

Bring out the best of the image

Rear-projection screens for a perfect close-viewing experience



An extensive portfolio, suiting any application

When watching a projected image, you are never watching the projector directly – you are watching the screen. So why would you give this screen less attention than the projector itself? Screens can make or break the entire experience. Not only Peak Gain (PG) and Half Gain Angle are important aspects; color accuracy, contrast, low reflectivity, brightness and durability are equally essential to reach the premium image quality your application requires.



OMV - Vienna

Barco's portfolio of rear-projection screens for virtual reality applications is unique in the market. While most manufacturers offer the same screens for all markets, Barco has thoroughly investigated the specific needs for close viewing experiences, and have built a comprehensive portfolio around these requirements.

Close viewing experiences pose a number of specific challenges to visualization systems. These include:

- Perfect visual quality, under wide viewing angles
- High contrast, with low reflectivity
- Operational under varying lighting conditions
- Durable screens ensuring years of worry-free operation without quality degradation
- Suited to create large, seamless projection surfaces
- True-to-life color representation

A projection screen consists of a base screen material, combined with a coating. Barco's portfolio consists of different screen types, and multiple coating options, providing an offer of combinations to choose from, depending on the needs of your application.



Gdansk University

Screen options

Four different screen types are available, ranging from the perfectly flat and rigid glass screens, to the light-weight RigiFlex screens:

- Multi-layer safety glass screens for highest rigidity and perfect flatness for ultimate viewing experience
- Rigid acrylic screens that combine very good flatness with lower weight
- Semi-rigid screens with a light weight, which can be rolled up for easy transportation and installation
- RigiFlex: a very rigid screen made from thin, lightweight material and specially designed to bring into any room.

Coating options

In order to fully answer the needs of our customers, we present multiple proprietary coatings which can be applied to the different screen types:

- High contrast coatings bring you the best ambient contrast available on the market allowing using your screen in an environment with normal lighting conditions or combining multiple screens and still achieving excellent contrast levels.
- High brightness coating gives you the choice of preserving more brightness when you have an environment where lighting is controlled and contrast is not the deciding parameter.
- Laser coating has been optimized to be combined with RGB laser projection in close viewing applications by delivering speckle elimination and the best uniformity you have ever seen.



4 screen types, many advantages

With four available screen materials, Barco lets you choose which type best suits your application. Every material has a set of specific advantages, and Barco adds the needed quality to ensure you get the best screen possible, providing excellent hardness, high resistance for UV-radiation, and cleaning possibilities.



Multi-layer safety glass

If your application requires the absolutely ultimate viewing experience, then Barco's multi-layer safety glass is the best choice for you. Offering perfect flatness and the highest rigidity, these screens are made for extensive use, over many years. In order to preserve the color accuracy, we use very specific optical white glass, ensuring an excellent image quality. What's more, glass screens are almost unsusceptible to change due to heat or humidity (meaning they will

perfectly keep their shape at any time) and are incombustible.

- Best image quality
- Perfect flatness
- Highest rigidity
- Unsusceptible to change due to heat or humidity
- Incombustible

Rigid acrylic

Barco's rigid acrylic screens have a lower weight than the multi-layer glass models. This makes handling, transportation and installation easier, while maintaining excellent flatness and image quality. This screen type is preferred by many professionals, as it combines image quality with installation ease.

- Excellent image quality
- Very good flatness and rigidity
- Moderate weight for easier installation



GFZ Potsdam - Berlin

Semi-rigid acrylic

Barco's semi-rigid screens are light and can even be rolled up in order to fit into an elevator or through passages with a limited height. They are very well performing in cylindrical rear-projection set-ups. For flat configurations it's advised to use the screen for small image sizes to guarantee the needed flatness. For larger sizes we recommend to use RigiFlex or one of the other rigid screen types (glass or rigid acrylic).

- Very easy to transport and install
- Possible to be rolled up, enabling room entrance
- Good image quality and flatness

Rigiflex

Barco's RigiFlex is a proprietary very rigid and light-weight rear-projection screen that comes on a roll, making it easy to get in or out of any location. At the same time, it offers superb performance thanks to its very high-tension surface. RigiFlex can be used as well as in flat as in cylindrical configurations.

- Save time, space and money with easier transportation and swifter installation
- Allows for very large set-ups
- Flexibility enables easy upgrades

Available in large sizes

VR systems are often very big, requiring large screen formats. Many manufacturers cannot comply to this demand, and need to deliver the large surface in multiple parts. Barco screens have configurable dimensions. Depending on the chosen screen material, sizes of up to 20 m (65.6 ft) on 4 m (13.1 ft) are possible, creating the perfect canvas for rear-projection.



In-house made coatings perfected for close viewing experience



GFZ Potsdam - Berlin

Barco's coatings are unique in the market as they combine very high durability with immaculate image quality. Completely developed, manufactured and owned by Barco, these coatings for virtual reality applications enable customers to make their system really stand out.

With high contrast coatings, high brightness coatings and laser-optimized coatings, Barco markets a very extensive portfolio.

High contrast coatings

The signature high contrast coating boasts a very low reflectivity of 2%. This results in system contrast levels of more than 30:1, even when used in lit environments. Compare this to conventional screens, which typically only reach a contrast level of 10:1. Details in the image are preserved a lot better than with competing solutions, creating crisp images that best bring the content to life. Furthermore, high contrast screens also have the advantage that colors remain a lot more lifelike and vivid.

The ultra-low reflectivity levels make this coating perfect for environments where ambient light is present – for example in CAVE systems where screen reflections from adjacent or opposite screens can pollute the image quality, or broadcast backdrop projection systems with

studio lighting present. The different coatings are tailored to typical needs of projections system solutions (single channel, blended, short throw, ...) and the customer application use case.

- Optimal dark levels for perfect details
- Very low reflectivity
- More vivid colors
- Fit for any environment
- No halo effects, mirror effects, or unreadable text



RWTH Ispace - Aachen

High brightness coating

When the projector's light output level is rather low according to the needs of the application, then high brightness coating brings the solution. This type boosts the available brightness, while still delivering a fair contrast compared to competing solutions on the market.

The screen reflectivity is still fairly low – although it is advised to control the lights reflecting directly on the screens to preserve the contrast level as much as possible. Furthermore, this coating delivers high screen uniformity due to its half gain angle of 70°, allowing positioning the user in a wide seating environment.

- Advised for (rather) low projector light output
- Compatible with ultra-short throw projection avoiding hot-spot effects
- High screen uniformity

Laser coating

As opposed to laser phosphor projectors (which work perfectly with conventional screen types), RGB laser projectors pose very specific challenges to screens. Speckle, a disturbing and eye fatigue evoking effect inherent to the projection technology, must be eliminated as much as possible. Barco's laser coating was designed to this end. With a fairly low screen reflectivity, high contrast levels are still achieved. Furthermore, the very uniform image allows looking at the screen from every angle without losing information or details.

- Eliminates laser speckle effect
- Very high contrast
- Most uniform image
- Designed for direct (R, G, B) laser projection systems
- Detailed and crisp image, from any viewing angle
- Half Gain Angle (HGA) and Color Critical Angle (CCA) > 80%





Skills and expertise, around the world

Barco has the necessary experience and global reach to handle projects in all corners of the world. With offices in over 90 countries and a globally managed spare parts inventory, Barco's support personnel are always accessible and dedicated to assist our customers as quickly as possible. In this way, we can reduce system downtime to a minimum, and keep you and your customers satisfied.

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The information and data given are typical for the equipment described.
However any individual item is subject to change without any notice.
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All specs mentioned in this brochure are in accordance with ISO 21118 standards.