

OV-D2

Barco's next-generation DLP projection series



Barco's next-generation DLP projection series offers a new visual experience for operators in a wide range of control room and studio environments. Sophisticated technology, including Barco's Sense⁶ concept, gives the OV-D2 series a unique position in the video wall market.

BARCO

Visibly yours



With years of experience in state-of-the-art visualization, Barco has advanced control room visualization technology by combining the highest possible image quality with the lowest cost of ownership. Now Barco has raised the bar again with a new series of video walls that bring control room operators the ultimate in viewing comfort. The new OV-D2 video wall family combines innovative, state-of-the-art functionality with proven technology that has made Barco's video walls so successful in control rooms all over the world.

Barco
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Barco's **next-generation** DLP projection series

- **A new visual experience**

Barco offers operators an unequalled visual experience by making use of the best display technology on the market and enhancing it with sophisticated Barco technology.

The result is a razor sharp, uniform image across the entire video wall.

- **Tailored to the human eye**

At Barco, we take ergonomics seriously with display technology that has been tailored to the human eye. Sophisticated sensor technology continuously guards and adjusts luminance and color characteristics to provide the best conditions for the human eye.

- **A secure investment**

Barco takes lowest cost of ownership into account from the ground up. That is why Barco's quality video wall components and dedicated technology guarantee maximum uptime of your system.

Fit for **any** application

For Barco, versatility is the norm. That is why Barco's video wall technology can be found in many various types of control rooms worldwide. From process control centers to broadcast environments, control room operators value Barco's video wall technology for a host of reasons.

Redundancy for 24/7 mission-critical applications

As no other video wall provider, Barco understands that redundancy is essential for 24/7 mission-critical applications. That is why the OV-D2 series features built-in lamp and content redundancy.

Barco's unique dual lamp system automatically activates a second redundant lamp upon lamp failure.

The redundant lamp system provides both cold-standby functionality for most economical operation or hot-standby redundancy in case every second counts.



Investment bank, Surveillance



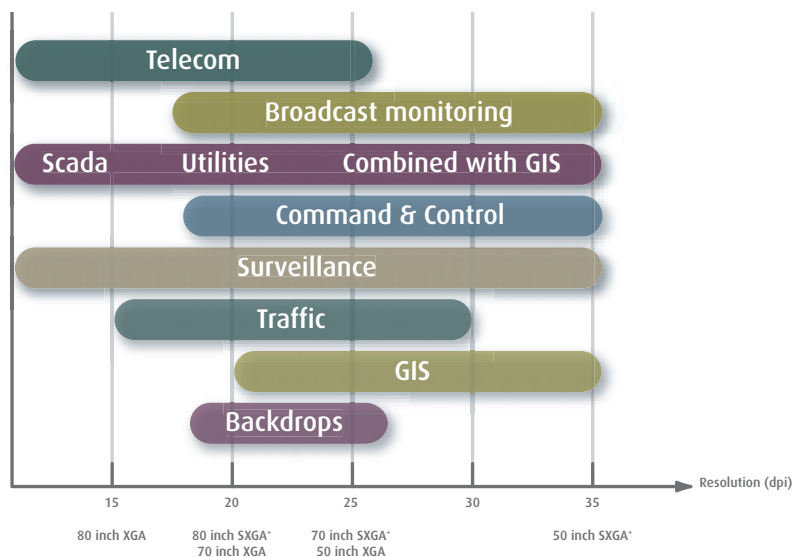
Channel 4, Broadcast monitoring



EnBW ZNL Esslingen, Utilities & Process control

Any resolution, any size

Barco's full range of video wall products covers the needs of practically any control room or backdrop application. The OV-D2 features a modular architecture with video wall modules ranging from 50" to 120" and from XGA to SXGA+, stackable to any size and resolution, curved or straight.





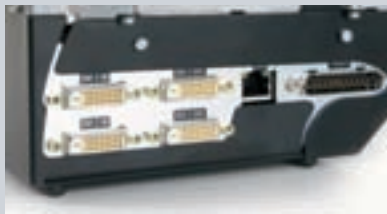
Hot-standby lamp



The lamp fails



Second lamp takes over & the optical dimmer re-adjusts brightness automatically to previous level



Dual DVI inputs and LAN connector

No content is lost during lamp service, lamps are hot-swappable without any safety issues.

Several levels of redundancy can be offered in case of video wall controller failure. This is specifically useful for very critical data that can be brought to the video wall by two independent ways: through a backup video wall controller or by directly connecting the sources to a video wall module. Dual digital inputs take video wall controller input in parallel with the video or RGB sources. In case of failure, the sources can be routed in parallel to the second input.



Mounted projection system

Truly seamless viewing

Barco's OV-D2 series offers operators a truly seamless viewing experience. The OV-D2 projection screens make use of Barco's patented stitch concept, which ensures that no air gaps, bezels or screen holders are present. Alternatively, Barco offers ZeroGap screens which are 100% seamless and able to adapt to temperature changes. The combination of high-precision lenses and fine mirror adjustment offers operators excellent image geometry and sharpness across the complete video wall. Additionally, high-quality screens conserve the sharpness, and are perfectly suited to present very high resolutions.



Madrid Barajas Airport, Traffic



BBC news, Backdrop



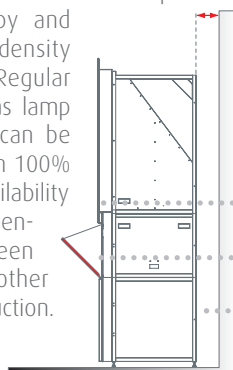
Decision room, Command & control

A perfect backdrop solution

More and more, video walls are used as an interactive element to present information on TV. The high resolution rear-projection modules support 3200 K color temperature to match with the studio lighting. They provide excellent on-camera performance with full GenLock capability and offer wide viewing angles for maximum flexibility of camera positions. Hot-standby lamps prevent any image loss during broadcast. Sense⁶ technology measures and adjusts the color and brightness to provide a constant uniformity.

Front access for confined spaces

For applications where space is limited, Barco offers video walls that can be serviced from the front and that require no back room space at all. The video walls' high resolutions allow operators to sit close by and monitor high-density information. Regular service, such as lamp replacement, can be performed with 100% video wall availability and without opening the screen area or any other operator obstruction.



Streamlined video images

To ensure excellent video quality and smooth movements, all display modules come standard with GenLock capability e.g. for synchronizing the refresh rate of the display with that of PAL or NTSC video. Be it for ticker bars in news broadcasts or moving traffic or surveillance videos, Barco's OV-D2 offers the most streamlined, jitter-free video images.

- No need to open the screen
- Access to the lamps
- No need for maintenance area

Tailored to the human eye

Always keeping the comfort of the operator in mind, Barco has designed its OV-D2 video wall series with a combination of state-of-the-art technology and in-depth knowledge of the human vision. Luminance, on-screen contrast and color are all optimized to maximally limit eye strain and adapt to the limitations of the human eye.

Excellent midtones



Optimized brightness

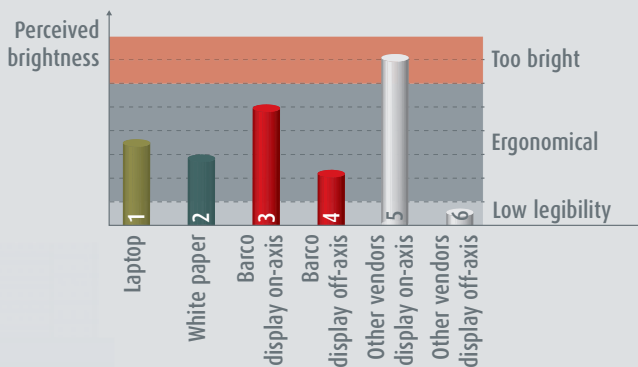
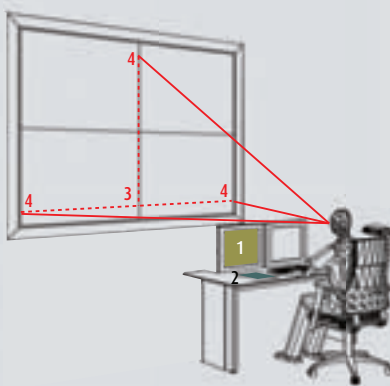
Barco's video walls are designed to present information in the most ergonomical way. To avoid eye strain, the luminance level of the video wall is at its best when it is matched with the luminance of a normal control room environment. Barco optimizes its video walls so all content can be seen from any operator seat within an ergonomic brightness range.

High on-screen contrast

On-screen contrast is critical for the legibility of a video wall. Barco combines high-contrast projection engines with anti-glare screens that avoid direct reflections.

High dynamic range

A unique optical dimming concept preserves video wall contrast over time and brings double the contrast values in comparison to Barco's competitors.



True color

Barco's new video wall series comes with a wide gamut range spanning several of the widely used, international color standards. Within that color range every color can be achieved within the limitations of the eye. The standard color temperature is set to 6500 K, which is ergonomically best suited in normal daylight conditions or can be set to 3200 K for camera recording in studios.

High contrast through high dynamic range



Wide color gamut

Perfect grayscale

Easy integration in your control room

An OV-D2 video wall seamlessly blends in with the environment and provides a truly ergonomic interface with operators and possible viewing galleries. Built-in flexibility offers integrators or installers a high degree of freedom: multiple installation heights, extensive height fine-adjustment for in-field flexibility and a variety of screen dimensions. The OV-D2's modular design allows quick installation. Screens with curvability and extreme viewability pose virtually no limitations on operator orientation towards the video wall.

Continuous uniformity across the video wall and over time

The optical design of the projection engine has been optimized to produce an excellent brightness uniformity and color uniformity within each display cube. Unlike LCD or plasma based products, the image generating element, which consists of a DLP chip and a color wheel, contains absolutely no aging or deteriorating components. Furthermore, OV-D2 guarantees a uniform and consistent image over time and across the entire video wall, thanks to Barco's unique Sense⁶ concept.

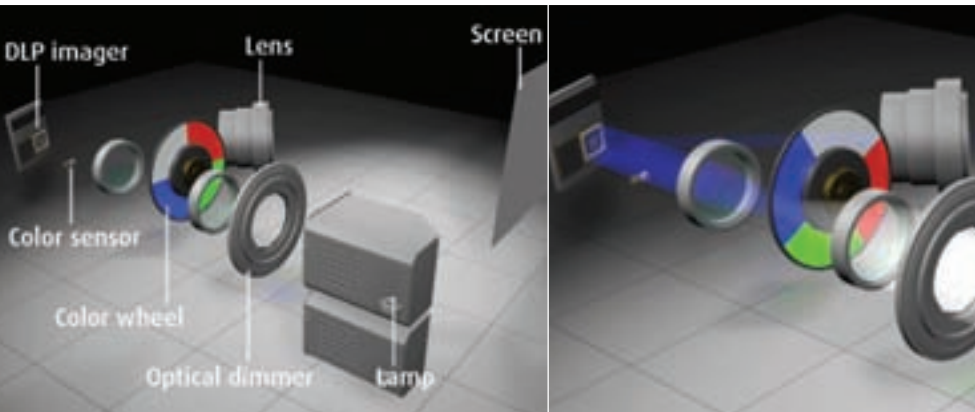
An image for all operators

Thanks to its wide effective viewing angle, Barco's OV-D2 video wall can be used efficiently from any operator seat. To keep luminance differences under different viewing angles to an acceptable level, the OV-D2 features screens that spread out the light evenly across all viewing angles. Additionally, the OV-D2 series offers a wide variety of screens with higher brightness levels, as they concentrate the luminance more towards on-axis viewing.



Images brought to life

Barco's OV-D2 video wall series builds on a revolutionary display solution that offers operators the most razor sharp and life like images available on a projection screen today. DLP is an innovative display solution that uses an optical semiconductor to manipulate light digitally. The result is maximum fidelity, with images whose accuracy, brightness and color must be seen to be believed.



Brightness lock

Adding color

The semiconductor

At the heart of every DLP projection system is an optical semiconductor known as the Digital Micromirror Device, or DMD chip. When a DMD chip is coordinated with a digital video or graphic signal, a light source, and a projection lens, its mirrors can reflect an all-digital image onto a screen. The DMD and the electronics that surround it are referred to as DLP technology.

The grayscale image

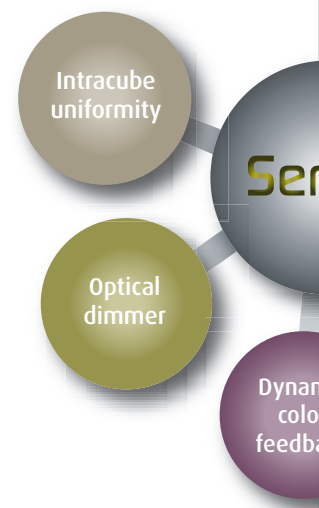
A DMD panel's Micromirrors are mounted on tiny hinges that enable them to tilt either toward the light source in a DLP projection system (ON) or away from it (OFF) – creating a light or dark pixel on the projection surface. The bit-streamed image code entering the semiconductor directs each mirror to switch on and off up to several thousand times per second. When a mirror remains on average longer in the on state than in the off state, it introduces a light gray pixel. If the off state dominates, a dark gray pixel is projected.

This way, the mirrors in a DLP projection system can reflect pixels in up to 1,024 shades of gray to convert the video or graphic signal entering the DMD into a highly detailed grayscale image.

Adding color

The white light generated by the lamp in a DLP projection system passes through a color wheel as it travels to the surface of the DMD panel. The color wheel filters the light into red, green, and blue, from which a single -chip DLP projection system can create at least 16.7 million colors.

OV-D2 uses the latest DMD technology with increased switching speed of the mirrors to deliver better video performance without contouring artifacts.



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Dynamic
brightness
feedback

Primary
color adjust

Gray
locking

A sense of perfection

Barco's new OV-D2 video wall series come with Sense⁶, a unique sensor technology that provides brightness and color stability over time and across the entire display. The unique Sense⁶ technology continuously measures brightness and color characteristics and adjusts the color space to provide an image that is most convenient for the human eye. No distracting luminance or color differences. No frequent maintenance or manual adjustments. No impact on the wall content whatsoever. Sense⁶ gives operators a sense of perfection with an image accuracy and uniformity that is second to none.

Brightness and color uniformity across the cube

Thanks to Barco's renowned optical design, the brightness and color uniformity levels of the single OV-D2 projection cubes are extremely high from center to edge, as well as in the corners.

Continuous brightness uniformity across the entire video wall

With Sense⁶ technology, operators are assured of luminance uniformity over time and across the entire video wall. A brightness sensor continuously measures the luminance characteristics of the projection module. This brightness information is used by the optical dimmer functionality to adapt and match the luminance of all cubes. The optical dimmer allows contrast with High Dynamic Range, which means video wall contrast is twice that of conventional systems. This makes it possible to see elements with a low brightness level, e.g. shades or dark scenes in movies.

Continuous color uniformity across the entire video wall

A true color sensor continuously measures the color performance of each projection cube. The Primary Color Adjust algorithm matches all projection cubes to the same color, based upon the sensor information.

This patented color feedback system operates in the background and adjusts the final color on-screen, compensating for tolerance difference of the optical path and color wheel as well as for color changes due to lamp aging or insertion of new lamps.

Perfect greyscale

Whereas the color locking functionality preserves color and the brightness locking functionality preserves white and black, the Sense⁶ gray locking functionality assures a consistent linearity between white and black, regardless of lamp brightness, or lamp age.

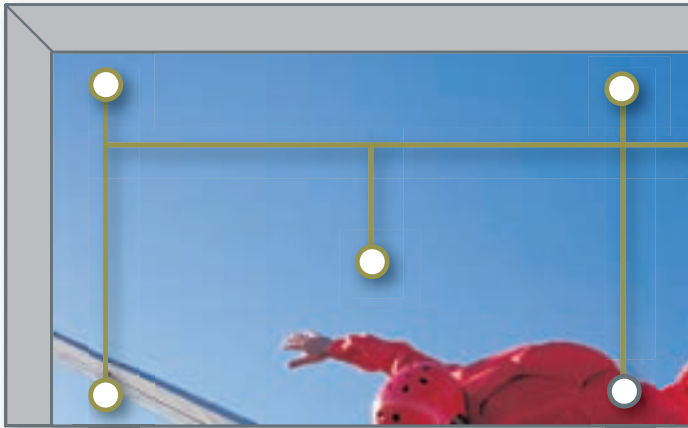
Sense⁶ benefits:

- **Excellent uniformity**
Equal brightness, color, contrast and midtones for all cubes.
- **Sensor based**
Barco's Sense⁶ technology sees what you see by measuring the output of the video wall rather than a specific optical component of the projector system. Changing a lamp or color wheel is automatically sensed and compensated for.
- **An active system**
The system actively measures and compensates over time and compensates for any changes, especially changes introduced by lamp aging or lamp changing.
- **No operator intervention needed**
The system works in the background and requires no operator intervention or technical skills.
- **100% availability of video wall content**
The system never interferes with the content on-screen. There is no need for special patterns keeping the requested content on the video wall at all times. Introduction of new lamps also does not require any recalibration pattern: the change is simply measured.



Sense⁶: a **sense** of perfection

Intracube uniformity



Intracube uniformity

Web page access to single cube



Intercube uniformity



Uniformity over time



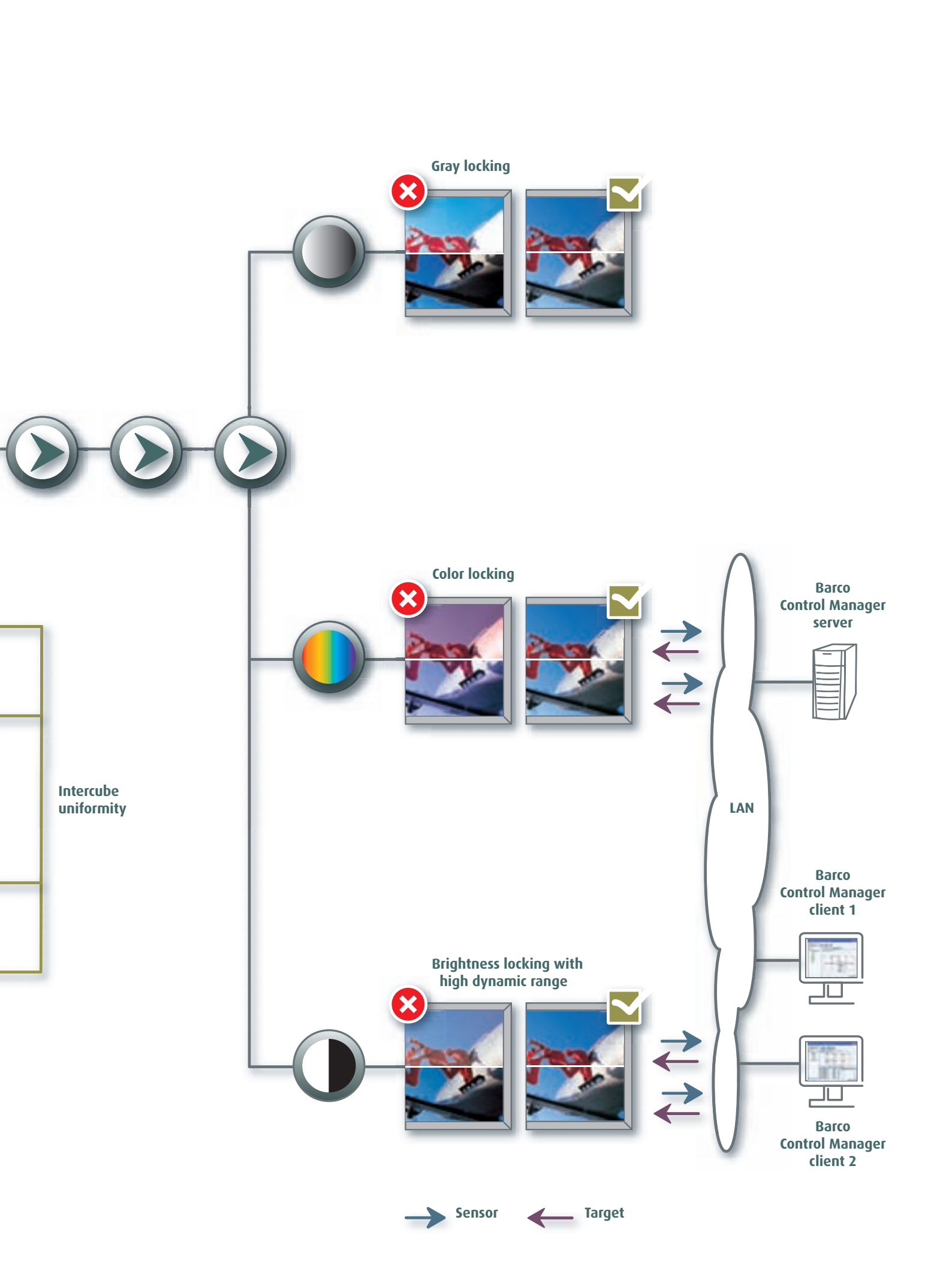
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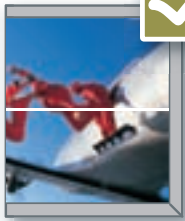
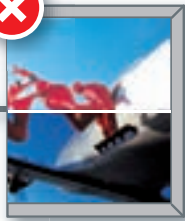
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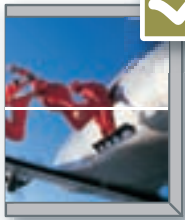
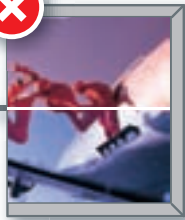
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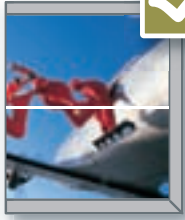
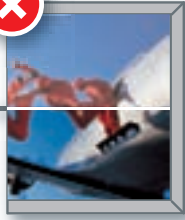
Gray locking



Color locking



Brightness locking with high dynamic range



→ Sensor

← Target

A secure investment

A video wall system should be ready for continuous image quality and maximum uptime without interruption of daily operations. That is why Barco takes lowest cost of ownership into account from system design onwards, so your system requires the least possible intervention and maintenance.



A dust filter keeps the electronics and lamps clean.



The lamp can be hot-swapped without image loss and without opening the system.



The I-lamp stores a.o. lamp runtime, serial number, color spectrum.

Quality components

The OV-D2 series offers excellent image performance thanks to sophisticated DLP technology. Compared to many other technologies, DLP technology shows absolutely no aging effects for a lifetime of over 100,000 hours. From lamp to screen, all OV-D2 components are designed for maximum Mean-Time-Between-Failure. The complete OV-D2 product line uses low-power, long-life-time UHP lamps, which have a higher efficiency than any other lamp technology available.

With a system that is designed for low power usage and heat dissipation, the OV-D2's power and air-conditioning cost is kept to a minimum. Severe in-house testing at Barco's dedicated reliability lab optimizes the OV-D2 for 24/7 usage.

Intuitive installation

The OV-D2 display series has been designed for quick and intuitive installation. The seamless screen is installed in minutes since no attention needs to be paid to screen gaps. The video wall structure has stable mechanics and includes dedicated cable guides. A small LCD display shows status at a glance.

Easy maintenance for minimal downtime

Maintenance should not be an obstacle for your daily operations. In Barco's maintenance philosophy, surprises and random interventions are avoided as much as possible by periodically planned service schedules. The Barco Wall Control Manager software allows for a complete health status overview of the system in the blink of an eye or allows the control of all projection cubes through direct Ethernet connection. All OV-D2 components are designed for low Mean-Time-To-Repair. The projection engine is split into a projection unit, which is smaller and lighter than the illumination unit.



Third party integration

The Barco system is open to any third party equipment. A published API allows communication to the video wall.

A trusted partner for quality support

Barco's worldwide customer support team and dedicated hot-line is ready to provide repair and assistance for your video wall system. Barco takes responsibility on system level so the complete system works, rather than only the display cubes or the controller. Training programs are organized frequently to keep up to date with technology evolutions.

Proven technology from a trusted company

Barco can boast the largest worldwide installed base together with more than 15 years' experience in the field of projection technology, a market position earned by innovative design, the use of the highest quality components for 24/7 usage and world class engineering.



The color wheel can be swapped within seconds.



The projection unit

This unique concept allows easy integration of future technology components without having to replace the full engine.

The projection unit, containing the complete optical path is 100% sealed off to keep dust out. A special heat exchanger between this clean area and the outside world cools the DMD chip and hereby significantly extends its lifetime.

Built-in redundancy for higher security

To improve the uptime of your content, Barco has equipped its video walls with built-in redundancy.

First, the standard redundant input with autoswitch ensures continuous content availability. Next, the redundant dual lamp system brings great advantages in terms of lamp servicing, since the second lamp automatically takes over upon lamp failure. Also, the exact same brightness and color is achieved after lamp change. This way, the swap can be done virtually unnoticed and without additional adjustment. The failed lamp can be replaced hot swappable, while the image remains displayed. Additional redundancy is provided by the color wheel, which can be swapped in minutes by a color wheel cartridge, without having to remove the projection unit.

Worry-free operation

Barco's OV-D2 series comes with Barco Wall Control Manager for video walls, a software package that continuously supports worry-free operation of your video wall. No more surprises, no unplanned or distracting maintenance interventions. Barco Wall Control Manager for video walls allows you to systematically manage and configure the uniformity and health status of your video wall fleet in an easy way.

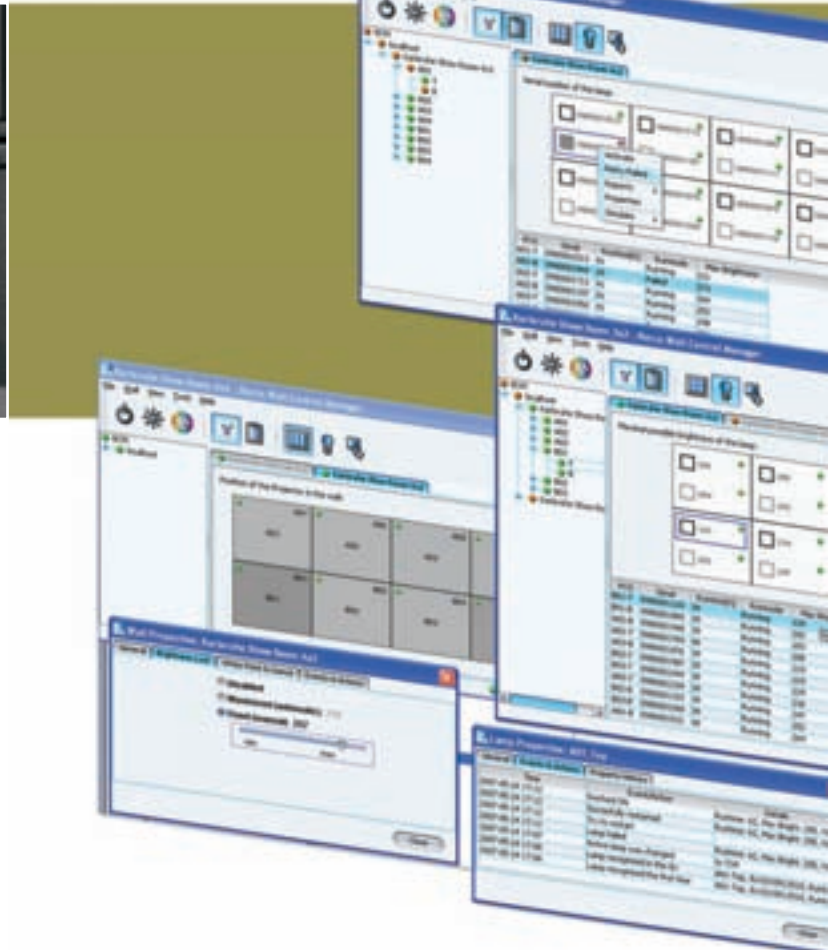
Brightness and color control

Barco Wall Control Manager for video walls allows the configuration of the common brightness target, and common color target of the entire video wall. Barco Wall Control Manager continuously measures the projector's brightness and color performance and makes corrections in case of drift.



The management of your video wall happens over the network

All projectors have their own ip address, which Barco Wall Control Manager for video walls is able to access all at the same time. By a single mouse click, you can control and configure various properties and features of the projection modules as well as of the entire video wall.



Input control

Barco Wall Control Manager allows to switch between active DVI inputs and to select a redundancy scenario in case an active input fails.

Lamp control

For a smooth maintenance of your video wall, Barco Wall Control Manager allows switching between active and backup lamps in the entire wall, or for a selection of projectors.

Health status

Barco Wall Control Manager shows health status on wall level up to projector level.

Extensive reporting

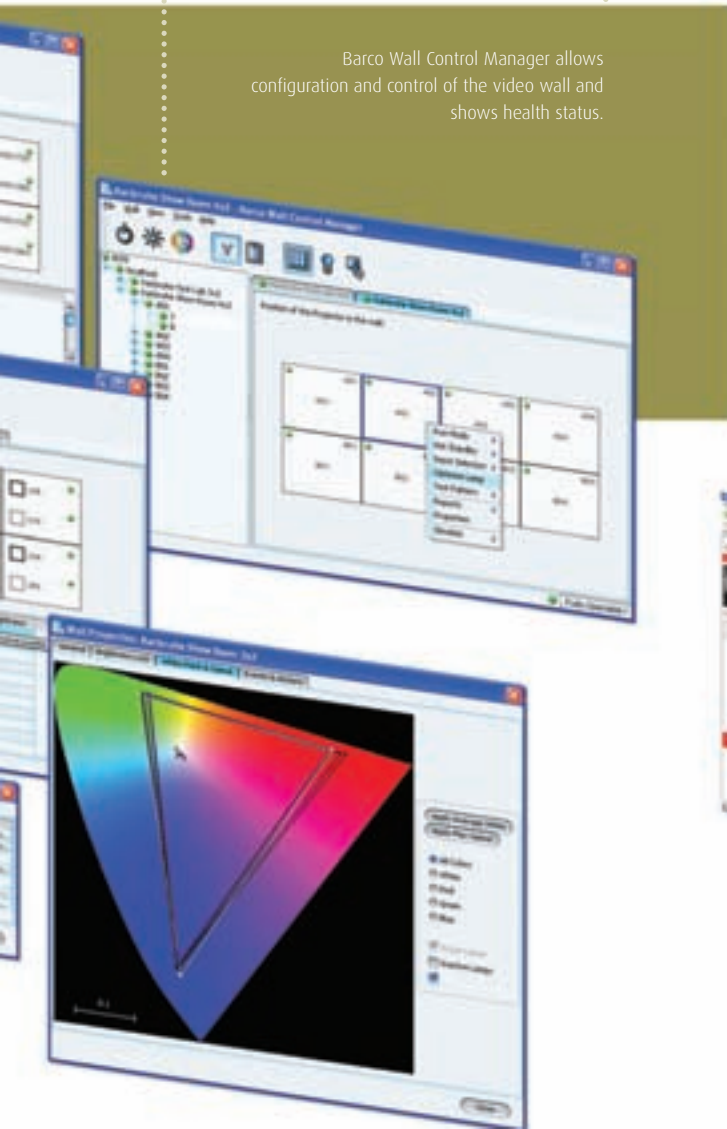
Barco Wall Control Manager for video walls provides extensive reporting functionality, such as event logging in case of lamp failure, hot standby enabling, projector switching, etc. The properties of projectors and lamps can also be logged according to user-defined intervals.

Direct web access

Second level maintenance can be performed by direct ethernet access to each projector. Every projector has its own web page and can be accessed by a standard web browser. Submenus include configuration settings and health status and allow direct control of the projector. Firmware can be upgraded remotely and fast, which reduces maintenance time.

Barco Wall Control Manager allows configuration and control of the video wall and shows health status.

Each projector can be accessed directly via its ip address and a standard web browser.



About Barco

Barco, a global technology company, designs and develops visualization products for a variety of selected professional markets. Barco has its own facilities for Sales & Marketing, Customer Support, R&D and Manufacturing in Europe, North America and Asia Pacific. Barco (Euronext Brussels: BAR) is active in more than 90 countries with about 3800 employees worldwide. Barco posted sales of euro 751 million in 2006.

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Barco is an ISO 9001 registered company. The information and data given are typical for the equipment described. However any individual item is subject to change without any notice. For in-depth features and technical specifications of the several OV-D2 configurations, please visit www.barco.com.
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