

BarcoReality SIM 6 mkII & SIM 6 Ultra



Dedicated digital light valve projectors for simulation and V&AR

Native Resolution:

SIM 6 mkII: SXGA, 1280 x 1024

SIM 6 Ultra: UXGA, 1600 x 1200

Both projectors can be equipped with a broad range of proprietary Application Specific Optimizations (ASO's) for demanding configurations in both **Simulation** and **Virtual Reality** applications. Compact size and rugged design makes them also perfect for implementation into motion-base platforms.

Barco proprietary options for dedicated application benefits

- **WARP 6™** non-linear image mapping using proprietary bicubic interpolation algorithms: enables high-order pre-distortions electronically, without frame delay
- **TRANSPORT DELAY REDUCTION (TDR)**: ensures minimal propagation delay between the input signal and the projected image
- **TRUE MOTION REPRODUCTION (TMR)**: motion artifacts compensation and image enhancement dramatically minimizes smearing inherent to LCD technology
- **Adjustable Scheimpflug correction** for tilted projector screen configurations
- **Passive stereo optimized configuration** (linear or circular polarization or Infitec stereo separation) for V&AR applications
- Available in passive stereo optimized configuration with linear and circular polarization
- **STEREO SWITCHER™**: switches between all three passive stereo separation technologies

Multi-channel optimization

- **Color Gamut Matching (CGM)**: matched optical components for multi-channel use
- **Gamut Expansion and Matching (GEM™)**⁽¹⁾: increased addressable gamut and more accurate color matching
- **Chromatically matched optical engines** with additional **DYNACOLOR™** electronic color space transformations for elimination of channel-to-channel color variations
- **Optical Soft Edge Matching (OSEM)**: edge blending for all brightness levels, including black level
- **Black & White uniformity correction**: factory adjustment to ensure excellent color uniformity of the grays, whites and blacks
- **1-STEREO™** for multi-channel, high quality stereoscopic viewing in V&AR applications

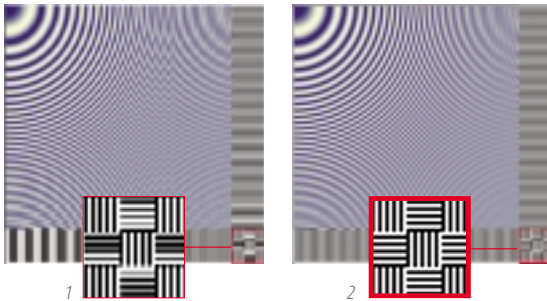
(1) requires Color Gamut Matching

BARCO

Visibly yours

Dedicated options 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.



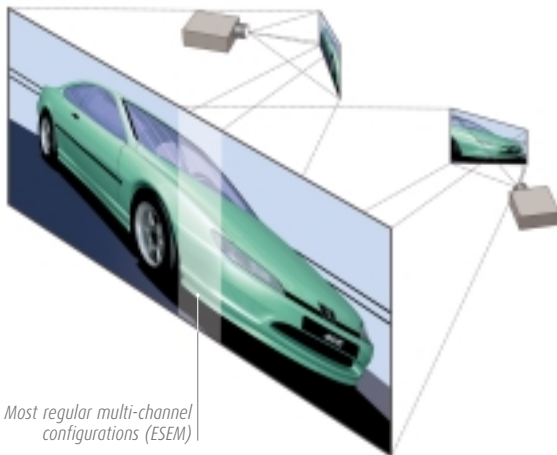
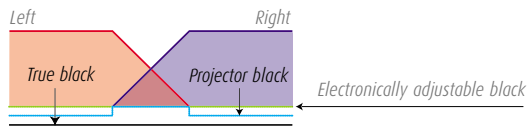
Warp 6™ Advanced Geometry Distortion

WARP 6™ is the most advanced geometry distortion technology using proprietary bi-cubic interpolation. It is specifically optimized to preserve fine detail in the image and suppress resampling artefacts. Thanks to WARP 6™, fixed matrix projectors like the SIM 6 MKII and the SIM 6 ULTRA can be used in a wide variety of curved-screen applications, ranging from straightforward cylindrical displays to the most severe distortions.

- Test charts scaled using
1. Generic bilinear algorithm
 2. WARP 6™ algorithm

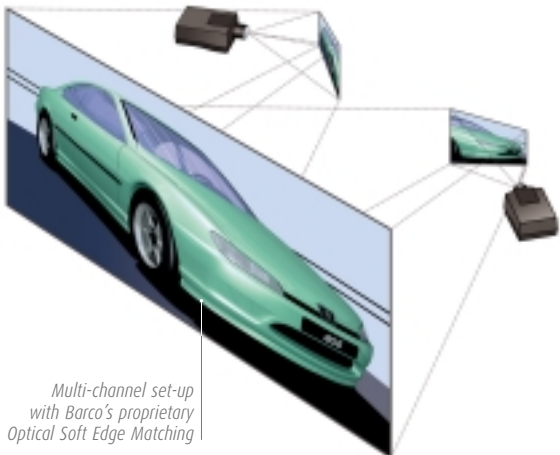
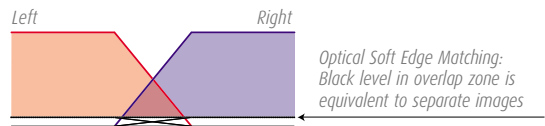
Electronic Soft Edge Matching (ESEM)

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 over the full dynamic range.





Extended Contrast Ratio (ECR)

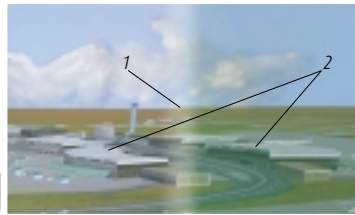
Dark night scenes typically deliver video signals with reduced dynamic range and almost no contrast.



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.

Gamut Expansion & Matching™

All projectors of a multi-channel system are carefully matched using unique optical components, raising the color accuracy throughout the application. GEM™ at the same time improves the primary color uniformity within the separate images, without having to sacrifice addressable gamut. This technology also increases the addressable color gamut of the combined multi-channel system.



DynaColor™

Optional on the SIM 6 Ultra and the SIM 6 mkII equipped with WARP 6 options

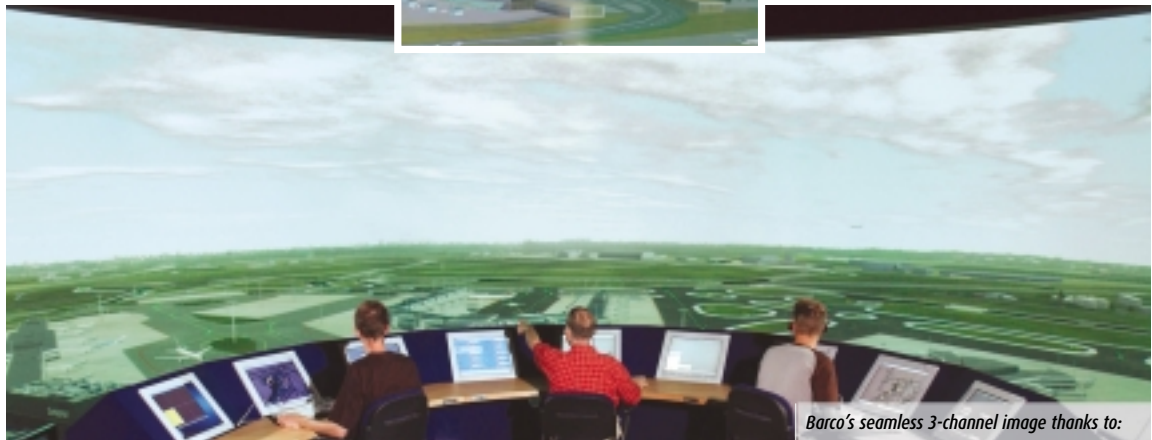
DynaColor provides the user with the ultimate electronic fine tuning to digitally set the primary and secondary color coordinates to obtain perfect color matching across a system.

Gray Level Definition (Part of DynaColor™)

Improved grayscale tracking across the different channels of the multi-channel setup by controlling the black, white and grays.

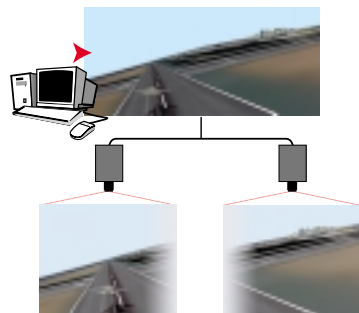
Blending with non-optimized projectors:

1. Alignment differences
2. Color & brightness differences



Barco's seamless 3-channel image thanks to:

- WARP 6™ for geometry
- Gem™ and DynaColor™ for color uniformity
- OSEM for an invisible blend



i-Stereo™

Optional on the SIM 6 mkII and SIM 6 Ultra with WARP 6™

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.

Stereo Switcher™

Optional on Sim 6 Ultra

Switching between linear and circular polarization and Infitec stereo separation enables you to adapt the installation's stereo creating technology to meet your application needs.

Photo courtesy: Nationaal licht-en ruimtevaartlaboratorium Amsterdam, The Netherlands

Specifications

	BARCOREALITY SIM 6 mkII	BARCOREALITY SIM 6 ULTRA
LCD Panels	3 active matrix Poly-Silicon LCD panels (1.8" diagonal) with Micro Lens Array and a native resolution of 1280 x 1024 pixels (aspect ratio 5:4)	3 active matrix Poly-Silicon LCD panels (1.8" diagonal) with Micro Lens Array and a native resolution of 1600 x 1200 pixels (aspect ratio 4:3)
Light output (typical) RST (ready for stereo technology)	3,400 ANSI lumens 2,380 ANSI lumens	3,000 ANSI lumens 2,140 ANSI lumens
Contrast ratio (typical)	500:1 (full white/full black)	800:1 (full white/full black)

Lamp

600 W metal-halide arc lamp
Typical lifetime: 1,000 h

Input Frequencies

Horizontal 15 kHz - 115 kHz
Vertical 25 Hz - 150 Hz
Synchronous rendering of 48 - 61 Hz
Compatible with field stretch

Compatibility

The SIM 6 mkII & SIM 6 ULTRA are compatible with:

- Image generators and electronic workstations with a resolution up to 2,000 x 1,280 pixels /76 Hz
- All computer graphics formats from VGA, SVGA, XGA, SXGA to UXGA
- Most Macintosh computers
- All current video sources (PAL, SECAM, NTSC 3.58, NTSC 4.43) in Composite, SVHS, Component RGB formats using optional video decoder
- All currently proposed HDTV, extended and improved television standards (Eureka 95, Hi-vision, ACTV, IDTV, EDTV)
- Most sources with a pixel clock up to 205 MHz

Inputs/outputs

Standard:

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

With Optional Audio/Video Pack:

Composite Video and S-Video on 5-wire BNC enabled

- 1 x Video (BNC or RCA)
- 1 x S-Video (4-pin mini-DIN)
- 1 x Monitor Output (D15 connector)
- 3 x Stereo Audio Input (2 x RCA)
- 1 x Stereo Audio Output (2 x RCA)

Communication

- 2 x D9 connectors for RS232 In/Out
- 1 x D9 connector for Com 800
- 1 x Mini-jack for Wired Remote Control
- 2 x IR receivers (front + back)

(1) Please contact Barco for further information.

Ref.no. R599653 November 2003



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.

WARP 6, Transport Delay Reduction, TDR, True motion Reproduction, TMR, Stereo Switcher, i-Stereo, Color Gamut Matching, CGM, Gamut Expansion and Matching, GEM, DynaColor, OPTICAL SOFT EDGE MATCHING, OSEM, EXTENDED CONTRAST RATIO and ECR are trademarks of Barco.

Remote control

- RS232 Control
- Remote Control Unit

AC Power

Power factor pre-regulated SMPS,
95 - 230 VAC ±10%/50-60Hz

Power consumption

Max 950 Watts

Power dissipation

< 3,250 BTU/h

Safety regulations

Compliant with UL1950 and EN60950

Electromagnetic interference

Compliant with FCC rules & regulations, part 15 Class B and CE EN55022 Class B

Noise Level (0-26°C / 32-79 F)

39 dB(A) at 39.4"/1m (3.3 ft)
34 dB(A) at 78.8"/2m (6.6 ft)

Weight

	kg	lbs.
Net (Body only)	17.7	39.0
Shipping weight (max.)	29	63.9

Lens Shift

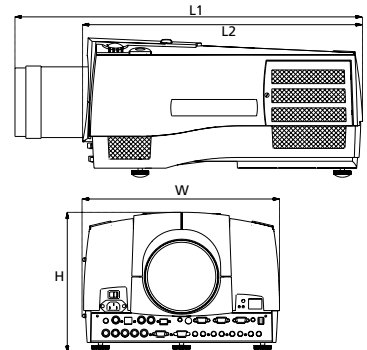
All zoom lenses allow the projector to be installed up to 110% off-axis, without losing any brightness (110 % vertically and 12% horizontally)

Lenses

QFD lenses are recommended for the highest optical efficiency and maximum light output on the SIM 6 mkII & SIM 6 ULTRA equipped with Micro Lens Arrays. These projectors are also compatible with Barco's existing range of QGD lenses.

Scheimpflug correction

This built-in optical correction guarantees optimal optical focus from left to right and top to bottom for projection under non-standard angles.



Dimensions	mm	inch
L1 [†]	619	24.41
L2	527	20.76
W	371	14.60
H	269	10.44

[†] with QFD (1.4 - 2.1) zoom lens

Shipping dimensions	mm	inch
L	710	28.0
W	550	21.7
H	470	18.5

Ruggedized version

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



Barco Simulation

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