

PQ22/20 series

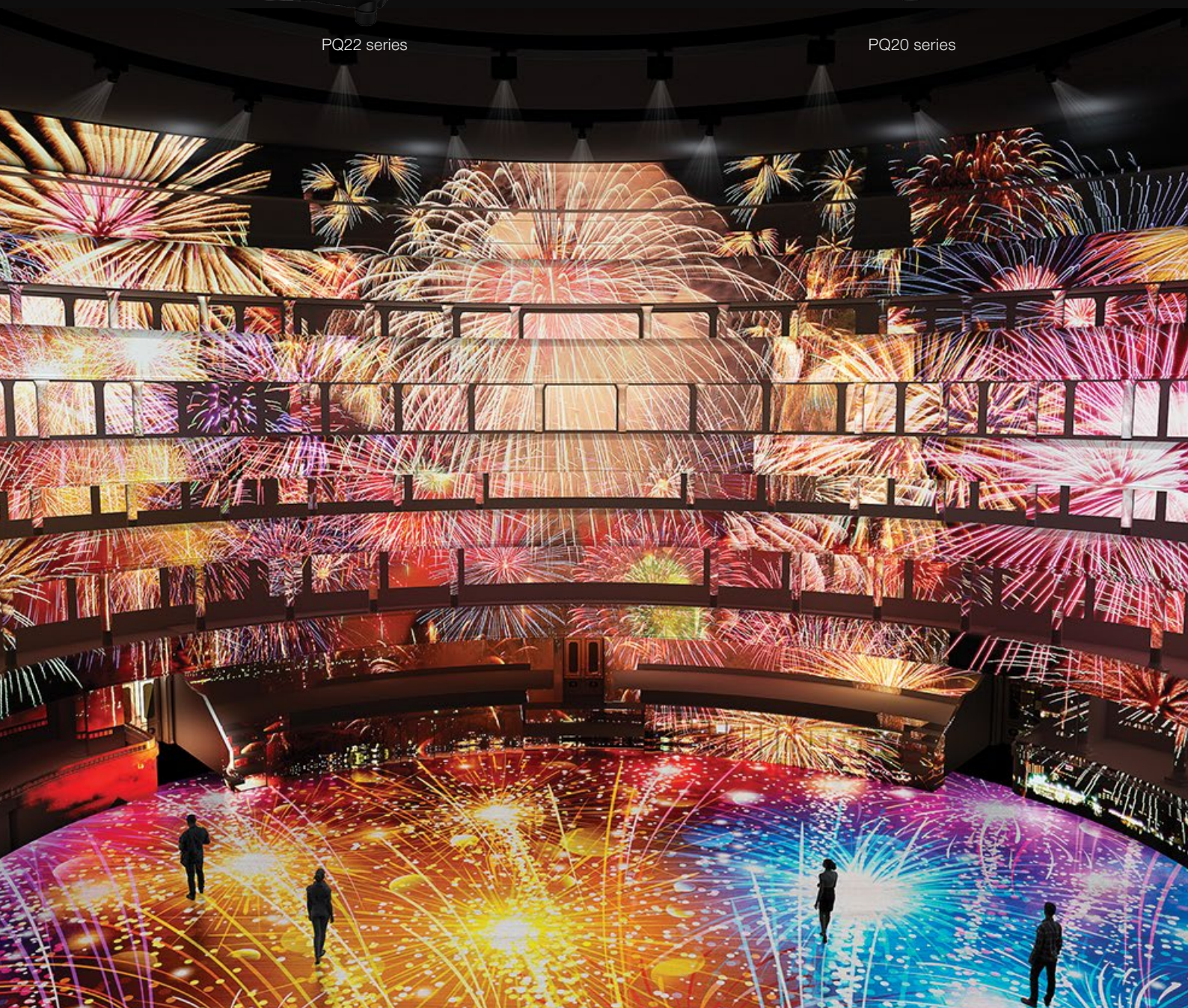
4K Laser Projectors



PQ22 series



PQ20 series



Epson 4K Crystal Motion technology



Conventional 4K image quality



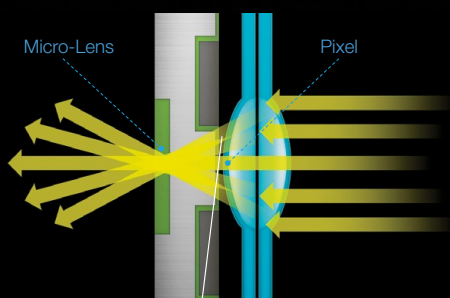
Epson's 4K



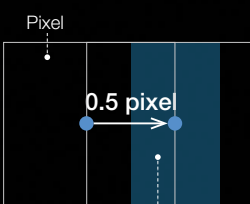
Micro-lens array technology

Epson's double micro-lens array technology equips each pixel with two lenses, enhancing light efficiency and resolution quality. This innovation optimises light utilisation and reduces optical path dispersion, resulting in sharper, clearer images and improved overall display performance.

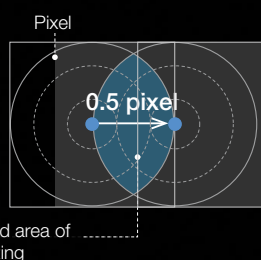
Double micro-lens array



Conventional pixel shift



Epson pixel shift



Cooling device

Vapour chamber

Peltier device

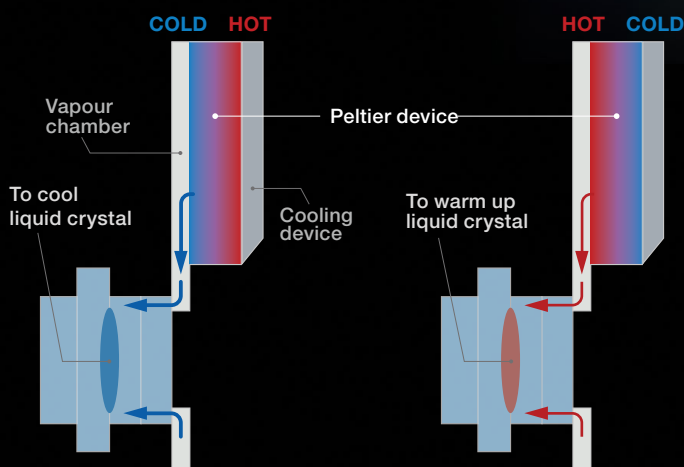
Thermo-controlled panel technology

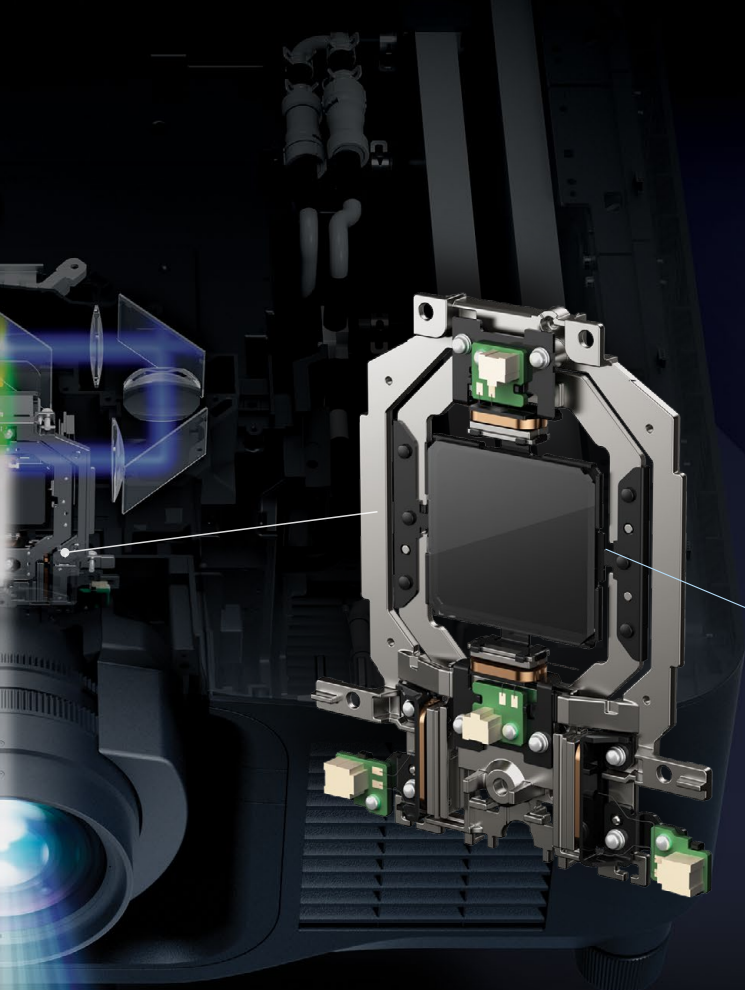
Epson has developed a new thermo-control panel incorporating advanced technology to enhance performance. This panel integrates a high thermal conductivity vapour chamber and peltier element directly into the liquid crystal panel¹.

One key feature of this technology is its ability to quickly switch between cooling and heating the liquid crystal by reversing the polarity of the applied voltage to the peltier element. This capability helps to increase the resolution and brightness of the projector.

cooling mode

heating mode



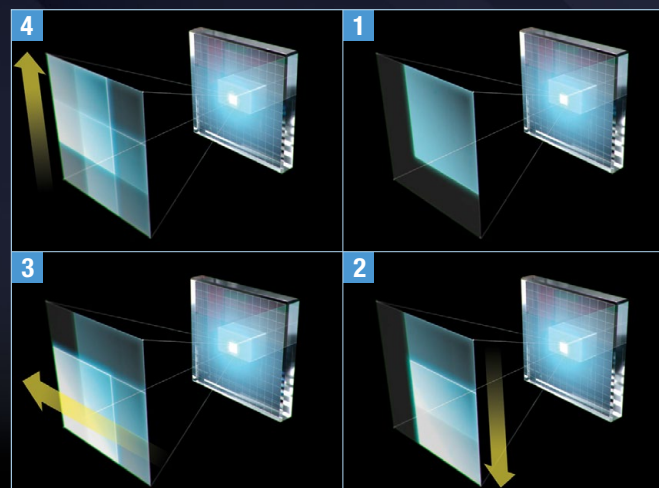


High-precision, dual-axis shift device

Developed in-house, Epson's dual-axis shift device enables crystal-clear 4K image quality. The action of the shift device is extremely fast and precise, which results in exceptionally clear 4K video.

High accuracy movement of

0.5 pixels



High-speed panel drive technology

Featuring 240 Hz² video response speed, enabled by Epson's Hybrid IC drive technology. This advancement optimises the display's drive circuit and signal path for 4K resolution, offering four times the refresh rate of previous models, enhanced motion clarity and improved overall performance.

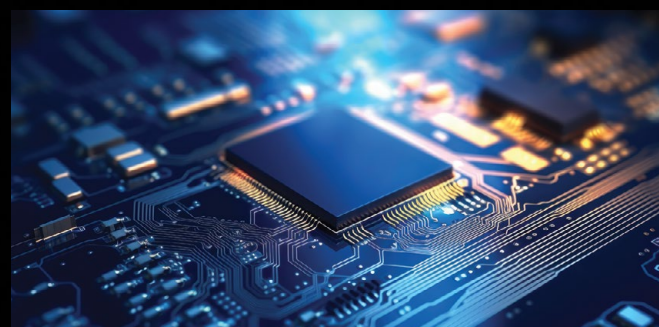
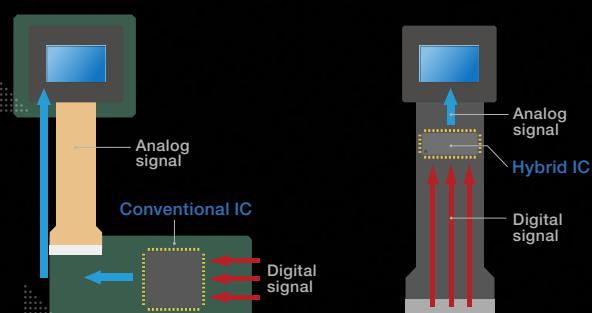
High-performance image processing

Incorporating a chip-set used in Epson's award winning home theatre projectors, the operating frequency, memory bandwidth, and data transmission speed have been significantly upgraded for a phenomenal 4K video experience.



Conventional panel module

Epson's panel module

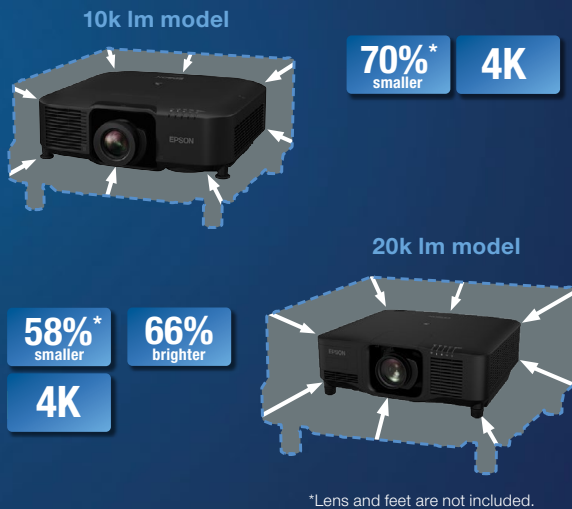


PQ22/20 series	Specification improvements	Benefits
Operating Frequency	Approx. 2 times VS PU series chip	Contributes to higher panel drive speed 4K@120 Hz image input / output support ³
Memory Bandwidth	Approx. 3 times VS PU series chip	4K geometry correction
Image Transmission	Approx. 3 times VS PU series chip	Contribute to high 4K image quality

Efficient & flexible operation

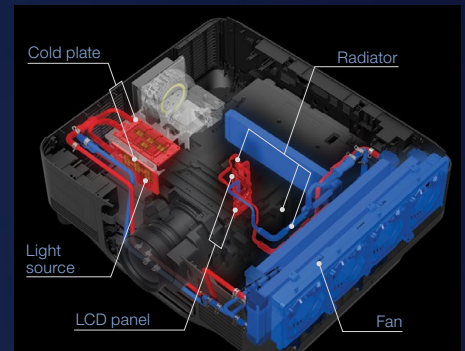
Compact

World's smallest and lightest 4K 10,000 lm and 20,000 lm model¹



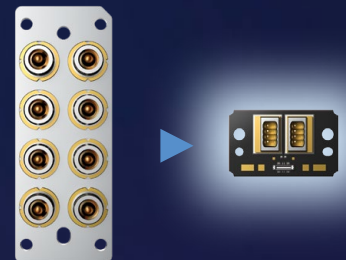
Sophisticated liquid cooling system

Epson's unique liquid-cooling system¹ is designed to cool the optical engines and laser light source units. This system not only improves cooling efficiency but also allows for a more compact footprint. By efficiently managing heat dissipation through liquid cooling, the series achieves better thermal management without compromising on performance or size.



High efficiency laser light source

The PQ22/20 series incorporates a new, more efficient 4-in-1 laser source to help reduce the unit's size⁵. This new laser is one-third the size of a conventional laser bank whilst still delivering the same brightness as the previous model.



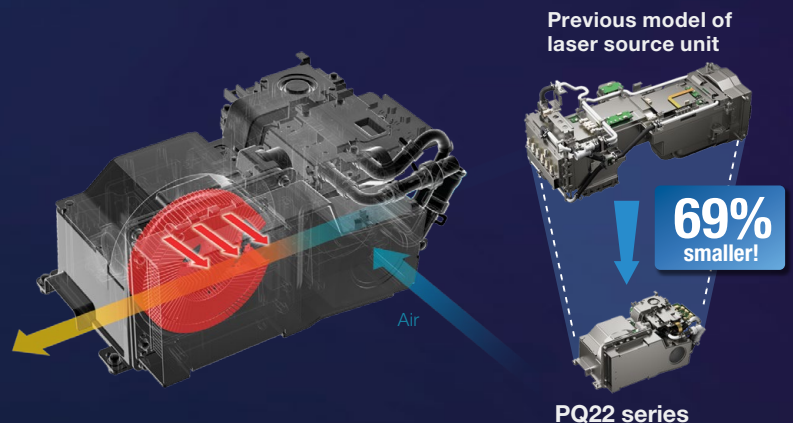
Benefits of being smaller

The more compact size and reduced weight allows for greater ease of transportation and warehousing. These, plus more flexible installation options, help deliver significant cost savings to our customers.



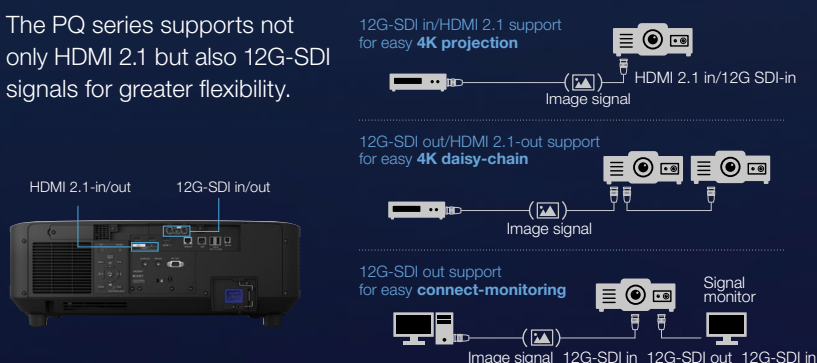
Improved phosphor wheel cooling

Epson's new stator vane heat exchange system improves phosphor cooling efficiency by efficiently transferring and expelling heat from the rotor vane. Through thermal fluid simulation, the optimised design achieves a 69% size reduction compared to the previous unit, enhancing compactness and versatility⁶.



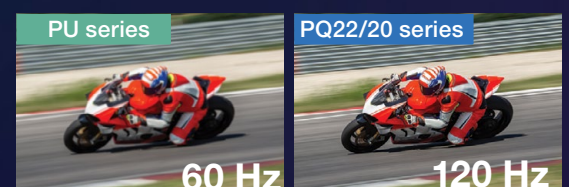
HDMI 2.1-in/out 12G SDI-in/out signal support

The PQ series supports not only HDMI 2.1 but also 12G-SDI signals for greater flexibility.



120 Hz/4K video signal support

The high-performance image processing chip and upgraded circuit design reduce screen flickering and provide smooth graphics by supporting 120 Hz/4K high-definition video.

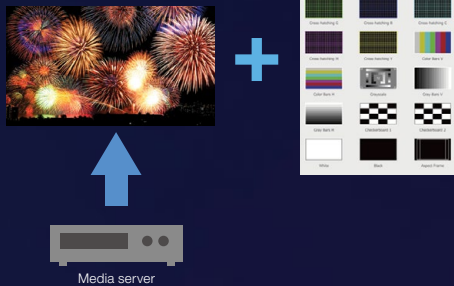


Freeze Capture function

With the Freeze Capture function, you can capture and use a test pattern from an external device.

Test pattern save

External test patterns can be saved for later use.



Continuous projection

Only a power supply is required to continuously project a test pattern image.



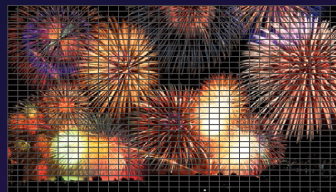
100 V power supply support⁷

The 100 V power supply support gives customers more convenience and flexibility to adapt in different installation environments.

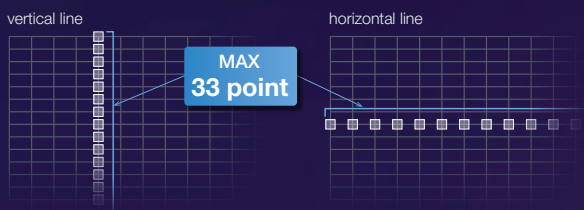


Versatile point correction

In addition to being able to make detailed point adjustments through point correction for 33 x 33 grids, installation is now even easier with support for simultaneous correction of points vertically or horizontally within a single column. This enhancement streamlines the correction process, making it more efficient and user-friendly.

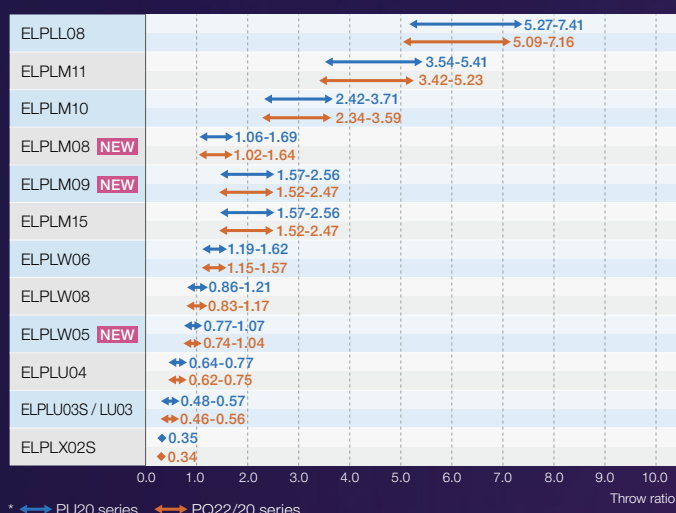


Control point



Broad lineup of lenses

The PQ22/20 series can be used without modification with the same lineup of lenses as the PU22/20 series. In addition, the PQ22/20 series supports the LW05/LU03/LM08/LM09 lenses (with some limitations⁹).



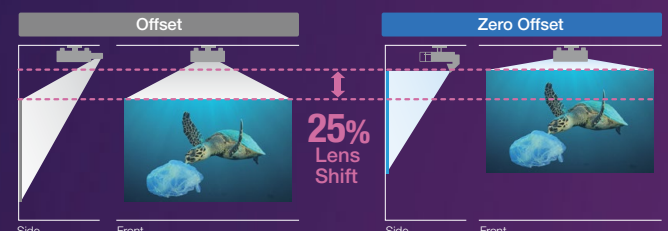
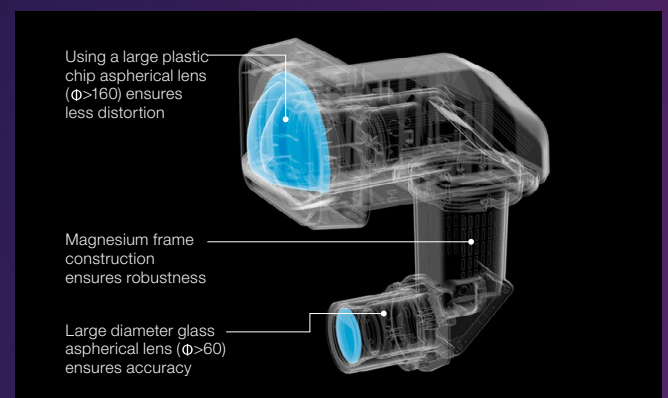
21:9 support

The PQ22/20 series can be used as a 21:9 display, which is useful for a hybrid meeting solution with high brightness and outstanding image quality.



Ultra short-throw lens support

The PQ22/20 series supports zero offset lenses that use advanced lens optical design and manufacturing technologies as shown in the diagram. Featuring a 0.35 throw ratio, this versatile lens is the ideal solution for installation in narrow spaces and rear-projection applications.

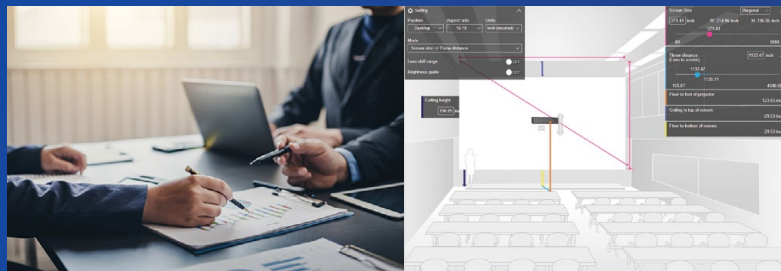


Efficient & flexible operation

Enhanced software support and functionality

Projection distance simulator support

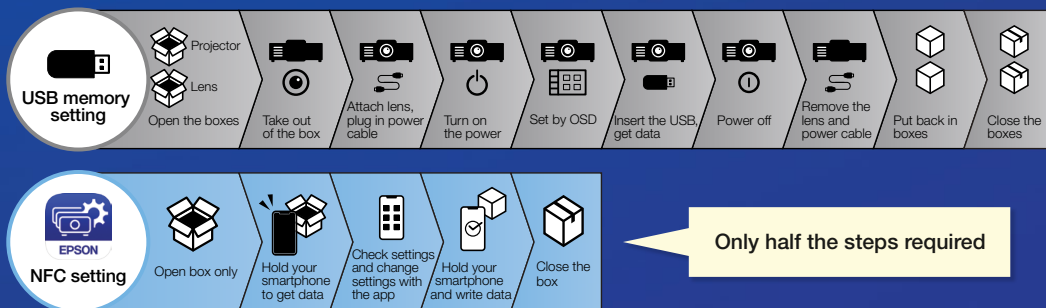
The projection distance for each projector model can be determined based on the screen size, and conversely, the screen size can be calculated from the distance between the screen and the projector. Additionally, it is possible to simulate the projector model, number of units, and lens based on the installation environment.



NFC functionality

NFC functionality enables communication with smart devices even when the projector is switched off and can be configured and checked easily from the Epson Projector Config Tool on a smart device.

This means the initial configuration can be carried out at the warehouse before transportation, reducing the work hours needed for installation and adjusting when multiple projectors are being installed.



Optional camera (ELPEC01)

PQ22/20 series



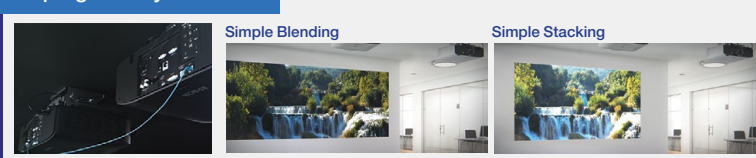
Auto Geometry Correction support⁹

In addition to supporting "Simple Stacking", the PQ22/20 series also supports "Simple Blending" to make blending functions a breeze. These functions eliminate complicated installation work and expedite large screen 4K setup. Furthermore, stacking and blending auto correction can be applied to both flat and curved walls using the Epson Projector Professional Tool software¹⁰.

Curved surface support



Simple geometry correction



Epson Projector Management Connected support

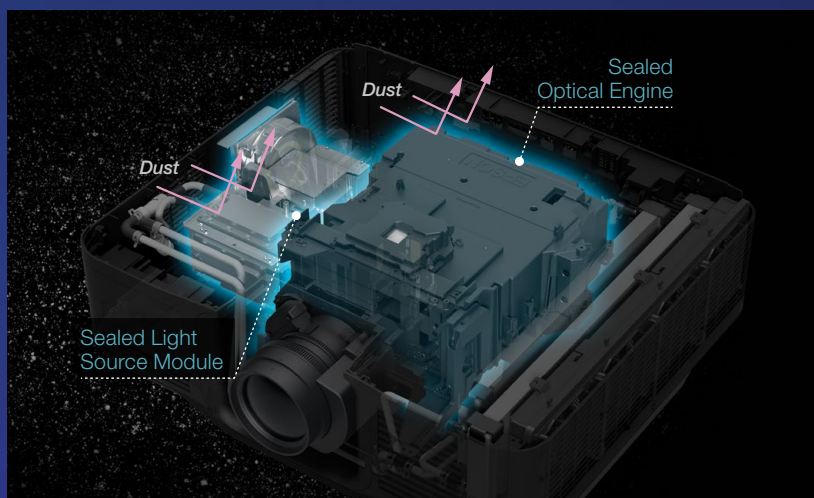
The PQ22/20 series supports the software¹¹ **Epson Projector Management Connected**, which provides a range of monitoring¹², notification and control functions for the projector.



Reliability

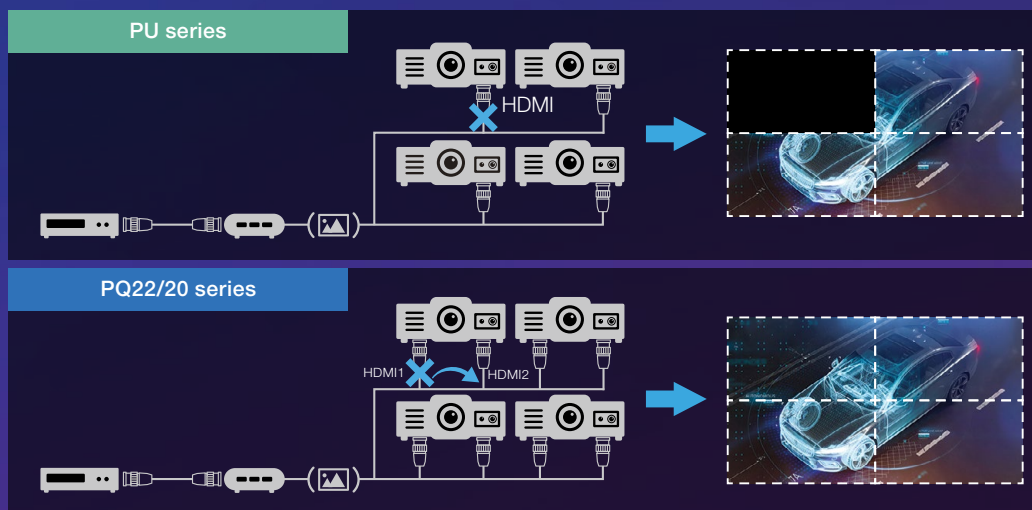
High durability with IP5X certified optical engine and laser light source module

The PQ22 series¹ is equipped with IP5X certified optical engines and laser light source modules conforming to IEC standard 60529¹³, which is the same level as PU22 series. In addition to sealed main components, circuit boards found to be at risk of dust-related short-circuit during testing are coated and protected. Thanks to this dustproof construction, the PQ22 series is filter-free, eliminating the need for filter changes¹.



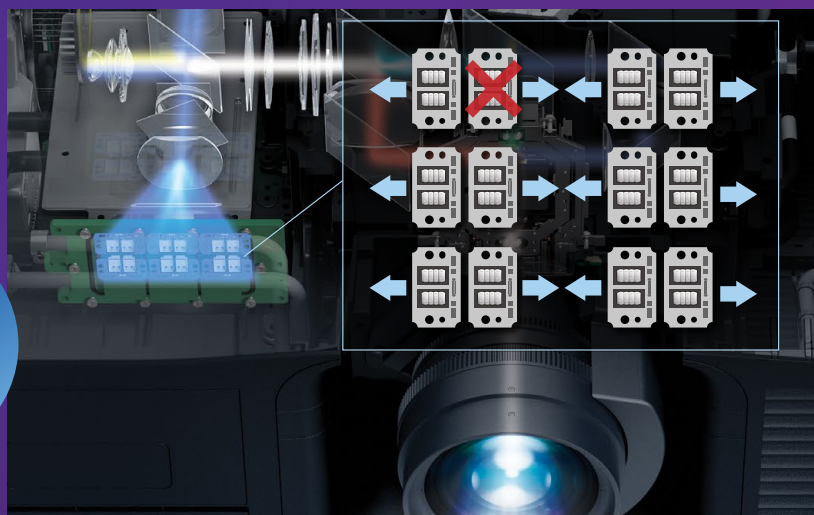
Backup source function

If, for some reason, the signal is lost when displaying the main signal in an environment with redundant transmission paths in place, the source can be quickly switched to a backup source with the PQ22/20 series' Backup Source function. SDI, HDMI2, and HDBaseT can be specified as the back up source¹⁴.



Independent laser element structure

The light source units equipped in the PQ22/20 series use an independent structure for the laser element and the drive circuit. Even if one light source unit fails, it will not affect the surrounding laser sources.



A brightness drop of only

8%

will occur if one PQ2220B laser chip fails¹⁵.

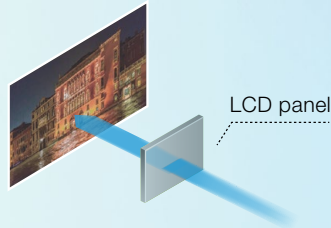
High Resolution

High contrast

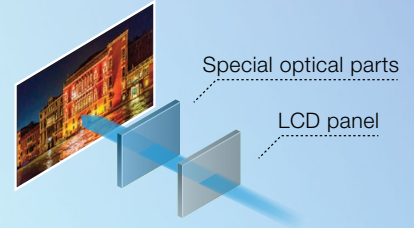
Epson's high-brightness projectors use the same technology Epson has developed for its award winning home theatre projectors.

Epson's unique optical technology is able to adjust polarisation to deliver exceptional contrast with true blacks and realistic colours.

Without special optical parts



With special optical parts



Improved native contrast

With the adoption of a newly-developed panel, the native contrast ratio has increased 1.5 times compared to preceding models. Black levels also look deeper making it possible to create projections with an even greater sense of immersion.

Other models

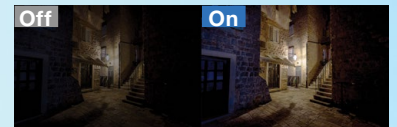
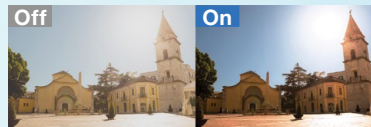


PQ22/20 series



Scene Adaptive Gamma Correction

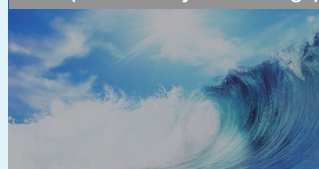
Scene Adaptive Gamma Correction analyses the image frame by frame and performs auto adjustments to the gamma level for optimal contrast. This prevents crushed blacks in dark scenes and clipped whites in bright scenes, resulting in a natural-looking image.



High dynamic range

The PQ22/20 series supports HDR10 and Hybrid Log-Gamma for dynamic output over a broad tonal range with a minimum of white or black spotting.

SDR (standard dynamic range)



HDR (high dynamic range)



Simulated images

- 1 Limited to PQ2216B / PQ2220B.
- 2 Native 4K refresh rate on the projection screen is 60 Hz.
- 3 Output: only when frame interpolation is on.
- 4 As of January 2024. Main unit without lens. 10,000 lm & 20,000 lm in accordance with ISO 21118.
- 5 PQ2010B has a 5-in-1 laser light source.
- 6 Limited to PQ2220B.
- 7 The brightness decreases to 15,500 lm (PQ2216B) & 16,000 lm (PQ2220B).
- 8 A decrease in brightness and other functional restrictions may apply. For details, please refer to the user manual.
- 9 Requires Epson external camera for each projector.
- 10 Some functional restrictions may apply based on the model & lens combination, and also depending on the customer's installation environment.
- 11 A PC that has Epson Projector Connected Agent installed is required for every 2,000 projectors.
- 12 Multiple users can monitor the same projectors at the same time from different devices.
- 13 IP5X certified in accordance with IEC Standard 60529. The IP5X certification is applied to the optical engine and light source module.
- 14 When using HDMI1 as the main port.
- 15 For one laser chip. PQ2216B will experience a 10% drop in brightness. PQ2010B will experience a 20% brightness drop.

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