

BarcoReality SIM 5plus



Photo courtesy CSC Defense Mission Engineering and Integration Division



- Single chip DLP™ technology
- SXGA+ resolution (1400 x 1050 pixels)
- High brightness
- Extreme bandwidth 16-bit processing
- Dual lamp redundancy, easy service features
- Uniform Dimming™ technology across channels
- Infitec technology for dual-eyepoint viewing

The dedicated projection solution for training and simulation

- Raises training efficiency
- Lowers operation costs
- Reduces maintenance costs
- An easy upgrade path for existing maritime, flight, driving, gunnery, and ATC training simulators

BARGO

Visibly yours

Lower operation and maintenance costs

Highest level of near-reality immersive visualization

- Dedicated design based on single-chip, high-resolution DLP technology (SXGA+) for bright, high-contrast images
- Integrated bicubic WARP 6™ predistortion for utmost detail on curved and spheric screens
- Accurate display of database scenes during night, dusk, and poor weather conditions
- A full-fledged debriefing solution including picture-in-picture possibilities

Lower total cost of ownership

- Unique built-in features for a seamless, uniform image over multiple screens eliminate the need for expensive, external add-on equipment that often causes disturbing artifacts and extra maintenance costs
- Optimized for easy maintenance through automated uniformity readjustments after a lamp replacement
- Remote, central, cross-system control over LAN (e.g. with the optional xRACU)

An easy upgrade path for existing simulators

- Identical throw distance to CRT projectors (wide range of lenses, motorized zoom, and brightness adjustment optional)
- Wide range of transversal and vertical lens shift for easy image adjustment
- Extensive Scheimpflug correction allowing off-axis projection



BARCOREALITY SIM 5plus



Photo courtesy Rheinmetall Defense Electronics

Photo courtesy of NADS and the National Highway Traffic Safety Administration

Upgrade for increased training efficiency

1 Optimal multi-channel geometry

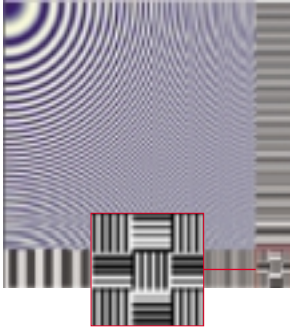


Image scaled using generic bilinear algorithm

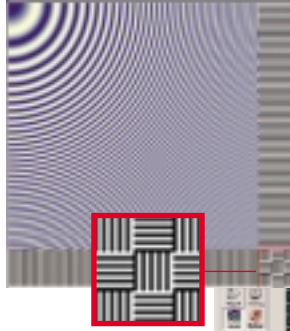
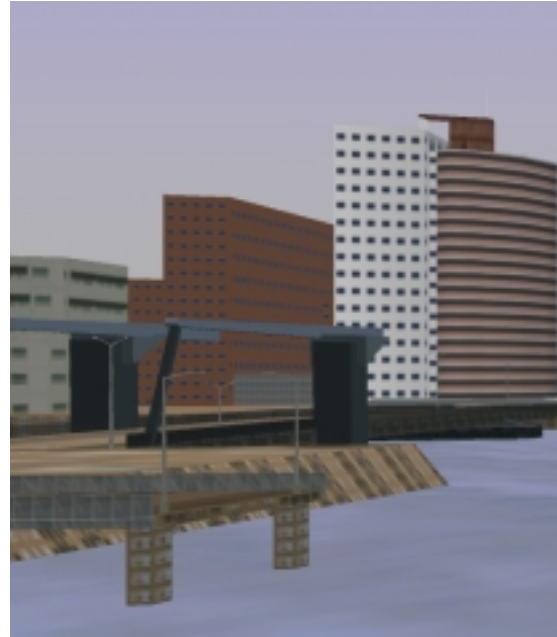


Image scaled using WARP 6™ algorithm



WARP 6™ software interface



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 artifacts. Thanks to WARP 6™, fixed matrix projectors like the SIM 5plus can be used in a wide variety of curved-screen applications, ranging from straightforward cylindrical displays to the most severe distortions.

2 Inter-channel color matching

Chromatically matched and highly-optimized optical engines guarantee well-matched color gamuts.

DynaColor™

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

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



More on Barco's dedicated multi-channel technologies: www.simulation.barco.com



Photo courtesy of U.S. Air Force

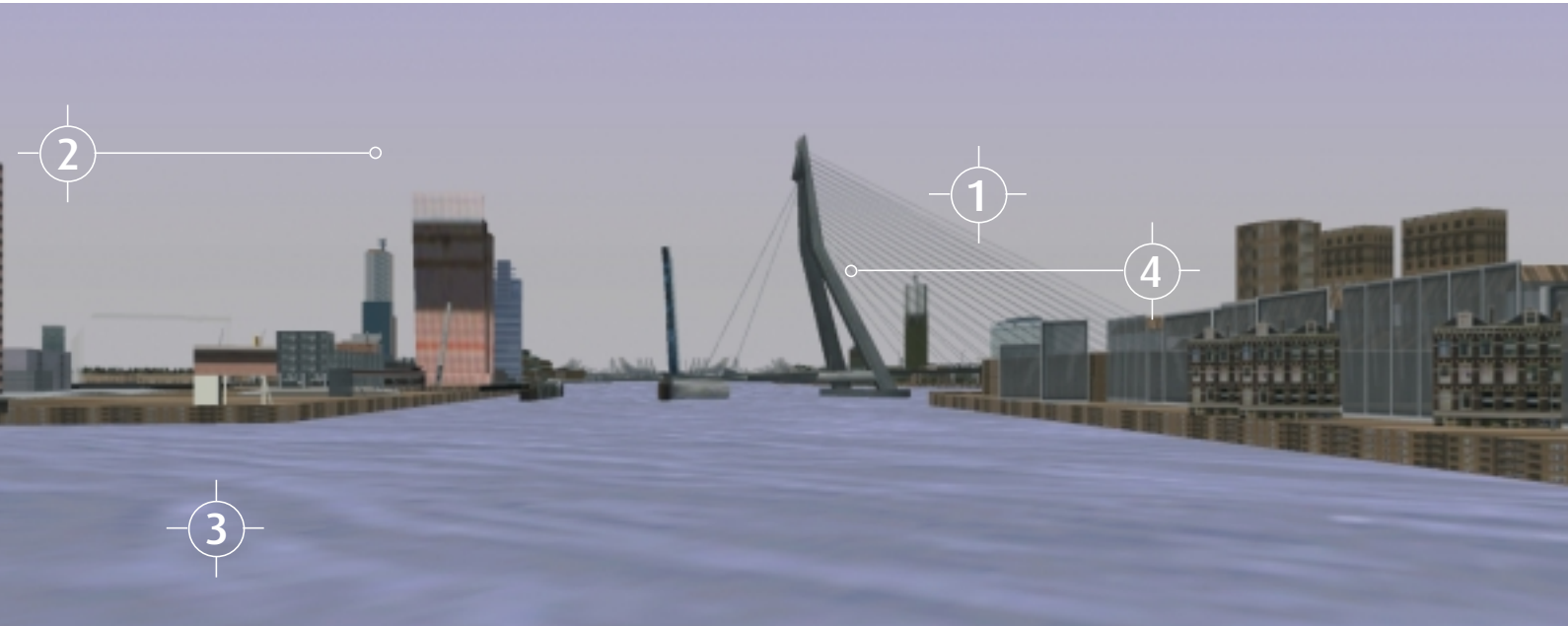


Photo courtesy Link Simulation and Training



Photo courtesy U.S. Navy

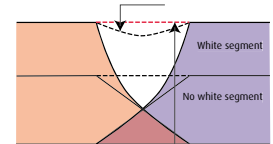
Photo courtesy W



Ship bridge simulator using simulation-dedicated projectors.

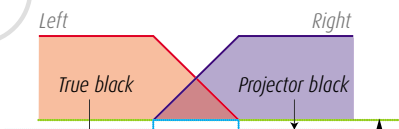
Excellent blending at high brightness levels

Extra use of the white segment in the DLP™ color wheel improves brightness but introduces white peaking in the overlap zones, making blends visible.



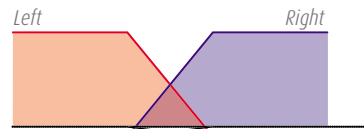
Barco's unique gamma compensation maintains excellent blending at high brightness levels. Optical Soft-Edge Blending is not influenced by white peaking.

3 Efficient seamless blending



In multi-channel setups, the non-zero black level of light valve projectors normally leads to brighter overlap zones, especially visible in night scenes.

Barco's flexible ESEM technology adjusts edge blending to a uniform black level.



Barco's proprietary OSEM optical blending filters in the lightpath, limiting the black level in the overlap zone to the separate images, resulting in seamless images with invisible blends, even in night scenes.



erbouwkundig Instituut Antwerpen, Belgium

Photo courtesy Lockheed Martin

Photo courtesy Aéroport de Paris (ADP), France

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Uniform brightness and contrast

Constant Light Output (CLO)

An integrated, calibrated light meter measures and controls the light output.

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

The xRACU allows for Linked CLO, so the brightness of all linked projectors is monitored and adjusted to the lowest value.

Uniform dimming

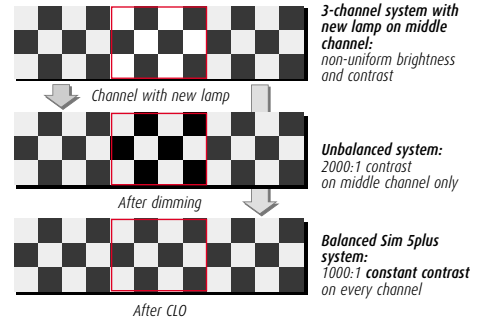
- Increased dynamic range (30:1)
- Accurate dark images
- Contrast level independent from dimming level (black level and Optical Soft Edge Matching do not change when changing lamps)



Typical dimmer:
gradient image
distortion

Barco ECR uniform dimming:
maintains image quality

Constant contrast dimmer

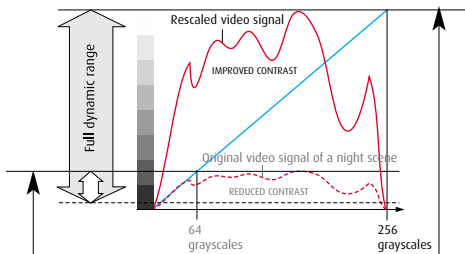


Contrast level independent from dimming level. Black level and overlap zones don't change when changing lamp bulbs.

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Accurate images for night and dusk training

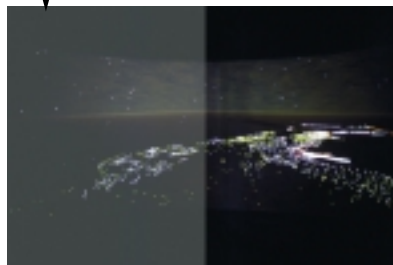
Extended Contrast Ratio (ECR)



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

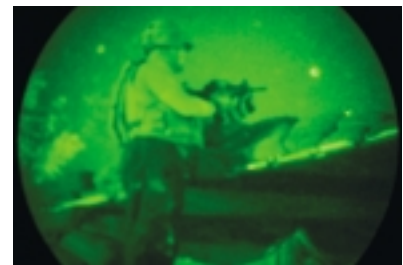
By electronically enhancing these video signals and dimming to rescale to full dynamic range, Barco's ECR greatly improves the contrast ratio and picture quality.

Standard image: weak dynamic range



ECR delivers full dynamic night scenes.

NVGVIEW™ projection



Barco's NVGVIEW system add-on enables users wearing NVG devices to see bright, properly-defined targets and images for true training accuracy and realism.



Photo courtesy Thales Training & Simulation

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Briefing and debriefing applications



Dual source visualization (PiP)

Allows you to show debriefing window or Head-Up Display (HUD) information in a flight simulation picture.

i-Blend: 3-channel edge-blended panoramic projection from a single PC

i-Blend is a built-in proprietary software that produces three-channel pictures with blend from a single high-bandwidth PC or workstation output (>170 MHz).

- Reduced IG costs
- Cheaper license costs
- Reduced complexity

Single off-the-shelf PC graphics output e.g. 3640 x 1050 pixels



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Lower total cost of ownership

Budget-friendly, on-board input switching



- Multiple inputs eliminate the need for expensive external switchers: DVI (up to 165 MHz), configurable 5-wire BNC, composite video, S-video, VGA (D15)
- Communication inputs and outputs include 10/100 BaseT fast Ethernet, RS232/422

Extensive specifications for dedicated installations available upon request.

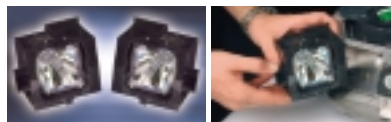
Ref. n°. R599821 February 2005



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.

WARP 6, DynaColor, OPTICAL SOFT EDGE MATCHING, OSEM, EXTENDED CONTRAST RATIO and ECR are trademarks of Barco.

Dual lamp system Easy lamp replacement



- Maximum light efficiency
- Single lamp eco-mode doubles maximum lamp lifetime
- Automatic redundancy for optimal system uptime
- No dismantling or realignment for lamp replacement

Fast cross-system remote control

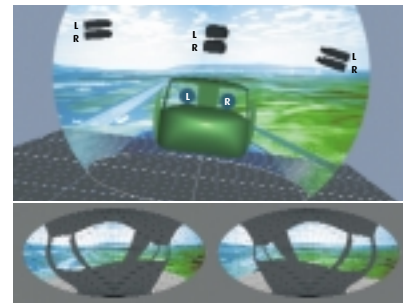
A fast ethernet connection facilitates central management of several simulators over LAN, either on PC or xRACU (Remote Alignment and Control Unit).



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Infitec: dual eyepoint viewing

For dual eyepoint viewing, two projectors are used - one for each viewpoint. Infitec technology filters the color spectrum of the image into parts: one for the position of the left viewer and another for the position of the right viewer. Matching filters in the projector and in the glasses ensure the correct information goes through to the corresponding viewer.



left viewer image - right viewer image

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