Christie
M 4K RGB Series

Frequently asked questions (FAQ)

CHRISTIE®

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FAQ

Here are the most-asked questions about the Christie® M 4K RGB Series pure laser projectors.

Why do I need RGB pure laser illumination technology?

Solid-state RGB pure laser illumination technology gives you key performance advantages over laser phosphor illumination technology and provides a better user experience. Two key RGB pure laser performance advantages are expansive color and longer laser life.

Since 2013, we've innovated and manufactured RGB pure laser 3DLP® projectors, focusing on developing our RGB pure laser technology capabilities and features to meet demanding customer requirements, enhance the user experience, and future-proof your investment. In 2022, the M 4K RGB Series entered the market as one of our latest cutting-edge product platforms in this category.

Why do I want a Christie M 4K RGB Series projector?

Christie M 4K RGB Series projectors are one of the smallest, lightest, quietest, all-in-one (no external chillers) RGB pure laser 3DLP projectors on the market. The compact platform is the successor to our legacy M Series. Launched in 2008, the original M Series earned the distinction of being the "industry workhorse" because it met the demanding needs of many ProAV projection applications.

The M 4K RGB Series improves our iconic projector with double the brightness, twice the color, quadruple the resolution, lower audible noise, longer illumination performance, higher contrast, next-gen TruLife+™ electronics. And with a wide range of enhanced features, it all comes together to create powerful performance capabilities that will surprise and impress you.

Which applications and markets is the M 4K RGB Series designed for?

While just about any application can benefit from more than twice the color of a Rec. 709 projector and the extended illumination performance of RGB pure laser, the M 4K RGB Series is an ideal fit for the following applications:

- Theme parks and attractions
- Theatrical performances
- Projection mapping
- Large-scale live events
- Planetariums and domes

- Auditoriums and conference rooms
- Sports venues
- Large-screen venues

What models are available in the M 4K RGB Series? What are their part numbers?

Currently, there are four models available in the Series:

M 4K15 RGB

163-066103-XX

163-065102-XX
(TAA-compliant)

M 4K+15 RGB

163-068105--XX

163-067104-XX
(TAA-compliant)

M 4K25 RGB

163-044109-XX

163-037101-XX
(TAA-compliant)

M 4K+25 RGB

163-053109-XX

163-052108-XX
(TAA-compliant)

What are the advantages of RGB pure laser projection compared to laser phosphor?

Color reproduction

The M 4K RGB Series reproduces an exceptionally wide color gamut, achieving ~98% of the Rec. 2020 color space — more than twice the color capability of Rec. 709, when compared to traditional laser phosphor projectors. Our all-in-one RGB pure laser projection technology displays visuals in a rich, vibrant, and true-to-life way that enhances the audience's experience. They also offer multiple color space modes that automatically align with the content being input into your projector.

Illumination performance

RGB pure laser technology has significantly longer illumination performance. Christie® M 4K RGB Series projectors operate at up to 25,000 hours (to 50% brightness), while laser phosphor projectors last up to 20,000 hours (to 50% brightness). When operating the M 4K25 and M 4K+25 RGB models at 100-120 VAC or half-power, you'll extend the life of the light source to 50,000 hours before it reaches 50% brightness.

Color and brightness stability

RGB pure laser technology provides long-term color, brightness reliability, and stability. Thanks to Christie LiteLOC™ white-point tracking ability, your content looks as good as it did on day one. Our factory-calibrated LiteLOC automatically maintains brightness and color balance throughout the projector's operational life in higher ambient temperatures and more humid environments for years of stable, virtually maintenance-free operation.

Higher perceived brightness

With RGB pure laser technology, the enhanced color performance of the Rec. 2020 color gamut gives you more than twice the color, which creates the perception of higher brightness on screen.

What is Rec. 2020? How does it make the M 4K RGB Series stand out?

Color space refers to the maximum achievable range of real surface color that are widely recognized standards for color reproduction for various industries and applications. The CIE 1931 color space chart (below) visually represents all the colors we can see in the natural world. RGB pure laser is the only projection technology that can achieve the Rec. 2020 gamut, giving content creators the freedom to reproduce more than twice as many real- world colors as Rec. 709 on-screen and 50% more colors than the DCI-P3 color gamut.

Color comparison
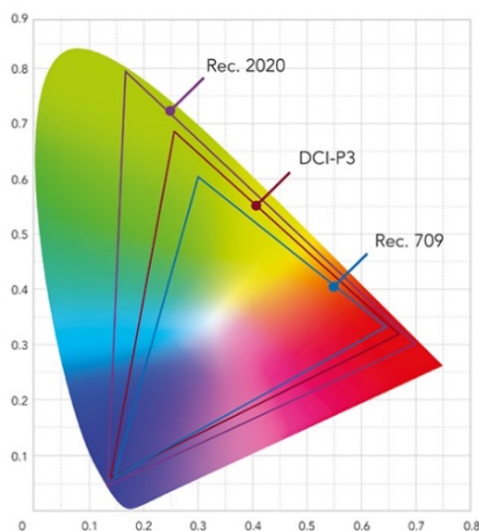
Color gamut	Illumination type
Rec. 2020	› RGB pure laser – the only projector illumination technology that supports Rec. 2020.
DCI-P3 (Digital Cinema Intiative)	› Xenon lamps › Some laser phosphor
Rec. 709 (HDTV)	› Mercury lamps › Laser phosphor

What's the contrast performance of the M 4K RGB Series?

Christie® M 4K15 and 4K25 RGB models boast 2700:1 sequential contrast with our standard lenses. If you need ultra-high contrast performance, our UHC (ultra-high contrast) lenses achieve up to 6000:1 sequential contrast for exceptionally black blacks.

With M 4K+15 and 4K+25 RGB, you get 2200:1 sequential contrast with our standard lenses and 4900:1 sequential contrast with our UHC lenses.

Is there a brightness loss with the UHC lenses?

Brightness is reduced by as much as 15% when using our UHC lenses.

Which lenses are available for the M 4K RGB Series?

Initially developed for our original M Series projectors, the ILS1™ (Intelligent Lens System) is a family of lenses compatible with the M 4K RGB Series projectors, as well as with our Crimson and J Series products. These lenses give you immediate cost savings if you replace an original M Series projector with a M 4K RGB Series projector.

Standard lenses	Part number
0.37:1 UST fixed lens - ILS1	118-131106-XX
0.67:1 fixed lens - ILS1	118-100110-XX
0.8-1.16:1 zoom lens - ILS1	118-130105-XX
1.1:1 fixed lens - ILS1	118-100117-XX
1.16-1.49:1 zoom lens - ILS1	118-100111-XX
1.4-1.8:1 zoom lens - ILS1	118-100112-XX
1.8-2.6:1 zoom lens - ILS1	118-100113-XX
2.6-4.1:1 zoom lens - ILS1	118-100114-XX
4.1-6.9:1 zoom lens – ILS1*	118-100115-XX
6.9-10.4:1 zoom Lens – ILS1*	118-100116-XX

Ultra-high contrast lenses	Part number
0.67:1 UHC fixed lens - ILS1	118-132107-XX
0.8-1.16:1 UHC zoom lens	163-153100-XX
1.28-1.87:1 UHC zoom lens - ILS1	163-165103-XX

These lenses require an optional lens hood for M 4K RGB Series projectors.

What accessories are available for the M 4K RGB Series?

We offer a ceiling mount and a rigging frame for this Series. The rigging frame has independent controls to adjust yaw, pitch, and tilt for quick and accurate setups. The M 4K RGB Series is also compatible with our legacy M Series mounts and frames.

How quiet is the M 4K RGB Series?

With our proprietary Christie TruLife+™ electronics, we engineered a highly efficient projector platform so the M 4K25 and M 4K+25 RGB operate at ≤46.7 dBA at full brightness, while the M 4K15 and M 4K+15 RGB models operate as low as 41 dBA in quiet fan mode. Lower audible noise is key for projector installations close to the audience because it won't disrupt their experience, regardless of the event or venue.

Does the M 4K RGB Series offer an optional quiet mode?

Yes, there are three fan modes: quiet, standard, and performance. The M 4K RGB Series retains the white point in all three fan modes.

- Quiet fan mode is for users who need to achieve the quietest operation. As ambient temperature increases, the projector maintains the quietest fan noise at the expense of decreasing brightness.

- Standard fan mode is the default setting for the M 4K RGB Series, which minimizes the sound it produces by automatically adjusting the fan speed in accordance with ambient temperature and humidity for the expected brightness.

- Performance fan mode prioritizes maximum brightness for users who want to achieve the highest performance (brightness and/or illumination life) regardless of fan noise.

There is also a limited brightness mode which is automatically enabled when plugged into 100-120 VAC power,
reducing the brightness by 50%.

Is the sound level reduced when you reduce brightness?

Yes, as you reduce brightness the sound level drops depending on the ambient temperature and humidity levels, and the projector isn't in performance mode.

What are the power requirements of the M 4K RGB Series?

The M 4K15 and M 4K+15 RGB models operate at full brightness at 100-120 VAC and at 200-240 VAC. The M 4K25 and M 4K+25 RGB models require 200-240 VAC power 50-60 Hz to operate at full brightness, which enables operation in any country worldwide. The M 4K25 and 4K+25 RGB models also operate at 100-120 VAC 50-60 Hz, but only at half brightness.

What's the difference between TruLife and TruLife+?

Christie TruLife™ electronics platform is the basis for our latest generation of RGB pure laser projectors. It delivers ultra-high resolution and high frame rate video with unprecedented image fidelity. The TruLife platform leverages the latest in field-programmable gate array integrated circuits and proprietary floating-point architecture to support a video-processing pipeline of up to 1.2 Gigapixels per second (GPix/s) and enable native 60 Hz at 4K. Higher frame rates are available with our Mirage and Mirage Pro licenses.

With TruLife+™, the hassle of removable input cards is a thing of the past. All the inputs you need are built-in and the ″all-in″ connectivity of TruLife+ means it's easy to change inputs wherever and whenever you want. TruLife+ technology advancements also allow for more efficient processing, lower noise levels, and a more compact projector size.

What inputs are standard in the M 4K RGB Series?

Incredibly, all these inputs come standard on the Christie® M 4K RGB Series projectors:

Inputs
- HDMI 2.1
- HDMI 2.0 (x2)
- DisplayPort (DP) 1.4 (x2)
- DisplayPort (DP) 1.2 (x2)
- 12G-SDI (Micro BNC) (x4)
- Christie Link Fiber (QSFP+) for use with Christie Link Transmitter (1 input/1 output)
- SDVoE (Christie Terra®)
- 3D Sync (1 input/1 output)

Control
- Ethernet - Control and Web UI
- RS232 (Serial)
- GPIO
- Wired keypad

Does the M 4K RGB Series support audio?

No. There is an AES3 output connection, but it's not supported.

Does the M 4K RGB Series have loop-out capability?

The M 4K RGB Series is compatible with optional Christie® Link input, which offers loop-out for content mirroring to a second projector.

Is the M 4K RGB Series controllable via RS232/network protocol?

Yes, the M 4K RGB Series uses the same control as Christie Griffyn® and the legacy M Series.

Does it have any emitting radios, Wi-Fi, or NFC?

No.

What is Christie Terra and SDVoE?

SDVoE (Software Defined Video Over Ethernet) is the most widely adopted standardized technology for distributing and managing AV signals in off-the-shelf Ethernet networks.

Christie Terra®, our SDVoE solution, is an expanding line-up of transmitters, receivers, processing and control hardware and software. Terra solutions include everything you need to design and integrate complete AV-over-IP systems for applications that demand the ultimate performance and quality. Built on standardized SDVoE technology, Terra provides unprecedented performance capabilities that include delivering uncompressed, zero- frame latency, artifact-free 4K at 60 Hz video over readily available and affordable 10G Ethernet components.

As a founding member of the SDVoE Alliance, we're committed to designing and manufacturing standardized SDVoE-compliant products and solutions engineered to enable complete AV-over-IP network environments.

What is precision pixel-shifting? How does it work?

Our new proprietary precision pixel-shifting technology is a form of DLP® actuating technology using an opto- mechanical device in conjunction with DLP processing algorithms to display two or more projected pixels from a single DMD micromirror. The M 4K RGB Series precision pixel-shifting is a true 4-way pixel-shifting technology that operates at significantly higher

frame rates, enabling both 2D and 3D formats at 4K UHD/UHD+ resolution up to 120 Hz, which reduces or eliminates the typical artifacts found in other pixel-shifting technologies at lower frame rates.

If you want to operate the M 4K RGB Series in native resolution, you can disable the actuator.

Is the M 4K RGB Series 3D and high frame rate (HFR) capable?

Yes. The M 4K RGB Series operates from 24-60 Hz in 2D only, but it can process and deliver 2D HFR or 3D and 3D HFR content when you upgrade to one of the two Christie® Mirage options.

When you upgrade to the Mirage option, it operates from 96-120 Hz in 2D UHD or 3D at 60 Hz per eye max. With the Mirage Pro upgrade, you get Mirage performance plus 240-480 Hz at HD scaled and Christie View, our simultaneous multi-point of view (MPoV) option that allows multiple viewers to view up to four unique content sources on the same screen using specially filtered glasses.

What is Christie View simultaneous multi-content viewer feature?

Using the Mirage Pro option, Christie View lets you simultaneously view multiple source inputs on a single projector overlaid on top of one another. This enables a single projection canvas to simultaneously show different content, allowing you to tailor the viewing experience for different viewers. To the naked eye, the Christie View projected image looks jumbled because you're seeing more than one image on the screen, but with the use of off-the-shelf active 3D glasses paired with the projected output, each input is individually visible to the viewer. Christie View works on the

M 4K RGB Series with four frame-locked HD feeds at 60 Hz to provide two views of 3D content or four feeds of mono content. Your content should ideally be around the same brightness level for consistency, and the content can be output through a single PC or up to four separate sources.

What is high frame rate?

Any content created at a frame rate higher than the standard 24 fps (frames per second) is considered a high frame rate (HFR) in cinema. However, for non-cinema applications, frame rates over 60 fps are considered a high frame rate. Higher frame rates improve fast motion video and camera panning, which results in sharper dynamic imagery that reduces or eliminates motion blur, judder, and the motion sickness that can accompany immersive projection environments.

What is electronic color convergence?

Color convergence is when three separate DMDs for each primary color light – red, green, and blue – in your 3DLP projector optically converge to produce a single, full-color image. When those DMDs are out of alignment, you need to adjust them either mechanically or electronically to get a perfect image on-screen with crisp focus and crisp colors.

Our electronic color convergence (ECC) feature allows you to independently select and individually adjust the red, green, or blue DMDs using the projector remote control to easily achieve excellent color convergence. With the option for remote control or WebUI, ECC eliminates

the need for a ladder or lift when the projector is installed in the ceiling or truss mounted for easy, perfect pixel alignment in any installation!

Want to know more? Watch this video to see how ECC makes convergence easy.

Can I adjust convergence mechanically?

The M 4K RGB Series models are built with three pre-aligned DMDs in the factory so there is no mechanical convergence adjustment — you can only converge the projector electronically.

Is the M 4K RGB Series omnidirectional?

Yes, the M 4K RGB Series can be installed in any direction or orientation — horizontally or vertically, at any angle
or position — without affecting performance, giving you unlimited installation flexibility for any application.

How does the size of M 4K RGB Series models compare to similar projectors?

See the charts below for comparisons.

M 4K25 and M 4K+25 RGB size comparisons					
Model	Weight	Size (L x W x H)	Light Source	Volume	Lumens
M 4K25 RGB M 4K+25 RGB	92lbs (41.7kg)	24.3 x 20.7 x 10.6"	RGB pure laser	3.09ft^3 (0.087m^3)	25,000 ISO

		(617 x 525 x 270mm)			22,500 ANSI
Barco XDM-4K25	231lbs (105kg)	42.13 x 27.95 x 21.54" (1070 x 710 x 547mm)	RGB pure laser	14.68ft^3 (0.416m^3)	23,500 typical
Barco UDM-4K22	105lbs (48kg)	21.26 x 28.54 x 13.3" (540 x 725 x 339mm)	Laser phosphor	4.67ft^3 (0.133m^3)	22,000 ISO 19,000 ANSI
Barco UDX-4K26 & UDX-W26	202lbs (92kg)	47.24 x 31.5 x 27" (1200 x 800 x 685mm)	Laser phosphor (phosphor disk)	23.21ft^3 (0.658m^3)	24,000 ANSI
Digital Projection Titan 26000 4K-UHD	209lbs (95kg)	38.2 x 25.6 x 15.6" (969 x 650 x 397mm)	Laser phosphor (phosphor disk)	8.8ft^3 (0.25m^3)	25,000 ISO 22,500 ANSI
NEC PX2000UL	112.4lbs (51kg)	29.5 x 20.9 x 9.8" (750 x 530 x 250mm)	Laser phosphor (phosphor disk)	3.49ft^3 (0.099m^3)	19,000 ANSI
Panasonic PT-RZ21K & PT-RS20K	108lbs (49kg)	28.5 x 23.5 x 10.6" (725 x 598 x 270mm)	Laser phosphor (phosphor disk)	4.13ft^3 (0.117m^3)	21,000 Center
Panasonic PT-RQ22	119lbs (54kg)	28.5 x 23.5 x 10.6" (725 x 598 x 270mm)	Laser phosphor (phosphor disk)	4.13ft^3 (0.117m^3)	21,000 Center
Epson Pro L20000UNL	109.3lbs (49.6kg)	31.1 x 24.4 x 14.1" (790 X 620 x 356mm)	Laser phosphor (phosphor disk)	6.19ft^3 (0.2m^3)	20,000 ANSI

M 4K15 and M 4K+15 RGB size comparisons					
Model	**Weight**	**Size (L x W x H)**	**Light Source**	**Volume**	**Lumens**
M 4K15 RGB M 4K+15 RGB	83.8lbs (38.1kg)	24.3 x 20.7 x 10.6" (617 x 525 x 270mm)	RGB pure laser	3.09ft^3 (0.087m^3)	25,000 ISO 22,500 ANSI
Barco UDM-4K15	105lbs (48kg)	29.3 x 21.25 x 13.3" (745 x 540 x 339mm)	RGB pure laser	14.68ft^3 (0.416m^3)	23,500 typical
Panasonic PT-RZ16KU (WUXGA)	108lbs (49kg)	23.62 x 29.33 x 11.8" (600 x 745 x 300mm)	Laser phosphor	4.67ft^3 (0.133m^3)	22,000 ISO 19,000 ANSI
Panasonic PT-RZ12KU (WUXGA)	97lbs 44kg	23.62 x 29.33 x 11.8" (600 x 745 x 300mm)	Laser phosphor (phosphor disk)	23.21ft^3 (0.658m^3)	24,000 ANSI

Which Christie software tools are compatible with the M 4K RGB Series?

The M 4K RGB Series is compatible with almost all proprietary Christie® software solutions. Check out these built- in and optional software tools available for the M 4K RGB Series:

Integrated electronics

The M 4K RGB Series has built-in Christie Twist™, which allows you to seamlessly edge-blend and stack multiple projected images on any 2D or

3D surface and precisely control the geometry of each projector through an easy-to-use grid-point / mesh interface.

We also built-in Christie Terra® connectivity, so it's ready to connect with Terra hardware and software solutions (not included) for uncompressed, zero-frame latency, artifact-free 4K at 60 Hz video.

Projection tools

Working in conjunction with Twist, Christie Mystique™ automates multi-projector warping and blending. With the click of a mouse, Mystique's camera-based software automatically aligns, stacks, and blends multi-projector systems in minutes with unsurpassed accuracy. For simple 2D setups that use up to three projectors in a single horizontal array on a flat screen or surface, download Mystique Lite at no additional cost and purchase an inexpensive supported webcam to get started. For more complex applications, choose the edition of Mystique that suits your project requirements.

With Christie Conductor advanced monitoring and control software solution, you can monitor and control up to 256 projectors on the same network from your laptop. Conductor is exclusive to Christie 3DLP® projectors and available to download at no additional cost.

Mirage upgrade options

The Christie Mirage option supports frame rates of 120 Hz in 2D or 3D.

The Mirage Pro option adds support for 240-480 Hz in 2D at HD resolution and 120 Hz per eye in 3D at HD resolution.

Is the light source field replaceable?

Yes, the M 4K RGB Series light source is field-replaceable by a factory-trained technician.

Which power cord comes with the M 4K RGB Series?

There are multiple cord options for the M 4K RGB Series with different plug types depending on your country. For 200-240 VAC in North America, you can order the M 4K RGB Series projectors with a 6-15R cord, 6-20 twist lock cord, or standard 5/15 plug for 120 VAC limited brightness mode applications. The projector has a standard socket for an IEC C13 plug (the C14 receptacle supports a lock), so you can use the appropriate cord and wall plug type for your country, provided it supports at least 15A at 200-240 VAC.