

CHRISTIE MYSTIQUE

Automated camera-based
alignment software

Auditoriums and lobbies

Casinos, cruise ships & hotels

Corporate spaces

Giant screens & dome theatres

Immersive experiences

Live events & performances

Museums & cultural attractions

Projection mapping

Sports venues

Theme park dark rides



CHRISTIE®



UP AND RUNNING IN NO TIME

^ 'The Wider Earth', a production by Dead Puppet Society, features stunning projections using Christie laser projectors, Pandoras Box Software and Mystique auto-alignment and calibration software. Photography by Prudence Upton.

Perfectly aligned. Day after day.

Multi-projector arrays, projection mapping and complex screen shapes and surfaces require expert image configuration, alignment, warping and blending - processes that can take hours of painstaking work.

Christie Mystique™ is an automated camera-based alignment and recalibration solution that lets you quickly install, align, calibrate and maintain multi-projector systems.

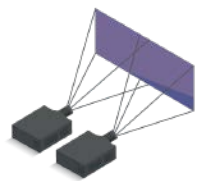


"We're thrilled to bring our creative vision to life with Christie's laser projectors fitted with Mystique auto-calibration software. The ability to seamlessly align, calibrate and maintain images from the three projectors in a matter of minutes, instead of hours, is just incredible."

Nicholas Paine, Executive Producer, Dead Puppet Society, and Creative Producer of 'The Wider Earth'.

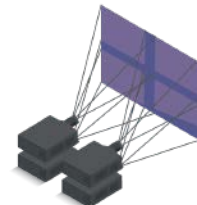
CHRISTIE OFFERS FIVE EDITIONS OF MYSTIQUE

We offer five versions of Mystique™ – and each is designed for specific screen types and applications to meet your needs.



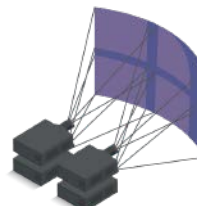
Lite Edition

- › Simple warping and blending of up to three Christie projectors on flat screens and surfaces. Exclusive to Christie projectors, Mystique Lite is a [complimentary download](#).



Essentials Edition

- › Projection stacking, warping, and blending on flat screens and surfaces.



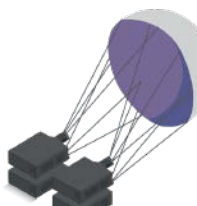
Pro Venue Edition

- › Projection stacking, warping, and blending including easy alignment on flat and cylindrical screens and surfaces such as stages, basketball courts and ice rinks.



Premium Edition

- › Projection stacking, warping, and blending on large-screen applications that require more than one camera to capture the entire screen. Screens can be flat, curved, or custom-shaped, including domes and 360-degree screens.



Large Scale Experience Edition

- › Projection stacking, warping, and blending on large-screen applications that require more than one camera to capture the entire screen. Screens or surfaces can be flat, curved, custom-shaped, or domes. Ideal for applications like theme park dark rides, flying attractions, giant screens, dome theatres, and 3D projection mapping on buildings, landmarks or objects.

COMPARE FEATURES

		Lite Edition (Complimentary download)	Essentials Edition	Pro Venue Edition	Premium Edition	Large Scale Experience Edition
Cameras, projectors, screens, support	Number of cameras	1 webcam ¹ (not supplied)	1	1	Unlimited	Unlimited
	Number of projectors	Up to 3 Christie projectors in a horizontal array ²	12 ³	Unlimited ⁴	Unlimited	Unlimited
	Supported screen shapes	Flat only	Flat only	Flat or cylindrical screens	Flat, curved and custom-shaped screens and surfaces, including domes ⁵	Same as Premium Edition, plus buildings, landmarks and objects ⁵
	Christie Pandoras Box* support	•	•	•	•	•
Recalibration features	Manual recalibration	•	•	•	•	•
	Automatic recalibration (camera-based)			•	•	•
	Automatic recalibration (screen markers)				•	•
	Christie Guardian		Optional	Optional		
Content layout modes	Mystique Operate		•	•	•	•
	Wallpaper (basic)	•	•	•	•	•
	Wallpaper (advanced)			•	•	•
	Fields of view				•	•
	Fields of view (collimated)				•	•
	Projector centric					•
Additional features	3D layout					•
	Automated color and brightness uniformity ^{6,7}		•	•		
	Background compensation ⁶		•	•		
	Alignment for surfaces with fixed markings such as sports playing surfaces or stages			•		
	Alignment for 3D projection mapping					•
	Electronic black-level blending			Optional	Optional	•
	Rear-projection support		•	•	•	•
Dual-screen mode					•	

¹ Supported webcams: Christie Intelligent Camera, Logitech C922 Pro HD Stream, Logitech c920 and Logitech c920s
² Warping and blending only. No stacking. Supported projectors: Christie Inspire Series, DWU880-GS, DWU1100-GS, DWU1400-GS, HS Series, Crimson Series, M 4K RGB Series, Griffin Series, 4K40-RGB Series, and Boxer Series.
³ Supports up to 12 projectors in a 2 high x 3 wide configuration, double-stacked
⁴ Number of projectors limited by capable resolution of the single camera
⁵ Screens include primitive shapes including flat, curved or dome shapes, or by importing a screen model. Custom screen shapes should be smooth, continuous screens
⁶ Requires Mystique Version 2.6 or greater and a single, color camera. Supported projectors: M 4K RGB Series, Griffin Series, 4K40-RGB Series, Boxer 4K30, and Mirage 304K.
⁷ The results will be limited by the lowest performing projector in the array.

SUPPORTED SCREEN TYPES

Christie Mystique™ works with screens and surfaces of all shapes and sizes.



Example of a flat screen

Flat and cylindrical screens

For flat and cylindrical screens and surfaces, Mystique Essentials and Pro Venue Editions provide easy-to-deploy, single-camera solutions to quickly warp, blend and stack projectors. With Mystique Lite and an inexpensive supported webcam, you can warp and blend up to three Christie projectors in a horizontal array on flat screens or surfaces.



Example of a dome. Photo courtesy of Great Lakes Science Center

Complex screens and dome theatres

Mystique Premium and Large Scale Experience (LSE) Editions are ideal for complex and smooth screen shapes, including wave shapes, domes, or toroidal screens. Using integrated primitive screen shapes or imported 3D models of your screen shape, Mystique can support the most complex projection layouts with any number of projectors.



Example of projection mapping onto an object

Buildings, landmarks, objects, and other surfaces

Mystique LSE Edition provides automatic, multi-camera-based recalibration for 3D projection mapping without the need for marker points. This reduces complexity and costs by saving hours of labor-intensive manual alignment and blending. LSE Edition also automatically corrects for projection drift to ensure that visual quality stays optimized. A robust tool, LSE Edition is indispensable for inexperienced and highly-skilled projectionists alike.

CAMERA SELECTION

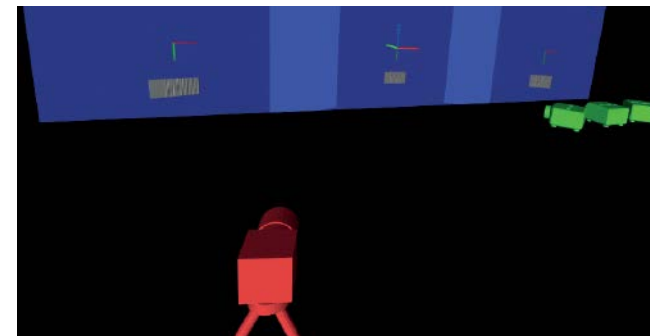
Christie Mystique¹ offers a variety of cameras and lenses that are pre-calibrated as a pair to ensure maximum image quality.

The number of cameras depends on both:

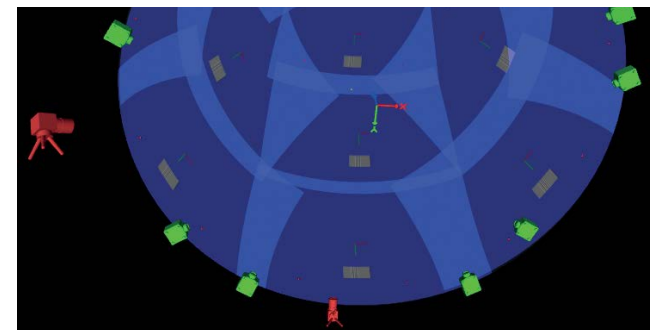
- › Where they can be placed in relation to your projection surface
- › The resolution of the screen in relation to the camera

You can use the [Mystique camera calculator](#) to estimate if a single camera and lens combination is sufficient for your screen.

And we can help you design a layout that works for multi-camera systems.



Example of a single-camera configuration



Example of a complex, three-camera configuration

Mystique camera calculator

Align content across multiple 3DLP[®] and select 1DLP[™] projectors in a fraction of the time it takes to achieve the same results manually.

The software works in conjunction with Christie Twist[™] to warp and blend projected content seamlessly in a single display. Use the calculator below to input your projection specifications and find camera options for Mystique[™] Essentials Edition and Pro Venue Edition.

Tell us about your setup

	Horizontal	
Projector Resolution	1920 px	1080
Number of Projectors	2	1
Blend Overlap	20 %	20
Screen Size	3.5 ft	2.0
Screen to Camera Distance	4.5	

Inches Feet Meters Restore Default

Applicable cameras for your setup

Result	Name	Horizontal FOV	Vertical FOV
✓	SMP GigE POE Blackfly with 8.0mm lens 156-146102-XX	53	45
✓	SMP GigE POE Blackfly with 5.0mm lens 156-114107-XX	79	69
✗	SMP GigE POE Blackfly with 16.0mm lens 156-146102-XX	28	23
✗	SMP GigE POE Blackfly with 12.0mm lens 156-147103-XX	37	31

	Horizontal
Required Field of View	43 degrees
Canvas Resolution	3456 px

¹ <https://www.christiedigital.com/help-center/tools-and-calculators/mystique-camera-calculator/>



RE-CALIBRATION FEATURES

Manual recalibration

Recalibration is applied by manually adjusting screen points within the Christie Mystique™ software and running the calibration process. Typically, this involves repositioning the corner and curvature points within the camera image.

Automatic recalibration (screen markers)

Typically required for systems that use multiple cameras or complex screens, screen marker recalibration allows you to realign your system with a single click. Screen markers – a series of LED or laser marker reference points – are embedded around the projection surface to preserve calibration in the case of slight camera or projector movements.

Automatic recalibration (camera-based)

Camera-based automatic recalibration is ideal for single-camera, flat screen applications that don't require screen markers. You can realign the system with a single click and automatically adjust for slight camera or projector movements.

Christie Guardian

Christie Guardian constantly monitors a blended projection system for any misalignment. If Guardian detects a misalignment, it automatically calibrates the image in real-time, quickly, invisibly, and without interruption. Because Guardian eliminates the need for visible structured light patterns, audiences are unaware of any problem. Unique to Christie, Guardian is supported by Christie Griffyn® Series, Crimson Series, D4K40-RGB, Boxer 4K30 and Mirage 304K projectors.

Mystique Operate

Mystique Operate provides a simple, browser-based experience for initiating a camera-based or screen marker recalibration run. It supports a REST API, which allows third-party applications to trigger the recalibration process.

Lotte World in South Korea uses Mystique to align three Christie RGB pure laser projectors for the spectacular 3D multimedia projection mapping show on their iconic Magic Castle.

Partners: Star Networks, d'strict
Photo courtesy of d'strict

CONTENT LAYOUT MODES

Wallpaper (basic)

Ideal for systems using a matrix projection layout, this mode is used for simple projection set-ups with a common overlap between each section and will support stacked projection systems. Users must provide a horizontal and/or vertical blend overlap expressed as a percentage or as pixels.

Wallpaper (advanced)

Designed for complex blended or stacked display types. Typically used for flat or curved (single axis) displays. For each content channel, the user provides left, right, top and bottom channel extents.

Fields of view

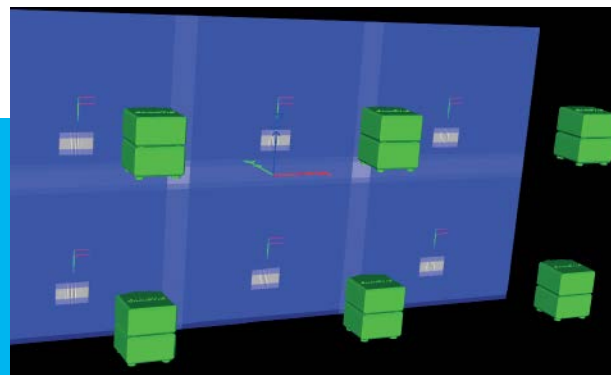
This is an advanced projective layout mode used in simulation of other real-time content solutions, where content is rendered from a single eye-point. Content channels are defined by providing the frustum details (yaw, pitch, roll and field of view settings) along with the eye-point. It can accommodate complex projection layouts with irregular overlaps and other features.

Fields of view (collimated)

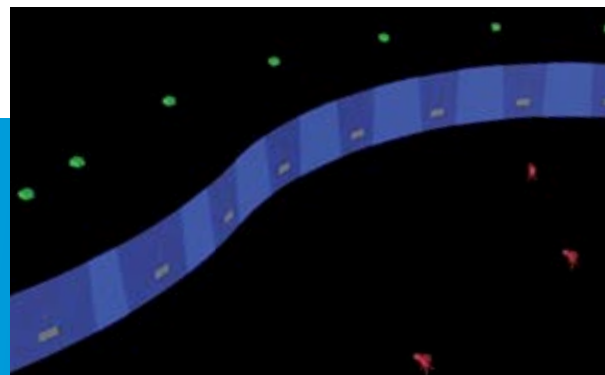
Fields of view (collimated) mode is primarily used in simulation scenarios where the user is looking at a spherical mirror showing a reflected image of the display. Content channels are defined by providing the frustum details along with the eye-point. The system defines the placement and size of the mirror.

Projector centric

This mode is ideal for projection scenarios where content is pre-rendered based on the planned position of each projector channel. It can minimize the amount of warping applied to each channel on subsequent alignment runs. Mystique can apply small warp adjustments to account for discrepancies between the planned projector position and the actual projector position. Projector centric mode is often used with theme park dark rides.



Example of wallpaper (basic) mode on 2 high x 3 wide, double-stacked projection array



Example of a wallpaper (advanced) layout

^ 'Take Flight' FlyRide® at Wilderness Resort in Wisconsin is an immersive aerial adventure ride with four 40,000-lumen RGB pure laser projectors that are aligned and calibrated by Mystique Large Scale Experience Edition.

Photo © 2024 SimEx-Iwerks Entertainment. All Rights Reserved.

FlyRide® system, AV system design and integration: SimEx-Iwerks.

M 4K RGB Series >

GS Series v

Crimson Series v

Christie Eclipse v

Inspire Series ^

v HS Series

^ Griffyn Series

PRODUCT COMPATIBILITY

Christie projectors

With a broad choice of compatible projectors, it's possible to specify a Mystique™ solution for a wide-variety of applications and budgets. The following Christie® projectors support Mystique:

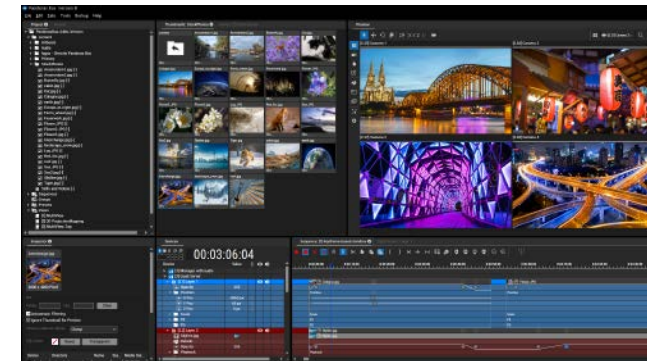
- > Inspire Series
- > GS Series - all models with Christie Twist™
- > HS Series
- > Crimson Series
- > M 4K RGB Series
- > Griffyn® Series
- > Eclipse
- > 4K40-RGB Series
- > Boxer® Series - Boxer 4K30, Boxer 4K20 and Mirage 304K

Christie Pandoras Box

Mystique integrates directly with Pandoras Box® Software Version 6 and higher, and enables automated camera-based alignment and calibration for large-scale projections, no matter which projector you use.

Mystique provides fast, repeatable camera-based alignment for any multi-projector scenario when you use Pandoras Box as a media server.

- > The optional Christie Guardian feature is not supported by Pandoras Box
- > Stacked projection systems require a dedicated Pandoras Box output
- > Blend quality depends on projector quality and cannot be guaranteed for non-Christie projectors



^ Pandoras Box Software interface

ADDITIONAL FEATURES

Christie Mystique provides the ultimate level of control for the most demanding multi-projector systems.

Dual-screen mode

Ideal when content is pre-rendered to a single model and displayed across multiple screens or venues. Dual-screen mode, working in conjunction with projector-centric layout mode, allows you to define two screen models. Using both models, Mystique™ attempts to correct for error in the physical model by mapping content to the intended location.

Rear projection support

Mystique supports configurations that use a rear projection screen, where cameras are often positioned in front of the screen. If cameras are placed behind a rear projection screen, the on-screen results depend on the screen material. It's possible an unexpected image could appear on the rear side of the screen, in which case extra steps to correct this may be required.

Electronic black-level blending

Mystique's electronic black-level blending feature balances the intensity of projected black so that the black of each projector in a multi-projector array looks the same as the sum of the blacks in the overlap between projectors. It's particularly valuable for dark scenes because it results in seamless blends at the black level, and ensures that black is uniform across the canvas for a more immersive viewing experience. Electronic black-level blending is included in LSE Edition and is an optional add-on to Pro Venue and Premium Editions.

^ Mystique keeps 12 Christie projectors perfectly aligned to ensure a seamless, immersive experience at Chico Albuquerque Museum of Image and Sound of Ceará.

Partners: Seal Telecom, ALCom Engenharia



ADDITIONAL FEATURES

Let Mystique do the heavy lifting for your next projection mapping installation.

Alignment for 3D projection mapping

Achieve repeatable accuracy and save time with automatic, camera-based, multi-projector alignment and blending on 3D surfaces such as buildings, landmarks, and objects. With a single click, you can detect any changes in projector or camera position and automatically correct the blended image. This feature uses markerless calibration for 3D projection mapping, eliminating the time-consuming and often costly need for screen or object markers.

Alignment for surfaces with fixed markings

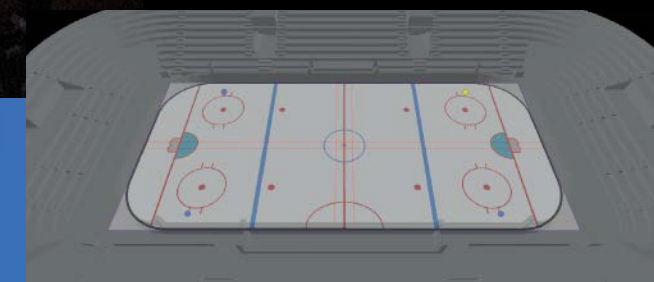
This feature is ideal for applications such as live stage performances and court or arena projection mapping. Content aligns to a surface with known, measured markings. You can define screen shape and aspect ratio by importing an image that represents the projection surface. Mystique™ overlays the image into the correct location on top of the camera image. This is helpful where content must align to markings or when screen corners aren't easily identifiable, such as a hockey rink, where face-off circles can be used as alignment points.

^ Mizzou Tigers Basketball projection mapping, University of Missouri

Partner: Quince Imaging



^ Playing surface alignment projection system **before** alignment



^ Playing surface alignment projection system **after** alignment

IMPROVE OVERALL IMAGE FIDELITY AND UNIFORMITY

In addition to quick and easy alignment and warping, Mystique Essentials and Pro Venue Editions offer two features that help improve overall image fidelity and uniformity.

Automated color and brightness uniformity¹

At the click of a mouse, you can adjust color and brightness uniformity across projectors in multi-projector blended arrays to display one seamless image², ensure a quality audience experience, and save time when setting up your display.



Without
correction



With
Automated
color and
brightness
uniformity

Background compensation¹

Need to project on a less-than-ideal background? Using a color camera to detect large contrast differences on your screen or projection surface, Mystique™ makes automatic adjustments to compensate for visual imperfections such as smudges, dirt or other surface anomalies to provide a more uniform projected image and maintain image fidelity.



Background

Source image

Uncorrected

Compensated

¹ Requires Mystique Version 2.6 or greater and a single color camera. Supported projectors: M 4K RGB Series, Griffyn Series, 4K40-RGB Series, Boxer 4K30 and Mirage 304K.

² The results will be limited by the lowest performing projector in the array.

CHRISTIE

christiedigital.com

For the most current specification information, please visit christiedigital.com

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