your displayed image.

- **Zoom and Focus**—Two internal lens motors allow for quick motorized adjustment of zoom and focus. Adjust zoom to fit the displayed image on the screen and adjust focus to improve the clarity of the image.
- **Lens Offset**—The motorized lens mount allows vertical and horizontal offset of the displayed image.
- **Shutter**—Sets the screen to absolute black, when in the closed state.

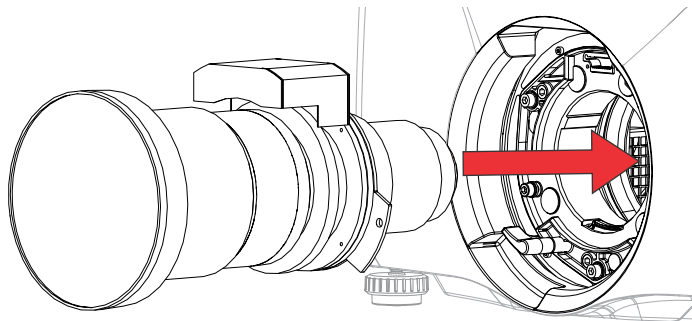
Do not adjust motorized lenses by hand without first setting them for manual operation; otherwise, the zoom and focus motors may be damaged.



1. Remove the inlet-side lens cap.  
Installing the projection lens with the inlet-side cap on can cause physical damage to the projector. Turning on the projector with the inlet-side cap installed can cause burning and contamination damage.
2. Ensure the lens cap is on the lens.
3. Ensure the two security screws (A in the image in step 3) are removed.
4. Rotate the lens clamp (B in the image below) to the open position.



5. Align the lens interface plate with the lens mount and align the lens electrical connector with the mating connector on the lens mount.
6. Fully insert the assembly straight into the lens mount opening without turning and press with your hand as shown.



7. To lock the lens assembly in place, while supporting the lens and holding it flat against the lens mount, push the lens clamp (B in the image in step 3) to lock in position.
8. Remove the front lens cap.
9. To secure the lens to the projector, use a 5 mm hex driver to fasten the security screws (A in the image in step 3) provided with the lens mount.  
Failing to use the security screws leaves the lens loose inside the projector.



## Calibrating the lens motor

Ensure the lens motor is calibrated before using the projector.

If the lens motors are not calibrated properly, implications may include:

- Incorrect reporting of the lens motor position.
- Inability to use the full range of the lens motors.
- Lens motors traveling outside of the pre-defined keep-out area.
- Damage to the projector.

Calibrate the lens motors when any of the following conditions are met:

- After a lens change.
- After the projector is moved and/or jostled.
- After any manual adjustment is made to the zoom or focus.

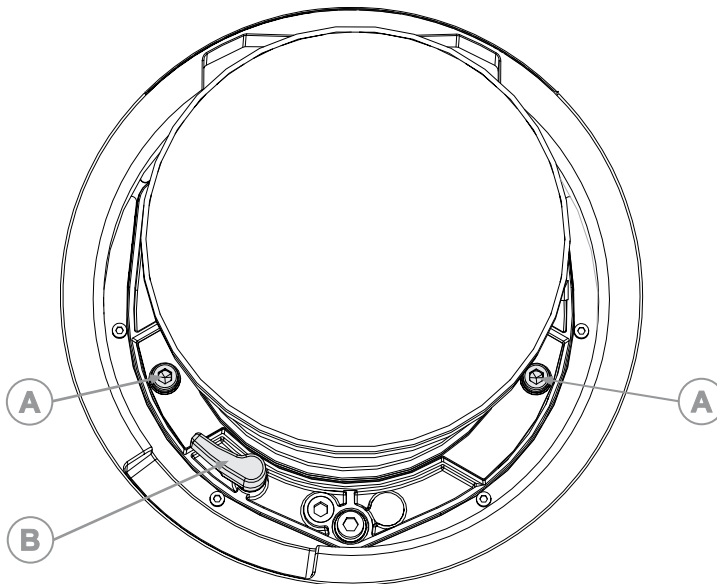
To calibrate the lens:

1. Select **MENU** > **Configuration** > **Lens Settings** > **Lens Calibration**.
2. Select **Enter**.

## Removing the projection lens

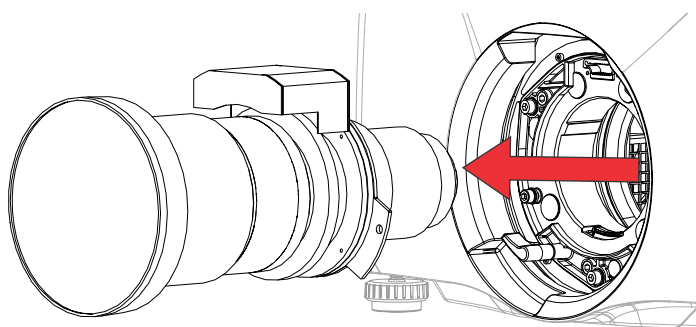
Use the correct method of removing the lens.

1. Remove and retain the two security screws (A), for installation, from the lens mount.



2. Rotate the lens clamp (B) counter-clockwise to the open position.
  3. Slide the lens straight out of the projector.
- If the lens does not slide out easily, reset the lens offset before removing the lens.





4. Attach the lens cap to avoid damage.

Packaging tape is required to ensure safe shipment of the projection lens to restrain the zoom ring from rotating during shipping.

## Turning on the projector

When the projector AC power supply is plugged in and the breaker switch is on, the power is on.




**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. Plug the projector into AC power and turn on the breaker switch.

When plugged in and the breaker switch is on, the projector automatically powers on to standby mode within 60 seconds. The display panel functionality becomes available.

2. To turn the light source on using the projector keypad, press and hold the **Power**  button until you hear a beep.

To turn on the light source using the remote, press and hold the **ON** button until you hear a beep.

## Projector LED status indicators

Identify the LED state colors and meaning.

LED	State		Description
Blue	Solid	Standby	Light source is off. Video electronics are off. Projector status is OK.
	Flashing	Cool down	Projector is moving to one of the two standby states: <ul style="list-style-type: none"> <li>• Light source is off and video electronics are booting up.</li> <li>• Light source is off. Video electronics and light source is cooling down.</li> </ul>
Green	Solid	Light source on	Light source is on. Projector status is OK.



LED	State		Description
	Flashing	Startup	Projector is moving to light source on state. Light source is warming up. Video electronics are initializing.
Yellow	Solid	Warning in standby	Projector is in standby state. A problem exists with the projector that does not prevent it from operating.
	Flashing yellow/green	Warning during startup	Projector is in a startup state. A problem exists with the projector that does not prevent it from operating.
	Flashing	Warning with light source on	Light source is on. A problem exists with the projector that will not cause it to shut down.
	Flashing yellow/blue	Warning during cool down	Projector is in a cool down state. Light source is off. Video electronics and light source are cooling down. A problem exists with the projector that does not prevent it from operating.
Red	Solid	Error in standby	Projector is in standby. An error exists that prevents the projector from starting up.
	Flashing	Error	An error with the projector exists during startup, cool down, or when the light source is off. Projector will proceed to shut down.
Off		AC off	The AC power is off.


## Projector LED shutter indicators

Identify the shutter LED state colors and meaning.

LED	State	Description
Solid magenta	Shutter closed	The shutter is closed. In standby, the shutter is always automatically closed and the magenta light is muted.
Off	Shutter open	The shutter is open.

## Turning off the projector

When powering off in preparation for inspection or maintenance, always disconnect from AC.

1. To turn the light source off using the projector keypad, press and hold the  button until you hear a beep.  
To turn off the light source using the remote, press and hold the **OFF** button until you hear a beep.  
When powering off the projector, allow the projector to complete its cool down cycle. Do not immediately unplug the projector if this can be avoided.
2. To turn off power to the projector, turn off the projector breaker switch.
3. Depress the red tab on the side of the plug and disconnect from AC power.



## Aligning the image

Only perform image alignment after the projector is fully assembled and powered up in its final location.

Basic image alignment ensures the image reflected from the DMDs is parallel and well-centered with the lens and screen. This initial optical alignment is the foundation for optimizing images on the screen and must be completed before final boresight adjustments. Before beginning, make sure the projector is properly positioned in relation to the screen.

1. Ensure the projector is positioned in the throw distance range for the particular lens.
2. Display a test pattern.
3. Do a quick preliminary focus and (if available) zoom adjustment with the primary lens.  
Do not worry about consistency across the image at this point, just center focus. It is good practice to have zoom adjustment color and focus adjustment color in the center of its range.
4. Holding a piece of paper at the lens surface, adjust offsets as necessary until the image is centered within the lens perimeter. A full black field works best for this.
5. If the projector is mounted off center to the screen axis, offset the lens as much as required. Aim the projector over slightly towards the center of the screen, but use caution when doing so, as too much tilt will cause excessive keystone distortion.
6. With a framing pattern on screen, double-check projector leveling so the top edge of the image is parallel to the top edge of the screen.

## Adjusting offset

Adjust the offset to align the image on the screen. Always adjust offset before adjusting boresight.



For the best optical performance and minimal keystone, use offsets instead of aiming at the center of the image, in off-axis installations. Avoid extreme tilts or offsets. Corner vignettes on a white test pattern indicate extreme offset that should be avoided using mechanical alignment.

1. Project an image with the primary lens.
2. Select a framing test pattern.
3. Select **LENS OFFSET**.  
You can also select **MENU > Configuration > Lens Settings > Lens Offset**.
4. Use the arrows to adjust the offset to display a square image on the screen, with minimal projector aiming error.
5. To exit to the home page, select **Back**.

## Resetting the lens to home position

Realign the lens to the home position after the lens has been offset and out of alignment.

1. Select **LENS OFFSET**.  
You can also select **MENU > Configuration > Lens Settings > Lens Offset**.
2. To reset the lens to the default home position, select **Enter**.
3. To confirm the reset, select **OK**.



## Selecting a test pattern

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

1. From the display panel, use the arrows to select **Test Pattern**.  
You can also select the test patterns from **MENU > Test Pattern** or pressing **N** on the IR remote.
2. Scroll through the list of test patterns.
3. Select the required test pattern.
4. To confirm your selection, select **Enter**.

## Adjusting boresight

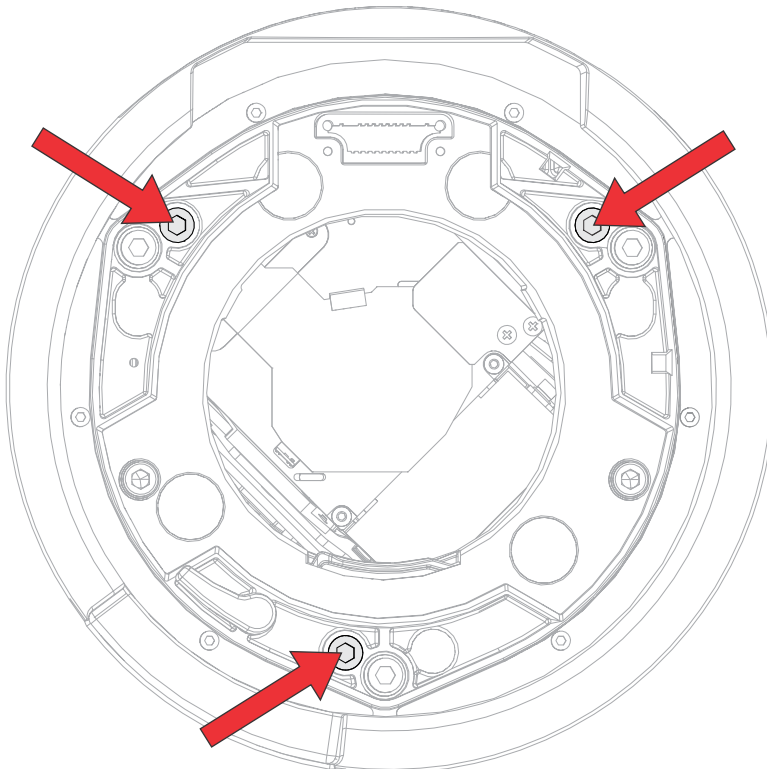
The boresight adjustment balances the tilt of the lens mount to compensate for screen-to-projector tilt.



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

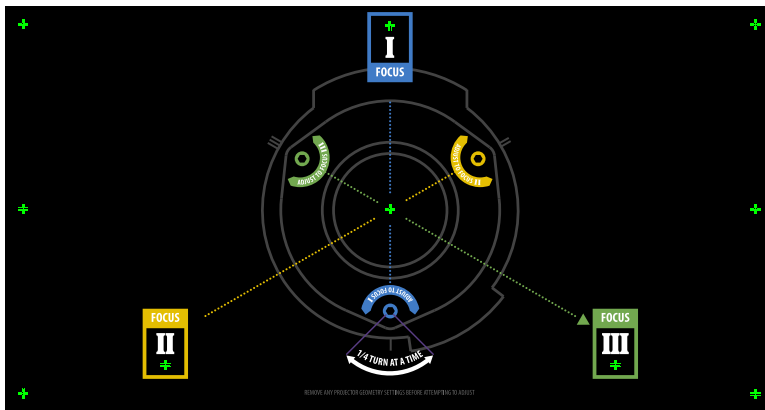
- Do not look directly into the lens when the light source is on. The extremely high brightness can cause permanent eye damage.

1. Close the shutter on the projector.
2. Unlock the three lens mount stabilization screws.

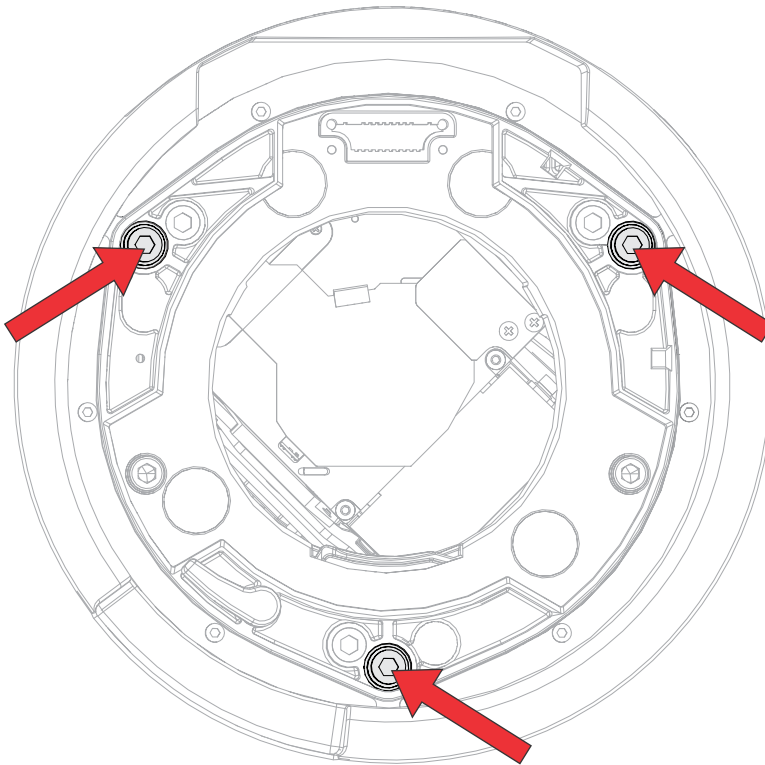


3. Open the shutter.
4. From the Test Pattern menu, select the **Boresight** test pattern.  
The Boresight test pattern assists with adjusting the boresight for the three focus points.





5. To focus the bottom boresight guide, adjust the blue boresight screw.  
Adjust the screw 1/4 inch. If you get to the end, further unlock the corresponding stabilization screw.



6. To focus the right boresight guide, adjust the green boresight screw.
7. To focus the left boresight guide, adjust the yellow boresight screw.
8. To continue to refine the focus, repeat steps 5 to 7.
9. Before adjusting the stabilization screws, close the shutter.
10. To maintain the adjustments, lock the stabilization screws.  
When locking the screws, start with the top stabilization screw and turn it so it just touches the base. Repeat for the other two stabilization screws. Continue to adjust the locking screws until they are tight.



11. Open the shutter.

## Adjusting the fold mirror

Fold mirror adjustment must be completed by trained personnel.

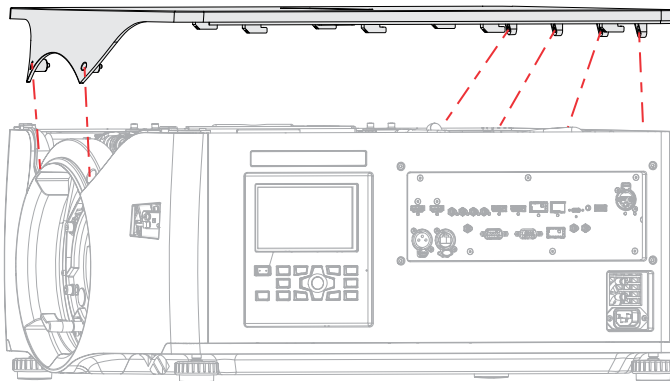


**Notice.** If not avoided, the following could result in property damage.

- Misalignment of the fold mirror may cause permanent damage to the product.

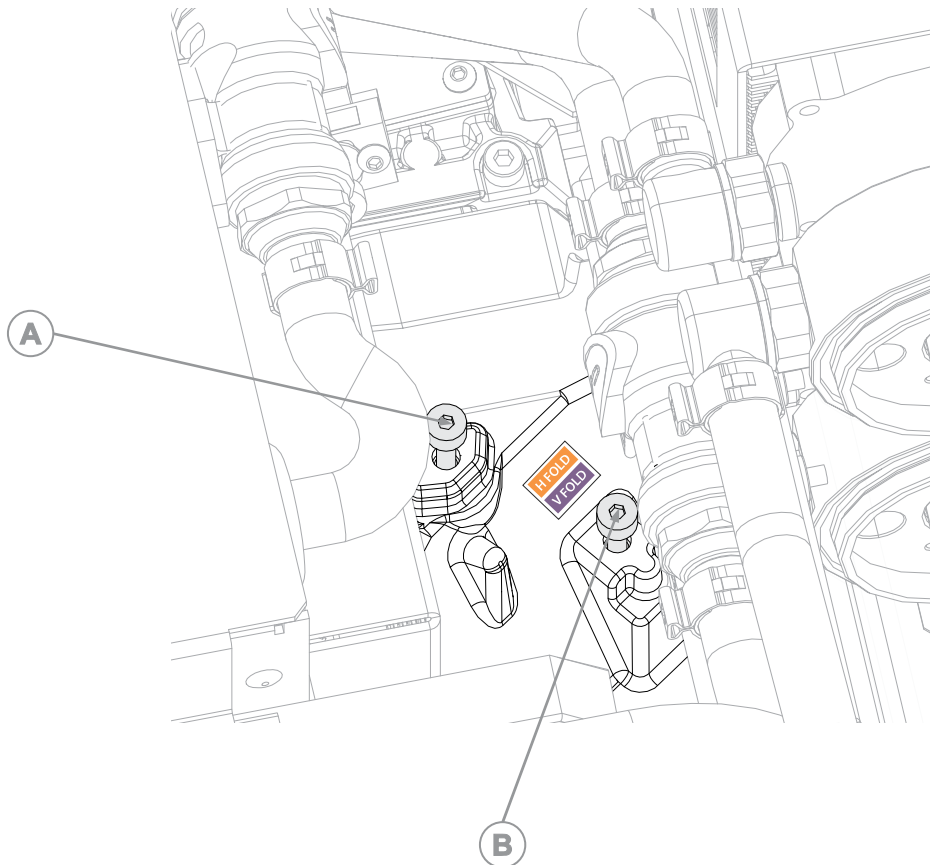
1. Set the projector to minimum power.
2. From the Test Pattern menu, select the **Integrator Rod** test pattern.
3. Loosen the six screws securing the top cover.

Two screws are located at the front of the projector and four screws are located at the rear of the projector.



4. Slide the top cover forward to release it and remove the cover.
5. Unlock the fold mirror screws to unlock the adjustment knobs.
6. To make horizontal adjustments, adjust the 2.5 mm hex screw labeled H FOLD (A in the image below).





7. To make vertical adjustments, adjust the 2.5 mm hex screw labeled V FOLD (B in the image in step 6).
8. To continue to refine the fold mirror adjustment, repeat the horizontal and vertical adjustments.
9. Once satisfied with the alignment, increase the projector power.

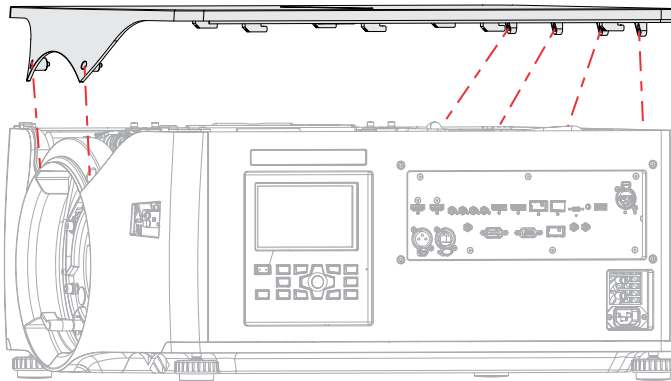
## Optimizing the integrator focus

Optimize the light focus on the DMDs.

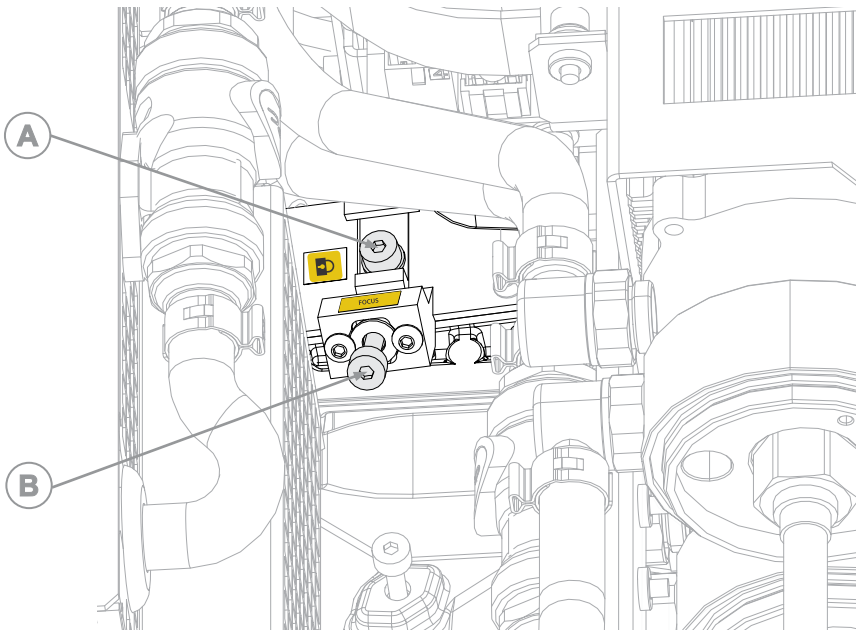
1. Set the projector to minimum power.
2. Display a test pattern on the screen.
3. Loosen the six captive screws securing the top cover.

Two screws are located at the front of the projector and four screws are located at the rear of the projector.





4. Remove the top cover.
5. Before optimizing the integrator focus, *adjust the fold mirror* (on page 33) to expose the top or bottom edge of the light spot on the DMD.
6. Using a 2.5 mm hex driver unlock the focus adjustment mechanism (A in the image below).



7. Adjust the focus on the screen using the 2.5 mm adjustment screw (B in the image in step 4).
8. When complete, lock the focus adjustment (A in the image in step 4).
9. *Re-align or optimize the fold mirror* (on page 33).
10. Replace the top cover.

## Adjusting DMD convergence

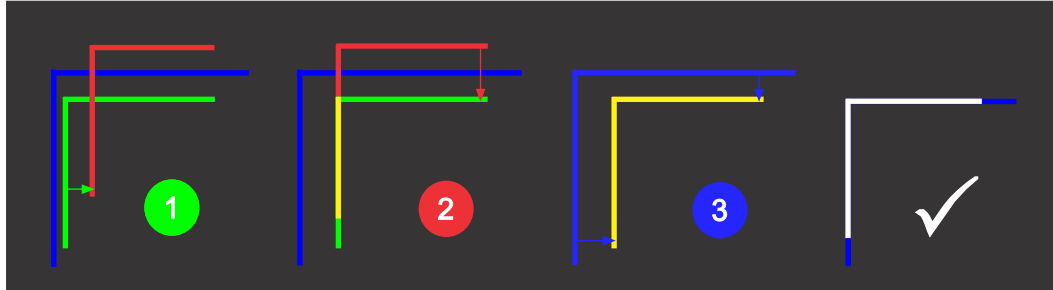
A convergence problem occurs when one or more projected colors (red, green, and blue) appears misaligned when examined with a convergence test pattern.

Adjusting the convergence is accomplished by aligning a red, green and blue sprite, which is displayed at the four corners of the displayed image. For electronic convergence all three colors can be adjusted.



Always align the color components of the sprite to the inner most line color (for each axis). When converged, the three colors should overlap to form white lines. Applying the sprite alignment settings to the screen results in the three colors overlapping to form white lines throughout the image.

One or more poorly converged individual colors may appear adjacent to some or all of the lines.



If you wear glasses with corrective lenses when performing this adjustment, ensure you are viewing the test pattern on a straight angle through the optical axis of your glasses and not from a tilted or angled perspective. This avoids a prismatic effect that can appear to shift convergence when viewing at an angle.

You can accomplish electronic convergence using either the remote, the display panel, or the web user interface.



Christie recommends using the remote to adjust convergence.

## Electronically adjusting convergence with the remote

Use the electronic convergence feature with the remote to adjust convergence.

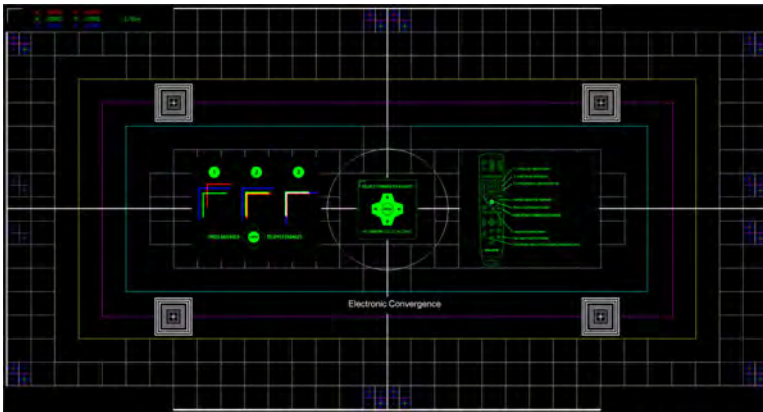


If warping with Christie Twist or Mystique, ensure the warp files are disabled before entering the electronic convergence feature.

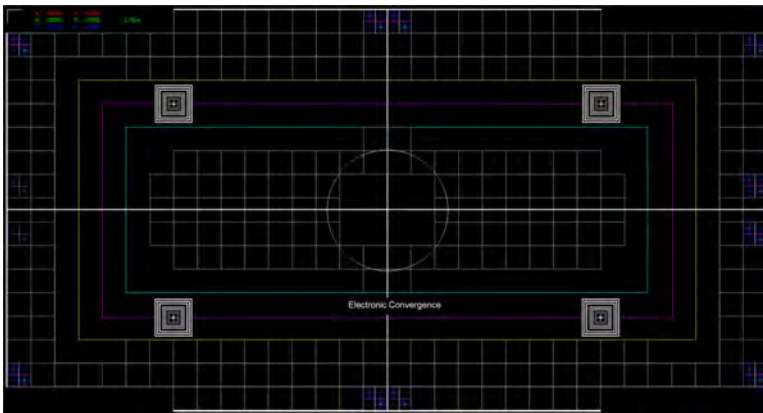
When using the remote to do electronic convergence, the following functionality is not available:

- Lens movement functions
  - Image optimization and setting the aspect ratio
  - Keystone adjustments
  - Customized actions
  - Context-sensitive help
  - On-screen display menu
1. Before adjusting DMD convergence, ensure the projector has reached a steady operational state. If switching from a white or bright test pattern to a dark convergence test pattern, or if warming up the projector after a shutdown, allow 15 minutes for stabilization so the optics can reach a steady state.
  2. On the remote, press **Test Pattern** and select the **E-Convergence** test pattern.





The E-Convergence test pattern is displayed, including the instructional text. To remove clutter from the screen or if you are familiar with the electronic convergence, turn off the instructional text. On the remote, press **OSD Hide** for two seconds.



Until electronic convergence is completed, the displayed image may appear to be blurred and difficult to read, especially for white text, due to the mis-convergence of the red, green, and blue pixels.

3. Select the corner sprite you want to adjust first.  
By default the top-left position is selected.
4. Lock the color component of the sprite to align the other two color components to, and then unlock one or both of the two remaining color components to adjust.  
On the remote use keys **1** (red), **2** (green), and **3** (blue) to lock and unlock the color components of the sprite.  
Always align the color components of the sprite to the inner most line color (for each axis).  
By default, all three color components (red, green, and blue) are displayed. It may be helpful to obtain a better view of the position of a particular color component if one or two of the other colors are deselected. On the remote, use keys **4** (red), **5** (green), and **6** (blue) to show or hide the color components.
5. Move the red, green, and/or blue components for the selected sprite either horizontally (x-axis) or vertically (y-axis) to align to the inner most line color.  
On the remote, use the **Up** and **Down** keys to adjust vertically on the x-axis and the **Left** and **Right** arrows to adjust horizontally on the y-axis.  
To change the step size for the adjustment, on the remote select **7** (decrease) or **9** (increase). The default is 1/8th of a pixel.



You cannot move the selected sprite outside the resolution range.

6. Repeat steps 4 and 5 for the other axis.
7. To apply the alignments and update the test pattern (so the effect is seen on the screen), on the remote press and hold the **Enter** button.  
A countdown is initiated and a message displayed when the alignments are applied.  
To apply the alignments to the test pattern at any time, press and hold the **Enter** button.  
Applying alignments to the test pattern does not automatically save the convergence settings to the projector. For how to save the convergence to the projector, refer to step 10.
8. To adjust remaining corners, repeat steps 3 to 7.  
To move to the next corner, on the remote press **Back**. The Select Corner to Adjust dialog appears. Use the arrow keys to select the next corner you want to adjust.
9. If the corner adjustment is not what you want or to start over with the alignment, reset the sprite positions:
  - a) On the remote, press **0**.
  - b) To reset the selected corner's alignment, select **Selected**.
  - c) To reset the alignments for all the corners, select **All**.
10. To save the convergence and exit, on the remote press **Test Pattern**.  
If no changes have been made, the projector exits the electronic convergence function. If any changes have been made to the convergence, a Save or Discard Changes dialog appears.
  - a) To save and exit, select **SAVE** and **ENTER**.  
The convergence settings are applied and saved to the projector before exiting the electronic convergence function.
  - b) To exit without saving, select **DISCARD** and **ENTER**.  
The convergence settings are not saved to the projector and the previous convergence settings are applied.

## Electronically adjusting convergence through the menu

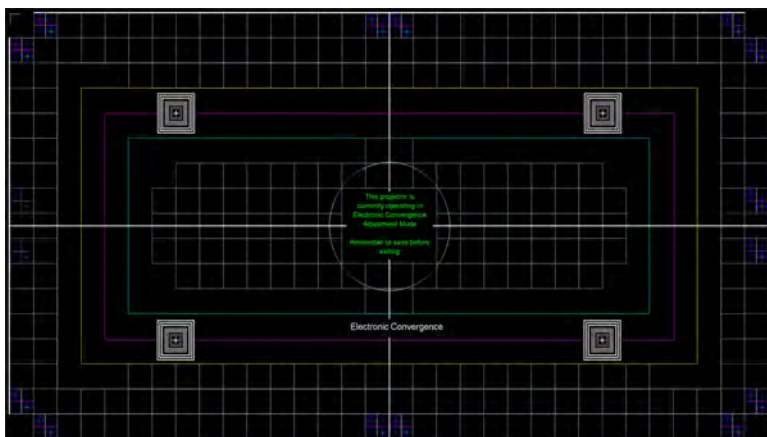
Use the electronic convergence feature in the menu to adjust convergence.

For an overview of the DMD convergence adjustment process, refer to *Adjusting DMD convergence* (on page 35).



- If warping with Christie Twist or Mystique, ensure the warp files are disabled before entering the electronic convergence feature.
  - Christie recommends using the remote to adjust convergence.
1. Before adjusting DMD convergence, ensure the projector has reached a steady operational state. If switching from a white or bright test pattern to a dark convergence test pattern, or if warming up the projector after a shutdown, allow 15 minutes for stabilization so the optics can reach a steady state.
  2. To enable electronics convergence, select **MENU > Admin > Service > Convergence** and select **Enable E-Convergence Adjustment**.  
The Electronic Convergence test pattern is automatically displayed.





Until electronic convergence is completed, the displayed image may appear to be blurred and difficult to read, especially for white text, due to the mis-convergence of the red, green, and blue pixels.

3. From the Select Corner to Adjust list, select the corner you want to adjust first.  
By default, the top-left position is selected.
4. From the Select Sprite Color to Adjust list, select the sprite or combination of sprites you want to adjust.  
By default, red is selected.  
It may be helpful to obtain a better view of the position of a particular sprite if one or two of the other sprites are deselected (set in step 5).
5. To show one or more sprites for each corner, select **Show Red Sprite**, **Show Green Sprite**, and/or **Show Blue Sprite**.  
By default, all three sprite colors are selected.
6. From the Select Step Size list, select the size of the step adjustment.  
By default, 1/8th is selected.
7. To modify the position for the selected sprite(s), select **Adjust**.
8. In the ADJUST SPRITE POSITION dialog, use the arrow keys to adjust the sprite(s) position.  
You cannot move the selected sprite outside the resolution range.
9. To check the results of the adjustment on the screen, select **Apply**.
10. To retry the convergence or convergence the next color and sprite, repeat steps 4 to 9.
11. To adjust remaining corners, repeat steps 3 to 11.
12. To apply and store the new settings, select **Save**.
13. To reset the electronic convergence, select **Reset**.
14. From the RESET CONTROL POINTS dialog, select the reset options.
  - Points—Reset all or the selected control points.
  - Reset to—Reset to the last saved e-convergence settings or to the factory defaults.
15. Select **OK**.
16. When complete, clear the **Enable E-Convergence Adjustment** checkbox.  
This turns off the Convergence test pattern.



## Aligning the image with lens zoom and focus

The lens zoom and focus adjustment allows the projected image to be focused and shifted to align with the screen.

1. Display an image or test pattern that can be used to analyze image focus and geometry.
2. Select **ZOOM**.
3. Use the up and down arrows to zoom in or out of the image.
4. To exit, select **Back**.
5. Select **FOCUS**.
6. Use the up and down arrows to adjust the focus of the image.
7. To exit, select **Back**.
8. To refine your adjusts, repeat steps 2 to 7.

## Running Auto Setup to optimize display settings

Auto Setup initiates an automated process in which the projector optimizes video settings for the active signal. Auto Setup helps to save time in perfecting a display and you can modify the adjustments as required.

1. Make sure of the following before running Auto Setup:
  - *Test patterns are turned off* (on page 31).
  - The active signal is valid.
2. From the remote, select **Auto Signal** or from the web UI, select **Auto Setup**.
3. Select **Run Auto Setup**.  
The system optimizes the active signal and displays a progress message on screen.

## Completing the installation checklist

Complete the provided installation checklist (P/N: 020-103137-XX) and return it to Christie.

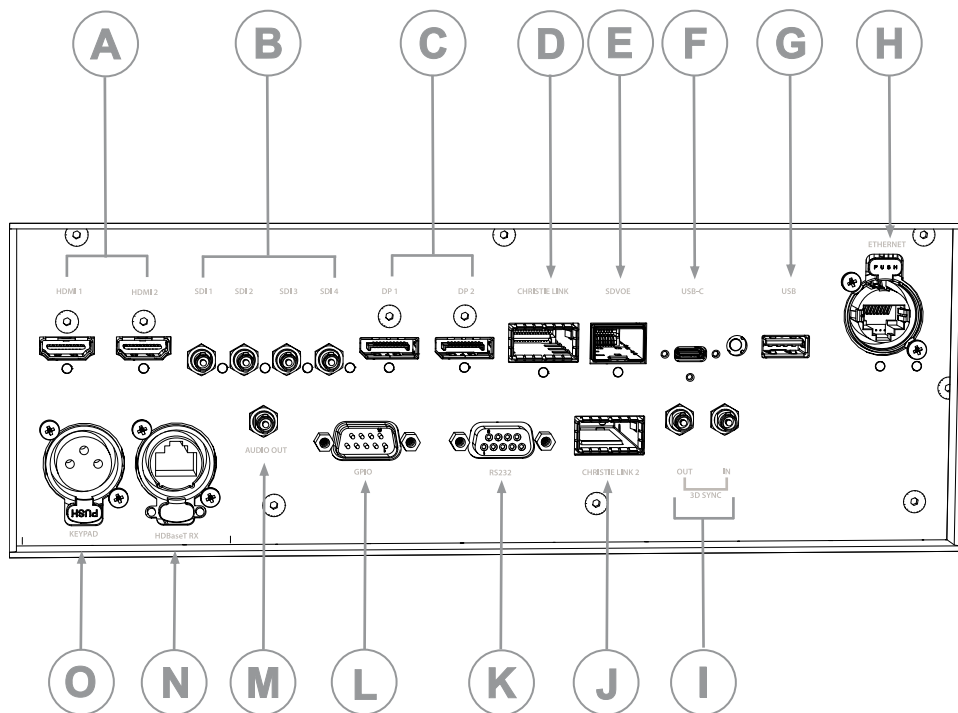


# Connecting devices and establishing communication

Learn how to connect external devices to the projector.

## Video Input panel

The Video Input panel has a variety of ports that can be used for control, 3D sync, upgrading, retrieving interrogators, and connecting audio.



The Video Input panel has two configuration options: Default and SDVoE. The selected option determines what video input configurations are enabled on the Video Input panel.

To enable the SDVoE option, plug in the SDVoE source into the Video Input panel and from the Input Configuration menu select **Main Menu** > **Configuration** > **Input Settings** > **Video Input configuration** > **SDVoE**.

To return to the default configuration, select **Default**.



ID	Port	Description	Default enabled	SDVoE enabled
A	HDMI	Accept digital video data from HDMI 2.0 input with HDCP 2.2 and 1.4 support.	X	X
B	SDI	Accepts digital video data from 12G, 6G, 3G, and HD SDI sources.	X	
C	DisplayPort	Accepts digital video data from DisplayPort 1.2 input with HDCP 1.3 support.	X	
D	Christie Link	Accept digital video data from QSFP+ 40 GB optical Christie Link input.	X	X
E	SDVoE	Accept digital video data from SDVoE input.		X
F	USB -C	Connects a USB-C flash drive that has been formatted with a FAT32 file system. Can be used for upgrades, backups, restores, and interrogators.		
G	USB 3.0-A	Connects a USB flash drive that has been formatted with a FAT32 file system. Can be used for upgrades, backups, restores, and interrogators.		
H	Ethernet	Ethernet, and network connection for remote control. 10/100/1000 Base-T Ethernet x 1 ruggedized connector.		
I	3D Sync In/3D Sync Out	Supported for 3D-enabled projectors.		
J	Christie Link	Reserved for future use.		
K	RS232	Sends/receives Christie serial commands using a standard RS232 serial cable.		
L	GPIO	Provides a method for controlling the projector using electrical signals.		
M	Audio Out	Reserved for future use.		
N	HDBaseT	Accepts HDBaseT V2.0 signals. HDBaseT x 1 ruggedized connector.	X	X
O	Wired keypad	Physically connects a remote control to the projector.		

## Connecting an HDMI video source

For the projector to accept digital video data from HDMI sources, plug the HDMI source directly into the Video Input panel.

The input configurations listed below are supported.

Input configuration	Description
One-Port	Enables connection of one HDMI cable. Supports both 2D and 3D frame-packed, top and bottom. In this configuration, the HDMI input supplies the entire video raster.



Input configuration	Description
One-Port, Dual-Input 3D	May be used for Dual-Input 3D configurations, where HDMI 1 = left eye input and HDMI 2 = right eye input.

## HDMI video formats

The following image formats are supported by the two HDMI inputs.



Frame rates also include fractional 1/1.001 frame rates.

### One-port 2D

The following one-port 2D HDMI 2.0 image formats are supported on each of the HDMI inputs.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
HD	1920x1080	1	1920	1080	24, 25, 30, 50, 60, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	2048x1080	1	2048	1080	24, 25, 30, 50, 60, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
4K	3840x2160	1	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	3840x2160	1	3840	2160	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8bpc
	3840x2160	1	3840	2160	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	4096x2160	1	4096	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	4096x2160	1	4096	2160	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8bpc
	4096x2160	1	4096	2160	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc

### One-port 2D 720p and 1080i

The following one-port 2D HDMI 2.0 image formats are supported on each of the HDMI inputs.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
HD	1280x720	1	1280	720	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	—
	1920x1080i	1	1920	1080	25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	1920x1080 interlaced (50/60 Hz field rate)



## One-port 2D PC

The following one-port 2D HDMI 2.0 PC image formats are supported on each of the two HDMI inputs.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
PC	1280x800	1	1280	800	60	RGB	8bpc
	1280x960	1	1280	960	60	RGB	8bpc
	1280x1024	1	1280	1024	60	RGB	8bpc
	1440x900	1	1440	900	60	RGB	8bpc
	1680x1050	1	1680	1050	60	RGB	8bpc
	1600x1200	1	1600	1200	60	RGB	8bpc
	1920x1200	1	1920	1200	60	RGB	8bpc

## One-port 3D

The following one-port 3D HDMI 2.0 image formats are supported on each of the HDMI inputs.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
3D	1280x720	1	1280	720	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	Frame-packing/ top-and-bottom
	1920x1080	1	1920	1080	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	Frame-packing

## Dual-input 3D

The following dual-input 3D HDMI image formats are supported where the indicated frame rate is per eye. Dual-input 3D is a fixed configuration where HDMI 1 = left eye input and HDMI 2 = right eye input.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
HD	1280x720	2	1280	720	24, 25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	1920x1080	2	1920	1080	24, 25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4/4:2:2	8/10/12bpc
	2048x1080	2	2048	1080	24, 25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
4K	3840x2160	2	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc
	3840x2160	2	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	3840x2160	2	3840	2160	60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8bpc



	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
	3840x2160	2	3840	2160	60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	4096x2160	2	4096	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc
	4096x2160	2	4096	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> 4:2:2	8/10/12bpc
	4096x2160	2	4096	2160	60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8bpc
	4096x2160	2	4096	2160	60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc

## Connecting 12G, 6G, 3G, or HD SDI video source

For the projector to accept digital video data from 12G, 6G, 3G, or HD SDI video source, plug the source directly into the Video Input panel.

Input configuration	Description
One-Port	Enables connection of any of the 12G, 6G, 3G, and HD SDI input standards.
One-Port, Dual-Input 3D	May be used for SDI inputs.
Four-Port Quadrant	May be used with four SDI inputs.

## SDI video formats

Identify the video formats for the 3GIC card for HD and 3G-SDI.



Frame rates also include fractional 1/1.001 frame rates.

### One-port 2D: SD, 720p and 1080i

The following one-port 2D SD, 720p and 1080i image formats are supported on each of the SDI inputs.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
SD	720x480	1	720	480	30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	SD interlaced component at 270Mb/s (ST 259 level C) Interlaced (60 Hz field rate)
	720x576	1	720	576	25	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	SD interlaced component at 270Mb/s (ST 259 level C) Interlaced (50 Hz field rate)



	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
HD	1280x720	1	1280	720	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	HD 720p Y'C <sub>B</sub> C <sub>R</sub> component at 1.5Gb/s (ST 292-1)
	1280x720	1	1280	720	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:4:4(4)	10bpc	HD 720p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 3.0Gb/s (ST 425-1) level A
	1920x1080	1	1920	1080	25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	HD 1080i component at 1.5Gb/s (ST 292-1) Interlaced (50/60 Hz field rate)

### One-port 2D: HD and UHD/4K

The following one-port 2D HD and UHD/4K image formats are supported on each of the SDI inputs.



2048 x 1080 and 4096 x 2160 formats are also supported.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
HD	1920x1080	1	1920	1080	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	HD 1080p component at 1.5Gb/s (ST 292-1)
	1920x1080	1	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	HD 1080p component at 3.0Gb/s (ST 425-1) level A
	1920x1080	1	1920	1080	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	12bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 3.0Gb/s (ST 425-1) level A
	1920x1080	1	1920	1080	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2(4)	12bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> component at 3.0Gb/s (ST 425-1) level A
	1920x1080	1	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB



	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
								component at 6.0Gb/s (ST 2081-10) mode 2 structure II
	1920x1080	1	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4	12bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 6.0Gb/s (ST 2081-10) mode 2 structure III
4K	3840x2160	1	3840	2160	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	2160p Y'C <sub>B</sub> C <sub>R</sub> component at 6.0Gb/s (ST 2081-10) mode 1 structure 1
	3840x2160	1	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4(4)	10bpc	2160p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 12.0Gb/s (ST 2082-10) mode 1 structure 2
	3840x2160	1	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4	12bpc	2160p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 12.0Gb/s (ST 2082-10) mode 1 structure 3
	3840x2160	1	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> / 4:2:2(4)	12bpc	2160p Y'C <sub>B</sub> C <sub>R</sub> component at 12.0Gb/s (ST 2082-10) mode 1 structure 4

### One-port, dual-input 3D

The following one-port, dual-input 3D SDI image formats are supported where the indicated frame rate is per eye. Dual-input 3D is a fixed configuration where SDI 1 = left eye for input 1, SDI 2 = right eye for input 1, SDI 3 = left eye for input 2, and SDI 4 = right eye for input 2.



2048 x 1080 and 4096 x 2160 image formats are also supported.



	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
HD	1280x720	2	1280	720	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	HD 720p Y'C <sub>B</sub> C <sub>R</sub> component at 1.5Gb/s (ST 292-1)
	1280x720	2	1280	720	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10bpc	HD 720p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 3.0Gb/s (ST 425-1) level A
	1920x1080	2	1920	1080	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	HD 1080p component at 1.5Gb/s (ST 292-1)
	1920x1080	2	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	HD1080p component at 3.0Gb/s (ST 425-1) level A
	1920x1080	2	1920	1080	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	12bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 3.0Gb/s (ST 425-1) level A
	1920x1080	2	1920	1080	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2(4)	12bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> component at 3.0Gb/s (ST 425-1) level A
	1920x1080	2	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 6.0Gb/s (ST 2081-10) mode 3 structure II
	1920x1080	2	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 6.0Gb/s (ST 2081-10) mode 2 structure III
	1920x1080	2	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2(4)	12bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 6.0Gb/s



	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
								(ST 2081-10) mode 2 structure IV
4K	3840x2160	2	3840	2160	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	2160p Y'C <sub>B</sub> C <sub>R</sub> component at 6.0Gb/s (ST 2081-10) mode 1 structure 1
	3840x2160	2	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10bpc	2160p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 12.0Gb/s (ST 2082-10) mode 1 structure 2
	3840x2160	2	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12bpc	2160p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 12.0Gb/s (ST 2082-10) mode 1 structure 3
	3840x2160	2	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2(4)	12bpc	2160p Y'C <sub>B</sub> C <sub>R</sub> component at 12.0Gb/s (ST 2082-10) mode 1 structure 4

## One-port, dual-link 2D

The following one-port, dual-link 2D SDI input formats are supported. Dual-link SDI is a fixed configuration where SDI 1 = link 1 of input1, SDI 2 = link 2 of input 1, SDI 3 = link 1 of input2, and SDI 4 = link 2 of input 2.



2048 x 1080 and 4096 x 2160 image formats are also supported.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
HD	1920x1080	2	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at dual-link 3Gb/s (ST 425-3) level A structure II
	1920x1080	2	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at dual-link 3Gb/s



	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
								(ST 425-3) level A structure III
	1920x1080	2	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	12bpc	Y'C <sub>B</sub> C <sub>R</sub> component at dual-link 3Gb/s (ST 425-3) level A structure IV
	1920x1080	2	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2:4	12bpc	Y'C <sub>B</sub> C <sub>R</sub> component at dual-link 3Gb/s (ST 425-3) level A structure IV
4K	3840x2160	2	3840	2160	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	Y'C <sub>B</sub> C <sub>R</sub> component at dual-link 6Gb/s (ST 2081-11) mode 1
	3840x2160	2	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at dual-link 6Gb/s (ST 2081-11) mode 1
	3840x2160	2	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at dual-link 6Gb/s (ST 2081-11) Mode 1
	3840x2160	2	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	12bpc	Y'C <sub>B</sub> C <sub>R</sub> component at dual-link 6Gb/s (ST 2081-11) mode 1
	3840x2160	2	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2:4	12bpc	Y'C <sub>B</sub> C <sub>R</sub> component at dual-link 6Gb/s (ST 2081-11) mode 1

## One-port, quad-link 2D

The following one-port, quad-link 2D image formats are supported. This is a fixed configuration where SDI 1 = link1, SDI 2 = link2, SDI 3 = link3, and SDI 4 = link 4 of the quad-link input.



4096 x 2160 image formats are also supported.



	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
4K	3840x2160	4	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at quad-link 3Gb/s (ST 425-5) level A structure 2
	3840x2160	4	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at quad-link 3Gb/s (ST 425-5) level A structure 3
	3840x2160	4	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2(4)	12bpc	Y'C <sub>B</sub> C <sub>R</sub> component at quad-link 3Gb/s (ST 425-5) level A structure 4
	3840x2160	4	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	12bpc	Y'C <sub>B</sub> C <sub>R</sub> component at quad-link 3Gb/s (ST 425-5) level A structure 4
	3840x2160	4	3840	2160	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at quad-link 6Gb/s (ST 2081-12) mode 2 structure II x 4
	3840x2160	4	3840	2160	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at quad-link 6Gb/s (ST 2081-12) mode 2 structure III x 4

## One-port square division

The following quad-link 2D SDI image formats are supported in square division mapping format, so each SDI input represents one quarter of the total image assigned as shown in the following diagram:

Input 1 SDI 1	Input 2 SDI 2
Input 3 SDI 3	Input 4 SDI 4



4096 x 2160 image formats are also supported.



	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
4K	3840x2160	4	3840	2160	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	Y'C <sub>B</sub> C <sub>R</sub> component at quad-link 3Gb/s (ST 425-5) annex B square division of 2160-image formats, B.1 level A mapping
	3840x2160	4	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at quad-link 3Gb/s (ST 425-5) annex B square division of 2160-image formats, B.1 level A mapping
	3840x2160	4	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at quad-link 3Gb/s (ST 425-5) annex B square division of 2160-image formats, B.1 level A mapping
	3840x2160	4	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2:4	12bpc	Y'C <sub>B</sub> C <sub>R</sub> component at quad-link 3Gb/s (ST 425-5) annex B square division of 2160-image formats, B.1 level A mapping
	3840x2160	4	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	12bpc	Y'C <sub>B</sub> C <sub>R</sub> component at quad-link 3Gb/s (ST 425-5) annex B square division of 2160-image formats, B.1 level A mapping
	3840x2160	4	3840	2160	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at quad-link 6Gb/s (ST 2081) mode 2 structure II



	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
	3840x2160	4	3840	2160	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12bpc	Y'C <sub>B</sub> C <sub>R</sub> /RGB component at quad-link 6Gb/s (ST 2081) mode 2 structure II

Where each SDI Input corresponds to one of the following input signal formats.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
HD	1920x1080	1	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	10bpc	HD 1080p component at 3.0Gb/s (ST 425-1) level A
	1920x1080	1	1920	1080	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	12bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 3.0Gb/s (ST 425-1) level A
	1920x1080	1	1920	1080	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2(4)	12bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> component at 3.0Gb/s (ST 425-1) level A
	1920x1080	1	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4(4)	10bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 6.0Gb/s (ST 2081-10) structure II
	1920x1080	1	1920	1080	48, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	12bpc	HD 1080p Y'C <sub>B</sub> C <sub>R</sub> /RGB component at 6.0Gb/s (ST 2081-10) mode 2 structure III

## Connecting a DisplayPort video source

For the projector to accept digital video data, plug the DisplayPort source directly into the Video Input panel.

The input configurations listed below are supported.



Input configuration	Description
One-Port	Enables connection of one DisplayPort cable. Supports both 2D and 3D frame sequential transmission format. In this configuration the DisplayPort input supplies the entire video raster.
Two-Port	Enables connection of two DisplayPort cables. Supports both 2D and 3D frame sequential transmission format. Each DisplayPort input supplies one of two columns of a 4K input image.
One-Port, Dual-Input 3D	May be used for Dual-Input 3D configurations.

## DisplayPort video formats

The following image formats are supported by the DisplayPort inputs.



Frame rates also include fractional 1/1.001 frame rates.

### One-port 2D

The following one port 2D DisplayPort 1.2 image formats are supported on each of the DP 1.2 inputs.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
HD	1280x720	1	1280	720	24, 25, 30, 50, 60, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10/12bpc
	1920x1080	1	1920	1080	24, 25, 30, 50, 60, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10/12bpc
	2048x1080	1	2048	1080	24, 25, 30, 50, 60, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10/12bpc
4K	3840x2160	1	3840	2160	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc
	4096x2160	1	4096	2160	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc

### One-port 3D

The following one-port 3D DisplayPort image formats are supported in a frame sequential transmission format.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
HD	1280x720	1	1280	720	25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10/12bpc
	1920x1080	1	1920	1080	25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10/12bpc
	2048x1080	1	2048	1080	25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10/12bpc



	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
4K	3840x2160	1	3840	2160	25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4	8/10bpc
	4096x2160	1	4096	2160	25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4	8/10bpc

### One-port, dual-input 3D

The following one-port, dual-input 3D DisplayPort 1.2 image formats are supported where the indicated frame rate is per eye. Dual-input 3D is a fixed configuration where DisplayPort 1 = left eye input and DisplayPort 2 = right eye input.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
HD	1280x720	2	1280	720	24, 25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4	8/10/12bpc
	1920x1080	2	1920	1080	24, 25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4	8/10/12bpc
	2048x1080	2	2048	1080	24, 25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4	8/10/12bpc
4K	3840x2160	2	3840	2160	24, 25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4	8/10bpc
	4096x2160	2	4096	2160	24, 25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4	8/10bpc

### Two-port 2D

The following two-port 2D DisplayPort 1.2 image formats are supported in two-column mode where each DisplayPort 1.2 input provides one half of the overall image width such that DisplayPort 1 = left half of the total image and DisplayPort 2 = right half of the overall image.

For example:

- For 3840x2160:  
DP 1 = 1920 x 2160 (left side[pixels 0 - 1919]) and DP 2 = 1920 x 2160 (right side [pixels 1920 - 3839])
- For 4096x2160:  
DP 1 = 2048 x 2160 (left side[pixels 0 - 2047]) and DP 2 = 2058 x 2160 (right side [pixels 2048 - 4095])

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
4K	1920x2160 (per input)	2	3840	2160	120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc
	2048x2160 (per input)	2	4096	2160	120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc



## Two-port 3D

The following two-port 3D DisplayPort image formats are supported in a 3D frame sequential, two-column transmission format. All frame rates are expressed per eye.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
4K	1920x2160 (per input)	2	3840	2160	60	Y'C'B'C'R/RGB/4:4:4	8/10bpc
	2048x2160 (per input)	2	4096	2160	60	Y'C'B'C'R/RGB/4:4:4	8/10bpc

## One-port 2D PC

The following one-port 2D DisplayPort 2.0 PC image formats are supported on each of the two DisplayPort inputs.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
PC	1280x800	1	1280	800	60	RGB	8bpc
	1280x960	1	1280	960	60	RGB	8bpc
	1280x1024	1	1280	1024	60	RGB	8bpc
	1440x900	1	1440	900	60	RGB	8bpc
	1680x1050	1	1680	1050	60	RGB	8bpc
	1600x1200	1	1600	1200	60	RGB	8bpc
	1920x1200	1	1920	1200	60	RGB	8bpc

# Connecting Christie Link video source

For the projector to accept digital video data from Christie Link, plug the source directly into the Video Input panel.



These input configurations are set up on the Christie Link transmitter. Refer to the Christie Link User Guide (P/N: 020-102234-XX).

Christie Link video loop-out enables signals received on the Christie Link input (labeled Christie Link 1 on the Video Input panel) to be passed through to the Christie Link output (labeled Christie Link 2 on the Video Input panel). The loop through connection is automatically established whenever active Christie Link QSFP modules are plugged into the respective connectors on the projector's Video Input panel.

Input configuration	Description
One-Port	Enables connection of Christie Link 4K transmitter to the projector.
One-Port, Dual-Input 3D	
Two-Port	



## Christie Link video formats

The following image formats are supported by the Christie Link input.

### One-port 2D

The following 2D image formats are supported by the Christie Link input.

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
HD	1280x720	1	1280	720	24, 25, 30, 50, 60, 100, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	—
	1920x1080i	1	1920	1080	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	1920 x 1080 Interlaced (50/60 Hz field rate)
	1920x1080	1	1920	1080	24, 25, 30, 50, 60, 100, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	—
	2048x1080	1	2048	1080	24, 25, 30, 50, 60, 100, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	—
4K	3840x2160	1	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10bpc	—
	3840x2160	1	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	12bpc	—
	3840x2160	1	3840	2160	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10bpc	—
	3840x2160	1	3840	2160	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	12bpc	—
	4096x2160	1	4096	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10bpc	—
	4096x2160	1	4096	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	12bpc	—
	4096x2160	1	4096	2160	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10bpc	—
	4096x2160	1	4096	2160	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	12bpc	—

### One-port 2D PC

The following 2D PC image formats are supported by the Christie Link input.



	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
PC	1280x800	1	1280	800	60	RGB	8bpc
	1280x960	1	1280	960	60	RGB	8bpc
	1280x1024	1	1280	1024	60	RGB	8bpc
	1440x900	1	1440	900	60	RGB	8bpc
	1680x1050	1	1680	1050	60	RGB	8bpc
	1600x1200	1	1600	1200	60	RGB	8bpc
	1920x1200	1	1920	1200	60	RGB	8bpc

### One-port 3D

The following one-port 3D HDMI 2.0 image formats are supported by the Christie Link input.

	Format	Cables	Hres	Vres	Frame Rate (Hz)	Sampling	Bit-Depth	Notes
3D	1280x720	1	1280	720	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	Frame-packing/ top-and-bottom
	1920x1080	1	1920	1080	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	Frame-packing

### One-port, dual-input 3D

The following one-port, dual-input 3D image formats are supported where the indicated frame rate is per eye. Dual-input 3D is a fixed configuration where Input 1 = left eye input and Input 2 = right eye input.

	Format	Cables	Hres	Vres	Frame Rate (Hz)	Sampling	Bit-Depth
HD	1280x720	2	1280	720	24, 25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	1920x1080	2	1920	1080	24, 25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	2048x1080	2	2048	1080	24, 25, 30, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
4K	3840x2160	2	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc
	3840x2160	2	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	3840x2160	2	3840	2160	60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc
	3840x2160	2	3840	2160	60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc



	Format	Cables	Hres	Vres	Frame Rate (Hz)	Sampling	Bit-Depth
	4096x2160	2	4096	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc
	4096x2160	2	4096	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	4096x2160	2	4096	2160	60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc
	4096x2160	2	4096	2160	60	Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc

## Two-port 2D

The following two-port 2D image formats are supported in two-column mode where each input provides one half of the overall image width such that Input 1 = left half of the total image and Input 2 = right half of the overall image.

	Format	Cables	Hres	Vres	Frame Rate (Hz)	Sampling	Bit-Depth	Notes
4K	1920x2160 (per input)	2	3840	2160	120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc	Two Column mode
	2048x2160 (per input)	2	4096	2160	120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc	Two Column mode

## Two-port 3D

The following two-port 3D image formats are supported in a 3D frame sequential, two-column transmission format by Christie Link. All frame rates are expressed per eye.

	Format	Cables	Hres	Vres	Frame Rate (Hz) per eye	Sampling	Bit-Depth	Notes
4K	1920x2160 (per input)	2	3840	2160	60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc	3D frame sequential Two Column mode
	2048x2160 (per input)	2	4096	2160	60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4	8/10bpc	3D frame sequential Two Column mode

# Connecting an SDVoE video source

For the projector to accept digital video data from a Christie Terra Transmitter, plug the SDVoE source directly into the SFP+ connector on the Video Input panel.

After plugging the SDVoE source into the Video Input panel, the video source must be selected from the Input Configuration menu by selecting **Main Menu > Configuration > Input Settings > Video Input configuration > SDVoE**.



When SDVoE is selected, the DisplayPort and SDI inputs are no longer supported.

The input configuration listed below is supported.



Input configuration	Description
One-Port	Enables 2D or 3D connection from an SDVOE source (such as the Christie Terra Transmitter).

## SDVoE video formats

The following image formats are supported by the SDVoE input.

### One-port 2D

The following 2D image formats are supported by the SDVoE input.

	Format	Cables	Hres	Vres	Frame Rate (Hz)	Sampling	Bit-Depth	Notes
HD	1280x720	1	1280	720	24, 25, 30, 50, 60, 120	Y'C'B'C'R/RGB/4:4:4 Y'C'B'C'R/4:2:2	8/10/12bpc	—
	1920x1080i	1	1920	1080	25, 30	Y'C'B'C'R/RGB/4:4:4 Y'C'B'C'R/4:2:2	8/10/12bpc	1920x1080 Interlaced (50/60 Hz field rate)
	1920x1080	1	1920	1080	24, 25, 30, 50, 60, 120	Y'C'B'C'R/RGB/4:4:4 Y'C'B'C'R/4:2:2	8/10/12bpc	—
	2048x1080	1	2048	1080	24, 25, 30, 50, 60, 120	Y'C'B'C'R/RGB/4:4:4 Y'C'B'C'R/4:2:2	8/10/12bpc	—
4K	3840x2160	1	3840	2160	24, 25, 30, 50, 60	Y'C'B'C'R/RGB/4:4:4 Y'C'B'C'R/4:2:2	8bpc	—
	4096x2160	1	4096	2160	24, 25, 30, 50, 60	Y'C'B'C'R/RGB/4:4:4 Y'C'B'C'R/4:2:2	8bpc	—

### One-port 2D PC

The following 2D PC image formats are supported by the SDVoE input.

	Format	Cables	Hres	Vres	Frame Rate (Hz)	Sampling	Bit-Depth
PC	1280x800	1	1280	800	60	RGB	8bpc
	1280x960	1	1280	960	60	RGB	8bpc
	1280x1024	1	1280	1024	60	RGB	8bpc
	1440x900	1	1440	900	60	RGB	8bpc
	1680x1050	1	1680	1050	60	RGB	8bpc



	Format	Cables	Hres	Vres	Frame Rate (Hz)	Sampling	Bit-Depth
	1600x1200	1	1600	1200	60	RGB	8bpc
	1920x1200	1	1920	1200	60	RGB	8bpc

## One-port 3D

The following one-port 3D HDMI 2.0 image formats are supported by the SDVoE input.

	Format	Cables	Hres	Vres	Frame Rate (Hz)	Sampling	Bit-Depth	Notes
3D	1280x720	1	1280	720	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	Frame-packing/ top-and-bottom
	1920x1080	1	1920	1080	24, 25, 30, 50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/ 4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	Frame-packing

## Connecting to a computer with USB

The two USB ports can be used for upgrades, backups, restores, profile management, and interrogator retrieval.

- **USB-C 3.0 Interface**—USB-C Connector with locking mechanism supporting USB 3.0 protocol (5 Gb/s), power over USB (2 A @ 5 VDC), and DP 1.2 Alt mode for video output.  
This port can be used as a high speed data interface.
- **USB Type A 3.0 Interface**—USB Type A connector with locking mechanism supporting USB 3.0 protocol (5 Gb/s) and power over USB (2 A @ 5 VDC). Intended for data ingest using USB flash drives for the purposes of upgrading, profile management, and interrogator retrieval.  
This port can be connected to a Christie-recommended WiFi USB device to provide wireless Ethernet control.

For information on performing upgrades, backups, restores, profile management, and interrogator retrieval, refer to the *Christie TruLife+ User Guide (P/N: 020-103315-XX)*.

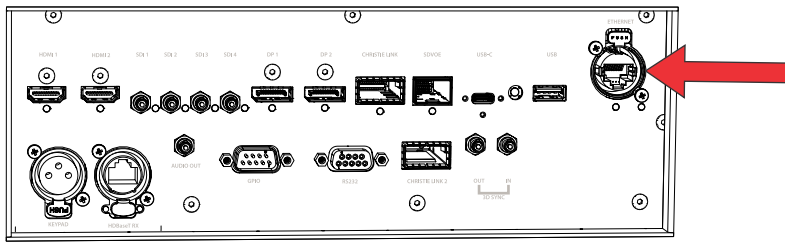
## Connecting to a computer or server with 10/100/1000 base-T Ethernet

Communicate with a remote computer, server, or an existing network using a RJ-45 cable.

The port located on the Video Input panel uses Christie-proprietary protocol or Art-Net control protocol and is intended for Christie accessories or automation controllers only.

1. Use an RJ-45 cable to connect the Ethernet hub or switch to the Ethernet port, located on the projector Video Input panel.





2. When using the Christie serial protocol over Ethernet, connect to port 3002.
3. For applications or equipment using serial communications, use the Christie-proprietary serial protocol or Art-Net protocol to communicate with the Ethernet port on the Video Input panel.

## Setting up the Ethernet

Ethernet is setup to obtain an IP address automatically if a DHCP server is on the network, modify IP settings, or manually enter an address.



You cannot change the IP settings using the web interface.

1. From the display panel, use the arrow keys to select **IP Settings**.
2. To set the type of network, select **DHCP** or **Static**.
3. If you selected Static, manually enter the network information for the **IP Address**, **Subnet**, and **Gateway**.
4. Select **Apply** and select **Enter**.
5. Select **MENU** > **Communications** > **Network Settings**.
6. Select **Device name**.
7. Use the up and down keys to enter the name of the projector.
8. Select **Enter**.

## Communicating with Christie M 4K RGB Series through Art-Net

Christie M 4K RGB Series supports communications through the Art-NET using the Ethernet connector.

1. Select **MENU** > **Communications** > **Art-Net Settings**.
2. Verify the **Enable Art-Net** option is disabled.  
Disabling Art-Net before configuring it ensures Christie M 4K RGB Series does not accidentally respond to DMX messages destined for other devices on the network.
3. To specify which subnet the projector belongs to, in the Art-Net Subnet field adjust the value between 0 and 15.  
The subnet provides expandability beyond the universe level.
4. To confirm your selection, select **Enter**.
5. To specify which universe the projector belongs to, so it can filter out all other data packets, in the Art-Net Universe field, adjust the value between 0 and 15.  
For Art-Net, data is broadcast over an Ethernet network, so every device receives every packet of data, whether the device belongs to that universe or not.



6. To confirm your selection, select **Enter**.
7. To determine the starting channel for this projector, in the Base Channel field, adjust the value between 1 and 488.  
If multiple projectors are used on the same universe and are to be controlled independently, this value must be changed. For example, if both projectors are using the Shutter (20 channels), projector 1 should start at base channel 1 and projector 2 should start at base channel 21.
8. To confirm your selection, select **Enter**.
9. Select **Enable Art-Net**.
10. To enable the Art-Net functionality, select **Enter**.

## Art-Net channel listing

There are 512 channels per universe. Christie M 4K RGB Series specifies 24 channels.



Christie M 4K RGB Series has multiple methods of being controlled in addition to Art-Net. If a setting is changed through another interface, the DMX controller can re-assert control by changing the value on the appropriate DMX channel.

Channel	Name	Description	Suggested starting position	Notes
1	Slider Lock	0 to 171 = Locked 172 to 255 = Unlocked	0	—
2	Power	0 to 85 = Powers off the projector (goes into Standby mode) 86 to 171 = Cancel timer 172 to 255 = Powers on the projector (switches light source on, warm up mode)	128	Must be valid for five seconds before it is applied.
3	Shutter	0 to 85 = Closes the shutter (black screen) 172 to 255 = Opens the shutter (live video)	255	Christie recommends setting this channel to 255 prior to powering up the projector so it is consistent with the shutter state after the projector is fully on.
4	Lens Shift Enable	0 to 171 = Disables lens shift 172 to 255 = Enables lens shift	—	Locks all lens motors.
5	Zoom (Coarse)	0 = Smallest image possible (0%)	128	<ul style="list-style-type: none"> <li>• Locked by the Lens Shift Enable channel.</li> <li>• Scaled as a percentage of the total control range.</li> <li>• A 250 ms delay exists before sending this channel to the projector.</li> </ul>
6	Zoom (Fine)	255 = Largest image possible (100%)		



Channel	Name	Description	Suggested starting position	Notes
7	Focus (Coarse)	0 = 0% 255 = 100%	128	<ul style="list-style-type: none"> <li>• Locked by the Lens Shift Enable channel.</li> <li>• Scaled as a percentage of the total control range.</li> <li>• A 250 ms delay exists before sending this channel to the projector.</li> </ul>
8	Focus (Fine)			
9	Lens Horizontal Position (Coarse)	0 = Full left position (0%) 255 = Full right position (100%)	128	<ul style="list-style-type: none"> <li>• Locked by the Lens Shift Enable channel.</li> <li>• A 250 ms delay exists before sending this channel to the projector.</li> </ul>
10	Lens Horizontal Position (Fine)			
11	Lens Vertical Position (Coarse)	0 = Full lower position (0%) 255 = Full upper position (100%)	128	<ul style="list-style-type: none"> <li>• Locked by the Lens Shift Enable channel.</li> <li>• A 250 ms delay exists before sending this channel to the projector.</li> </ul>
12	Lens Vertical Position (Fine)			
13	Input	1 to 80 = Input index 86 = Load 91 to 170 = Additional input indices 171 = Execute	0	To change inputs, send the following sequence: Load > Input index > Execute Channel 1 slider lock can be used if a keypad is not available for the input selection.
14	Fade Time	0 = 0 seconds 250 = 2.5 seconds	—	Determines the length of time it takes for the shutter to open and close with a fading effect.
15 to 24	Reserved	Reserved for future use.	—	—

## Configuring the 3D Sync in/3D Sync out interface

The 3D sync interface is supported for 3D-enabled projectors. A Mirage license is required.

The projector can configure the 3D output sync port to supply an output synchronized right eye/left eye signal for:

- Another projector
- 3D glasses emitter

The 3D sync input and output interface connector is a micro 75 ohm BNC connector.

For information on setting up the projector for 3D, refer to the *3D setup (on page 70)* chapter.



## Configuring the RS232 port

Configure the RS232 port to send Christie serial commands using a standard RS232 serial cable.

For more information, on the serial commands, see the *Christie TruLife+ Serial Commands Guide* (P/N: 020-103316-XX) .

1. Select **Menu > Communications > Projector Communication**.
2. Use the down arrow to select **Baud Rate**.
3. Select the appropriate baud rate and select **Enter**.
4. Use the down arrow to select **Network Routing**.
5. Select the type network routing appropriate for your projector and select **Enter**.

## Configuring the GPIO

The Generic Purpose Input Output (GPIO) provides a flexible method of interfacing with external devices to the projector.

The GPIO is configured to automate real time events. Each of the seven pins is defined as either an input or output depending on the required outcome. The remaining two pins are reserved for ground and power.

Configure the pin as an input if you want the projector to respond to something the device does and as an output if you want the external device to respond to an action taken by the projector. For example, configure the pin as an output if you want the lighting in a room to automatically dim when the projector is turned on.



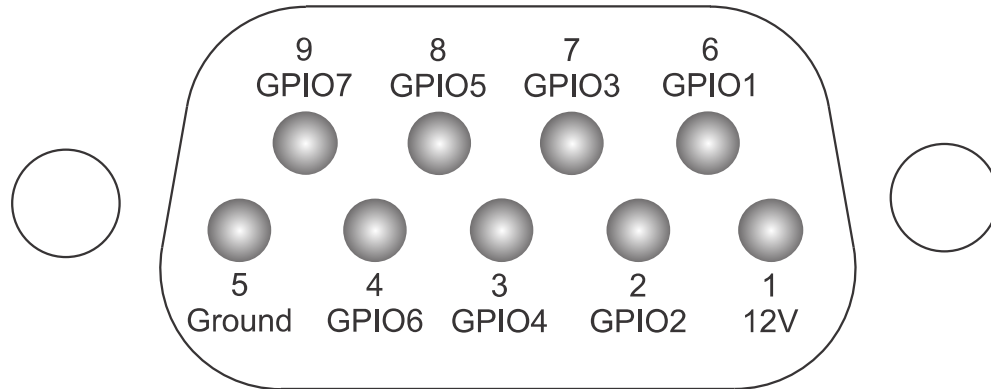
This feature is only available on the web interface.

1. From the home page of the web interface, select **Macros and GPIO**.
2. Select **GPIO Configuration**.
3. In the GPIO Configuration dialog under Update the New Configuration, toggle the pins you want active for the input and output.  
A blue pin indicates input and a green pin indicates output.
4. Select **Apply**.



## GPIO connector

The GPIO connector located on the input panel provides a flexible method of interfacing with the projector. Seven GPIO pins are available on the nine pin D-Sub GPIO connector. Two other pins are reserved for ground and power.



D-SUB pin number	Signal	Output high (Voh)	Notes
Pin 1	+12V	—	1A max
Pin 2	GPIO 2	5V	75mA max (e)fused to prevent damage
Pin 3	GPIO 4		
Pin 4	GPIO 6		
Pin 5	Ground	—	—
Pin 6	GPIO 1	5V	75mA max (e)fused to prevent damage
Pin 7	GPIO 3		
Pin 8	GPIO 5		
Pin 9	GPIO 7		



All GPIO pins are weakly pulled up to 3.3V.

## Connecting an HDBaseT video source

The HDBaseT port on the Video Input panel accepts digital video data from HDBaseT sources.

Can connect a 10/100/1000 base-T Ethernet cable for sever or network connectivity.

The input configurations listed below are supported.

Input configuration	Description
One-Port	Enables 2D or 3D connection of one Ethernet cable to the HDBaseT port on the Video Input panel. The HDBaseT input supplies the entire video raster.



## HDBaseT video formats

The following image formats are supported by the HDBaseT inputs.

### HDBaseT 2D

The following 2D HDBaseT image formats are supported.

	Format	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
HD	1280x720	1280	720	24, 25, 30, 50, 60, 100, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	1920x1080i	1920	1080	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	1920x1080	1920	1080	24, 25, 30, 50, 60, 100, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
	2048x1080	2048	1080	24, 25, 30, 50, 60, 100, 120	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc
4K	3840x2160	3840	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8bpc
	4096x2160	4096	2160	24, 25, 30	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8bpc

### HDBaseT 3D

The following 3D HDBaseT image formats are supported.

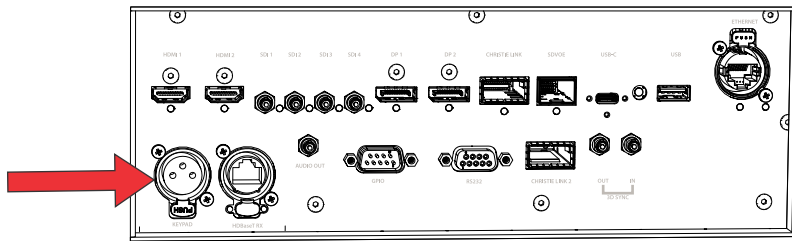
	Format	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth	Notes
HD	1280x720	1280	720	50, 60	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	Frame-packing, top and bottom
	1920x1080	1920	1080	24, 25	Y'C <sub>B</sub> C <sub>R</sub> /RGB/4:4:4 Y'C <sub>B</sub> C <sub>R</sub> /4:2:2	8/10/12bpc	Frame-packing

## Enabling the wired remote keypad

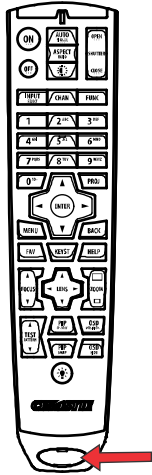
The wired remote keypad interface supports the NEC IR communication protocol.

1. Connect the remote cable in the Wired keypad port on the Video Input panel.





2. Connect the remote cable in the bottom of the remote.



3. On the projector, select **MENU > Communications > Projector Communications**.
4. To enable a wired version of the remote, select **Wired Keypad Enabled** and select **Enter**.  
By default this feature is enabled.

## Selecting a port configuration

Select a port configuration before you select a video source.

1. From the display panel, select **INPUT**.
2. To access the port configuration dialog from the input screen, select the right arrow.  
You can also access the Port Configuration screen from **MENU > Configuration > Input Settings > Input Port Configuration**.
3. From the Port Configuration screen, navigate the list of port configurations until you find the selection that best matches your configuration.

The range of available configuration depends on the projector model and/or input/output combinations. When the Default configuration is selected (**Main Menu > Configuration > Input Settings > Video Input configuration > Default**), the following configurations are supported:

- One-port
- Two-port
- Four-port quadrants
- One-port dual-input 3D (3D license-specific)



When SDVoE is selected (**Main Menu > Configuration > Input Settings > Video Input configuration > SDVoE**), the one-port configuration is selected.

4. To return to the Input screen, select the left arrow.

## Selecting a video source

After connecting a video source to the projector and making sure your port configuration is correct, you must select it.

1. From the display panel, select **INPUT**.
2. Navigate the list of input selections until you find a selection that best matches your configuration.

The range of available input selections depends on the projector model and/or input/output combinations. When the Default configuration is selected, the following inputs are supported for each configuration:

- One-port—HDMI, SDI, DisplayPort, Christie Link, HDBaseT
- Two-port—DisplayPort, Christie Link
- Four-port quadrants—SDI
- One-port dual-input 3D (3D license-specific)—SDI, DisplayPort, Christie Link

When SDVoE is selected, the HDMI, SDVoE, Christie Link, and HDBaseT inputs are supported for the one-port configuration.

3. To select the input, select **Enter**.



# 3D setup

The projector is capable of displaying stereoscopic 3D video sources, relying on additional hardware (stereo emitters and glasses) to complete the display system.

Images generated from a stereo 3D video source consist of a series of images (frames) that alternate quickly between two slightly different viewpoints, corresponding to our left and right eyes. When these frames are displayed fast enough and viewed with special glasses synchronized to the left/right (L/R) changes, the resulting image appears with the same depth and perspective sense in the real world.

## 3D requirements

Stereo 3D applications require a stereo 3D-capable source, special hardware and software setups, and the projector's 3D Settings menu option to control the projector's processing, synchronization, and displaying of the stereoscopic 3D source material.

### Hardware requirements

Understand the hardware requirements for stereo 3D applications.

- Christie M 4K RGB Series projector with a Mirage license
- 3D stereo sync cable for direct-input 3D (and frame doubled)
- A source, usually a computer with a 3D graphics card(s)
- Emitter for controlling active shutter glasses

or

A qualified device that mounts in front of the lens of the projector to process the light from the lens into a passive polarized light. Contact your Immersive dealer for more information.

### Software and content requirements

Understand the software and content requirements for stereo 3D applications.

- A Mirage license is required.
- Any 3D computer software that supports 3D stereo on a supported computer(s) with associated graphic cards (suggested cards include ATI or NVIDIA)
- A video stream from a video source prepared to be sequential content (for direct-input 3D) or two video streams from a video source that has been prepared to be supplied left eye and right eye concurrently and frame locked (dual-input 3D)



## 3D system timing

The projected video must be optimized for the glasses' shutter speed or polarization filter performance to prevent obvious "ghosting" of the video content (known as cross-talk in stereo 3D applications) or other more subtle color artifacts.

Visual performance can be optimized by adjusting the Dark Interval and the 3D Sync Delay settings. Consult the documentation for your glasses or polarization filter and keep their specifications in mind when configuring the projector for 3D operation.

## 3D input video configurations

The stereo 3D input video stream may be supplied from the video server to the projector in two configurations: direct-input 3D or dual-input 3D.

Configuration	Description
Direct-input 3D	<p>In this configuration a single video stream is provided by the video server, with the left eye and right eye frames supplied as alternate frames within the video stream. A 3D input sync may be used to identify the left eye frames.</p> <p>The direct-input 3D video stream may be supplied by a One-Port input video configuration (such as one cable supplying the entire frame).</p>
Dual-input 3D	<p>In this configuration two video streams are provided by the video server, with the left eye supplied by one stream and the right eye supplied by the other. The video streams are frame locked and supplied concurrently.</p> <p>The dual-input 3D video streams may be supplied by two One-Port input video configurations (such as one cable supplying the entire frame for each eye, with a total of two cables).</p>

## Setting up a single projector to display 3D content

The projector must be installed correctly to display 2D content (optically aligned, focused, and so on) before completing the following steps to display the 3D content.

1. *Enable 3D mode* (on page 71).
2. *Confirm the emitter setup* (on page 72).
3. *Configure the projector for the 3D source* (on page 72).

## Enabling 3D mode

Select the mode for your 3D operation.

1. To enable 3D mode, select **MENU > Image Settings > 3D Settings > 3D Mode**.
2. Select the appropriate 3D mode:
  - Off—Disable the 3D operation.
  - Auto Detect—Automatically determine which 3D mode to use based on auxiliary video data, for example, HDMI info frame.



- Multi-Flash 3D—Display content multiple times to provide a 3D image.

## Confirming the emitter setup

Define whether the 3D Sync is output and control how it is processed.

1. To set the 3D output to emitter, select **MENU > Image Settings > 3D Settings > 3D Sync Output**.
2. Select **To Emitter**.
3. Select **Enter**.
4. To enable the 3D test pattern, select **3D Test Pattern**.
5. Select **Enter**.
6. To configure the dark interval so the amount of dark time aligns with the amount of time required for the glasses to switch, select **Dark Interval**.
7. Adjust the slider or enter the dark interval value as required.
8. To confirm your selection, select **Enter**.
9. View the displayed test pattern. If you can see both Ls and Rs with both eyes, increase the dark interval until the Ls are only visible to the left eye and the Rs are only visible to the right eye.
10. Optionally, to adjust the 3D Sync delay, select **3D Sync Delay**.  
This adjusts the timing of the sync pulse in relation to the dark time transition on the DMDs. Use the default value of 0 as a starting point.
11. Adjust the slider or enter the delay value.
12. To confirm your selection, select **Enter**.

## Configuring the projector for the 3D source

Configure the projector for the 3D source.

1. Select the *appropriate port configuration* (on page 68) and then set the *inputs for your video source* (on page 69).
2. To select the correct EDID timing, select **MENU > Configuration > Input Settings > EDID Timing**.
3. Select the required EDID timing and select **Enter**.
4. Connect all the required cables between the 3D source and the projector.
5. Configure your 3D source.

## Connecting devices to the 3D sync ports

The 3D Sync Input and Output ports located on the Video Input panel provide a convenient method for interfacing the projector to the 3D stereo projection system.

Connect the 3D Sync Input to the video source for synchronization of the left eye/right eye frames of Direct input 3D or for frame doubled content.

The 3D Sync Input is not required for Dual-Input 3D. The 3D Sync Output is available for control of an IR Emitter for active glasses or a polarization device for passive glasses.



# Regulatory

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

## Safety

- CAN/CSA C22.2 No. 60950-1-07 + Am 1:2011+ Am 2:2014 Information Technology Equipment Safety Part 1: General Requirements
- ANSI/UL 60950-1-2014 – Information Technology Equipment – Safety – Part 1: General Requirements
- IEC 60950-1:2005 + Amendment 1:2009 + Amendment 2:2013 – Information Technology Equipment - Safety - Part 1: General Requirements
- EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 – Information Technology Equipment – Safety – Part 1: General Requirements
- CAN/CSA-C22.2 No. 62368-1: 2014 – Audio/video, information and communication technology equipment - Part 1: Safety requirements.
- UL 62368-1: 2014 – Audio/video, information and communication technology equipment - Part 1: Safety requirements.
- IEC 62368-1:2014 - Audio/Video, Information And Communication Technology Equipment - Part 1: Safety Requirements
- EN 62368-1: 2014 – Audio Video, IT & Communication Technology Equipment (AV/ICT) – Part 1: Safety Requirements
- IEC/EN 62471-5 – Photobiological Safety of Lamps and Lamp Systems – Part 5: Image projectors
- IEC 60825-1:2014 - Safety of Laser Products - Part 1: Equipment Classification and Requirements
- ANSI Z136.1 (2014) – Safety of Lasers

## Electro-magnetic compatibility

### Emissions

- FCC CFR47, Part 15, Subpart B, Class A – Unintentional Radiators
- CAN ICES-003 (A)/NMB-003 (A) – Information Technology Equipment (Including Digital Apparatus) – Limits and Methods of Measurement
- CISPR 32/EN 55032, Class A – Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements
- IEC 61000-3-2/EN61000-3-2 - Limits for Harmonic Current Emissions



- IEC 61000-3-3/EN 61000-3-3: Limitations of Voltage Changes, Voltage Fluctuations, and Flicker input current  $\leq 16$  A per phase and not subject to conditional connection

## Immunity

- CISPR 35/EN 55035 Electromagnetic compatibility of multimedia equipment - Immunity requirements

## California law on security

- California Law Requiring Internet Connected Devices To Include Reasonable Security Features (California Civil Code Section 1798.91.04)

## Environmental

- EU Directive (2011/65/EU) on the restriction of the uses of certain hazardous substances (RoHS) in electrical and electronic equipment and the applicable official amendment(s).
- EU Directive (2012/19/EU) on waste and electrical and electronic equipment (WEEE) and the applicable official amendment(s).
- Regulation (EC) No. 1907/2006 on the registration, evaluation, authorization and restriction of chemicals (REACH) and the applicable official amendment(s).
- China Ministry of Information Industry (along with 7 other Government Agencies) Order No.32 (01/2016) on the control of pollution caused by electronic information products, hazardous substances concentration limits (GB/T 26572 - 2011), and the applicable product marking requirement (SJ/T 11364 - 2014).

International packaging recycling mark requirements.

- EU Directive (2012/19/EU) on waste and electrical and electronic equipment (WEEE) and the applicable official amendment(s).
- EU Directive (94/62/EC) on packaging and packaging waste
- China packaging recycling mark standard (GB18455-2001)



