Christie M 4K RGB Series

Frequently asked questions (FAQ)

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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 experience for end-users. Two key performance advantages of RGB pure laser are expansive color volume and longer illumination performance life. With these advantages in mind, we continue to develop and enhance our RGB pure laser technology.

Since 2013, we've innovated and manufactured RGB pure laser 3DLP® projectors and the M 4K+25 RGB is our latest cutting-edge product platform in this category. We innovate and create advanced capabilities and features to meet demanding customer needs that future-proof your investment.

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

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

The M 4K RGB Series improves on 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 lenses, it all comes together to create powerful performance capabilities that will surprise the heck out of 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

> Rental and staging

> Projection mapping

> Large-scale events

> Planetariums and domes

> Large-screen venues

> Sports venues

How many models / part numbers are available in the M 4K RGB Series?

Currently, there are four models available:

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 which most laser phosphor projectors reproduce. 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. Additionally, our RGB pure laser projectors offer multiple color space modes to align with the color space of the content being input to the projectors. For example, if you have Rec. 709 content, then you need to select the Rec. 709 color mode to match the content.

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 can last up to 20,000 hours (to 50% brightness). When operated at 100-120 VAC or half-power, the M 4K RGB Series can maintain that illumination level for up to 50,000 hours before there's any degradation in illumination power.

Color and brightness stability

RGB pure laser technology provides long-term color and brightness reliability as well as stability. Thanks to [Christie LiteLOC™](#) white-point tracking ability, your content can look 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 color, the enhanced color performance of the Rec. 2020 color gamut creates an increased perception of brightness.

What is Rec. 2020? And why is the M 4K RGB Series' ability to achieve it an important differentiator?

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. Visually, the CIE 1931 color space chart (below) 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, which gives 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
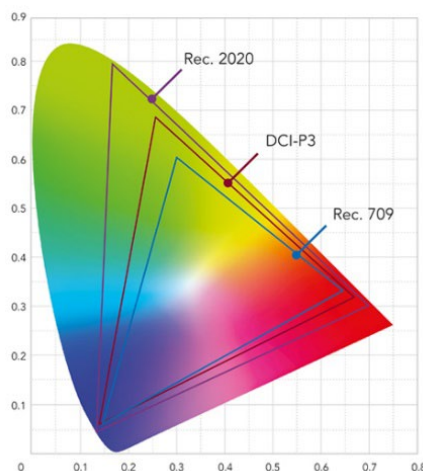
Color gamut	Illumination type
Rec. 2020	› RGB pure laser – the only projector illumination technology that supports Rec. 2020.
DCI-P3 (Digital Cinema Intiative)	› Xenon lamps › Some laser phosphor
Rec. 709 (HDTV)	› Mercury lamps › Laser phosphor

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

Christie® M 4K25 RGB boasts 3000:1 sequential contrast with our standard lenses, but if you're looking for ultra-high contrast performance, our UHC (ultra-high contrast) lenses achieve up to 7000:1 sequential contrast for exceptionally black blacks.

With M 4K+25 RGB, you get 2500:1 sequential contrast with our standard lenses and 5900:1 sequential contrast with our UHC lenses.

Is there a brightness loss with the UHC lenses?

Brightness is reduced by up to 15% with the use of ultra-high contrast lenses.

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

We offer a family of lenses called ILS1 (Intelligent Lens System), which we initially developed for our original M Series projectors. These legacy lenses are compatible with our Crimson and J Series products as well as the new M 4K RGB Series, which means if you replace an original M Series projector with a M 4K RGB Series projector, you can use the lens(es) you have for immediate cost savings.

Standard lenses	Part number
0.37:1 UST fixed lens - ILS1	118-131106-03
0.67:1 fixed lens - ILS1	118-100110-03
0.8-1.16:1 zoom lens - ILS1	118-130105-03
1.1:1 fixed lens - ILS1	118-100117-02
1.16-1.49:1 zoom lens - ILS1	118-100111-03
1.4-1.8:1 zoom lens - ILS1	118-100112-01
1.8-2.6:1 zoom lens - ILS1	118-100113-02
2.6-4.1:1 zoom lens - ILS1	118-100114-03
4.1-6.9:1 zoom lens – ILS1*	118-100115-03
6.9-10.4:1 zoom Lens – ILS1*	118-100116-03
Ultra-high contrast lenses	**Part number**
1.28-1.87:1 UHC zoom lens - ILS1	163-165103-XX
1.87-2.56:1 UHC zoom lens - ILS1	163-153100-XX
0.67:1 UHC fixed lens - ILS1	118-132107-XX

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

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

The M 4K RGB Series is compatible with the original legacy M Series rigging frame and has independent controls to adjust yaw, pitch, and tilt for quick and accurate setups. There are also third-party rigging frames and mounts available for the M 4K RGB Series.

How quiet is the M 4K RGB Series?

With our proprietary next-generation [Christie TruLife+™](#) electronics, we engineered a highly efficient projector that operates at ≤46.7dBa at full brightness. This is key for projector installations close to the audience because it won't disrupt their experience regardless of the event or venue.

Does the 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, which reduces the brightness by 50%.

Does turning down the brightness reduce the sound the M 4K RGB Series produces?

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

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

For full brightness, the M 4K RGB Series projectors require single-phase 200-240 VAC power 50-60Hz, which enables operation in any country worldwide. The M 4K RGB Series also operate at 100-120 VAC 50-60Hz at 50% brightness.

What's the difference between TruLife and TruLife+?

Our proprietary Christie TruLife™ electronics platform forms 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. Leveraging the latest in field-programmable gate array integrated circuits and proprietary floating-point architecture, the TruLife platform supports a video-processing pipeline of up to 1.2 Gigapixels per second (GPix/s) and enables native 120Hz at 4K UHD/UHD+ or 240-480Hz at HD resolution.

With TruLife+, the hassle of removable input cards is a thing of the past. We built in all the inputs you need, and the 'all-in' connectivity of TruLife+ means it's easy to change inputs wherever and whenever you want. TruLife+ technology advancements 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:

Video

- HDMI 2.0 (x2)
- Micro BNC (12G-SDI) (x4)
- DisplayPort (DP) 1.2 (x2)
- Christie Link (1x Input, 1x Output)
- HDBaseT (x1)

Audio

- Audio Out (x1)

Control

- Wired keypad (x1)
- Ethernet (x1)
- RS232 (x1)
- HDBaseT (x1)
- USB-C (x1)
- USB Type A (x1)
- 3D Sync In and Out (x1)

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 is our Software Defined Video over Ethernet (SDVoE) solution. Made up of 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@60Hz 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.

We designed and built Terra connectivity right into our TruLife+ electronics platform, which is standard on our M 4K RGB Series pure laser projectors.

What is precision pixel-shifting and how does it work?

Our new proprietary precision pixel-shifting technology is a form of DLP® actuating technology where an opto-mechanical device is used 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 120Hz, which reduces or eliminates the typical artifacts found in other pixel-shifting technologies at lower frame rates.

If you need to operate the M 4K RGB Series at native frame rates, the actuator can be turned off.

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

Yes. The M 4K RGB Series operates from 24-60Hz 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 96-120Hz in 2D UHD or 3D at 60Hz per eye max. With the Mirage Pro upgrade, you get Mirage performance plus 240-480Hz 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?

The Christie View feature lets you simultaneously view multiple inputs from a single projector overlaid on top of one another. This enables a single projection canvas to simultaneously show different content, allowing you to tailor different viewing experiences for different viewers. To the naked eye, the Christie View display looks jumbled, 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 60Hz 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 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 (ECC)?

Our new electronic color convergence feature gives you the ability to independently select and individually adjust the red, green, or blue DMDs using the projector remote control, which eliminates the need for a ladder or lift when the projector is ceiling-hung or truss-mounted. ECC also reduces or eliminates most lens artifacts for easy, perfect image alignment!

Can I adjust convergence manually?

The M 4K RGB Series makes convergence easy. We build the M with three mechanically pre-aligned DMDs in the factory so that you can complete the task of convergence electronically, and no physical contact with the projector is required.

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, which gives you unlimited installation flexibility for any application.

How big is the M 4K RGB Series? And how does it compare to similar competitive products?

See the chart below for comparisons.

	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" (617 x 525 x 270 mm)	RGB pure laser	3.09 ft^3 (0.087 m^3)	25,000 ISO 22,500 ANSI
Barco XDM-4K25	231lbs (105kg)	42.13 x 27.95 x 21.54" (1070 x 710 x 547 mm)	RGB pure laser	14.68 ft^3 (0.416 m^3)	23,500 typical
Barco UDM-4K22	105lbs (48 kg)	21.26 x 28.54 x 13.3" (540 x 725 x 339 mm)	Laser phosphor	4.67 ft^3 (0.133 m^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 685 mm)	Laser phosphor (phosphor disk)	23.21 ft^3 (0.658 m^3)	24,000 ANSI
Digital Projection Titan 26000 4K-UHD	209lbs (95kg)	38.2 x 25.6 x 15.6" (969 x 650 x 397 mm)	Laser phosphor (phosphor disk)	8.8 ft^3 (0.25 m^3)	25,000 ISO 22,500 ANSI
NEC PX2000UL	112.4lbs (51kg)	29.5 x 20.9 x 9.8" (750 x 530 x 250 mm)	Laser phosphor (phosphor disk)	3.49 ft^3 (0.099 m^3)	19,000 ANSI
Panasonic PT-RZ21K & PT-RS20K	108lbs (49kg)	28.5 x 23.5 x 10.6" (725 x 598 x 270 mm)	Laser phosphor (phosphor disk)	4.13 ft^3 (0.117 m^3)	21,000 Center
Panasonic PT-RQ22	119lbs (54kg)	28.5 x 23.5 x 10.6" (725 x 598 x 270 mm)	Laser phosphor (phosphor disk)	4.13 ft^3 (0.117 m^3)	21,000 Center
Epson Pro L20000UNL	109.3 lbs. (49.6 kg)	31.1 x 24.4 x 14.1" (790 X 620 x 356 mm)	Laser phosphor (phosphor disk)	6.19ft^3 (0.2 m^3)	20,000 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@60Hz 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 120Hz in 2D or 3D.

The Mirage Pro option adds support for 240-480Hz in 2D at HD resolution and 120Hz 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 either a 6-15R cord or 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 @ 200-240 VAC.