Infinipix™ Gen2

Get more impact and greater reliability from your Barco LED video wall

The performance of your LED wall is only as good as the processor that controls it. The safest way to ensure your wall looks impeccable is by using the Infinipix™ Gen 2 specifically designed and engineered by Barco. Infinipix™ Gen 2 always has your back and uses proprietary calibration software that supports your creativity and makes your content look picture-perfect.

Why Infinipix™ Gen2 matters

1. Reliable consistency

Multiple levels of redundancy, including our patented 4-way inter-tile cabling, ensure a maximal uptime and uninterrupted viewing experiences. Additionally, Barco Infinipix™ Gen2 guarantees perfect synchronization on the input without any tearing and no sacrifices in terms of latency.

2. Unmatched color & detail performance

With best-in-class performance, **framerates of 240fps and up to 8K30 resolution**, Infinipix™ Gen2 ensures that every video source is shown as intended. Colors are displayed with unmatched accuracy - even when dimmed to very low brightness levels.

3. From the LED experts

With a vast experience of **over 25 years in LED**, we know the ins and outs of the market. Building upon our know-how in critical systems (including the E2 image processing range for events), we continue to set the benchmark in image processing.

Guaranteed uninterrupted images

Data typically flows from tile to tile in a daisy chain. If the data path is interrupted, all subsequent tiles in the chain appear to be off with no content displayed. With the new Infinipix™ Gen2 processing, we provide **different ways** to deal with possible interruptions to guarantee that your display is always on 24/7.

1. First of all, we implemented the patented **4-way failover system**, which means the data signal is linked to all neighboring LED tiles. When any link breaks, the LED tile picks up the signal from a surrounding module. In essence, data redundancy is baked into our LED tile architecture right out of the box making TruePix the most reliable solution on the market.

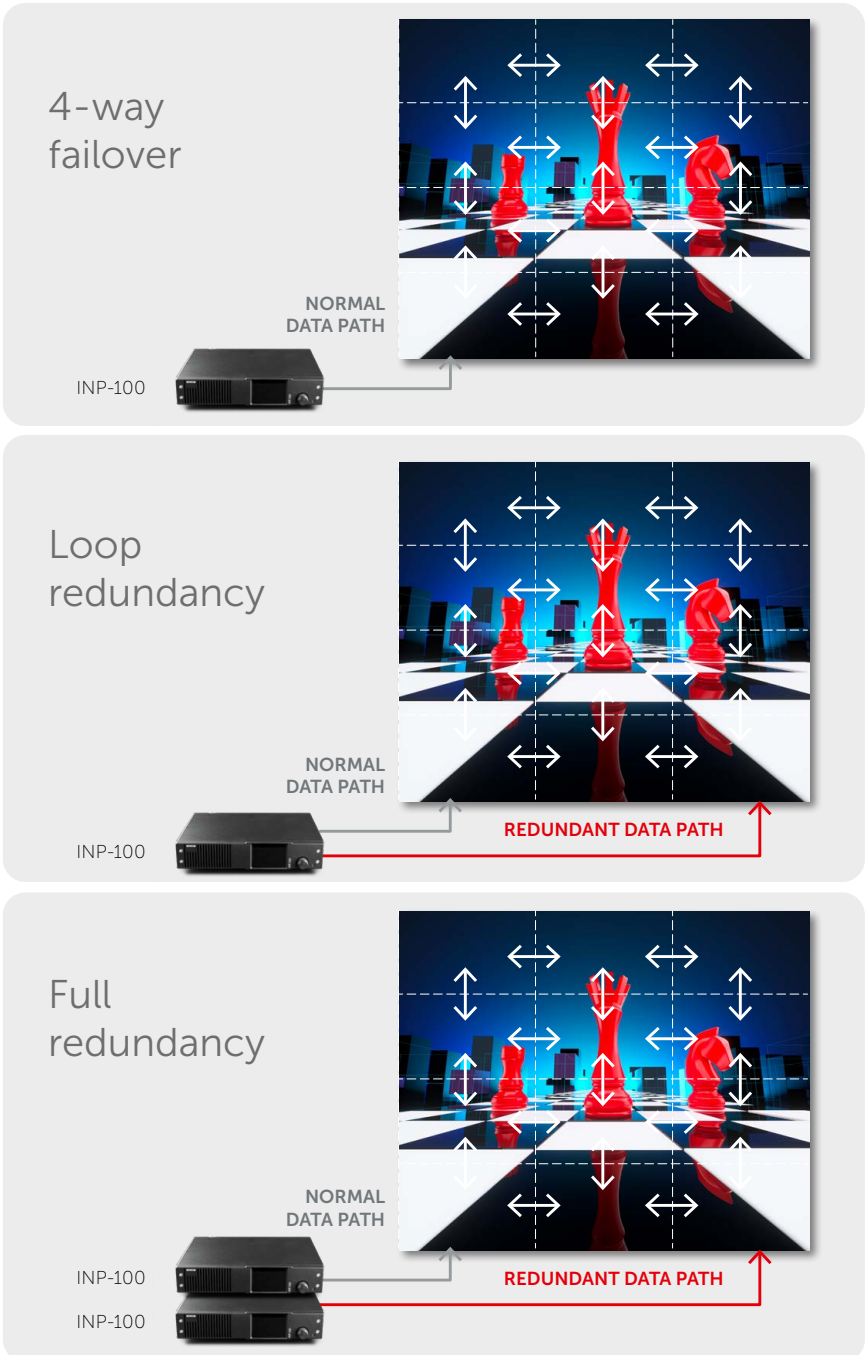
Another benefit of this system is the self-recognition of the panels, making set-up a lot easier. The image auto-calibrates itself on the panel reducing time of install or service time during module swaps.

2. Secondly, **loop redundancy** using two fiber cables (one to first tile, one to last). A redundant data path is created starting from one INP-100.

3. **Full redundancy** is similar to loop redundancy, but here 2 INP-100s are used so the processing unit is redundant as well.

In all these methods, restoration of the data path is immediate. No content interruption such as a black screen or LED module is perceptible, not even for a split second.

Signal redundancy ensures that if anything happens to the source, an automatic failover switches the system to a second source. Additionally, Infinipix™ Gen2 also offers a **5Gb bandwidth capacity,** which is 5 times bigger than other LED products. You therefore need a reduced number of cable runs from the image processor to the wall, resulting in less complexity and fewer risks of failure.



Flawless viewing experiences for maximum impact

You can create memorable moments when showing outstanding unique content on an impressive LED wall. But if even the smallest artifact disrupts the viewing experience, people will spot and remember that.

Barco's Infinipix Gen2 is **optimized to do your content justice, always bringing flawless, smooth and seamless results** for still, slow- and fast-moving content. To keep this promise, different elements are handled in our image processor.

Dimming

The Infinipix Gen2 platform ensures the best color performance with Barco's unique True Dynamic Range feature enabled by **23-bit color processing**

In many applications, including control rooms and design centers, the LED wall is usually running at a reduced brightness. But all the details still need to be clearly visible. With Infinipix Gen2's color processing you can keep the same color accuracy, gray scale levels and details in both dimmed and full brightness mode. Our image processor ensures that there are no visual artefacts. Don't let your creativity be limited by your canvas, and always show your color transitions as intended – in both highlights and dark areas of your content.

Latency

Latency is the time needed to process and transfer content from the input source to the screen. This is an extremely important factor to assure lip sync when displaying real-time content and also in simulations where the user's interaction must be immediately visible on the screen. Our next generation of Infinipix delivers market-leading lowest latency of less than 1 frame delay.

Image tearing

Whether you're running content from a laptop in 1080p or showing bespoke, wide color gamut marketing content or video. Infinipix Gen2 ensures the smoothest, optimal visuals without image tearing, for a more comfortable visual effect.

Stunning color accuracy

The color gamut of an LED display is limited by the characteristics of the individual LEDs and the processing behind the video wall. This affects the video wall's ability to accurately display colorful images. Therefore, Barco developed **Smart-Calibration™** in Infinipix™. This unique patented system counters limitations in the color gamut of an LED display and unlocks the support of wide color gamut.

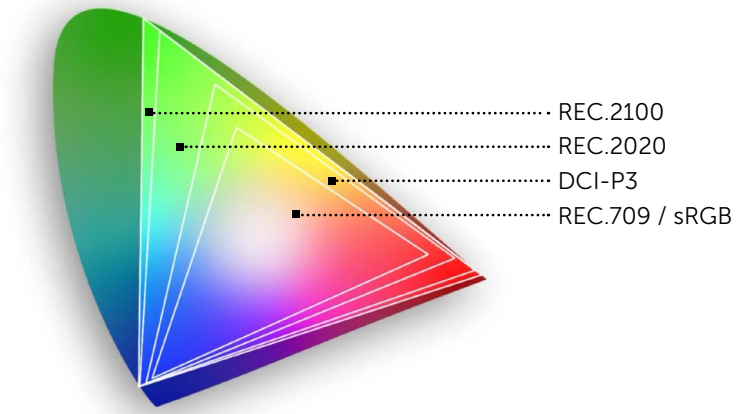
> With Infinipix™ Gen2 we assure the lowest latency in the market: it's even possible to achieve an end-to-end latency of less than 1 frame delay!

Stijn Indevuyst
Expert Development Electronics Engineer Barco

Today, we are dealing with video sources in a multitude of standards (including HDR, HDR10, HLG, sRGB, and DCIP). They all need to be managed by the processing system. **Barco Smart-Calibration™ is an essential tool for accurately showing any video source, or switching automatically when the video source changes.**

The end result? An accuracy never seen before, deeper and more saturated hues, and no visual impact on uniformity in areas of the image that would otherwise fall outside of the display's available color space. Where necessary, it is still possible to carry out manual color matching.

Wide color gamut support



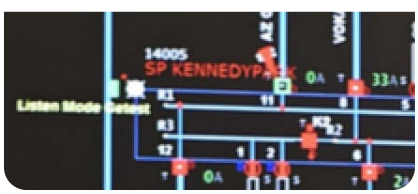
Smart-Calibration™ automatically applies the correct color gamut to ensure the colors are represented correctly – under any condition. It pushes the boundaries of the LED wall's native gamut to get even closer to the so-called wide color gamuts. The challenge, however, is not to oversaturate the image.

Let's take a closer look in the 3 images below: In the middle example, you can see that the umbrella looks spectacular, but the skin tone has a very unnatural color. Using Infinipix™ Gen2's Smart Calibration™, the umbrella still looks excellent, without affecting the delicate parts of the image such as skintones.

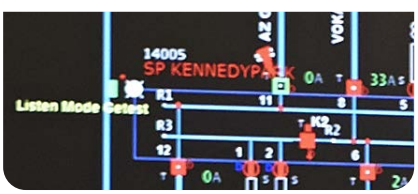
Scaling

Via scaling, your content is reduced or enlarged to match the resolution of the available LED wall. This, however, can often lead to unwanted inconsistencies in the image (such as 'jaggies' on sharp edges). Infinipix Gen2's embedded scaler guarantees superior signal clarity and minimum scaling artifacts, at Athena quality levels. Premium anti-aliasing filters to produce perfectly scaled and sharp images that match the resolution of your display.

Scaling artefacts



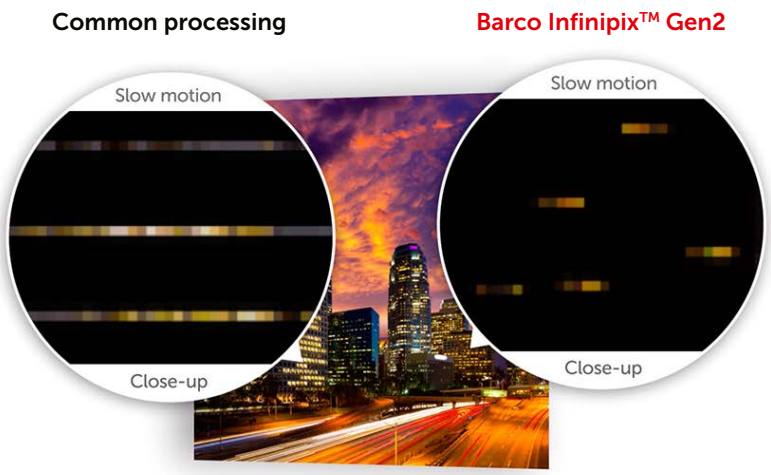
The benefits of Barco Infinipix™ Gen2

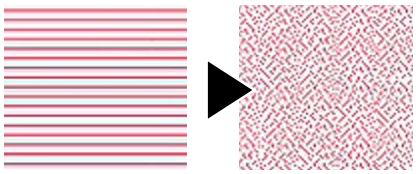


Easier on the eyes, easy to use

Optimal viewing comfort

When looking at an LED screen for long periods of time, eye fatigue can be a serious issue. For control room operators, for example, this is a real concern that can lead to loss of concentration and even eye problems. The cause is the perceivable patterns that originate from driving LEDs. Barco's **SteadyView™ technology counters this effect, by applying a unique driving algorithm** to reduce this perceivable flicker and the resulting eye fatigue. This considerably helps and improves the viewing comfort.





Interlacing can cause eye-fatigue

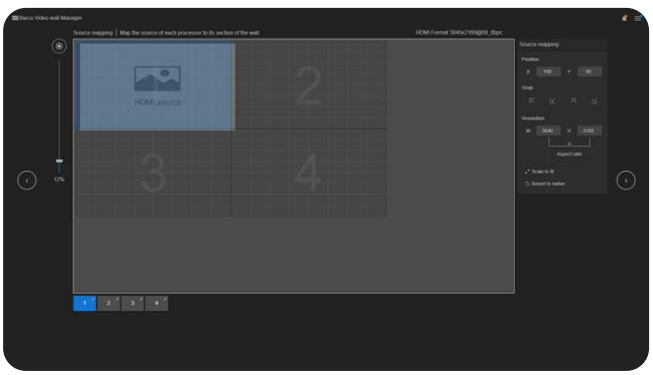
Barco's Infinipix™ Gen2 reduces eye-fatigue

Flexible and simple

The Infinipix™ processing platform makes the life of any installer or operator a lot easier with an intuitive and simple interface and stress-free remote serviceability. In addition, the API interface enables easy integration with third party monitoring and control solutions.

Video Wall Manager

Barco's new generation Video wall Manager helps you to set up, configure and maintain your video wall. It has been re-written from scratch and now provides a brand-new UI that boosts our customer and partner experience in setting up and maintaining video walls. The aim is to let anyone configure a video wall, even without training. The installation wizard is extremely easy to use, and will guide you through the whole process. The Video wall Manager also guards over the video wall's image quality. Not only at setup time, but also during the complete lifetime. A number of innovative features make sure you always have a perfect image.

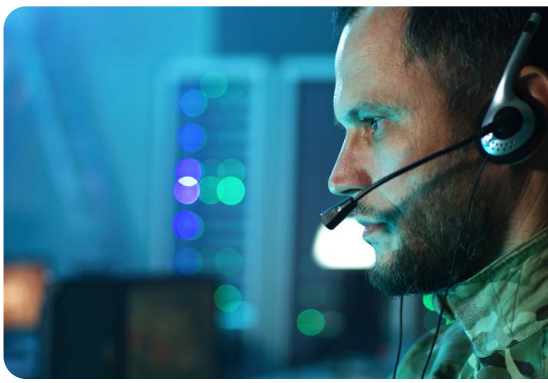


- ✓ Easy, intuitive and faster UX
- ✓ Worry free guided workflow for wall setup
- ✓ No complicated cable diagrams to follow
- ✓ Quickly troubleshoot a device
- ✓ Intuitive visualization of deviations & health issues

Barco's security checklist

LED walls are used in various data-critical environments: government monitoring centers, command posts and for internal company presentations. Recognizing this, the Infinipix™ Gen2 processors work with a proprietary transfer protocol within an isolated network to eliminate the risk of data leaks.

Smart user management with multi-level accessprofiles combines security with flexibility. What's more, the software is developed in-house in the EU and US to ensure code security. For these and other reasons, Barco has applied for **FIPS 140-3 certification**, a level of security required for US federal agencies.



Why Infinipix™ Gen2 for your application

Image processing that shows your true colors

Correct contrast and perfect colors are critical for every LED user:

- Color fidelity is key in mission-critical **control rooms** where the LED wall is typically at a low brightness. In addition, the flexible dimming and SteadyView™ capabilities of Infinipix™ Gen2 contribute to the viewing comfort of operators monitoring images 24/7.
- Consumer **brands** invest a lot of time, effort, and money in their brand identity. Where other processors are often over-saturating colors, Infinipix™ allows for brand-specific calibration. Even the palest pastel colors are accurately reproduced.
- The human eye reacts differently to light than cameras. **Television studios** highly benefit from Infinipix™ to recalibrate colors for specific camera requirements with one single press on the button.
- In the case of **digital prototyping**, manufacturers want to review their 3D designs as close to reality as possible. Thanks to Barco's LEDs' outstanding color accuracy and perfect contrast levels, these designers can trust what is being visualized and make the right decisions.

During the design of Infinipix™ Gen2, all aspects of 24/7 mission critical applications have been taken into account.

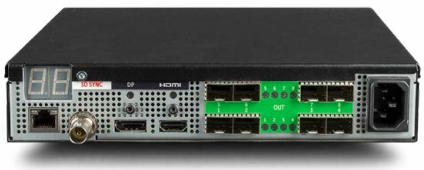
Gerrit Vermeire
Director Product Management, Large video walls, Barco

Specifications for INP-100

With an HDMI™ 2.0 and DP1.4 input and 8 modular SFP+ cages, the Infinipix™ Gen2 is your future-proof image processor and is ready to support 8K. 3D video footage is also supported with refresh rates going from 24 Hz for your typical cinema content up to 240 Hz for simulation content.

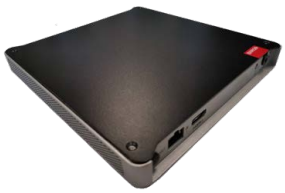
- ✓ Premium 8K visuals
- ✓ Simple set-up and operation
- ✓ The highest reliability and color performance

Inputs	1x HDMI™ 2.0 (type A) input 1x DP1.4 input
Outputs	8x SFP Modular wall outputs
Resolution	**For HDMI™:** Up to 4096x2160@60Hz at 4:4:4 at 8 bpc (24 bit/px) Up to 4096x2160@60Hz at 4:2:2 at 12 bpc (36 bit/px) **For DisplayPort:** Up to 7680x4320@30, YCbCr 4:2:2 at 12bpc (36 bit/px) Up to 3840x2160@60Hz RGB, or YCbCr 4:4:4 at 12 bpc (36 bit/px) Up to 3840x2160@120Hz, YCbCr 4:2:2 at 12bpc (36 bit/px) with custom timings
Input capabilities	HDR10 Active 3D Supports input bit depth of up to 12 bpc Progressive RGB and YCbCr 4:2:2 and 4:4:4 HDCP 1.4, HDCP 2.2, HDCP 2.3
Refresh rate	Support from 23.98 Hz up to 240 Hz
Dimensions	177 x 222 x 43,5 (h) mm - 7 x 8.75 x 1.7 (h) inch
Weight	2.7 Kg (5.95lbs)
Barco eco label	A+



The building blocks of Barco's LED image processing:

Video wall manager



The Video Wall Manager hosts a straightforward web interface that allows you to access information for your display hardware and offers the tools to (pre)view and manipulate settings on the hardware. What's more, it monitors your wall, keeps the system running and informs operators of any issues that occur. Save time and money, while Infinipix™ does the work for you!

INP-100

The Infinipix™ INP-100 processes the signals coming from connected video sources and transmits them to the receiver cards in the LED tiles. The processor is controlled by the Video wall Manager and steers one or more connected LED tile(s).

NR5 & NRX

The Infinipix™ receiver cards, integrated into the Barco TruePix and NT LED tiles, are the receiving party of the processing flow performing the final perfections on the processed input.

More info on the capabilities of our Infinipix™ Gen2 LED processing platform?
Go to https://www.barco.com/product/infinipix-inp-100.

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