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user's manual

ATLAS 67 CS4
AND
ATLAS 84 CS4

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1 Introduction

The wide variety of new possibilities to combine different projector and interface technologies to create customer specific Atlas Display Walls has lead to the creation of a new and more concise nomenclature. The brand ATLAS remains as a generic term for Display Walls from Barco Control Rooms. The single variants on projection units differing in projection technology are expanded by a mnemonic expression, e. g.:

ATLAS 67 CS4	Projection unit with Poly-Silicon LCD technology and 67 inch screen diagonal, SXGA (screen ratio: 5 by 4)
ATLAS 84 CS4	Projection unit with Poly-Silicon LCD technology and 84 inch screen diagonal, SXGA (screen ratio: 5 by 4)

This manual describes design, function, operation and maintenance of the large screen rear projection system ATLAS 67 CS4 and ATLAS 84 CS4 of Barco Control Rooms.

ATLAS CS4 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.

1.1 The ATLAS CS4 series

This User's Manual refers to the models from the ATLAS 67 CS4 and ATLAS 84 CS4 series. Since operation and properties of ATLAS 67 CS4 and of ATLAS 84 CS4 are quite similar, the expression ATLAS CS4 refers to both of them. If ATLAS 67 CS4 or ATLAS 84 CS4 are mentioned explicitly, there are differences in operation or properties.

1.1.1 Resolution

ATLAS CS4 is available with SXGA resolution:

ATLAS 67 CS4	projection module, 67 inch, SXGA (1280×1024 pixels)
ATLAS 84 CS4	projection module, 84 inch, SXGA (1280×1024 pixels)

1.2 How This Manual Is Organized

This manual is divided into sixteen 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.
- ▶ **Location and Functions of Control**
describes the functions and explains the control panel terminology
- ▶ **Connections**
describes the interfaces of ATLAS CS4
- ▶ **Controlling**
explains how ATLAS CS4 is operated via the Remote Control Unit and the local keypad
- ▶ **Start Up of the Adjustment Mode**
explains how to use the menu controlled software of ATLAS CS4
- ▶ **Random Access Adjustment Mode**
provides an overview of the commands of ATLAS CS4
- ▶ **Installation Mode**
describes the possible configurations of ATLAS CS4
- ▶ **Service Mode**
explains the commands which are available in Service Mode
- ▶ **Maintenance and Servicing**
explains how the equipment can be serviced
- ▶ **Technical Data**
provides tabular overviews about the technical details of ATLAS CS4.
- ▶ **Configuring Notes**
provides the mounting dimensions and shows anthropotechnical requirements
- ▶ **Troubleshooting**
lists possible errors together with steps to eliminate the respective fault.
- ▶ **Appendix A: Standard Source Set Up Files**
lists all the available set up files for the various timings
- ▶ **Appendix B: Source Numbers 81-85 AND 91-96**
explains the relationship between source input, source number and set up file

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**, as figures and tables are, e. g. **Figure 5-4**.

1.3 Styles And Symbols

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

Helvetica bold

Labels, menus and buttons are printed in the **Helvetica 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.



Within a piece of programming code this arrow marks a line, that must be made up in two lines, though meant to be one line.



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!

1.4 Safety Information

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

Safety

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.

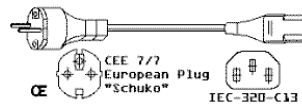


The devices are designed to operate with single-phase power systems having a grounded neutral conductor. To reduce the risk of electrical shock, do not plug into any other type of power system.

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, CO₂, 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.

1.4.1 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!

1.4.2 Unpacking of Devices

Note advises on the packaging for unpacking!

1.4.3 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

ATLAS CS4 is a modular rear projection system for the construction of large Display Walls. The technologies used guarantee the best optical properties for high-quality presentation of information with very simple integration into higher-level systems.

Technology

ATLAS CS4 combines the latest modern projection technology with sophisticated electronics and solid mechanics. This design results in high image quality and reliability.

Application Fields

ATLAS CS4 can be used wherever a large-area presentation of computer data or video is required. It is designed for continuous operation (24h).

High-quality and large-area displaying of monitor contents is becoming increasingly important. Simple data presentations are being increasingly supplemented by multimedia applications with video displays. ATLAS CS4 provides optimum solutions which also satisfy the highest demands. ATLAS CS4 is multimedia-compatible since it can be connected to any current source (digital and analog camcorder sources, analog video tape sources, DVD, Laserdisc, digital video tape sources, computer data sources). Audio reproduction is possible by connecting amplifiers or active boxes to the audio socket. Personal computers with the following graphics adapters can be connected as the data sources: SXGA, XGA, SVGA, VGA. Workstations, Apple Macintosh and Power Macintosh are also supported. Remote real-time switching is possible between all sources.

User Friendly

The rear panel of an ATLAS CS4 projection cube gives free access to all control elements. The only maintenance work, i. e. cleaning the dust filter and replacing the lamps, can be done within few seconds and makes no re-adjustment necessary.

Environmentally Friendly

The burning life of the used 100 Watt lamps is very high at 8000 hours. This long lamp lifetime and the low power consumption do not only reduce the cost of ownership but also contribute to saving energy and natural resources.

Flexible Configuration

ATLASCS4 DISPLAY WALLS consists of a modular aluminum structure on which mechanical and optical components are fixed. This makes it possible to build curved display walls with any size of screen.

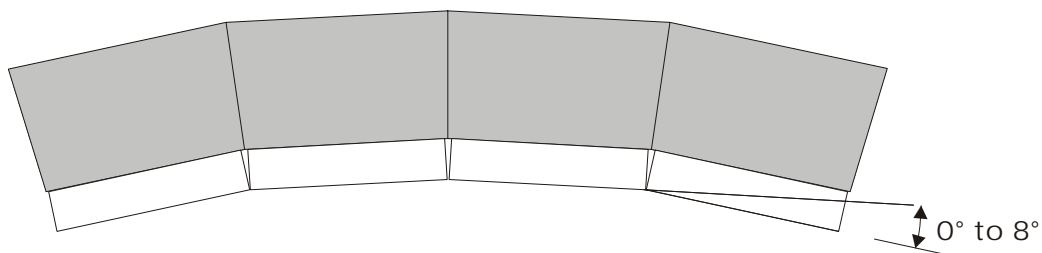


Figure 2-1
Curved Display Wall consisting of 4 Atlas CS4 Units

2.2 Properties of ATLAS CS4

ATLAS CS4 can be used as one large monitor with a screen diagonal of 67 or 84 inches. 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.
- ▶ **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 from the front.
- ▶ **Ready for any application**
The source is automatically recognized. The projector has intelligent and user-adjustable priority switching.

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 Unit

Atlas 67 CS4

The Atlas 67 CS4 Unit has a display area of 1068 millimeters high and 1335 millimeters wide. The resulting screen diagonal of 1710 millimeters corresponds to approximately 67 inches.

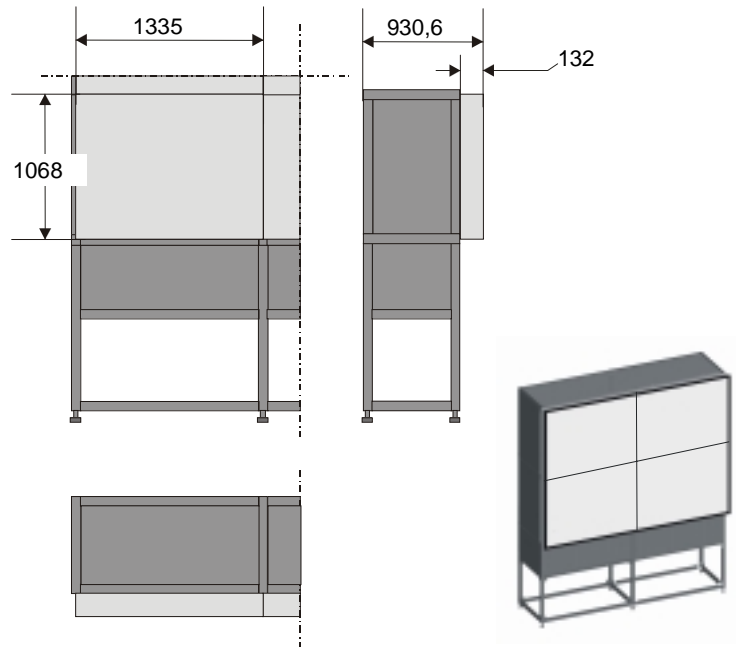


Figure 3-1
Atlas 67 CS4 Unit

Atlas 84 CS4

The Atlas 84 CS4 Unit has a display area of 1320 millimeters high and 1650 millimeters wide. The resulting screen diagonal of 2113 millimeters corresponds to approximately 84 inches.

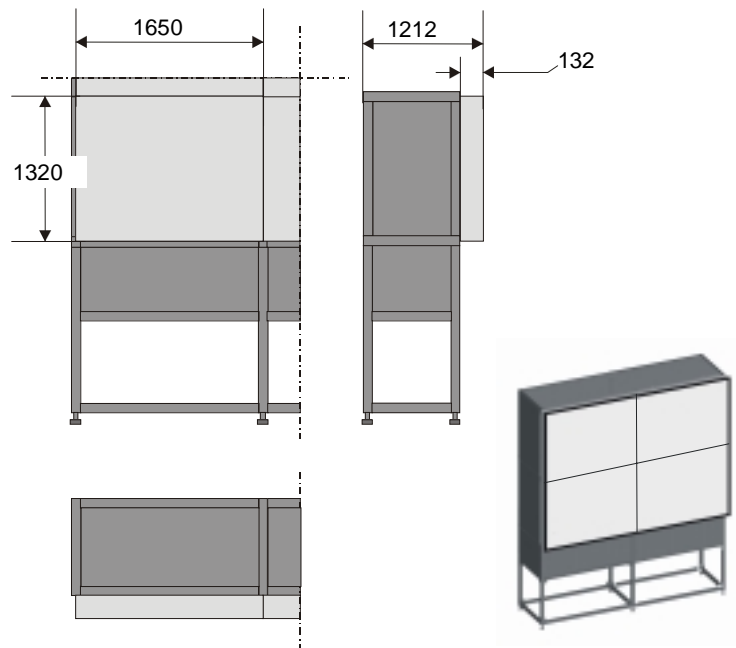
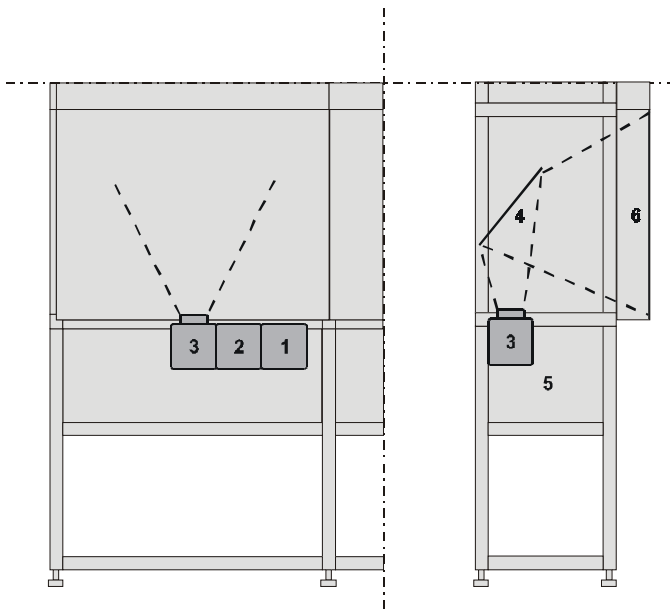


Figure 3-2
Atlas 84 CS4 Unit

The Atlas CS4 projection modules consists of the following components:



1	lamp module
2	illumination unit
3	projection unit
4	deflection mirror
5	Atlas structure covered with light shields
6	screen

Figure 3-3

- ▶ **Housing:** The Atlas system is a compact mechanical housing especially designed to meet any given requirements concerning set up, resolution, and operational conditions. Due to its flexible structure different projector types and screens can be mounted. The closed structure prevents incident light or dust from entering the unit.
- ▶ **Projection unit:** The projection unit consists of three components: the lamp module, the light path for optimization of the light distribution and the X Cube and dichroic prism system.
- ▶ **Deflection mirror:** a mirror in the top part of the housing deflects the light onto the rear of the projection screen.
- ▶ **Screen:** patented seamless screen mounting via high precision cuts, supported by very fine steel pins results in a nearly not perceptible optical seam.
- ▶ **Fan:** a fan in the housing ensures that the unit is sufficiently cooled.

ATLAS CS4 has been designed for rear access of interfaces and exchange of consumables (lamp module, filters..).

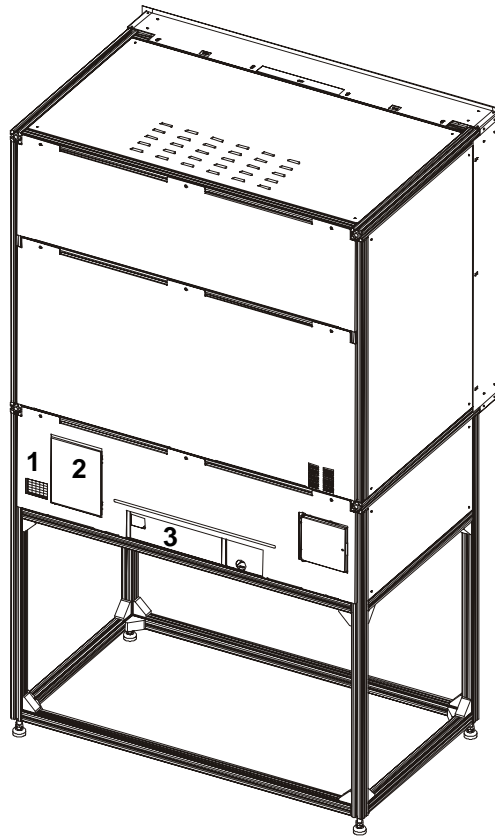


Figure 3-4
rear side of Atlas CS4

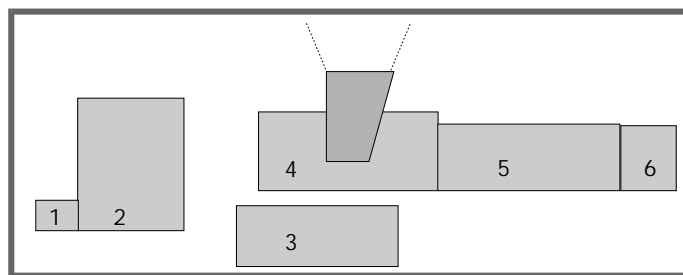


Figure 3-5
rear side of Atlas CS4 (schematic)

1	keypad
2	filter pad
3	control unit
4	projection unit
5	illumination unit
6	lamp module

3.1.1 Lamp Module

The lamp module generates the light for the subsequent projection. The lamp (100 Watt UHP (Ultra High Performance) lamp) has an operation time of 8000 hours.

3.1.2 Illumination Unit

The illumination unit consists of the 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.

3.1.3 Projection Unit

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.

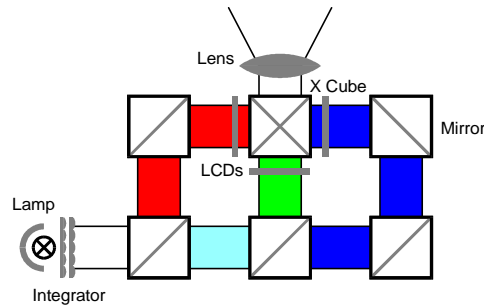


Figure 3-2
3-panel Poly-Silicon LCD

▶ 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 its 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.

3.1.4 Screen Module

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 Atlas 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**

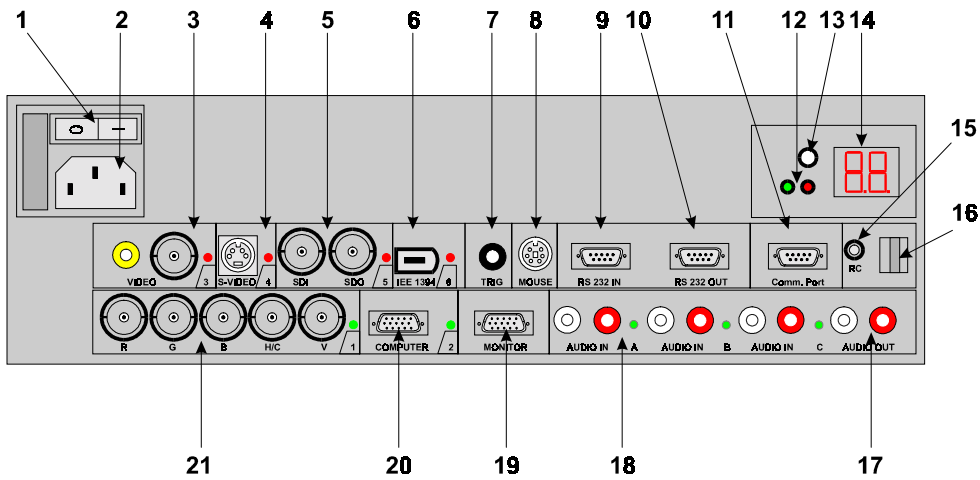
The surface of the screen has a special non-glare texture. This texture minimizes the direct reflection of the light of the surrounding and contributes also to the high contrast of the screen.

4 Location and Functions of Control

This chapter provides an overview about the controls of ATLAS CS4.

4.1 Control Unit

4.1.1 Power, source and communication connections [3]



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	IEE 13994	not yet implemented
7	TRIG	(mini-jack) output voltage of 5V when projector is on
8	Mouse	(DIN 13) mouse output to be connected to the mouse input of a computer. The computer can now be controlled via the Executive Remote Control Unit
9	RS232 IN	(D9), to allow communication with external computer, e. g. IBM PC or compatible, MAC ..
10	RS232 OUT	(D9), used to connect to next projector, RS232 IN plug
11	Communication port	(D9), allows communication with the 800 peripherals
12	IR-Acknowledged IR-Received	IR-Signals are recognized IR-Signals are received but not recognized by the projector
13		
14		
15		
16		
17		
18		
19		
20		
21		

13	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
14	Diagnostics code	a) source number b) error code: a two digit error code is displayed
15	Remote	(mini-jack), remote input for wired remote control
16	IR-receiver	Receiver for control signals transmitted from the RCU
17	Audio output	
18	Audio input	3 audio inputs. Each audio input can be associated with arbitrary input
19	Monitor output	the monitor of your computer can be connected to this output if your computer is connected to the computer input
20	Computer input	
21	5-cable input	can be software switched between Video, S-Video, RGB analog or Component Video

4.2 Control Panel Terminology

The projector can be controlled by the local **keypad** or by the remote control unit (**RCU**)

4.2.1 Local keypad

The local **keypad** [1] is located on the back side of the ATLAS CS4
(explanation see [4.2.3 Terminology of keypad and RCU controls](#))

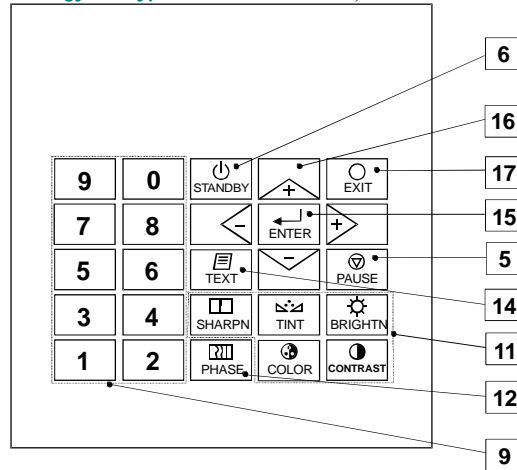


Figure 4-1
The local keypad

4.2.2 Remote control

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

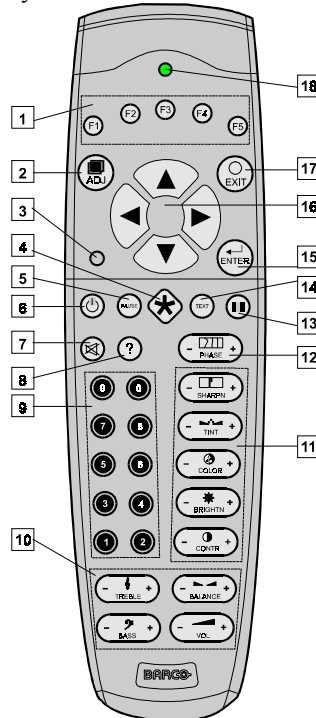


Figure 4-2
IR Remote Control Unit (RCU)

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.

4.2.3 Terminology of keypad and RCU controls

1	Function keys	have no function for this projector
2	ADJ	ADJUST key, to enter or exit the adjustment mode.
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	to direct access the zoom/focus/shift functions.
5	PAUSE	to stop projection for a short time, press 'PAUSE'. The image disappears but full power is retained for immediate restarting.
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. <i>Attention : Switching to Stand-by. When the projector is running and you want to go to stand-by, press the stand-by key for 2 seconds until the message 'Saving data, please wait' is displayed. Do not press any longer on the stand-by key otherwise the projector will restart.</i>
7	Mute	to interrupt the sound reproduction.
8	Help	on line help information (not yet available)
9	Digit buttons	direct input selection.
10	Audio controls	use these buttons to obtain the desired sound level
11	Picture controls	use these buttons to obtain the desired picture analog level
12	PHASE	used to remove the instability of the image.
13	Freeze	press to freeze the projected image.
14	TEXT	when adjusting one of the image, e.g. controls during a meeting, the displayed bar scale can be removed by pressing 'TEXT' key first. To re-display the bar scale on the screen, press 'TEXT' key again.
15	ENTER	to start up the adjustment mode or to confirm an adjustment or selection in the adjustment mode.

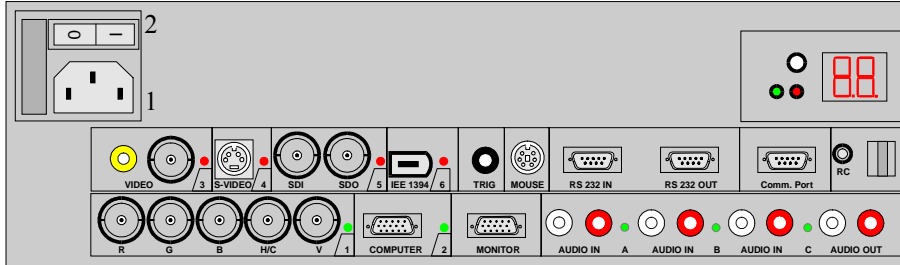
16	Cursor Keys (on RCU) or " and '-' keys (cursor keys) on the local keypad	<p>to make menu selections when in the adjustment mode or to zoom/focus when the direct access is active.</p> <p>Comparison between the cursor keys and the use of the '+' and '-' keys on the local keypad</p> <table border="0"> <thead> <tr> <th data-bbox="576 383 794 409">RCU</th> <th data-bbox="871 383 1010 409">local keypad</th> </tr> </thead> <tbody> <tr> <td data-bbox="576 416 724 443">cursor key up</td> <td data-bbox="871 416 975 443">'+' key up</td> </tr> <tr> <td data-bbox="576 450 759 477">cursor key down</td> <td data-bbox="871 450 1002 477">'-' key down</td> </tr> <tr> <td data-bbox="576 483 751 510">cursor key right</td> <td data-bbox="871 483 1002 510">'+' key right</td> </tr> <tr> <td data-bbox="576 517 735 544">cursor key left</td> <td data-bbox="871 517 975 544">'-' key left</td> </tr> </tbody> </table> <p>Use the '+' and '-' keys (cursor keys) to increase or decrease the analog level of the image controls when they are first selected.</p>	RCU	local keypad	cursor key up	'+' key up	cursor key down	'-' key down	cursor key right	'+' key right	cursor key left	'-' key left
RCU	local keypad											
cursor key up	'+' key up											
cursor key down	'-' key down											
cursor key right	'+' key right											
cursor key left	'-' key left											
17	EXIT	to leave the adjustment mode or to scroll upwards when in the adjustment mode.										
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)										

5 Connections

This chapter explains the various interfaces of ATLAS CS4.

5.1 Power connection

5.1.1 AC Power (mains) cord connection



- ▶ Use the supplied power cord to connect your projector to the wall outlet.
- ▶ Plug the female power connector into the male connector [1] at the control panel.

The power input is auto-ranging from 90 to 240 VAC.

5.1.2 Fuses



For continued protection against fire hazard:

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

Fuse type : T3.15 AH/250V

5.1.3 Switching on

Use the **power** switch [2] 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.

5.1.4 Image projection

To start image projection:

- ▶ apply the appropriate voltage to the 24V interface. The **projector mode indication lamp** will be green.
- ▶ press the '**Stand by**' button once on the local keypad or on the remote control. The **projector mode indication lamp** will be green.
- ▶ press a digit button to select an input source. The **projector mode indication lamp** will be green.

5.1.5 Lamp Run Time

The operation time of the lamp is 8000 hours. The total hours of operations are counted and can be displayed on the screen.



The total lifetime of the lamp for a safe operation at high and constant brightness is about 8000 hours. Always replace with a same type of lamp

5.1.6 Switching to Stand-by

When the projector is running and you want to go to stand-by:

- ▶ Press the **STANDBY** key for 2 seconds until the message '**Saving data, please wait**' is displayed. Do not press any longer on the **standby** key otherwise the projector will restart.
- ▶ Switch off the voltage of the 24V interface.

5.1.7 Switching Off

To switch off:

- ▶ Switch off the voltage of the 24V interface or press **STANDBY** key for 2 seconds. When the message '**Saving data, please wait**' is displayed, do not press any longer on the standby key otherwise the projector will restart.
- ▶ Let cool down the projector at least 10 min.
- ▶ Remove the paneling to gain access to the **power** switch.
- ▶ Switch off the projector with the **power** switch.



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 restart 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.

5.1.8 Input Connections

ATLAS CS4 has multiple input connections for all common RGB and video sources. The input can be selected either manually or automatically. When '**automatic**' is selected in the **Input slots menu**, by starting up the projector, it searches for an input source by scanning the inputs one by one. If only one source is found, this source will be projected. If different sources are found, the priority is as follows

input facilities	priority of automatic input selection
Video	1
S-Video	2
5-cable input	3
Computer	4
Serial digital input	never automatically selected
IEEE 1394 (not yet active)	never automatically selected



When a RCVDS is connected to the projector, the '**Automatic**' selection is disabled.

5.1.9 Set up of the input selection:

- ▶ 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 '**Input Slots**'.
- ▶ Press **ENTER** to display the **Input slots menu**.
In the Input slots menu the available input sources are marked with **x**
- ▶ Press the cursor key **up** or **down** to select '**Input Slots**'.
- ▶ Press **ENTER** to toggle between [**Manual**] or [**Automatic**].
- ▶ Press **EXIT** several times to leave the adjustment mode.



Use of a RCVDS05 or VS05 :

When using a RCVDS05, it is recommended to use a 5-cable output module in the RCVDS. The outputs of this module have to be connected to the 5 cable input (slot 1) of the projector.

To switch the projector in the 5-cable mode see chapter [9 Installation Mode](#).

5.1.10 5-cable Input Slot (slot 1)

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	-	-

Slot 1 selection

To select slot 1:

- ▶ Press the digit button **1** on the RCU or the local keypad.

Configuration of the 5-cable input

The configuration has to be done on the '**Input slot**' menu.

To change the signal format:

- ▶ Press **ADJUST** or **ENTER** to start up the **Adjustment** mode.
- ▶ Push the cursor key **up** or **down** to select **Installation**
- ▶ Press **ENTER**.
- ▶ Press the cursor key **up** or **down** to select '**Input Slots**'
- ▶ Press **ENTER**. The internal system will scan the inputs and displays the result in the '**Input Slots**' menu.
- ▶ Push the cursor key **up** or **down** to select the first slot.
- ▶ Press **ENTER** key to toggle the input signal priority.

Possible indication:

RGB [HS&VS]	RGB analog signals, separate sync is horizontal and vertical sync.
RGB CS	RGB analog signals, separate sync is composite sync.
RGB CV	RGB analog signals, separate sync is composite video or tri-level sync.
RGB-SOG	RGB analog signals, sync on green is composite sync.
COMPONENT VIDEO - CS	separate sync is composite sync.
COMPONENT VIDEO	component video with composite sync on Y or composite tri-level sync on Y.
VIDEO	
S-VIDEO	



When using an RCVDS 05 with a 5 cable output module, connect these 5 cables to this 5-cable input slot (slot1) of the projector.

All sources of the RCVDS can now be accepted by the projector.

5.1.11 Computer input/Monitor output

- ▶ Connect the output of the graphical card of the computer to the **computer input** of the projector (connection < 60 cm) or insert an interface between the output of the computer and the input of the projector.
- ▶ Connect the monitor of the computer to the monitor output of the projector.
- ▶ This monitor output is only available when the computer input is used as input.

Pin configuration of the D15 connector:

1	RED	9	loop through to monitor
2	GREEN	10	ground
3	BLUE	11	loop through to monitor
4	loop through to monitor	12	loop through to monitor
5	ground	13	sync horizontal / composite
6	ground	14	sync vertical
7	ground	15	loop through to monitor
8	ground		

Slot 2 selection:

- ▶ Press the digit button **2** on the **RCU** or the local **keypad**.

5.1.12 Video Input

Input signal:

Composite video signals from a VCR, OFF air signal decoder, etc...

1 x BNC or cinch 1.0Vpp \pm 3 dB

No loop through.

Slot 3 selection:

Press the digit button **3** on the **RCU** or the local **keypad**.

5.1.13 S-Video Input

Input signal:

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 \pm 3 dB
4	chrominance 282 mVpp \pm 3 dB

Slot 4 selection:

Press the digit button **4** on the **RCU** or the local **keypad**.

5.1.14 Serial Digital Input / Serial Digital Output

Full compatibility with digital Betacam, or digital video sources.

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.

connections:

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 .

Slot 5 selection:

Press the digit button **5** on the **RCU** or the local **keypad**.



When a RCVDS05 is connected to the projector, the SDI input is available by keying in 85 on the **RCU**.

5.1.15 IEEE 1394 Input

Input not yet implemented.

5.1.16 Communication Connections

The following communication connections are available:

- ▶ RS232 in / RS232 out.
- ▶ Comm port for communication with peripheral (switchable between PPM and RC5)
- ▶ RC for remote cable connection with the RCU.
- ▶ MOUSE to control a PC with the projector remote control.
- ▶ TRIG: output voltage to control another device.

5.1.17 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 communicate between the computer and the projector.

Applications:

remote control	easy adjustment of projector via IBM PC (or compatible) or MAC connection allow storage of multiple projector configurations and set ups. wide range of control possibilities. address range from 0 to 255.
data communications	sending data to the projector or copying the data from the projector to a hard memory device (hard disc, floppy, etc.).

Set up of the Baud Rate for Communication with a Computer:

see “change Baudrate PC” in chapter [10 Service Mode](#).

5.1.18 Communication port for communication with peripherals

This port can be configured to accept PPM or RC5 coded signals.

To change the port configuration see “800 Peripherals” in chapter [9 Installation Mode](#).

Connecting a RCVDS 05 to the projector:

- ▶ Up to 20 inputs with the RCVDS 05 and 90 inputs when RCVDS's are linked via the expansion module.
- ▶ Serial communication with the projector.
- ▶ Remote control buttons on the RCVDS to control the projector (source selection and analog settings).
- ▶ The selected source number will be displayed on a 2 digit display and the selected input module will be indicated with a LED on the rear.

For more information about the use of the RCVDS 05, consult the owner's manual of the RCVDS05, see [12.5.2 User's Manuals](#).

Connecting a VS05 to the projector:

The VS05 (see [12.5.1 Optional Parts](#)) can switch up to 5 Composite Video sources, 3 Super Video sources and 1 RGB analog or component video source to the projector. In addition, the audio signal proper to the source, can be switched to an audio amplifier or the audio input of the projector.

For more information about the use of the VS05, consult the VS05 owner's manual, see [12.5.2 User's Manuals](#).

5.1.19 TRIG Output

5 V output voltage to trigger an external device (max. 10mA).

This voltage is available when the projector is on.

5.1.20 MOUSE

Mouse output to be connected to the mouse input of a computer. With the **Executive Remote Control** (see [12.5.1 Optional Parts](#)), the computer can now be controlled via the projector. All normal mouse functions except the 'drag and drop' function are available. For more information about the mouse functions, consult the owner's manual of the Executive Remote Control.

5.1.21 Audio Connections

Three audio inputs and one audio output are available. Each audio input can be associated with an input source using the control software of the projector, e.g. source 1 can be locked with audio input B.

Locking an audio input to a source input :

- ▶ Press **ENTER** to start up the adjustment mode.
- ▶ Press the cursor key **up** or **down** to select '**Random Access**'.
- ▶ Press **ENTER** to display the **Random Access menu**.
- ▶ Press the cursor key **up** or **down** to select '**Audio Tuning**'.
- ▶ Press **ENTER** to display the **Audio Tuning menu**.
- ▶ Press the cursor key **up** or **down** to select '**Video-Audio lock**'.
- ▶ Press the cursor key **up** or **down** to select the desired source input.
- ▶ Press **ENTER** to toggle between [A], [B] or [C].
- ▶ Press several times **EXIT** or **ADJUST** to return to the operational mode.

See also chapter [8.2.13 Video - Audio lock](#)

6 Controlling

The projector can be controlled with

- ▶ the **RCU**
- ▶ the hardwired **RCU** (cable is not included)
- ▶ the local **keypad**

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.

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 Using 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**.

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.

Color Saturation

Color saturation is only active for Video and S-Video. Adjust the color intensity of the picture.

Use the **+** button for richer colors.

Use the **-** button for lighter colors.

Tint Control

Tint is only active for Video and S-Video when using the NTSC 4.43 or NTSC 3.58 system.

Use the **+** button

Use the **-** button.

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.

Freez key

Press **Freez** to freeze the displayed image.

6.3.5 Sound controls with direct access

When a **sound** control is pressed, a text box with a bar scale, icon and function name of the control, e.g. '**volume...**' appears on the screen (only if **TEXT** is **ON**). The length of the bar scale indicates the current memorized setting for this source. The bar scale changes as the **+** or **-** buttons of the control are pressed.

The picture controls can only be adjusted with the RCU.

Volume Control

Volume control adjusts the volume.

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

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

Bass Control

Bass control adjusts the bass level (low tones).

Use the **+** button for more low tones.

Use the **-** button for less low tones.

Treble Control

Treble control adjusts the treble level (high tones).

Use the **+** button for more high tones.

Use the **-** button for less high tones.

Balance Control

Is only effective if a external amplifier with loudspeakers is connected to the audio output.

The **balance** control adjust the sound level between the left and the right box.

Use the **+** button for a higher sound level on the right box than on the left one.

Use the **-** button for a higher sound level on the left box than on the right one.

The Pause key

When the **Pause** key is pressed, the image projection is stopped, a blue screen will be displayed and the projector remains with full power for immediate restart. The sound is not interrupted.

The display on front of the projector will show a **P**.

To restart the image:

- ▶ press **Pause** key
- ▶ press **EXIT** key or
- ▶ select a source number.

The Selection key

When the **Selection** key is pressed, the **zoom/focus/shift menu** will be displayed immediately.

To focus or zoom the image:

- ▶ Push the **up** or **down** key to zoom and **left** or **right** key to focus the image.
- ▶ When finished, press **EXIT** to return.

To shift the image:

- ▶ Press **ENTER** to switch to the **shift menu**
- ▶ Push the **up** or **down** key to shift the image up or down and **left** or **right** key to shift the image left or right.
- ▶ When finished, press **EXIT** to return

7 Start Up of the Adjustment Mode

All source parameters, picture and audio tuning, and geometry are made while in the '**Adjustment Mode**'. Press the **ADJUST** or **ENTER** key to enter the '**Adjustment mode**'.

7.1 Adjustment mode

You are now in the '**Adjustment Mode**'.

- ▶ The cursor key (**RCU**) or '+' or '-' keys (local **keypad**) are used to make **menu** selections and also for adjustments.
- ▶ The **ENTER** and **EXIT** keys are used to move forward and backward through the **menu** structure.
- ▶ The **ADJUST** key can be used to terminate the adjustment mode while any path selection menu is displayed.

There are 3 possible paths to follow once in the **Adjustment Mode**. They are:

- ▶ **Installation**
Installation should be selected if a new input module is installed or a new source is connected to an existing input module. Also when the projector is relocated in a new configuration.
- ▶ **Random Access**
Random Access should be selected to set up a new source.
- ▶ **Service**
Service should be selected if the user intends to change general settings such as password, language, address, etc. or some service actions as reset lamp run time, panel adjustments, etc. or get set-up information.

Some items in the **Adjustment** mode are password protected. While selecting such an item, the projector asks to enter your password (Password protection is only available when the password strap on the controller module is **ON**, call an authorized service center to change the position of the password strap).

7.1.1 Password

The password contains 4 digits.

- ▶ Enter the digits with the numeric keys.

Example: 2 3 1 9

The first digit position is highlighted. Enter with the numeric keys. The highlighted square jumps to the next position. Continue until all 4 digits are filled in.

When your password is correct, you gain access to the selected item.

When your password is wrong, the error message "Invalid password" is displayed on the screen. Press **EXIT** to continue and to return to the **Service menu**.

The factory programmed password is 0 0 0 0

Once the password is correctly entered, all other password protected items are accessible without re-entering the password.

When re-entering the **Adjustment** mode, it will be necessary to enter the password again when selecting a password protected item.

For setting up your own password see chapter [10.2 Change Password](#)

8 Random Access Adjustment Mode

To start up the Random Access Adjustment Mode:

- ▶ push the cursor key **up** or **down** to highlight '**Random Access**' and then press **ENTER**

The **Random Access** menu comprises four submenus each of which gives access to the various settings and commands related to the submenu:

main menu	submenu	commands
Random Access Adjustment Mode	File Service	load edit rename copy delete options
	Picture Tuning	cti (color transient improvement) color temperature gamma decoding dynamic color depth noise reduction input balance
	Audio Tuning	volume balance bass treble mute fade mode stereo/mono video – audio lock
	Geometry	shift size side keystone blanking aspect ratio options

8.1 File Service

Before using a new source, a correct file has to be installed. The projector's memory contains a list of files corresponding to the most used sources. When the new source corresponds with one of these files, the file can be loaded and saved for future use. When there is a little difference, the file can also be loaded and then edited until the source specs are reached.



File loading can be done automatically (see [8.1.6 File Options](#)).

To enter the **File Service**, handle as follows:

- ▶ Push the cursor key **up** or **down** to highlight '**File Service**'.
- ▶ Press **ENTER** to select.
- ▶ The **File service menu** will be displayed.
- ▶ **EXIT** returns to the **Path selection menu**.
- ▶ **ADJUST** returns to operational mode.

The following file manipulations are possible:

Load	installation of a file for a new source
Edit	editing a loaded file to the source specs
Rename	renaming a file
Copy	copying a file to a new file
Delete	deleting an existing file
Options	way of sorting the files & automatic file loading

8.1.1 Load File

- ▶ Push the cursor key **up** or **down** to highlight '**Load**'.
- ▶ Press **ENTER** to select.

The **Load menu** displays the corresponding files depending on the installed filter. This filter can be **Fit** or **All**.

All: all files that can be loaded will be displayed.

Fit: only the best fitting files will be displayed (with a distinction of ± 2 lines and line duration distinction of ± 300 ns, if nothing is found within this small area, the projector continues searching until it finds something.)

To change the filter :

- ▶ Push the cursor key **left** or **right** to highlight '**filter list**'.
- ▶ Press **ENTER** to toggle the annotation between brackets.

To load a file:

- ▶ Push the cursor key **up** or **down** to select the best fitting file.
- ▶ Press **ENTER** to select.
A confirm **Load file menu** will be displayed with the newly created file and the one on which the new file is based on.
- ▶ Press **ENTER** to confirm the new creation or **EXIT** to return to the load file menu.



When scrolling through the files, the image will be adapted according to the settings of the selected file (on line adaptation).

If the displayed image is not correct after selecting the best fitting file, go to the **edit menu**, select the active file and change the file settings.

During a load file, the actual active file is displayed next to the indication '**Active file**'.

8.1.2 Edit File

The **Edit file menu** makes it possible to change the settings of the file according to the real settings of the connected source. Consult the source specification before entering the data.

To start up the **EDIT menu**:

- ▶ Push the cursor key **up** or **down** to highlight '**Edit**'.
- ▶ Press **ENTER** to select.
- ▶ The **Edit file adaptation menu** will be displayed.
- ▶ Select the file which must be edited (mostly the active file).
- ▶ Press **ENTER**.
The file name will be displayed in the upper right corner.

The following items can be adjusted:

- ▶ Total quantity horizontal pixels
- ▶ Active quantity horizontal pixels
- ▶ Horizontal start (in pixels)
- ▶ Horizontal period (in μ s) (is automatically adapted during the installation of a file with **LOAD**)
- ▶ Total vertical lines (is automatically adapted during the installation of a file with **LOAD**)
- ▶ Active vertical lines
- ▶ Vertical start (in lines)
- ▶ Interlaced: toggle on/off (is automatically set to its correct position during the installation of a file with **LOAD**)

All settings can individually be changed by pushing the cursor key **up** or **down** to select an item.

The color of the selected item will change. There are three methods to change the value.

method 1:

- ▶ press **ENTER** to activate the digits
- ▶ enter directly with the numeric keys on the **RCU** or local **keypad** the new value

method 2:

- ▶ Press **ENTER** to activate the digits
- ▶ Push the cursor key **right** or **left** to select the changing digit.
- ▶ Push the cursor key **up** or **down** to scroll to desired digit.
- ▶ When finished press **ENTER** to confirm.

method 3

- ▶ Counting up or down by pushing the cursor key **right** or **left**.

How to find the correct values for the displayed item?

During the installation of a file with **LOAD**, the horizontal period, the total number of vertical lines and the interlaced mode are automatically measured and filled in the menu table. These values will be available when starting up the **EDIT** procedure of an active file.



Do not adjust these settings on an active file, they are used to identify the input source file.

If the value for **Horizontal Total Pixels** is wrong, sampling mistakes (small vertical bars in the projected image) will be seen in the image. Select **Total** and adjust the pixel quantity. Adjust for zero bars (hint: if the number of bars increase, adjust in the other direction).

The **Active Pixels** determine the width of the window on the screen. This value is normally given in the source specifications. If not, adjust until full image is displayed (no missing pixels).

Horizontal Start gives the number of pixels between the beginning of the input signal and the start of the video information in the signal.

The **Horizontal Period** is already filled in with the correct value of the active file.

The **Vertical Total Lines** are already filled when an active file is selected to be edited.

Active Lines is the number of horizontal lines determining the height of the projected image. This value is normally given in the specification of the source. If not, adjust until full image height is displayed (no missing lines)

Vertical start gives the number of lines between the start of the input signal and start of the image on the screen.

Interlaced [On] or [Off]: this selection is automatically filled when active file has to be edited. If the image is wrong due to mismeasurement, use the **ENTER** key to toggle between [On] and [Off]. (for interlaced images, one frame contains two fields).

Read AMDS (AMDS = automatic mode detection & synchronization): During the installation of a file with **LOAD**, the system automatically measured the horizontal period, the total vertical lines and the interlaced mode. When selecting **Read AMDS**, the system re-measures the above indicated items.

Options

- ▶ Source Number
The source number of a non-active source can be changed to any other source number. This makes it possible to create a file for future source numbers.
- ▶ Clamp Position
Clamping determines the black level of the signal. The clamp pulse can be related to the leading or the trailing edge of the sync pulse. Use the **ENTER** key to toggle between [leading] and [trailing].
- ▶ Clamp Delay
The time between the leading edge of the clamp pulse and the locked edge of the sync pulse. Can be any value between 0 and 255. Change the value by pushing the cursor key **right** or **left**.
- ▶ Clamp Width
The width of the clamp pulse. Can be any value between 0 and 255. Change the value by pushing the cursor key **left** or **right**.
- ▶ Field Polarity
The field polarity function is used for interlaced images. Both rasters of the image could be shifted in a wrong way (double lines are visible in the image). This can be corrected by forcing the field polarity to [**neg**] or [**pos**]. Use the **ENTER** key to toggle between [**pos**] and [**neg**].
- ▶ Field Select: Default [**both**]
The field select is only used for interlaced images. One frame of an interlaced image contains two fields, an even and an odd field. The choice exists to project [**both**] fields on the screen or only the [**even**] or [**odd**] field. This can be useful for 3D projection. Use the **ENTER** key to toggle between [**both**], [**even**] and [**odd**].
- ▶ Vertical Refresh [**sync/async**]
The way of updating the image information on the LCD panels. Not available for PAL-NTSC-SECAM sources. This option will be displayed in gray.
 - * For sources with a vertical frequency up to 60 Hz: the vertical refresh rate is the same as the vertical frequency of the incoming source. This is a necessity to project moving images without 'motion artifacts'. For stationary images with a vertical frequency up to 60 Hz it is still possible to use asynchronous refresh. When loading Pal, Secam, NTSC-files the synchronous mode is default, for all other sources below 60 Hz asynchronous mode is default.
 - * For sources with a vertical frequency higher than 60 Hz: the vertical refresh is different than the vertical frequency of the incoming source. Synchronous refresh cannot be used.
- ▶ Vertical Sync Polarity [**leading**] or [**trailing**]
The vertical refresh can be synchronized with the leading sync edge or trailing sync edge. Default on [**leading**].
Toggling to [**trailing**] is only necessary for special applications where the trailing edge of the sync signal has to be taken as a reference. Use the **ENTER** key to toggle between [**leading**] or [**trailing**].

Press **EXIT** to leave the **Edit File Option** menu.

- ▶ A '**Confirm Edit File**' menu will be displayed.
- ▶ Press **ENTER** to confirm and to save the new settings or **EXIT** to return without saving the new entered settings.

8.1.3 Rename

To change the name of a selected file:

- ▶ Push the cursor key **up** or **down** to highlight '**Rename**'.
- ▶ Press **ENTER**.
- ▶ The **Rename selection menu** will be displayed.
- ▶ Push the cursor key **up** or **down** to select a file name.
- ▶ Press **ENTER** to select.

The **Rename menu** will be displayed with the selected file name already filled in the '**From file name:**' area and in the '**To file name:**' area.

The first character is highlighted.

- ▶ Push the cursor key **left** or **right** to select the desired character.
- ▶ Change that character by pushing the cursor key **up** or **down**. Numeric characters can be entered directly with numeric keys on the **RCU**.
- ▶ Press **ENTER** to confirm. The renamed file is entered in the list of files.
- ▶ Press **EXIT** to return to the **Rename menu selection**. No changes are made.

8.1.4 Copy

To copy a selected file into a new file:

- ▶ Push the cursor key **up** or **down** to highlight '**Copy**'.
- ▶ Press **ENTER**. The **Copy selection menu** will be displayed.
- ▶ Push the cursor key **up** or **down** to select a file name.
- ▶ Press **ENTER** to select.

The **Copy menu** will be displayed with the selected file name already filled in, in the '**From file name :**' area and in the '**To file name :**' area.

The first character is highlighted.

- ▶ Push the cursor key **left** or **right** to select the desired character.
- ▶ Change that character by pushing the cursor key **up** or **down**. Numeric characters can be entered directly with numeric keys on the **RCU**.
- ▶ Press **ENTER** to confirm. The renamed file is entered in the list of files.
- ▶ Press **EXIT** to return to the **Copy menu selection**. No changes are made.

8.1.5 Delete

To delete a selected file out of the list of files:

- ▶ Push the cursor key **up** or **down** to highlight '**Delete**'.
- ▶ Press **ENTER**.
- ▶ The **delete selection menu** will be displayed.
- ▶ Push the cursor key **up** or **down** to select a file name.
- ▶ Press **ENTER** to select.
If [**All**] is selected, your password has to be entered before all files will be deleted.
- ▶ A **confirmation menu** "Delete file 'file name'?" is displayed. When you want to delete the file, press **ENTER**. If you do not want to delete the file, press **EXIT**.



The active file cannot be deleted.

8.1.6 File Options

- ▶ Push the cursor key **up** or **down** to highlight '**File Options**'.
- ▶ Press **ENTER**.
The **option selection menu** will be displayed.

File Sort

- ▶ Press **ENTER** to toggle between [**name**] and [**index**]
[**name**]: The files in the file list will be sorted on the file name.
[**index**]: The files in the file list will be sorted on the file extension.

File Load

- ▶ Press **ENTER** to toggle between [**Automatic**] and [**Manual**].
[**Automatic**]: the best fitting file will be loaded automatically when a source is selected. It is still possible to change that file by another file using the **Load** function
[**Manual**]: no file will be loaded when a source is selected. The **Load** function in **File Service** has to be used to load a file.

8.2 Picture Tuning

- ▶ Push the cursor key **up** or **down** to highlight '**Picture Tuning**'.
- ▶ Press **ENTER** to select. The **Picture Tuning menu** will be displayed.

CTI ON/OFF	to improve the transition from one color to another
color temperature	to select a color temperature
gamma	to set the gamma of the projector image
decoding EBU/IRE	decoding of NTSC video signals via IRE or EBU standard
dynamic color depth	to increase the color contrast for all video and data sources
noise reduction	to reduce noise and pixel jitter in all video and data sources
input balance	to adjust brightness and contrast

8.2.1 CTI ON/OFF

This function applies to PAL and NTSC video or S-video inputs only.

- ▶ Push the cursor key **up** or **down** to highlight '**CTI**'.
- ▶ Press **ENTER** to toggle between **ON** and **OFF**.

8.2.2 Color Temperature

- ▶ Push the cursor key **up** or **down** to highlight '**Color Temperature**'.
- ▶ Press **ENTER** to select.
- ▶ The **color temperature selection menu** will be displayed.

The following selections are possible :

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

Push the cursor key **up** or **down** to select a fixed color temperature or custom balance.

Projector white will provide maximum projector light output.

The calibrated '**Broadcast**', '**Film**', '**Video**' and '**Computer**' presets will provide optimum color tracking.

Custom balance allows the user to set his own preferred color temperature.

To adjust **Custom Balance**, handle as follows:

- ▶ Push the cursor key **up** or **down** to highlight '**Custom Balance**'.
- ▶ Press **ENTER** to select.
- ▶ Push the cursor key **up** or **down** to adjust red and push the cursor key left or right to adjust blue (range 0 to 2.5) in comparison with the green color (value 1).

8.2.3 Gamma

With the **gamma correction adjustment**, it is possible to accurately set the **gamma** of the projector image.

To change the gamma value :

- ▶ Push the cursor key **up** or **down** to highlight '**Gamma**'.
- ▶ Press **ENTER** to select.
- ▶ Change the **gamma** value by pushing the cursor key left or right until the desired value is reached.
- ▶ Press **EXIT** to return to the **Picture Tuning menu**.

8.2.4 Decoding EBU/IRE

Only for NTSC signals.

The possibility is offered to decode the NTSC video signals via the default American IRE standard or via the European EBU standard. Decoding a NTSC signal using the European EBU standard may result in a greenish tint.

- ▶ Push the cursor key **up** or **down** to highlight '**Decoding**'.
- ▶ Press **ENTER** to toggle between **EBU** or **IRE**.
- ▶ Press **EXIT** to return.

8.2.5 Dynamic Color Depth

Increases color contrast for all video and data sources.

To change the dynamic color depth value:

- ▶ Push the cursor key **up** or **down** to highlight '**Dynamic Color Depth**'.
- ▶ Press **ENTER** to select.
- ▶ Change the value by pushing the cursor key **left** or **right** until the desired color contrast is reached: Adjustment range: 0 ... 8; default: 4
- ▶ Press **EXIT** to return to the **Picture Tuning menu**.

8.2.6 Noise Reduction

Reduces noise and pixel jitter in all video and data sources.

To change the noise reduction value :

- ▶ Push the cursor key **up** or **down** to highlight '**Noise Reduction**'.
- ▶ Press **ENTER** to select.
- ▶ Change the value by pushing the cursor key **left** or **right** until the desired noise level is reached. Adjustment range: 0 ... 8
- ▶ Press **EXIT** to return to the **Picture Tuning menu**.

8.2.7 Input Balance



Before starting the **Input Balance** function, generate a signal with dominant black and white areas.

The default values are normally loaded when selecting a source. If the image is not as desired, adjust for this source as follow:

- ▶ Start with the **Black Balance**:
- ▶ Push the cursor key **up** or **down** to highlight '**Black Balance**'.
- ▶ Press **ENTER** to select.
- ▶ Adjust the **Brightness** to a maximum value until there is just no green noise visible in the black areas.
- ▶ Adjust with the cursor key **up** or **down** or **left** or **right** until there is no red or blue noise visible in the black areas.
- ▶ Continue with the **White Balance**:
- ▶ Push the cursor key **up** or **down** to highlight '**White Balance**'.
- ▶ Press **ENTER** to select.
- ▶ Adjust the **Contrast** to a maximum value until the white areas are just white (without green noise) and return one step.
- ▶ Adjust with the cursor key **up** or **down** or **left** or **right** until there is no red or blue noise visible in the white areas.

8.2.8 Audio Tuning

- ▶ Push the cursor key **up** or **down** to highlight '**Audio Tuning**'.
- ▶ Press **ENTER** to select. The **Audio Tuning** menu will be displayed.

The following items are available :

Volume	to adjust volume
Balance	to adjust balance
Bass	to adjust bass
Treble	to adjust treble
Mute	to stop the sound reproduction
Fade	to determine where the sound signals will be reproduced
Mode	Sound reproduction can be done in stereo or mono
Video - Audio lock	to lock an input source to an audio input

8.2.9 Volume, Balance, Bass and Treble

When a sound control is selected by highlighting the item with the cursor key, a text box with a bar scale, icon and function name of the control, e.g. '**Volume**' appears on the screen (only when text is **ON**). The length of the bar scale indicates the current memory setting for this source. For more information about the sound controls, see [6.3.5 Sound controls with direct access](#)

8.2.10 Mute

To stop the sound reproduction.

- ▶ Push the cursor key **up** or **down** to highlight '**Mute**'.
- ▶ Press **ENTER** to toggle between [**on**] or [**off**]

8.2.11 Fade

Determine where the sound signals will be reproduced. Adjust the fade as follows:

- ▶ Push the cursor key **up** or **down** to highlight '**Fade**'.
- ▶ Press **ENTER** to select.
- ▶ Adjust the desired **fade** level.
- ▶ The **fade** can be adjusted between -15 and 15.

Fade on -15: no sound reproduction on the external loudspeakers, max on the internal loudspeaker with the same volume level as adjusted with the **volume** control.

Fade on 15: no sound reproduction on the internal loudspeakers but max on the external loudspeakers with the same volume level as adjusted with the **volume** control.

8.2.12 Mode [stereo]/[mono]

The sound reproduction can be done in mono or stereo. To install the mode:

- ▶ Push the cursor key **up** or **down** to highlight '**Mode**'.
- ▶ Press **ENTER** to toggle between [**stereo**] or [**mono**].

8.2.13 Video - Audio lock

To lock an input source to an audio input, follow the next steps :

- ▶ Push the cursor key **up** or **down** to highlight the first input source.
- ▶ Press **ENTER** to toggle the associated audio input between [**A**], [**B**] or [**C**].
- ▶ Push the cursor key **left** or **right** to highlight another input source.
- ▶ Press **ENTER** to toggle between [**A**], [**B**] or [**C**].
- ▶ Continue for the other inputs in the same way.

8.3 Geometry

To start up the **Geometry** functions:

- ▶ Push the cursor key **up** or **down** to highlight '**Geometry**'.
- ▶ Press **ENTER** to select.
- ▶ The **geometry menu** will be displayed.

The following adjustments are possible:

horizontal and vertical image shift.	to shift the image in a horizontal or vertical direction
horizontal and vertical image size	to adjust the size in a horizontal or vertical direction
side keystone	to align the image (only necessary if the projector is mounted at a non standard projection angle).
blanking	to frame the projected image on to the screen
aspect ratio	to force the projector in a typical aspect ratio
options	to change the geometry options

The following ways are possible to adjust a **geometry** function:

- ▶ using the cursor key to adjust or
- ▶ entering the value with the digit keys. Therefore, press **ENTER** to select the indicated value and enter the desired value with the digit keys. Press **ENTER** to confirm the entered value.

8.3.1 Shift

The image can be shifted in a horizontal or vertical direction.

To start up the shift action:

- ▶ Push the cursor key **up** or **down** to highlight '**Shift**'.
- ▶ Press **ENTER** to select.
- ▶ Push the cursor key **up** or **down** to shift the image in a vertical direction. Push the cursor key **left** or **right** to shift the image in a horizontal direction. The default value for the shift is 0.

Shifting in a vertical direction: when the shift value is positive, the image is shifted upwards, when the value is negative, the image is shifted downwards.

Shifting in a horizontal direction : when the shift value is positive, the image is shifted to the right, when the value is negative, the image is shifted to the left.

8.3.2 Size

The size can be adjusted in a vertical or horizontal way.

When adjusting the vertical size, the upper side of the image is fixed (table and ceiling mounted configurations) and only the lower side can be moved to its exact position.

When adjusting the horizontal size, the left side of the image is fixed and only the right side can be moved to its exact position.

To start up the size adjustment:

- ▶ Push the cursor key **up** or **down** to highlight '**Size**'.
- ▶ Press **ENTER** to select.
- ▶ Push the cursor key **up** or **down** to size the image in a vertical direction. Push the cursor key **left** or **right** to size the image in a horizontal direction.

8.3.3 Blanking

Blanking adjustments affect only the edges of the projected image and are used to frame the projected image on to the screen and to hide or black out unwanted information (or noise). A '**0**' on the bar scale indicates **no blanking**.

To adjust the **blanking**:

- ▶ Push the cursor key **up** or **down** to highlight '**Blanking**'.
- ▶ Press **ENTER** to display the blanking menu.

The following blanking corrections are possible :

- ▶ top blanking
- ▶ bottom blanking
- ▶ left blanking
- ▶ right blanking

8.3.4 Aspect Ratio [5:4]/[4:3]/[16:9]

To force the projector in a typical aspect ratio, e.g. projecting a 4:3 image in a 16:9 aspect ratio.

To install the desired aspect ratio:

- ▶ Push the cursor key **up** or **down** to highlight '**Aspect Ratio**'.
- ▶ Press **ENTER** to toggle between [5:4] or [4:3] or [16:9].

8.3.5 Options

To change the geometry options:

- ▶ Push the cursor key **up** or **down** to highlight '**Options**'.
- ▶ Press **ENTER** to display the **Geometry options menu**
The next question will be asked by the projector :
'Use the same side keystone correction for all files ? [YES] or [NO].
[YES]: the same **keystone** correction will be used for all installed files
[NO]: the **keystone** has to be adjusted file per file.
- ▶ Push the **ENTER** key to toggle between [YES] or [NO].
- ▶ Press **EXIT** to return to the **Geometry menu**.

9 Installation Mode

To start up the **Installation Mode**, push the cursor key **up** or **down** to highlight '**Installation Mode**' and then press **ENTER**.

The following items can be selected in the **Installation mode**:

Input slots	to set up the input priority
800 Peripheral	to select the type of output module used in the RCVDS05.
Convergence	to align the red, green and blue image.
Configuration	to set up the projector position
OSD color	to change the color of the highlighted item.
Internal Patterns	

9.1 Input Slots

The input configuration of the variable inputs is shown in the **input slots menu**. To view or to change the input configuration:

- ▶ Push the cursor key **up** or **down** to highlight '**Input Slots**'.
- ▶ Press **ENTER** to select.
The internal system will scan the input slots and displays the result in the **Input slots menu**.
The black indicated inputs are selectable and changeable. The gray indicated inputs are fix inputs and are not changeable.

indication in front of the digit	meaning
x	valid signal connected to the input.
-	no valid signal connected to the input.

indication in the source description	meaning
Video or S-Video	Video S-Video
RGB analog	RGB-CV: separate sync is composite video signal on H/C input RGB-HS&VS separate sync is horizontal and vertical sync RGB-CS separate sync is composite sync RGB-SOG sync on green
Component video	Component Video

If a RCVDS (switched on) or VS05 is connected to the projector, it will be also indicated on the **menu** by adding **+800 peripheral**. If no **800 peripheral indication** is made on the **menu**, there are still two possibilities :

- ▶ no RCVDS or VS05 connected or
- ▶ RCVDS is switched off.

When a **800 peripheral** is connected to the projector, the input slots are not accessible with the cursor key to toggle their function.

9.2 800 Peripheral

Output module selection

When a **RCVDS05** is connected to the projector, the type of output module of this **RCVDS05** has to be defined in the **800 peripheral menu**.

The type of output module can be:

- ▶ standard output module or
- ▶ 5 cable output module.

To define the output module:

- ▶ Push the cursor key **up** or **down** to highlight '**800 Peripheral**'.
- ▶ Press **ENTER** to select.
- ▶ Push the cursor key **up** or **down** to highlight '**Output module**'.
- ▶ Press **ENTER** to toggle between '**Standard**' or '**5-cable**'.

Infrared Communication

When a peripheral is connected to the '**Comm Port**', the communication can be in PPM or RC5.

The type of communication can be set to:

- ▶ PPM
- ▶ RC5

To define the communication:

Push the cursor key **up** or **down** to highlight '**Infrared**'.

Press **ENTER** to select.

Press **ENTER** to toggle between [**PPM**] or [**RC5**].

9.3 Configuration

The configuration of the projector can be set up as follows:

- ▶ Push the cursor key **up** or **down** to highlight '**Configuration**'.
- ▶ Press **ENTER** to select.
- ▶ The **Configuration menu** will be displayed.
For more information, see chapter [14.1 Faults](#)

9.4 OSD color (On-Screen Display)

The highlighted items on the menus can be displayed in red, green or yellow.

To change this color setting:

- ▶ Push the cursor key **up** or **down** to highlight '**OSD color**'.
- ▶ Press **ENTER** to select.
- ▶ The **OSD color menu** will be displayed.
- ▶ Push the cursor key **up** or **down** to highlight a color.
- ▶ Press **ENTER** to select.

9.5 Internal Patterns

The projector is equipped with different internal patterns which can be used for measurement purposes.

To select an internal pattern, handle as follow:

- ▶ Push the cursor key **up** or **down** to highlight '**Internal Patterns**'.
- ▶ Press **ENTER** to select.
- ▶ The **internal pattern menu** will be displayed.
- ▶ Push the cursor key **up** or **down** to highlight the **Internal Patterns**.
- ▶ Press **ENTER** to display the selected internal pattern.

The following patterns are available:

- ▶ Outline
- ▶ Hatch
- ▶ Color Bars
- ▶ Multiburst
- ▶ Checker Board
- ▶ Page Characters
- ▶ Alpha-numeric characters
- ▶ Character Sets
- ▶ Backgrounds

9.6 No Signal

If there is no signal connected to the projector, the background color can be black or blue and the projector can shutdown after a certain time.

To change the background color handle as follows:

- ▶ Push the cursor key **up** or **down** to highlight '**No signal**'.
- ▶ Press **ENTER** to select.
- ▶ The '**No Signal**' menu will be displayed.
- ▶ Push the cursor key **up** or **down** to highlight '**Color**'.
- ▶ Press **ENTER** to toggle between **[blue]** or **[black]**.

To change the shutdown setting, handle as follows:

- ▶ Push the cursor key **up** or **down** to highlight '**No signal**'.
- ▶ Press **ENTER** to select.
- ▶ The '**No Signal**' menu will be displayed.
- ▶ Push the cursor key **up** or **down** to highlight '**Shutdown**'.
- ▶ Press **ENTER** to toggle between **[On]** or **[Off]**.

The shutdown time can be set between 5 min and 60 min.

To set up the shutdown time, handle as follows:

- ▶ Push the cursor key **up** or **down** to highlight '**No signal**'.
- ▶ Press **ENTER** to select.
- ▶ Push the cursor key **up** or **down** to highlight '**Shutdown time**'.
- ▶ Push the cursor key **up** or **down** to change the digits or enter the digits directly with the digits keys on the **RCU**.

10 Service Mode

To start up the **Service Mode**:

- ▶ push the cursor key **up** or **down** to highlight '**Service**'
- ▶ press **ENTER**.

Some items in the **Service mode** are password protected (when the password function is active). Enter the password to continue. All other password protected items are now available if you stay in the **adjustment mode**.

The **service menu** is built-up in two parts which are connected together with the '**more**' item.

If the desired item is not in the list of the displayed menu, select '**more**' with the cursor key and push **ENTER** to display the other items in the **service menu**.

Service	Service
Identification	Barco Logo
Change Password	Panel Adjustments
Change Language	Uniformity
Change Proj. Address	Preset Input Balance
Change Baudrate PC	I2C Diagnosis
Reset Lamp Runtime	More
More	
Select with key up or down , then <Enter> , <EXIT> to return	Select with key up or down , then <Enter> , <EXIT> to return

10.1 Identification

To display the **Identification screen**:

- ▶ Push the cursor key **up** or **down** to highlight '**Identification**'.
- ▶ Press **ENTER** to display the Identification screen.

The Identification screen gives an overview of:

type of projector	Barco ATLAS 67 CS4 or ATLAS 84 CS4
projector address	to change the address of the projector, see 10.4 Change Projector Address
software version	
installation configuration	possible installations: Front/Ceiling Front/Table Rear/Ceiling Rear/Table To change the installation configuration follow the instructions in chapter
baud rate	transfer speed for communication with an IBM PC (or compatible) or MAC. The baud rate of the projector must be the same as the baud rate of the connected computer. When there is a difference, consult chapter 10.5 Change Baudrate PC .
text	ON or OFF
projector serial number	indicates the fabrication number of the projector. This number can be useful when calling for technical assistance
projector run time	gives the total run time since the first start up. All projectors leave the factory with a run time of approximately 24 hours.

10.2 Change Password

This item is **password protected** when the password strap is installed.

The **password** function is enabled when the password strap on the controller module is installed. Consult an authorized Barco service technician to change the strap position.

How to change the password:

- ▶ Push the cursor key **up** or **down** to highlight '**Change password**'.
- ▶ Press **ENTER** to display the **Change Password menu**.
- ▶ The old password is displayed and can be changed by entering the digit with the numeric keys of the **RCU** or local **keypad**.
- ▶ Press **ENTER** to save the new entered password.
- ▶ Press **EXIT** if no changes have to be made.

10.3 Change Language

To change the language of the control software:

- ▶ Push the cursor key **up** or **down** to highlight '**Change Language**'.
- ▶ Press **ENTER** to display the **Change Language menu**.
- ▶ Push the cursor key **up** or **down** to highlight the desired language.
- ▶ Press **ENTER** to change the language. (Available languages: English)

10.4 Change Projector Address

Every projector requires an individual address between 0 and 255. This address can be software installed.

To change that address:

- ▶ Push the cursor key **up** or **down** to highlight '**Change Projector Address**'.
- ▶ Press **ENTER** to display the **Change Projector Address menu**. The actual address will be filled in.
- ▶ The first digit is highlighted. Enter the new projector address with the digit keys on the **RCU** or the local **keypad** or push the cursor key **left** or **right** to select a digit and change the value by pushing the cursor key **up** or **down** until the new value is reached. Continue with the other digits in the same way.

10.5 Change Baudrate PC

The communication speed between projector and computer, e.g. PC or MAC, has 8 possible speeds. The baud rate speed can be software set. Handle as follows:

- ▶ Push the cursor key **up** or **down** to highlight '**Change Baudrate PC**'.
- ▶ Press **ENTER** to display the **Change Baudrate PC menu**. The actual baud rate will be highlighted. The following baud rates are available:
230400/115200/57600/38400/19200/9600/4800/1200
- ▶ Push the cursor key **up** or **down** to highlight the desired baud rate.
- ▶ Press **ENTER** to select.

10.6 Reset Lamp Runtime

Reset lamp run time is only allowed when a new lamp is installed.

When Reset Lamp Run Time is selected in the Service Mode selection menu, the following warning will be displayed :



Risk of electrical shock. Reset lamp run time is reserved to qualified service personnel.

If you are not qualified, press **EXIT** to cancel the reset operation.

10.7 BARCO logo

The BARCO logo can be added to the image, in overlay or on a background, on any place on the screen.

To add the BARCO logo or to change a setting in the **BARCO logo menu**:

- ▶ Push the cursor key **up** or **down** to highlight '**BARCO logo**'.
- ▶ Press **ENTER** to display the **BARCO logo menu**. The actual settings will be displayed.

Within this menu, three toggle settings and a shift control are available.

STATUS [ON/OFF]	ON: BARCO logo will be displayed on the screen. OFF: No BARCO logo displayed on the screen.
BACKGROUND [ON/OFF]	ON: BARCO logo will be displayed on a black background. OFF: BARCO logo will be displayed without any background.
SHIFT	By pushing the cursor key up , down , left or right , the BARCO logo can be positioned anywhere on the screen.
HOT KEY [TEXT/OFF]	OFF: no key on the RCU is used to display the BARCO logo TEXT: the TEXT key on the RCU is used to display or to remove the BARCO logo with one single push on this key (only in operational mode)..

10.8 Uniformity



Changing these settings may seriously affect the performance of the projector

When **Uniformity** is selected in the **Service Mode selection menu**, the following warning will be displayed :



Uniformity is reserved to qualified service personnel.
If you are not qualified, press **EXIT** to cancel the uniformity.

10.9 Preset Input Balance



Changing these settings may seriously affect the performance of the projector.

When **Preset Input Balance** is selected in the **Service Mode selection menu**, the following warning will be displayed :



Preset Input Balance is reserved to qualified service personnel.
If you are not qualified, press **EXIT** to cancel the preset input balance.

10.10 I2C Diagnosis.

Gives an overview of the correct working of the I²C controlled IC's.

Highlight **I2C diagnosis** by pushing the cursor key **up** or **down** and press **ENTER** to display the overview.

11 Maintenance and Servicing

ATLAS CS4 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 ATLAS CS4.



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.

11.1 Cleaning of Screens

11.1.1 General

Screens consist of single or double screen elements. Each screen element has a delicate optical screen surface structure dedicated to its 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.

11.1.2 Cleaning the Screen



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.

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 airborne 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 screen should be completely 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 deformations in the surface which will appear as stains.

Don't store screens at temperatures exceeding 38°C (100°F)

11.2 Replacing

Both the filter pad and the lamp module are accessible from the rear side.

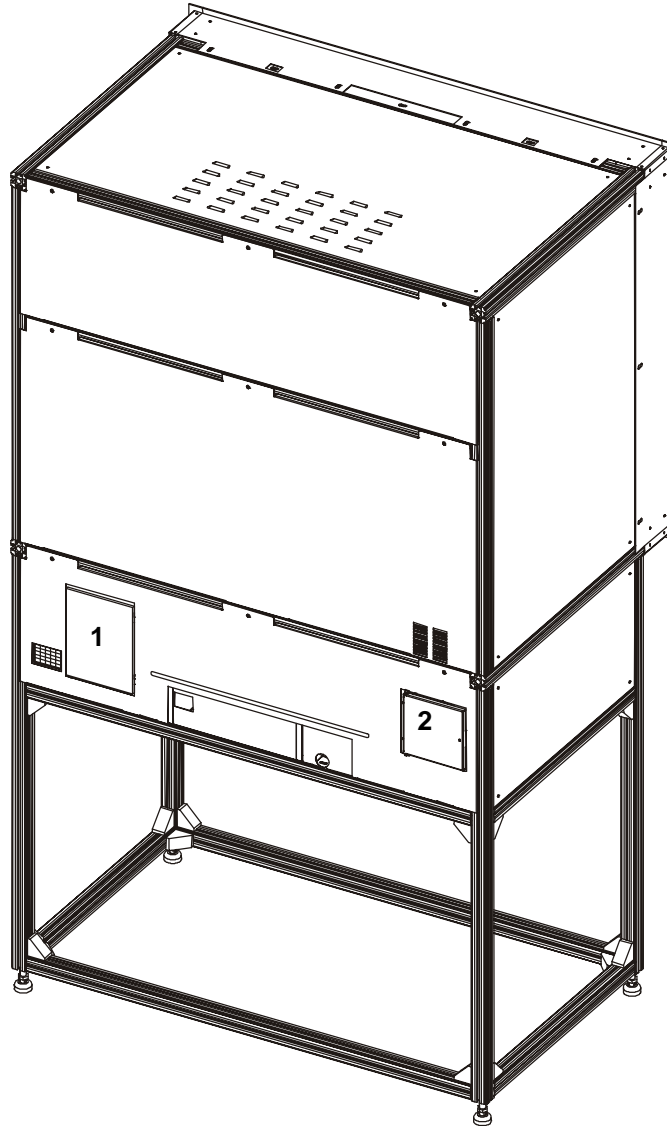


Figure 11-1
Position of filter pad and lamp module

- | | |
|---|------------------|
| 1 | filter pad |
| 2 | lamp access unit |

11.2.1 Replacing the Lamp Module

The lamp module must be replaced after an operating period of 8000 hours or if a fault occurs earlier.



The hot lamp is at high pressure. Do not open the lamp housing before the lamp has cooled down! Wait at least about 10 minutes after switching to standby.



Always hold the lamp by its socket, and never on the glass bulb or reflector! Use fabric gloves when replacing!

Removing a Lamp Module

- ▶ Go to **standby mode** by pressing **STDBY** on the **RCU** or on the local **keypad** or switch off the voltage of the **24V interface**
- ▶ Let cool down the projector at least 10 minutes
- ▶ Switch off power by pressing **0**
- ▶ Turn the screw on the lamp cover and open the door.

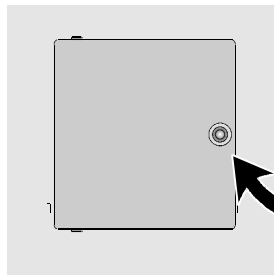


Figure 11-2
Position of lamp module (plate removed)

- ▶ Loosen first the lower screw [2] and then the top left screw [1] (only the left screw, not the right one) with an Allen key size 3mm. This removes slowly the plug of the lamp module.

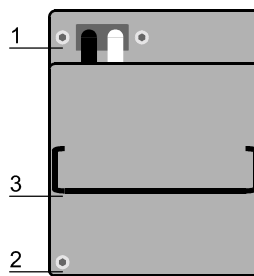


Figure 11-3
Removing the lamp module

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

Inserting a Lamp Module



Never remove the cover of the lamp housing with the equipment switched on.

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.

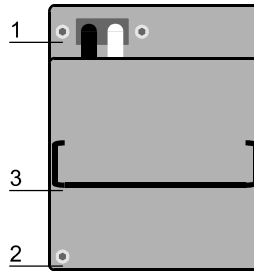


Figure 11-4
Inserting the lamp module

- ▶ Tighten first the left screw [1] (only the left screw, not the right one) and then the lower screw [2] with an Allen key size 3mm. This plugs slowly in the plug of the lamp module.
- ▶ When the screws are tight, lower the small grip [3].
- ▶ Close the lamp cover
- ▶ Turn the screw on the lamp cover.
- ▶ Switch on power by pressing 1.
- ▶ Switch on the lamp by pressing **Standby** or by applying the appropriate voltage to the 24V interface.

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!

11.2.2 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.

- ▶ 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!

- ▶ Lift the cover of the filter pad slightly and remove it.

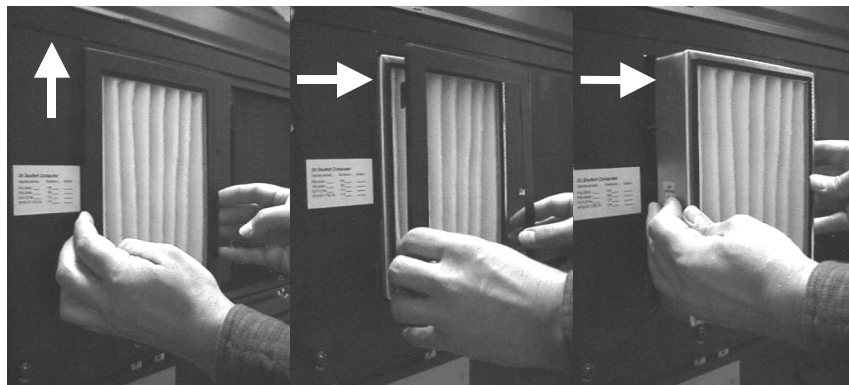


Figure 11-5
Removing the cover and the filter pad

- ▶ 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** or by applying 24V to the **24V interface**.

12 Technical Data

This chapter provides tabular overviews about the technical details of ATLAS CS4.

12.1 General Data

characteristic	specification Atlas 67 CS4	specification Atlas 84 CS4
Dimensions		
screen width	1335mm 52,5in	1650mm 65in
screen height	1068mm 42 in	1320mm 52in
total depth	929.5mm 36.6in	1212mm 47.7in
Weight		
1 AtlasCS4 Unit (average of a 2x2 wall)	90 kg 198.42 lbs	120 kg 264.55 lbs
1 illumination and projection unit	18.4 kg 40.57 lbs	18.4kg 40.57 lbs
∑	108.4 kg 238.98 lbs	138.4 kg 305.12 lbs
Normal operating conditions*		
ambient temperature	18 .. 25°C 64 .. 77°F	
humidity	40-60% (non condensing)	
Transport and storage conditions		
ambient temperature	0 .. 50° C 30 .. 120° F	
humidity	max. 85% (non condensing)	
Circulation of air (depending on number of revolutions of fan)	19m ³ /h	

Table 12-1

(*) Maximum number of stitch screens in wall configuration (x and y direction) in function of temperature and humidity range:

	67" / 84"	Temperature DGC				
		18-22	15-25	10-30	0-40	-10 -50
humidity	40-60	23 / 18	15 / 12	11 / 8	7 / 5	4 / 4
% RH	20-80	7 / 5	7 / 5	5 / 4	3 / 3	3 / 2
	0-100	4 / 3	3 / 3	3 / 2	2 / 1	2 / 1

12.2 Technical Data of Optical System

characteristic	specification
ATLAS CS4	native SXGA-resolution, 5:4, 1280×1024pixels
colors	16.7 millions
lamp	UHP™ lamp 100 Watt operation time 8000 hours

Table 12-2

12.3 Technical Data Of Electrical System

characteristic	specification
AC power supply	100VAC 240VAC
mains frequency	50....60 Hz
power consumption	220W with 230VAC

Table 12-3

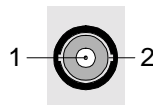
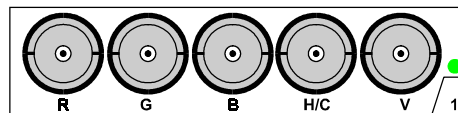
12.4 Interfaces

12.4.1 24V Interface

This interface allows switching the projector **on** and **off** without using the **RCU** or the local **keypad**. Switching is done by applying a voltage (24V). The interface is made accessible via a two pole connector mounted at the bottom of the cover.

interface	two pole connector 2×0.75mm ² , red/black
configuration	Plus(+)-pole: red Minus(-)-pole: black
voltage	0-50 V
current	max. 30mA
standby	0-5V
projector ON :	12-32V
insulation voltage:	5300V

12.4.2 Slot 1: 5 cable input, 5×BNC

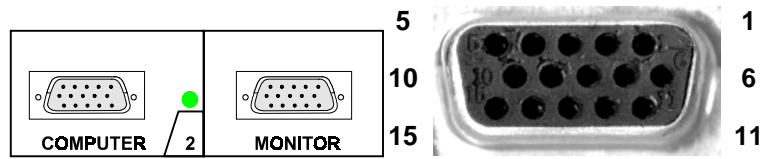


1	Signal
2	Shield

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 12-4

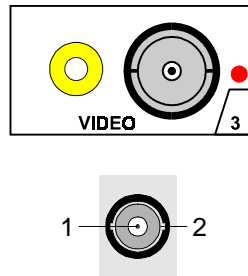
12.4.3 Slot 2: Computer input/Monitor output



1	Red	6	ground	11	loop through to monitor
2	Green	7	ground	12	loop through to monitor
3	Blue	8	ground	13	HSYNC / CSYNC
4	Green	9	loop through to monitor	14	VSYNC
5	ground	10	ground	15	loop through to monitor

Table 12-5

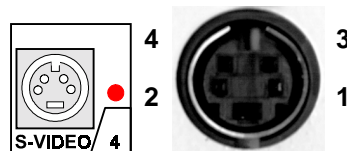
12.4.4 Slot 3: Video Input



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

Table 12-6

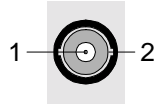
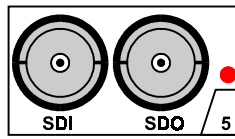
12.4.5 Slot 4: S-Video Input



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

Table 12-7

12.4.6 Slot 5: Serial digital Input / Serial digital Output



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

Table 12-8

12.5 Parts List

12.5.1 Optional Parts

order No.	designation
R9829960	Executive Remote Control
R9827890	VS05

Table 12-9

12.5.2 User's Manuals

order No.	title
R5976255	User's Manual ATLAS CS4 - SERIE
R5975765	Owner's manual RCVDS05
R5975245	Owner's manual VS05

Table 12-10

12.6 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 • Fa× (49) (721) 6201-298
E-mail info.bcd@barco.com, Web www.barco.com

- ▶ **BARCO Projection Systems - Europe**
Noordlaan 5 • B-8520 Kurne • Belgium
Phone (32) (56) 36-8211 • Fa× (32) (56) 36-8251
E-mail sales.bcd@barco.com • Web www.barco.com

13 Configuring Notes

A number of design and ergonomic conditions must be considered when planning the installation of ATLAS CS4. In addition to mounting dimensions, the following sections also include anthropo-technical requirements which must be observed in a specific application.

13.1 Floor Space And Maintenance Area

Sufficient floor space and maintenance area must be available when installing ATLAS CS4

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 ATLAS CS4. A cement, wood or false floor is permissible.

The load of the ATLAS CS4 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 ± 5 millimeters can be compensated using the adjustable feet.

ATLAS 67 CS4

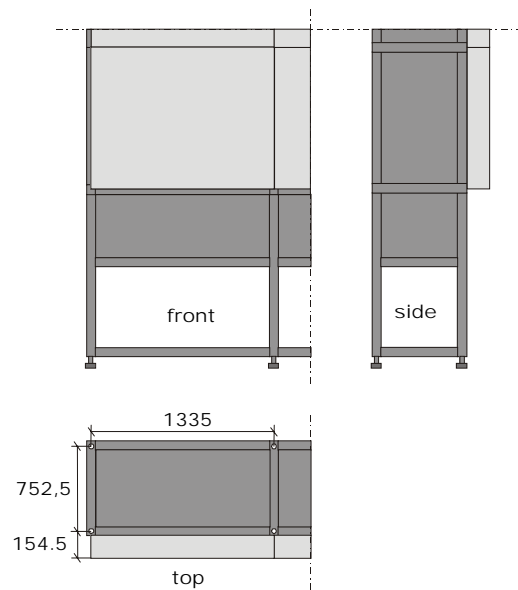


Figure 13-1
Position of the feet of ATLAS 67 CS4
(All dimensions measured in millimeters!)

ATLAS 84 CS4

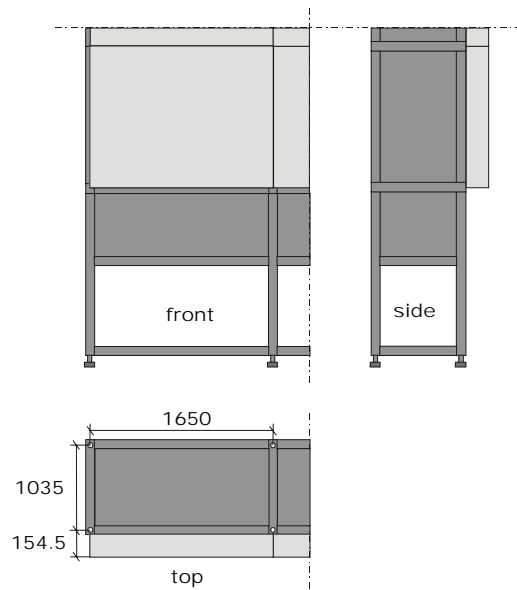


Figure 13-2
Position of the feet of ATLAS 84 CS4
(All dimensions measured in millimeters!)

Maintenance Area

The floor space for a Atlas Unit is calculated from the basic area of the structure. A maintenance area must be provided behind each Atlas Unit 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.

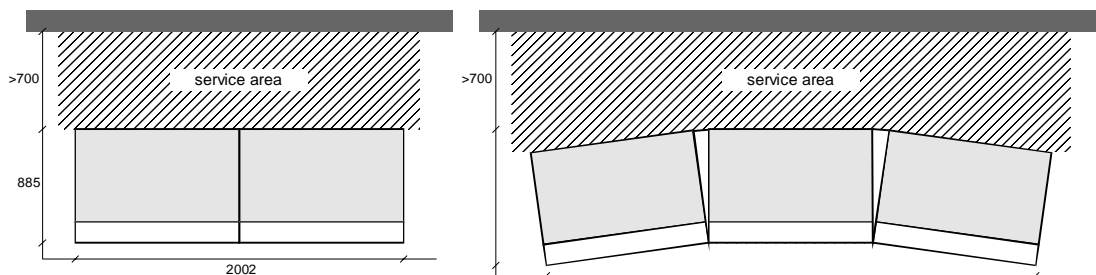


Figure 13-3
Linear and polygonal set-up of ATLAS CS4
(All dimensions measured in millimeters!)

The Atlas Units can have a linear or curved arrangement. With a curved design, the modular aluminum structure is built with angled connecting plates. The angle between two columns can vary between 0 and 8°.

13.2 Overall Height

The installation room must be sufficiently high. Sufficient space (recommended > 100 millimeters) must be provided above the Atlas Units. The total height results from the height of the supporting construction plus the height of the Atlas Units with feet plus the vacant space above the modules.

ATLAS 67 CS4

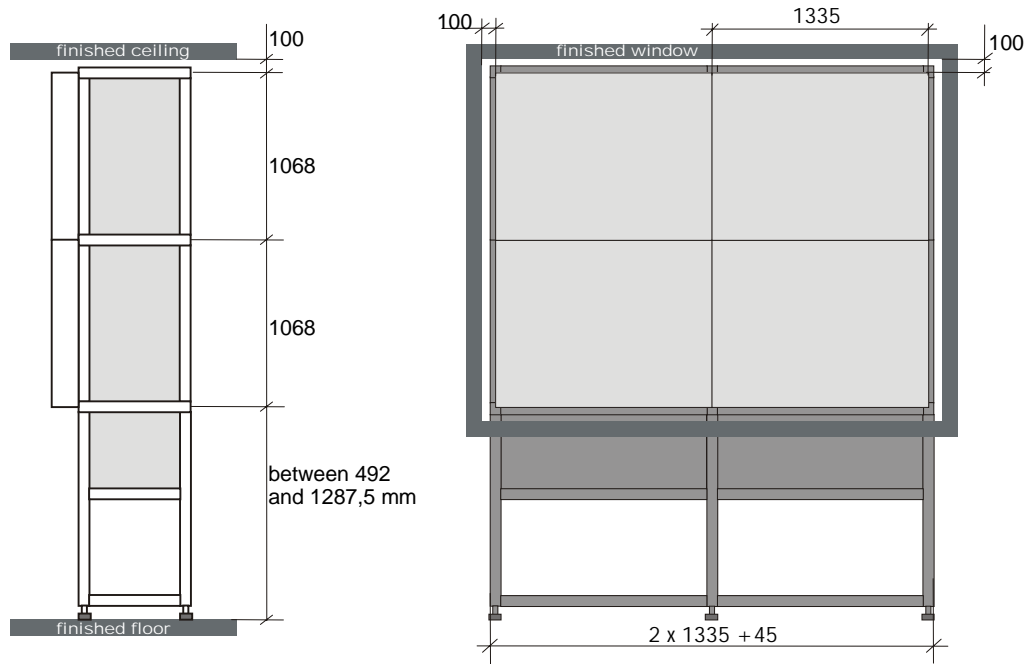


Figure 13-3
Mounting dimensions of ATLAS 67 CS4
(All dimensions measured in millimeters!)

The depth of the ATLAS 67CS4 WALL is 929.5mm. The standard screen height with the adjustable feet is 1287.5 millimeters. Other heights are available on request.

ATLAS 84 CS4

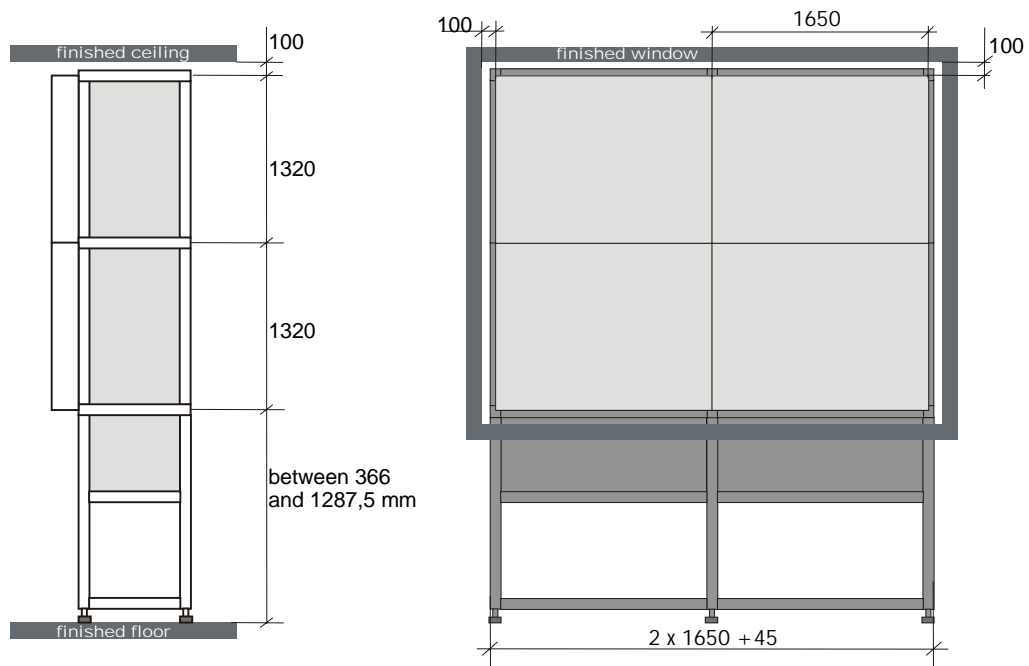


Figure 13-4
Mounting dimensions of ATLAS 84 CS4
(All dimensions measured in millimeters!)

The depth of the ATLAS 84 CS4 WALL is 1212mm. The standard screen height with the adjustable feet is 1287.5 millimeters. Other heights are available on request.

13.3 Viewing Distance and Angle

When planing the installation of ATLAS CS4, 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.

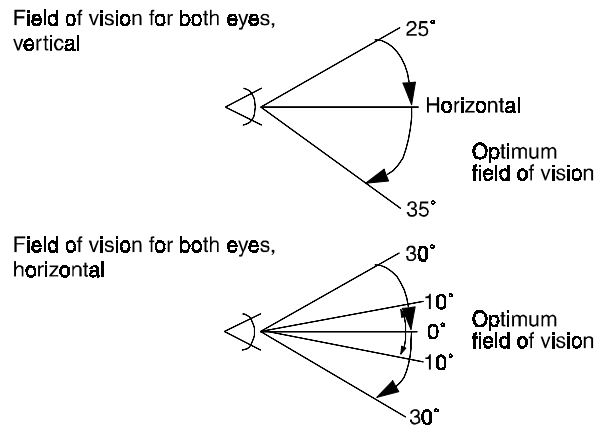


Figure 13-5
Human field of vision for both eyes

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.

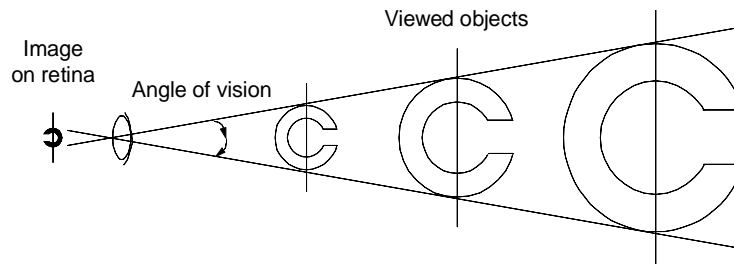


Figure 13-2
Angle of vision

The screen of the ATLAS CS4 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 ATLAS CS4. 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.

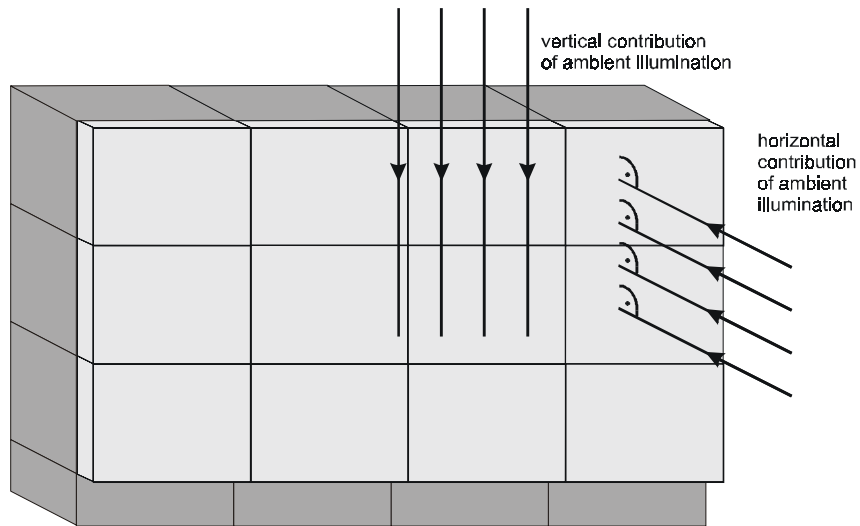


Figure 13-6
room illumination

13.4 Room Ventilation

The electrical power consumption of typically 220 Watts per illumination unit can be used as a measure for the heat dissipation of ATLAS CS4 into the room.

It is favorable to pass fresh and clean air through ventilation ducts in the floor below the dark boxes. 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 ATLAS CS4 in critical environments like coal-fired power stations etc. please make sure that there are no coal particles suspended in the air.

14 Troubleshooting

When faults occur with ATLAS CS4 which are not described below please contact BARCO.

14.1 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 (see 12.3 Technical Data Of Electrical System)!
	Power switch is off. Switch on power switch. See 5.1.3 Switching on
	The cover of the lamp housing is not installed correctly, and the micro-switch in the housing interrupts power supply. The cover sheet must be fixed (see 11.2.1 Replacing the Lamp Module)!
display is upside-down	<p>change the configuration: To change the configuration of the projector, proceed as follows:</p> <ul style="list-style-type: none"> ▶ 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. <p>Press the cursor key up or down to select the corresponding configuration.</p>
the display is dark though the lamp is ignited	there is no signal applied. Check the input source and the connections
ATLAS CS4 can not be controlled via the RCU	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 14-1

14.2 Contact

14.2.1 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) 6201-0 • Fa× (49) (721) 6201-298
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▶ **BARCO Projection Systems - Europe**

Noordlaan 5 • B-8520 Kurne • Belgium
Phone (32) (56) 36-8211 • Fa× (32) (56) 36-8251
E-mail sales.bcd@barco.com • Web www.barco.com

15 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
8514_A	1024 × 384i	43,479	35,522	44,900	1264	1024	409	384
CGA	640 × 200	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_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
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
MAC_4	560 × 384	60,147	24,480	17,234	704	560	407	384
MAC_5	512 × 342	60,158	22,259	15,670	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

name	resolution	Fvert/Hz	Fhor/kHz	Fpix/MHz	ptot	pact	ltot	lact
MAC_LC	640 × 480	66,619	34,975	31,338	896	640	525	480
MAC_POR	640 × 870	74,996	68,846	57,280	832	640	918	870
MUSE	1172 × 518i	30,000	33,750	37,125	1172	1024	563	518
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
SDI_625	675 × 2781	25,000	15,625	13,500	864	720	313	278
SDI_525	675 × 2401	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
SUNNEWS67	1280 × 1024	67,189	71,691	117,000	1632	1280	1067	1024
SUNNEWS76	1280 × 1024	76,107	81,130	135,000	1664	1280	1066	1024
SUN×GA60	1024 × 768	59,984	48,287	64,125	1328	1024	805	768
SUN×GA70	1024 × 768	70,041	56,596	74,250	1312	1024	808	768
SUN×GA77	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
VGA_72V	640 × 480	72,800	37,856	31,496	832	640	520	480
VGA_GR	640 × 480	59,941	31,469	25,175	800	640	525	480
VGA_T×T	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

name	resolution	Fvert/Hz	Fhor/kHz	Fpix/MHz	ptot	pact	ltot	lact
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

16 Appendix B: Source Numbers 81 - 86 And 91 - 96

16.1 Projector without any 800 peripheral connected.

The source numbers 81 - 86 and 91 - 96 do not correspond to physical inputs. An additional adjustment file can be created for these source numbers. This file can contain different settings. The relationship between sources 1 - 6 and 91 - 96 or between 1 - 6 and 81 - 86 is shown in the diagram below.

source input	source number	file
1	1	A
1	81	A'
1	91	A''
2	2	B
2	82	B'
2	92	B''
3	3	C
3	83	C'
3	93	C''
	.	
	.	
	.	
6	6	F
6	86	F'
6	96	F''

Follow the steps below to create a second or a third file for sources 1 to 6:

- ▶ Select the source between 1 and 6.
- ▶ Select the corresponding source number between 81 and 86 or 91 and 96 with the digit keys on the **RCU**.
- ▶ Enter the **adjustment mode** and load a corresponding file. Edit this file if necessary.
- ▶ Save the file and exit the **adjustment mode**.

16.2 Projector with a 800 peripheral connected.

16.2.1 Source numbers 91 - 99.

The source numbers 91 - 99 do not correspond to physical inputs. An additional adjustment file can be created for these source numbers (source numbers of the 800 peripheral). This file can contain different settings. The relationship between sources 1 - 9 of the 800 peripheral and 91 - 99 is shown in the diagram below.

source input	source number	file
1	1	A
1	91	A'
2	2	B
2	92	B'
3	3	C
3	93	C'
	.	
	.	
	.	
9	9	I
9	99	I'

16.2.2 Source numbers 81 - 86

Only valid if no input module is connected to slot 81 - 86 of a RCVDS05.

The source numbers 81 - 86 correspond to the physical inputs 1 - 6 of the projector.

e.g. When slot 1 of the projector has to be selected, key in source number 81.

The relationship between the sources of slot 1 - 6 of the projector with 800 peripheral is shown in the table below.

source of slot	source number
1	81
2	82
3	83
4	84
5	85
6	85

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