Doc-3340-2
user's manual

OVERVIEW-CPU67-DL

Doc-3340-2

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	main issue	update
chapter 1	new	
chapter 2	new	
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chapter 4	new	
chapter 5	new	
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chapter 7	new	
chapter 8	new	
chapter 9	new	
chapter 10	new	
chapter 11	new	
chapter 12	new	

new: The corresponding chapters are new or completely revised.
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Document History

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Revision sheet

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Table of Contents

1 Introduction

This manual describes design, function, operation and maintenance of the rear projection system OVERVIEW CPU67-DL.

OverView cPU67-DL is a modular structure, which houses a 3-panel poly-Silicon LCD projection engine. The LCDs have a resolution of 1600×1200 pixels (UXGA) with an aspect ratio of 4:3. The screen has a diagonal of 67". To ensure a 100% availability, the projection engine is designed as dual lamp system.

These features together explain the "addon" of the name OverView:

Character	meaning
c	Profile based structure
P	poly-Silicon
U	stands for UXGA
67	screen diagonal in inch
DL	dual lamp system

For better reading, the mnemonic extensions of the name will be omitted in the following chapters of this manual. Whenever the projection system is referred to, it will be by means of the "family name" OverView.

OVERVIEW CPU67-DL has a digital interface (DVI) as well as analog interfaces and allows you to display a wide variety of common video and RGB sources. The display can be controlled via an IR remote control or via an integrated keypad.

OVERVIEW CPU67-DL can be lined up and stacked (up to 4 rows high) without any dividing parts to achieve an impressive Display Wall.

1.1 How this manual is organized

This manual is divided into fifteen chapters:

- **Preliminary remarks**
  explains the structure of the manual itself and the used typographic styles and symbols. Safety information is provided concerning the operation of systems from BARCO.
- **Summary**
  provides a summary of the system components and characteristics.
- **Design and functions**
  provides a technical description of the equipment listing the fundamental characteristics and functional principles. Knowledge of this section is not absolutely essential for operation.
- **Examining the E-Box**
  describes the type and location of interfaces
- **Control panel terminology**
  describes the keys and functions of local keypad and the Remote-Control unit
- **Controlling**
  explains how OVERVIEW CPU67-DL is operated via the Remote Control Unit and the local keypad
- **Menu structure**
  explains the menus and commands of OVERVIEW CPU67-DL
- **Maintenance and servicing**
  explains how the equipment can be serviced and provides instructions how to exchange consumables
- **Technical Data**
  provides tabular overviews about the technical details of OVERVIEW CPU67-DL.
- **Troubleshooting**
  lists possible errors together with steps to eliminate the respective fault.
- **Configuring notes**
  provides the mounting dimensions and shows anthropotechnical requirements.
- **Appendix A: Standard Source Set Up Files**
  lists all the available set up files for the various timings

Chapters, pages, figures and tables are numbered separately. Chapters are indicated by a »point syntax«, e. g. **4.2.3**, pages by a »dash syntax«, e. g. **2-1**.

1.2 Styles and symbols

The typographic styles and the symbols used in this document have the following meaning:

Arial bold

Labels, menus and buttons are printed in the **Arial bold** font.

Condensed

Links to both other chapters of this manual and to sites in the Internet are printed **condensed**. In the on-line version of this manual all hyperlinks appear **teal**.

`Courier`

Names of files and parts from programs are printed in the `Courier` font.

`Courier bold`

Inputs you are supposed to do from the keyboard are printed in **`Courier bold`** font.

This arrow marks tips and notes.

If you do not heed instructions indicated by this symbol there is a risk of damage to the equipment!

If you do not heed instructions indicated by this symbol there is a risk of electrical shock and danger to personal health!

1.3 Safety information

This section describes safety precautions which must be observed when installing a product from BARCO.

Safetey

OVERVIEW CPU67-DL is built in accordance with the requirements of the international safety standard IEC950, UL1950 and CSA C22.2 No. 950, which are the safety standards of information technology equipment including electrical business equipment.

The safety standards of information technology equipment impose important requirements on the use of safety critical components, materials and isolation, in order to protect the user or operator against the risk of electric shock and energy hazard, and having access to live parts.

Safety standards also impose limits to the internal and external temperature rises, radiation levels, mechanical stability and strength, enclosure construction and protection against risk of fire.

Simulated single fault condition testing ensures the safety of the equipment to the use even when the equipment's normal operation fails.

General safety instructions

- All the safety and operating instructions should be read before using this unit.
- The operating instructions manual should be retained for future reference.
- All warnings on the device and in the documentation manuals should be adhered to.
- All instructions for operating and use of this equipment must be followed precisely.

Installation and Service

Installation and preliminary adjustments should be performed by qualified BARCO personnel or authorized BARCO service dealers.

On Safety

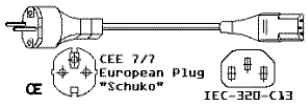
Check the power rating on your outlet before connecting the devices to the wall outlet or to a power strip. Contact your facilities manager or a qualified electrician if you are not sure what type of power is supplied to your building.

The devices are designed to operate with single-phase power systems having a grounded neutral conductor. To reduce the risk of electrical shock, do not plug into any other type of power system.

A. Mains lead (AC Power cord) with CEE 7 plug:

The colors of the mains lead are colored in accordance with the following code:

Green-and-yellow:	Earth (safety earth)
Blue:	Neutral
Brown:	Line (live)



B. Power cord with ANSI 73.11 plug:

The wires of the power cord are colored in accordance with the following code:

Green/yellow:	Ground
White:	Neutral
Black:	Line (live)

- Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
- To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord does not exceed the extension cord ampere rating. Also make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.
- Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock.
- Never spill liquid of any kind on the product. Should any liquid or solid object fall into the cabinet, unplug the set and have it checked by qualified service personnel before resuming operations.

Warning: Do Not Place Flammable or Combustible Materials Near Projector!

BARCO products are designed and manufactured to meet the most stringent safety regulations. Exposing flammable or combustible materials into close proximity of this device could result in the spontaneous ignition of that material, resulting in a fire. For this reason, it is absolutely necessary to leave an "exclusion zone" around all external surfaces of the projector whereby no flammable or combustible materials are present. The exclusion zone must be not less than 10 cm (4"). Do not cover the projector with any material while the projector is in operation.

Keep flammable and combustible materials away from the projector at all times. Mount the projector in a well ventilated area away from sources of ignition and out of direct sun light. Never expose this product to rain or excessive moisture. In the event of fire, use sand, CO_2, or dry powder fire extinguishers; never use water on an electrical fire.

Always have service performed on this product by authorized BARCO service personnel. Always insist on genuine BARCO replacement parts. Never use non-BARCO replacement parts as they may degrade the safety of this device.

Use only the power cord supplied with your device. While appearing to be similar, other power cords have not been safety tested at the factory and may not be used to power the projector. For a replacement power cord, contact your dealer.

Slots and openings in the cabinet and the sides are provided for ventilation; to ensure reliable operation of the device and to protect it from overheating, these openings must not be blocked or covered. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation or enclosure unless proper ventilation is provided.

On Servicing

Do not attempt to service this device yourself, as opening or removing covers may expose you to dangerous voltage potential and risk of electric shock! Refer all projector service to a qualified BARCO service center.

Adjust only those controls that are covered by the operating instructions since improper adjustment of the other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.

Call for service in the following conditions :

- When the power cord or plug is damaged or frayed.
- If liquid has been spilled into the device.
- If the product has been exposed to rain or water.
- If the product does not operate normally when the operating instructions are followed.
- If the product has been dropped or the cabinet has been damaged;
- If the product exhibits a distinct change in performance, indicating a need for service.

When replacement parts are required, be sure the service technician has used original BARCO replacement parts or authorized replacement parts which have the same characteristics as the BARCO original part. Unauthorized substitutions may result in degraded performance and reliability, fire, electric shock or other hazards. Unauthorized substitutions may void warranty.

Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

1.3.1 Precautions

For your own protection, observe the following safety precautions when installing your device!

- Observe all warnings and instructions printed on the devices!
- Check that the voltage and frequency of your power supply match those printed on the device label with the rated electrical values!
- Servicing not explicitly mentioned in this manual should never be carried out by unauthorized personnel!

1.3.2 Unpacking of devices

Note advises on the packaging for unpacking!

1.3.3 Modification of devices

Mechanical or electrical modifications others than described in this manual must not be made to the devices. BARCO is not liable for damages resulting from modified devices.

Only authorized personnel should carry out other maintenance work not explicitly mentioned in this user's manual!

Never open the case of the power supply or of the projection unit without first disconnecting the power supply cord! Measurements and tests with an opened device may be carried out only in the factory or by specially trained personnel, due to the dangers of electrical shock.

2 Abbreviated Summary

This chapter provides a summary of the system components and characteristics.

2.1 Design

OVERVIEW CPU67-DL can be used as one large monitor with a screen diagonal of 67 inches and UXGA resolution. Furthermore the units can be combined horizontally and vertically to achieve Display Walls of any size.

The technologies used guarantee the best optical properties for high-quality presentation of both computer data and video displays:

- **High, Constant Reading Accuracy Over the Complete Display Panel**
  Optimally adjusted high-performance lens systems guarantee a distortion-free and sharp image.
- **Bright Displays**
  A 100W UHP™ lamp provides a high luminous flux which is passed on at great efficiency by the illumination system.
- **High Contrast**
  The screen has a surface which absorbs ambient light falling on it and increases the contrast.
- **Dual Lamp System**
  The projection engines has a dual lamp system and can be operated in three operation modes: hot standby, cold standby, auto switch mode.
  In **Hot standby** both lamps are on. In case of a lamp failure, the light output of the other lamp is immediately switched to illuminate the optics, and there is no noticeable effect on the displayed information: no loss of information, no impact on quality. Switching time is about a second.
  In **Cold standby** mode the second lamp is only switched on in case a failure occurs with the active lamp. Since the second lamp needs some minutes to reach a stable operating temperature, at the beginning the display will have reduced brightness. The contents of information, however, is available nearly without interrupt.
  Auto switch mode is a special version of the cold standby mode: the lamps are active in turns: after a defined period (in the range of 12 hours to 500 hours) the light path is illuminated by the other lamp. Since the lamp is switched on some minutes in advance, the takeover of the other lamp is nearly not noticeable
- **High Contrast**
  The screen has a surface which absorbs ambient light falling on it and increases the contrast.
- **Easy Adjustment and Low-maintenance**
  Readjustment of the components is not required. The operation time of the lamps is very high at 8000 hours. Lamp and filters can be replaced without special training.
- **Ready for any application**
  The source is automatically recognized.

Flexible Configuration

OVERVIEW CPU67-DL projection modules can be combined in rows and columns to realize Display Walls of virtually unlimited size. The set up of the projection modules can be linear or curved.

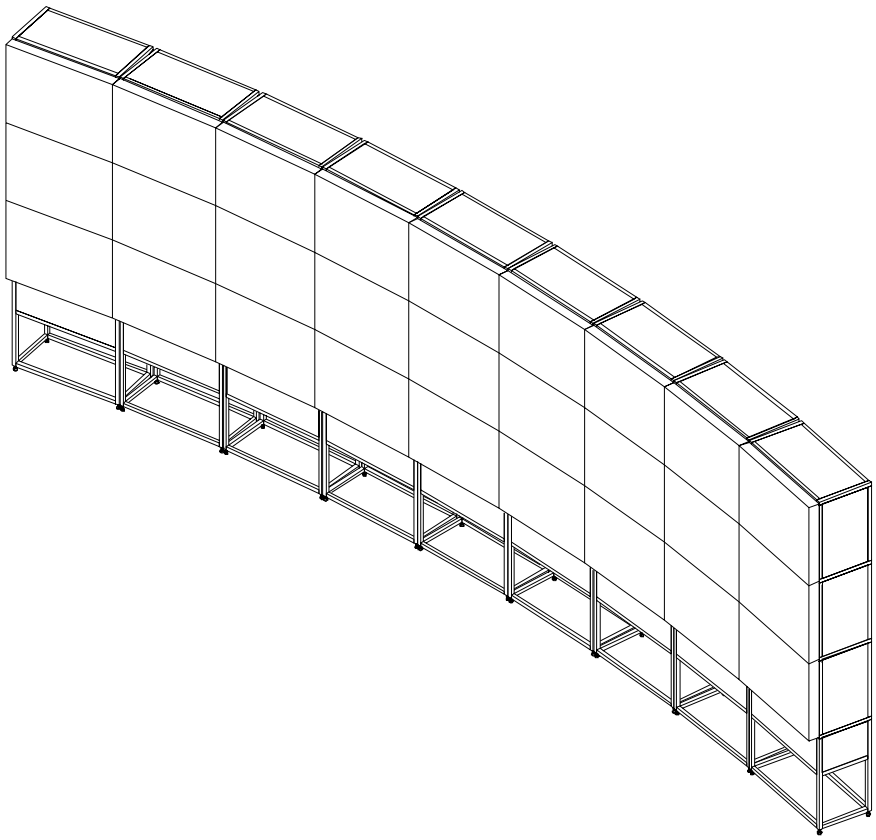


Figure 2-1
Curved Display Wall consisting of 9x3 OverView cPU67-DL projection modules

2.2 Components of an OverView cPU67-DL Display Wall

An OVERVIEW CPU67-DL Display Wall consists of two main components: the projection modules housing the dual lamp projector and the graphical controller.

2.2.1 Projection module

The projection module is the component for generating the displays of OVERVIEW CPU67-DL. The light of a UHP™ lamp is directed via an optical system to the LCD panels whose images are projected via a high-performance lens system onto the rear side of a screen.

Due to the dual lamp system, the availability of the Display Wall is about 100%: in case the lamp fails, the light output of the second lamp is automatically switched into the light path.

Since the screen is illuminated right up to its edges, it is possible to construct Display Walls of any size by the adjacent arrangement of several units.

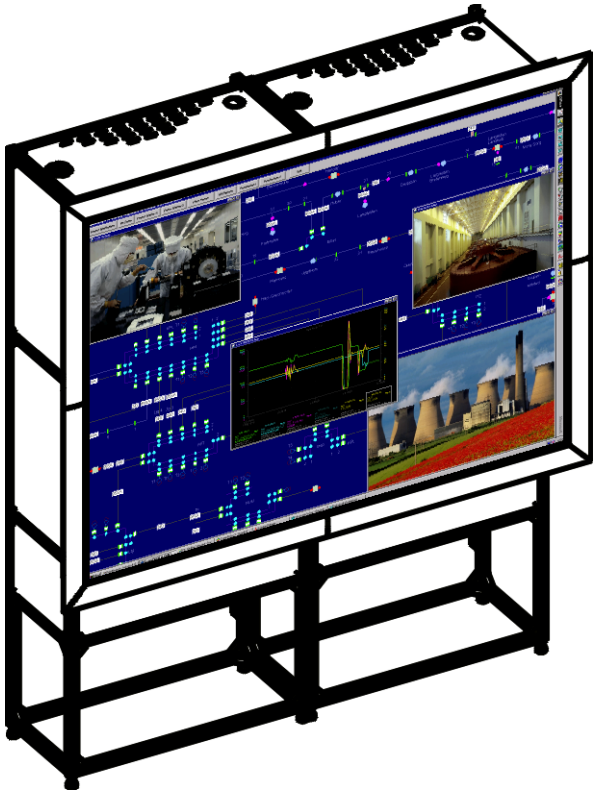


Figure 2-2
Display Wall consisting of 4 OverView cPU67-DL projection modules

2.2.2 Graphical control unit

The projection unit of OVERVIEW CPU67-DL is provided with display information from the graphical control unit. The graphic cards of the controller are connected to the DVI-D input.

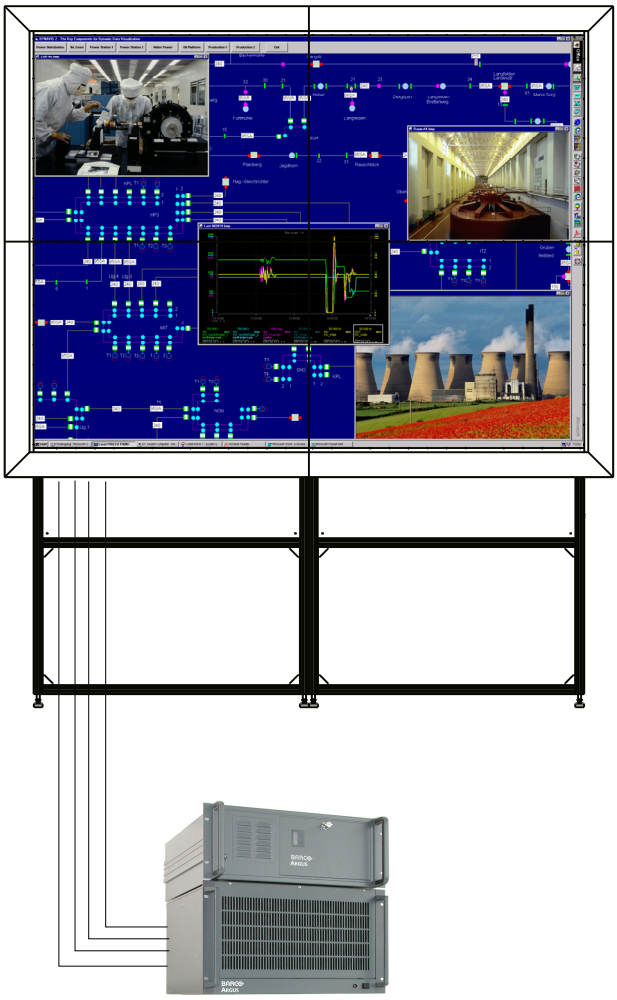


Figure 2-2
OverView cPU67-DL controlled by Argus

3 Design and function

This chapter provides a technical description of the equipment listing the fundamental characteristics and functional principles. Knowledge of this section is not absolutely essential for operation.

3.1 Projection module

The projection module OVERVIEW CPU67-DL has a display area of 1026 millimeters high and 1368 millimeters wide. The resulting screen diagonal of 1710 millimeters corresponds to approximately 67 inches.

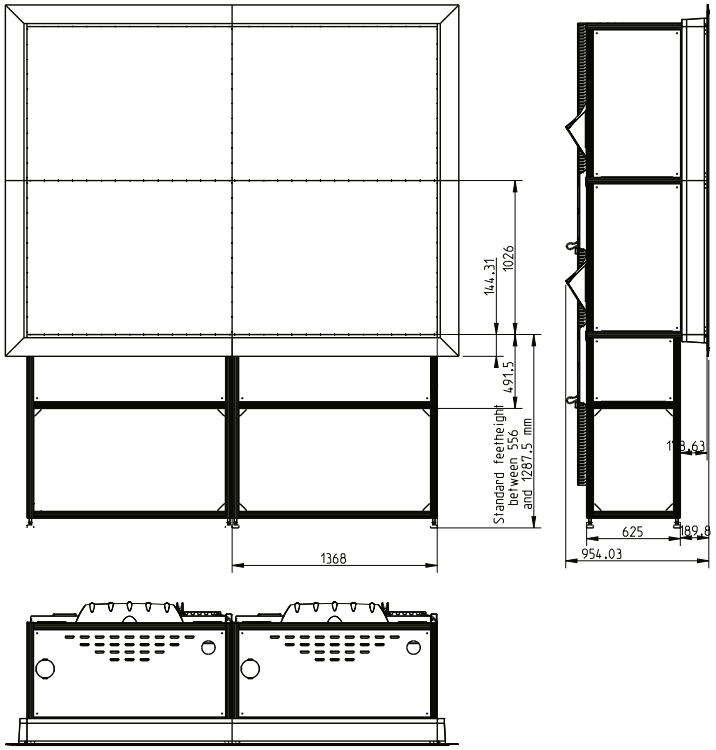


Figure 3-1
OverView cPU67-DL

The **shielding** prevents ambient light from falling onto the rear of the screen and thus reducing the contrast.

3.2 Inside the structure

The structure houses the projection unit, the illumination unit (dual lamp system), the E-Box and a cooling system.

- Via a mirror, the image is projected onto the rear of the screen.
- **Projection unit**
  The light of one of the UHP lamps is directed on the 3-panel LCD cube which generates the display to be projected onto the screen via a lens.
- **Illumination unit**
  The illumination unit is designed as a dual lamp systems, thus ensuring 100% availability of the Display Wall. The projector can be operated in three operation modes: **Hot Standby**, **Cold Standby**, **Auto Switch** mode.
  In **Hot Standby** both lamps are on. In case of a lamp failure, the light output of the other lamp is immediately switched to illuminate the optics, and there is no noticeable effect on the displayed information: no loss of information, no impact on quality. Switching time is about a second.
  In **Cold Standby** mode the second lamp is only switched on in case a failure occurs with the active lamp. Since the second lamp needs about one minute to reach a stable operating temperature, at the beginning the display will have reduced brightness. The contents of information, however, is available nearly without any interrupt.

Auto Switch mode is a special version of the cold standby mode: the lamps are active in turns: after a specified period (between 12 hours and 500 hours) the light path is illuminated by the other lamp. Since the lamp is switched on some minutes in advance, the takeover of the other lamp is nearly not noticeable

The illumination unit also includes lens system for uniform illumination of the LCDs and the electronics for lamp power supply and monitoring.

- **Optical Integrator**
  An optical integrator consisting out of two multi-segment lenses guarantees a uniform illumination of the LCDs and thus of the screen.

E-Box

The E-Box provides all interfaces and comprises graphics and video signal processing electronics as well as the functionality to control the projection engine.

The electronics converts the image signals of the graphic card into control signals for the LCD's. The image is electronically mirrored in the process and the reversal of the image following the deflection mirror is thus compensated.

Lens System

The projection lens system has been especially developed for OVERVIEW CPU67-DL. It projects the image resulting of the LCDs via the deflection mirrors onto the rear of the screen module.

Fan

Two fans in the housing ensures that the unit is sufficiently cooled.

Deflection Mirror

Due to folding up the optical path by a mirror the installation depth of the OVERVIEW CPU67-DL projection unit is only 940 millimeters.

3.3 Screen

The screen is selected upon the overall environmental conditions and requirements of the field of application. The image is generated in the screen . It consists of the optical screen and a frame with which the screen is exactly mounted onto the structure.

Fresnel Lens

The screen consists of a Fresnel lens and a Front Element Screen. The Fresnel lens deflects the light coming from the projection lens system such that it falls perpendicularly onto the front element screen.

Front Element

The front element screen guarantees that the light is distributed horizontally and vertically, while maintaining a high contrast.

Texture of Surface

The surface of the screen has a special non-glare texture. This texture minimizes the direct reflection of the light of the surrounding and contributes also to the high contrast of the screen.

3.4 Principle of 3-panel LCD projection technology

The light from the lamp is split with dichroic mirrors into red, green and blue light to illuminate three LCD panels, each of which contains the respective color-information for the red, green and blue parts of the projected image. The LCD panels are attached to a cubical prism called X Cube which recombines the three light paths, so the image is projected using a single lens.

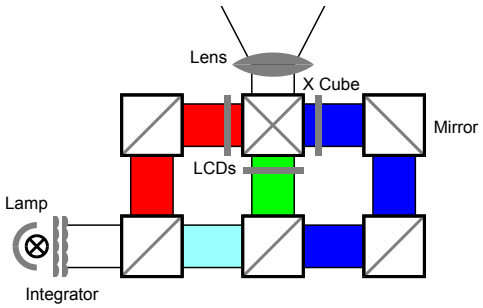


Figure 3-2
light path of 3-panel pSi LCD(schematics)

- **Poly-Silicon TFT-LCD**
  The LCD panels are based on Poly-Silicon technology. Poly-Silicon material consists of numerous small crystals leading to small circuitry. The results are a big aperture (ratio of a pixel's shutter area to it's total area), high speed and reliability. The panels have 1,310,720 (SXGA 1280×1024) pixels.
- **Lens System**
  The projection lens system is positioned behind the X Cube. It projects the image resulting on the LCD's via the deflection mirror onto the rear of the screen module.

3.5 Principle of dual lamp system

The dual lamp system implemented in OVERVIEW CPU67-DL is based on a switchable mirror which directs the light output of the respective lamp in front of the optics.

The lamp which illuminates the optics is called **active lamp**.

The following identities apply:

Lamp Top == Lamp 1
Lamp Bottom == Lamp 2

(1): Light of active lamp

(2) Light of inactive lamp (hot standby)

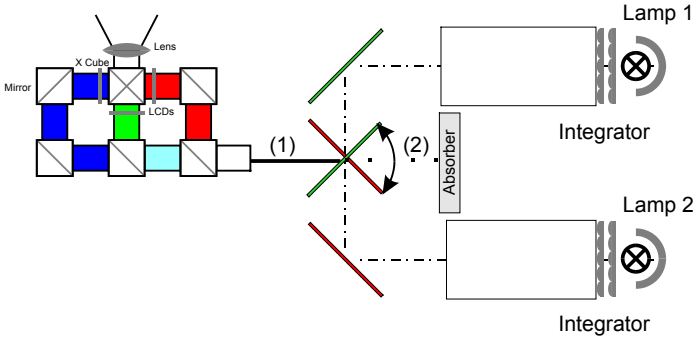


Figure 3-3
principle of dual lamp (schematics)

The OSD (On Screen Display) provides the command to select and to change the active lamp as well as the operation mode.

There are three modes of operation:

In **Hot Standby** mode, both lamps are switched on. The light of the active lamp illuminates the optics, the light of the redundant lamp is directed to a cooled absorber to prevent an overheating of the system.

In **Cold Standby** mode (or **Auto Switch** mode), the active lamp is switched on, the second lamp is switched off.

Hot Standby is only available if especially requested!

In **projector standby mode**, both lamps are switched off. The fans are running.

3.6 Control elements

The control elements of OVERVIEW CPU67-DL are located on the rear of the system. They include the keypad and the controls of the E-Box.

Once powered on and configured (e.g. data sources connected), the system can be operated and controlled via the IR Remote-Control which keys correspond to the keys on the keypad. In addtion the projector can also be RS232 remote-controlled.

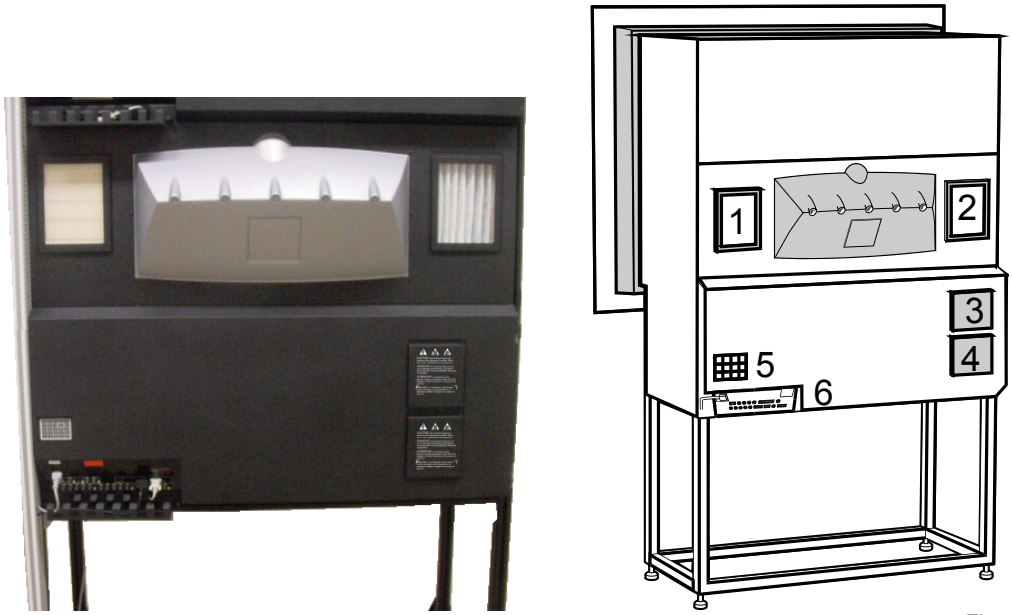


Figure 3-4
rear side of OverView cPU67-DL

1	Filterpad, LCD cooling (fine folding)
2	Filterpad, Lamp cooling (coarse folding)
3	Lamp door, lamp top
4	Lamp door, lamp bottom
5	keypad
5	E-Box

3.7 E-Box

The E-Box provides interfaces to directly connect any RGB- or video source to OVERVIEW CPU67-DL. Use these interfaces to display an analog RGB- or video source exclusively on this projection module.

OVERVIEW CPU67-DL Display Walls consisting of more than one projection module can be operated as one big monitor if connected to the graphical controller Eos or Argus. Connect the graphic cards of the graphical controller to the DVI-D interface.

3.8 Graphical controller

The projection units of an OVERVIEW CPU67-DL Display Wall are provided with display information by the graphical controller EOS or ARGUS The controller is available as a standard X-Terminal with exceptional additional properties or as a Windows NT/2000 Workstation.

3.8.1 Controller as X.11 Terminal

The X Window System (also abbreviated to X.11) was originally developed by MIT as a graphic system for UNIX workstations. In the meantime, it is available on a large number of computer platforms. These also include operating systems such as VAX/VMS or OS/2 in addition to various UNIX versions.

The X Window System is divided into two parts: The X client and X server are connected to one another by a communication system (usually TCP/IP). This division permits execution of the X server and X client either on the same system or also on different systems connected by a network.

The X server is executed on the controller. It implements the graphic display and handles the inputs from the keyboard and mouse. The X clients can be executed also on the controller or on other systems in the network.

The controller satisfies the X.11 protocol (Rel. 6.), and can thus be used by any X clients, toolkits and window managers. All X clients (including window managers) use the multi-screen facility without actually 'knowing' this.

Video and RGB Input

The controller has inputs to which video cameras or recorders as well as monitor signals can be connected.

Simple Integration

The controller possesses the generally established interfaces (Ethernet, TCP/IP, X.11 protocol), thus guaranteeing simple integration into existing computer networks.

Blinking

The controller provides blinking colors (frequencies to DIN).

3.8.2 Controller as Windows NT/ Windows 2000 Workstation

If applications based on Microsoft Windows NT or Windows 2000 should be operated via OVERVIEW CPU67-DL, the controller as Windows NT/2000 Workstation is used. The operating system in this case is Windows NT 4.0 or Windows2000, so OVERVIEW CDG67-DL is like a PC with Windows NT/Windows2000 connected to a large monitor. No software modifications are necessary to run applications on OVERVIEW CPU67-DL.

The Windows applications are operated by keyboard and mouse of the controller.

Video and RGB Input

The controller has inputs to which video cameras or recorders as well as monitor signals can be connected.

4 Examining the E-Box

This chapter provides an overview about the interfaces of OVERVIEW CPU67-DL.

Figure 4-1
rear view of OverView cPU67-DL: E-Box, all interfaces can easily be accessed

4.1 Location of interfaces

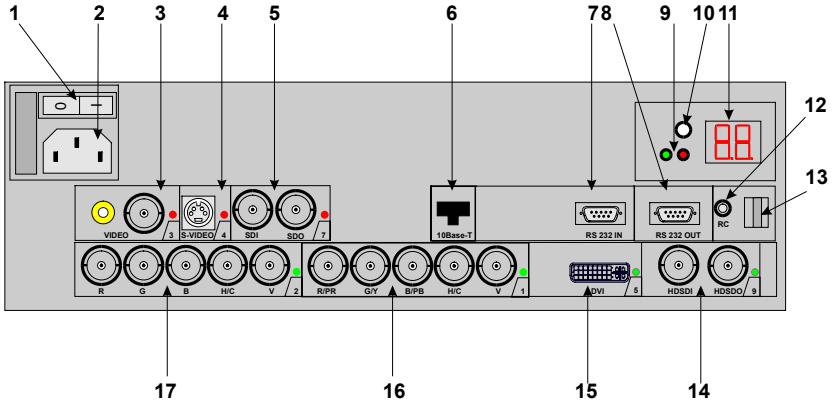


Figure 4-2
front view of the E-Box (schematics)

1	Power switch	1 = on, 0 = off
2	Power input	autoranging from 100VAC to 240VAC
3	Video input	1 cinch or 1 BNC connector, no loop through
4	S-Video	4-pin mini-DIN
5	SDI and SDO	2× BNC terminals, serial digital input and loop through output
6	10Base-T	Not available with this projector
7	RS232 IN	(D9), to allow communication with external computer, e. g. IBM PC or compatible, MAC.
8	RS232 OUT	(D9), used to connect to next projector, RS232 IN plug
9	IR-Acknowledged IR-Received	IR-Signals are recognized IR-Signals are received but not recognized by the projector
10	Projector mode indication	indicates the status of the projector Light off: power switch is not pressed Red light: power switch is pressed, projector in standby mode Green light: projector in operational mode
11	Diagnostics code	a) source number b) error code: a two digit error code is displayed
12	Remote	(mini-jack), remote input for wired remote control
13	IR-receiver	Receiver for control signals transmitted from the RCU
14	HDSDI, HDSDO	Not connected
15	DVI	Data input, DVI-D only
16	5-cable data input (BNC1)	can be software switched between Video, S-Video, RGB analog or Component Video
17	5-cable input (BNC2)	To connect the output of the graphical card of the computer to the projector

4.2 Power connection

4.2.1 AC Power (mains) cord connection

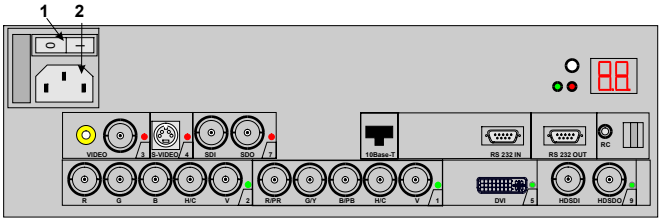


Figure 4-3
Power connection

- Use the supplied power cord to connect your projector to the wall outlet.
- Plug the female power connector into the male connector [2] at the control panel.

The power input is auto-ranging from 100 to 240 VAC.

4.2.2 Switching on the projector

Use the **power** switch [1] to switch on. When **'0'** is visible, the projector is switched off. When **'1'** is visible, the projector is switched on.

When switching on with the **power** switch, the projector starts in the **standby mode**. The projector mode indication lamp is red.

When the projector is started, the mirror is tested, and it is driven into its two positions. Therefore some clickings are audible.

When the projector is switched on, the systems loads the logo (no matter wheter logo is selected as background or not). This is a bit time consuming.

4.2.3 Switching on the lamp

To switch on the lamp (to switch from standby mode to projection mode)

- press the **'Stand by'** button once on the local keypad or on the remote control. The **projector mode indication lamp** will be green.

4.2.4 Switching off the lamp (switching to standby)

When the projector is running and you want to go to standby:

- Press the **STANDBY** key for 2 seconds. Do not press any longer on the **standby** key otherwise the projector will restart.

When switching to standby, it is possible to restart within the first 5sec. When not restarted within these first 5 sec., you have to wait one minute for being able to re-start again. During the period when restarting is disabled, the LED display will show a jumping square with a dash. When restarting is enabled again, two dashes will be displayed to indicate that the projector can be restarted.

After switching off, a lamp can only be switched on after the cool down time (60sec).

4.2.5 Switching off the projector

To switch off:

- Press the **STANDBY** key for 2 seconds.
- Let cool down the projector at least 10 min.
- Switch off the projector with the **power** switch.

Switching off the projector without first switching it to standby will result in a loss of data!

Only press the power switch off when there are no longer any jumping dashes on the two digit display

4.2.6 Fuses

For continued protection against fire hazard:

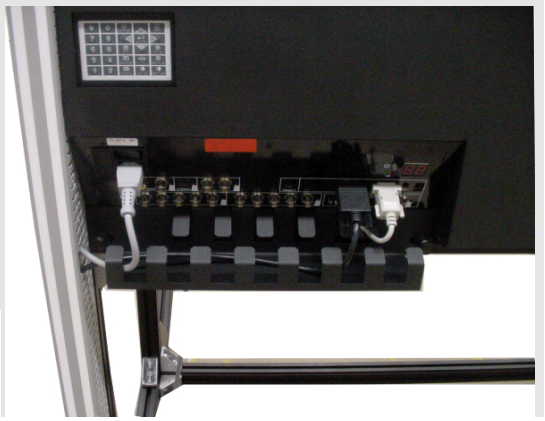
- refer replacement to qualified service personnel
- ask to replace with the same type of fuse.

Fuse type : F 5*20T 5A H UL

4.3 Input Connections

OVERVIEW CPU67-DL has multiple input connections for all common RGB and video sources. The input can be selected either via the OSD, or by entering the related source number on the IR Remote-Control or on the key pad.

input facilities	source number / Input slot
5-cable input (BNC1)	1
5-cable input (BNC2)	2
Video	3
S-Video	4
DVI	5
SDI	7



4.3.1 5-cable input (BNC1)

Slot 1 has 5 BNC input terminals.

The following signals can be connected to these BNC connectors:

Connector name	R	G	B	H	V
Input signal					
RGBHV	R	G	B	H	V
RGBS	R	G	B	S	-
RGsB	R	Gs	B	-	-
Composite Video	-	Video	-	-	-
Super Video	-	Y	-	-	C
Component Video - SS	R-Y	Y	B-Y	S	-
Component Video - SOY	R-Y	Ys	B-Y	-	-

4.3.2 5-cable input (BNC2)

Slot 2 has 5 BNC input terminals.

The following signals can be connected to these BNC connectors:

Connector name	R	G	B	H	V
Input signal					
RGBHV	R	G	B	H	V
RGBS	R	G	B	S	-
RGsB	R	Gs	B	-	-

4.3.3 Video Input

Slot 3 provides 1 x BNC or cinch 1.0Vpp ± 3 dB. The cinch connector and the BNC connector are internally connected together.

The following signals can be connected to these connectors:

- Composite video signals from a VCR, OFF air signal decoder, etc. No loop through.

Composite Video is a single video signal that contains luminance, color and synchronization information.

NTSC, PAL and SECAM are examples of composite video systems.

4.3.4 S-Video Input

Slot 4 provides an S-Video input.

The following signals can be connected:

- Separate Y-luma/C-chroma signals for higher quality playback of Super VHS-signals.

Pin configuration mini DIN plug:

1	ground luminance
2	ground chrominance
3	luminance 1.0Vpp ± 3 dB
4	chrominance 282 mVpp ± 3 dB

4.3.5 DVI-D input

Slot 5 provides a single link DVI input. Input voltage is in the range from 200mV – 800mV.

The analog link (4 pins at the right side of the connector) is not supported.

- Connect one channel of the dual channel UGX graphics card to this input

4.3.6 Serial Digital Input / Serial Digital Output

Slot 7 provides 1 x BNC input and 1 x BNC output.

The input is always 75 Ω terminated. The output impedance of the SDO is 75 Ω.

This avoids the need for analog processing anywhere in the video production chain and guarantees the ultimate image quality.

An active loop through of the SDI input signal is provided for monitoring or for double or triple stacking applications.

4.4 Communication Connections

The following communication connections are available:

- RS232 in / RS232 out.
- RC for remote cable connection with the RCU.

4.4.1 RS232 in / RS232 out

To connect a computer, e.g. IBM PC (or compatible), Apple Macintosh to the RS 232 input of the projector to allow communication between the computer and the projector. Via this connection the projector can be RS232 remote-controlled. Furthermore it is possible to send data to the projector or to copy the data from the projector to a hard memory device (hard disc, floppy, etc.).

4.4.2 RC for remote cable connection

Besides the IR Remote-Control unit, there is a hard wired Remote-Control unit. This device is connected to this mini jack.

5 Control Panel Terminology

The projector can be controlled by the local **keypad** or by the remote control unit (**RCU**). Both devices provide the same keys and functionalities

5.1 Local keypad

The local **keypad** [5] is located on the rear side of the projection module.
(explanation see below)

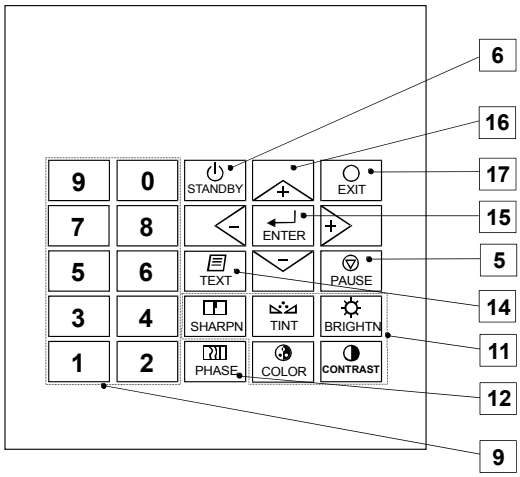


Figure 5-1
The local keypad

5.2 Remote control

This remote control unit (**RCU**) includes a battery powered infrared (IR) transmitter that allows the user to control the projector remotely.

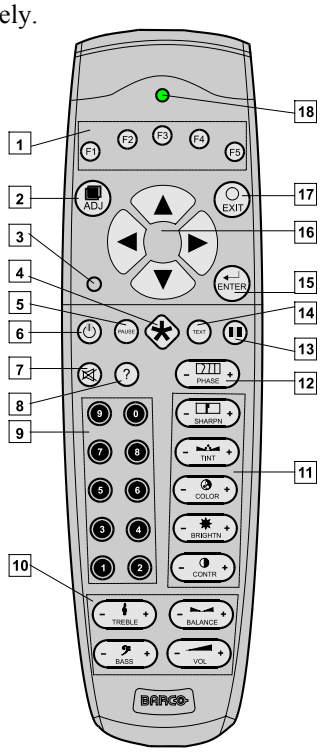


Figure 5-2
IR Remote Control Unit (RCU)

This remote control is used for source selection, control, adaptation and set up. It includes automatic storing of the picture controls (brightness, sharpness ...) and the settings.

Other functions of the remote control are:

- switching between standby and operational mode
- switching to "pause" (blank picture, full power for immediate restarting)
- direct access to all connected sources.

5.3 Terminology of keypad and RCU controls

1	Function keys	have no function for this projector
2	ADJ	ADJUST key, to display the menu bar (ENTER on the keypad)
3	Address key	(recessed key), to enter the address of the projector (between 0 and 9). Press the recessed address key with a pencil, followed by pressing one digit button between 0 and 9.
4	Selection key	has no function for this projector
5	PAUSE	To stop projection without going to standby/to resume projection
6	Standby	stand by button, to start projector when the power switch is switched on and to switch off the projector without switching off the power switch.
7	Mute	has no function for this projector
8	Help	has no function for this projector
9	Digit buttons	To enter the remote control address or to select a source
10	Audio controls	have no function for this projector
11	Picture controls	Give direct access to adjust contrast, brightness, color without the need to activate the OSD
12	PHASE	To adjust the phase of the signal
13	Freeze	To freeze the picture / to unfreeze it
14	TEXT	In connection with the direct access keys: displays the dialog box to adjust the settings
15	ENTER	to display the menu bar or to confirm an adjustment or selection.
16	Cursor Keys	to make menu selections when in the adjustment mode. **RCU** cursor key up cursor key down cursor key right cursor key left Use the cursor keys up or right for increasing a value. Use the cursor keys down or left for decreasing a value.
17	EXIT	to exit a menu or a submenu..
18	RC operating indication	lights up when a button on the remote control is pressed. (This is a visual indicator to check the operation of the remote control)

6 Controlling

The projector can be controlled with

- the **RCU**
- the hardwired **RCU** (cable is not included)
- the local **keypad**
- via RS232 remote-controlled (not explained in this manual)

Controlling the projector with the **RCU** and the hardwired **RCU** is equal.

6.1 RCU used in a hardwired configuration

Connections:

- Plug one end of the remote cable in the connector on the bottom of the **RCU**
- Plug the second side in the connector in the front panel of the projector labelled **'RC'**.

6.2 How to use the RCU?

Point the front of the **RCU** directly at the screen.

When using the wireless remote control, make sure you are within the effective operating distance (30m, 100ft in a straight line). The remote control unit will not function properly if strong light strikes the sensor window or if there are obstacles between the remote control unit and the IR sensor.

If the RCU does not function properly, please check also the batteries!

6.3 Projector address

The projector's address may be set to any value between 0 and 255 (see 'Change projector address' in chapter 'Service mode). When the address is set, the projector can be controlled now by the **RCU** for addresses between 0 and 9.

The projector can also be controlled by computer, e.g. IBM PC (or compatible), Apple MAC, etc. for addresses between 0 and 255.

A projector will respond to a **RCU** set to an address of '0' regardless of what address is set in the projector itself.

6.3.1 Addressing a projector by means of the RCU

The **RCU** is default programmed with address 0, **'zero address'**. With that **'zero address'** programmed into the RCU, every projector, without exception will listen to the commands given by this **RCU**. If it is necessary to control a specific projector, than enter the projector address into the **RCU** (only when that address is between 0 and 9). The projector with the corresponding address will listen to that specific **RCU**.

6.3.2 Displaying a projector address

Press the **ADDRESS** key (recessed key on the **RCU**) with a pencil. The projector's address will be displayed in a 'Text box'. This text box disappears after a few seconds.

To continue using the **RCU** with that specific address, it is necessary to enter the same address with the **digit buttons** (address between 0 and 9) within 5 seconds after pushing the address key. For example if the **Address** key displays projector address 003, then press "3" digit button on the **RCU** to set the **RCU**'s address to match the projector's address. Do not press 003 digits. This will address the remote control to '0' and control all projectors in the room.

If the address is not entered within 5 seconds, the **RCU** returns to its default address (**zero address**) and control all projectors in the room.

6.3.3 How to program an address into the RCU?

Press the **ADDRESS** key (recessed key on the **RCU**) with a pencil and enter the address with the digit buttons within 5 seconds after pushing the **address** key. That address can be any digit between 0 and 9.

6.3.4 Picture controls with direct access.

When an image control is pressed, a text box with a bar scale, icon and function name of the control, e.g. 'brightness...' appears on the screen (only if **TEXT** is **ON**). The length of the bar scale and the value of the numeric indication indicate the current memorized setting for this source. The bar scale changes as the control stick on the **RCU** is pressed or the **+** or **-** buttons on the local **keypad**.

The picture settings are automatically saved in the custom image file, cf.**Load.**

Brightness Control

A correct **'brightness'** setting is important for good image reproduction.

Use the **+** button for a higher brightness.

Use the **-** button for a lower brightness.

Contrast Control

A correct **'contrast'** setting is important for good image reproduction.

Adjust the contrast to the level you prefer, according to room lighting conditions.

Use the **+** button for a higher contrast.

Use the **-** button for lower contrast.

Sharpness Control

Use the **+** button for a sharper picture.

Use the **-** button for a softer picture.

Phase Control

Use the control disc to adjust the phase.

Color

Press the Color key to adjust red. Press again the **Color** key to adjust blue.

Freeze key

Press **Freez** to freeze the displayed image. Please mind: the writing on the **Freeze** key reads "||"

Pause key

Press the **Pause** key to stop projection.

Press on TEXT to get the dialog boxes with the sliders displayed!

The TEXT key is a toggle key, and there is no direct indication whether it is on or off.

If there is no dialog box displayed on the screen, pressing the keys for direct access don't have any effect.

6.3.5 Selecting a source via the numeric keys

A source can be selected by pressing the corresponding numeric key on the **RCU**. The respective source then will be displayed, featuring the active settings. These settings can be checked and modified in the OSD.

input facilities	Related source number / Input slot
5-cable input (BNC1)	1
5-cable input (BNC2)	2
Video	3
S-Video	4
DVI	5
SDI	7

7 Menu structure

7.1 General

OVERVIEW CPU67-DL has a build in "PC like" menu bar which allows easy access to different parameters for setting up the projector.

The toolbar menu is activated by pressing **ADJ** (or **ENTER**) on the Remote-Control Unit (**RCU**)

Menu items which are not applicable are grayed out.

Commands which require expert knowledge are only accessible for advanced users and are hidden in the **More** menu item which can be only accessed via a password.

7.2 Menu layout

The existence of a **submenu** is indicated by a white arrow

Three suspension points indicate that the menu item hides a **dialog box** or a **text box**.

A dot indicates which option is selected.

Grayed out menus or items are not applicable (due to the software versions or due to missing signals).

7.2.1 Navigating

Use the cursor keys on the **RCU** to navigate within a **menu** or a **submenu**.

Press **Enter** to select a menu item

Press **Enter** to open the submenu.

Press **Exit** to exit a submenu or menu

7.3 Activating the menu bar

Press the **ADJ** key (or **ENTER**) on the **RCU** to display the menu bar.

Figure 7-1
menu bar

Use the **cursor key** on the **RCU** to select a **menu**. Press **Enter** to activate it.

7.4 Source Selection menu

The Source Selection menu allows to select a connected source. As explained above, the E-Box has various interfaces to connect all kind of video and RGB data.

If there are multiple connections, the source which is to be displayed on the projection module has to be selected.

However, when switching from **standby** to projection mode, the last selected source will be displayed.

To select a source, proceed as follows:

- Press **Adj** to activate the menu bar
- Use the cursor keys to highlight **Source Selection**
- Press **ENTER** to select.

A Barco Logo next to the source number indicates that there is an active source connected!

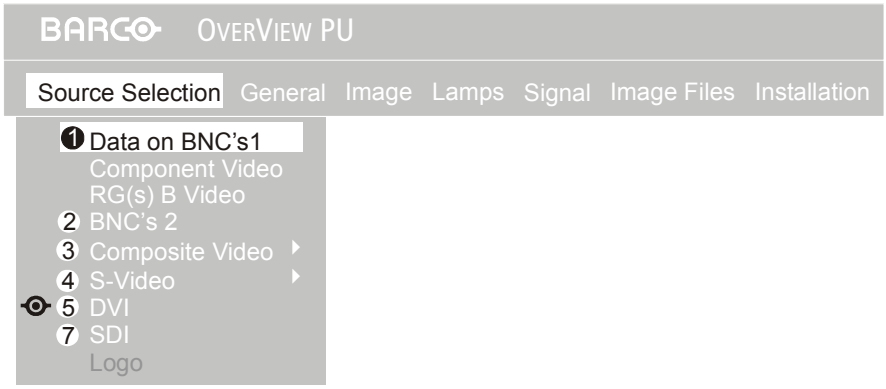


Figure 7-2
Source Selection menu, data on BNC's 1

The sources are also related to input numbers. In the pull-down menu, these numbers head the type of source.

Selection of a source is also possible by means of this number: Without the need to activate the menu bar, pressing the corresponding key on the IR Remote-Control Unit wll activate the related source.

7.4.1 BNC's 1

Input 1 comprises 5 BNC terminals to connect RGB and video sources. The connection of the multiple sources is according the following table:

Connector name	R	G	B	H	V
Input signal					
RGBHV	R	G	B	H	V
RGBS	R	G	B	S	-
RGsB	R	Gs	B	-	-
Composite Video	-	Video	-	-	-
Super Video	-	Y	-	-	C
Component Video - SS	R-Y	Y	B-Y	S	-
Component Video - SOY	R-Y	Ys	B-Y	-	-

Data on BNC's 1

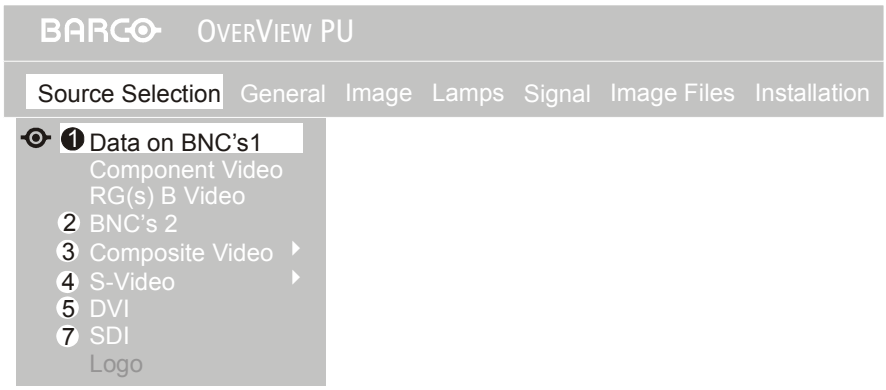


Figure 7-3
General menu: data on BNC's 1

If a source of type RGBHV, RGBS, RGsB is connected to the 5 cable input, and if this source is to be displayed on the projection module, proceed as follows:

- Use the cursor keys to highlight **Data on BNC's 1**
- Press **ENTER** to select.

Component video on BNC's 1

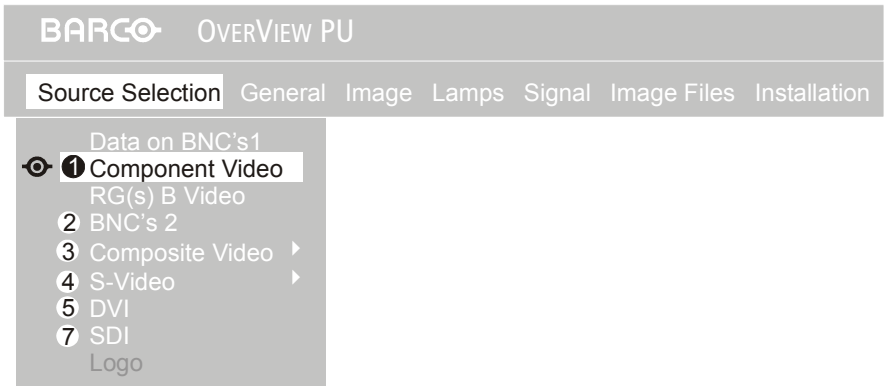


Figure 7-4
Source Selection menu, component video on BNC's 1

If a component video is connected to the 5 cable input, and if this source is to be displayed on the projection module, proceed as follows:

- Use the cursor keys to highlight **Component video**
- Press **ENTER** to select.

RG(s)B Video on BNC's 1

Select **RGsB Video** when an RGB video signal with Sync on green or sync on H is presented on the BNC's labeled "1". This signal is routed to the video circuit and is projected in a video window.

If this source is to be displayed on the projection module, proceed as follows:

- Use the cursor keys to highlight **RG(s)B**
- Press **ENTER** to select.

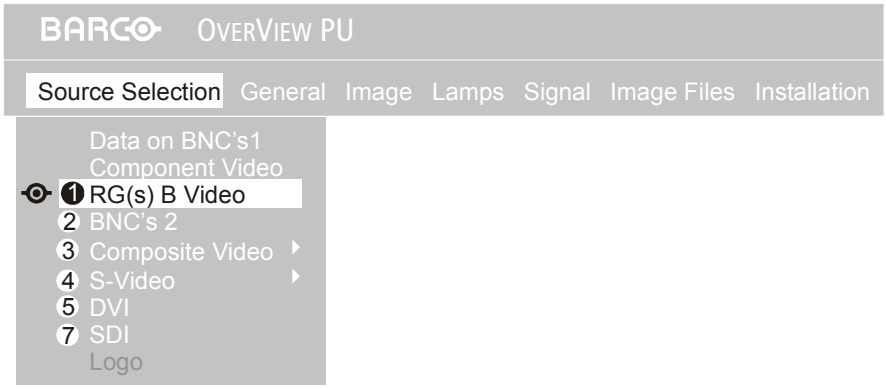


Figure 7-5
Source Selection menu, RG(s)B Video on BNC's 1

BNC's 1 can also be selected using the numeric digit "1" on the local keypad and the RCU.

Pressing digit "1" on the RCU selects the type selected in the Source Selection menu,

7.4.2 BNC's 2

BNC's 2 includes 5 BNC terminals. The following signals can be connected:

Connector name	R	G	B	H	V
Input signal					
RGBHV	R	G	B	H	V
RGBS	R	G	B	S	-
RGsB	R	Gs	B	-	-

If a data signal is connected to BNC's 2, and if this signal is to be displayed, proceed as follows:

- Use the cursor keys to highlight **BNC's**
- Press **ENTER** to select.

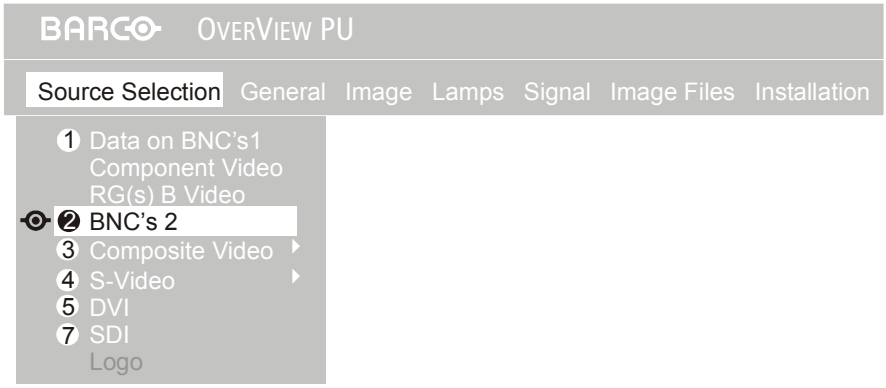


Figure 7-6
Source Selection menu, BNC's 2

BNC's 2 can also be selected using the numeric digit "2" on the local keypad and the RCU.

7.4.3 Composite video

If a video source is connected to the video input, and if this signal has to be displayed on the projection module, proceed as follows:

- Use the cursor keys to highlight **Composite Video**
- Press **ENTER** to select.

A sub menu opens where you can select the type of video:

- Use the cursor keys to highlight the type
- Press **ENTER** to select. Now a white dot indicates the selection.

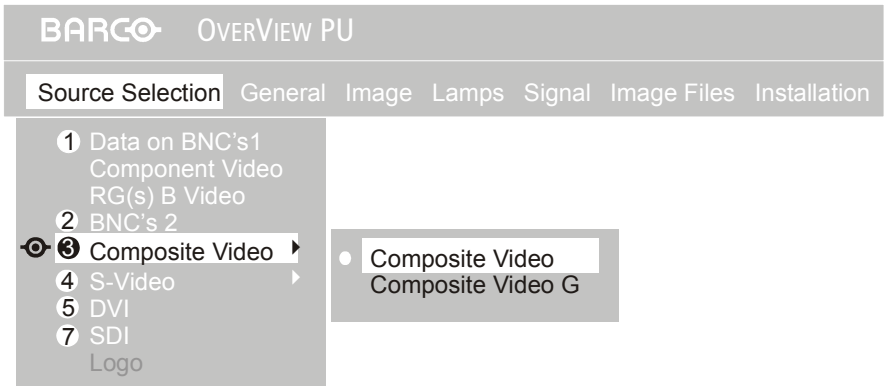


Figure 7-7
Source Selection menu, Composite Video

The composite video source can also be selected using the numeric digit "3" on the local keypad and the RCU.

Pressing digit "3" on the RCU selects the composite video source selected in the composite video menu,

7.4.4 S-Video

If a video source is connected to the video input, and if this signal has to be displayed on the projection module, proceed as follows:

- Use the cursor keys to highlight **S- Video**
- Press **ENTER** to select.
- A sub menu opens where you can select the type of video:
- Use the cursor keys to highlight the type
- Press **ENTER** to select. Now a white dot indicates the selection.

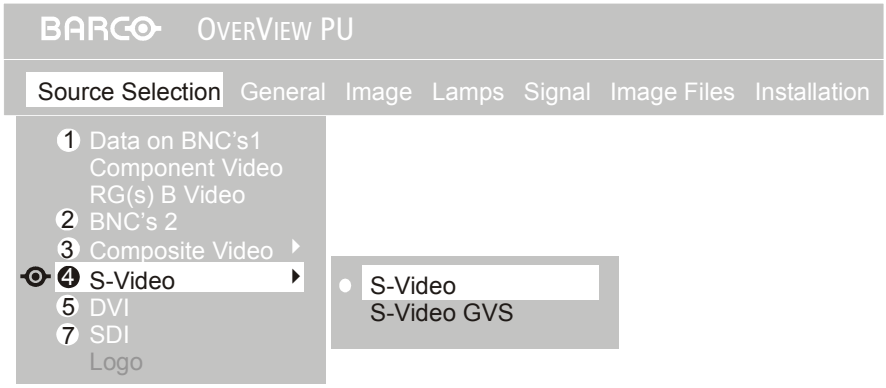


Figure 7-8
Source Selection menu, S-Video

The S-Video source can also be selected using the numeric digit "4" on the local keypad and the RCU.

Pressing digit "4" on the RCU selects the S-Video source selected in the S-Video sub menu,

7.4.5 DVI input

The DVI input is a “digital only” DVI interface to connect e.g. the graphic cards of an EOS or ARGUS controller.

To display the content of the controller on the projection module, proceed as follows:

- Use the cursor keys to highlight **DVI**
- Press **ENTER** to select.

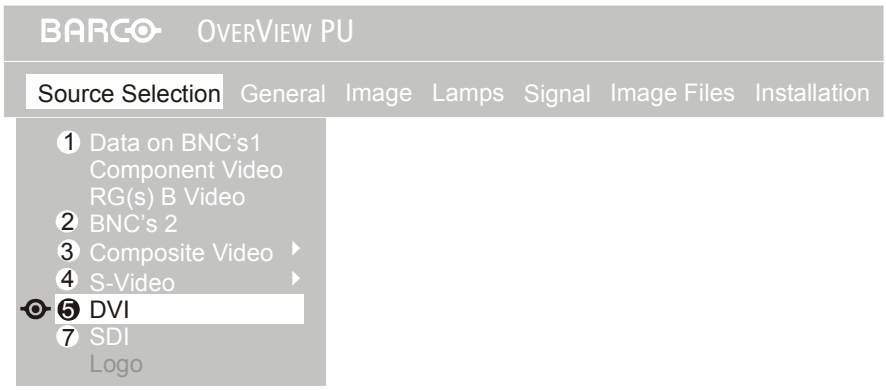


Figure 7-9
Source Selection menu, DVI

The DVI source can also be selected using the numeric digit “5” on the local keypad and the RCU.

7.4.6 SDI input

If there is a signal connected to the SDI input, and this signal has to be displayed on the projection module, proceed as follows:

- Use the cursor keys to highlight **SDI**
- Press **ENTER** to select.

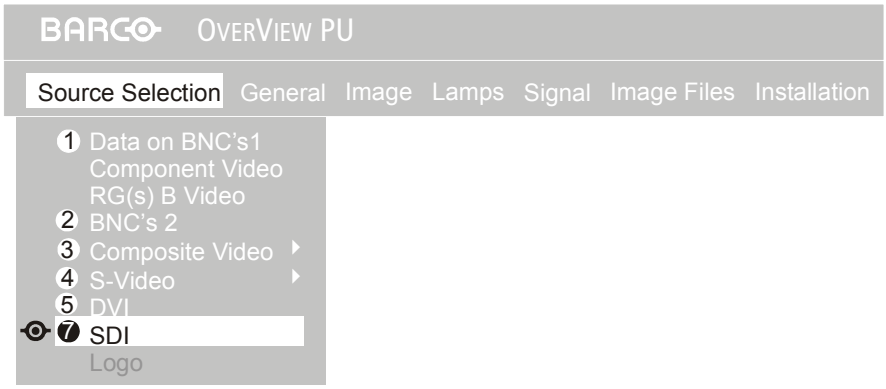


Figure 7-10
Source Selection menu, SDI

The SDI source can also be selected using the numeric digit “7” on the local keypad and the RCU.

7.5 General

This menu gives access to some general commands. To activate the pull-down menu, proceed as follows.

- Press **ADJ** to display the menu bar
- Use the cursor key to highlight **General**
- Press **ENTER** to select.

The **General** menu opens. These four features can be set: **Pause**, **Freeze**, **Standby timer**, **Identification**, **Error Warning** and **More**

7.5.1 Pause

Use this command to stop an image projection.

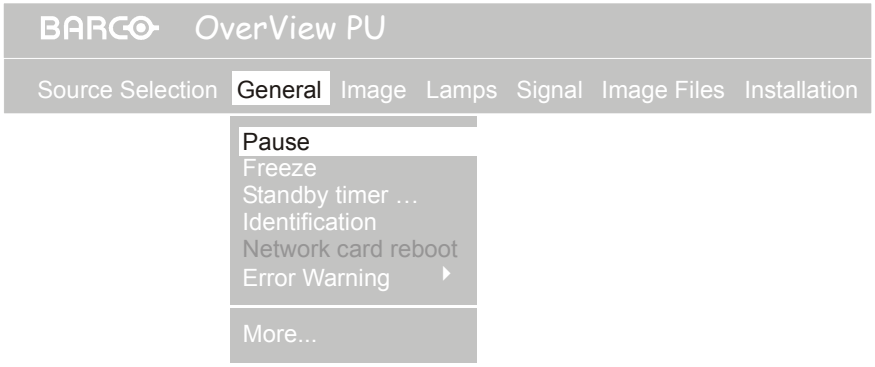


Figure 7-11
General menu, Pause

To stop an image projection, proceed as follows:

- User the cursor key to highlight **Pause**.
- Press **Enter** to select.

Image projection can also be stopped by pressing PAUSE on the IR Remote-Control Unit.

To restart the image : press again PAUSE, or press the ADJ key.

7.5.2 Freeze

With the **Freeze** function, the image can be frozen.

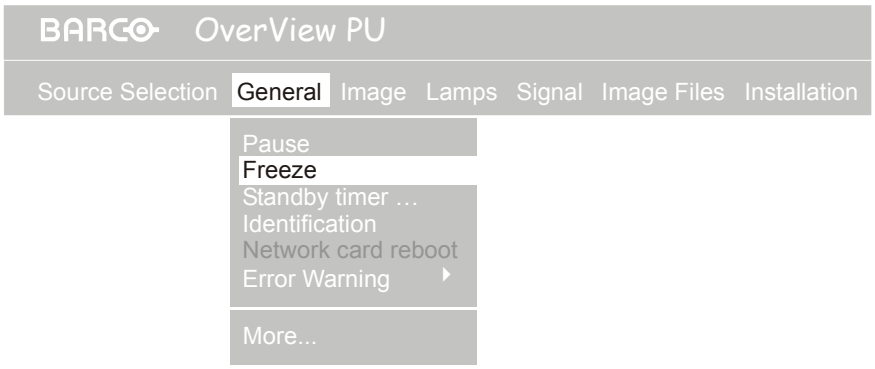


Figure 7-12
General menu, Freeze

To freeze (unfreeze) an image, proceed as follows:

- Use the cursor key to highlight **Freeze**
- Press **Enter** to select.

To freeze an image, use also the FREEZE key on the IR Remote-Control Unit. To re-start it again, click on the FREEZE key on the RCU again or re-use the Freeze command of the OSD.

7.5.3 Standby timer

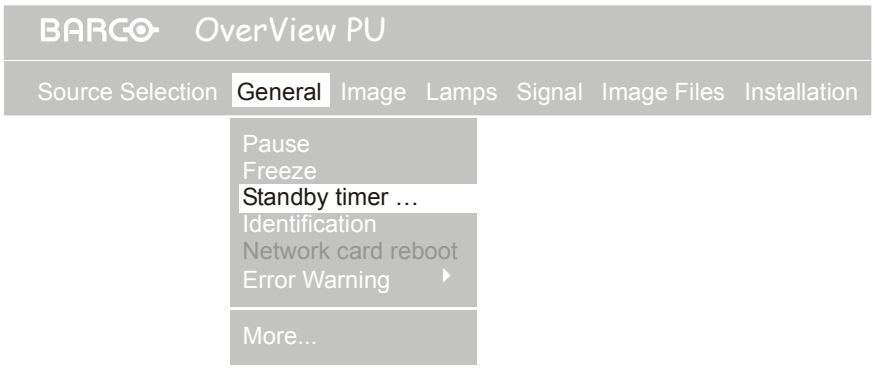


Figure 7-13
General menu, Standby timer

If there is no signal, and the standby timer is enabled, a dialog box is displayed and the projector will shut down after a determined time (power save).

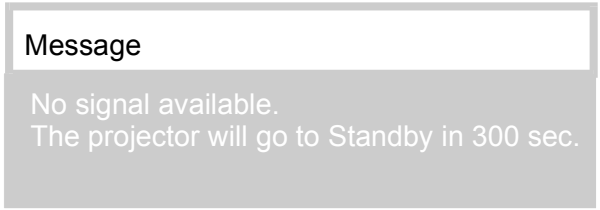


Figure 7-14
Dialog box informing about going to standby

The countdown time can be set in a dialog box in a range from 180 to 3600 seconds (default value = 300). The Timer can also be disabled.

To enable the timer and to set the countdown time proceed as follows:

- User the cursor key to highlight **Standby timer**.
- Press **Enter** to select

A dialog box is displayed:

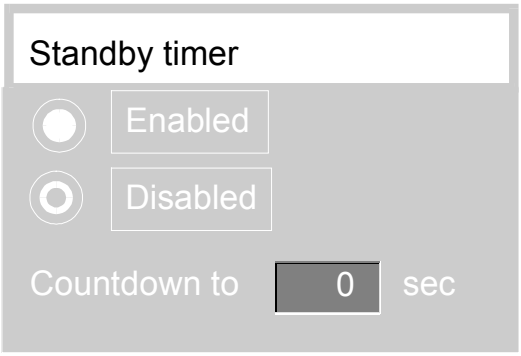


Figure 7-15
configuring the standby timer

The current status is indicated by a selected radio button.

To select the other status, proceed as follows:

- Use the cursor key to highlight the desired status.
- Press **Enter** to select.

To change the **countdown** time, proceed as follows:

- Use the cursor keys to browse to the input field. The input field becomes grey.
- Enter the desired value by means of the numeric keys on the RCU.
- Press **Enter** to activate

7.5.4 Identifikation

The **Identification** menu displays a dialog which shows the projector type, its address, the software version and its serial number.

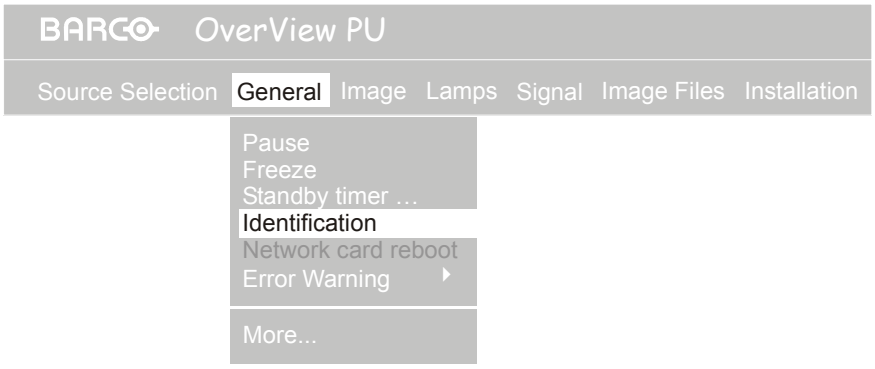


Figure 7-16
General menu, identification

To display the information about the projector proceed as follows:

- User the cursor key to highlight **Identification**.
- Press **Enter** to select

A dialog box is displayed:

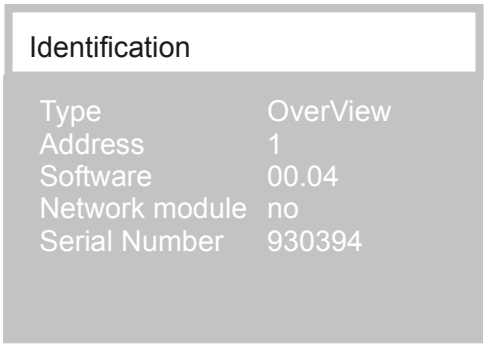


Figure 7-17
Identification dialog

To change the projector address, cf. Projector address

7.5.5 Error warning

Error Warnings can be displayed (overlaying the application) or hidden.

- Use the cursor keys to highlight **Error Warning**
- Press **ENTER** to select.

The currently selected status is indicated with a white dot.

- Push the cursor key **up** or **down** to highlight **Disabled, or Enabled**
- Press **ENTER** to select.

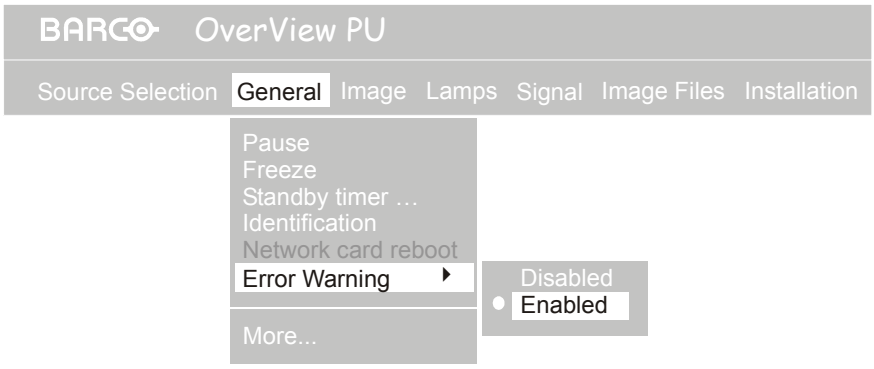


Figure 7-18
Error Warning

7.5.6 More

More can only be accessed via a password.

7.6 Image menu

Correct image settings are important for a good image reproduction. The image settings are made through a dialogbox with a scrollbar. Minimal, maximal and actual values are indicated. These settings can also be done directly via the RCU's dedicated buttons.

The image menu allows to adjust the image settings like brightness, contrast, color, sharpness, and Gamma and to select a color temperature.

These settings are automatically stored in a customized image file. Customized image files have the extension **.c**.

The pre-defined image files of the projector can not be modified. As soon as they are edited, e.g. settings are adjusted, they are saved as customized image files.

The settings (and the modification of the settings) refer exclusively to the active lamp!

To activate the **Image** menu, proceed as follows:

- Press **ADJ** to display the menu bar
- Use the cursor key to highlight **Image**
- Press **Enter** to select.

The custom image file is saved every 15 minutes or when switching to standby!

7.6.1 Settings

- Use the cursor key to highlight **Settings**
- Press **Enter** to select.
- A submenu opens to modifiy **contrast**, **brightness**, **color**, **sharpness**, and **Gamma**.

Contrast

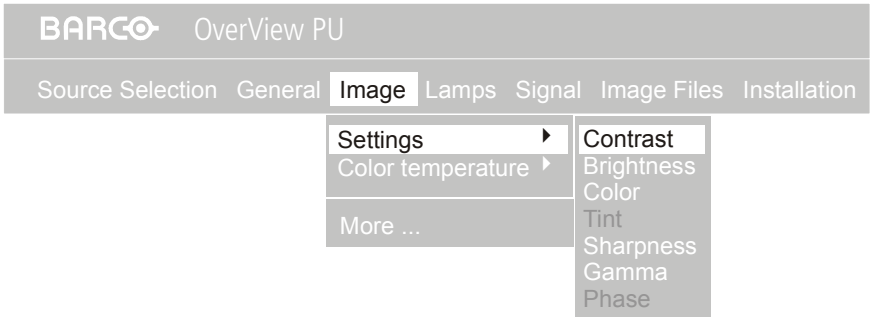


Figure 7-19
Image menu, setting contrast

To change the contrast, proceed as follows:

- Use the cursor key to highlight **Settings**
- Press **Enter** to select.
- Use the cursor key to highlight **Contrast**
- Press **Enter** to select.

A dialog opens where the current value is indicated and where you can modify the value by means of a slider bar. Use the cursor keys to increase or decrease the values.

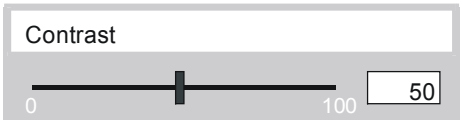


Figure 7-20
adjusting contrast

Brightness

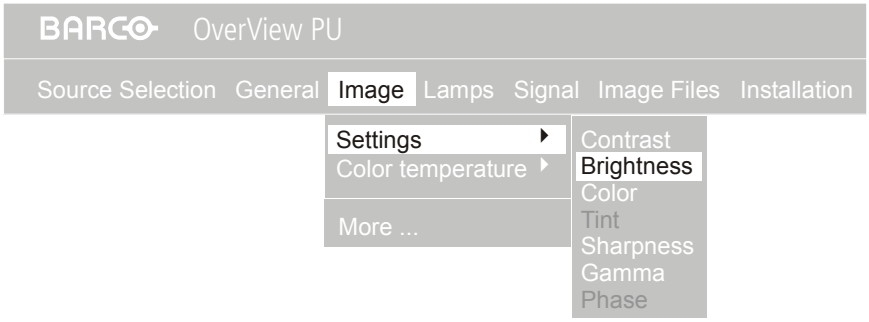


Figure 7-21
Image menu, setting brightness

To change the brightness, proceed as follows:

- Use the cursor key to highlight **Settings**
- Press **Enter** to select.
- Use the cursor key to highlight **Brightness**
- Press **Enter** to select.

A dialog opens where the current value is indicated and where you can modify the value by means of a slider bar. Use the cursor keys to increase or decrease the values.

Figure 7-22
adjusting brightness

Color

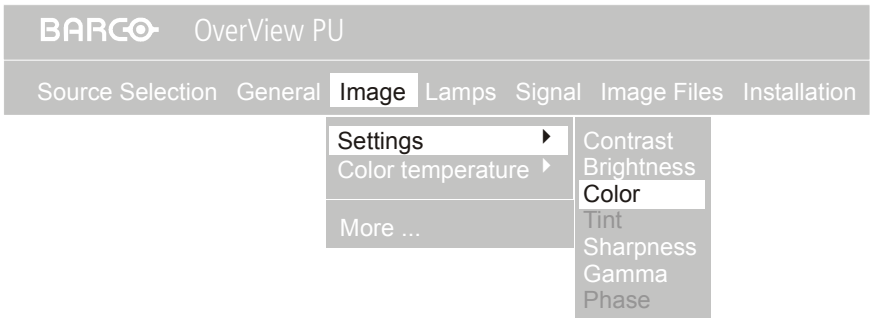


Figure 7-23
Image menu, setting color

To change the color, proceed as follows:

- Use the cursor key to highlight **Settings**
- Press **Enter** to select.
- Use the cursor key to highlight **Color**
- Press **Enter** to select.

A dialog opens where the current value is indicated and where you can modify the value by means of a slider bar. Use the cursor keys to increase or decrease the values.

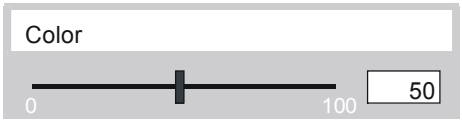


Figure 7-24
adjusting color

Sharpness

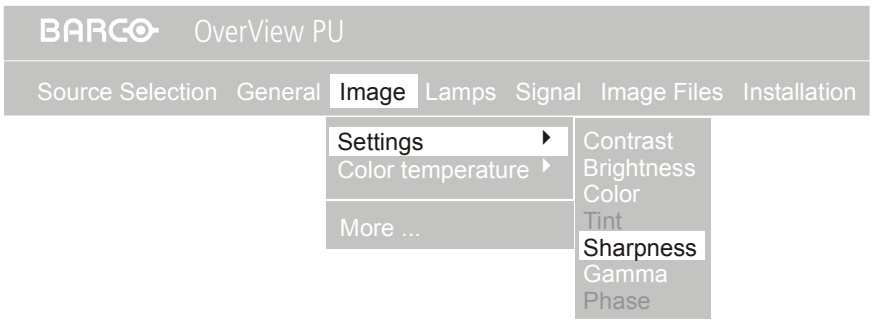


Figure 7-25
Image menu, setting sharpness

To change the sharpness, proceed as follows:

- Use the cursor key to highlight **Settings**
- Press **Enter** to select.
- Use the cursor key to highlight **Sharpness**
- Press **Enter** to select.

A dialog opens where the current value is indicated and where you can modify the value by means of a slider bar. Use the cursor keys to increase or decrease the values.

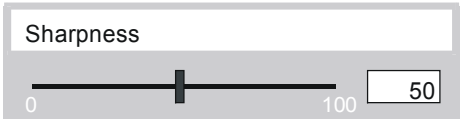


Figure 7-26
adjusting sharpness

Gamma

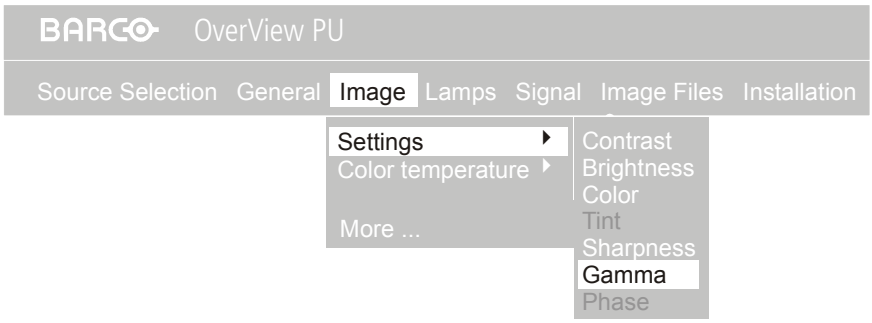


Figure 7-27
Image menu, setting gamma

To change the gamma value, proceed as follows:

- Use the cursor key to highlight **Settings**
- Press **Enter** to select.
- Use the cursor key to highlight **Gamma**
- Press **Enter** to select.

A dialog opens where the current value is indicated and where you can modify the value by means of a slider bar. Use the cursor keys to increase or decrease the values.

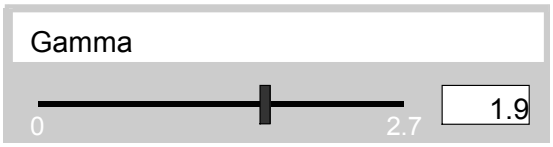


Figure 7-28
adjusting gamma

7.6.2 Color temperature

There are 4 different preset color temperatures:

name	related temperature
Projector white	
Broadcast	3200 K
Film	5400 K
Video	6500 K
Computer	9300 K
Custom	

These calibrated presets can be selected and will provide optimum color tracking, the projector allows however the setting of a personal color temperature, this is done in custom.

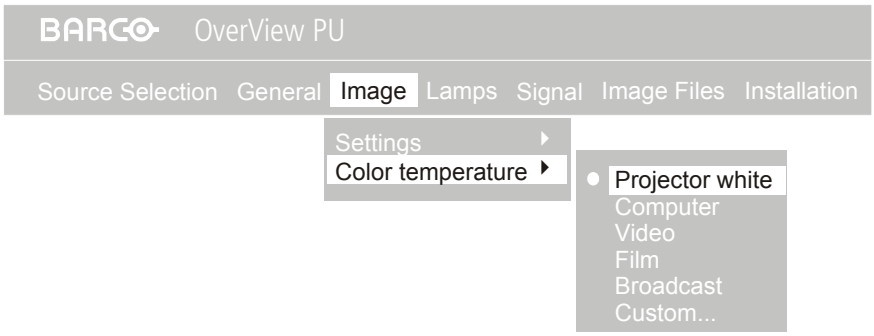


Figure 7-29
Image menu, color temperature

- Use the cursor key to highlight **Color temperature**
- Press **Enter** to select.

The currently selected color temperature is indicated by a white dot.

- Use the cursor key to highlight the desired color temperature.
- Press **Enter** to select.

Custom color temperature

If non of the pre-defined color temperatures matches your needs, you can define the desired color temperature.

To customize the color temperature, proceed as follows:

- Use the cursor key to highlight **Color temperature**
- Press **Enter** to select.
- Use the cursor key to highlight **Custom**
- Press **Enter** to select.

A dialog opens where the current value is indicated and where you can modify the value by means of a slider bar. Use the cursor keys to increase or decrease the values.

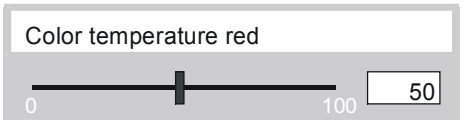


Figure 7-30
adjusting color temperature

You can also adjust the color temperature blue:
Pressing the Color key on the Remote-Control Unit toggles between red and blue.

7.6.3 More

The **More** menu can only be accessed via a password.

7.7 Lamps

Use the **Lamps** menu to select the active lamp, an operation mode, and to see and modify runtimes.

Proceed as follows to activate the lamps menu:

- Press ADJ to display the menu bar
- Use the cursor key to highlight Lamps
- Press Enter to select.

7.7.1 Active lamp

OVERVIEW CPU67-DL has a dual lamp system for 100% availability of the projector. The active lamp is the lamp currently projecting the image and can be freely selected.

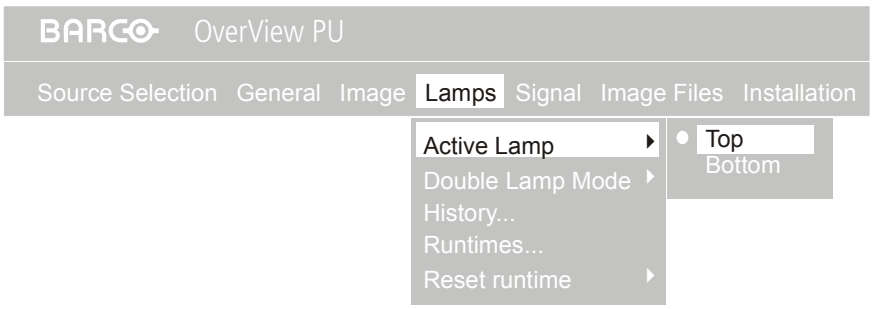


Figure 7-31
Lamps menu, active lamp

Proceed as follows to change the active lamp

- Use the cursor key to highlight **Active Lamp**.
- Press **Enter** to select.
- The currently active lamp is indicated by a white dot.
- Use the cursor key to highlight the desired active lamp
- Press **Enter** to select.

Depending on the operation mode of the projector, changing the active lamp initiate different actions:

Cold Standby or Auto Switch mode

- In this operation mode, the active lamp is on, the second lamp is switched off. Therefore when changing the active lamp, the second lamp first has to be switched on (and the other lamp is switched off). Since a lamp requires some time to burn stable, the displayed image will first have reduced brightness. After some instants the image will show the former brightness.

In these operation modes, a subsequent change of the active lamp is only possible after the cool down cycle of the first lamp (about 60sec).

Hot Standby mode

- In this operation mode, both lamps are switched on. Therefore when changing the active lamp, there is no noticeable impact on the displayed image (both lamp are adjusted to have the same brightness).
- Since both lamps are one, a second subsequent change of the active lamp is immediately possible.

7.7.2 Dual lamp mode

Hot Standby can only be selected if it has been enabled by a Barco technician (special request).

If Hot Standby is disabled, this mode is grayed out.

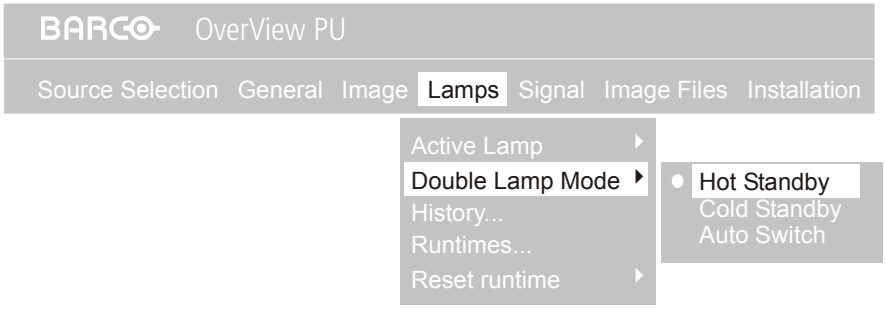


Figure 7-32
Lamps menu, double lamp mode

Proceed as follows to select the operation mode

- Use the cursor key to highlight **Mode**.
- Press **Enter** to select.
- The currently selected operation mode is indicated by white dot.
- Use the cursor key to highlight the desired operation mode
- Press **Enter** to select.

A message box is displayed to confirm the selection:

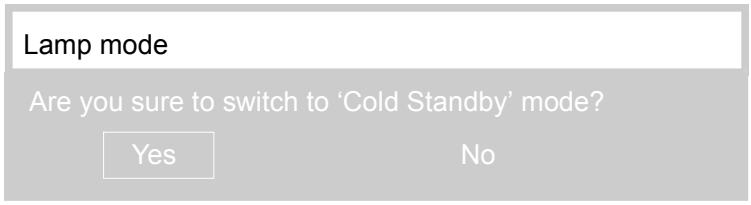


Figure 7-33
message box to confirm the selection

In **hot standby** both lamps are on. In case of a lamp failure, the light output of the other lamp is immediately switched to illuminate the optics, and there is almost no noticeable effect on the displayed information: no loss of information, no impact on quality. Switching time is about one second.
In **cold standby** mode the second lamp is only switched on in case a failure occurs with the active lamp. Since the second lamp needs about one minute to reach a stable operating temperature, at the beginning the display will have reduced brightness. The contents of information, however, is available nearly without interrupt.
Auto Switch mode is a special version of the cold standby mode: the lamps are active in turns: every predefined period (can be set between 12 hours and 500 hours) the light path is illuminated by the other lamp. Since the lamp is switched on some minutes in advance, the takeover of the other lamp is equally percepted as in hot standby mode: no noticeable effect on the displayed information, no loss of information, no impact on quality.

Ask your Barco support techician to set the switching time according your needs!

7.7.3 History

Use this command to see the list of serial numbers and the current runtime of the lamps

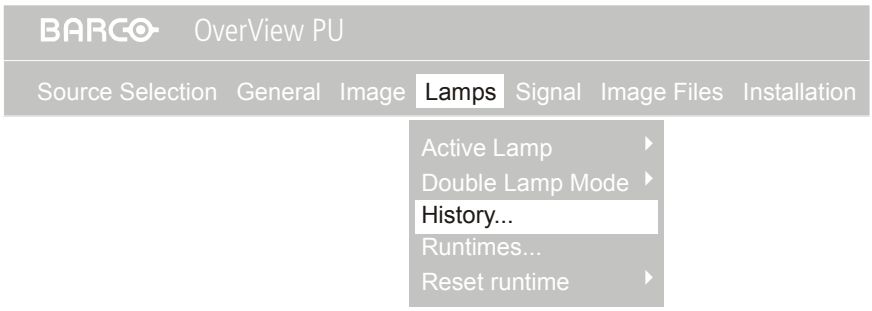


Figure 7-34
Lamps menu, History

Proceed as follows to view the lamp history:

- Use the cursor key to highlight **History**
- Press **Enter** to select.
- A dialog is displayed which shows the serial numbers and runtimes of the employed lamps.

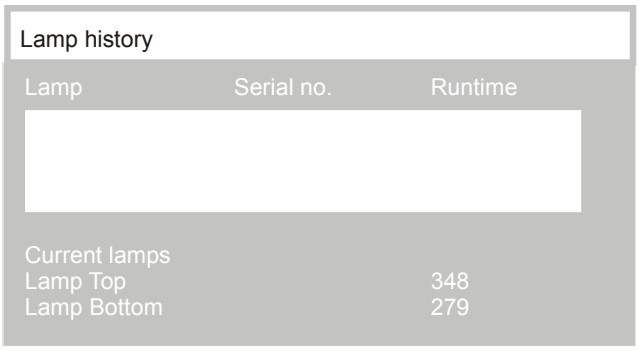


Figure 7-35
Lamp history

7.7.4 Runtimes

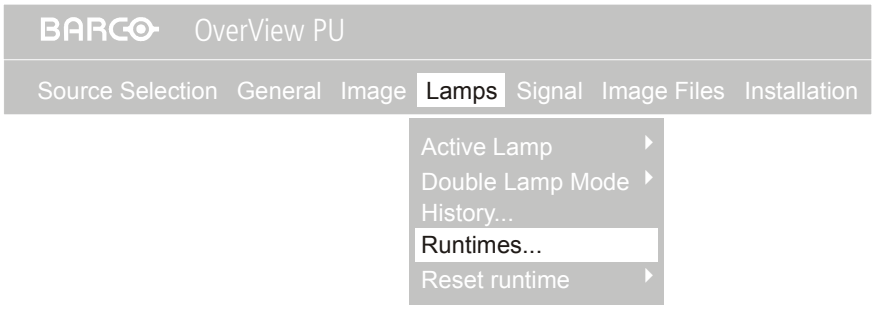


Figure 7-36
Lamps menu, runtimes

The **Runtimes** command displays a dialog where the runtimes of the lamps and the projector can be viewed.

To check the runtimes, proceed as follows:

- Use the cursor key to highlight **Runtimes**.
- Press **Enter** to select.

The **Runtime** dialog is displayed where the runtimes for both lamps and the projector itself are listed:

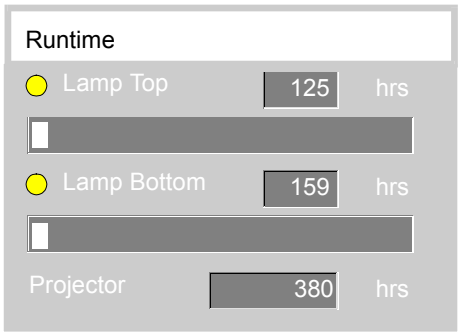


Figure 7-37
dialog box Runtime

7.7.5 Reset runtime

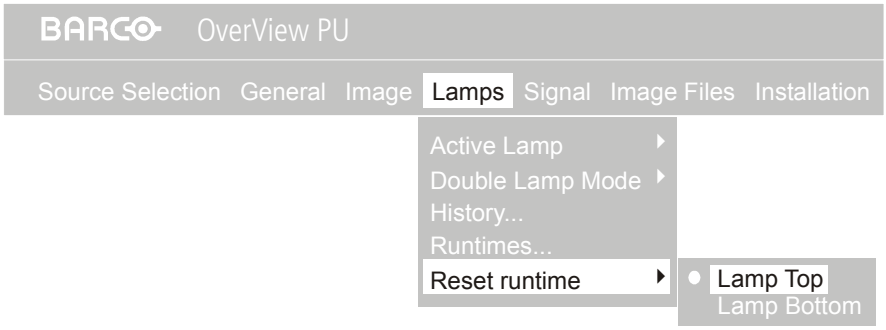


Figure 7-38
Lamps menu, reset runtime

After replacement of the lamp, the serial number of the new lamp has to be entered.

The command **Reset runtime** displays the dialog to enter the serial number.

To enter the serial number of the new lamp, proceed as follows:

- Use the cursor key to highlight **Reset runtime**.
- Press **Enter** to select.

The following dialog is displayed:

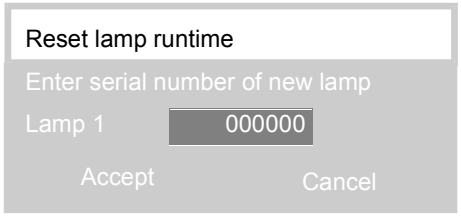


Figure 7-39
dialog to enter the serial number of a new lamp

- Use the cursor keys to highlight the input field.
- Use the numeric keys on the RCU to enter the serial number of the new lamp.
- Click **Accept** to activate the serial number.

Reset lamp runtime resets the error flag and the indication about the lamp error on the display of the E-Box.

Reset lamp runtime is the only possibility to register a lamp in the system!

7.8 Signal

The transition effects when switching from one source to another can be set in multiple ways. Use the **Switching** mode sub menu to select your preference!

The second command of the **Signal** menu refers to the background which can be set to black, blue or to display a logo.

To view or modify the signal settings, proceed as follows:

- Press **ADJ** to display the menu bar
- Use the cursor key to highlight **Signal**.
- Press **Enter** to select.

7.8.1 Switching mode

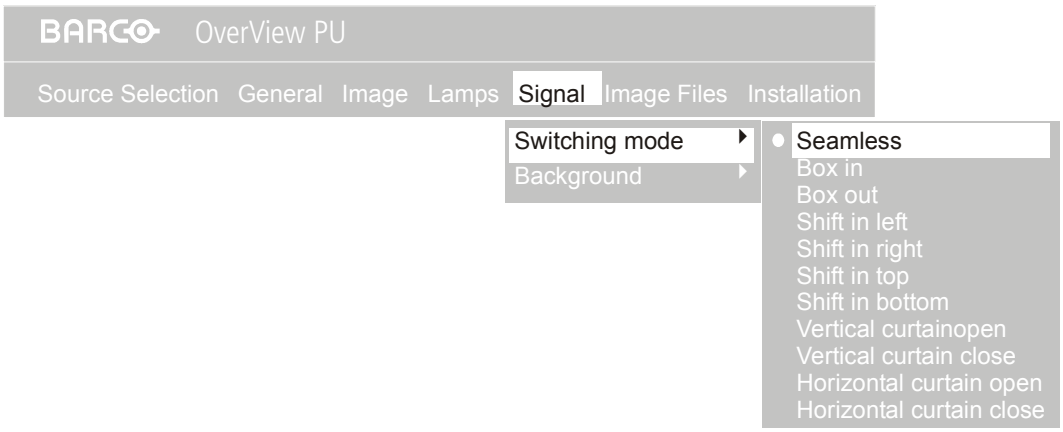


Figure 7-40
Signal menu, switching mode

To view or modify the switching mode, proceed as follows:

- Use the cursor key to highlight **Switching mode**.
- Press **Enter** to select.

A submenu with the available transition effects is displayed. The currently selected effect is indicated by a white dot.

- Use the cursor key to highlight the desired transition.
- Press **Enter** to select.

7.8.2 Background

If there is no signal connected to the projector, the **background** will be a logo, a black or a blue screen depending on the background settings.

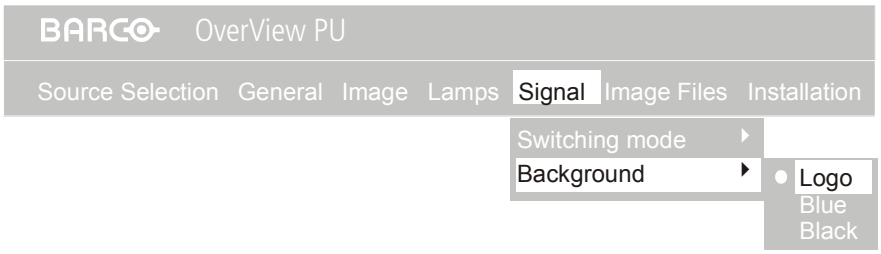


Figure 7-41
signal menu, background

To view or modify the background, proceed as follows:

- Use the cursor key to highlight **Background**.
- Press **Enter** to select.

A submenu with the available backgrounds is displayed. The currently selected background is indicated by a white dot.

- Use the cursor key to highlight the desired background.
- Press **Enter** to select.

Ask a Barco support technician to store your desired logo into the projectors flash memory!

7.9 Image Files

An image files contains the main characteristics of a source (number of active lines,.resolution, vertical frequency, horizontal frequency...). The projector's memory contains a list of files corresponding to the most common sources, these are the standard files (file extension = *.s). When a new source corresponds to one of these files, a custom file (file extension =*.c) is created and saved for future use.

Please see **Appendix A: Standard source set up files** for a list of standard image files.

7.9.1 Load

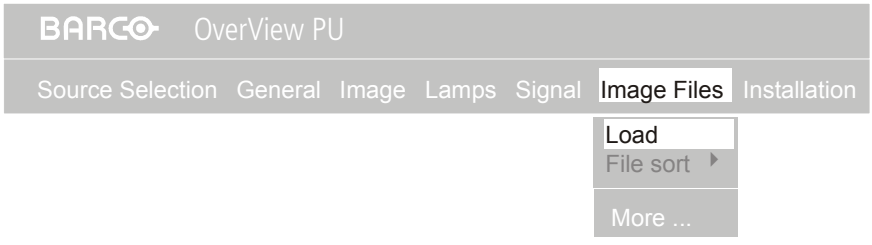


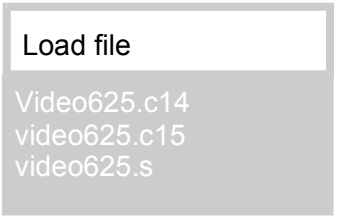
Figure 7-42
Image files menu, load

The projectors **AutoImage** function creates automatically the best suited image file (custom file) for a new source. **AutoImage** is used whenever a new source is detected.

To load an image file, proceed as follows:

- Use the cursor key to highlight **Load**
- Press **Enter** to select.

A dialog is displayed which lists all the files which matches best the characteristics of the connected source.



- Use the cursor key to highlight the desired file
- Press **Enter** to select.

The file is loaded and the image is adapted. If some of the image settings will be modified, the custom file will be saved under a new sequence number.

Please mind the file extension:
.s is the standard file (as listed in the appendix)
.cxx is a customized file, derived from the standard file with the same file name

7.9.2 More

The **More** menu can only be accessed via a password.

7.10 Installation

Use the installation menu to change a **projector's address**, to assign a common address, to specify the **language**, **baudrate** and **orientation** of the projector.

To activate the installation menu, proceed as follows:

- Press **ADJ** to display the menu bar.
- Use the cursor key to highlight **Installation**
- Press **ENTER** to select.

7.10.1 Projector address

Figure 7-43
Installation menu, projector address

To control every projector of a Display Wall individually, the projector has to get a unique address. This address can be set between 0 and 9 (IR Remote-Control) or between 0 and 255 (RS232 Remote-Control).

By means of the **common RC5 address** the IR Remote-Control can talk simultaneously to all projectors of a Display Wall.

The common RC5 address can be set either to 0 or to 1.

To modify the projector address:

- Move the cursor to **Projector Address.**
- Press **Enter** to select.

The projector address and the common RC5 address is displayed.

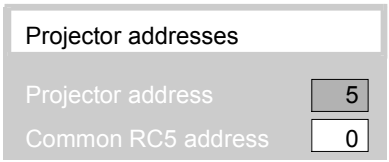


Figure 7-44
Projector Address and common address

The projector address is set to five, and the common RC5 address is zero. Therefore the projector will listen to commands received from an IR Remote-Control unit with the address “5” and with the address “0”.

To change a value:

- Move the cursor key to the respective field.
- Enter the new value by means of the numeric keys of the IR Remote-Control.

For an application it might be useful to have the Display Wall split into two parts, one with the common RC5 address “0” and one with the common RC5 address “1”.

7.10.2 Orientation

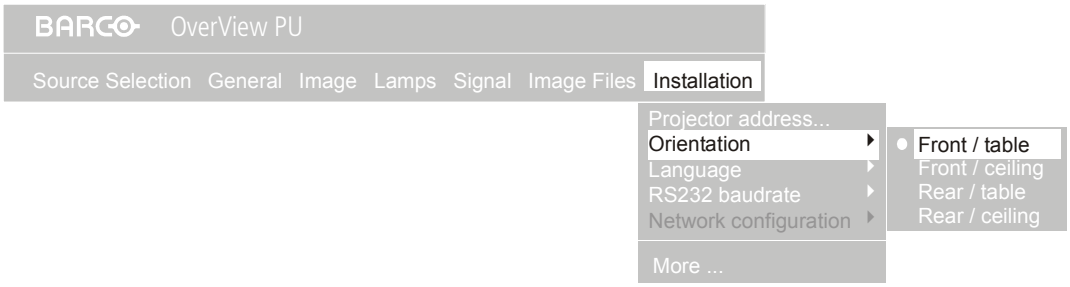


Figure 7-45
Installation menu, orientation

For projection engines incorporated in OVERVIEW CPU67-DL systems, this menu entry is irrelavant: The orientation of the projection engine is fixed and defined as **Front/Ceiling**. However, in case your picture is displayed upside down, it might be recommended to check the orientation set on this menu.

(The other orientations are required for test situations with the engine NOT installed in the structure.)

To check the set orientation, proceed as follows:

- Move the cursor keys to highlight **Orientation**.
- Press **Enter** to select.

A submenu opens where the current orientation is indicated by a white dot.

In case you want to change the orientation, proceed as follows:

- Move the cursor keys to highlight your desired orientation
- Press **Enter** to select.

For OverView cPU67-DL, the only correct orientation is Front/Ceiling!

7.10.3 Language

This menu item refers to the language of the OSD. For OVERVIEW CPU67-DL currently **English** is available.

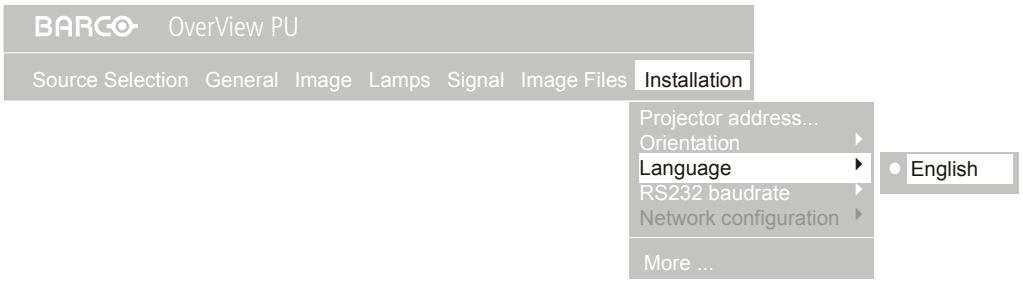


Figure 7-46
Installation menu, Language

To select a language, proceed as follows

- Use the cursor key to highlight **Language**
- Press **ENTER** to select.

A submenu is displayed with all available languages. The currently selected language is indicated by a white dot.

7.10.4 RS232 baudrate

For Remote-Control, the baudrate can be set. The higher the baudrate, the faster the communication. However, the working baudrate also depends on the number of connected devices.

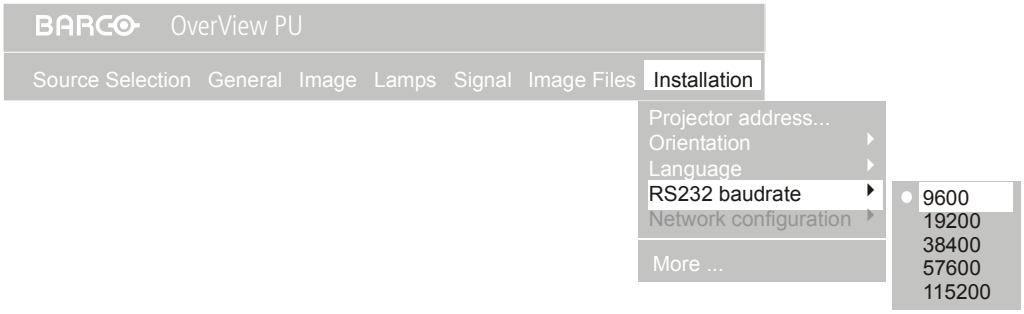


Figure 7-47
Installation menu,RS232 baudrate

To change a baudrate, proceed as follows:

- Use the cursor key to highlight **RS232 baudrate**
- Press **ENTER** to select.

A submenu is displayed with all available baudrates. The currently selected baudrate is indicated by a white dot.

- Use the cursor key to highlight the desired baudrate
- Press **ENTER** to select.

For an OverView cPU67-DL Display Wall, it is recommended to set the baudrate to 9600. The max. number of devices controlled by one Remote-Control chain is 64!

7.10.5 More

The **More** menu can only be accessed via a password.

8 Maintenance and Servicing

OVERVIEW CPU67-DL requires very little maintenance and servicing. Maintenance operations are nevertheless necessary at regular intervals to guarantee good operational performance.

This chapter describes maintenance and servicing of OVERVIEW.

Only authorized personnel should carry out other maintenance work not explicitly mentioned in this user manual!

Never open the access cover without first disconnecting the power supply cord! Measurements and tests with the opened device may be carried out only in the factory or by specially trained personnel, due to the dangers of electrical shock.

8.1 Cleaning

8.1.1 Cleaning the screen

General

Screens consist of single or double screen elements. Each screen element has an delicate optical screen surface structure dedicated to it's functionality. The optical surface can easily be damaged if the screen is handled incorrectly. Only handle screens while wearing gloves with a soft texture (eg. cotton gloves).

Avoid touching the rear beaded surface unnecessarily. It is easily damaged.

The screen is a high-precision optical component. It is made of plastic and is not scratch-proof. Only use a soft, damp cloth when cleaning.

The following cleaning solutions can be used:

- 50% alcohol/water solution, e. g. Glassex;
- soap/water solution (washing-up liquid).

The screen must only be wiped in a vertical direction!

Cleaning

If the screen is only slightly dusty or is showing particles a vacuum cleaner with a soft bristle or a feather duster is recommended. Clean compresses air can be used, but it makes the screen statically charged, attracting airborn particles. The brushing direction should always be along the optical structures in the screen (circular in case of fresnel).

If the dirt on the screen is heavier, possibly from fingerprints, soft lint-free cloth or paper towel can be used. If required the screen may be cleaned with a cleaning agent, such as ordinary window cleaner with ammonia (not alcohol). Never apply cleaning solution directly onto the screen surface. Instead, add cleaning agent to the cloth or towel, then wipe the surface. It is important that the csreen should be complately dry after treatment.

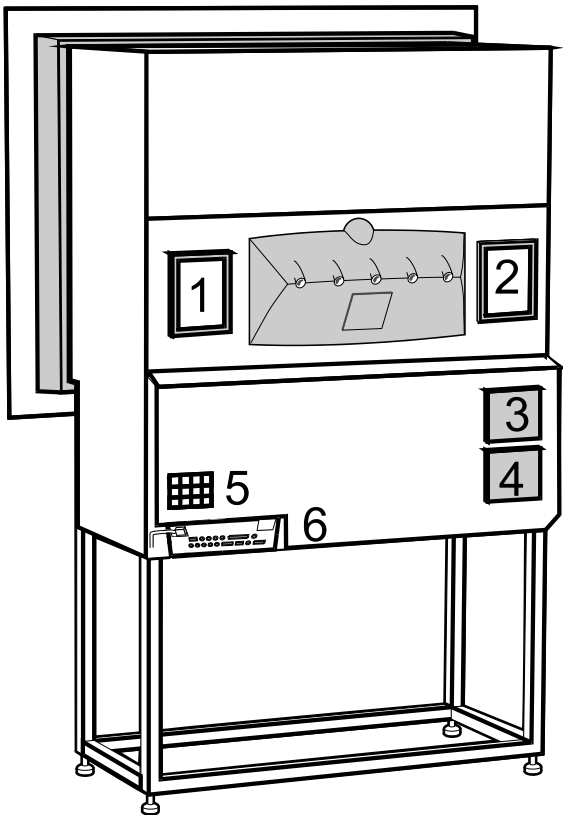
Never use cleaning agents with solvents as these may destroy the screen. Also, never rub hard or persistently on the screen in order to remove stains, as this will cause deformationsin the surface which will appear as stains.

Don't store screens at temperatures exceeding 38ºC (100ºF)

-

8.2 Exchange of consumables

Both the filter pads and the lamp modules are accessible from the rear side of the system.



1	Filter for LCD cooling
2	Filter for lamp cooling
3	Lamp top
4	Lamp bottom
5	Keypad
6	E-Box

Figure 8-1
Position of filter pads and lamp modules

OverView cPU67-DL has two different filter pads, one for the lamp cooling (coarse foldings) and one for the LCD (fine foldings). Always replace with the same type! Never mix up the filter pads! Severe damage will occur!

8.2.1 Behavior on lamp failure

Lamp failures can only be detected if the lamp is running!

Lamp failures set the Lamp Error Flag

The display on the E-Box shows which lamp has to be replaced, cf. Request to change a lamp, left digit C (dual lamp systems)

In case **Error Warning** is enabled after the detection of a lamp failure the following warning pops up:

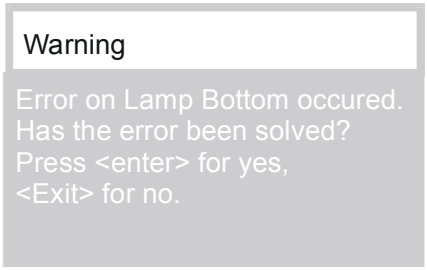


Figure 8-2
Warning on Lamp failure

In case this message is acknowledged **YES**, the system requires confirmation:

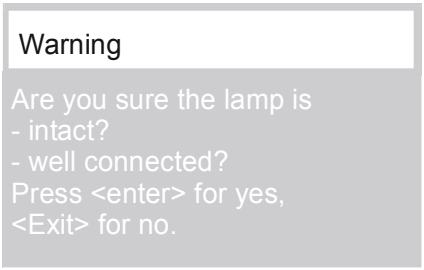


Figure 8-3
Confirmation on lamp replacement

In case of a positive acknowledge, the **Lamp Error Flag** is reset.

In case the warning on lamp failure has not been positively answered, the **lamp error** stays saved.

The lamp operation mode is still valid, but the mirror can no longer be switched.

The error flag is reset when entering the new serial number for the lamp, cf. Reset runtime

In **Hot Standby** mode, after resetting the error, the lamp is ignited. If ignition is successful and the lamp has been switched on, the mirror can be switched again. If ignition is a failure, the lamp error is set again and the mirror remains locked.

In **Cold Standby** mode, since the replaced lamp is the inactive lamp, after resetting the error, there is no lamp check, and the lamp remains switched off. The mirror can be switched again. If then the system changes the active lamp by means of the mirror, the new lamp is tried to be lighted. If it is a flop, the error flag is set again, and within about 5 seconds, the projector switches back to the lamp which has been the active one. Then the mirror is locked again.

In Cold Standby, after switching the active lamp, the lamp which has been active at that time is only switched off if the second lamp succeeds in being switched on.

8.2.2 Replacing the lamp module

The nominal lifetime of the lamp is 8000 hours. Replace the lamp module if a fault occurs or when automatically switched off after passing its lifetime.

OVERVIEW CPU67-DL has a dual lamp system to ensure a 24/7 operation. If a lamp fails, the second lamp is switched into the light path and projects the image.

The broken lamp then has to be replaced to ensure that there will be a good lamp in case the second lamp fails.

The hot lamp is at high pressure. Do not open the lamp housing before the lamp has cooled down! Wait at least about 5 minutes after switching off the lamp.

Always hold the lamp module by the metal housing, don't touch the inside of the housing or reflector and lamp! Use fabric gloves when replacing!

Removing a Lamp Module

A lamp has to be replaced after a lamp failure. A warning will be displayed for some minutes to indicate that a lamp failure has taken place.

The two-digit display on the control unit will indicate which lamp has failed and therefore will have to be replaced:

Indication	**meaning**
CT	**C**hange Lamp **T**op
CB	**C**hange Lamp **B**ottom

In case the indication fails, you can also fade in the information using the IR Remote-Control.

Activate the menu bar by pressing the Adj key.

Select Lamps

Select Active Lamp. The broken lamp is grayed out since it cannot be selected active!

- In case the indication reads **CT**, open the lamp cover of the top lamp
- In case the indication reads **CB**, open the lamp cover of the bottom lamp.

- To open the lamp cover, use a screw driver, and turn the screw a quarter turn counter clock-wise.

Figure 8-4
opening the lmap door

- Open the lamp door.
- Loosen first the lower screw [**2**] and then the top left screw [**1**] (only the left screw, not the right one) with an Allen wrench size2,5mm. This removes slowly the plug of the lamp module.

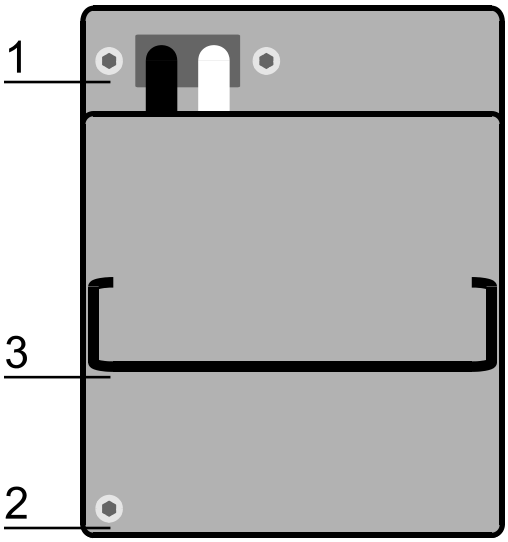


Figure 8-5
removing the lamp module

- When the screws turn freely, lift the small grip [**3**] and withdraw cautiously the whole lamp module.

Figure 8-6
pulling out the lamp

Inserting a Lamp Module

The following description applies if the lamp has already been removed as described above.

- Carefully insert the new lamp module into the lamp housing and push it cautiously right back as far as it will go.

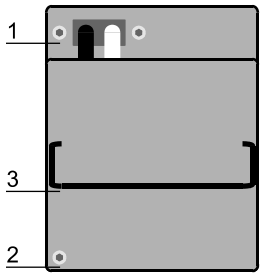


Figure 8-7
Inserting the lamp module

- Tighten first the left screw [**1**] (only the left screw, not the right one) and then the lower screw [**2**] with an Allen wrench size 2,5mm. This plugs slowly in the plug of the lamp module.

The torque on the screw may not exceed 0.75 Nm!

- When the screws are tight, lower the small grip [**3**].
- Close the lamp housing.

Disposing a Lamp

Note that there may be laws concerning disposal and recycling of burnt-out lamps in your country! Please contact your local authorities to get further information!

8.2.3 Replacing the filter pad

The filter pad must be replaced regularly. The operating period of a filter pad depends on the quality of the supplied air.

OVERVIEW CPU67-DL employs two kind of filter pads, one for the LCD cooling (fine foldings) and one for the lamp cooling (coarse folding). The replacement procedure for both filter pads is identical and only described once.

Replace the filter pad always with one of the same type! Never mix them up!

To replace a filter pad, proceed as follows:

- Go to **standby mode** by pressing **STDBY** on the **RCU**
- For cooling down the lamp, wait 10 minutes.
- Switch off power by pressing **0**.

Switch off the equipment before replacing the filter pad in order to avoid severe contamination!

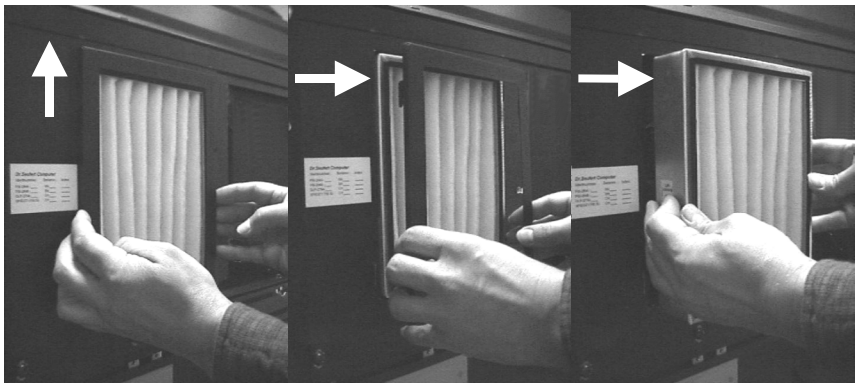


Figure 8-8
Removing the cover and the filter pad

- Push the cover of the filter pad slightly up and remove it.
- Remove the filter pad.
- Insert the new filter pad as indicated on its frame.
- Insert the cover of the filter pad and press it slightly down.
- Switch on power by pressing **1**.
- Switch on the lamp by pressing **standby**.

8.3 Replacing the fans

The correct operation mode of the two fans is checked regulary twice a minute. In case of two subsequent missing feedbacks the fan is considered to have failed. A warning is displayed on the screen to indicate that the system will be shut down within 5 minutes.

In order to protect the system from severe damage, the system is shut down after a fan failure within 5 minutes.

In case the fan is replaced within 5 minutes, the error is re-set, and the system won't shut down but keep running.

In case of a fan failure, please contact a Barco service technician to replace the fan.

In case the fan for lamp cooling is broken, the two-digits indication on the control unit reads FA (**F**an **A**ux)

In case the fan for LCD cooling is broken, the two-digits indication on the control unit reads FL (**F**an **LCD**).

Please refer also to **Displayable error messages**.

9 Technical Data

This chapter provides tabular overviews about the technical details of OVERVIEW CPU67-DL.

9.1 General data

characteristic	specification
dimensions	
	67” diagonal
screen width	1368 mm | 53.9 in.
screen height	1026 mm | 40.4 in.
total depth, incl. mirror shielding	954 mm | 37.55 in.
weight	
total weight per unit (without support)	102 kg | 224.9 lbs
support (standard height)	72 kg | 158.79 lbs
operating conditions	
ambient temperature	10 .. 40°C | 50 .. 105°F
humidity	max. 80% (non condensing), depending on configuration

Table 9-1

9.2 Technical data of optical system

characteristic	specification
OVERVIEW CPU67-DL	Modular rear projection system, 3-panel poly-Silicon LCD projector, 1600×1200 pixels, dual lamp system
colors	16.7 millions
Luminous flux	> 400 lumens
Luminance	110 cd/m²
brightness uniformity	> 95%
Contrast	> 400:1
lamps	UHP™ lamp 100 Watt operation time 8000 hours

Table 9-2

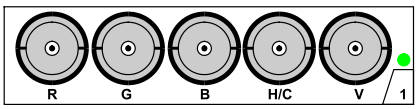
9.3 Technical data of electrical system

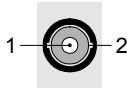
characteristic	specification
AC power supply	100-240 VAC
mains frequency	50/60 Hz
power consumption	Hot standby: 395 W cold standby: 285 W

Table 9-3

9.4 Interfaces

9.4.1 Slot 1: 5 cable input, 5×BNC



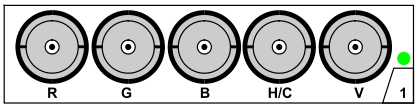


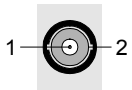
1	Signal
2	Shield

Connector name	**R**	**G**	**B**	**H**	**V**
Input signal					
RGBHV	R	G	B	H	V
RGBS	R	G	B	S	-
RGsB	R	Gs	B	-	-
Composite Video	-	Video	-	-	-
Super Video	-	Y	-	-	C
Component Video - SS	R-Y	Y	B-Y	S	-
Component Video - SOY	R-Y	Ys	B-Y	-	-

Table 9-4

9.4.2 Slot 2: 5 cable input, 5×BNC



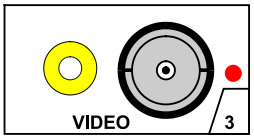


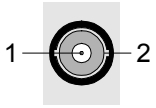
1	Signal
2	Shield

Connector name	**R**	**G**	**B**	**H**	**V**
Input signal					
RGBHV	R	G	B	H	V
RGBS	R	G	B	S	-
RGsB	R	Gs	B	-	-

Table 9-5

9.4.3 Slot 3: Video input

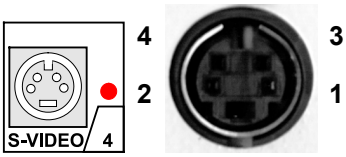




	1×BNC or cinch 1.0Vpp ± 3 dB, no loop through
1	Signal
2	Shield

Table 9-6

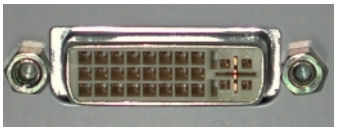
9.4.4 Slot 4: S-Video input



1	ground luminance	**3**	luminance 1.0Vpp ± 3 dB
2	ground chrominance	**4**	chrominance 282 mVpp ± 3 dB

Table 9-7

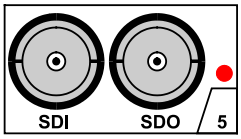
9.4.5 Slot 5: DVI-D input

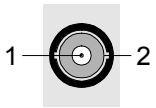


Pin	Signal Assignment	Pin	Signal Assignment
1	TMDS Data 2-	13	-
2	TMDS Data 2+	14	-
3	TMDS Data 2 Shield	15	Ground (+5, Analog /V Sync)
4	-	16	-
5	-	17	TMDS Data 0-
6	DDC Clock	18	TMDS Data 0+
7	DDC Data	19	TMDS Data 0 Shield
8	-	20	-
9	TMDS Data 1-	21	-
10	TMDS Data 1+	22	TMDS Clock Shield
11	TMDS Data 1 Shield	23	TMDS Clock +
12	-	24	TMDS Clock -

Table 9-8

9.4.6 Slot 7: Serial digital input / serial digital output





1	Signal
2	Shield
SDI	BNC input, 75 Ω terminated
SDO	BNC output, output impedance 75 Ω

Table 9-9

9.5 Parts List

order No.	designation
R9842270	OVERVIEW CPU67-DL, rear projection system with a 3-panel Poly-Silicon LCD projector, dual lamp system. Each of the LCD panels have 1600×1200 pixels (UXGA). The projection engine has analog interfaces and a digital interface (DVI-D) Linear configuration
R9842273	OVERVIEW CPU67-DL, rear projection system with a 3-panel Poly-Silicon LCD projector, dual lamp system. Each of the LCD panels have 1600×1200 pixels (UXGA). The projection engine has analog interfaces and a digital interface (DVI-D) The angle between two projection modules is 3 degrees
R9842275	OVERVIEW CPU67-DL, rear projection system with a 3-panel Poly-Silicon LCD projector, dual lamp system. Each of the LCD panels have 1600×1200 pixels (UXGA). The projection engine has analog interfaces and a digital interface (DVI-D) The angle between two projection modules is 5 degrees
R9842278	OVERVIEW CPU67-DL, rear projection system with a 3-panel Poly-Silicon LCD projector, dual lamp system. Each of the LCD panels have 1600×1200 pixels (UXGA). The projection engine has analog interfaces and a digital interface (DVI-D) The angle between two projection modules is 8 degrees

Table 9-10

9.5.1 Consumables and spare parts

order No.	designation
RSPSI28481	Lamp Module for OVERVIEW CPU67-DL
RSPSI28420	Dust Filter LCD cooling
RSPSI28422	Dust Filter Lamp cooling
RSPSI30951	Fan Box Repair Kit

Table 9-11

9.5.2 Optional parts

order No.	designation
RSPSI30440	Executive Remote Control

Table 9-12

9.5.3 User's manuals

order No.	title
Doc-3340-2	User's Manual OVERVIEW CPU67-DL

Table 9-13

9.6 Addresses

Feel free to contact us if you have any further questions!

- **Barco Control Rooms GmbH**
  An der Rossweid 5 • D-76229 Karlsruhe • Germany
  Phone (49) (721) 6201-0 • Fax (49) (721) 6201-298
  E-mail info.de.bcd@barco.com, Web www.barcocontrolrooms.de
- **BARCO N.V. Projection Systems**
  Noordlaan 5 • B-8520 Kuurne • Belgium
  Phone (32) (56) 36-8211 • Fax (32) (56) 36-8251
  E-mail sales.bcd@barco.com • Web www.barcocontrolrooms.com
-

10 Troubleshooting

When faults occur with OverView which are not described below please contact BARCO.

10.1 Faults

Faults	cause/steps
no display: lamp not ignited and fan of the illumination unit not running	The equipment is not connected to power supply. It must be supplied with suitable voltage (see9.3 Technical data of electrical system)!
	Power switch is off. Switch on power switch. See 4.2.2 Switching on
display is upside-down	change the configuration: To change the configuration of the projector, proceed as follows: ▸ Press **ENTER** to start up the adjustment mode. ▸ Press the cursor key **up** or **down** to select **'Installation'**. ▸ Press **ENTER** to display the **Installation menu**. ▸ Press the cursor key **up** or **down** to select **'Configuration'**. ▸ Press **ENTER** to display the **Configuration menu**. The actual installed configuration will be highlighted. Press the cursor key **up** or **down** to select the corresponding configuration.
the display is dark though the lamp is ignited	there is no signal applied. Check the input source and the connections
OVERVIEW CPU67-DL can not be controlled via the **RCU**	Replace the batteries. Point the front of the **RCU** directly to the sensor on the screen. When using the wireless remote control, make sure you are within the effective operating distance (30m, 100ft in a straight line). The remote control unit will not function properly if strong light strikes the sensor window or if there are obstacles between the remote control unit and the IR sensor.

Table 10-1

10.2 Displayable error messages

10.2.1 General

The E-Box has a two digit 7 segments LCD indication which displays error messages.

Due to the restricted possiblites of a 7 segment display, some characters may be a bit confusing. The following table shows the character and their representation in the 7 segment display:

0	1	2	3	4	5	6	7	8	9	-	_			
A	B	C	D	E	F	H	I	L	P	T	U	Y	o lower	o upper

10.2.2 Wait requests

Whenever the projector is not ready to receive any command (e.g. the lamp is cooling down and cannot be re-ignited during this time), a message with the left digit toggling is displayed, thus showing that the projector is busy and requests the user to wait.

Wait requests are indications with the left digit toggling between "o upper" and "o lower". The bi-sected cell represents blinking, showing the two status which are displayed in turns:

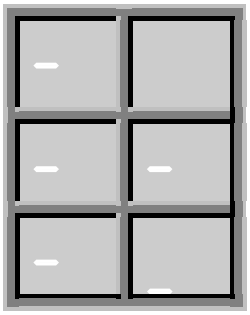
First Digit, Blinking	Second digit	Indication
o / o	0	"Wait" to prevent hot restrike after shutdown due to PC ACKNOWLEDGE ERROR
o / o	C	"Wait" to prevent hot restrike after shutdown due to PC CLOCK ERROR
o / o	d	"Wait" to prevent hot restrike after shutdown due to I²C DATA ERROR
o / o	H	"Wait" to prevent hot restrike after detection HARDWARE INCONSIS-TENCY
o / o	L	"Wait" to prevent hot restrike after AUTOMATIC SHUTDOWN
o / o	P	"Wait" to prevent hot restrike after shutdown due to SMP ERROR
o / o	-	"Wait" to prevent hot restrike

10.2.3 Error messages, left digit H (and U), (related to the 800 peripheral)

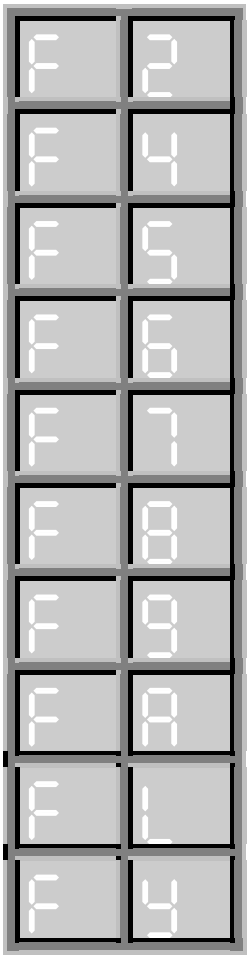
First Digit,	Second digit	Indication
H	0	800 peripheral TX busy
H	1	800 peripheral RX time out
H	2	800 peripheral RX data error
H	3	800 peripheral RX error
H	5	800 peripheral source number
H	6	800 peripheral TX time out
U	U	Unknown error

10.2.4 Error messages and status messages, left digit -

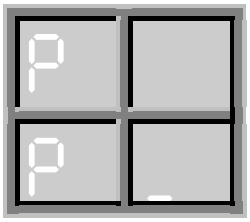
First Digit,	Second digit	Indication
-	0	I²C Acknowledge
-	C	I²C clock error (see service menu)
-	d	I²C data error (see service menu)
-	H	Hardware inconsistency
-	L	Projector shutdown due to a failure or an automatic shutdown
-	P	SMP error

First Digit,	Second digit	Indication
		Projector ready to start up
		Projector ready to start up after shutdown
		Projector shutting down

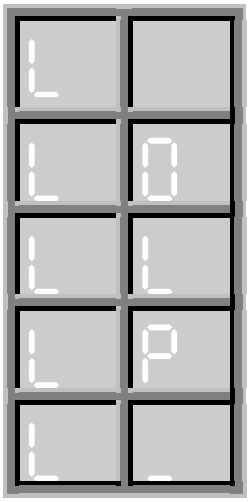
10.2.5 Error messages, left digit F

First Digit,	Second digit	Indication
		Motor error, power supply controller, device type I501PCF8574 on address 74H
		Flash read error
		Flash write error
		Flash clear error
		Flash format error
		Flash command busy
		Flash command time out
		Fan alert (in case of dual lamp system: Fan for cooling the lamps
		Fan LCD (dual lamp system). The system shuts down.
		Mirror can no longer be switched (dual lamp system)

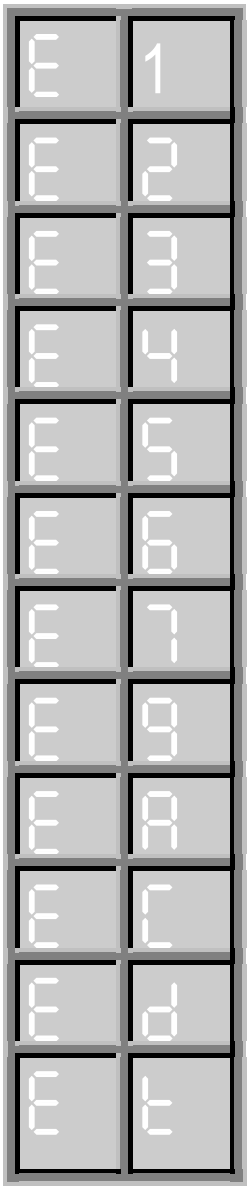
10.2.6 Error messages, left digit P (related to projector)

First Digit,	Second digit	Indication
		Projector in pause
		Exit pause mode

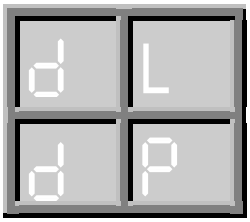
10.2.7 Error messages, left digit L

First Digit,	Second digit	Indication
		Start up projector
		I²C Acknowledge, power supply controller, device type I300PCF8574 on address 78H
		Lamp error, power supply controller, device type I300PCF8574 on address 78H. First check if the lamps are connected!
		SMP error, power supply controller, device type I300PCF8574 on address 78H
		Start up lamp, power supply controller, device type I300PCF8574 on address 78H

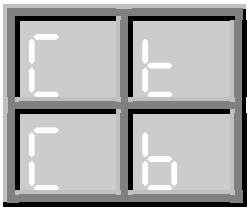
10.2.8 Error messages, left digit E

First Digit,	Second digit	Indication
	E	1	I²C Acknowledge, LCD Driver, device type I721CXA2122 on address 76H
	E	2	I²C Acknowledge, LCD Driver, device type I803BELLA on address C0H
	E	3	I²C Acknowledge, LCD Driver, device type I804BELLA on address C4H
	E	4	I²C Acknowledge, LCD Driver, device type I805BELLA on address C8H
	E	5	I²C Acknowledge, decoder on address 12H
	E	6	I²C Acknowledge, digital input, device type I278SAA7192 on address E0H
	E	7	I²C Acknowledge, input selector , on address 16H
	E	9	I²C Acknowledge, audio input selector on address 18H
	E	A	Uniformity error (module R763221)
	E	C	I²C clock error
	E	d	I²C data error
	E	E	Temperature error, please check the following things: Cable projector/E-box, air tubes connection, fan, filter. The system shuts down within 5 minutes.

10.2.9 Error messages, left digit d

First Digit,	Second digit	Indication
		Download mode
		Default program mode

10.2.10 Request to change a lamp, left digit C (dual lamp systems)

First Digit,	Second digit	Indication
		Change lamp top
		Change lamp bottom

10.3 Contact

10.3.1 Hot line

Feel free to contact us if you have any further questions!

- **Barco Control Rooms GmbH**
  An der Rossweid 5 • D-76229 Karlsruhe • Germany
  Phone (49) (721) 6201-227 • Fa× (49) (721) 6201-298
  E-mail **support.de.bcd@barco.com**, Web **www.barcocontrolrooms.de**
- **BARCO N.V. Projection Systems**
  Noordlaan 5 • B-8520 Kuurne • Belgium
  Phone (32) (56) 36-8211 • Fa× (32) (56) 36-8251
  E-mail **support.bcd@barco.com**,• Web **www.barcocontrolrooms.com**

11 Configuring notes

A number of design and ergonomic conditions must be considered when planning the installation of OVERVIEW CPU67-DL. In addition to mounting dimensions, the following sections also include anthropotechnical requirements which must be observed in a specific application.

11.1 Floor space and maintenance area

Sufficient floor space and maintenance area must be available when installing OVERVIEW CPU67-DL

Floor Space

The floor space must have a sufficient load carrying capacity and be sufficiently flat (according to DIN 18202). It must not sag by more than 1 millimeter under the load of the OVERVIEW CPU67-DL Display Wall. A cement, wood or false floor is permissible.

The load of the OVERVIEW CPU67-DL is transmitted to the floor via adjustable feet.

No installations (venting ducts, sockets etc.) must be present in the floor in the area of the feet or of the lower anchoring devices. An area of at least 15 centimeters must be kept free around each foot. The loading capacity in the area of the feet must be sufficient. Height differences up to ±30 millimeters can be compensated using the adjustable feet.

It is recommended to fix the installation to the floor!

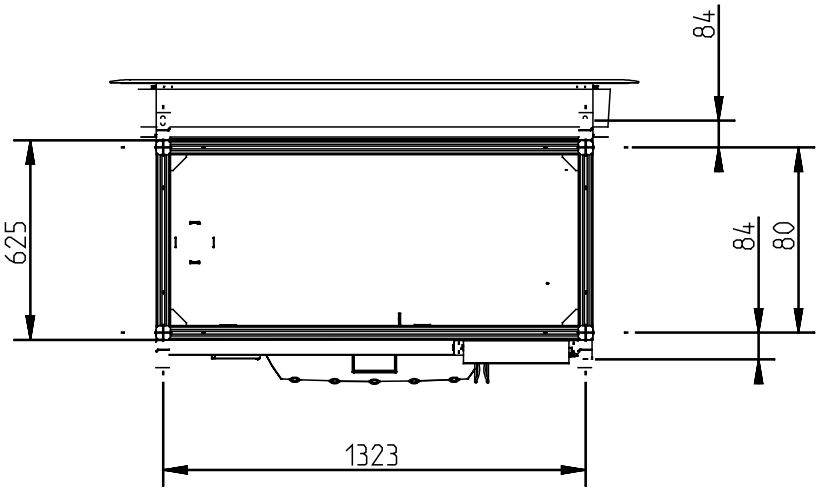


Figure 11-1
OverView cPU67-DL: position of feet

Maintenance Area

The floor space for OVERVIEW CPU67-DL is calculated from the basic area of the structure. A maintenance area must be provided behind each OVERVIEW CPU67-DL over the complete width. This area must be permanently accessible. The exact regulations for such a maintenance area can be obtained from the specifications for working premises.

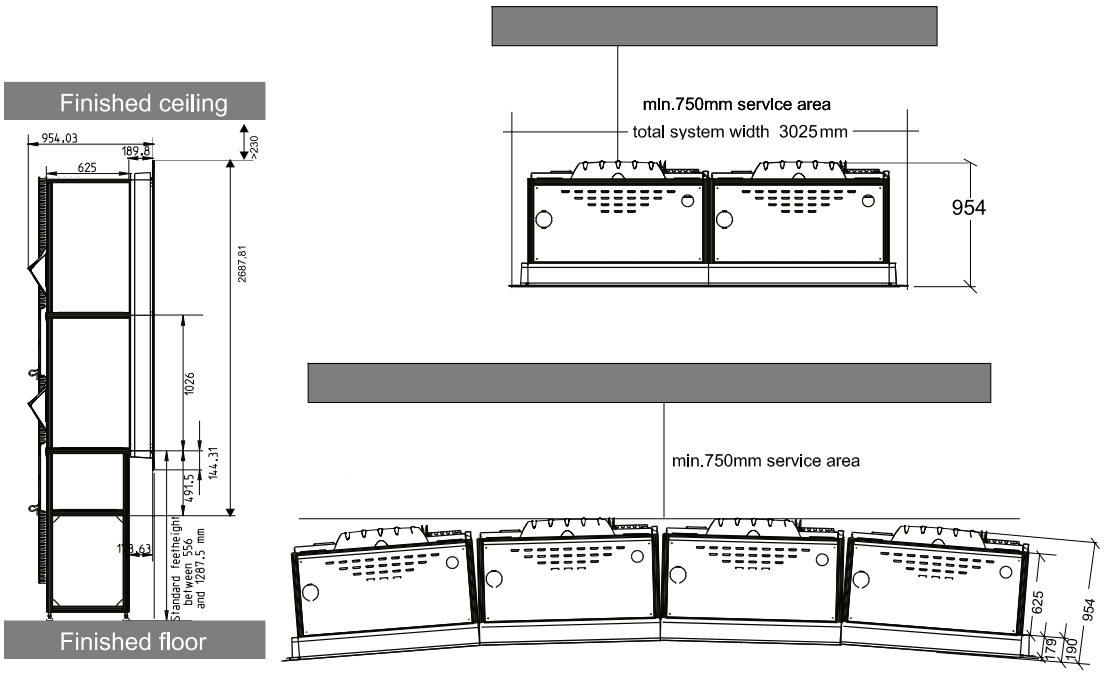


Figure 11-2
Linear and polygonal set-up of OverView cPU67-DL
(All dimensions measured in millimeters!)

With regards to maintenance area, please note that there may be laws concerning safety standards in your country!

The OVERVIEW CPU67-DL Display Wall can have a linear or curved arrangement. Standard curved configurations are available with angles of 3, 5, and 8 degrees.

Other angles on request!

11.2 Overall height

The installation room must be sufficiently high. Sufficient space (recommended > 230 millimeters) must be provided above the OVERVIEW CPU67-DL projection modules. The total height results from the height of the structure plus the vacant space above the modules.

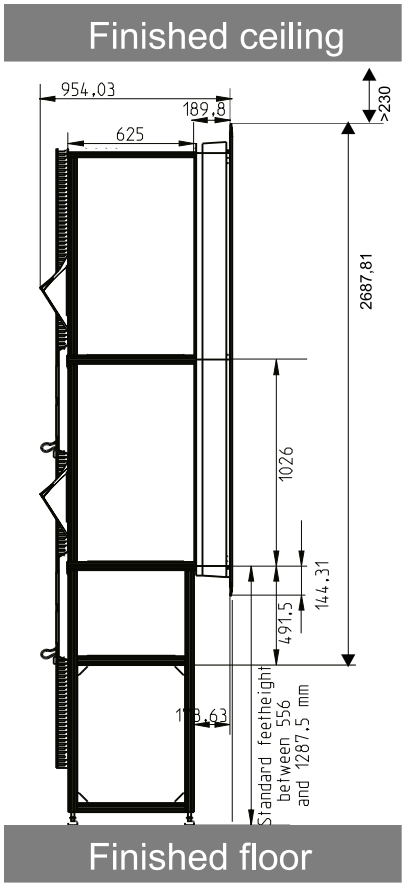


Figure 11-3
Mounting dimensions of OVERVIEW CPU67-DL
(All dimensions measured in millimeters!)

The depth of the OVERVIEW CDPU67-DL incl. mirror shielding is 954 mm. The standard support height with the adjustable feet is 1287,5mm. Other heights are available on request.

11.3 Viewing distance and angle

When planing the installation of OVERVIEW CPU67-DL, anthropotechnical factors such as the human field of vision must be considered in addition to design requirements. General rules for the viewing angle and distance will not be specified here since they depend on the field of application. The notes in this section are therefore only recommendations which can be observed for a particular application.

In the case of permanent, intensive viewing of the display, the display should be in the field of vision of both eyes of the observer. The following figure shows the horizontal and vertical angles of the field of vision with both eyes. An optimum field of vision can be defined for the horizontal field.

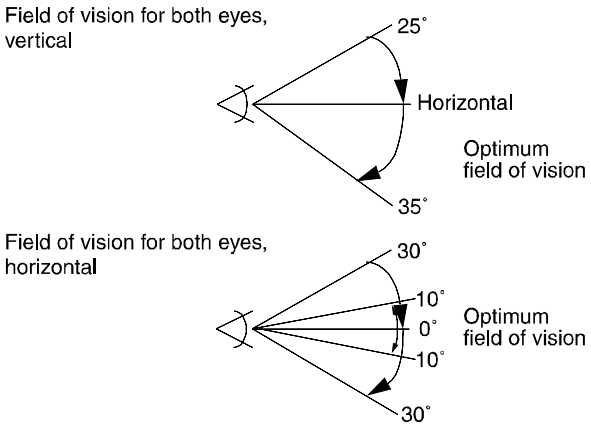


Figure 11-4
Human field of vision for both eyes

The maximum viewing distance depends on the minimum character size used. Characters and upper-case letters should appear to the eye at an angle of vision greater than 18 angular minutes. This corresponds to a viewing distance less than 200 times the character height.

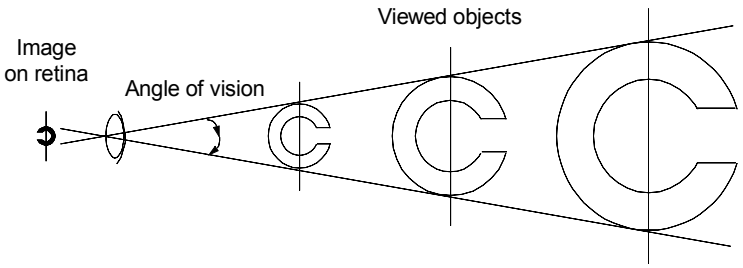


Figure 11-5
Angle of vision

The screen of OVERVIEW CPU67-DL can be viewed at angles greater than 45 degrees without problems. The vertical viewing angle has been designed such that there is no difference whether the observer is standing or sitting.

In addition to the viewing angles, the room illumination should also be considered when installing OVERVIEW CPU67-DL. Diffuse ambient light measured horizontally up to 300 lux and vertically up to 500 lux is no problem if the displayed image has a sufficiently high contrast.

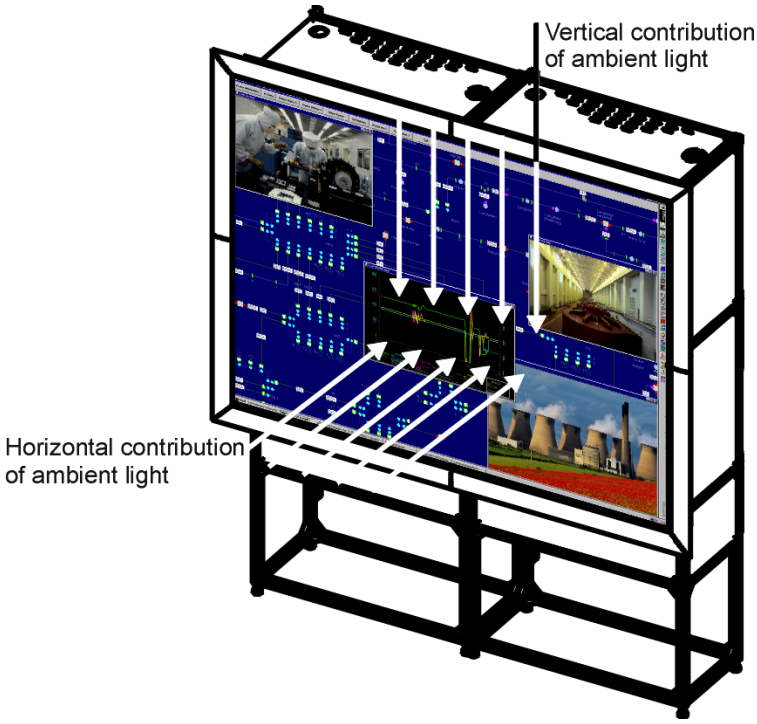


Figure 11-1
room illumination

11.4 Room ventilation

The room must be ventilated such that the room temperature is in the specified range. The electrical power consumption of typically 285 W (cold standby) or 395Watts (hot standby) per illumination unit can be used as a measure for the heat dissipation of OVERVIEW CPU67-DL into the room.

It is favorable to pass fresh and clean air through ventilation ducts in the floor below the structure. The inlets should be provided with replaceable dust filters.

The electronic boards are very sensitive against being soiled with particles of e. g. carbon. Carbon dust is taken up by the circuit boards thus causing short-circuits. When installing OVERVIEW CPU67-DL in critical environments like coal-fired power stations etc. please make sure that there are no coal particles suspended in the air.

12 Appendix A: Standard source set up files

Name: name of file, contains the settings
Resolution: image resolution, when followed by ...I means interlaced.
FVERT/Hz: vertical frame frequency of the source
FHOR/kHz: horizontal frequency of the source.
FPIX/MHz: pixel frequency
PTOT: total pixels on one horizontal line
PACT: active pixels on one horizontal line
LTOT: total lines in one field
LACT: active lines in one field

name	resolution	Fvert/Hz	Fhor/kHz	Fpix/MHz	ptot	pact	ltot	lact
1600_48V	1600 × 600I	48,040	62,500	135,000	2160	1600	651	600
1600_60V	1600 × 1200	60,000	75,000	162,000	2160	1600	1250	1200
1600_65V	1600 × 1200	65,000	81,250	175,500	2160	1600	1250	1200
1600_70V	1600 × 1200	70,000	87,500	189,000	2160	1600	1250	1200
1600_75V	1600 × 1200	75,000	93,756	203,000	2160	1600	1250	1200
8514_A	1024 × 384I	43,479	35,522	44,900	1264	1024	409	384
CGA	640 × 200I	59,924	15.700	14.318	912	640	262	200
COMPUSC4	1024 × 480I	29,945	30,694	39,779	1296	1024	512	480
ED	735 × 480	59,943	31,470	28,638	910	735	525	480
EGA	640 × 350	59,702	21,851	16,257	744	640	366	350
EWS_50	1280 × 1024	50,000	52,350	87,948	1680	1280	1047	1024
EWS_100	1280 × 1024	100	107,204	185,249	1728	1280	1072	1024
EWS_50	1280 × 1024	50,000	52,350	87,948	1680	1280	1047	1024
EWS_60	1280 × 1024	60,000	63,900	107,352	1680	1280	1065	1024
EWS_60V	1280 × 1024	60,282	63,657	110,000	1728	1280	1056	1024
EWS_72	1280 × 1024	72,000	76,968	130,076	1690	1280	1069	1024
EWS_75	1280 × 1024	75,025	79,976	135,000	1688	1280	1066	1024
EWS_85	1280 × 1024	85,000	91,149	157,506	1728	1280	1072	1024
FMR	640 × 400I	42,323	36,440	28,570	784	640	431	400
FMTO_2	640 × 400	55,370	24,370	21,056	864	640	440	400
HD_1080I	1920 × 540I	30,000	33,750	74,250	2200	1920	562	540
HD720P	1280 × 720	60,000	45,000	74,250	1650	1200	750	720
HDMAC	1252 × 570I	25,020	31,250	39,125	1252	1024	625	570
INTER_GR	1184 × 886	67,170	61,796	92,941	1504	1184	920	886
MAC_2	640 × 480	66,667	35,000	30,240	864	640	525	480
MAC_3	512 × 384	60,147	24,480	15,667	640	512	407	384

name	resolution	Fvert/Hz	Fhor/kHz	Fpix/MHz	ptot	pact	ltot	lact
MAC_4	560_384	60,147	24,480	17,234	704	560	407	384
MAC_5	512 × 342	60,158	22,259	16,670	704	512	370	342
MAC_6	832 × 624	74,546	49,722	57,280	1152	832	667	624
MAC_7	1024 × 768	74,907	60,150	80,000	1330	1024	803	768
MAC_LC	640 × 480	66,619	34,975	31,338	896	640	525	480
MAC_POR	640 × 870	74,996	68,846	57,280	932	640	918	870
MUSE	1172 × 518I	30,000	33,750	37,125	1172	1024	563	518
MXGA_60	1152 × 864	60,000	54,540	60,000	1456	1152	909	864
MXGA_70	1152 × 864	70,000	63,630	94,500	1480	1152	909	864
MXGA_75	1152 × 864	75,000	67,500	75,000	1600	1152	900	864
MXGA_80	1152 × 864	80,000	76,640	80,000	1440	1152	958	864
MXGA_85	1152 × 864	85,000	77,055	121,500	1576	1152	907	864
MXGA_100	1152 × 864	100	92,997	145,820	1568	1152	930	864
NTSC	675 × 240	60	15,748	13,512	858	675	263	240
NTSC_LIMO_X2	834X482	60	31,496	32,252	1024	834	525	482
NTSC_LIMO_X3	834X715	60	46,646	47,766	1024	834	778	715
NTSC_LIMO_X4	834X961	60	62,992	64,504	1024	834	1050	961
PAL	675 × 286	50	15,625	13,500	864	675	313	286
PAL_LIMO_X2	834 × 574	50	31,250	32,000	1024	834	626	574
PAL_LIMO_X3	834 × 850	50	46,296	47,407	1024	834	926	850
PAL_LIMO_X4	834 × 1146	50	62,500	64,000	1024	834	1250	1146
VIDEO525	1302 × 239I	29,970	15,734	32,207	1302	1024	263	239
VIDEO625	1024 × 278I	25,000	15,625	31,984	1310	1024	313	278
PAM500	640 × 400	60,000	26,400	22,810	864	640	440	400
PAM800	1120 × 375I	44,936	36,443	50,000	1372	1120	406	375
PC98_1	640 × 400	56,416	24,823	21,050	848	640	440	400
PC98_2	1120 × 375I	39,994	32,835	47,840	1457	1120	411	375
PC98_3	1120 × 750	60,000	50,000	78,569	1571	1120	833	750
S1152_66	1152 × 900	66,004	61,846	94,500	1528	1152	937	900
S1152_76	1152 × 900	76,637	71,809	108,000	1504	1152	937	900
S1600_67	1600 × 1280	67	89,286	200,000	2240	1600	1334	1280
SDI_625	675 × 278I	25,000	15,625	13,500	864	720	313	278

name	resolution	Fvert/Hz	Fhor/kHz	Fpix/MHz	ptot	pact	ltot	lact
SDI_525	675 × 240I	29,970	15,734	13,500	858	720	263	240
SG_50	1600 × 1200	50,000	62,500	130,313	2085	1600	1250	1200
SG_60_1	1280 × 1024	60,000	63,900	107,352	1680	1280	1065	1024
SG_60_2	1024 × 768	60,000	48,780	64,390	1320	1024	813	768
SG_60_3	960 × 680	60,000	43,200	54,432	1260	960	720	680
SG_60_4	1600 × 1200	60,000	75,000	156,375	2085	1600	1250	1200
SUNEWS67	1280 × 1024	67,189	71,691	117,000	1632	1280	1067	1024
SUNEWS76	1280 × 1024	76,107	81,130	135,000	1664	1280	1066	1024
SUNXGA60	1024 × 768	59,984	48,287	64,125	1328	1024	805	768
SUNXGA70	1024 × 768	70,041	56,596	74,250	1312	1024	808	768
SUNXGA77	1024 × 768	77,069	62,040	84,375	1360	1024	805	768
SUP_MAC	1024 × 768	60,000	48,780	63,999	1312	1024	813	768
SVGA_56V	800 × 600	56,250	35,156	36,000	1024	800	625	600
SVGA_60V	800 × 600	60,317	37,879	40,000	1056	800	628	600
SVGA_72V	800 × 600	72,084	48,080	50,003	1040	800	667	600
SVGA_75	800 × 600	75,000	46,875	75,000	1056	800	625	600
SVGA_85	800 × 600	85,000	53,635	56,250	1048	800	631	600
SVGA_100	800 × 600	100,000	62,800	100,000	1056	800	628	600
VGA_60	640 × 480	60	31,326	25,061	800	640	525	480
VGA_72V	640 × 480	72,800	37,856	31,496	832	640	520	480
VGA_75	640 × 480	75,000	37,500	31,500	840	640	500	480
VGA_85	640 × 480	85,000	43,369	36,000	832	640	509	480
VGA_GR	640 × 480	59,941	31,469	25,175	800	640	525	480
VGA_TXT	720 × 400	70,087	31,469	28,322	900	720	449	400
VGA75ISO	640 × 480	75,000	39,375	31,500	800	640	525	480
XGA_60	1024 × 768	60,000	48,360	64,996	1344	1024	806	768
XGA_70	1024 × 768	70,000	57,050	78,044	1368	1024	815	768
XGA_70V	1024 × 768	69,705	56,182	74,610	1328	1024	806	768
XGA_72	1024 × 768	71,955	58,140	80,000	1376	1024	808	768
XGA_75	1024 × 768	75,781	61,080	86,000	1408	1024	806	768
XGA75_GS	1024 × 768	74,534	59,701	79,284	1328	1024	801	768
XGA_85	1024 × 768	85,000	68,680	94,500	1376	1024	808	768
XGA_EOS	1024 × 768	63,000	50,000	67,200	1344	1024	796	768
XGA_100	1024 × 768	100,000	80,800	100,000	1368	1024	808	768
HD_25I	1920 × 540	50,000	28,125	74,000	2640	1920	562	540
HD_30I	1920 × 540	60,000	33,750	74,000	2200	1920	563	540

name	resolution	Fvert/Hz	Fhor/kHz	Fpix/MHz	ptot	pact	ltot	lact
HD_30I_2	1920 × 517	60,000	33,750	74,000	2200	1920	563	517
HD_24P	1920 × 1080	24,000	27,000	74,000	2750	1920	1125	1080
HD_25P	1920 × 1080	25,000	28,125	74,000	2640	1920	1125	1080
HD_30P	1920 × 1080	30,000	33,750	74,000	2200	1920	1125	1080
HD_60P	1280 × 720	60,000	45,000	74,000	1650	1280	750	720
HD_24SF	1950 × 540	48,000	27,000	74,000	2750	1950	562	540
2048_60V	2048 × 1536	60,000	95,822	240,000	2504	2048	1597	1536