

# SEMU

## Soft Edge Modulation Unit For Perfect Edge Blending



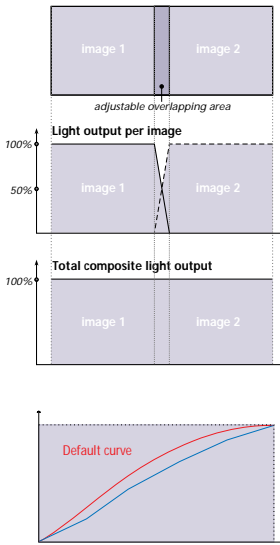
Relying on its advanced projection technology and edge-blending know-how, BARCO has designed and developed a proprietary microprocessor-controlled Soft Edge Modulation Unit, the SEMU. The SEMU is mandatory in all multi-channel projection displays where the highest image continuity and quality across different screens has to be ensured. The SEMU enables image edge blending that gives the appearance of a single view, thus achieving realistic immersion for the majority of simulation and virtual reality applications.

# Ultimate Image Edge Blending

## State-of-the-art technology

The principle of edge blending seems straightforward: it is achieved by linear modulation of the light output in the overlap zone so that the total light output in that zone equals the light output of the rest of the image.

However, linear modulation is not sufficient because the light output of CRT projectors is far from linear and changes over time (aging of the CRT tubes). Therefore, optimal edge blending has to rely on the projector's characteristics and their evolution in time. In addition, the image content influences the gamma curves: bright scenes and dark scenes require a different gamma correction. BARCO's SEMU automatically adapts the gamma correction to the level of the video signal, thus optimizing the gamma curves for night, dust and day scenes.



Automatic gamma correction



Hard Edge



Without Soft Edge Modulation



BARCO Soft Edge Modulation

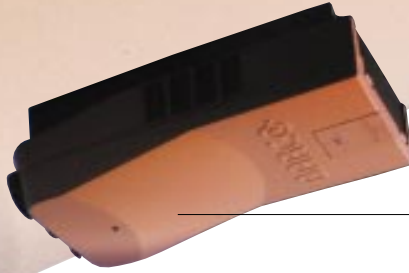


# For Realistic Immersion



- **Built-in module**

The SEMU module is integrated into the BARCO projectors and allows easy set-up. As the multi-channel signals are connected directly to the projector no extra cables or expensive and space-consuming racks are needed.



- **Optimized projectors for curved-screen applications**

BARCO's multi-channel display optimized projectors ensure ultimate image geometry, linearity, continuity and stability.



### **SEMU ADVANCED and SEMU LITE**

The SEMU ADVANCED version has been designed for curved and spherical screen applications that need horizontal and vertical blending.

The SEMU LITE version has been developed for cylindrical and flat screen applications requiring straight left/right blending.

*Full geometrical control of blend shapes*



### **User-friendly on-screen displays**

The SEMU is aligned with the BARCO projector Remote Control unit. This means straightforward ease of use: on-screen menus guide the operator through the alignment process.



# Technical Specifications

## SEMU ADVANCED

- Blending sides: left and right, top and bottom
- Blends shapes: full geometrical control (straight and curved blending possible)
- Gamma correction:
  - fully adjustable gamma correction
  - CRT aging adaptation
  - Adaptive Gamma Correction (AGC)
- Minimum overlap: minimum 4%, > 6% recommended
- Bandwidth: >200 Mc @ +/-3dB compatible with dotlock signals of over 400 MHz
- Maximum scan frequency: not limited
- Resolution: compatible with all resolutions exceeding 2500 x 2000
- User-friendly guided On-Screen Display adjustment functionality
- Fully projector built-in system for ease of installation

## SEMU Lite

- Blending sides: left and right
- Blends shapes: parallel to the image edges
- Gamma correction: fully user-selectable, auto-store function
- Minimum overlap: 8%
- Bandwidth: > 60 Mc @ +/-3dB
- Maximum scan frequency: 63 kHz
- Resolution: compatible with resolutions exceeding 1024 x 768
- User-friendly guided On-Screen Display adjustment functionality
- Fully projector built-in system for ease of installation

SOFT EDGE GEOMETRY

INTERNAL PATTERN : on  
SIZE  
KEystone  
BOWS

RANDOm ADJUSTMENT

ON SCREEN LENGHTS :  
TOP  
LEFT RIGHT  
BOTTOM

Select with arrow  
keys, then <ENTER>;  
<EXIT> to return.

SEMU incorporates some of the functionalities of SEOS Displays Ltd's DigiBlend™ technology.

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**BARCO**



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