User Guide
020-103315-04

Christie TruLife+

Content

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 TruLife+ product documentation and technical support, go to *www.christiedigital.com*.

Model names

This guide applies to the following models.

- Griffyn 4K32-RGB

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: *http://bit.ly/3powZic* or *https://www.christiedigital.com/products/projectors/all-projectors/*.
   - Scan the QR code using a QR code reader app on a smartphone or tablet.
2. Select the projector series.
3. On the product page, select the model and switch to the **Downloads** tab.

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.

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.

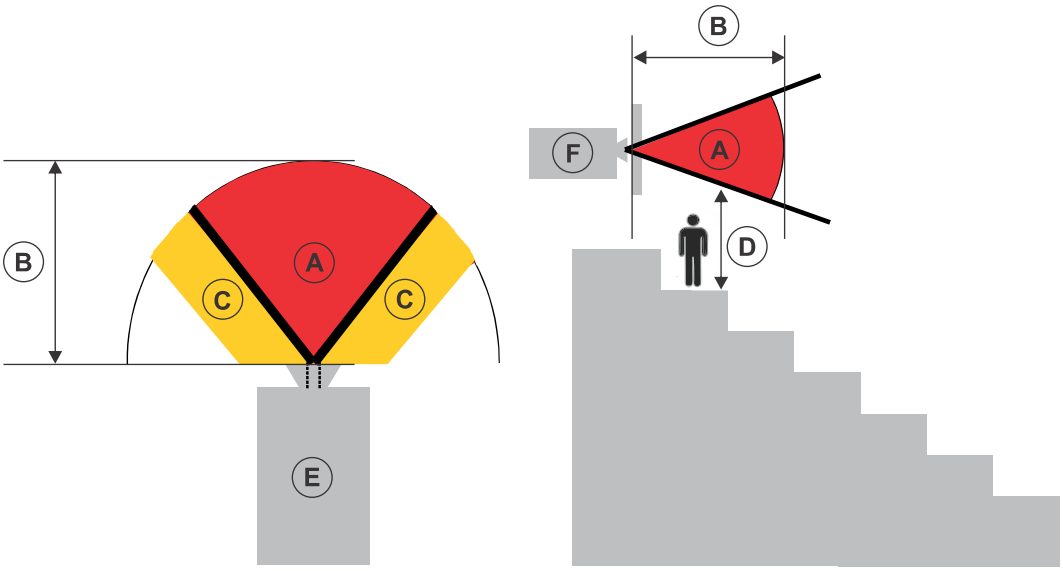
Light intensity hazard distance

This projector has been classified as Risk Group 3 as per the IEC 62471-5:2015 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.
- E—Represents the top view of the projector.
- F—Represents the side view of the projector.

For information detailing the hazard distance for each lens, refer to the product's *Installation and Setup guide*.

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.

  FDA variances can be found in the online training course–Laser Illuminated Projection - Class 1 Risk Group 3 Installation.
- 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 IIIb 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*. 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* for additional regulatory requirements.

Technical support

Technical support for Christie Enterprise products is available at:

- North and South America: +1-800-221-8025 or *Support.Americas@christiedigital.com*
- Europe, Middle East, and Africa: +44 (0) 1189 778111 or *Support.EMEA@christiedigital.com*
- Asia Pacific (*support.apac@christiedigital.com*):
  - Australia: +61 (0)7 3624 4888 or *tech-Australia@christiedigital.com*
  - China: +86 10 6561 0240 or *tech-supportChina@christiedigital.com*
  - India: +91 (80) 6708 9999 or *tech-India@christiedigital.com*
  - Japan: 81-3-3599-7481
  - Singapore: +65 6877-8737 or *tech-Singapore@christiedigital.com*
  - South Korea: +82 2 702 1601 or *tech-Korea@christiedigital.com*

- Christie Professional Services: +1-800-550-3061 or *NOC@christiedigital.com*

Contact your dealer

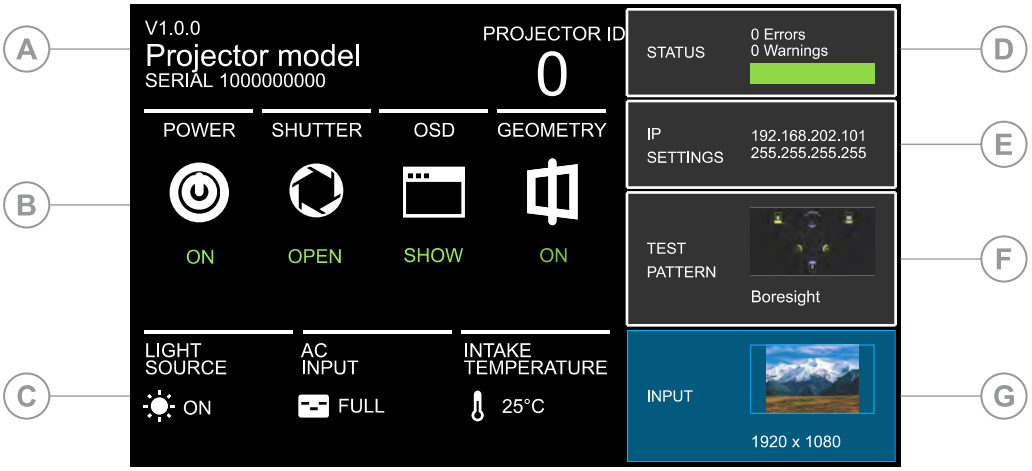
Record the information about your projector and keep this information with your records to assist with the servicing of your projector. If you encounter a problem with your Christie projector, contact your dealer.

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	

Display panel components

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

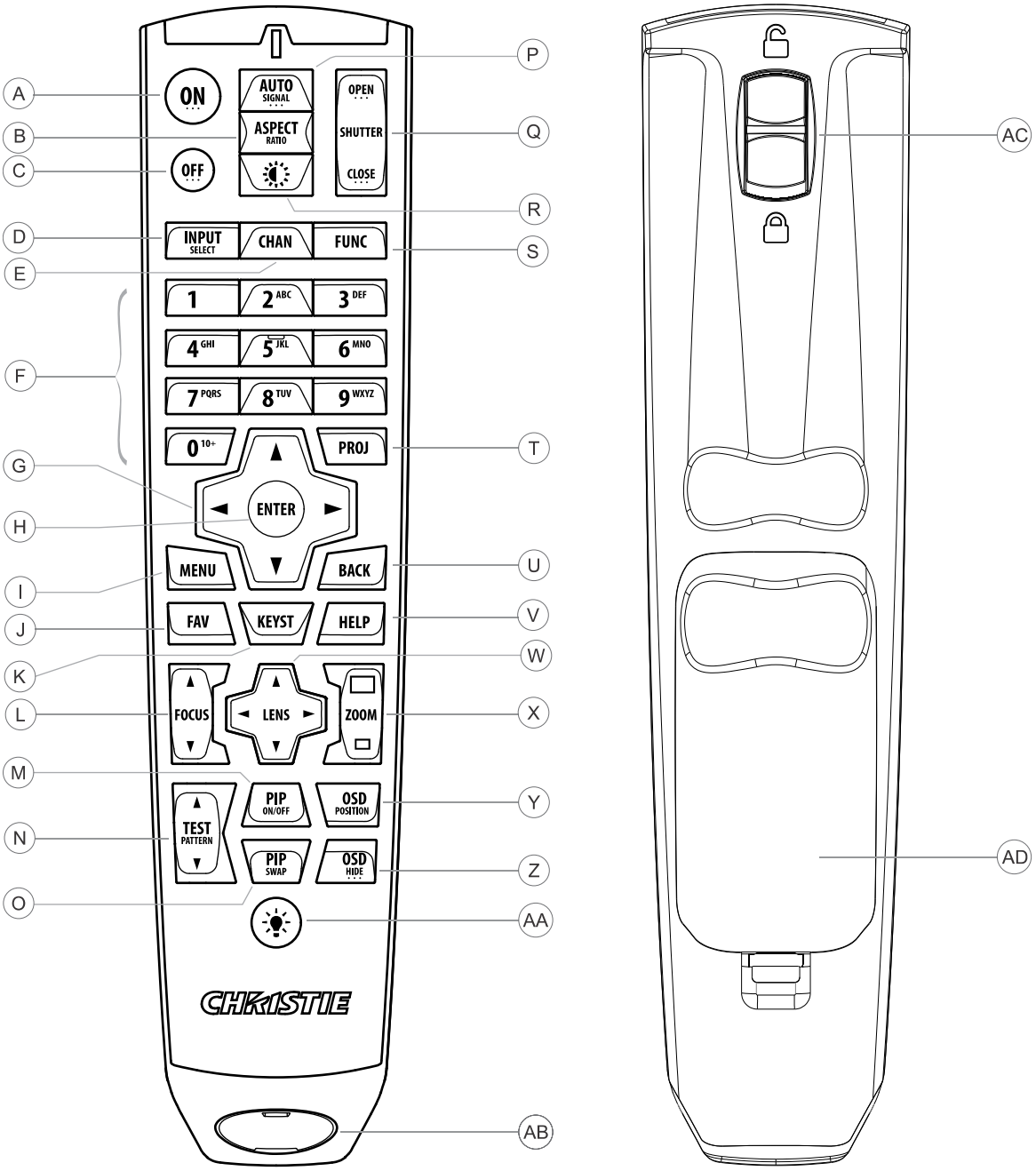


ID	Component	Description
A	Projector Information	Provides information about the projector such as the projector name, serial number, software version, and projector ID.

ID	Component	Description
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 remote keypad

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



Button	Description
A	Powers on the projector light source.
B	Opens the aspect ratio dialog.

Button	Description
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.
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.

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:
   - **Auto**—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 lens settings

Adjust various lens settings including the offset, zoom, focus, and locking the lens motor.

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

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 **Reset**.
3. To confirm the reset, select **Reset Lens Position**.

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 **Lens Zoom**.
   You can also select the zoom function from **MENU** > **Configuration** > **Lens Settings** > **Zoom**.
3. Use the up and down arrows to zoom in or out of the image.
4. To exit, select **Back**.
5. Select **FOCUS**.
   You can also select the focus function from **MENU** > **Configuration** > **Lens Settings** > **Focus**.
6. Use the up and down arrows to adjust the focus of the image.
7. To exit on the display panel, select **Back**.
8. To refine your adjusts, repeat steps 2 to 7.

Locking the lens motor

Prevents all lens motors from moving. It disables the zoom, focus, and offset settings, locking out any changes and overriding all other lens features. This feature prevents accidental lens position changes in multi-projector installations.

1. Select **MENU** > **Configuration** > **Lens Settings** > **Lock all Lens Motors**.
2. To enable locking of all lens motors, select **Enter**.

Calibrating the zoom motor

Calibrate the zoom motor to ensure all zoom controls for the lens are enabled.

1. Select **MENU** > **Configuration** > **Lens Settings** > **Zoom Lens Calibration**.

Issuing the `(LCB+ZOOM 1)` serial command also manually calibrates the lens.

2. To start the calibration, select **Calibrate Zoom Lens**.
3. At the confirmation prompt, select **Calibrate Zoom Lens**.

   The Zoom menu item is greyed out until the calibration is complete, which can take up to a minute.

Determining what lens warnings are displayed

Controls the level of lens warnings displayed.

1. Select **MENU** > **Configuration** > **Lens Settings** > **Lens Warnings**.
2. Select the appropriate lens warning level:
   - **Show All Warnings**—Shows all lens warnings.
   - **Hide Zoom Motor Warnings**—Hides zoom motor warnings. Christie recommends selecting this option when using a fixed lens as all zoom operations are disabled.
   - **Hide Detection Warnings**—Hides lens detection warnings. Christie recommends selecting this option when using a third-party lens.
3. Select **Enter**.

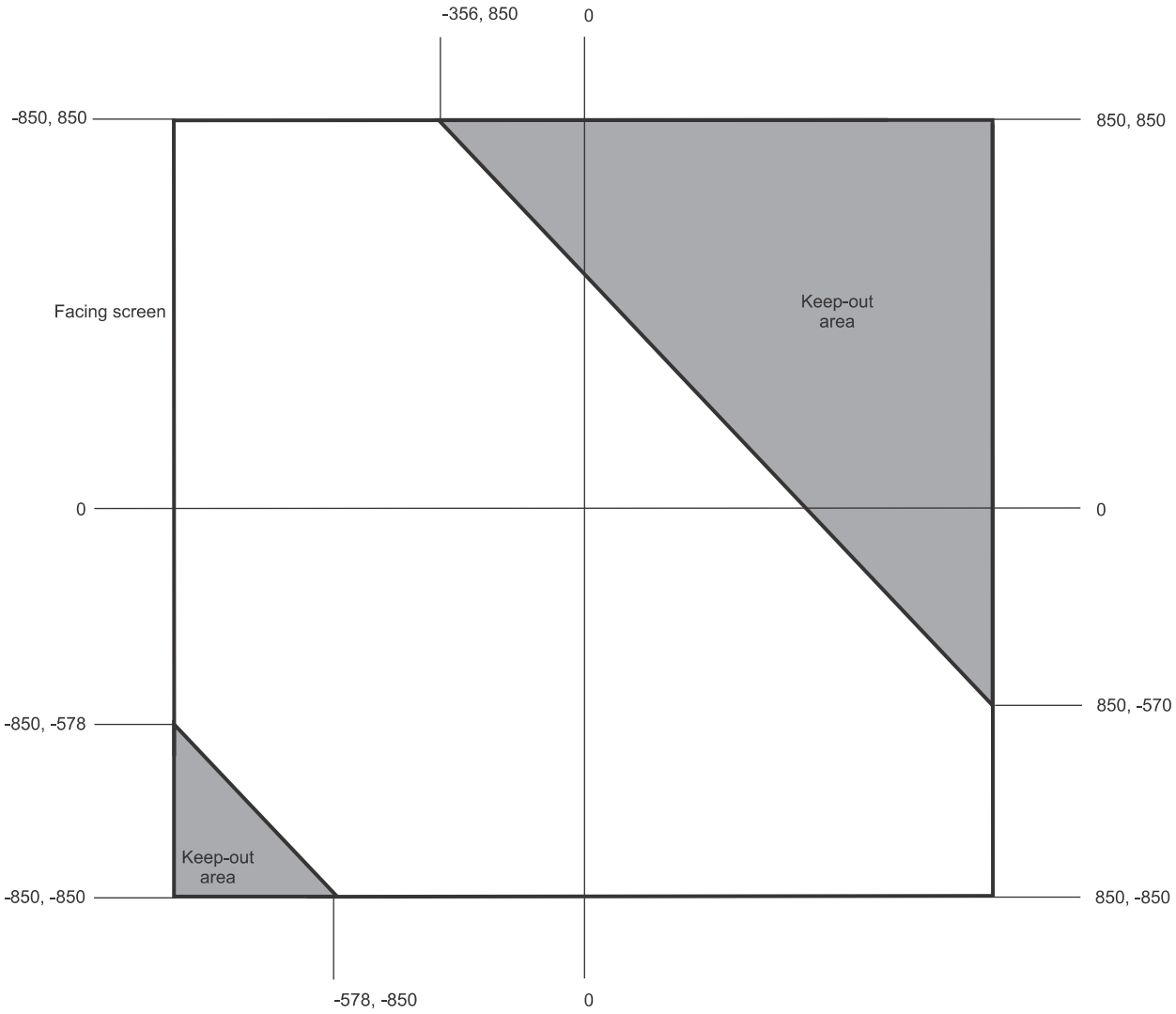
Lens control limitations

The projector has keep-out areas for the lens position, illustrated below. When adjusting the lens offset, these regions are unavailable to prevent interference and potentially damage of internal components.

Ultra short throw lens control limitations

The projector has keep-out areas for the ultra short throw lens position, illustrated below. When adjusting the lens offset, these regions are unavailable to prevent interference and potentially damage of internal components.

Only applies to: Griffyn 4K32-RGB



Enabling the ultra short throw lens keep-out area

Not switching to the ultra short throw lens keep-out area risks damaging the projector when an ultra short throw lens is installed.

Only applies to: Griffyn 4K32-RGB

1. Select **MENU** > **Configuration** > **Lens Settings**.
2. Select **Enable UST Lens 0.38:1**.
3. To enable the ultra short throw lens keep-out area, select **Enter**.
   The reduced keep-out area is implemented and the lens offset is set to zero.
4. To use a non-ultra short throw lens, clear the checkbox to disable this option.

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, light source 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 display panel, select **MENU** > **Configuration**.
2. Select **Color Primary Settings**.
3. To edit the primary colors settings, select **Edit**.
4. Adjust the slider or enter the measured color values of the primary color component you selected.
5. To confirm your selection, select **Enter**.
6. Repeat steps 4 and 5 for each primary color component.
7. To view a specific color while adjusting, select **Show Color Pattern**.
8. Select the appropriate color and select **Enter**.
9. To reset the primary colors to their defaults, select **Reset Color Primaries**.
10. At the confirmation prompt, select **Reset**.

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. To edit the custom color correction settings, select **Edit**.
3. Adjust the slider or enter the measured color values of the primary color component you selected.
4. To confirm your selection, select **Enter**.
5. Repeat steps 3 and 4 for each primary color component.
6. To view a specific color while adjusting, select **Show Color Pattern**.
7. 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. To edit the custom color correction settings, select **Edit**.
3. Adjust the value of the primary color you selected by using more or less of it in relation to the other primary colors.
4. To confirm your selection, select **Enter**.
5. Repeat steps 3 and 4 for each primary color.
6. To view a specific color while adjusting, select **Show Color Pattern**.
7. Select the appropriate color and select **Enter**.

Signal color correction

Adjust the video signal color as required.

For best results, Christie recommends setting all color and gamma settings to **Auto Detect**.

Adjusting the color space

Determine how the color components are decoded for accurate color in the display.

1. Select **MENU** > **Image Settings** > **Color & Gamma** > **Color Space**.
2. Select the adjustment most suited to the input signal:
   - Auto Detect
   - RGB (Full Range)
   - RGB (Limited Range)
   - YCbCr HDTV (ITU-R BT.709)
   - YCbCr HDTV (Expanded Range)
   - YCbCr JPEG (Full Range)
   - YCbCr UHDTV (ITU-R BT.2020) (Full Range)
3. Select **Enter**.

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:
   - Auto Detect
   - sRGB
   - ITU-R BT-1886
   - HDR/PQ (SMPTE ST 2084)
   - Power Law Function
   - HDR/PQ (No Compression)
   - Classic
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:
   - **Auto Detect**—Automatically detect the appropriate color correction mode, where possible.
   - **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.
   - **DCI P3**—Set the DCI P3 (cinema) colorimetry with DCI white point.
   - **DCI P3 (D65)**—Set the DCI P3 colorimetry with D65 white point.
   - **ITU-R BT.2020**—Set the Rec.2020 colorimetry with D65 white point.
   - **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**.
2. To set the total video frame delay, select **Set Delay**.
3. Adjust the value and to confirm your selection, select **Enter**.

The Actual Delay field reports what the system has delivered for the frame delay. The value is reported in frames and milliseconds.

Enabling film mode detect

Enables or disables the detection of film motion.

1. Select **MENU** > **Image Settings** > **Advanced Image Settings** > **Film Mode Detect**.
2. To enable the detection of film motion, select **Auto Detect**.
3. To disable the detection of film motion, select **Disabled**.
4. 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**.

Creating a seamless image with edge blending

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

Adding edge blends to the projector

Use Christie Twist or Mystique to create edge blends and upload them to Christie TruLife+.

1. Create an edge blend file using the Christie Twist or Mystique application.

   To connect Christie TruLife+ with Christie Twist or Mystique, use port 3003.

   Christie Twist Premium, Twist Pro, and Mystique offer advanced warping options. Refer to the Christie website (*www.christiedigital.com*) for product information and documentation.

2. Upload the edge blend file to the projector.
3. On one projector, select **MENU** > **Configuration** > **Edge Blending**.
4. Select the appropriate edge blend setting and select **Enter**.
5. Repeat steps 2 to 4 for the remaining projectors.
6. To turn off edge blending, from **MENU** > **Configuration** > **Edge Blending**, select **Off**.

Enabling basic edge blending

Create basic edge blends directly on Christie TruLife+.

1. Start with two projectors and display the full white field test pattern from both.
2. On one projector, select **MENU** > **Configuration** > **Edge Blending**.
3. To enable basic edge blending, select **Basic**.
4. To edit blending adjustments, select **Edge Blend Widths**.
5. From the Basic Blending dialog, select a side to blend.
6. To make the blending adjustments, use the arrow keys to change either the vertical and horizontal values as appropriate.
7. To accept the selection, select **Enter**.
8. Repeat steps 4 to 6 to blend the remaining sides.
9. When all adjustments are made, use the arrow keys to highlight **Apply** and select **Enter**.
10. Repeat steps 2 to 9 for the remaining projectors.
11. To turn off basic edge blending, from **MENU** > **Configuration** > **Edge Blending**, select **Off**.

Resetting edge blending

Reset the edge blending to revert any edge blends.

1. Select **MENU** > **Configuration** > **Edge Blending**.
2. Select **Reset Edge Blends**.
3. At the confirmation prompt, select **Reset**.

Blending black levels for multiple projectors

Use black level blending to modify the brightness of non-blended regions to match the elevated brightness levels of the blended regions.

You can adjust the black level intensity of multiple adjacent projected images to create one large seamless display.

Enabling black level blending

Enable black level blending to eliminate the differences between black levels when edge blending multiple projectors.

1. Select **MENU** > **Configuration** > **Black Level Blending** > **Black Level Blending Mode**.
2. Select **Basic**.

To disable black level blending, select **MENU** > **Configuration** > **Black Level Blending** > **Black Level Blending Mode** > **Off**.

Adjusting the black level blends

Control how the edges of adjacent images are overlapped to create a seamless image.

1. Start with a minimum of two projectors and display the full black field test pattern from each projector.
2. On one projector, select **MENU** > **Configuration** > **Black Level Blending** > **Black Level Blend Widths**.
3. Set the black level blend widths of the top, bottom, left, or right edges (depending on which edge of the projector you are working with to black level blend).
   - To use the widths set by the edge blend, select **Use Edge Blend Width Values**.
     This option is selected by default.
   - To manually set the widths, use the arrow keys to enter the pixel values.

   On the on-screen display or web user interface, you can enter the number directly in the field using the remote or keyboard.
4. Select **Apply**.
5. Select **MENU** > **Configuration** > **Black Level Blending** > **Black Level Blend Offset**.
6. To adjust the brightness and black hues of the blended region, use the arrow keys to enter the pixel values.
   On the on-screen display or web user interface, you can enter the number directly in the field using the remote or keyboard.
7. If using the web user interface, you can adjust the brightness and black hues in more detail by modifying the values in the Fine Adjustment and Course Adjustment fields.
8. Select **Apply**.
9. Repeat steps 2 to 8 for the remaining projectors.

Resetting black level blending

Reset the black level blending to revert any black level blends.

Pressing **Func+Help** on the IR remote keypad disables all geometry corrections (warping, keystone, and black level blending) without changing the settings associated with them.

1. Select **MENU** > **Configuration** > **Black Level Blending**.
2. Select **Reset Black Level Blends**.
3. At the confirmation prompt, select **Reset**.
   After the reset, the black level blend offsets are set to 0, **Use Edge Blend Width Values** checkbox is selected, and the edge blend values are used; however, the black level blend widths are not set to zero.

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 Christie Twist or Mystique application.

   To connect Christie TruLife+ with Christie Twist or Mystique, use port 3003.

   Christie Twist Premium, Twist Pro, and Mystique offer advanced warping options. Refer to the Christie website (*www.christiedigital.com*) for product information and documentation.
2. Upload the warp file to the projector.
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**.

   Pressing **Func+Help** on the IR remote keypad disables all geometry corrections (warping, keystone, and black level blending) without changing the settings associated with them.

Correcting the shape of a keystoned 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 keystoned 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 keystoned 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 keystoned 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.

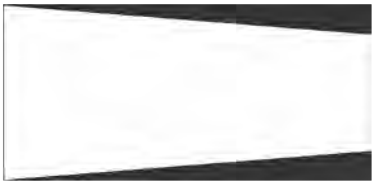
If vertical keystone adjustments have been made, starting horizontal keystone adjustments erases the vertical settings.


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 keystoned 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.

Pressing **Func+Help** on the IR remote keypad disables all geometry corrections (warping, keystone, and black level blending) without changing the settings associated with them.

1. Select **MENU** > **Configuration** > **Geometry Correction**.
2. Select **Reset Keystone Correction**.
3. At the confirmation prompt, select **Reset**.

Cropping pixels from the display edges

Use the Blanking feature to crop certain pixels from any edge of the display.

1. Select **MENU** > **Configuration** > **Blanking**.
2. To crop the pixels on one display edge, use the arrow keys to adjust the values between 0 and 25%.
3. To accept the selection, select **Enter**.
4. Repeat steps 2 and 3 to crop pixels for the remaining sides, if required.
5. To remove all cropping from the display edges, select **Reset Blanking**.
6. At the confirmation prompt, select **Reset**.
   The blanking values are returned to 0.

Configuring system settings

Learn how to configure the system settings.

Setting the date

Configure the date on Christie TruLife+.

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

Configure the time on Christie TruLife+.

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).

Synchronizing the date and time

Set the projector date and time to match what is set on the computer.

This feature is only available on the web interface.

1. Select **MENU** > **System Settings** > **Date & Time**.
   You can also access the date and time configurations by clicking on the time displayed on the header of the web interface.
2. To synchronize the date and time, select **Sync to System**.

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**.

Changing the language

Choose the language you want displayed on projector display panel and on-screen display.

1. Select **MENU** > **Languages**.
   You can also select the language from **MENU** > **System Settings** > **Menu Preferences** > **Languages**.
2. Select **Enter**.
3. Select the appropriate language and select **Enter**.
   The change takes effect immediately.

Changing the temperature units

Set if the temperature is measured in Celsius or Fahrenheit.

1. Select **MENU** > **System Settings** > **Menu Preferences** > **Temperature Units**.
2. Select the temperature unit: **Celsius** or **Fahrenheit**.
3. Select **Enter**.

Changing the user account password

The user account password limits access to the functionality on the web interface to authorized users.

Christie recommends changing the default user account password.

This feature is only available on the web interface.

1. From the home page of the web interface, select **MENU** > **Admin** > **Remote Password**.
2. Click the **Current Password** and type your current password.
3. Click **New Password** and type your new password.

Create your password using 4 to 32 characters. The password can be any combination of letters, numbers, and symbols (ASCII-standard characters only). Accents and accented characters are not supported.

4. Click **Confirm** and retype your new password.
5. Click **Apply**.

Accessing the generated user account password

If the user account password is not available, the generated password can be used to access the functionality on the web interface.

Note the following about the generated user account password:

- The generated password can be used to change the user account password.
- Every time the user account password is updated, the generated password is changed.
- If the projector defaults are reset using either the **Reset Projector Defaults** or **Reset Factory Defaults** features, the user account password is reset.

This feature is accessed from the display panel on the projector and the on-screen display.

1. From the display panel, select **MENU** > **Admin** > **Service**.
2. Enter the service password.
3. Select **Generated password**.
   The generated password is displayed in this field.

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**.

Keeping electronics on in standby mode

When the projector is placed in standby mode, the light source will be turned off but the electronics and required fans remain on.

1. Select **MENU** > **System Settings** > **Power Settings**.
2. Select **Keep Electronics On In Standby**.
3. To enable electronics remaining on in standby mode, select **Enter**.

Setting a fan speed profile

Use the fan speed profile to balance noise compared to brightness depending on projection needs.

Only applies to: Griffyn 4K32-RGB

1. Select **MENU** > **Configuration** > **Light & Output Settings** > **Fan Speed Profile**.
2. Select the appropriate fan speed profile:
   - **Standard**—The projector attempts to achieve a balance between low noise and brightness performance by adjusting fan speed with regards to ambient temperature and requested brightness. (Default)
   - **Quiet**—The projector achieves the lowest noise at the possible expense of brightness performance.
3. Select **Enter**.

Configuring video input

Defines which video inputs are available. This setting is persistent so when the projector powers up, it loads the video input defined below.

When changing the selection, the system takes up to 15 seconds to re-configure. During this time the user interface is not responsive.

1. Select **MENU** > **Configuration** > **Input Settings** > **Video Input Configuration**.
2. Select the appropriate video input configuration:
   - **Default**—Supports HDMI, DP, SDI, HDBaseT, and ChristieLink. (Default)
   - **SDVoE**—Supports HDMI, SDVOE, HDBaseT, and ChristieLink.
3. Select **Enter**.

Informing the source of signal preferences

Configure Christie TruLife+ to automatically inform the video source of the preferred signal formats.

1. If you need a specific frame rate, from the display panel, select **MENU** > **Configuration** > **Input Settings** > **EDID Timing**.
2. Select the required EDID timing and select **Enter**.
   60 Hz is the default EDID timing.

Managing the light source

Learn how to configure brightness and color using the projector's LiteLOC feature.

Using LiteLOC, you can easily control the brightness and color of the projector. In addition, LiteLOC can maintain these settings over time under changing environmental conditions.

LiteLOC works with a sensor-to-screen calibration that ultimately allows you to input your required x, y chromaticity coordinate in the user interface and control the brightness of the projector with a single slider.

LiteLOC's ability to hold required color and brightness depends on your environmental conditions. Conditions resulting in a low dew point such as low ambient temperature and low humidity result in higher maximum brightness. On the other hand, conditions resulting in a high dew point such as high ambient temperature and high ambient humidity result in lower maximum brightness. When the environmental conditions exceed the projector's ability to maintain the required brightness, it automatically dims as necessary to maintain your required color point on the screen. In this case, the projector also issues a warning. If the environmental conditions become better, the projector recovers your original required brightness.

LiteLOC™ sensor-to-screen calibration

The LiteLOC sensor-to-screen calibration is performed in the factory under specific setup conditions which include the type of lens, screen, and the spectroradiometer used for measuring screen color and brightness.

Your projector's setup conditions may not match the factory setup which may result in an error in color accuracy. Upon first installation, check the accuracy of the color point and if unsatisfactory, perform this calibration. Doing this calibration captures all the variables of your setup and achieves the best results. By doing this calibration, you will not overwrite the factory calibration. Once satisfied, some scenarios may exist in which you may need to re-do the calibration in the future.

Re-doing this calibration is required if the following is replaced:

- Color sensor board

Re-doing this calibration is optional if any of the following are replaced:

- Light engine
- Lens
- LOS (laser optical subsystem)
- Screen
- Any other optical components in the optical path between the LOS and the screen

After replacing these components, check the accuracy of the color point and if unsatisfactory, re-do this calibration.

Refer to the LiteLOC sensor-to-screen calibration instruction sheet (P/N: 020-103435-XX) available on the Christie website. Navigate to *https://www.christiedigital.com/products/projectors/all-projectors/*, select **projector series** > **projector model** > **Downloads** > **Instruction sheets**.

Configuring LiteLOC™

To ensure color and brightness are held at the required levels for your installation, Christie recommends enabling LiteLOC with your required settings for each laser configuration you create.

1. To configure LiteLOC, navigate to **MENU** > **Configuration** > **Light & Output Settings**.
2. To enable LiteLOC, select **LiteLOC** > **Enabled**.
3. To enter your own values for Max Ambient Temperature and Max Ambient Humidity, select **User Defined Environmental Conditions**.

   If this box is left unselected, the Max Ambient Temperature and Max Ambient Humidity controls are disabled. Note the following:

   - The maximum ambient temperature is calculated by the system and displayed in the **Ambient Temperature Limit** field. If the actual ambient temperature exceeds this value, the system may dim as necessary but still maintains color.
   - The maximum ambient humidity is assumed to be 80%.

a) Use the **Max Ambient Temperature** slider to increase and decrease the maximum ambient temperature you expect the room to reach and select **Enter**.

A lower room temperature generally results in increased brightness and better efficiency. A higher room temperature reduces the maximum power setting available for the lasers. The maximum expected room temperature setting must reflect the anticipated operating conditions.

b) Use the **Max Ambient Humidity** slider to increase and decrease the maximum ambient humidity you expect the room to reach and select **Enter**.

A lower room humidity generally results in increased brightness and better efficiency. A higher humidity reduces the maximum power setting available for the lasers. The maximum expected humidity setting must reflect the anticipated operating conditions.

The **Ambient Temperature Limit** field displays the measured ambient temperature. If **User Defined Environmental Conditions** is not selected, the **Ambient Temperature Limit** field also shows the calculated maximum ambient temperature under which the system can maintain the required brightness and color point. If the actual ambient temperature exceeds the limit value displayed in this field, the system may dim as necessary but still maintains color.

4. Use the **Brightness** slider to increase and decrease the brightness and select **Enter**.

   If the required brightness cannot be achieved, the slider indicates the actual brightness.

5. To set the white point you want to achieve from the laser, entered the required **White x** and **White y** values.

Disabling LiteLOC™

Disable LiteLOC if you want to manually control the red, green and blue lasers independently. When LiteLOC is disabled, the set color and brightness may drift over time as the ambient conditions change.

1. 1. Navigate to **MENU** > **Configuration** > **Light & Output Settings**.
2. To disable LiteLOC, select **LiteLOC** > **Disabled**.
3. Use the **Max Ambient Temperature** slider to increase and decrease the maximum ambient temperature you expect the room to reach and select **Enter**.

   A lower room temperature generally results in increased brightness and better efficiency. A higher room temperature reduces the maximum power setting available for the lasers. The maximum expected room temperature setting must reflect the anticipated operating conditions.

4. To set the approximate red power level, select **Red Laser Setpoint** and use the slider to increase and decrease the value required for the projector brightness.

   System stability may be affected if you set a power level below the minimum power level recommended.

   A value below the maximum limit ensures the required red power level can be achieved until the maximum ambient temperature is reached.

5. To set the green (**Green Laser Setpoint**) and blue (**Blue Laser Setpoint**) power levels, repeat step 4.

Setting up 1D color uniformity

Learn how to set up 1D color uniformity on the projector after taking measurement of each of the color primaries at points (15, 2, 5, 8, and 16).

1. Ensure the projector is running in representative ambient light.
2. Setup a spectroradiometer, such as the CR-250, on a tripod.

   If not using the CR-250 or better, Christie recommends placing the meter perpendicular to the screen to achieve accurate measurements.

   Do not use the PR-655 spectroradiometer to perform color uniformity on a multi-projector installation.
3. Power on the projector.
4. Allow the light source to stabilize.
5. From the side panel home page, use the arrows to select **Test Pattern**.
6. Select the **17 Point test pattern** and to confirm your selection, select **Enter**.

7. Select **MENU** > **Configuration** > **Horizontal 1D Color Uniformity** > **Color Uniformity Mode**.
8. To disable color uniformity, select **Color Uniformity Off**.
9. Select **Enter**.
10. Select **Color Correction Mode** > **Max Drives** and to confirm your selection, select **Enter**.
11. Select **Show Color Pattern** > **Auto** and to confirm your selection, select **Enter**.
12. Record the x, y, and RGB luminance values for the center point.
    a) Point the spectroradiometer at point 5 (middle square).
    b) Click the X value.
    c) Record the x value from the spectroradiometer in the projector user interface.
    d) Click the Y value.
    e) Record the y value from the spectroradiometer.
    f) Click on the Red luminance setting.
       The display changes to the appropriate color.
    g) Record the luminance value from the spectroradiometer.
    h) Click on the Green luminance setting.
       The display changes to the appropriate color.
    i) Record the luminance value from the spectroradiometer.
    j) Click on the Blue luminance setting.
       The display changes to the appropriate color.

k) Record the luminance value from the spectroradiometer.

13. Record the luminance values for the remaining four points (2—inside left, middle square; 15—far left, middle square; 8—inside right, middle square; and 16—far right, middle square)
    a) Point the spectroradiometer at a point.
    b) Click on the Red luminance setting.
       The display changes to the appropriate color.
    c) Record the luminance value from the spectroradiometer in the projector user interface.
    d) Click on the Green luminance setting.
       The display changes to the appropriate color.
    e) Record the luminance value from the spectroradiometer.
    f) Click on the Blue luminance setting.
       The display changes to the appropriate color.
    g) Record the luminance value from the spectroradiometer.
    h) For the remaining three points, repeat steps a to g.
14. To enable color uniformity, select **Color Uniformity Mode** > **Horizontal 1D Color Uniformity** and to confirm your selection, select **Enter**.
15. To verify 1D color uniformity is working, enable a flat white test pattern.

Implementing Stealth mode

When Stealth mode is enabled, the status and shutter LEDs are turned off and the heartbeat feature on the display panel Enter key is disabled.

1. Select **MENU** > **System Settings** > **Power Settings** > **Stealth Mode**.
2. To disable the LEDs and heartbeat feature, select **Enter**.
3. To enable the LEDs and heartbeat feature, select **Stealth Mode** again.

Configuring communications

Defines and controls how single or multiple projectors are linked with each other and with a controlling device.

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.

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 display panel, select **MENU** > **Admin** > **Service**.
2. Enter the service password.
   The password is only required for the display panel and not the web user interface.
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**.

Communicating with Christie TruLife+ through Art-Net

Christie TruLife+ 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 TruLife+ 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 TruLife+ specifies 24 channels.

Christie TruLife+ 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%) 255 = Largest image possible (100%)	128	• Locked by the Lens Shift Enable channel. • Scaled as a percentage of the total control range. • A 250 ms delay exists before sending this channel to the projector.
6	Zoom (Fine)			
7	Focus (Coarse)	0 = 0% 255 = 100%	128	• Locked by the Lens Shift Enable channel. • Scaled as a percentage of the total control range. • A 250 ms delay exists before sending this channel to the projector.
8	Focus (Fine)			
9	Lens Horizontal Position (Coarse)	0 = Full left position (0%) 255 = Full right position (100%)	128	• Locked by the Lens Shift Enable channel. • A 250 ms delay exists before sending this channel to the projector.
10	Lens Horizontal Position (Fine)			
11	Lens Vertical Position (Coarse)	0 = Full lower position (0%)	128	• Locked by the Lens Shift Enable channel.

Channel	Name	Description	Suggested starting position	Notes
12	Lens Vertical Position (Fine)	255 = Full upper position (100%)		• A 250 ms delay exists before sending this channel to the projector.
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.	—	—

Index list for the input channel

the following table provides the index information for the input channel.

Not all options listed in the table are available. Available options depend on the Video Input configuration option selected: **Default** or **SDVoE**.

Input index	Description
0	One-port HDMI01
1	One-port HDMI2
2	One-port HDBaseT
3	One-port DisplayPort1
4	One-port DisplayPort2
5	N/A
6	One-Port SDI1
7	One-Port SDI2
8	One-Port SDI3
9	One-Port SDI4
10	N/A
11	One-Port SDVoE
12	Christie Link A
13	Christie Link B

Input index	Description
21	Two-Port DisplayPort
22	Four-Port SDI

Working with macros

Automate tasks in Christie TruLife+ with macros so the same tasks can be done on a regular basis.

If the date and/or time is changed on the projector, a macro may be unexpectedly executed.

Adding a Scheduled Event macro

Create a Scheduled Event macro to automate a repetitive task.

Up to 24 macros can be created.

This feature is only available on the web interface.

1. From the home page of the web interface, select **MENU** > **Macros and GPIO**.
2. Click the **Add Macro**.
   If the limit of 24 macros is reached, the **Add Macro** button is disabled and displays a Limit Reached message.
3. In the Name field, enter a meaningful name for the macro.
4. From the Type list, select **Scheduled Event**.
5. In the Start Date field, select a date from the calendar.
6. In the Start Time field, use the up and down keys to adjust the hour (HH), minutes (MM), and seconds (SS).
   You can also manually enter the hour, minutes, and seconds.
7. To make this a reoccurring event, click **Recurring**.
   When enabled, the button appears green. When disabled, the button appears gray.
   a) To determine the recurrence pattern, under Every, select the day or days of the week you want run the macro.
   b) Determine the life of the macro.
      - To have the macro run indefinitely, select **No end date**.
      - To run the macro for a defined period of time, in the Recur for field, use the up and down keys to adjust the number of weeks.
        You can also manually enter the number of weeks. The limit is 99 weeks.
8. In the Serial Command field, enter the serial command(s) you want to run.
   For available serial commands and their syntax, refer to the *Christie TruLife+ Serial Commands Guide (P/N: 020-103316-XX)*.
9. To test the functionality, click **Test**.
   An `Action succeeded` message is displayed upon a successful test.

10. To save the macro, click **Save**.

If the time specified in a macro has expired, a warning icon depicting an expired macro is displayed in the title bar.

Adding a GPIO Event macro

Create a macro which can be triggered through a GPIO input pin to automate projector actions by external signals.

Up to 14 GPIO Event macros can be created.

This feature is only available on the web interface.

1. From the home page of the web interface, select **MENU** > **Macros and GPIO**.
2. Click the **Add Macro**.
   If the limit of 24 total macros is reached, the **Add Macro** button is disabled and displays a Limit Reached message.
3. In the Name field, enter a meaningful name for the macro.
4. From the Type list, select **GPIO Event**.
5. From the display of pins, select the input pin.
   Only pins configured as input pins can have triggers. Output pins are disabled.
6. Select the type of transition: **High to Low** or **Low to High**.
   An input pin can only have a maximum of two events, one for each transition type.
7. In the Serial Command field, enter the serial command(s) you want to run.
   For available serial commands and their syntax, refer to the *Christie TruLife+ Serial Commands Guide (P/N: 020-103316-XX)*.
8. To test the functionality, click **Test**.
   An `Action succeeded` message is displayed upon a successful test.
9. To save the macro, click **Save**.

If the input pin used in a GPIO Event macro has changed from input to output, a warning icon depicting an invalid macro is displayed in the title bar.

Copying a macro

Duplicate a Scheduled Event macro to create another macro of similar functionality.

Up to 24 macros can be created. GPIO Event macros cannot be duplicated.

This feature is only available on the web interface.

1. From the home page of the web interface, select **MENU** > **Macros and GPIO**.
2. From the list of macros, click **Duplicate** next to the macro you want to copy.

   If the limit of 24 macros is reached, the **Duplicate** button is disabled and the **Add Macros** button displays a Limit Reached message.

3. In the Name field, enter a meaningful name for the macro.
4. Modify the appropriate fields.
5. To save the macro, click **Save**.

Editing a macro

Edit the macro if the functionality of the macro has changed.

This feature is only available on the web interface.

1. From the home page of the web interface, select **MENU** > **Macros and GPIO**.
2. From the list of macros, click **Edit** next to the macro you want to edit.

3. Modify the appropriate fields.
4. To save the macro, click **Save**.

Deleting a macro

Delete one or more macros if they are no longer relevant.

This feature is only available on the web interface.

1. From the home page of the web interface, select **MENU** > **Macros and GPIO**.
2. From the list of macros, select one or more macros to delete.

   To delete all the macros in the list, click **Select All**. the number of macros you want to delete is displayed next to the trash can.
3. Click **Delete**.

4. At the confirmation prompt, click **Delete**.

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.

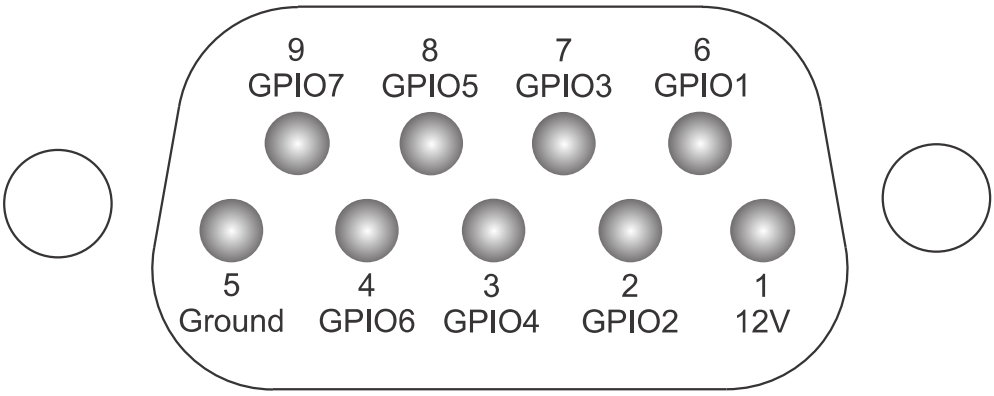
This feature is only available on the web interface.

1. From the home page of the web interface, select **MENU** > **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.

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. Next to New Profile, select **Create**.
5. In the dialog, enter a new profile name.
6. Select **Save**.

Importing a projector profile

Import projector profiles set on different projectors using a USB flash drive (projector) or file (web interface).

1. If using the display panel, 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. Next to Import From File, select **Import**.
5. Select a projector profile file.
   - On the projector, from the File Selection dialog, select a projector profile file.
   - From the web interface, in the Open dialog, navigate to the file and select **Open**.

   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, *<productname>_2020-06-15*. 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 (projector) or file (web interface).

1. If using the display panel to export a projector profile, 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**.
   A default name is assigned.
5. Select **Download File**.
   The profile file is exported to the USB flash drive or to the default location on the computer.

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**.
4. At the confirmation prompt, select **Delete**.

Backing up, restoring, and upgrading projector files

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

Upgrading the Christie TruLife+ software

When a new version of the software is released, Christie TruLife+ must be upgraded.

1. Turn off the lasers before proceeding with the upgrade.
2. If using the display panel to upgrade the software, insert a USB key that contains the software upgrade file.

   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. Select **MENU** > **Admin** > **Software** > **Upgrade**.
4. Select an upgrade file.
   - On the projector, select the upgrade file from the root of the USB and select **Enter**.
   - From the web interface, in the Open dialog, navigate to the file and select **Open**.
5. To automatically restart Christie TruLife+, select **Restart Now**.

   If you decide restart Christie TruLife+ at a later date (**Restart Later**), you cannot perform another upgrade until the Christie TruLife+ is restarted.

Adding a software license to a projector

Add the software license to the projector using the Christie Twist 2.5 or higher.

The projector does not display 4K content if the HFR license is installed and enabled. To change to 4K mode, use the OTR serial command. For more information, refer to *Christie TruLife+ Serial Commands Guide (P/N: 020-103316-XX)*.

1. Record the serial number of the projector(s) and send it to Christie Technical Support.

   The serial number is available on the projector label, from the **Status** > **Configuration** menu, or you can send the (SST+CONF?1) serial API command.

   Christie Technical Support will send a zipped license file to you. If you sent more than one serial number, you will receive multiple license files as the .key file is based on the serial number of the projector.
2. Unzip the license file to a known location on your computer.

3. Make sure the projector you want to upgrade is running and is on the same subnet as your computer.
4. From the Start menu, select **Christie** > **Twist 2.x** > **Projector License Utility**.
5. In the Christie Projector License Utility dialog, click **Browse**.
6. Navigate to the location of the unzipped license file (.key) and select it.
7. From the Projectors list, select the projector you want to apply the upgrade to.
8. Click **Apply**.
9. Reboot the projector.
10. Repeat steps 3 to 9 for each additional projector.

Exporting backup settings to an external device

Save the Christie TruLife+ settings to a USB flash drive (projector) or file (web interface).

1. If using the display panel to export settings, insert a USB flash drive (properly formatted as FAT) into the USB port on Christie TruLife+.
2. Select **MENU** > **Admin** > **Backup & Restore**.
3. Select the backup option.
   - On the projector, select **Backup to USB**.
   - On the web interface, select **Backup to File**.

   A default name is assigned.
4. From the projector:
   a) To edit the backup file name, select the up arrow and select **Enter**.
   b) To save the name, navigate down and select **SAVE**.
   The backup file is exported.
5. From the web interface:
   a) To edit the backup file name, enter the new name and select **Backup**.
   The backup file is created.
   b) To download the backup file, select **Download**.
   The backup file is downloaded to the default location on the computer.

Importing a file from an external device to restore settings

Restore backed up files, stored on a USB flash drive (projector) or file (web interface), onto the projector.

1. If using the display panel to import the file, insert the USB flash drive containing the backup file into the USB port on the projector.
2. Select **MENU** > **Admin** > **Backup & Restore**.
3. Select the restore option.
   - On the projector, select **Restore from USB**.

- On the web interface, select **Restore from File**.

4. Select the file.
   - On the projector, from the File Selection dialog, select a file to restore.
   - From the web interface, in the Open dialog, navigate to the file and select **Open**.

   The backup settings file is imported to the projector.

Restoring projector default settings

Restore the Christie TruLife+ settings back to the default values. Network configurations and calibration values are not reset.

1. From the display panel, select **MENU** > **Admin** > **Backup & Restore**.
2. Next to Reset Projector Defaults, select **Reset**.

   All customized settings are set to the default Christie TruLife+ settings.

Diagnostic tools

Follow these procedures to help with diagnosing issues with Christie TruLife+.

Viewing Christie TruLife+ information

View the licenses for the software added to Christie TruLife+ and the licenses of the software used to operate Christie TruLife+. The information is read-only.

1. To view the additional software added to Christie TruLife+, select **MENU** > **Admin** > **Licenses**.
2. To view the software licenses used to run Christie TruLife+, select **MENU** > **Admin** > **About**.

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 available 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** or **MENU** > **Diagnostics** > **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 dispalyed 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 enable movement of the test pattern, select **Test Pattern Ramp Motion** and select **Enter**.
6. To change the slope of the ramp test pattern, select **Test Pattern Ramp Slope** and adjust the slider to the value you want.
7. To confirm your selection, select **Enter**.
8. To change the level of the ramp test pattern, select **Test Pattern Ramp Level** and adjust the slider to the value you want.
9. 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**.

Enabling a specific test pattern color

You can enable a specific test pattern color to eliminate one or more colors to help with certain diagnostics and setups, such as overlaying one image on top of another from stacked projectors.

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. Select the **Flat White** test pattern.
3. To confirm your selection, select **Enter**.
4. On the IR remote keypad, press **Func**+**6**+**<0 to 7>**.
   Where *<0 to 7>* represents a specific color.

Selecting an engine test pattern

Several engine test patterns are available to assist with the calibration and internal optical alignments of the projector and to diagnose any issues that may occur.

1. Select **MENU** > **Admin** > **Service**.
2. Select **Engine Test Patterns**.
3. Scroll through the list of test patterns.
4. Select the required test pattern.
5. To confirm your selection, select **Enter**.
6. To disable the engine test patterns, select **MENU** > **Admin** > **Service** > **Engine Test Patterns** > **Off**.

Viewing Christie TruLife+ 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 Christie TruLife+.

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

Running the Christie TruLife+ interrogator

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

1. If saving the interrogator file to a USB flash drive on the projector, insert a USB flash drive in the USB port on Christie TruLife+.
   The USB flash drive must be formatted using the FAT 32 file system.
2. Select **MENU** > **Admin** > **Interrogator**.
3. Select **Run**.
   - If on the projector, the interrogator file is stored at the root directory on the USB flash drive.

- If running Christie TruLife+ interrogator from the web interface, a message appears indicating the integrator file was successfully created.

4. From the web interface to download the interrogator file to the computer, select **Download File**.

   The interrogator file is downloaded to the default location on the computer.

5. If on the projector, at the completion prompt, select **OK**.

Identifying where alarm and trap messages are sent

Configure the email address and SNMP trap destination where alarms are recorded.

Creating a distribution mailing list for SNMP alerts means that changes to the people receiving the emails does not require a change to the MIB browser configuration.

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. Enter the read community string.

   On the display panel use the up and down arrows to enter the read community string.
3. To confirm the name of the string, select **Enter**.

Configuring traps

A trap is a condition that SNMP monitors on Christie TruLife+.

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

   The available traps are:

   - Fan Stall
   - Thermal Sensors
   - Power
   - Video Signal
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. From the projector:
   a) Select **Address 1**.
   b) Use the up and down arrows to enter an IP address.

c) To confirm the address, select **Enter**.

d) To add a second and third IP address, repeat steps a to c for **Address 2** and **Address 3**.

3. From the web interface:
   a) For Address 1, select **Edit**.
   b) Enter the IP address.
   c) Select **Apply**.
   d) To add a second and third IP address, repeat steps a to c for **Address 2** and **Address 3**.

Downloading the SNMP MIB files

The SNMP management information base (MBI) files describe the data format used by SNMP.

1. Select **MENU** > **Communications** > **SNMP**.
2. To download the SNMP MIB files, select **Download File**.
   The files are downloaded to the default location on the computer.

Restoring factory default settings

Restoring factory settings removes all custom device settings.

Only Christie qualified technicians can reset factory defaults.

1. From the display panel, select **MENU** > **Admin** > **Service**.
2. Enter the service password.
   The password is only required for the display panel and not the web user interface.
3. Select **Reset Factory Defaults**.
   All customized settings are set to the default factory settings.
4. At the confirmation prompt, select **Reset**.

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 ≤ 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)

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For the most current technical documentation, visit www.christiedigital.com.

Installation and Setup Guide

020-103314-05

Griffyn 4K32-RGB

CHRISTIE

Content

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 Griffyn 4K32-RGB product documentation and technical support, go to *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/3fbZLx8* or *https://www.christiedigital.com/products/projectors/all-projectors/griffyn-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.

- *Griffyn 4K32-RGB Product Safety Guide (P/N: 020-103313-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)*
- *Griffyn 4K32-RGB Service Guide (P/N: 020-103329-XX)*

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.
- A minimum of four people or appropriately rated lift equipment is required to safely lift, install, or move the product.
- 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 two 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.

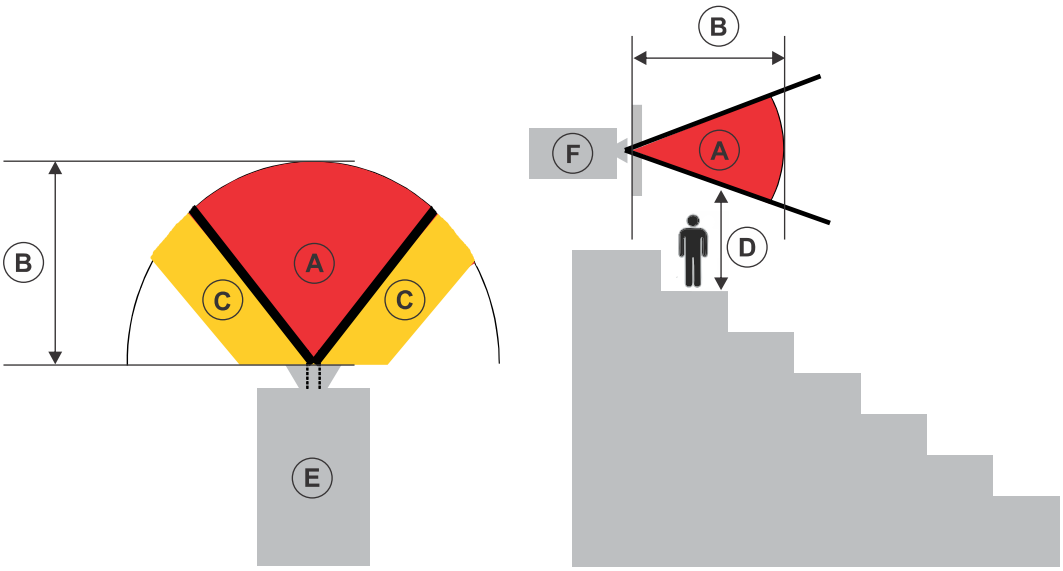
Light intensity hazard distance

This projector has been classified as Risk Group 3 as per the IEC62471 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.
- 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.

Projection Lens	Part Number	Hazard Distance (m)
High brightness		
0.37:1 enhanced	144-136101-XX	1.0
0.72:1fixed	144-110103-XX	1.0
0.9:1 fixed	144-111014-XX	1.2
1.13-1.31:1 zoom	144-103105-XX	1.7
1.13-1.66:1 zoom	144-129103-XX	2.2
1.31-1.63:1 zoom	144-104106-XX	2.1
1.45-2.17:1 zoom	144-130105-XX	2.8
1.63-2.17:1 zoom	144-105107-XX	2.8
1.99-2.71:1 zoom	144-106108-XX	3.4
2.71-3.89:1 zoom	144-107109-XX	4.9
3.89-5.43:1 zoom	144-108100-XX	6.9
Ultra high contrast		
0.72:1 fixed	163-116109-XX	1.0
0.9:1 fixed	163-117100-XX	1.0
1.13-1.66:1 zoom	163-118101-XX	1.8
1.45-2.17:1 zoom	163-119102-XX	2.4
1.95-3.26:1 zoom	163-120103-XX	3.4
2.71-3.89:1 zoom	163-121105-XX	4.1
3.89-5.43:1 zoom	163-122106-XX	5.8

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.

  FDA variances can be found in the online training course–Laser Illuminated Projection - Class 1 Risk Group 3 Installation.
- 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 IIIb 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*. 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* 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.

Fire and Shock Hazard	
	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.

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

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

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

General hazard.

Not for household use.

Mandatory action

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)

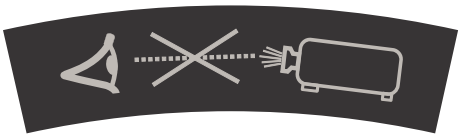
This product is in conformity with performance standards for laser products under 21 CFR 1040, except with respect to those characteristics authorized by Variance Number 2018-V-3898 effective on November 21, 2018.

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. 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.

Projector overview

Learn about the Griffyn 4K32-RGB projector.

Griffyn 4K32-RGB is a professional quality, easy-to-use 3DLP® RGB laser projector. The high-brightness Griffyn 4K32-RGB 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 rugged chassis and ultra-fast processing of Christie TruLife+™ electronics, the Griffyn 4K32-RGB 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 into the projector chassis
- LiteLOC™ feature for constant image brightness and color
- Easily adjusted electronic convergence using the remote control to maintain a perfect image
- Field adjustable RGB convergence, boresight, and optical path
- 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, Guardian, 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

List of components

Verify all components were received with the projector.

- Power cord
- IR remote keypad
- Tools

Technical support

Technical support for Christie Enterprise products is available at:

- North and South America: +1-800-221-8025 or *Support.Americas@christiedigital.com*
- Europe, Middle East, and Africa: +44 (0) 1189 778111 or *Support.EMEA@christiedigital.com*
- Asia Pacific (*support.apac@christiedigital.com*):
  - Australia: +61 (0)7 3624 4888 or *tech-Australia@christiedigital.com*
  - China: +86 10 6561 0240 or *tech-supportChina@christiedigital.com*
  - India: +91 (80) 6708 9999 or *tech-India@christiedigital.com*
  - Japan: 81-3-3599-7481
  - Singapore: +65 6877-8737 or *tech-Singapore@christiedigital.com*
  - South Korea: +82 2 702 1601 or *tech-Korea@christiedigital.com*
- Christie Professional Services: +1-800-550-3061 or *NOC@christiedigital.com*

Installation and setup

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

Site requirements

To safely install and operate the Griffyn 4K32-RGB 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)
- Humidity (non-condensing) 10% to 80%
- Operating altitude 0 to 3000 meters (0 to 9843 feet)

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).

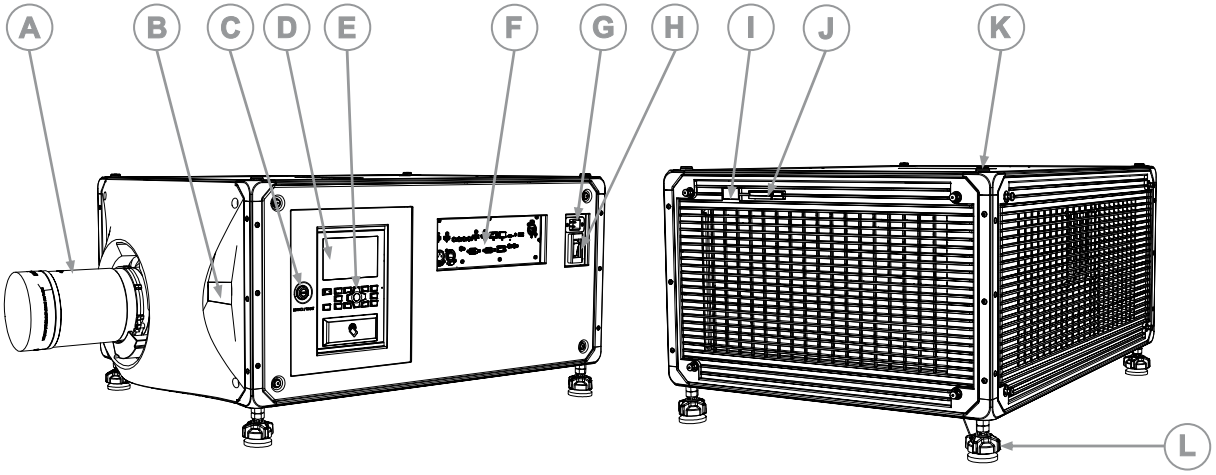
Power connection

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

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

Projector components

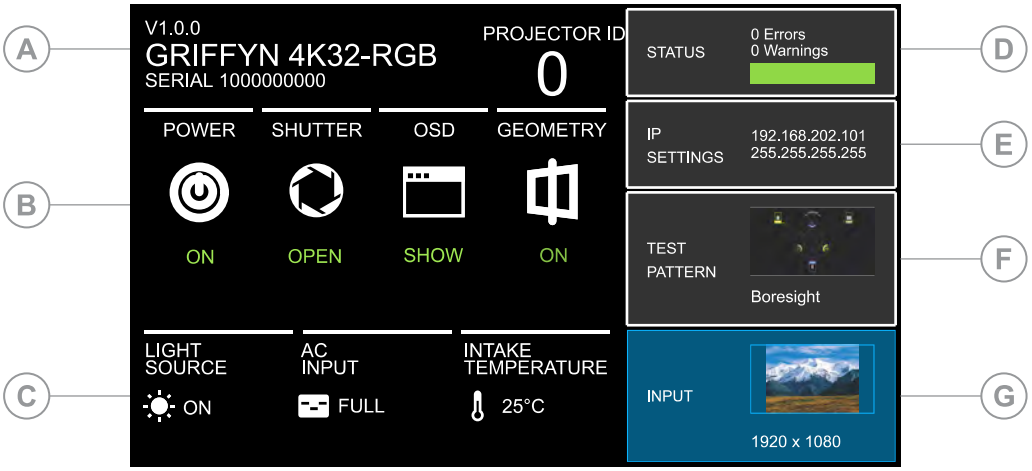
Identify the main components of the projector.



ID	Component	Description
A	Projection lens	A variety of lenses can be used with the projector. Available lenses are listed in the *Griffyn 4K32-RGB Service Guide (P/N: 020-103329-XX)*.
B	Front IR	Receives transmissions from the IR remote.
C	Service door	Provides access to the fold mirror, optical zoom/focus, and DMD convergence adjustments as well as the tools for Christie qualified technicians.
D	Display panel	Displays the projector menus and status.
E	Keypad interface	Controls the projector.
F	Communication and input panel	Connects media sources to the Video Input panel.
G	AC input	For use with projector power cord.
H	Power on/off switch	Switch to power the projector on or off.
I	Rear IR	Receives transmissions from the IR remote.
J	LED and shutter LED status indicator	Indicates power status and shutter status.
K	Mounting and rigging holes	M12 x 1.75 holes for projector feet installation and for mounting and rigging points. Four holes located on the top, and four located on the bottom.
L	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

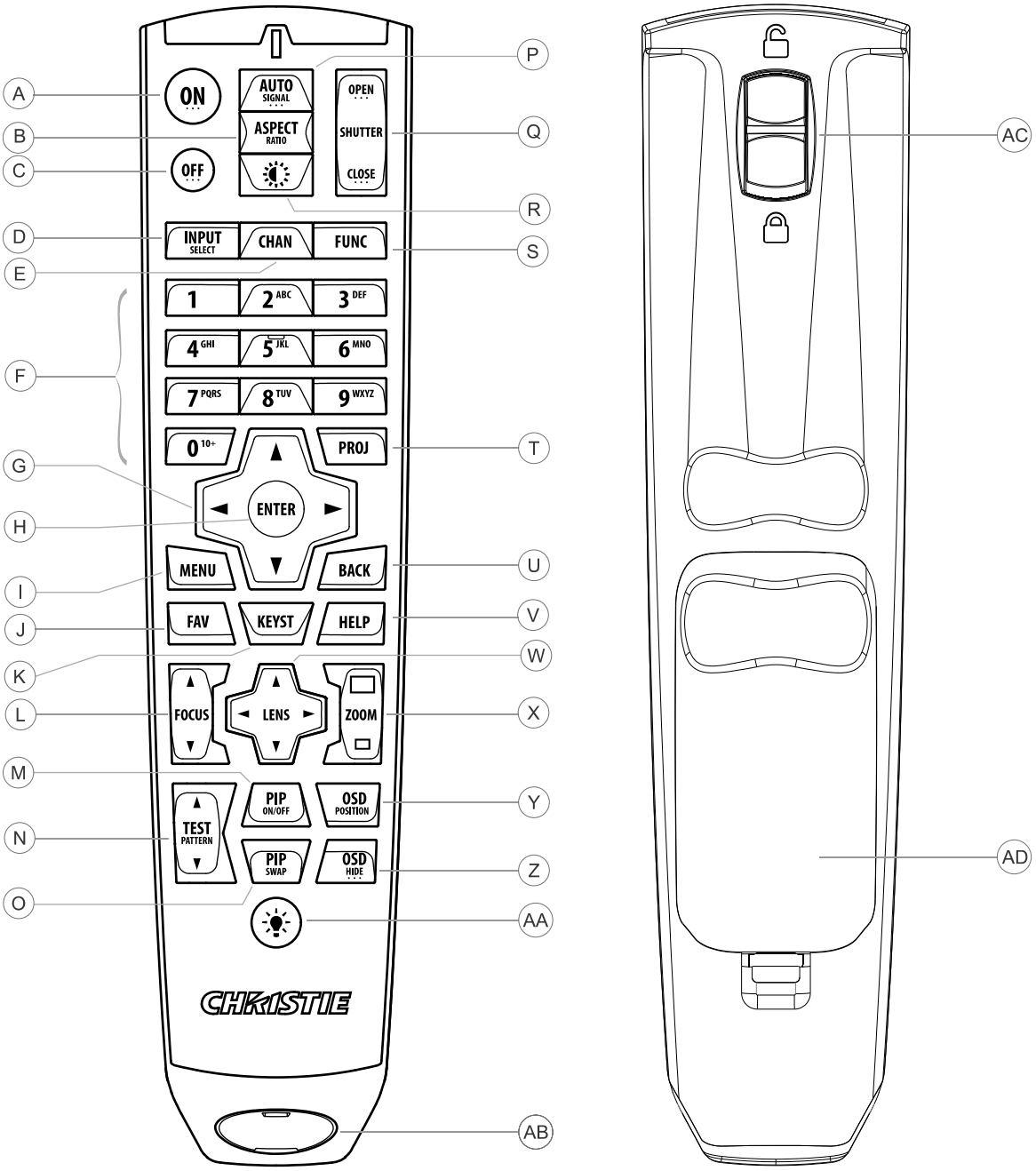
Identify the main components of the display panel (also known as the home page).



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 remote keypad

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



Button	Description
A	Powers on the projector light source.
B	Opens the aspect ratio dialog.

Button	Description
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.
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.

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.

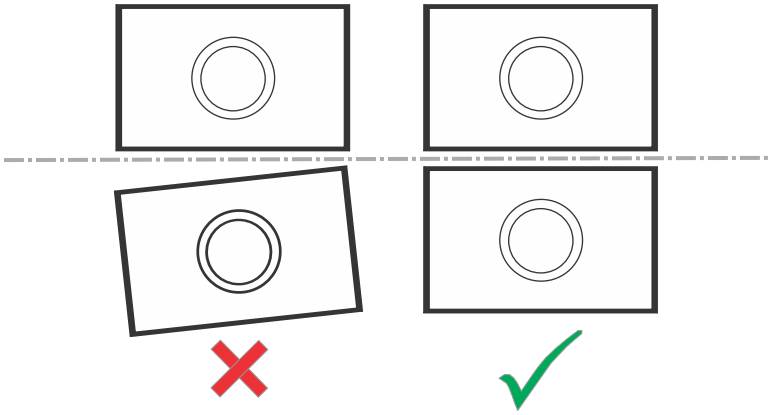
Lifting and positioning the projector

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 two projectors in landscape orientation.

1. If stacking the projector, ensure the bottom projector is level by adjusting the roll of the lens axis to ensure the stability of the stack.

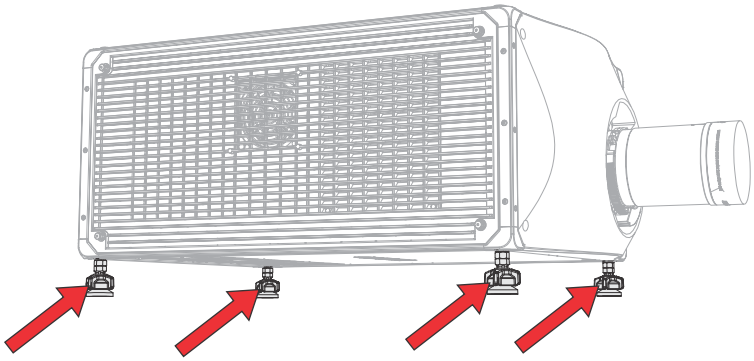


2. Position the projector so it is centered and parallel with the screen. If space is limited, aim the projector slightly off-center and use lens offset to center the image on the screen.

Leveling the projector

Use the projector feet to level the projector.

1. 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.



The projector feet are removable and can be moved to the top of the projector to run in an inverted orientation.

2. Once the required adjustment is made, using a wrench, tighten the lock nut against the bottom of the projector.

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: • Light source is off and video electronics are booting up. • Light source is off. Video electronics and light source is cooling down.
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.

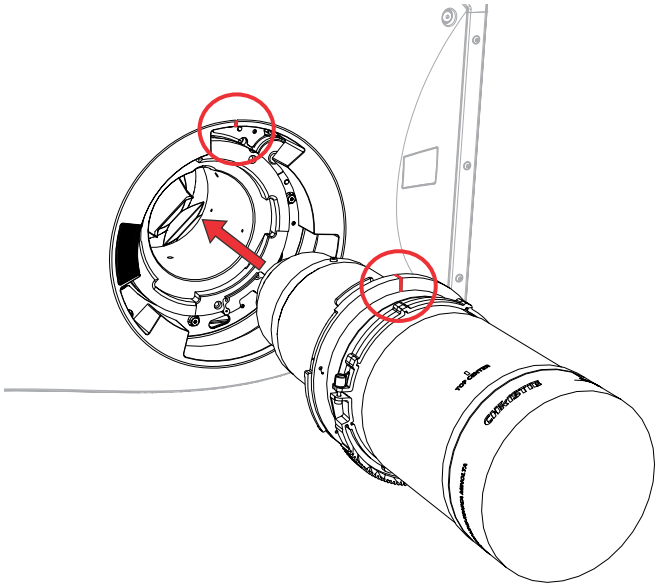
Installing the projector lens

Only use lenses designed for Griffyn 4K32-RGB projectors. Installing a lens not designed for Griffyn 4K32-RGB, results in a warning that the lens is not present.

1. Remove the lens caps from the lens.

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

2. Align the guides on the front cover and the lens marked by a red line.

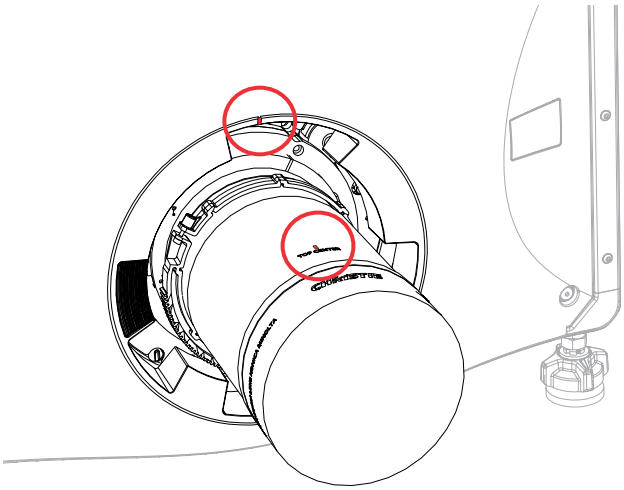


3. Insert the lens into the projector and turn it clockwise until you hear two clicks.

   The first click indicates the safety lock mechanism has been engaged.

4. Continue to turn the lens clockwise until you hear a second click.

   The second click indicates the lens is fully locked in position. The top center label should face up and be aligned to the lens guide on the front cover.



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.

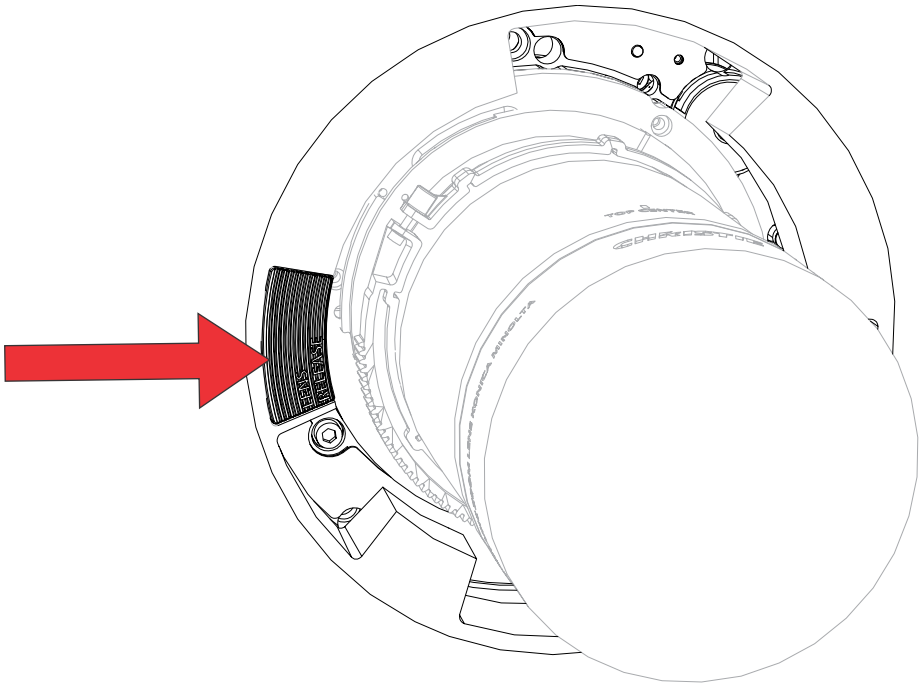
To calibrate the lens:

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

Removing the projection lens

Use the correct method of removing the lens.

1. Push in and hold the lens release button.



2. Turn the lens counterclockwise until the lens guides are aligned.
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.

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

- Once the lens removal has begun the safety retention features of the lens are defeated. To re-engage the safety lock mechanism, the lens must be removed and re-inserted, or fully rotated clockwise until a click is heard.
- Packaging tape is required to ensure safe shipment of the projection lens to restrain the zoom ring from rotating during shipping.

Installing the ultra short throw projector lens

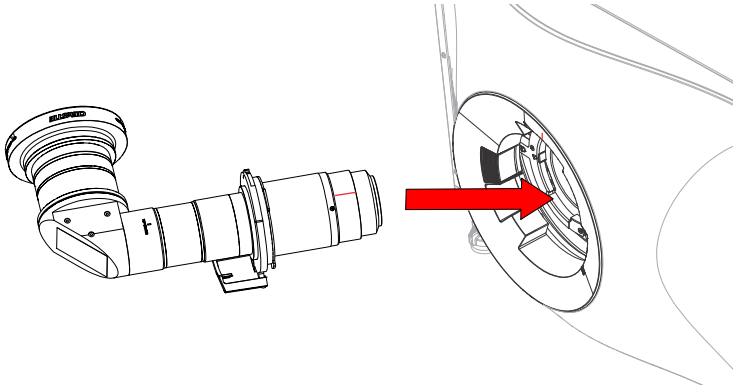
Learn how to install the ultra short throw projection lens.

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

1. Switch to the ultra short throw lens keep-out area.
   a) Select **MENU** > **Configuration** > **Lens Settings**.
   b) Select **Enable UST Lens (0.38:1)**.
   c) To enable the ultra short throw lens keep-out area, select **Enter**.

   Not switching to this keep-out area risks damaging the projector when the ultra short throw lens is installed.
2. Remove the lens caps from the lens.
3. Align both the guide on the front cover and the lens marked by a red line, and the insert plates on the lens.
4. Insert the lens into the projector and turn it clockwise until it is locked in place.

   Make sure the lens is supported near the front element.



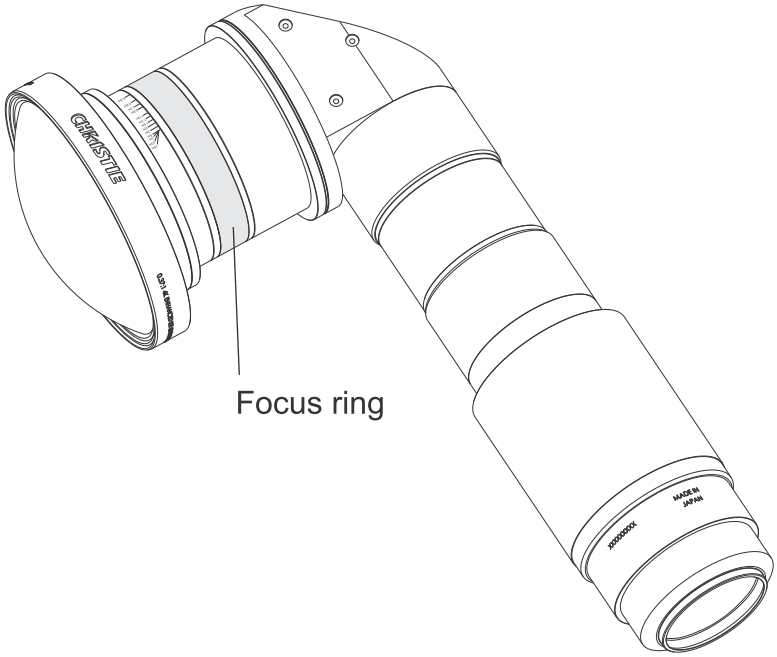
Aligning and focusing the image (ultra short throw lens)

After installing the lens, align and focus the image.

The method for performing the steps below may vary depending on projector model. For detailed information, refer to the user documentation for your product.

1. If required, power on the projector.
2. Perform a lens calibration.
3. To align the image, position the projector and adjust offsets.

4. Adjust boresight.
5. Adjust the center focus of the image by using the Focus feature on the projector.
6. Manually adjust the corner focus of the image using the focus ring on the lens.



7. To fine tune the focus, repeat steps 5 and 6 until optimum focus is achieved.

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**.

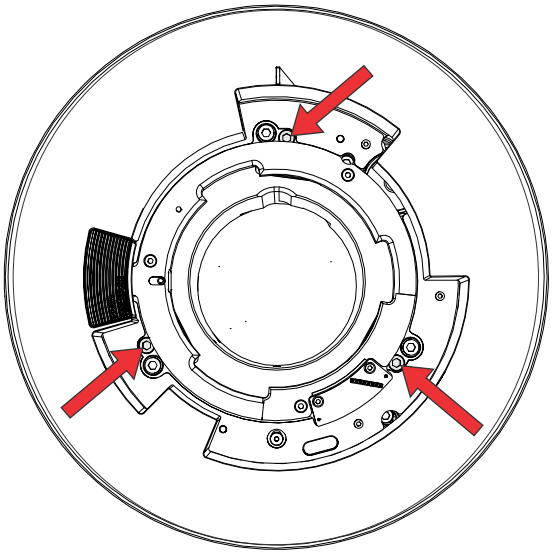
Adjusting boresight

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

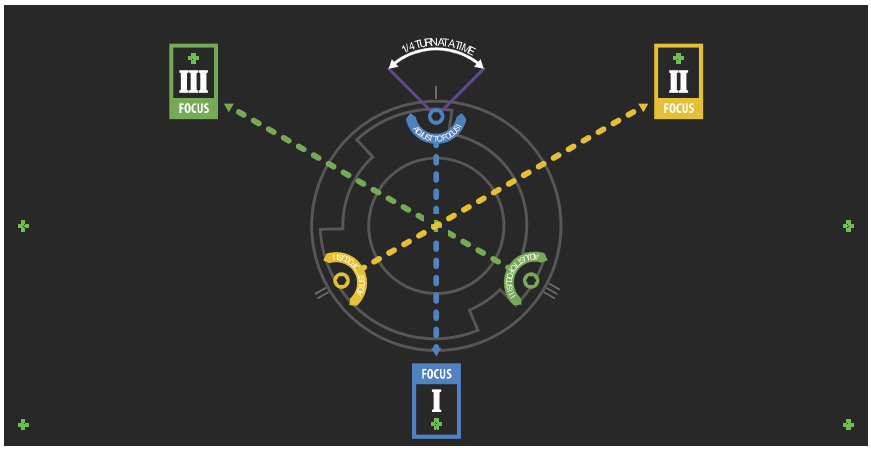
Caution! If not avoided, the following could result in minor or moderate injury.

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

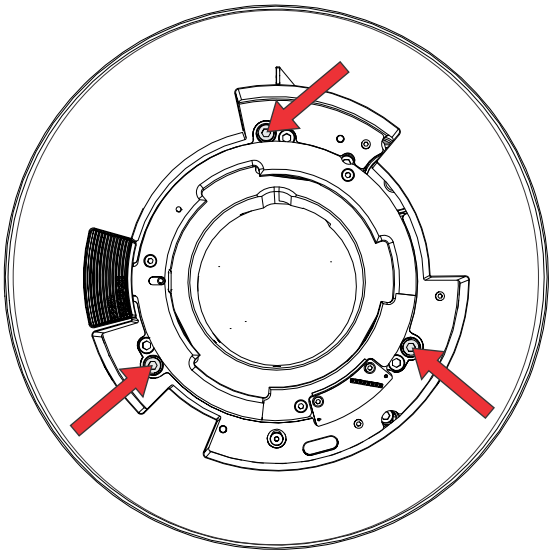
1. Close the shutter on the projector.
2. Unlock the three lens mount stabilization screws.



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.

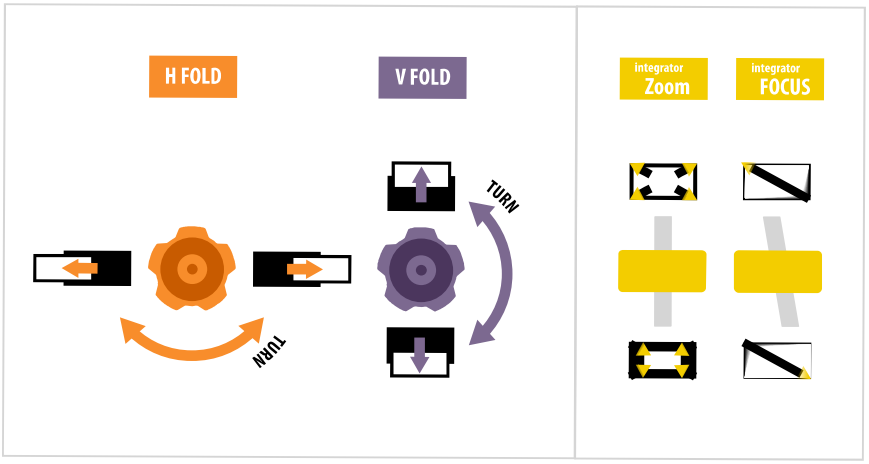


6. To focus the right boresight guide, adjust the green boresight screw.
7. To focus the left boresight guide, adjust the yellow boresight screw.
8. To continue to refine the focus, repeat steps 5 to 7.
9. Before adjusting the stabilization screws, close the shutter.
10. To maintain the adjustments, 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.

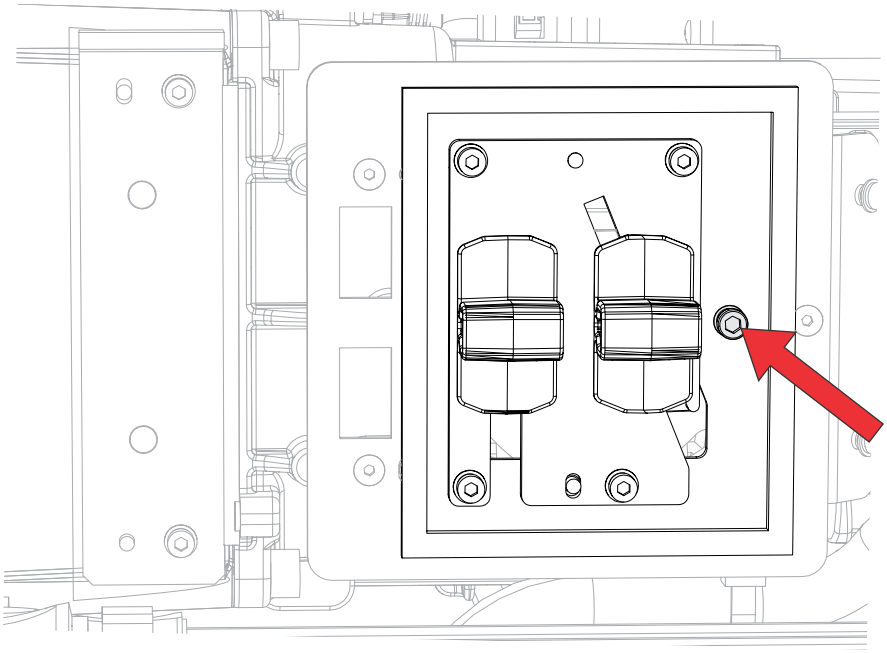
Optimizing the integrator zoom and focus

1. From the Test Pattern menu, select the **Integrator Rod** test pattern.



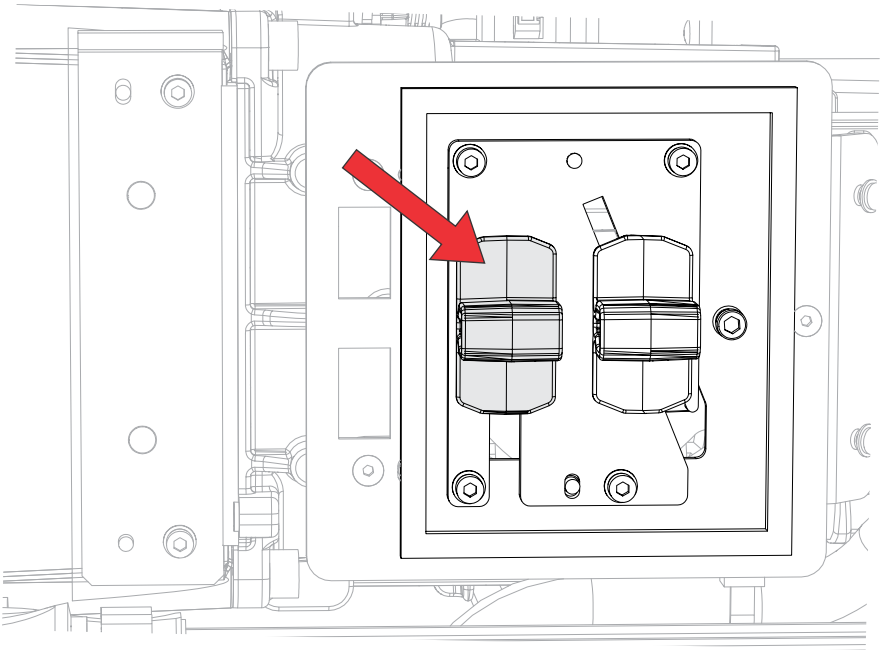
2. Open the Service door on the side of the projector.
3. Remove the zoom and focus cover and rotate it out of the way.

4. Unlock the Zoom and Focus paddles.



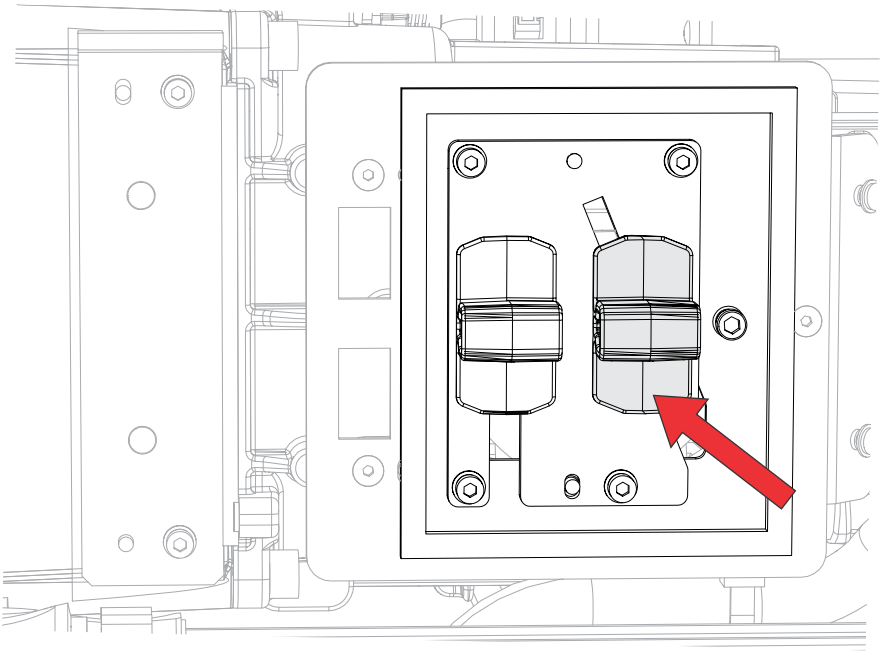
5. Adjust the magnification using the Zoom paddle and following the Integrator Rod test pattern as a guide.

   Make sure you do not see any corners.



6. Adjust the focus using the Focus paddle.

   Adjust focus to reduce blurry edges and shadows at the corners of the image.



7. To continue to refine the zoom and focus, repeat steps 4 and 5.
8. When complete, lock the Zoom and Focus paddles and re-install the zoom and focus cover.

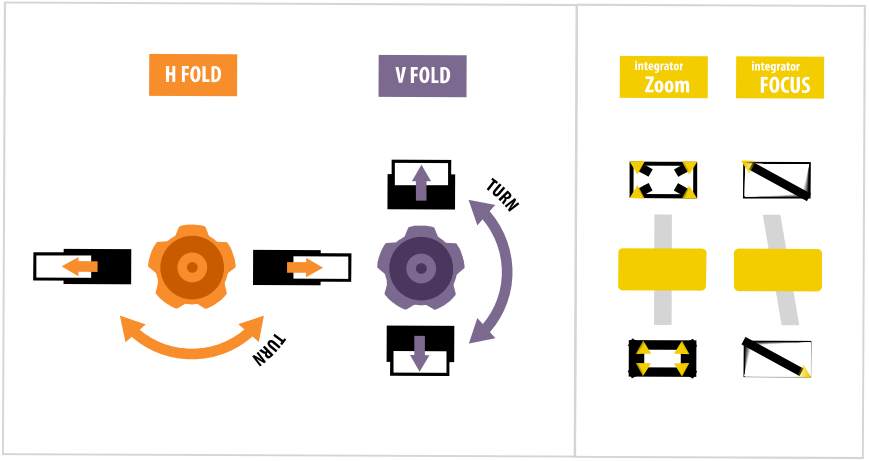
Adjusting the fold mirror

Fold mirror adjustment must be completed by trained personnel.

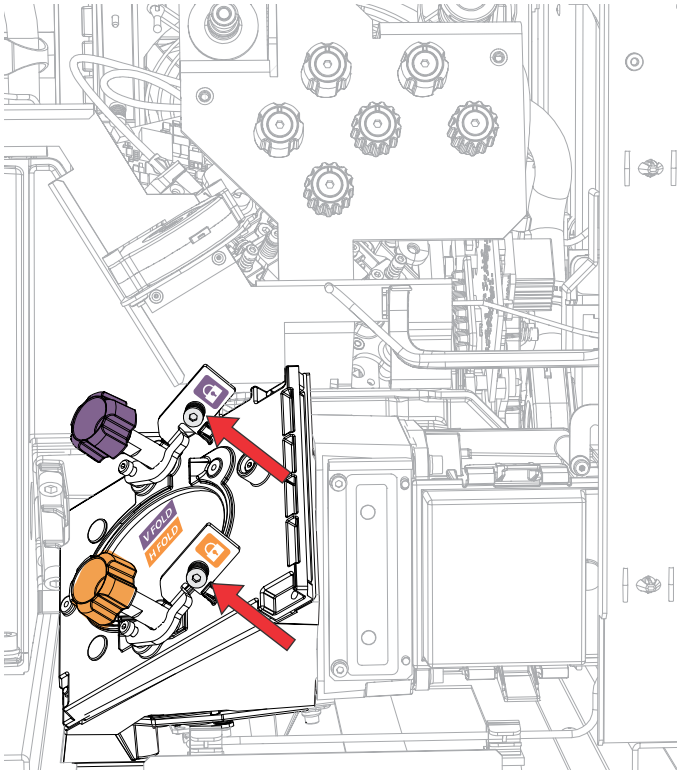
Notice. If not avoided, the following could result in property damage.

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

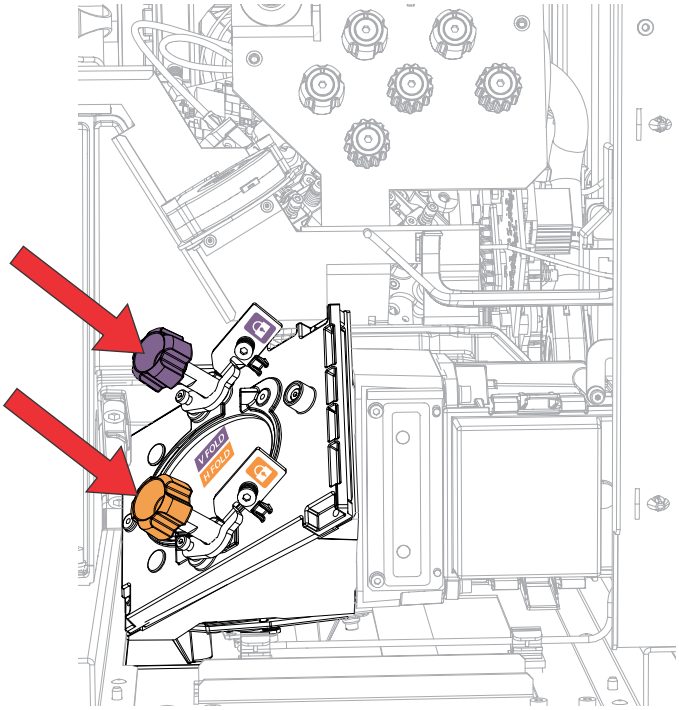
1. Set the projector to minimum power.
2. From the Test Pattern menu, select the **Integrator Rod** test pattern.



3. Open the Service door on the side of the projector.
4. Unlock the fold mirror screws to unlock the adjustment knobs.



5. To make horizontal adjustments, use the orange knob labeled Horizontal.
6. To make vertical adjustments, use the purple knob labeled Vertical.



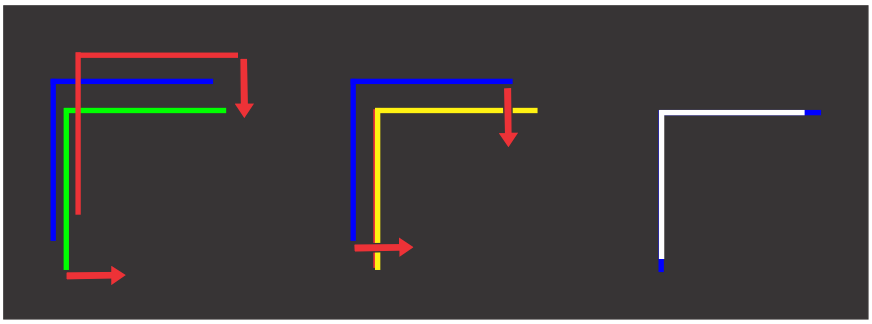
7. To continue to refine the fold mirror adjustment, repeat the horizontal and vertical adjustments.
8. Lock the fold mirror screw to lock the adjustment knobs.
9. Once satisfied with the alignment, increase the projector power.

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.

Two features can be used independently or in conjunction to adjust convergence: electronic (with the remote or through the menu) and/or mechanical.

When adjusting the convergence, you are adjusting red and green to blue for mechanical convergence. 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). The three colors should overlap to form pure white lines throughout the image and one or more poorly converged individual colors may appear adjacent to some or all of the lines.

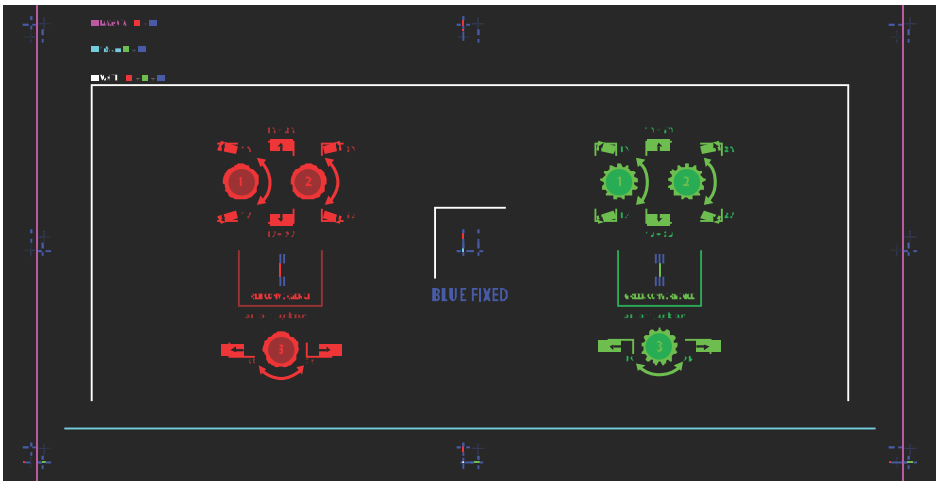


If you wear glasses with corrective lenses when performing this adjustment, ensure that you are viewing the test pattern on a straight angle through the optical axis of your glasses, and not from a tilted or angled perspective. This avoids a prismatic effect that can appear to shift convergence when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

Mechanically adjusting convergence

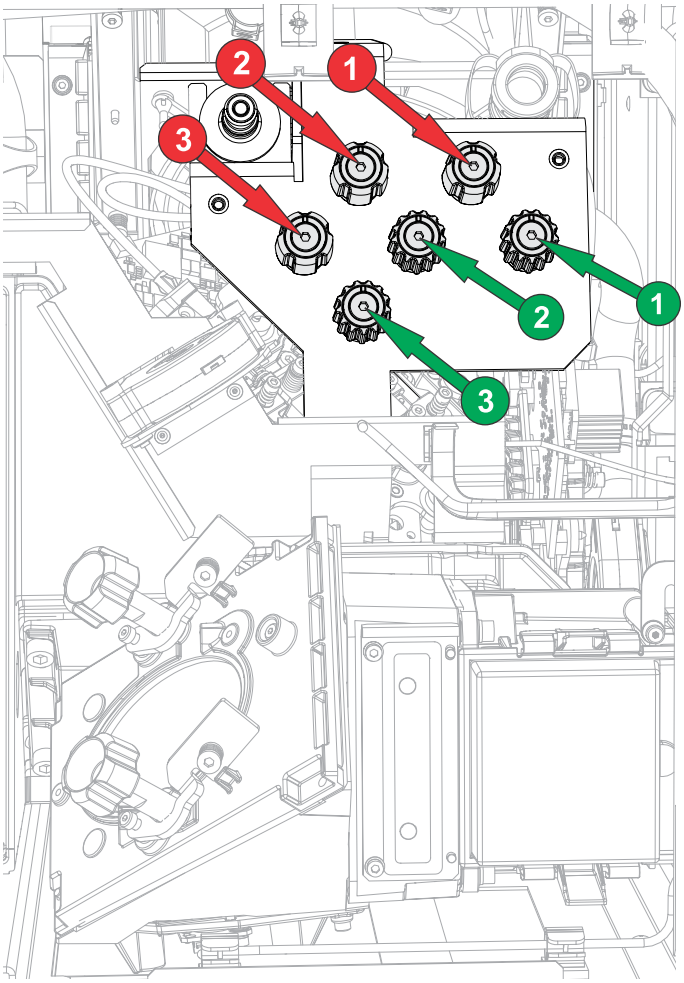
Use the convergence knobs behind the Service door to mechanically adjust convergence.

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 that the optics can reach a steady state.
2. Ensure electronic convergence has been reset to zero prior to conducting mechanical convergence.
3. From the Test Pattern menu, select the **RGB-4K-Convergence** test pattern and display it full screen.



4. Open the Service door on the side of the projector.
5. To adjust the convergence knobs, use the 3 mm driver included with the projector.

   If adjusting by hand without using the tool, pull out the convergence adjustment knobs to engage them.



6. Use the Convergence test pattern to assist with adjusting the horizontal and vertical lines.

   Horizontal adjustments are controlled by adjusting knob 3.

   Vertical convergence and rotation are controlled by adjusting knobs 1 and 2. Christie recommends rotating a single knob a maximum of a quarter rotation before adjusting the second knob a quarter rotation. For example, if using one hand, turn the left knob a quarter rotation and then the right knob a quarter rotation, and so on. Adjusting a single knob for vertical or rotational adjustment to an extreme before adjusting the second knob may result in the convergence mechanism binding.

   For the best stability, Christie recommends setting convergence while rotating the knobs in a clockwise direction. This may require first adjusting convergence by turning the knobs counter-clockwise, and finalizing the convergence with a clockwise approach. This applies to all knobs.

7. When complete, push in all the convergence adjustment knobs to disengage them.

Electronically adjusting convergence with the remote

Use the electronic convergence feature with the remote to adjust convergence. It can be used in addition to or instead of mechanical DMD convergence. When used in addition to mechanical DMD convergence, Christie recommends completing mechanical convergence prior to making electronic adjustments.

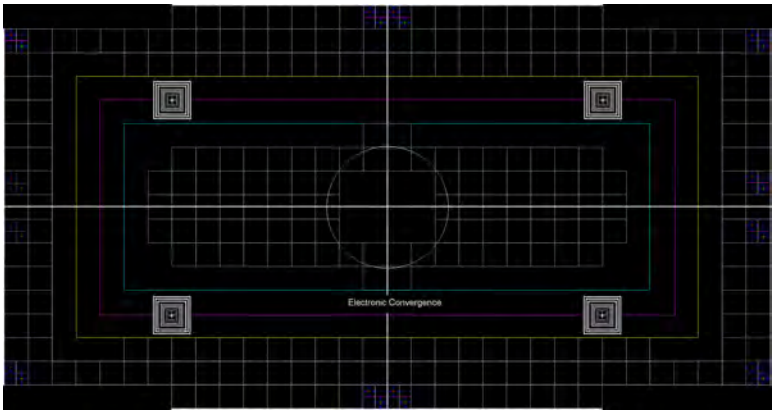
When using the remote to do electronic convergence, the following functionality is not available:

- 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.

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. To save the convergence, on the remote press **Test Pattern** and select **Save**.

10. If the corner adjustment is not what you want, to start over reset the electronic convergence:

    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**.

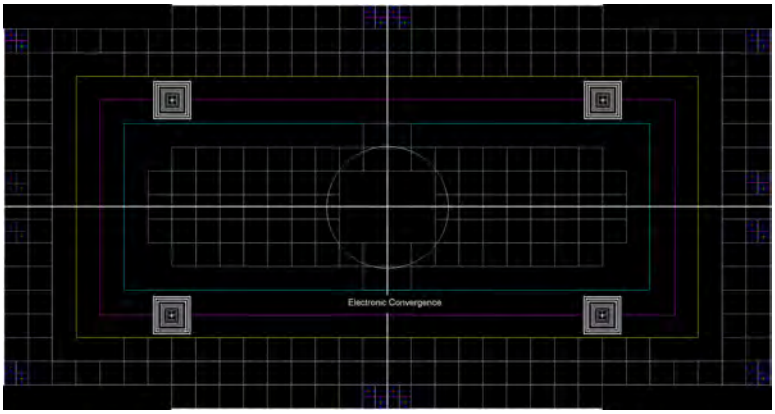
Electronically adjusting convergence through the menu

Use the electronic convergence feature in the menu to adjust convergence. It can be used in addition to or instead of mechanical DMD convergence. When used in addition to mechanical DMD convergence, Christie recommends completing mechanical convergence prior to making electronic adjustments.

If warping with Christie Twist or Mystique, adjust the convergence mechanically. Do not use the electronic convergence feature.

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. From the Test Pattern menu, select the **E-Convergence** test pattern and display it full screen.

   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. To enable electronics convergence, select **MENU** > **Admin** > **Service** > **Convergence**.
4. To show the adjustment locations, select **Show Convergence Sprite**.

   Only one adjustment position can be selected at a time.
5. From the Corner list, select the corner you want to adjust first.

   By default the top-left position is selected.
6. To select the color for adjustment, select **Color** and select the appropriate color from the list.

   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.
7. Modify the red, green, and/or blue convergence for the selected sprite both vertically and horizontally by adjusting the sliders so all three color components are overlapped (sprite is displayed in white).

   You cannot move the selected sprite outside the resolution range.
8. To adjust remaining locations, repeat steps 5 to 7.
9. To apply and store the new settings, select **Convergence Enable**.

   If already selected, deselect and reselect **Convergence Enable**.
10. To reset the electronic convergence, select **Reset**.

11. At the confirmation prompt, select **Reset** and then apply and store the new settings using step 10.

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 28).
   - 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.

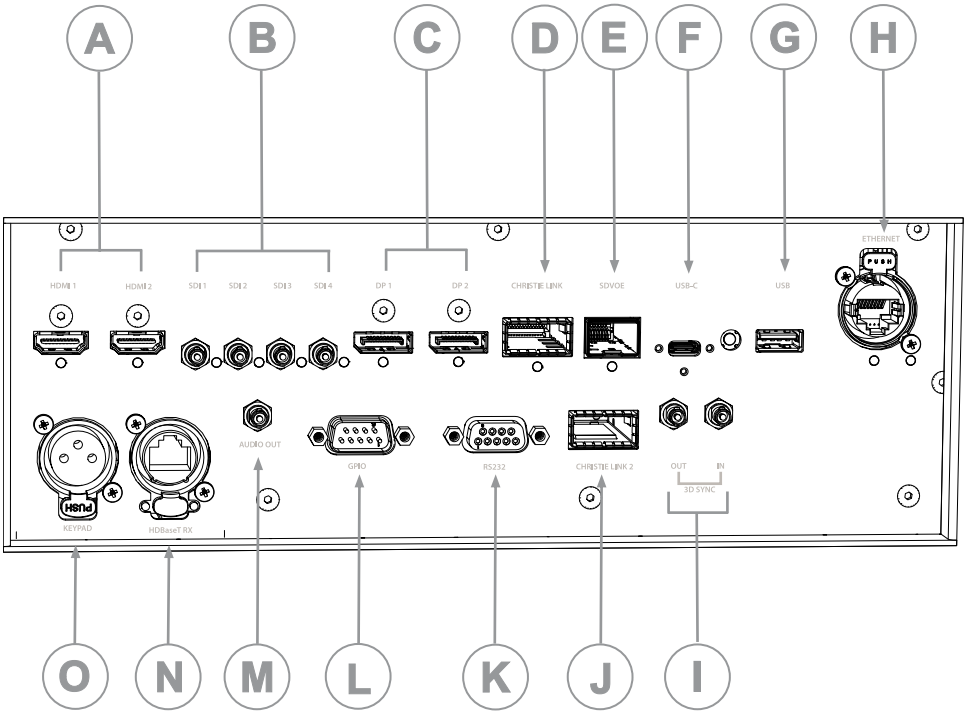
Connecting devices and establishing communication

Learn how to connect external devices to the projector.

Communication and input ports are located on the projector side input panel (operator side).

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'$_B$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	Y'C'$_B$C'$_R$/RGB/4:4:4 Y'C$_B$C$_R$/4:2:2	8/10/12bpc
	3840x2160	1	3840	2160	50, 60	Y'C'$_B$C'$_R$/RGB/4:4:4	8bpc
	3840x2160	1	3840	2160	50, 60	Y'C'$_B$C'$_R$/4:2:2	8/10/12bpc
	4096x2160	1	4096	2160	24, 25, 30	Y'C'$_B$C'$_R$/RGB/4:4:4 Y'C$_B$C$_R$/4:2:2	8/10/12bpc
	4096x2160	1	4096	2160	50, 60	Y'C'$_B$C'$_R$/RGB/4:4:4	8bpc
	4096x2160	1	4096	2160	50, 60	Y'C'$_B$C'$_R$/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'$_B$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)

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'$_B$C'$_R$/RGB/ 4:4:4 Y'C$_B$C$_R$/4:2:2	8/10/12bpc	Frame-packing/ top-and-bottom
	1920x1080	1	1920	1080	24, 25, 30, 50, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4 Y'C$_B$C$_R$/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'$_B$C'$_R$/RGB/4:4:4 Y'C$_B$C$_R$/4:2:2	8/10/12bpc
	1920x1080	2	1920	1080	24, 25, 30, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4/4:2:2	8/10/12bpc
	2048x1080	2	2048	1080	24, 25, 30, 60	Y'C'$_B$C'$_R$/RGB/4:4:4 Y'C$_B$C$_R$/4:2:2	8/10/12bpc
4K	3840x2160	2	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/RGB/4:4:4	8/10bpc
	3840x2160	2	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/4:2:2	8/10/12bpc
	3840x2160	2	3840	2160	60	Y'C'$_B$C'$_R$/RGB/4:4:4	8bpc

	Format	Cables	Hres	Vres	Frame rate (Hz)	Sampling	Bit-depth
	3840x2160	2	3840	2160	60	Y'C'$_B$C'$_R$/4:2:2	8/10/12bpc
	4096x2160	2	4096	2160	24, 25, 30	Y'C'$_B$C'$_R$/RGB/4:4:4	8/10bpc
	4096x2160	2	4096	2160	24, 25, 30	Y'C'$_B$C'$_R$4:2:2	8/10/12bpc
	4096x2160	2	4096	2160	60	Y'C'$_B$C'$_R$/RGB/4:4:4	8bpc
	4096x2160	2	4096	2160	60	Y'C'$_B$C'$_R$/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'$_B$C'$_R$/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'$_B$C'$_R$/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'$_B$C'$_R$/4:2:2	10bpc	HD 720p Y'C'$_B$C'$_R$ component at 1.5Gb/s (ST 292-1)
	1280x720	1	1280	720	24, 25, 30, 50, 60	Y'C'$_B$C'$_R$/ 4:4:4(4)	10bpc	HD 720p Y'C'$_B$C'$_R$/RGB component at 3.0Gb/s (ST 425-1) level A
	1920x1080	1	1920	1080	25, 30	Y'C'$_B$C'$_R$/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'$_B$C'$_R$/4:2:2	10bpc	HD 1080p component at 1.5Gb/s (ST 292-1)
	1920x1080	1	1920	1080	48, 50, 60	Y'C'$_B$C'$_R$/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'$_B$C'$_R$/RGB/ 4:4:4(4)	12bpc	HD 1080p Y'C'$_B$C'$_R$/RGB component at 3.0Gb/s (ST 425-1) level A
	1920x1080	1	1920	1080	24, 25, 30	Y'C'$_B$C'$_R$/ 4:2:2(4)	12bpc	HD 1080p Y'C'$_B$C'$_R$ component at 3.0Gb/s (ST 425-1) level A
	1920x1080	1	1920	1080	48, 50, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4(4)	10bpc	HD 1080p Y'C'$_B$C'$_R$/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'$_B$C'$_R$/RGB/ 4:4:4	12bpc	HD 1080p Y'C'$_B$C'$_R$/RGB component at 6.0Gb/s (ST 2081-10) mode 2 structure III
4K	3840x2160	1	3840	2160	48, 50, 60	Y'C'$_B$C'$_R$/4:2:2	10bpc	2160p Y'C'$_B$C'$_R$ component at 6.0Gb/s (ST 2081-10) mode 1 structure 1
	3840x2160	1	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/RGB/ 4:4:4(4)	10bpc	2160p Y'C'$_B$C'$_R$/RGB component at 12.0Gb/s (ST 2082-10) mode 1 structure 2
	3840x2160	1	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/RGB/ 4:4:4	12bpc	2160p Y'C'$_B$C'$_R$/RGB component at 12.0Gb/s (ST 2082-10) mode 1 structure 3
	3840x2160	1	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/ 4:2:2(4)	12bpc	2160p Y'C'$_B$C'$_R$ 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 input1, 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'$_B$C'$_R$/4:2:2	10bpc	HD 720p Y'C'$_B$C'$_R$ component at 1.5Gb/s (ST 292-1)
	1280x720	2	1280	720	24, 25, 30, 50, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4(4)	10bpc	HD 720p Y'C'$_B$C'$_R$/RGB component at 3.0Gb/s (ST 425-1) level A
	1920x1080	2	1920	1080	24, 25, 30	Y'C'$_B$C'$_R$/4:2:2	10bpc	HD 1080p component at 1.5Gb/s (ST 292-1)
	1920x1080	2	1920	1080	48, 50, 60	Y'C'$_B$C'$_R$/4:2:2	10bpc	HD1080p component at 3.0Gb/s (ST 425-1) level A
	1920x1080	2	1920	1080	24, 25, 30	Y'C'$_B$C'$_R$/RGB/ 4:4:4(4)	12bpc	HD 1080p Y'C'$_B$C'$_R$/RGB component at 3.0Gb/s (ST 425-1) level A
	1920x1080	2	1920	1080	24, 25, 30	Y'C'$_B$C'$_R$/ 4:2:2(4)	12bpc	HD 1080p Y'C'$_B$C'$_R$ component at 3.0Gb/s (ST 425-1) level A
	1920x1080	2	1920	1080	48, 50, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4(4)	10bpc	HD 1080p Y'C'$_B$C'$_R$/RGB component at 6.0Gb/s (ST 2081-10) mode 3 structure II
	1920x1080	2	1920	1080	48, 50, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4	12bpc	HD 1080p Y'C'$_B$C'$_R$/RGB component at 6.0Gb/s (ST 2081-10) mode 2 structure III
	1920x1080	2	1920	1080	48, 50, 60	Y'C'$_B$C'$_R$/ 4:2:2(4)	12bpc	HD 1080p Y'C'$_B$C'$_R$/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'$_B$C'$_R$/4:2:2	10bpc	2160p Y'C'$_B$C'$_R$ component at 6.0Gb/s (ST 2081-10) mode 1 structure 1
	3840x2160	2	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/RGB/ 4:4:4(4)	10bpc	2160p Y'C'$_B$C'$_R$/RGB component at 12.0Gb/s (ST 2082-10) mode 1 structure 2
	3840x2160	2	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/RGB/ 4:4:4	12bpc	2160p Y'C'$_B$C'$_R$/RGB component at 12.0Gb/s (ST 2082-10) mode 1 structure 3
	3840x2160	2	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/ 4:2:2(4)	12bpc	2160p Y'C'$_B$C'$_R$ 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'$_B$C'$_R$/RGB/ 4:4:4(4)	10bpc	Y'C'$_B$C'$_R$/RGB component at dual-link 3Gb/s (ST 425-3) level A structure II
	1920x1080	2	1920	1080	48, 50, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4	12bpc	Y'C'$_B$C'$_R$/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'$_B$C'$_R$/4:2:2	12bpc	Y'C'$_B$C'$_R$ component at dual-link 3Gb/s (ST 425-3) level A structure IV
	1920x1080	2	1920	1080	48, 50, 60	Y'C'$_B$C'$_R$/4:2:2:4	12bpc	Y'C'$_B$C'$_R$ component at dual-link 3Gb/s (ST 425-3) level A structure IV
4K	3840x2160	2	3840	2160	48, 50, 60	Y'C'$_B$C'$_R$/4:2:2	10bpc	Y'C'$_B$C'$_R$ component at dual-link 6Gb/s (ST 2081-11) mode 1
	3840x2160	2	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/RGB/ 4:4:4(4)	10bpc	Y'C'$_B$C'$_R$ /RGB component at dual-link 6Gb/s (ST 2081-11) mode 1
	3840x2160	2	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/RGB/ 4:4:4	12bpc	Y'C'$_B$C'$_R$/RGB component at dual-link 6Gb/s (ST 2081-11) Mode 1
	3840x2160	2	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/4:2:2	12bpc	Y'C'$_B$C'$_R$ component at dual-link 6Gb/s (ST 2081-11) mode 1
	3840x2160	2	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/4:2:2:4	12bpc	Y'C'$_B$C'$_R$ 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'$_B$C'$_R$/RGB/ 4:4:4(4)	10bpc	Y'C'$_B$C'$_R$/RGB component at quad-link 3Gb/s (ST 425-5) level A structure 2
	3840x2160	4	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/RGB/ 4:4:4	12bpc	Y'C'$_B$C'$_R$/RGB component at quad-link 3Gb/s (ST 425-5) level A structure 3
	3840x2160	4	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/ 4:2:2(4)	12bpc	Y'C'$_B$C'$_R$ component at quad-link 3Gb/s (ST 425-5) level A structure 4
	3840x2160	4	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/4:2:2	12bpc	Y'C'$_B$C'$_R$ component at quad-link 3Gb/s (ST 425-5) level A structure 4
	3840x2160	4	3840	2160	48, 50, 60	Y'C$_B$C$_R$/RGB/ 4:4:4(4)	10bpc	Y'C'$_B$C'$_R$/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$_B$C$_R$/RGB/ 4:4:4	12bpc	Y'C'$_B$C'$_R$/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'$_B$C'$_R$/4:2:2	10bpc	Y'C'$_B$C'$_R$ 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'$_B$C'$_R$/RGB/ 4:4:4(4)	10bpc	Y'C'$_B$C'$_R$/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'$_B$C'$_R$/RGB/ 4:4:4	12bpc	Y'C'$_B$C'$_R$/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'$_B$C'$_R$/4:2:2:4	12bpc	Y'C'$_B$C'$_R$ 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'$_B$C'$_R$/4:2:2	12bpc	Y'C'$_B$C'$_R$ 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'$_B$C'$_R$/RGB/ 4:4:4(4)	10bpc	Y'C'$_B$C'$_R$/RGB component at quad-link 6Gb/s (ST 2081) mode 2 structure II

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	$Y'C'_BC'_R$/RGB/ 4:4:4	8/10/12bpc
	1920x1080	1	1920	1080	24, 25, 30, 50, 60, 120	$Y'C'_BC'_R$/RGB/ 4:4:4	8/10/12bpc
	2048x1080	1	2048	1080	24, 25, 30, 50, 60, 120	$Y'C'_BC'_R$/RGB/ 4:4:4	8/10/12bpc
4K	3840x2160	1	3840	2160	24, 25, 30, 50, 60	$Y'C'_BC'_R$/RGB/ 4:4:4	8/10bpc
	4096x2160	1	4096	2160	24, 25, 30, 50, 60	$Y'C'_BC'_R$/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	$Y'C'_BC'_R$/RGB/ 4:4:4	8/10/12bpc
	1920x1080	1	1920	1080	25, 30, 60	$Y'C'_BC'_R$/RGB/ 4:4:4	8/10/12bpc
	2048x1080	1	2048	1080	25, 30, 60	$Y'C'_BC'_R$/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'$_B$C'$_R$/RGB/ 4:4:4	8/10bpc
	4096x2160	1	4096	2160	25, 30	Y'C'$_B$C'$_R$/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'$_B$C'$_R$/RGB/ 4:4:4	8/10/12bpc
	1920x1080	2	1920	1080	24, 25, 30, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4	8/10/12bpc
	2048x1080	2	2048	1080	24, 25, 30, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4	8/10/12bpc
4K	3840x2160	2	3840	2160	24, 25, 30, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4	8/10bpc
	4096x2160	2	4096	2160	24, 25, 30, 60	Y'C'$_B$C'$_R$/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'$_B$C'$_R$/RGB/4:4:4	8/10bpc
	2048x2160 (per input)	2	4096	2160	120	Y'C'$_B$C'$_R$/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	$Y'C'_BC'_R$/RGB/4:4:4	8/10bpc
	2048x2160 (per input)	2	4096	2160	60	$Y'C'_BC'_R$/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'$_B$C'$_R$/RGB/ 4:4:4 Y'C'bC'r/4:2:2	8/10/12bpc	—
	1920x1080i	1	1920	1080	50, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4 Y'C'bC'r/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'$_B$C'$_R$/RGB/ 4:4:4 Y'C'bC'r/4:2:2	8/10/12bpc	—
	2048x1080	1	2048	1080	24, 25, 30, 50, 60, 100, 120	Y'C'$_B$C'$_R$/RGB/ 4:4:4 Y'C'bC'r/4:2:2	8/10/12bpc	—
4K	3840x2160	1	3840	2160	24, 25, 30	Y'C'$_B$C'$_R$/RGB/ 4:4:4 Y'C'bC'r/4:2:2	8/10bpc	—
	3840x2160	1	3840	2160	24, 25, 30	Y'C'bC'r/4:2:2	12bpc	—
	3840x2160	1	3840	2160	50, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4 Y'C'bC'r/4:2:2	8/10bpc	—
	3840x2160	1	3840	2160	50, 60	Y'C'bC'r/4:2:2	12bpc	—
	4096x2160	1	4096	2160	24, 25, 30	Y'C'$_B$C'$_R$/RGB/ 4:4:4 Y'C'bC'r/4:2:2	8/10bpc	—
	4096x2160	1	4096	2160	24, 25, 30	Y'C'bC'r/4:2:2	12bpc	—
	4096x2160	1	4096	2160	50, 60	Y'C'$_B$C'$_R$/RGB/ 4:4:4 Y'C'bC'r/4:2:2	8/10bpc	—
	4096x2160	1	4096	2160	50, 60	Y'C'bC'r/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'bC'r/RGB/ 4:4:4 Y'C'bC'r/ 4:2:2	8/10/12bpc	Frame-packing/ top-and-bottom
	1920x1080	1	1920	1080	24, 25, 30, 50, 60	Y'C'bC'r/RGB/ 4:4:4 Y'C'bC'r/ 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'bC'r/RGB/4:4:4 Y'C'bC'r/4:2:2	8/10/12bpc
	1920x1080	2	1920	1080	24, 25, 30, 60	Y'C'bC'r/RGB/4:4:4 Y'C'bC'r/4:2:2	8/10/12bpc
	2048x1080	2	2048	1080	24, 25, 30, 60	Y'C'bC'r/RGB/4:4:4 Y'C'bC'r/4:2:2	8/10/12bpc
4K	3840x2160	2	3840	2160	24, 25, 30	Y'C'bC'r/RGB/4:4:4	8/10bpc
	3840x2160	2	3840	2160	24, 25, 30	Y'C'bC'r/4:2:2	8/10/12bpc
	3840x2160	2	3840	2160	60	Y'C'bC'r/RGB/4:4:4	8/10bpc
	3840x2160	2	3840	2160	60	Y'C'bC'r/4:2:2	8/10/12bpc
	4096x2160	2	4096	2160	24, 25, 30	Y'C'bC'r/RGB/4:4:4	8/10bpc
	4096x2160	2	4096	2160	24, 25, 30	Y'C'bC'r/4:2:2	8/10/12bpc

	Format	Cables	Hres	Vres	Frame Rate (Hz)	Sampling	Bit-Depth
	4096x2160	2	4096	2160	60	Y'C'bC'r/RGB/4:4:4	8/10bpc
	4096x2160	2	4096	2160	60	Y'C'bC'r/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'bC'r/RGB/ 4:4:4	8/10bpc	Two Column mode
	2048x2160 (per input)	2	4096	2160	120	Y'C'bC'r/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'bC'r/RGB/ 4:4:4	8/10bpc	3D frame sequential Two Column mode
	2048x2160 (per input)	2	4096	2160	60	Y'C'bC'r/RGB/ 4:4:4	8/10bpc	3D frame sequential Two Column mode

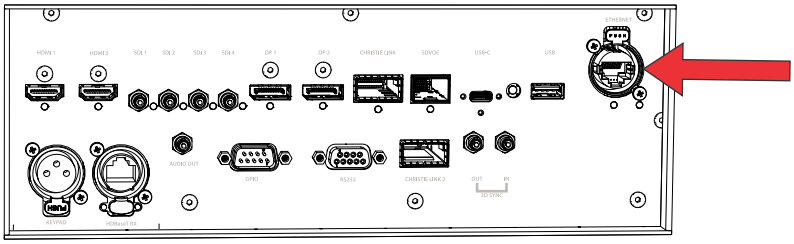
Connecting an SDVoE video source

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.



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.

Christie recommends using the Ethernet port on the Video Input panel as the HDBaseT port is limited to 100 Mb/s.

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 Griffyn 4K32-RGB through Art-Net

Griffyn 4K32-RGB supports communications through the Art-NET using the Ethernet connector.

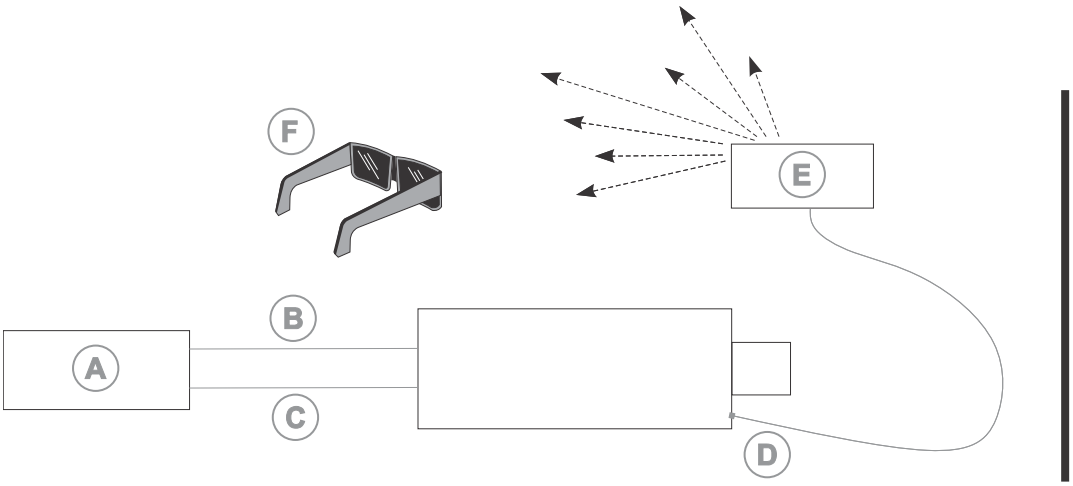
1. Select **MENU** > **Communications** > **Art-Net Settings**.
2. Verify the **Enable Art-Net** option is disabled.

   Disabling Art-Net before configuring it ensures Griffyn 4K32-RGB 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.

Active stereo 3D configuration

Use the following diagram to understand a typical hardware configuration for active stereo 3D systems.

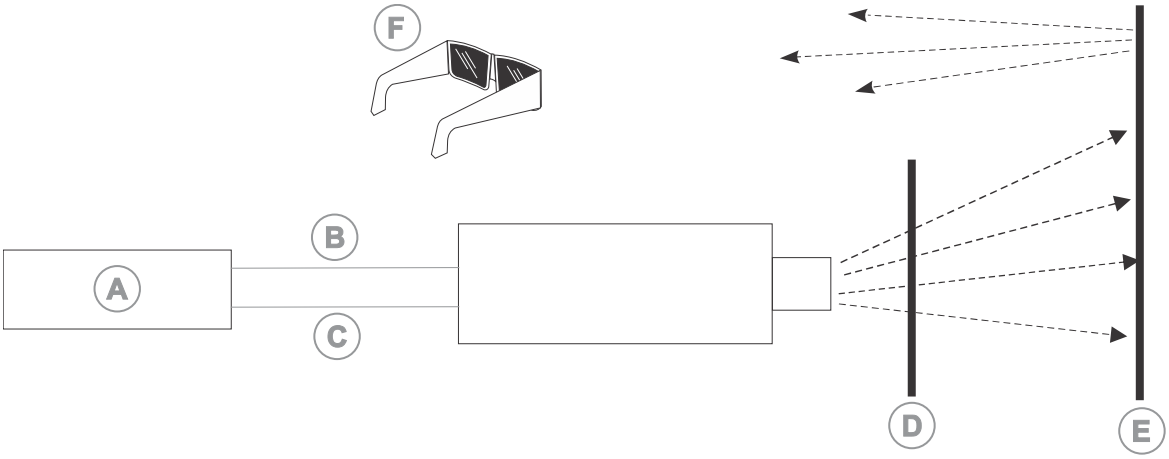


- A—Server/PC with stereo 3D-capable video sources
- B—L/R sync signal (3D-direct input only)
- C—3D direct or 3D dual-input connections
- D—3D stereo synch cable
- E—IR emitter
- F—Active glasses

In response to the 3D Sync Out signal from the projector, the IR emitter emits an infrared signal to a receiver in the active 3D shutter glasses. This synchronizes the active glasses to alternatively open and close for the active stereo 3D applications.

Passive stereo 3D configuration

Use the following diagram to understand a typical hardware configuration for passive stereo 3D systems.



- A—Server/PC with stereo 3D-capable video sources
- B—L/R sync signal (3D-direct input only)
- C—3D direct or 3D dual-input connections
- D—3D active filter cell
- E—Polarization maintaining screen
- F—Passive polarizing glasses

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	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. The direct-input 3D video stream may be supplied by a One-Port input video configuration (such as one cable supplying the entire frame).

Configuration	Description
Dual-input 3D	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. 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).

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 72).
2. *Confirm the emitter setup* (on page 72).
3. *Configure the projector for the 3D source* (on page 73).

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 68).
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 ≤ 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)

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