

User Manual

020-101778-02

Mirage 304K



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- j. For LCD projectors, the warranty period specified in the warranty applies only where the LCD projector is in "normal use" which means the LCD projector is not used more than 8 hours a day, 5 days a week.
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- l. Image retention on LCD flat panels.
- m. Defects caused by normal wear and tear or otherwise due to normal aging of a product.

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

PREVENTATIVE MAINTENANCE

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


REGULATORY

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

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

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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 operators of Mirage 304K projection systems.

For complete Mirage 304K product documentation and technical support, go to www.christiedigital.com.

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

- Do not look directly into the lens or at the lamp. The extremely high brightness can cause permanent eye damage.
- **EXTREME BRIGHTNESS!** When accessing a restricted access location for product service or maintenance, avoid exposure to the product beam path by turning the product power off and disconnecting the product from AC power, or by shuttering the lamp to avoid emissions from the front aperture.
- **FIRE HAZARD!** Keep hands, clothes, and all combustible material away from the concentrated light beam of the lamps.
- **SHOCK HAZARD!** Power supply uses double pole/neutral fusing. Disconnect all power sources before opening the product.
- **FIRE HAZARD!** Do not exceed 30 A for the breaker to power Input 1 on the projector.
- Install the product near an easily accessible AC receptacle.



Caution! Failure to comply with 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.
- The American Conference of Governmental Industrial Hygienists (ACGIH) recommends occupational UV exposure for an 8-hour day to be less than 0.1 microwatts per square centimeters of effective UV radiation. A workplace evaluation is advised to assure employees are not exposed to cumulative radiation levels exceeding the government guidelines for your area. Be aware that some medications are known to increase sensitivity to UV radiation.

Light intensity hazard distance

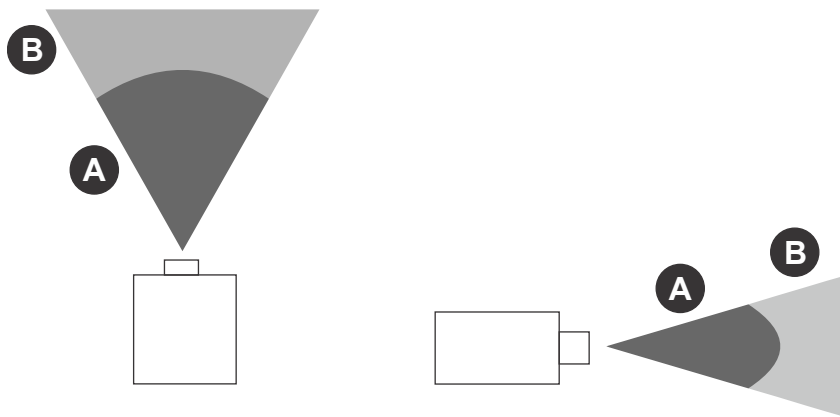
This projector has been classified as Risk Group 3 as per the IEC62471 standard due to possible hazardous optical and thermal radiation being emitted.



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

- PERMANENT/TEMPORARY BLINDNESS HAZARD! No direct exposure to the beam is permitted.
- PERMANENT/TEMPORARY BLINDNESS HAZARD! Operators must control access to the beam within the hazard distance or install the product at the height (greater than or equal to 3.0 m from the floor to the beam) that prevents exposure of spectators' eyes within the hazard distance.
- EXTREME BRIGHTNESS! Do not place reflective objects in the product light path.

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



- Zone A—The light intensity may cause eye damage after a momentary or brief exposure (before a person can avert his or her eye away from the light source). The light may cause skin burns to occur.
- Zone B—The light intensity does not pose a hazard due to the eye’s aversion response to bright light. However, staring directly into the light may still be a hazard.

Projection lens	Part number	Zone A (m)	Zone B (m)
0.72:1 HB fixed lens	144-110103-XX	0 to 0.6	0.6+
0.9:1 fixed lens	144-111014-XX	0 to 0.7	0.7+
1.13-1.31:1 HB zoom lens	144-103105-XX	0 to 1.1	1.1+
1.31-1.63:1 HB zoom lens	144-104106-XX	0 to 1.3	1.3+
1.63-2.17:1 HB zoom lens	144-105107-XX	0 to 1.7	1.7+
1.99-2.71:1 HB zoom lens	144-106108-XX	0 to 2.2	2.2+
2.71-3.89:1 HB zoom lens	144-107109-XX	0 to 3.1	3.1+
3.89-5.43:1 HB zoom lens	144-108100-XX	0 to 4.2	4.2+
4.96-7.69:1 HB zoom lens	144-109101-XX	0 to 6.0	6.0+

Product safety labels

Learn about the safety labels used on the projector.



Indicates the presence of a dangerous condition or situation.



Indicates the presence of a pinch hazard. To avoid personal injury, keep hands clear and loose clothing tied back.



Indicates the presence of a hot surface. To avoid personal injury, always allow the projector to cool down for a minimum of 10 minutes before performing maintenance or service procedures.



Indicates the presence of a hot surface. To avoid personal injury, always allow the projector to cool down for a minimum of 10 minutes before performing maintenance or service procedures.



Indicates the presence of an electrical shock hazard. To avoid personal injury, always disconnect all power sources before performing maintenance or service procedures.



Indicates the presence of an electrocution hazard. To avoid personal injury, always disconnect all power sources before performing maintenance or service procedures.



Indicates the presence of 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.



Indicates exposure to bright light. To avoid personal injury, never look directly at the light source.



Indicates the presence of an explosion hazard. To avoid personal injury, always disconnect all power sources and wear Christie approved protective clothing.



Always disconnect all power sources before performing maintenance or service procedures.



See the product service manual for specific information and directions.



Risk Group 3 warning: Possibly hazardous optical radiation emitted from this product. Thermal radiation emitted from this product may cause burns.

Projector overview

Learn about the Mirage 304K projector.

The Mirage 304K is a professional quality, easy-to-use projector using Digital Light Processing (DLP™) technology from Texas Instruments. Integrating smoothly into traditional projection environments, the Mirage 304K interfaces with local networks throughout the world, for multimedia presentations from a variety of formats, to offer stunning wide screen, high resolution 4K images at 60 frames per second.

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 side panel	
Purchase date:	
Installation date:	
Ethernet settings	
Default gateway	
Projector IP address	
Subnet mask	

Key features

Understand the important features of the projector.

- Built in warp and blend of projected images
- Near field communication
- Multi-lamp module with no lamp alignment required
- Improved lens mount with bayonet style insertion

- Single phase 200-240 V
- Side access to optical adjustments
- 4K resolution for flexibility and future proofing
- Omnidirectional operation
- TruLife electronics
- New LCD display to provide information at-a-glance

How the projector works

The Mirage 304K accepts a variety of input signals for projection on front or rear projection screens, typical in commercial or other large screen applications.

High-brightness light is generated by six mercury vapor lamps, then modulated by three Digital Micromirror Device (DMD) panels responding to incoming data streams of digitized red, green and blue color information. As these digital streams flow from the source, light from the responding “on” pixels of each panel is reflected, converged and then projected to the screen through one or more projection lenses, where all pixel reflections are superimposed in sharp full-color images.

List of components

Verify all components were received with the projector.

- Power cord for full brightness, six lamp operation
- Power cord for limited power, single lamp operation
- IR remote keypad

Site requirements

To safely install and operate the projector, the installation location must have restricted access for authorized personnel only and meet these minimum requirements.

Physical operating environment

Provides specifications for the operating environment.

- Ambient temperature (operating) 5 to 40°C (41 to 104°F) up to 1500 ft
- Humidity (non-condensing) 10 to 80%
- Operating altitude: 10,000 ft maximum at 5 to 25 degrees Celsius ambient

Power connection

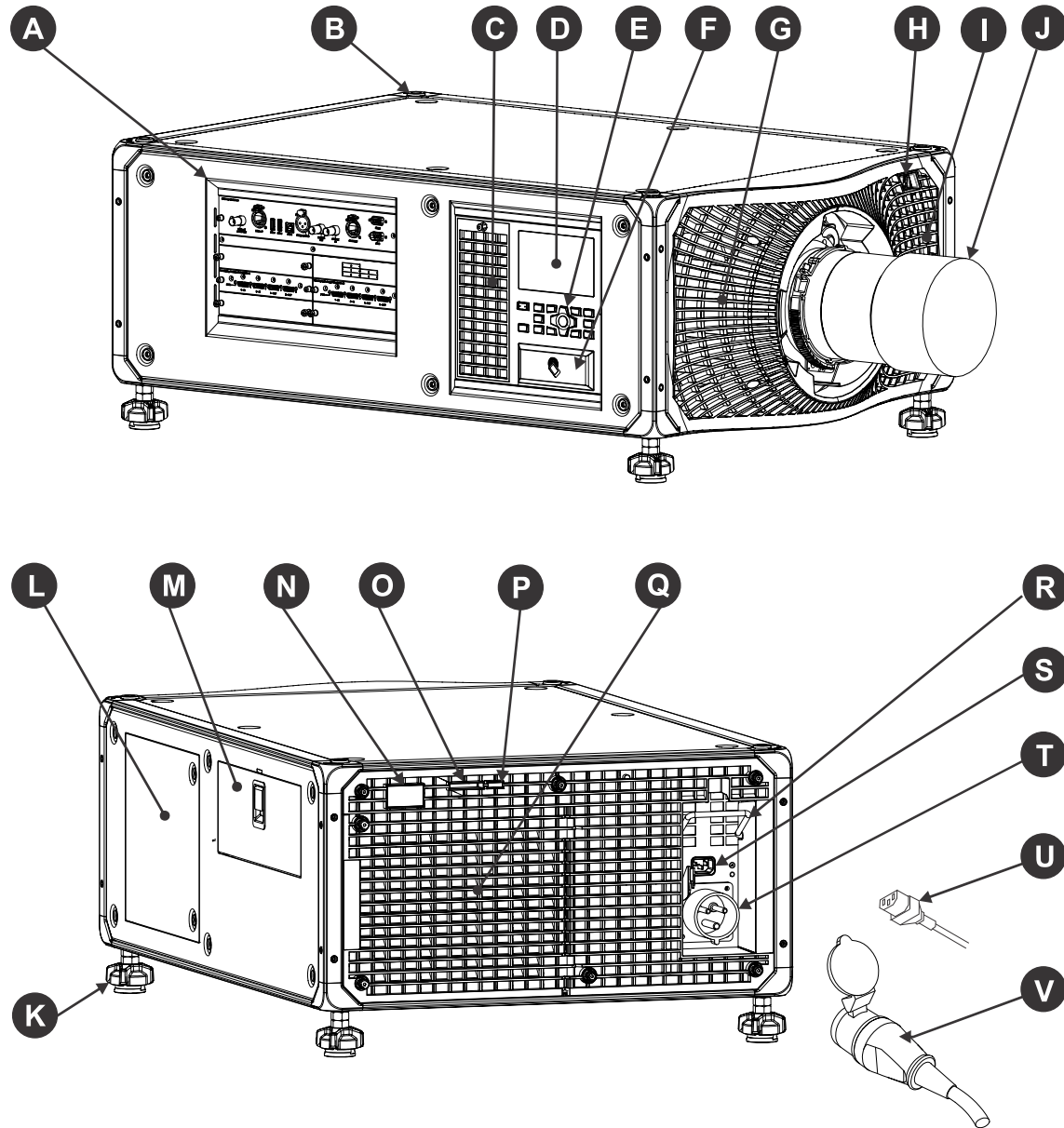
The projector uses an innovative dual AC inlet power system that offers two power modes.

To operate at full brightness (six lamps), power the projector using AC Input 1 if the appropriate high power source is available. To operate in limited power mode (single lamp), power the projector using standard lower power sources using AC Input 2. A different power cord is provided for each power

source. A 30A rated wall breaker is required at the installation when using Input 1. A 15A rated wall breaker is required at the installation when using Input 2.

Projector components

Identify the main components of the projector.



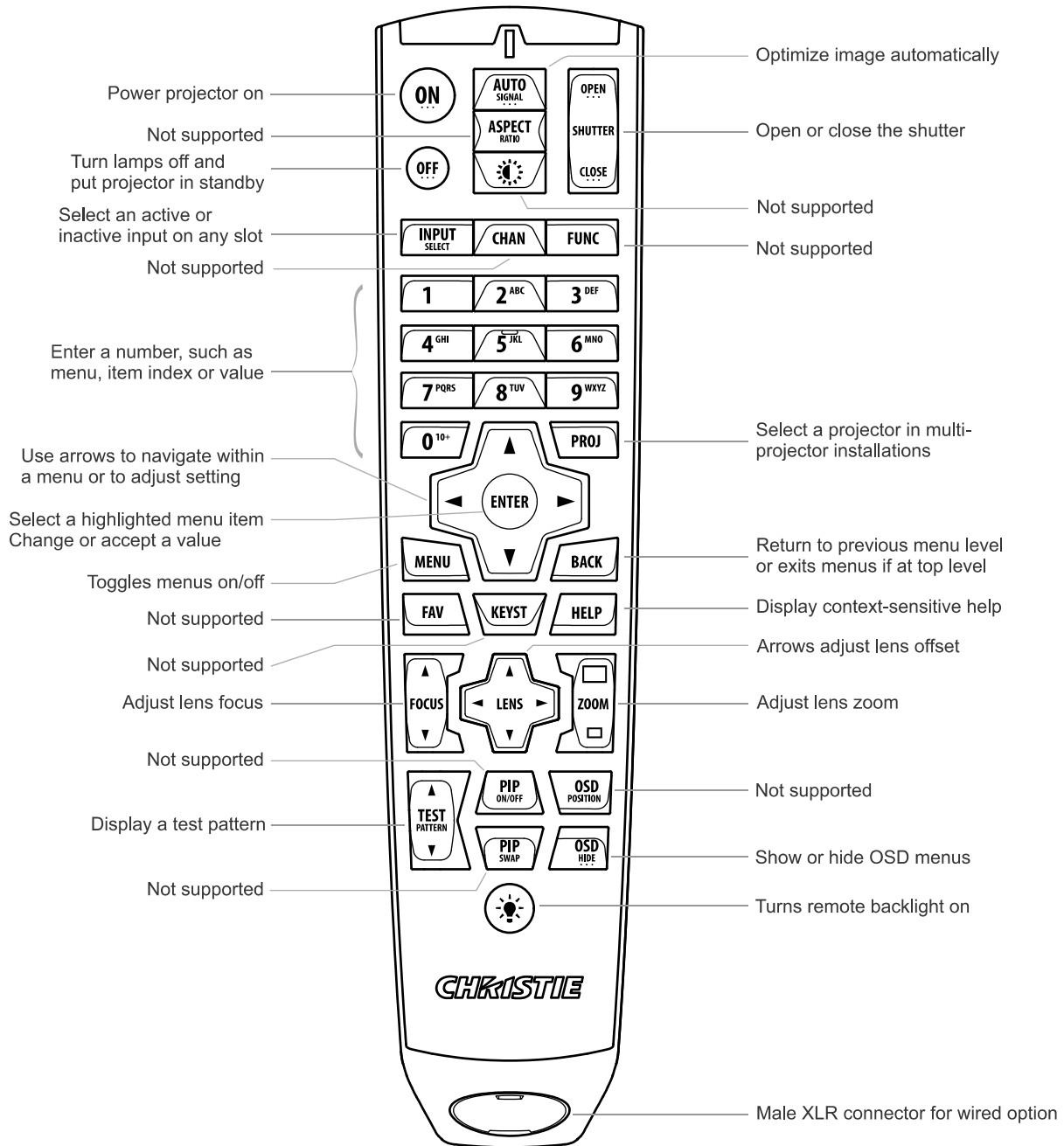
ID	Component	Description
A	Communication and input panel	Connects media sources to either the ports on the option cards or the IMXB.

ID	Component	Description
B	Mounting and rigging holes	M12 x 1.75 holes for projector feet installation and offer mounting and rigging points.
C	User interface air filter door	Provides to the user interface air filter.
D	LCD Side display panel	Displays the projector menus and status.
E	Keypad interface	Controls the projector.
F	Christie TAP Enables	Android devices to communicate with the projector using near field communication.
G	Electronics-side filter door	Provides access to the electronics-side air filter.
H	Front IR	Receives transmissions from the IR remote.
I	Lamp-side filter door	Provides access to the lamp-side air filter.
J	Projection lens	A variety of lenses can be used with the projector. Available lenses are listed in accessories.
K	Adjustable feet	Raise or lower these feet when positioning the projector to make sure it is level on all sides so the displayed image appears rectangular without any keystone.
L	Service compartment	Access to fold mirror, optical zoom/focus, and DMD convergence adjustments.
M	Tool box	Provides tools for Christie qualified technicians.
N	Rear IR	Receives transmissions from the IR remote.
O	LED status indicator	Indicates lamp and power status.
P	Shutter LED status indicator	Indicates shutter status.
Q	Lamp door	Access to lamp compartment.
R	AC lock	Locks Input 1 power cord.
S	AC Input 2: limited power	Use this IEC 320-C14 inlet to connect to an appropriately rated power cord (component R) provided for your region. For use in limited power mode.
T	AC Input 1: full power	Use this IEC 309 inlet to connect to an appropriately rated power cord (component S) provided for your region. For use in full power mode.
U	Power cord: limited power	Connects the provided power cord appropriately rated for your region to AC Input 2 for limited power mode.
V	Power cord: full power	Connects the provided power cord appropriately rated for your region to AC Input 1 for full power mode.

IR remote keypad

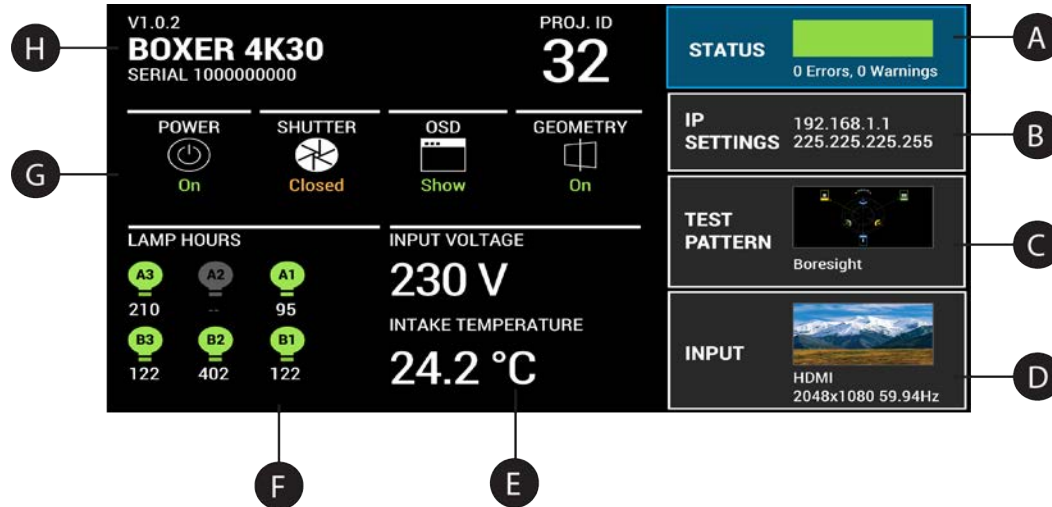
The IR remote keypad controls the projector by way of wireless communications from a battery-powered infrared (IR) transmitter.

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 will detect the signal and relay the commands for internal processing. The remote also offers a connector for wired connections to the projector.



Side panel display components

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



ID	Component	Description
A	Status	Contains information about the health of the projector including the number of warnings and errors. Provides access to the status system.
B	IP Settings	Displays the IP address and subnet values. Provides access to changing the IP settings.
C	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.
D	Input	Displays the signal for the currently selected input. Provides access to the list of input signals.
E	Power and Temperature	Indicates the incoming voltage, measured in Volts, and intake temperature, measured in Celsius.
F	Lamp Hours	Displays the state of the lamps and the number of hours used.
G	Projector and Component Controls	Indicates the states of the projector and its components.
H	Projector Information	Provides information about the projector such as the projector name, serial number, software version, and projector ID.

Turning the projector on

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



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

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

1. Plug the projector in to AC power.

The projector automatically powers on when plugged in. The side panel display functionality becomes available.

2. To turn the lamps on, press and hold the **Power** button until you hear a beep.

Projector LED status indicators

Identify the LED state colors and meaning.

LED	State		Description
Blue	Solid	Standby	Lamps are 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"> • Lamps are off and video electronics are booting up. • Lamps are off. Video electronics and lamps are cooling down.
Green	Solid	Lamps on	Lamps are on. Projector status is OK.
	Flashing	Startup	Projector is moving to lamp on state. Lamps are striking and 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 lamps on	Lamps are 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. Lamps are off. Video electronics and lamps 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.

LED	State	Description	
	Flashing	Error	An error with the projector exists during startup, cool down, or when the lamps are 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 the projector off

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

- To turn the lamps off, press and hold the **Power** 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.
- To turn off power to the projector, disconnect from AC power.

Adjusting the image

Adjust the projector image. Christie recommends warming the lens before completing these procedures as focus may change as the lens warms.

Selecting screen image orientation

Specify the orientation to use for the image. The projector supports front projection, rear projection, front projection inverted, or rear projection inverted.

1. Select **MENU > Image Settings > Image Orientation**.
2. Select the required orientation from the list.
3. To confirm your selection, press **Enter**.

Setting the image resize preset

Set the image resize preset to determine if an image will display in its native resolution or will resize by maximizing the height, width, both height and width, or to the maximum size while keeping the original aspect ratio.

1. Select **MENU > Image Settings > Size & Position > Resize Presets**.
2. Select the appropriate resize preset:
 - **Default**—Maximize for current source.
 - **No Resizing**—Display in native resolution.
 - **Full Size**—Fill the screen, regardless of source.
 - **Full Width**—Fill display width and keep aspect ratio.
 - **Full Height**—Fill display height and keep aspect ratio.
3. Select **Enter**.

Adjusting offset

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**.
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

Set the lens offset back to the home position.

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**.

Aligning the image with lens zoom and focus

Ensure that the image reflected from the digital micromirror device (DMD) is parallel and centered with the lens and 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.

Adjusting primary colors

Calibrate the accuracy of primary colors, which can change because of lighting and environmental factors.

All primary colors in the projector are precisely set to pre-established values to ensure overall color performance is optimized and is as accurate as possible. Lighting and other environmental factors may slightly change how these colors appear on your screen. While the change is negligible in most cases, you may prefer to recover the originally intended color performance before trying to match colors from several projectors.

To achieve consistency use a color meter to measure the native primary colors—red, green, blue, and white—as they appear on the screen. On the basis of these new values, which are stored in memory, each projector automatically calculates any necessary corrections to reproduce the original factory colors under the current environmental conditions. This essentially calibrates a projector to its surroundings, compensating for factors such as screen type, lamp and/or ambient lighting, and

improves color accuracy and consistency in a group of projectors. It ensures a good starting point for further customizing and matching; however, is not critical for all installations.

1. From the home page, select **MENU > Admin > Service**.
2. Enter the service password.
3. Select **Color Primary Settings**.
4. To edit the primary colors, select **Edit Primary Colors**.
5. Adjust the slider or enter the measured color values of the primary color component you selected.
6. To confirm your selection, select **Enter**.
7. Repeat steps 5 and 6 for each primary color component.
8. To view a specific color while adjusting, select **Show Color Pattern**.
9. Select the appropriate color and select **Enter**.
10. To reset the primary colors to their defaults, select **Reset Color Primaries**.
11. At the confirmation prompt, select **OK**.

DMD color correction

Adjust the DMD color values as required.

Adjusting color by precise chromaticity values

Change the values of the primary color components.

1. Select **MENU > Configuration > Color Correction by x,y**.
2. Adjust the slider or enter the measured color values of the primary color component you selected.
3. To confirm your selection, select **Enter**.
4. Repeat steps 2 and 3 for each primary color component.
5. To view a specific color while adjusting, select **Show Color Pattern**.
6. Select the appropriate color and select **Enter**.

Adjusting color by saturation

Change the strength of the primary color in relation to the other primary colors.

1. Select **MENU > Configuration > Color Saturation**.
2. Adjust the value of the primary color you selected by using more or less of it in relation to the other primary colors.
3. To confirm your selection, select **Enter**.
4. Repeat steps 2 and 3 for each primary color.
5. To view a specific color while adjusting, select **Show Color Pattern**.
6. Select the appropriate color and select **Enter**.

Signal color correction

Adjust the video signal color as required.

Adjusting color by temperature

Adjust the color temperature as expressed in degrees Kelvin.

1. Select **MENU > Image Settings > Color & Gamma**.
2. Select **Color Temperature**.
3. Adjust the slider to change the light to warmer or cooler and select **Enter**.

Adjusting color values based on gamma function

The gamma function options adjust the color values of the inputted signal to give you a more detailed picture.

1. Select **MENU > Image Settings > Color & Gamma > Gamma Function**.
2. Select the appropriate option:
 - sRGB
 - ITU-R BT-1886
 - Power Law Function
 - M-Series (Standard)
3. Select **Enter**.

Selecting the color correction mode

Select the color correction mode most suited to the input signal.

1. Select **MENU > Image Settings > Color & Gamma > Color Correction Mode**.
2. Select the adjustment most suited to the input signal:
 - **Max Drives**—All color adjustments are turned off, allowing the projector to run at maximum brightness.
 - **Color Temperature**—Specify a color temperature between 3200 and 9300, expressed in degrees Kelvin.
 - **HD Video**—Set the output color to a specific standard value. Adjusts the colors red, green, blue, and white.
 - **Custom**—Select a user defined set of color adjustments.
3. Select **Enter**.

Correcting for ambient light

Ambient light is the natural light that occurs in the environment where the projector is located.

1. Select **MENU > Image Settings > Color & Gamma > Ambient Light Correction**.
2. Select **Enter**.

3. Use the right and left arrows to adjust how the image displays in conditions with ambient light.
4. To confirm your selection, select **Enter**.

Setting the frame delay

Delay the output signal timing relative to the input signal timing by a fraction of a frame, and up to several frames.

The minimum latency can vary based on the amount of scaling applied to the image. When using keystone or warping, an additional latency is required, depending on the amount of warp.

1. Select **MENU > Image Settings > Advanced Image Settings > Frame Delay**.
You can also set the frame delay from the 3D Settings menu.
2. To set the frame delay, select **Set Delay**.
3. Adjust the value and to confirm your selection, select **Enter**.
4. To set the achievable frame delay, select **Actual Delay**.
5. Adjust the value and to confirm your selection, select **Enter**.

Adjusting the image sharpness

Change the sharpness of the image.

Lower settings can improve a noisy signal. Setting the sharpness above the halfway point can introduce noise in the image.

1. Select **MENU > Image Settings > Advanced Image Settings > Sharpness**.
2. Select **Enter**.
3. Use the right and left arrows to adjust the sharpness of the image.
4. To confirm your selection, select **Enter**.

Enabling edge blending

Combine several projected images into one single, seamless image with edge blending.

1. Create a blend file using the Twist application.
For details, see the *Twist 2.0 User Manual (P/N: 020-101380-XX)*.
2. Upload the blend file to the projector.
For details, see the *Twist 2.0 User Manual (P/N: 020-101380-XX)*.
3. Select **MENU > Configuration > Edge Blending**.
4. Select the appropriate blend and select **Enter**.
5. To turn off edge blending, from **MENU > Configuration > Edge Blending**, select **Off**.

Geometry correction

Modify the geometry for all sources.

Enabling warping

Use warping to project images on any surface shape.

1. Create a warp file using the Twist application.
For details, see the *Twist 2.0 User Manual (P/N: 020-101380-XX)*.
2. Upload the warp file to the projector.
For details, see the *Twist 2.0 User Manual (P/N: 020-101380-XX)*.
3. Select **MENU > Configuration > Geometry Correction > Geometry Correction Mode**.
4. Select the appropriate warp setting and select **Enter**.
5. To turn off warping, from **MENU > Configuration > Geometry Correction > Geometry Correction Mode**, select **Off**.

Correcting the shape of a keystoneed image

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

To correct the shape of a keystoneed image, use the keystone options available in the geometry correction menu. Perform coarse keystone adjustments by using the horizontal or vertical settings. It may not be possible to match the screen dimensions with the horizontal and vertical keystone controls but you can refine these settings by adjusting the 2D keystone settings.

Enabling keystone adjustments

Enable keystone corrections to correct the shape of a keystoneed image.

1. Select **MENU > Configuration > Geometry Correction > Geometry Correction Mode**.
2. Select **Keystone**.

Any keystone adjustments previously set are enabled.

To disable keystone adjustments, select **MENU > Configuration > Geometry Correction > Geometry Correction Mode > Off**.

Adjusting the image with 2D keystone

2D keystone distorts the projected image both vertically and horizontally simultaneously and resembles a trapezoid.

Adjusting horizontal or vertical keystone correction after 2D keystone erases the 2D keystone settings; however, performing 2D keystone after horizontal or vertical correction retains the previous keystone setting.



1. Select **MENU > Configuration > Geometry Correction > Geometry correction Mode.**
2. Select **2D Keystone Correction.**
3. From the correction dialog, select the corner to adjust.
4. To make the keystone adjustments, use the arrow keys to change both the vertical and horizontal values.
5. Select **Apply Changes.**

Adjusting vertical keystone

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

If vertical keystone adjustments have been made, starting horizontal keystone adjustments erases the vertical settings.

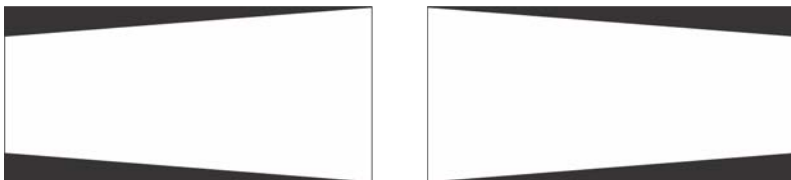


1. Select **MENU > Configuration > Geometry Correction > Geometry Correction Mode.**
2. Select **Vertical Keystone Correction.**
3. From the correction dialog, adjust the vertical keystone by using the arrow keys.
4. Select **Apply Changes.**

Adjusting horizontal keystone

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

If horizontal keystone adjustments have been made, starting vertical keystone adjustments erases the horizontal settings.



1. Select **MENU > Configuration > Geometry Correction > Geometry Correction Mode.**
2. Select **Horizontal Keystone Correction.**
3. From the correction dialog, adjust the horizontal keystone by using the arrow keys.
4. Select **Apply Changes.**

Resetting keystone correction

Reset keystone to revert the distorted image shape back to default values.

1. Select **MENU > Configuration > Geometry Correction.**
2. Select **Reset Keystone Correction.**

3. At the confirmation prompt, select **Reset**.

Configuring system settings

Learn how to configure the system settings.

Setting the date on the projector

Configure the date on the projector.

1. Select **MENU** > **System Settings** > **Date & Time**.
2. Select **Date**.
3. Use the up and down keys to adjust the year (YYYY), month (MM), and day (DD).

Setting the time on the projector

Configure the time on the projector.

1. Select **MENU** > **System Settings** > **Date & Time**.
2. Select **Time**.
3. Use the up and down keys to adjust the hour (HH), minutes (MM), and seconds (SS).

Changing the splash screen

Select the color displayed on the screen.

1. Select **MENU** > **System Settings** > **Splash Screen Settings** > **Background Color**.
2. Select a splash screen background color:
 - Black
 - Red
 - Green
 - Blue
3. Select **Enter**.

Determining the on-screen display position

Choose one of the pre-defined locations for the display of the on-screen menus.

1. Select **MENU > System Settings > Menu Preferences > OSD Position**.
2. Select the location on the screen where you want the on-screen display menus to appear.
3. Select **Enter**.

Resuming projector operation after an AC power interruption

If an AC power interruption occurs while Auto Power Up is enabled, the projector will resume operation in the same state it was prior to the loss of power.

1. Select **MENU > System Settings > Power Settings**.
2. Select **Auto Power Up**.
3. To enable automatically powering up the projector after an AC interruption, select **Enter**.

Enabling projector communication

Enable the receivers and the wired keypad to communicate with the projector from the remote.

The front and rear IR sensors receive transmissions from the IR remote. Keep the transmission path to these sensors unobstructed for uninterrupted communications with the projector.

Alternatively, you can connect a wired version of the remote to the connector on the IMXB labeled Wired Keypad.

1. Select **MENU > Communications > Projector Communications**.
2. To assign the projector an ID, select **Projector ID**.
3. Use the up and down keys to enter the projector ID.
4. Select **Enter**.
5. To enable the front IR sensor, select **Front IR Enabled** and select **Enter**.
6. To enable the rear IR sensor, select **Rear IR Enabled** and select **Enter**.
7. To enable a wired version of the remote, select **Wired Keypad Enabled** and select **Enter**.
By default this feature is enabled.
8. To enable HD control for video signals, Ethernet, or IR, select **HDBaseT Keypad Enabled** and select **Enter**.

Setting the remote access level

Determine if and how the projector can be accessed remotely for the RS232 port or the Ethernet.

1. From the home page, select **MENU > Admin > Service**.
2. Enter the service password.

3. To determine the remote access for the Ethernet port, select **Remote Access Level (Ethernet)**.
4. Select the appropriate remote access level:
 - No Access
 - Login Required
 - Free Access
5. Select **Enter**.
6. To determine the remote access for the RS232 IN port, select **Remote Access Level (RS232 IN)**.
7. Select the appropriate remote access level:
 - No Access
 - Login Required
 - Free Access
8. Select **Enter**.

Enabling direct pass-through of HDMI, 3G, and DisplayPort input signals

Allow the signals from HDMI, 3G, and DisplayPort inputs to pass through another projector.

1. Select **MENU > Configuration > Input Settings > Enable Video Loop Out**.
2. To enable passing HDMI, 3G, and DisplayPort input signals through to another projector, select **Enter**.

Adjusting lamp power

Change the power of the lamp.

1. Select **MENU > Configuration > Lamp > Lamp Power**.
2. Press **Enter**.
3. To adjust the lamp power, use the slider.
4. To confirm your selection, press **Enter**.

Setting up projector profiles

Use the projector profiles to store configured settings so you can switch between the profiles as required.

Creating a new projector profile

Save the projector configuration to a profile so you can revert to those saved settings any time. You can save up to 10 projector profiles.

1. Configure the projector settings you want to save to the profile.
2. Select **MENU > Admin > Projector Profiles**.
3. Select an empty profile.
4. Select **New Profile**.
5. Select **Save**.

Importing a projector profile

Import projector profiles set on different projectors using a USB flash drive.

1. Insert the USB flash drive containing the projector profile file into the USB port on the projector.
2. Select **MENU > Admin > Projector Profiles**.
3. Select an empty profile.
4. Select **Import From File**.
5. From the File Selection dialog, select a projector profile file.
The projector profile file is imported to the projector.

Restoring settings from a profile

Return the projector to the configuration specified in a specific projector profile.

1. Select **MENU > Admin > Projector Profiles**.
2. Select an existing profile.

3. Select **Restore Profile**.
4. From the Restore dialog, select the settings you want to restore.
5. Select **Restore**.

Renaming a projector profile

A newly created projector profile is given the name of the projector with the date the profile was saved, for example, Mirage 304K_2015-08-15. You can change the name of the saved profile to a more meaningful name.

1. Select **MENU > Admin > Projector Profiles**.
2. Select an existing profile.
3. Select **Rename Profile**.
4. Use the up and down keys to enter the new name of the profile.
5. Select **Save**.

Exporting a projector profile to an external device

Save the projector settings to a USB flash drive.

1. Insert a USB flash drive (properly formatted as FAT) into the USB port on the projector.
2. Select **MENU > Admin > Projector Profiles**.
3. Selecting an existing profile.
4. Select **Export to File**.
A default name is assigned.
5. Select **Download File**.
The profile file is exported to the USB flash drive.

Deleting a projector profile

If the settings in the projector profile are no longer relevant, delete the profile.

1. Select **MENU > Admin > Projector Profiles**.
2. Select the profile you want to delete.
3. Select **Delete Profile**.
4. At the confirmation prompt, select **Delete**.

Backup, Restore, and Upgrade Projector Files

Learn how to back up, restore, and upgrade projector files.

Upgrading the projector software

When a new version of the software is released, the projector must be upgraded.

1. Turn off the lamps before proceeding with the upgrade.
2. Insert a USB key that contains the software upgrade file.
If two USB flash drives are inserted, the first flash drive inserted is the one recognized for the upgrade. The USB flash drive must be formatted using the FAT 32 file system.
The upgrade file must be located at the root of the USB key.
3. From the home page, select **MENU > Admin**.
4. Select **Software > Upgrade**.
5. Select an upgrade file and select **Enter**.
6. To automatically restart the projector, select **Restart Now**.
If you decide restart the projector at a later date (**Restart Later**), you cannot perform another upgrade until the projector is restarted.

Exporting backup settings to an external device

Save the projector settings to a USB flash drive.

1. Insert a USB flash drive (properly formatted as FAT) into the USB port on the projector.
2. Select **MENU > Admin > Backup & Restore**.
3. Select **Backup to USB**.
A default name is assigned.
4. To edit the backup file name, select the up arrow and select **Enter**.
5. To save the name, navigate down and select **SAVE**.
The backup file is exported to the USB flash drive.

Importing a file from an external device to restore settings

Restore backed up files, stored on a USB flash drive, onto the projector.

1. Insert the USB flash drive containing the backup file into the USB port on the projector.
2. Select **MENU > Admin > Backup & Restore**.
3. Select **Restore from USB**.
4. From the File Selection dialog, select a file to restore.

The backup settings file is imported to the projector.

Restoring projector default settings

Restore the projector settings back to the default values. Network configurations and calibration values are not reset.

1. From the home page, select **MENU > Admin > Backup & Restore**.
2. Select **Reset Projector Defaults**.

All customized settings are set to the default projector settings.

Diagnostic tools

Follow these procedures to help with diagnosing issues with the projector.

Viewing lamp information

Monitor the states of the lamps and the number of hours used.

1. Select **MENU > Status > Lamp Info**.
2. Use the right arrow to select the lamp list.
3. For a detailed view of a specific lamp, select **Enter**.

Adding lamp end-of-life indicator

Specify the number of hours remaining before issuing an end-of-life indicator for the lamp.

1. Select **MENU > Configuration > Lamp > Lamp life warning at (hours)**.
2. Select **Enter**.
3. Use the right and left arrows to specify the number of hours remaining before issuing a lamp end-of-life warning.
4. To save the adjustment, select **Enter**.

Freezing an image

Use the Freeze Image diagnostic tool to examine in detail a still version of an incoming image.

For example, in moving images sometimes it is difficult to observe artifacts such as external de-interlacing/resizing and signal noise.

1. Select **MENU > Admin > Diagnostics**.
2. To enable freezing of an image, select **Freeze Image** and select **Enter**.
3. To return to normal operation, select **Enter** again to clear the checkbox.

Test patterns

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

Selecting a test pattern

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

1. From the side panel home page, use the arrows to select **Test Pattern**.
You can also select the test patterns from **MENU > Test Pattern**.
2. Scroll through the list of test patterns.
3. Select the required test pattern.
4. To confirm your selection, select **Enter**.

Modifying grey level test pattern characteristics

Set the level of grey displayed in the full grey test patterns.

1. Select **MENU > Admin > Diagnostics**.
2. Select **Test Pattern**.
3. Select one of the grey test patterns: GREY SCALE 16 or FLAT GREY.
4. Select **Enter**.
5. To change the grey scale of the test pattern, select **Test Pattern Grey Level** and adjust the slider to the value you want.
6. To confirm your selection, select **Enter**.

Modifying ramp test pattern characteristics

Modify the characteristics for the associated ramp video signal test patterns.

1. Select **MENU > Admin > Diagnostics**.
2. Select **Test Pattern**.
3. Select one of the ramp test patterns: RGBW RAMP, HORIZONTAL RAMP, VERTICAL RAMP, or DIAGONAL RAMP.
4. Select **Enter**.
5. To change the slope of the ramp test pattern, select **Test Pattern Ramp Slope** and adjust the slider to the value you want.
6. To confirm your selection, select **Enter**.
7. To change the level of the ramp test pattern, select **Test Pattern Ramp Level** and adjust the slider to the value you want.
8. To confirm your selection, select **Enter**.

Modifying grid test pattern characteristics

Modify the characteristics for the associated grid test patterns.

1. Select **MENU > Admin > Diagnostics**.
2. Select **Test Pattern**.
3. Select one of the grid test patterns: SQUARE GRID or DIAGONAL GRID.
4. Select **Enter**.
5. To change the pitch of the grid test pattern, select **Test Pattern Grid Pitch** and adjust the slider to the value you want.
6. To confirm your selection, select **Enter**.
7. To change the color of the grid, select **Test Pattern Grid Color** and select **Enter**.
8. To enable movement of the test pattern, select **Test Pattern Grid Motion** and select **Enter**.

Changing the test pattern frequency

Test patterns are displayed with a 60 Hz frequency (60 frames/second). For diagnostic purposes, you can change the frame rate.

1. Select **MENU > System Settings > Diagnostics > Test Pattern Frequency**.
2. Select the appropriate frequency:
 - Bit Sequence
 - 3D
 - Other Image Artifacts
3. Select **Enter**.

Viewing projector status

Alarms contain information about the values of the items operating in normal range, warnings, and errors that can be reported by the status system of the projector.

1. From the side panel home page, select **Status**.
You can also view the statuses from **MENU > STATUS**.
2. Scroll to the status category you want to view and select it.

Monitoring projector and lamps with Christie TAP

The near field communication (NFC) mobile app, called Christie TAP, enables Android devices to communicate with the projector, regardless if the projector is powered on or not.

1. From the Google Play Store, download the Christie TAP mobile app to your compatible Android device.

2. Hold the NFC tag of your Android device to the NFC panel next to the side panel display on the projector until you connect.

The projector does not need to be powered on to retrieve projector and lamp information.

Successful connection includes a visual cue on the screen, haptic feedback on the device, and an auditory cue as well.

3. Review the projector IP address and lamp hour information provided.

Running the projector interrogator

The interrogator captures diagnostic information Christie personnel uses to help diagnose and correct projector issues.

1. Insert a USB flash drive in the USB port on the projector.
If two USB flash drives are inserted, the first flash drive inserted is the one recognized. The USB flash drive must be formatted using the FAT 32 file system.
2. From the home page, select **MENU > Admin > Interrogator**.
3. Select **Run**.
The interrogator file is stored at the root directory on the USB flash drive.
4. At the completion prompt, select **OK**.

Monitoring the projector with SNMP

The SNMP (simple network management protocol) interface provides a common way to manage network devices from a single remote location.

With SNMP, you can configure trap notifications to be sent when certain events occur.

Setting the SNMP read community string

The SNMP read community string is similar to a userid or password that allows access to the device.

1. Select **MENU > Communications > SNMP > SNMP Read Community**.
2. Use the up and down arrows to enter the read community string.
3. To confirm your selection, select **Enter**.

Configuring traps

A trap is a condition that SNMP monitors on the projector.

1. Select **MENU > Communications > SNMP > Trap Configuration**.
2. Select the trap you want to enable and select **Enter**.

The available traps are:

- Lamp Life
- Lamp Fault
- Fan Stall

- Thermal Sensors
 - Power
3. To enable additional traps, repeat step 2.

Defining a trap IP address

When a trap condition is met, a notification is sent using an SNMP notification to one or more specified IP addresses.

1. Select **MENU > Communications > SNMP**.
2. Select **Address 1**.
3. Use the up and down arrows to enter an IP address.
4. To confirm the address, select **Enter**.
5. To add a second and third IP address, repeat steps 2 to 4 for **Address 2** and **Address 3**.

Restoring factory default settings

Restoring factory settings removes all custom projector settings.

Only Christie qualified technicians can reset factory defaults.

1. From the home page, select **MENU > Admin > Service**.
2. Enter the service password.
3. Select **Reset Factory Defaults**.

All customized settings are set to the default factory settings.

Specifications

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

Display

Learn about the display specifications.

Panel resolution and refresh rate	
Pixel format (H x V square pixels)	4096 x 2160
Processing path	23.97 - 60 Hz
Achievable contrast ratio	
450:1 ANSI, up to 2000:1 Full Frame ON/OFF	
Color and grayscale resolution	
Displayable colors	35.2 trillion
Grayscale resolution	45 bits total linear, 25 bits per RGB component
White point	
Nominal white (full white, after calibration)	$y = 0.300 \pm 0.050$
	$y = 0.300 \pm 0.050$
Gamma	
Nominal	$2.2 \pm 5\%$

Control signal compatibility

Ethernet port	
Interface	10Base-T/100Base-TX
Connector	Female RJ-45

3D sync	
Connector	BNC Male
Interface	TTL inputs and outputs

RS232 in	
Connector	9-pin subminiature D, female
Bit rate	115,200 bps
Data format	1 start bit, 8 data bits, 1 stop bit, no parity

GPIO	
Connector	DE-9 Male
Interface	CDS GPIO/3D Trigger Support - 7bit configurable

Wired remote	
Connector	3-pin XLR female
Interface	Custom

Optional input cards

Learn about the input cards that may be used with the projector.

Input card	Part number	Additional information
Dual 3G SD/HD-SDI	108-313101-02+	
Dual Link DVI (DDIC)	108-312101-02+	Analog signals are not supported for this input card; therefore VGA port and VGA to DVI converters are not supported.
Twin HDMI (THIC)	108-311101-XX	
Twin DisplayPort (TDPIC)	108-451101-XX	
Quad DisplayPort (QDPIC)	144-114107-XX	

Temperature sensor thresholds

The projector shutdowns within one minute of an error threshold being reached.

Location	Warning (°C)	Error (°C)	Remarks
Air intake	47	--	
IMXB CPU	82	95	
IMXB FPGA	82	95	

Location	Warning (°C)	Error (°C)	Remarks
Backpane	82	95	
HIP scaler	82	95	
HIP warp red	82	95	
HIP warp green	82	95	
HIP warp blue	82	95	
Red FPGA	82	95	
Formatter FPGA red	82	95	
Formatter FPGA Green	82	95	
Formatter FPGA Blue	82	95	
Option card 1	82	95	
Option card 2	82	95	
Option card 3	82	95	
Option card 4	82	95	
Housekeeping board	82	95	
Lamp driver A1	95	--	
Lamp driver A2	95	--	
Lamp driver A3	95	--	
Lamp driver B1	95	--	
Lamp driver B2	95	--	
Lamp driver B3	95	--	
Heatsink 2	85		
Heatsink 3	70		
Heatsink 5	85		

Warning thresholds for fans

Learn the warning thresholds (in RPMs) for each fan. All fan warnings are set to ~75% of their normal operating speeds.

Location	Warning
Bulb blower B3	100
Bulb blower B2	100
Bulb blower B1	100
Bulb blower A3	100

Location	Warning
Bulb blower A2	100
Bulb blower A1	100
Lamp fan B3	100
Lamp fan A3	100
Lamp fan B2	100
Lamp fan A2	100
Lamp fan B1	100
Lamp fan A1	100
Radiator fan A	800
Radiator fan B	800
Radiator fan C	800
Radiator fan D	800
HIP blower A	800
HIP blower B	800
Intake A	800
Intake B	800
Lamp driver intake	800
Lamp driver exhaust	800
Formatter-green	800
Formatter-red	800
Formatter-blue	800
LAD blower A	800
LAD blower B	800
Card cage exhaust	1600
Card cage exhaust	1600
Card cage intake	1600
Card cage intake	1600

Warning threshold for liquid cooling module

Learn the warning thresholds (in RPMs) for the liquid cooling components.

Location	Warning
Liquid cooling pump	180 RPM

Power requirements

Learn the power requirements for the projector.

Parameter	Requirement
Rated voltage	
Input 1	200 - 240 VAC
Input 2	100 - 130 VAC; 200- 240 VAC
Rated current	
Input 1	19A maximum
Input 2	13.8 - 10.6 A; 9.3 - 7.7 A
Line frequency	50/60 Hz
AC input coupler	
Input 1	IEC 309, 32 A/250 VAC
Input 2	IEC 320 - C14, 15 A/125 VAC, 10 A/250 VAC
Inrush current	40 A maximum
Maximum power consumption	
Input 1	3800 W
Input 2	1380 W

Physical specifications

Learn the dimensions and weight of the projector.

Description	Dimensions
Projector size	
Overall size, case only (L x W x H) (excluding lens, stack, and feet)	939.8 x 596.9 x 304.8 (mm) 37 x 23.5 x 12 (inches)
Overall size (L x W x H) (includes skid)	1207 x 838 x 654 (mm) 47.5 x 33 x 25.75 (inches)
Projector weight	
Without lens	73 kg (160 lbs)
Shipping without lens (includes packaging)	95 kg (210 lbs)
Operating position	Omni-directional

Accessories

Learn about the accessories available for the projector.

Lenses (sold separately) Description	Part number
Lens 1.13-1.31:1 HB Zoom	144-103105-XX
Lens 1.31-1.63:1 HB Zoom	144-104106-XX
Lens 1.63-2.17:1 HB Zoom	144-105107-XX
Lens 1.99-2.71:1 HB Zoom	144-106108-XX
Lens 2.71-3.89:1 HB Zoom	144-107109-XX
Lens 3.89-5.43:1 HB Zoom	144-108100-XX
Lens 4.98-7.69:1 HB Zoom	144-109101-XX
Lens 0.72:1 HB Fixed	144-110103-XX
Lens 0.9:1 Fixed	144-111014-XX

Other accessories (sold separately) Description	Part number
IR remote	003-120918-xx
AutoSTACK	108-308101-XX
Rigging frames	144-112015-xx



Notice. Failure to comply with the following may result in property damage.

- Use appropriate packaging when shipping the product installed in the frame.

Regulatory

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

Safety

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

Near field communication reader



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

- Changes or modifications not expressly approved by Christie Digital Systems Canada Inc. could void the user's authority to operate the equipment.
- Contains: FCC ID: XU6-NFCR, IC : 8691A-NFCR

Approvals

This product is designed and built to comply with all relevant directives, standards, safety, health and environmental rules and regulations required for the product to be sold in: USA/Canada, EU, Australia/New Zealand, Kuwait, China, Korea, Japan, Mexico, Ukraine, Russia, India, Argentina, Brazil, Singapore, South Africa, and Saudi Arabia.

Electro-magnetic compatibility

Emissions

FCC CFR47, Part 15, Subpart B, Class A

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

CISPR 22/EN 55022, Class A

- IEC 61000-3-2/EN61000-3-2

Immunity

CISPR 24/EN55024

- IEC 61000-3-3/EN61000-3-3

IEC/EN61000

- IEC 61000-4-2/EN61000-4-2
- IEC 61000-4-3/EN61000-4-3
- IEC 61000-4-4/EN61000-4-4
- IEC 61000-4-5/EN61000-4-5
- IEC 61000-4-6/EN61000-4-6
- IEC 61000-4-8/EN61000-4-8
- IEC 61000-4-11/EN61000-4-11

Environmental

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

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

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

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

Environment

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

Operating environment	
Temperature	5 to 40°C (41 to 104°F)
Humidity (non-condensing)	10 to 80%
Altitude	3000 meters (10,000 feet) maximum
Non-operating environment	
Temperature	-40 to 70°C (-40 to 158°F)

Mirage 304K signal connectivity

Identify the signal connectivity specifications.

2D/3D	Port configuration	3D type	Input format	Frame rate (Hz)	Interface	Cards	Cables	RGB / 4:4:4 8-bit	RGB / 4:4:4 10-bit	RGB / 4:4:4 12-bit	4:2:2 8-bit	4:2:2 10-bit	4:2:2 12-bit
3D	Four-Port	Direct	4K, QHD	120	DisplayPort 1.1a	4x TDPIC	4	X	X				
3D	Four-Port	Direct	4K, QHD	120	DisplayPort 1.2	1x QDPIC	4	X	X	X	X	X	X
3D	Four-Port	Direct	4K, QHD	120	DVI (Dual)	4x DDIC	4	X					
3D	Four-Port	Dual-Input	4K, QHD	60	DisplayPort 1.1a	4x TDPIC	8	X	X		X	X	X
3D	Four-Port	Dual-Input	4K, QHD	60	HDMI 1.4a	4x THIC	8	X	X	X	X	X	X
3D	Two-Port	Dual-Input	4K, QHD	60	DisplayPort 1.1a	4x TDPIC	4	X	X				
3D	Two-Port	Dual-Input	4K, QHD	60	DisplayPort 1.2	1x QDPIC	4	X	X	X	X	X	X
3D	Two-Port	Dual-Input	4K, QHD	60	DVI (Dual)	4x DDIC	X						
3D	Four-Port	Dual-Input	4K, QHD	60	3G-SDI	4x 3GIC	8					X	
3D	Four-Port	Direct	4K, QHD	60	DisplayPort 1.1a	2x TDPIC	4	X	X		X	X	X
3D	Four-Port	Direct	4K, QHD	60	DisplayPort 1.2	1x QDPIC	4	X	X	X	X	X	X
3D	Two-Port	Direct	4K, QHD	60	DisplayPort 1.1a	2x TDPIC	2	X	X				
3D	Two-Port	Direct	4K, QHD	60	DisplayPort 1.2	1x QDPIC	2	X	X	X	X	X	X
3D	Four-Port	Direct	4K, QHD	60	HDMI 1.4a	2x THIC	4	X	X	X	X	X	X

2D/3D	Port configuration	3D type	Input format	Frame rate (Hz)	Interface	Cards	Cables	RGB / 4:4:4 8-bit	RGB / 4:4:4 10-bit	RGB / 4:4:4 12-bit	4:2:2 8-bit	4:2:2 10-bit	4:2:2 12-bit
3D	Four-Port	Direct	4K QHD	60	3G-SDI	2x 3GIC	4					X	
3D	Two-Port	Direct	4K, QHD	60	DVI (Dual)	2x DDIC	2	X					
3D	Four-Port	Direct	4K, QHD	60	DVI (Single)	4x DDIC	4	X					
3D	Four-Port	Direct	4K, QHD	48, 50	DisplayPort 1.1a	2x TDPIC	4	X	X		X	X	X
3D	Four-Port	Direct	4K, QHD	48, 50	DisplayPort 1.2	1x QDPIC	4	X	X	X	X	X	X
3D	Two-Port	Direct	4K, QHD	48, 50	DisplayPort 1.1a	2x TDPIC	2	X	X				
3D	Two-Port	Direct	4K, QHD	48, 50	DisplayPort 1.2	1x QDPIC	2	X	X	X	X	X	X
3D	Four-Port	Direct	4K, QHD	48, 50	HDMI 1.4a	2x THIC	4	X	X	X	X	X	X
3D	Two-Port	Direct	4K, QHD	48, 50	DVI	2x DDIC	2	X					
3D	One-Port	Dual-Input	4K, QHD	60	DisplayPort 1.2	1x QDPIC	2	X	X		X	X	X
3D	One-Port	Dual-Input	2K, HD	60	DisplayPort 1.1a	1x TDPIC	2	X	X		X	X	X
3D	One-Port	Dual-Input	2K, HD	60	DisplayPort 1.2	1x QDPIC	2	X	X	X	X	X	X
3D	One-Port	Dual-Input	2K, HD	60	HDMI 1.4a	1x THIC	2	X	X	X	X	X	X
3D	One-Port	Dual-Input	2K, HD	60	3G-SDI	1x 3GIC	2					X	
3D	One-Port	Dual-Input	2K, HD	60	DVI (Single)	2x DDIC	2	X					
3D	One-Port	Direct	2K, HD	120	DisplayPort 1.1a	1x TDPIC	1	X	X				

2D/3D	Port configuration	3D type	Input format	Frame rate (Hz)	Interface	Cards	Cables	RGB / 4:4:4 8-bit	RGB / 4:4:4 10-bit	RGB / 4:4:4 12-bit	4:2:2 8-bit	4:2:2 10-bit	4:2:2 12-bit
3D	One-Port	Direct	2K, HD	120	DisplayPort 1.2	1x QDPIC	1	X	X	X	X	X	X
3D	One-Port	Direct	2K, HD	120	DVI (Dual)	1x DDIC	1	X					
3D	One-Port	Direct	2K, HD	60	DisplayPort 1.1a	1x TDPIC	1	X	X		X	X	X
3D	One-Port	Direct	2K, HD	60	DisplayPort 1.2	1x QDPIC	1	X	X	X	X	X	X
3D	One-Port	Direct	4K, QHD	60	DisplayPort 1.2	1x QDPIC	1	X	X		X	X	X
3D	One-Port	Direct	2K, HD	60	HDMI 1.4a	1x THIC	1	X	X	X	X	X	X
3D	One-Port	Direct	2K, HD	60	3G-SDI	1x 3GIC	1					X	
3D	One-Port	Direct	2K, HD	60	DVI (Single)	1x DDIC	1	X					
3D	One-Port	Direct	2K, HD	48, 50	DisplayPort 1.1a	1x TDPIC	1	X	X		X	X	X
3D	One-Port	Direct	2K, HD	48, 50	DisplayPort 1.2	1x QDPIC	1	X	X	X	X	X	X
3D	One-Port	Direct	2K, HD	48, 50	HDMI 1.4a	1x THIC	1	X	X	X	X	X	X
3D	One-Port	Direct	2K, HD	48, 50	3G-SDI	1x 3GIC	1					X	
3D	One-Port	Direct	2K, HD	48, 50	DVI (Single)	1x DDIC	1	X					
2D	Four-Port		4K, QHD	120	DisplayPort 1.1a	4x TDPIC	4	X	X				
2D	Four-Port		4K, QHD	120	DisplayPort 1.2	1x QDPIC	4	X	X	X	X	X	X
2D	Four-Port		4K, QHD	120	DVI (Dual)	4x DDIC	4	X					
2D	Four-Port		4K, QHD	120	DisplayPort 1.1a	4x TDPIC	4	X	X				

2D/3D	Port configuration	3D type	Input format	Frame rate (Hz)	Interface	Cards	Cables	RGB / 4:4:4 8-bit	RGB / 4:4:4 10-bit	RGB / 4:4:4 12-bit	4:2:2 8-bit	4:2:2 10-bit	4:2:2 12-bit
2D	Two-Port		4K QHD	120	DisplayPort 1.2	1x QDPIC	2	X	X		X	X	X
2D	One-Port		2K, HD	120	DVI (Dual)	1x DDIC	1	X					
2D	One-Port		4K, QHD	60	DisplayPort 1.2	1x QDPIC	1X	X	X		X	X	X
2D	One-Port		4K, QHD	24, 25, 30, 48, 50	DisplayPort 1.2	1x QDPIC	1	X	X	X	X	X	X
2D	One-Port		2K, HD	24, 25, 30, 48, 50, 60, 120	DisplayPort 1.2	1x QDPIC	1	X	X	X	X	X	X

4K = 4096 x 2160

QHD = 3840 x 2160

2K = 2048 x 1080

HD = 1920 x 1080

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