

# BarcoReality SIM 4



## Single-chip DLP™ projector designed for immersive applications

The BARCOREALITY SIM 4 is the first single-chip DLP™ projector with SXGA resolution, designed especially for simulation and immersive applications. Thanks to Barco's Flex 4 geometry distortion technology, which is integrated in the projector's compact industrial design, the BARCOREALITY SIM 4 can support virtually any type of curved screen application. For **simulation** applications, specific attention was given to the requirements of Ship Bridge, Air Traffic Control and Driving simulators. In **Virtual & Augmented Reality**, the BarcoReality SIM 4 equips CADWalls™ and analysis and decision centers. Its unique features make it also a valuable alternative to CRT projectors in **planetariums**.

### Exceptional versatility

- Standard in all SIM 4s is the proprietary FLEX 4™ processor for pre-distortion of images in curved-screen applications (based on Barco's WARP 6™ technology)
- Leading-edge geometry distortion range
- Passive stereo optimized for V&AR (linear or circular polarization)

### Multi-channel optimization

- Optional, proprietary OPTICAL SOFT EDGE MATCHING (OSEM): custom-made optical filters to achieve truly seamless blending for multi-channel systems, maintaining full contrast ratio
- Chromatically matched optical engines with additional DYNACOLOR™ electronic color space transformations for elimination of channel-to-channel color variations
- EXTENDED CONTRAST RATIO: Integrated, optical dimmer for use in night scenery and light output equalization
- Optional CONSTANT LIGHT OUTPUT (CLO) for continuous brightness tracking
- Optional linked CLO with linked DYNACOLOR™

### Superior optics

- 200 W UHP lamp to produce up to 2,000<sup>+</sup> ANSI lumen
- Optimized engines achieve contrast ratio >1300:1
- Standard fitted with a (1.2 - 1.4):1 zoom lens: Flexible positioning through -100% to +100% off-axis adjustable lens mount. Optional 0.92 and 0.7 fixed lenses.
- Standard Scheimpflug Adjustment for use on tilted screen configurations

BARCO

Visibly yours

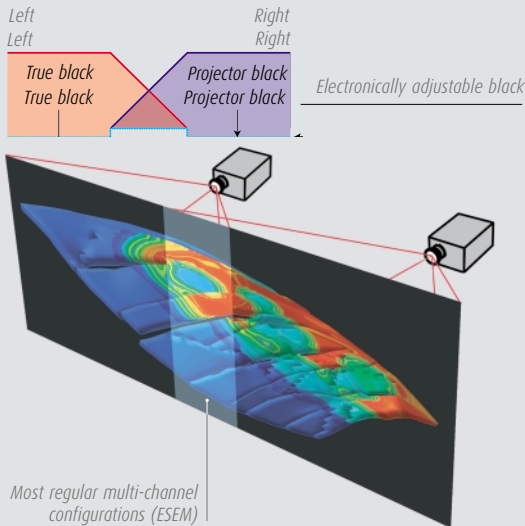
# Barco proprietary technologies for demanding applications

For night scenes in Simulation, for high contrast detail in Virtual Reality applications and for dark starry skies in planetariums, Barco incorporated an impressive array of proprietary technologies and dedicated options to ensure the highest possible contrast and multi-screen color and brightness uniformity of all projected images.



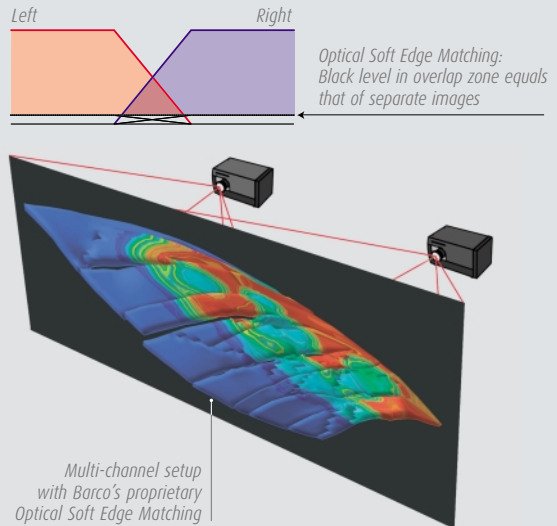
## Electronic Soft Edge Matching (ESEM)

In multi-channel setups, the nonzero black level of light valve projectors normally leads to brighter overlap zones, especially in night sceneries, which complicates multi-sided overlaps. Barco's standard ESEM technology allows you to adjust edge blending without black level correction on all Barco simulation projectors.



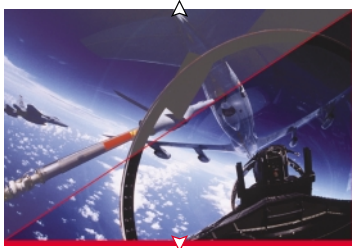
## Optical Soft Edge Matching (OSEM)

With Barco's proprietary OSEM, blending filters in the optical path maintain the black level in the overlap zone to that of the separate images. This results in a seamless image with invisible blends, also in night sceneries, with complete control of the full dynamic range.



## Extended Contrast Ratio (ECR)

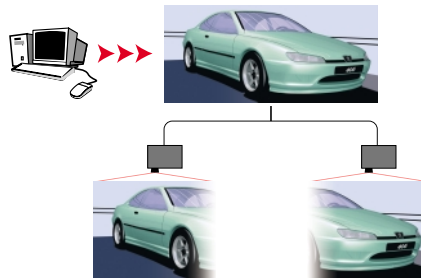
Dark night scenes typically deliver video signals with reduced dynamic range and almost no contrast.



By electronically enhancing these video signals and dimming to rescale to full dynamic range, Barco's ECR greatly improves the contrast ratio and picture quality.

## i-Stereo™

From a single high-bandwidth PC or workstation output (>170 MHz), i-STEREO™ produces two channel pictures with blend. By using the two outputs of the PC or workstation, you get a two channel passive stereo projection at full resolution.



## Constant Light Output (CLO)

An integrated, calibrated light meter measures and controls the light output. A projector set at e.g. 1000 lumen maintains this brightness over time, independent of lamp life.

- New and used lamps can be mixed allowing you to control brightness
- Not all lamps need to be changed at the same time

### Blending with non-optimized projectors:

1. Alignment differences
2. Color & brightness differences

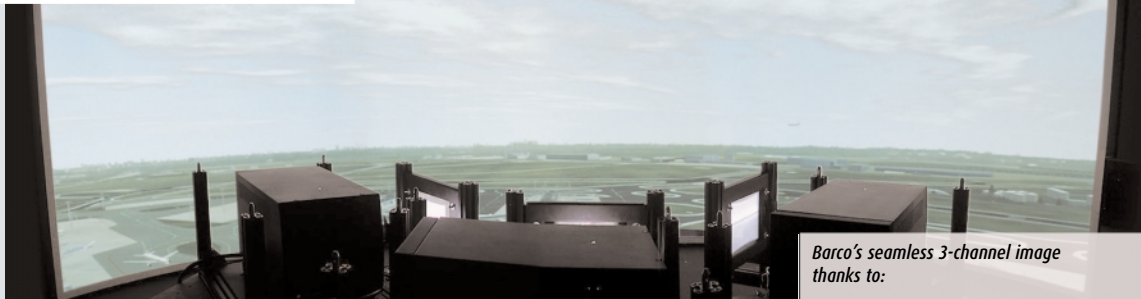
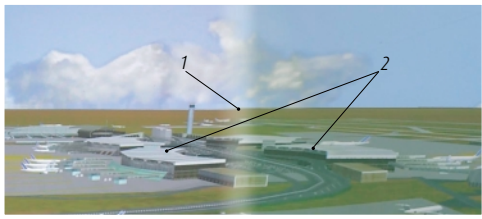
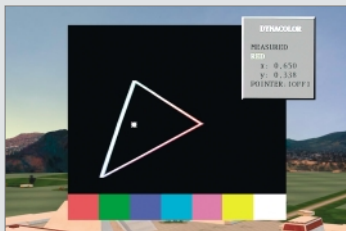


Photo courtesy: Evans & Sutherland

## Linked DynaColor™

## DynaColor™

DYNACOLOR™ allows the user to digitally set the primary and secondary color coordinates in order to obtain perfect color matching across a system.



A graphical representation of the color triangle provides an excellent visualization of the color corrections being applied.

Linked DYNACOLOR™ automatically aligns the projector to a common color triangle. This ensures that all projectors in the entire system have exactly the same primary and secondary color coordinates. The system auto-senses the addition of a new projector to a system and updates the common color triangle as required.

The linked DYNACOLOR™ option is enabled with the linked CLO option.

## Linked CLO

The brightness of all linked projectors is monitored and adjusted to the lowest value.

### Barco's seamless 3-channel image thanks to:

- Flex 4™ for geometry
- DynaColor™ for color uniformity
- CLO for brightness uniformity
- OSEM for an invisible blend

## Superior optics, flexible installation

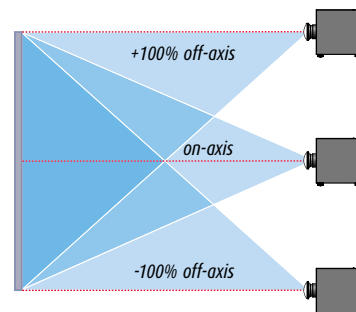
**Standard fitted with a (1.2-1.4):1 zoom lens** the Barco SIM 4 is the sole projector on the market featuring an adjustable lens mount allowing 100% off axis projection (up and down). As no geometry distortion is needed, the IG's can use their full processing power to provide optimal visual resolution. In a ship bridge simulator you can position the projector standing on top of the wheelhouse without the need for an additional mechanical construction. In planetariums the projectors can be positioned in the perimeter of the dome and project on the hemisphere. Its throw distance makes the SIM 4 a perfect replacement for old CRT projectors.

### Optional 0.92 lens

A high-quality lens for on-axis use especially recommended for rear-projected CADWALL™ applications. Offset capabilities allow double-stacking.

### Optional 0.7 lens

This unique lens combines an extremely short throw ratio with 50% off-axis capabilities (up and down) for applications where space is limited. Especially suited for curved-screen applications (cylinders or domes).



# Specifications

## Light output

1,500 up to 2,000\* ANSI lumens

## Contrast ratio

>1300:1 (full white/full black)

## Native resolution

1280 x 1024 (SXGA)

## Lamp

200W UHP lamp

## Optics

Standard:

1.2 - 1.4 zoom lens

Optional:

0.92 fixed lens

0.7 fixed lens

## Input frequencies

Horizontal 15 kHz - 115 kHz

Vertical 25 Hz - 150 Hz

Synchronous display between

48-62 Hz

## Inputs/Outputs

- 1 x input for RGB/RGSB/RGBS/RGBHV (5 x BNC)
- 1 x VGA (D-15 connector)

## Compatibility

The BARCOREALITY SIM 4 is compatible with:

- Image generators and electronic workstations with a resolution up to 1,600 x 1,200 pixels/76 Hz
- All computer graphics formats from XGA to UXGA
- Most sources with a pixel clock up to 205 MHz

## Communication

- 2 x D9 connectors for RS232 In/Out
- 1 x D9 connector for COM 800
- 1 x Mini-jack for wired remote control
- 1 x IR receivers (front)
- Optional: 1 x 10 Base T network connector

## Power consumption

350 Watts

Power dissipation < 1200 BTU/h

## AC power

Power factor pre-regulated SMPS

85-240 VAC, 50-60Hz

## Safety regulations

Compliant with UL1950 and EN60950

## Electromagnetic interference

BARCOREALITY SIM 4 complies with FCC rules & regulations, part 15 Class A and CE EN55022 Class B

## Weight

	kg	lbs.
Net	20	44.1
Shipping weight (max.)	35	77.2

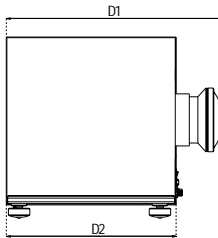
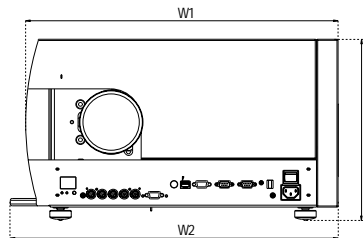
## Ruggedized version

optimized for use on motion base platform, designed to take 3g in x, y, z

## Ordering information

BARCOREALITY SIM 4 R9040300

For further information please contact Barco.



Dimensions	mm	inch
W1	510	20.1
W2	535	21.1
H	296	11.7
D1	354	13.9
D2	278	10.9

\* Optional. For further information contact Barco.

Ref.no. R599656 February 2005



Barco Simulation 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. The latest version of this product sheet can be found on [www.simulation.barco.com](http://www.simulation.barco.com).

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