

# Image processing

Reliable and modular video processing for all your setups





# 4K video processing for your installation

The demand for extremely high-resolution, video-based installations that wow audiences with an exceptional experience is growing. Image processing, screen management, and show control are key for video-based presentations. Stay up-to-date with the latest and greatest, and choose our presentation switchers that offer modular solutions that scale with your requirements.

## Unmatched performance

Bright outcomes require great products. Impress your audience with the best visual experience by relying on Barco's state-of-the-art video processors to manage **exceptional 4K image quality** with **best-in-class scaling** and **ultra-low processing latency** down to 15ms.

Call on integrated video signal distribution, switching, screen composition for layered videos, and the ability to **manage all your screens with just one box**. From small or large main screens to supportive downstage monitors.

## Flexible customized designs

Whatever your project needs, we have a full portfolio of processing solutions. Based on a **Build to Order design**, you can select the system that matches your requirements. Thanks to a wide range of **modular input or output cards**, you can **tune the system to the exact configuration** you need, taking in consideration your canvas size, input and output requirements, and the necessary windows.

You only **pay for what you need!** You simply pick and choose the right combination for your project.

## Future-proof solution

As new software is released on a regular basis, the Event Master systems are a future-proof solution. To keep up with the changing needs of the market, each **software upgrade brings user-requested and powerful new functionalities** to the line. Update your system to the latest releases to gear up for the spike in virtual and hybrid events in the next several years.

With the **ability to grow and expand** you can gradually upgrade the modular systems with new I/O cards or boxes. All the tools you need to keep your box future-proof and manage future projects with absolute ease.





Eurovision is a mega production equaled by very few worldwide. You can only be successful in such a production by applying the highest quality standards. And Barco was able to meet these standards hands down.

**Ben Augenbroe**  
Project Manager at Faber Audiovisuals

## Ultimate reliability

The Barco solutions come in a compact rugged design, which makes them **easy to transport and install**. We have tested all our boxes for G-shock, vibration, and extreme temperatures. They are truly **built to last**.

Our Event Master portfolio provides more situational awareness as all inputs and outputs are monitored in the **Multi-viewer** and the User Interface. Additionally, the user interface gives you a clear overview of all your system resources.

To conclude, the presentation switchers are very easy to use and maintain. The **compact form factor and easy GUI** speed up installation time. And the modular cards ensure **stress-free serviceability** in the field.

With reliability and ease-of-use as core features, executing your visual spectacle becomes effortless.

## Worldwide fleet

Supported by full APIs the flexible Barco systems can be easily integrated with a wide array of popular third party control systems on the market. Worldwide **over 1000 Event Master operators** have been certified, so when hosting a large production in your virtual studio, it's easy to bring in highly skilled freelance operators for additional help.

Cross renting an extra E2 or S3 is also not an issue with the **worldwide fleet** of Barco Event Master products in the rental market.

# Size the system to the project

## Custom-made BTO models



- ✓ Design your own configuration at standard pricing
- ✓ Fully modular in cost and capacity
- ✓ Upgrade without costly re-installation and programming

The Event Master E2, S3 and EX have a finished and stocked off-the-shelf configuration, but as it's a scalable and modular system, the units are also available as **BTO "Build To Order"** systems. You can configure the screen management systems to your show size and the set-up you need. Need all HD? No problem. Need 4K? No problem. Need a combination of the two? No problem. **Easily and rapidly configure the system** for your smaller set-ups, or push the limits with an incredible flexibility and granularity of resources.

Specify your exact system requirements. From a single chassis with as few as two cards, or **up to eight chassis with every card included**, the Event Master is the **most scalable and I/O dense screen management system** in the world. BTO enables you to choose the layer capacity and number of pips/keys, to decide whether you will link or not, and to select your input/output mix.

Size the system to the show, not the show to the system.



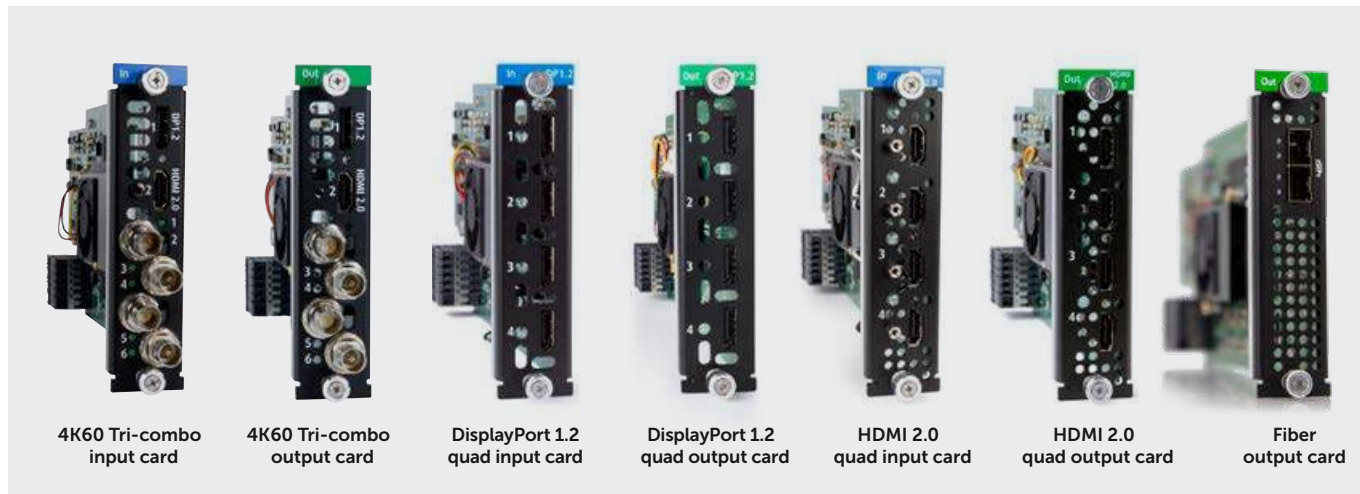


## Gen 2 input and output cards

compatible with E2/S3/Ex/ImagePRO-4K

These **modular I/O cards** can be used across the product family. As new signal interfaces are regularly released, you can simply add a new card to your configuration. The cards also make your systems scalable to support larger screens, a higher number of inputs and windows for your canvas or growing resolution. In short, the portfolio provides all of the advanced features and future **upgradeability** you need.

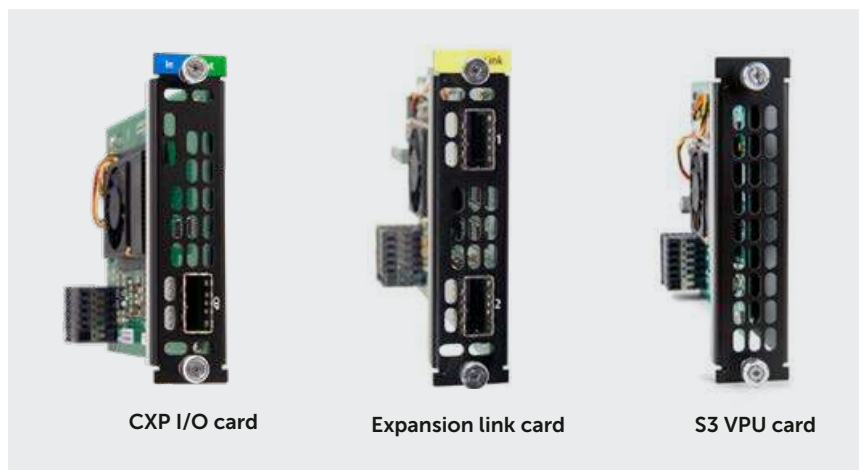
Nice to know: these I/O cards are **backwards compatible** and future-proof! If you've invested in these cards in the past, you'll be able to re-use them on our latest and still upcoming presentation switchers platforms.



## Expansion cards

for E2/S3/Ex only

Link cards can **expand your system by connecting E2 to E2, S3-4K to S3- 4K, or E2 to S3-4K**. If you only need to expand inputs or outputs, you can also link the Ex processor to the E2 or S3- 4K, increasing inputs and outputs in even smaller increments. This enables **easy expansion beyond the standard amount of inputs and layers**, without additional external processing or routing to distribute the signals. This Ex extends inputs and outputs for applications up to 300 meters away.



## Audio card

for PDS-4K only

This card **adds two DisplayPort 1.2 input connectors** and the ability for the PDS-4K to **pass embedded audio** from HDMI/DisplayPort/SDI input\* to Program outputs and embed/disembed to Dante network audio.

*\*SDI input and output supported in future software release*



# E2 Gen 2



- ✓ Native 4K input and output supported
- ✓ Easy and reliable show setup and production
- ✓ Flexible layer management
- ✓ Intuitive user interface

The Barco Event Master E2 is a **ground-breaking 4K screen management system** that offers video professionals unparalleled flexibility to manage the most awe-inspiring visuals on the largest pixel canvases. Excelling in image quality, I/O density, expandability, and durability, it is the most comprehensive system of its kind. Supporting native 4K input and output, this screen management system manages **4K projector blends with refresh rates up to 60Hz with full 4:4:4 color sampling and 12bit processing.**

The E2 offers an extremely **flexible layer management system**. With **up to 32 layers** available in HD, the E2 Gen 2 can customize the layer configuration to meet the needs of your application. The layers can be configured to support a mixture of HD and 4K resolutions maximizing your system flexibility.

We are blown away by the groundbreaking revolutionary features of the E2 system. Its modularity, ease of use and build quality – along with the future-proof, 4K native switching capability – are all reasons why we love it.

**Clint Fowler**  
Sound Stylists' Head of AV

## Standard E2 Gen 2 configuration

### Inputs

- 40 inputs via 8 input cards
  - Up to 16 x 4K
  - 16 x SD/HD/3G/6G/12G
  - 12 x HDMI 2.0 (600 MHz max)
  - 12 x DisplayPort 1.2 (660 MHz max)

### Outputs

- 18 outputs via 4 output cards
  - Up to 8 x 4K outputs
  - 4 x SD/HD/3G/6G/12G
  - 13 x HDMI (up to 600 MHz max)
  - 1 x DisplayPort (up to 660 MHz max)
  - 1 x 4K/4 x FHD Preview



Is the standard configuration not what you're looking for? Need more inputs or want 3D stereo capabilities? Then **customize your E2 using our Build to Order configurator**. Just configure your chassis with the cards you need. **The E2 BTO systems grow with your needs.**

# S3-4K



- ✓ Native 4K input and output supported
- ✓ Compact and modular design
- ✓ Easy expansion thanks to interlinking of chassis

Featuring 14 input channels, 4 PROGRAM outputs, 4 AUX outputs and 4 dedicated Preview outputs with Multiviewer, the S3-4K is the **E2 image processor's more compact sidekick**. Under the hood, however, it boasts the same processing performance, image quality, flexibility and rugged durability. In short: all the tools you need to create a stunning live experience, in a single compact and roadworthy housing. The S3 utilizes the same modular cards as the E2 and is also ready for future signal interfaces.

Barco's image processing enabled my team to display each content with accurate timing and perfection.

**Jo Pauly**  
Manager at Visual Solutions

## Standard S3-4K configuration

### Inputs

- 14 inputs via 3 input cards
- Up to 5 x 4K
- 4 x SD/HD/3G/12G SDI
- 4 x HDMI2.0 (600 MHz max)
- 4 x DisplayPort1.2 (600 MHz max)

### Outputs

- 14 outputs via 3 output cards
- Up to 6 x 4K
- 4 x SD/HD/3G/6G/12G
- 8 x HDMI 2.0 (up to 600 MHz max)
- 1 x 4K/4 x FHD Preview



If one of our preconfigured systems are not right, the **S3 is customizable using our Build to Order configurator**. Just configure your chassis with the cards you need. In addition, the S3 can link up to 8 units or can be linked with an E2 for a larger system with added in- and outputs. The S3-4K BTO systems grow with your needs.

# Ex



- ✓ Add extra scaling/switching power to your system
- ✓ Add extra Input/Output to your system
- ✓ Simplified cabling and system setup
- ✓ Invest only when you need to

As your requirements increase, you can also **link additional boxes**, such as the Ex, to **expand I/O switching and scaling power of your system**. With the Barco presentation switchers, expanding your system is as simple as connecting a few cables and an additional processor. If you only need a little, use a single link cable and the Ex expansion unit. If you need more, you can add an extra E2 with four link cables or an S3-4K with two cables. **No additional routers or splitters** are required.

Via the fiber extension solutions, the Ex processors can be **up to 300 meters away** from the E2 or S3-4K devices with zero compression, no additional latency and still preserving full bandwidth. They even allow for **expansion outside the room** using the Ex as a stagebox in a control room for easier and cleaner cable management.

Our theater needed a reliable live management system. The Barco E2 and EX combination made managing the 14 UDX projectors a piece of cake.

**Chris Ee**  
Technical Director/ Visual Designer  
at NABA Theater

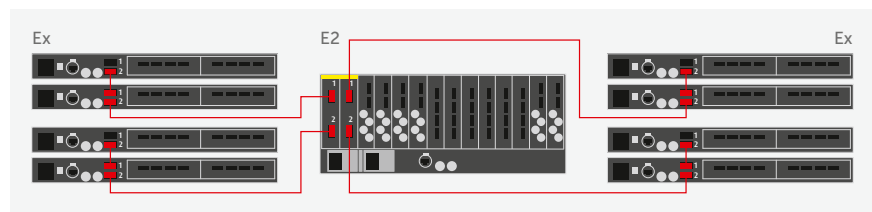
## Flexible and simple

Because the Ex shares its modular cards and software with the other presentation switchers, you can flexibly configure your systems and service your units in the field. This also makes your cabling and systems simpler – replacing up to 16 fiber extenders between remote devices and Event Master boxes.

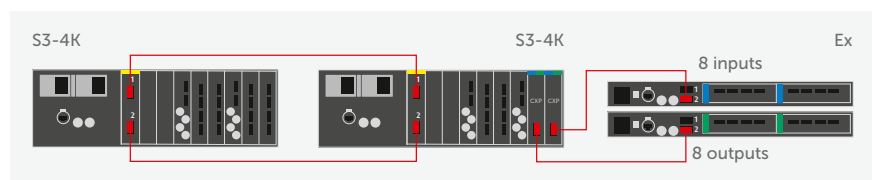
To bring you the highest flexibility of input and output options, the Ex ships without cards. Use cards you already own, or purchase the exact mix of cards you require. When you need out-of-the-box usability, use the **Ex BTO expansion unit** with a Tri-combo input card and output card.

## Expansion in numbers

Two Ex processors, with a total of two input cards and two output cards, can be connected to each E2/S3-4K link. This enables **8 extra inputs and 8 outputs of HD or 2x 4K input and output per link connection**. For the E2, you can link up to 8 Ex chassis, this means up to 64 additional HD inputs and outputs. And for the S3-4K, you can link up to 4 Ex, adding up to 32 additional HD inputs and outputs – all without adding a full-sized processing chassis or routers.



With the CXP I/O card you can extend or expand up to 6 slots of a host chassis. Each slot has 8 possible signals and with the Ex client chassis you can extend your applications up to 300m.





# PDS-4K



- ✓ Premium 4K visuals
- ✓ Simple set-up and operation
- ✓ Excellent price/performance ratio
- ✓ Digital audio switching capabilities

The PDS series of screen switchers is designed to meet today's requirements for a high-quality, easy-to-use and fast seamless switching with more **digital inputs at an affordable price**. Thanks to its straightforward setup and operation, the PDS is a perfect fit for smaller events, boardrooms, corporate auditoriums, houses of worship, or education and training facilities.

The PDS-4K enables **single screen and dual screen switching with high-quality 4K** processing, and it can also **support Dante® audio simultaneously with the video inputs** with the addition of an optional interface card.

The PDS-4K switcher guarantees unsurpassed performances and outstanding visual experience while also being **exceptionally easy to operate**. With just one simple press on the buttons of the intuitive front panel interface, you can switch easily between the input sources and preconfigured layouts.

This PDS-4K fills the dark hole of 4K processing for smaller rooms that has loomed over our industry for years. We are excited to have a simple solution for 4K switching with the reliability of Barco. It will be a game changer for the corporate event world.

**Andrew Poley**  
CEO of Don't Wonder Productions

## PDS-4K

### Inputs

- 6x HDMI 2.0

### Outputs

- 4x HDMI 2.0
- 1x UHD @60 MVR



## PDS-4K SDI

### Inputs

- 6x HDMI 2.0
- 2x 12G-SDI

### Outputs

- 4x HDMI 2.0
- 4x 12G-SDI
- 1x UHD @60 MVR



## Optional card

**DP + Audio card - R9802040**  
adding Dante® audio (de)embedding, passthrough and two DisplayPort 1.2 inputs.



**Dante™**

# ImagePRO-4K



- ✓ The highest resolutions and the best color performance
- ✓ Road-ready and reliable
- ✓ LED at your fingertips with the LED set-up menu

For video professionals, the ImagePRO is the ultimate **multi-functional problem solver**. It supports format **conversion, scaling, and switching**. That's three boxes in one – without the need to worry about connectivity or compatibility. The many uses save the expense of carrying multiple devices to perform multiple tasks. Operation and configuration are easily managed from the front panel or the Event Master Toolset, with the ability to **preview upcoming sources on the front panel**. The live-source view provides you with a clear view of the incoming signal giving you the confidence you need to execute your event flawlessly. And when it comes to shipping and racking, the **small size** of the ImagePRO-4K will save you space and shipping costs.

The ImagePro-4K offers extreme performance with ultra-low latency, 12-bit internal processing and up to 4K60p 4:4:4 10-bit signals. Imagine the possibilities that will offer upcoming events and installations! Work your magic in a 4K world.

Looking at the current state of the market and the need to push more pixels, the ImagePRO-4K is the logical step. The ability to take the latest high-res inputs along with the processing power and reliability made this an easy decision.

**Don Gaskill**  
Owner Rentex



## LED at your fingertips

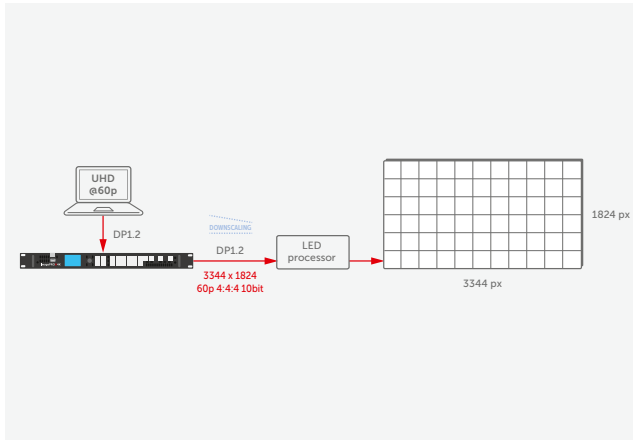
This device is a **perfect match with your LED video wall**. It easily scales, converts and switches the highest quality signals for your always-on LED wall, effectively solving glitches before they even occur. Need to slice and dice LED signals? The ImagePRO-4K does it with ease. Either chop up single inputs across several connectors, or drive multiple walls from multiple sources. The LED set-up menu will guide you through the process to achieve pixel-perfect images.



# What ImagePRO-4K can do for you

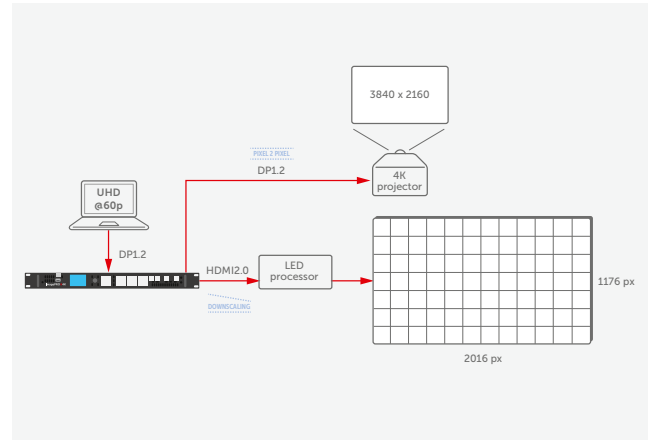
## LED: single channel pre-scaling

Since most LED walls are not a standard 4K resolution, the incoming signal needs pre-scaling or cropping to the actual resolution of the LED wall. ImagePRO's 12-bit processing preserves the signal's details and color.



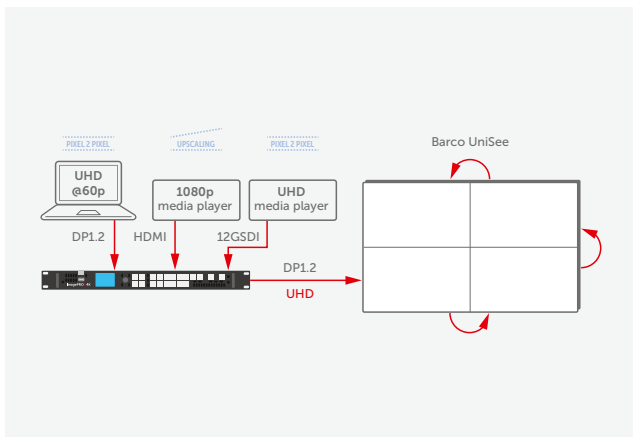
## Dual output application: LED + projection

The challenge here is to output two separate signals with different resolutions: a 4K projector and an LED display.

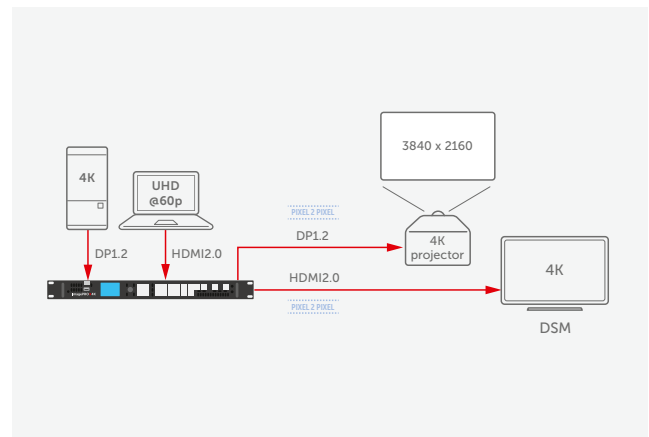


## Upscaling + switching: 2x2 UniSee wall

Input different signals such as DP1.2, HDMI and 12GSDI, and output to the UniSee using DP1.2.



## Small breakout room with matrix mode



# Controllers



From stadiums and houses of worship to lobbies and broadcast studios. And from trade show booth, to large corporate event or a music tour. These innovative event controllers give up to four operators **instant access to resources and great situational awareness** for a wide range of applications.

## Controller models

### EC-210

large event controller

For larger set-ups, the EC-210 brings faster programming to your large events with its revolutionary syntax. It provides the operator with everything needed to operate with confidence.

### EC-50

compact event controller

This smaller sibling of the EC-210 still provides full situational awareness. Easily add it to the ToolSet Computer with USB, even after the show is programmed. The smaller footprint of the EC-50 makes it suitable for most control environment.

### EC-30

small event controller

The EC-30 is a perfect fit for less demanding situations with instant access to the most crucial features. For fingertip control where budget and space are the deciding factors. Easily add it to the ToolSet Computer with USB, even after the show is programmed.

We're Barco people to the core. And the EC-210 made everything work the way we wanted it to.

**Danny Whetstone**  
Founder + President, DWP Live



# Take control...

The presentation switchers come with a **cross-platform GUI-based user interface** that provides **touchscreen ergonomics and ease-of-use**. With the toolset you can interface with E2 or S3-4K from a PC or Mac via an Ethernet connection. The program provides a **step-by-step approach** to configuring, programming presets, setting up the dedicated Multiviewer, and managing system functions.

## ...in 3 easy steps

The 3 key screens of the GUI include:

### 1. System configuration

The System configuration screen is the first to appear when you launch the GUI software. Here you can add or remove devices to the selected systems and modify their parameters (inputs, backgrounds, outputs and destinations).



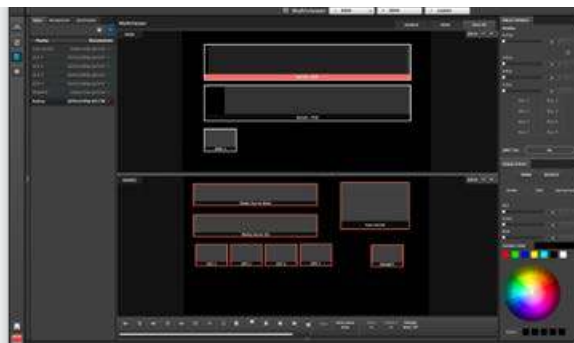
### 2. Programming screen

Use the Programming screen to bring the different elements together and build your show. Define sources for inputs, modify layer attributes like size and border, and create user keys and presets.



### 3. Multiviewer

In the Multiviewer screen, you can configure the dedicated Multiviewer, which enables multiple sources (inputs, backgrounds and destinations) to be displayed on up to four monitors. Up to four custom layouts can be created for the Multiviewer.

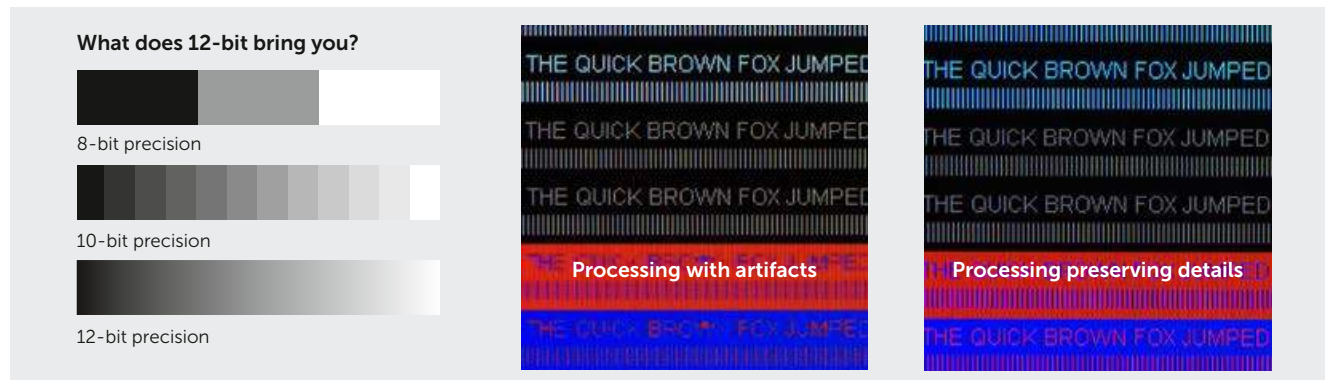


# 12-bit processing for better images in every format

To keep you up-to-spec with the demands of today's 4K market, all Barco image processing models boast **12-bit internal processing** as standard.

No matter the input or output format, your signals are always processed with 12-bit accuracy, creating **best scaling and conversion**.

The result: faster and more accurate processing that leads to **lower latency** and **the finest levels of detail** in each format – even if the output is 8-bit.



## Regular firmware updates

Working together with users in the field, we regularly upgrade our image processing firmware and software with a bunch of new features and improved functionalities that are highly wanted by the community! With a quick update you are ready for the future.

Some important highlights from our latest releases (8.2 and 9.0) include Tally indicators, automatic input failover and Multi Operator functions.

If you want to stay informed about available future updates, make sure to subscribe to the myBarco support page

of your presentation switcher, check your mailbox for notifications or keep an eye on our website for news posts and videos elaborating on all the cool stuff the newest firmware has to offer.



*Some important highlights from our latest releases (8.2 and 9.0) include Tally indicators, automatic input failover and Multi Operator functions.*



# Application areas

The demand for extremely high-resolution, video-based installations that impress audiences with an exceptional experience is growing. That's why image processing, screen management, and show control are key. Barco provides event professionals and fixed installation customers with a very complete range of image processing solutions. The tools include presentation switchers, controllers and scalers. The power and flexibility **can be used in different applications from (virtual) events to meeting and conference environments**. Unbridled creativity and ultimate ease-of-use, that's what our processors are all about. The only limit is your imagination.



## Events

With performance second to none and ultra-low latency, the Barco video processing and presentation switchers are the benchmark in the rental and staging industry. With their modular, rock-solid, future-proof architecture, they're the go-to IP solution for building truly epic events of all sizes.



## Virtual studios

The number of virtual and hybrid event initiatives surges notably. If you want a successful virtual production, you need to step up your game and be different from the overload of online meetings, webinars and webcasts. That's why the real brain of any great virtual studio is a great screen management system.



## Lobbies

Businesses need to make an emotional connection with visitors and staff the moment they walk in the door. They need to promote the quality and creativity of their brand, as well as their corporate values. Professional screen management in your lobby enables you to create beautiful layouts and customize the content to your needs, 24/7.



## Auditoriums

An in-house auditorium or seminar room is often used as multi-purpose space. No matter the type or topic of the content, your audience needs to be wowed by the visual experience. When integrating a camera during a live speaker slot, no production switcher is needed. With broadcast-style workflows incorporated, the Barco Event Master solution is really all you need.



## Boardrooms

The boardroom is the VIP of all meeting rooms. Adding a Barco screen management system to your boardroom offers the professionalism to support your corporate experience with premium videos, pixel perfect content and even pristine digital audio switching when using the PDS-4K. And they're easy to use!



## Television studios

TV studios should step up with engaging productions that manifest both distinctiveness and professionalism to make audiences tune in, every day, again and again. Barco's reliable processing solutions guarantee a flawless process for years to come and enable creative freedom, day after day.

# Summary unit

Photo: Hawthorn

	<b>E2/S3-4K/Ex</b>	<b>PDS-4K</b>	<b>ImagePRO-4K</b>
<b>Inputs</b>	4 to 384 inputs (4 to 6 per card). Choose interface with card.	6 x HDMI / 2 x 12G SDI / 2 x DP1.2	4 to 6 per card. Choose interface with card.
<b>Independent video walls</b>	Up to 4 x 4K60 / 8 x 4K30 (Or up to 32 x 4K60 / 64 x 4K30 in fully linked system)	2 x 4K60 / 4 x 4K30	Up to 2x 4K
<b>Max single video wall</b>	40Mp (or up to 320Mp in fully linked system)	10Mp	20Mp
<b>Additional scaling routing</b>	4 x 4K60 / 8 x 4K30 (Or up to 32 x 4K60 / 64 x 4K30 in fully linked system)	N/A	N/A
<b>Picture In Picture</b>	8 x 4K or 32x FHD (Or up to 64 x 4K or 256 x FHD in fully linked system)	2 x 4K	No PIP
<b>Projection blends</b>	Yes	N/A	No
<b>Layout capabilities</b>	Advanced composition & effects	Composition & effects	Full Screen Switch
<b>Genlock</b>	Yes, Tri-Level and Blackburst	No	Yes, Tri-Level and Blackburst
<b>Option cards</b>	Gen2 I/O cards, Expansion cards	DP1.2 and Audio option card	Gen2 I/O cards
<b>Applications</b>	Large events Virtual studios Multipurpose auditoriums Television studios Houses-of-worship	Small to mid-sized events Virtual studios Break-out rooms Corporate lobbies Boardrooms	Signal management for LED screens Branding lobbies Executive briefing centers Television studios

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ENABLING BRIGHT OUTCOMES

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