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Image 12-1



Image 12-2

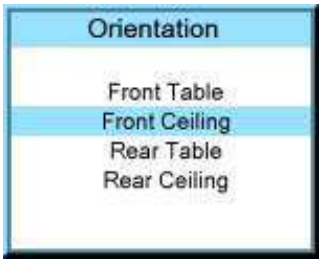


Image 12-3

For more information about the physical installation, see chapter “General”, “Projector configurations”.

12.3 Lens adjustment

Quick way to enter the lens adjustment setting; press the lens button on the local keypad or the remote control.

Access to the lens adjustments

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Alignment* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Lens* and press **ENTER**.

   The lens adjustment menu is displayed.



Image 12-4



Image 12-5



Image 12-6

Zoom/focus the lens

1. Use the ▲ or ▼ key to select *Zoom/Focus* and press **ENTER**.

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Image 12-7

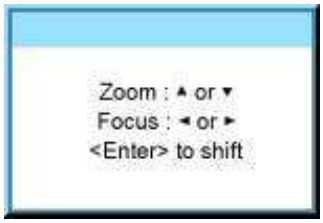


Image 12-8

2. Use the ▲ or ▼ key to zoom the lens.
   Use the ◄ or ► key to focus the lens.
3. Press **ENTER** to go to the shift adjustments.

Lens shift

1. Use the ▲ or ▼ key to select *Shift* and press **ENTER** or when in the Zoom/Focus menu press **ENTER** to toggle to the Shift menu.



Image 12-9

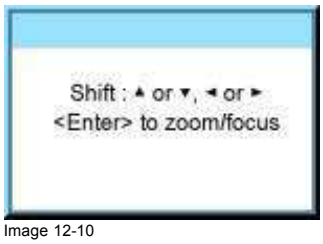


Image 12-10

2. Use the ▲ or ▼ key to shift the lens upwards or downwards.
   Use the ◄ or ► key to shift the lens to the left or to the right.

12.4 Side keystone

What can be done?

The side keystone adjustment is used to align the image if the projector is mounted at a non standard projection angle.

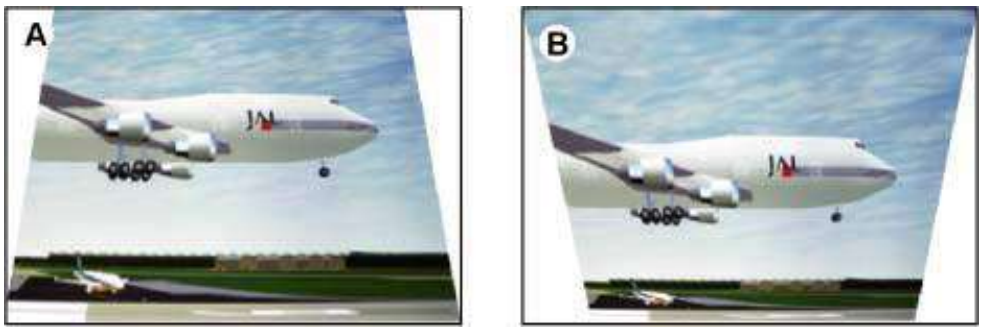


Image 12-11
Side keystone

A Keystone adjustment with positive values
B Keystone adjustment with negative values

Side keystone adjustment

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Alignment* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Side keystone* and press **ENTER**.

   The keystone dialog box appears.
4. Use the ◄ or ► key to adjust the keystone of the image.

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When the upper part of the image is wider than the lower part of the image, push the ◄ key. The value below the bar scale will be negative.

When the upper part of the image is smaller than the lower part of the image, push the ► key. The value below the bar scale will be positive.

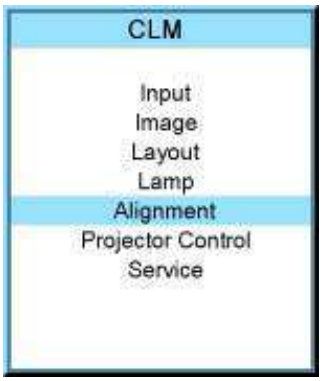


Image 12-12



Image 12-13

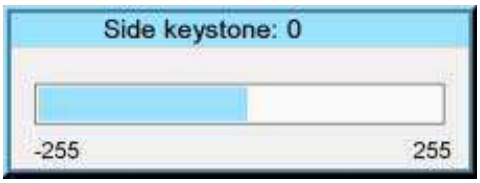


Image 12-14

12.5 Blanking

What can be done ?

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.

Which blanking adjustments are available ?

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

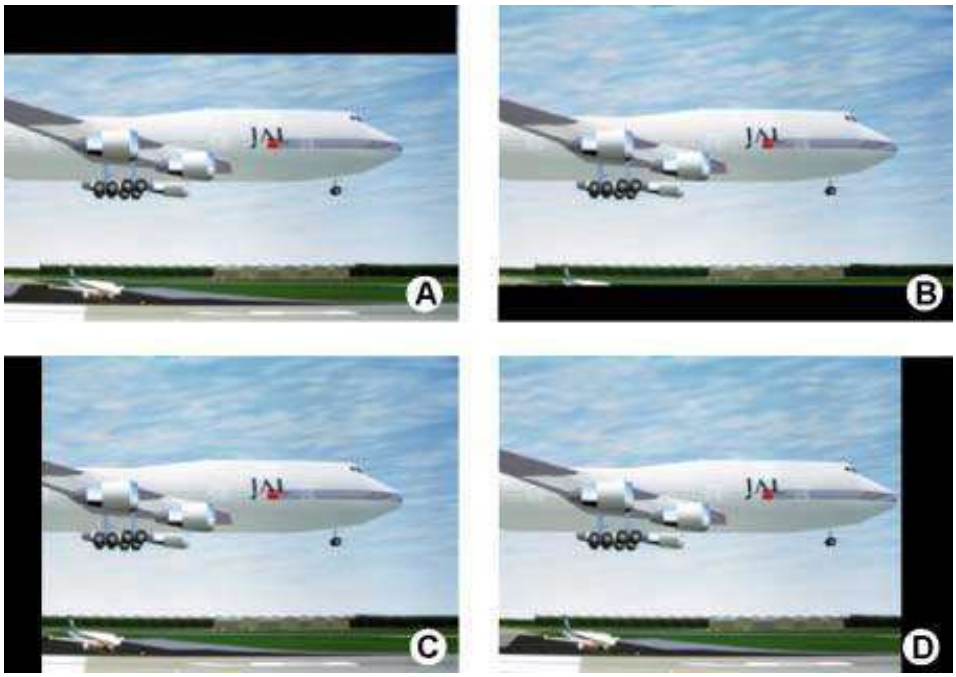


Image 12-15
Blanking

A Top blanking
B Bottom blanking
C Left blanking
D Right blanking

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The reset function brings all blanking settings back to zero.

How to adjust the blanking?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Alignment* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Blanking* and press **ENTER**.
4. Use the ▲ or ▼ key to select the desired blanking adjustment and press **ENTER**.
5. Use the ▲ or ▼ key to adjust until the desired blanking is reached.
6. Press **EXIT** to return.



Image 12-16



Image 12-17



Image 12-18

12.6 Optical dimming

What can be done

The light in the optical light path can be dimmed with a mechanical shutter plate. This way of light dimming will enhance the contrast of the image. Optical light dimming can reduce the light more than the lamp power reduction and it will enhance the contrast at the same time. Both dimming methods can be combined.

Maximum optical dimming (255) has the same result as closing the shutter by pushing the projector in pause.

When set on 0 (zero): no dimming.

When set on 255 : maximum dimming.

How to dim?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Alignment* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Optical dimming* and press **ENTER**.

   The Optical dimming progress bar appears.
4. Use ◄ or ► key to change the optical dimming setting and press **EXIT**.

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Image 12-19



Image 12-20

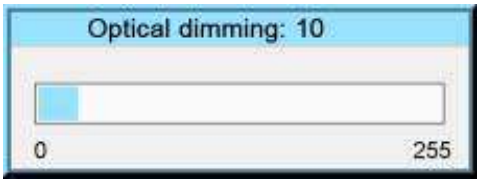


Image 12-21

12.7 Gamma

About Gamma

Gamma is an image quality enhancement function that offers a richer image by brightening the already darker portions of the image without altering the brightness of the brighter portions (contrast feeling enhanced).

How to adjust gamma?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Alignment* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Gamma* and press **ENTER**.

   The Gamma progress bar appears.
4. Use ◄ or ► key to change the gamma setting and press **EXIT**.
   Gamma can be set to one of the 8 available steps.



Image 12-22



Image 12-23

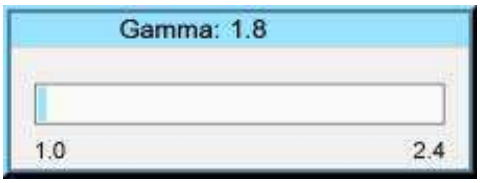


Image 12-24

12.8 Internal pattern

What can be done with these patterns?

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

How to select?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Alignment* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Internal patterns* and press **ENTER**.

   The internal patterns menu is displayed.

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4. Use the ▲ or ▼ key to scroll through the possible selection and press **ENTER** to activate the selected pattern. Select ▲ or ▼ in the menu to display the previous or next page with possible internal patterns.



Image 12-25



Image 12-26

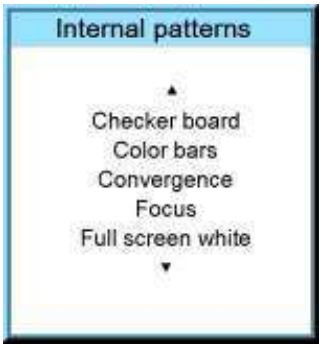


Image 12-27

The selected pattern is displayed.
The following patterns are available:

- Checker board
- Color bars
- Convergence
- Focus
- Full screen black
- Full screen blue
- Full screen green
- Full screen red
- Full screen white
- Hatch
- Outline
- ScenergiX

12.9 Color space

Color space

A color space or color standard is a mathematical representation for a color. For example the RGB color space is based on a Cartesian coordinate system.

What can be adjusted ?

The color space (gamut), the collection of colors which can be reproduced by the projector, can be adjusted to 4 predefined stored values (one projector specific, 2 international standards and one custom preset). A temporary custom adjustment is possible. The maximum color space which can be displayed is the projector color space. This color space is measured at the factory and stored inside the projector.

How to select a color standard?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Alignment* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Color space* and press **ENTER**.
4. Use the ▲ or ▼ key to select the [On] or [Off] selection and **ENTER** to toggle color space on or off.
5. When color space is [On], use the ▲ or ▼ key to select the desired color standard and press **ENTER** to activate. Use the ► key to view the details or to edit the details when Custom is selected.

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Projector	Maximum color space
EBU	European Broadcasting Union. This organization defines a European standard.
SMPTE	American standard.
Custom	The user can define the x and y coordinates for red, green and blue which forms the corners of the color space. By changing the coordinates, the color reproduction can be changed.



Image 12-28



Image 12-29

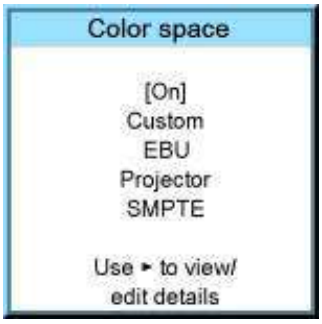


Image 12-30

6. When custom is selected, use the ► key to view the details. To adjust the custom values, select the desired color point using the ▲ or ▼ key and change the value with ◄ or ► key until the desired value is reached. When finished, press **EXIT** to return.



Image 12-31

12.10 White peaking

About white peak and brilliant color

In video centric applications true color reproduction is generally a priority over brightness. To achieve this a typical design will not utilize a white segment of the color wheel. This has the side effect of reducing the amount of light allowed through the color wheel, which reduces the overall brightness. To compensate for this a technique can applied called Spoke Light Capture (SLR). The spokes are defined to be the time between colors. If the light is passed through the spokes, the average over time across them is made up of a mixture of the two adjacent colors. This will result in a secondary color. Color processing can take advantage of this situation. Combining red with green yields yellow light. Similarly, combining red with blue yields magenta while combining blue with green yields cyan. The BrilliantColor™ technology is configured to process the spoke regions as a secondary color which improves the brightness of the display and gives the viewer a truly life-like image.

If after all, the viewer is still not satisfied with the color reproduction, this can further be improved by diminishing the white peaking. With the white peaking on 10 the full white segment is used in projecting the image. At the other end when the white peaking is on 0, the white segment is cancelled out from the projected image. This makes the colors look more pronounced as with full white peaking on.

How to change the white peaking value

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Alignment* and press **ENTER**.
3. Use the ▲ or ▼ key to select *White peaking* and press **ENTER**.
4. Use ◄ or ► key to change the white peaking setting and press **EXIT**.

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White peaking can be set between 0 and 10.

The default value is 10.

With 0, no white peaking, spokes not used to enhance the secondary colors and 10, full white peaking, spokes are fully used to enhance the secondary colors to show a truly life-like image.



Image 12-32



Image 12-33

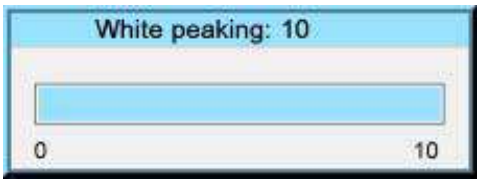


Image 12-34

12.11 ScenergiX

Overview

- Introduction
- Preparations
- ScenergiX activation
- ScenergiX pattern
- ScenergiX overlap zone (horizontal ScenergiX)
- ScenergiX overlap zone (vertical ScenergiX)
- ScenergiX size adjustment
- Adjusting the black level of the images

12.11.1 Introduction

Why ScenergiX ?

When working in a multichannel setup the FLM R20+ Performer and its Soft Edge possibilities enable an image blending that gives the appearance of a single view, thus achieving realistic immersion for the majority of wide screen applications.

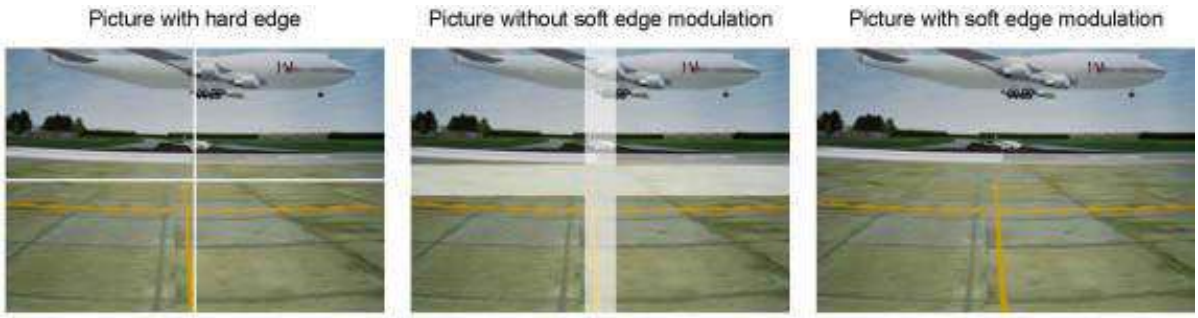


Image 12-35
Why Soft Edge?

What is the Basic Principal of ScenergiX ?

The principle of edge blending is archived by linear modulation of the light output in the overlap zone so that the light output in that zone equals the light output of the rest of the image.

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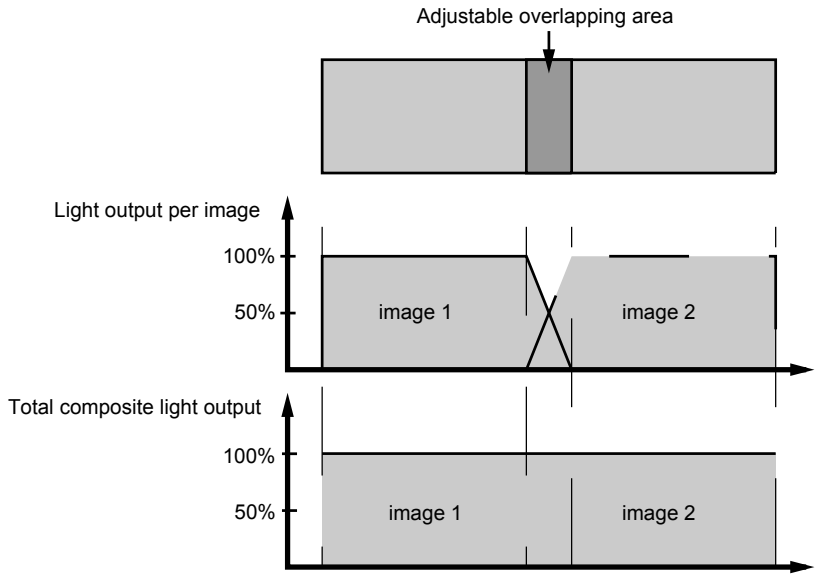


Image 12-36
ScenergiX Basic Principle

12.11.2 Preparations

ScenergiX Preparations

To ensure proper ScenergiX adjustment, be sure that the following adjustments are done perfectly on all projectors:

- Convergence
- Geometry
- Color Matching (Color Temperature, Color Standard, Input Balance, Gamma)

12.11.3 ScenergiX activation

How to activate?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Alignment* and press **ENTER**.
3. Use the ▲ or ▼ key to select *ScenergiX* and press **ENTER**.
4. Use the ▲ or ▼ key to select *Status* and press **ENTER** to toggle between [On] and [Off].

On	ScenergiX is active
Off	ScenergiX is not active



Image 12-37



Image 12-38



Image 12-39

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12.11.4 ScenergiX pattern

What can be done?

To make the ScenergiX adjustment more easy, an internal pattern can be displayed.

How to display or remove the pattern?

1. Use the ▲ or ▼ key to select *Show pattern* and press **ENTER**.

   The internal ScenergiX pattern is displayed.

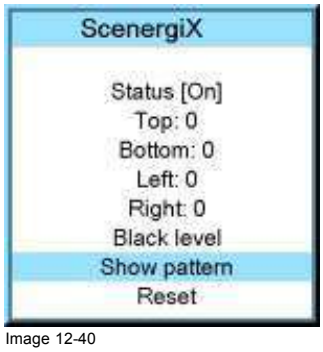


Image 12-40

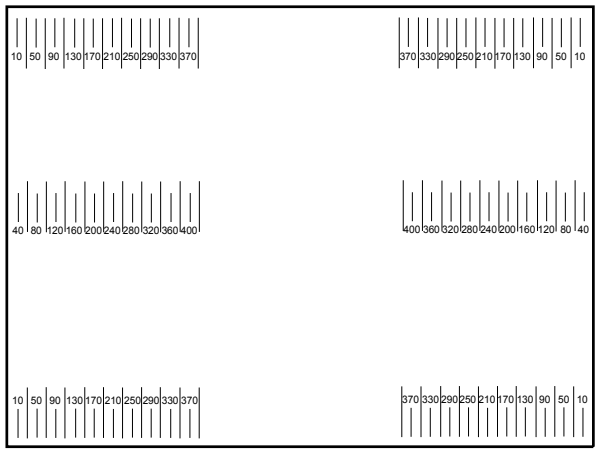


Image 12-41
ScenergiX pattern

2. To remove the internal pattern, use the ▲ or ▼ key to select *Hide pattern* and press **ENTER**.



Image 12-42

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12.11.5 ScenergiX overlap zone (horizontal ScenergiX)

Definitions

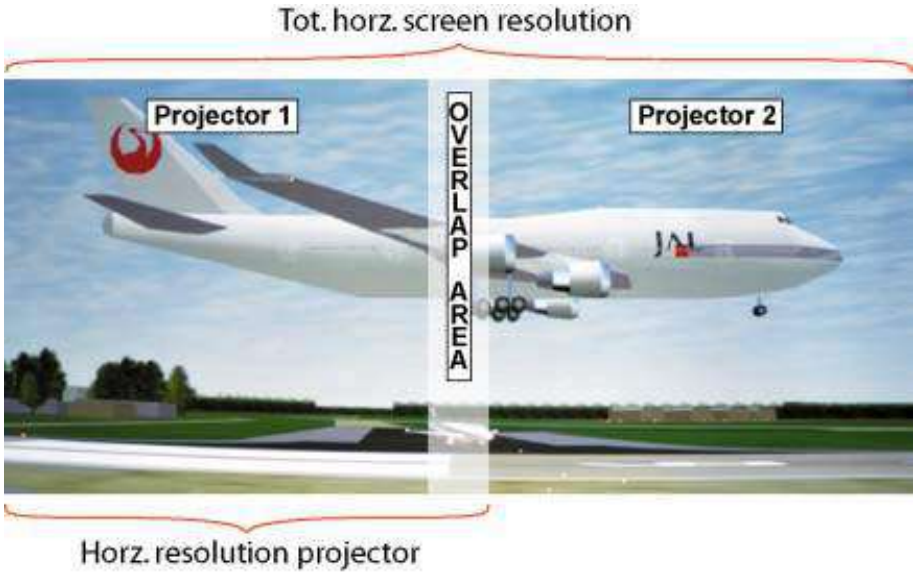


Image 12-43
ScenergiX set up

Overlap : number of pixels that overlap

Horizontal resolution of 1 projector : 1024 for Graphics versions, 1280 for Reality versions, 1400 for SXGA projectors.

Total horizontal screen resolution : [(horizontal resolution of 1 projector) x 2] minus overlap.

Horizontal Resolution source : number of active pixels of the source.

Adjustment of Active pixels of the first projector

1. Go to Image –> Timings menu of first projector.



Image 12-44



Image 12-45

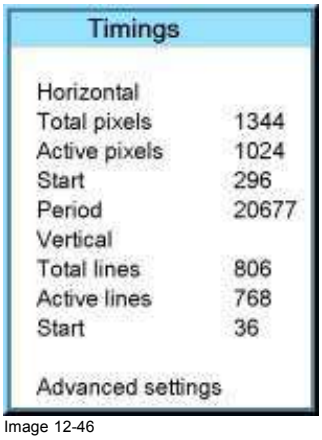


Image 12-46

2. Enter value for horizontal active as follows :
   Horz. active= [(Horz. resolution of 1 projector)/(Total horz. screen resolution)] x (horz. resolution source)
3. Horizontal start remains the same.

Adjustment of Active pixels (Pact) of second projector

1. Go to Image –> Timings menu of second projector.

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Image 12-47



Image 12-48

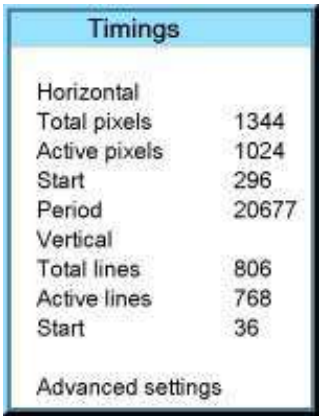


Image 12-49

2. Enter value for horizontal active as follows :
   Horz. active= [(Horz. resolution of 1 projector)/(Total horz. screen resolution)] x (horz. resolution source)
3. Horizontal start = original start + [(Horz. resolution source) minus (newly calculated Horz. active)]

Example

Horizontal resolution source : 1600 pixels

horizontal resolution projector 1 & 2 : 1024 pixels

Overlap : 100 pixels

Total horizontal screen size in pixels : 1948 pixels

Horz; active projector 1 = [(1024 / 1948)] x 1600 = 841 pixels

Horz. active projector 2 = [(1024 / 1948)] x 1600 = 841 pixels

Horz. start projector 2 = Horz. start projector 1 + (1600 – 841)

12.11.6 ScenergiX overlap zone (vertical ScenergiX)

Definitions

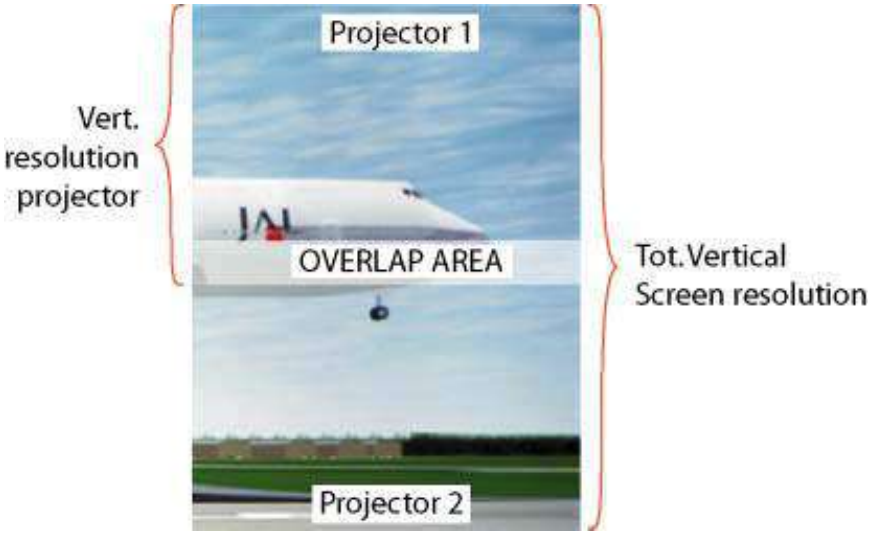


Image 12-50
Scenergix overlap zone vertical

Overlap : number of pixels that overlap

Vertical resolution of 1 projector : 768 for Graphics versions, 1024 for Reality versions, 1050 for SXGA projectors.

Total vertical screen resolution : [(Vertical resolution of 1 projector) x 2] minus (overlap)

Vertical Resolution source : number of active lines of the source

Adjustment of Active lines (Lact) of the first projector

1. Go to Image –> Timings menu of first projector.

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Image 12-51



Image 12-52

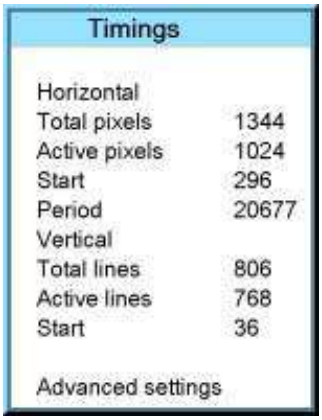


Image 12-53

2. Enter value for vertical active (= Lact) as follows :
   Lact = [(vert.. resolution of 1 projector)/(Total Vert. screen resolution)] x (Vert. resolution source)
3. Vertical start (= Lstart) remains the same.

Adjustment of Active lines (Lact) of second projector

1. Go to *Image –> Timings* menu of first projector.



Image 12-54



Image 12-55

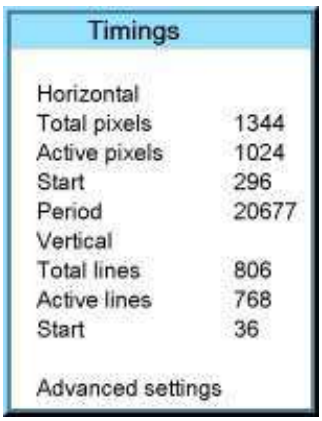


Image 12-56

2. Enter value for vertical active (= Lact) as follows :
   Lact = [(vert.. resolution of 1 projector)/(Total Vert. screen resolution)] x (Vert. resolution source)
3. Vertical start (= Lstart) = original start + [(Vert. resolution source) minus (newly calculated Lact)]

Example

Vertical resolution source : 1200 lines

Vertical resolution projector 1 & 2: 768 lines

Overlap : 50 lines

Total vertical screen size : 1486 lines

Lact projector 1 = (768 / 1486) x 1200 = 620 lines

Lact projector 2 = (768 / 1486/) x 1200 = 620 lines

Lstart projector 2 = Lstart projector 1 + (1200 – 620)

12.11.7 ScenergiX size adjustment

What can be done with the size menu?

The Top, bottom, left or right item set the blending zone.

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The ScenergiX menu items are only accessible when status is [On].

How to set the blending zone?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Alignment* and press **ENTER**.
3. Use the ▲ or ▼ key to select *ScenergiX* and press **ENTER**.
4. Use the ▲ or ▼ key to select one of the four size adjustments and press **ENTER**.



Image 12-57



Image 12-58



Image 12-59

A pattern with the different areas is displayed.

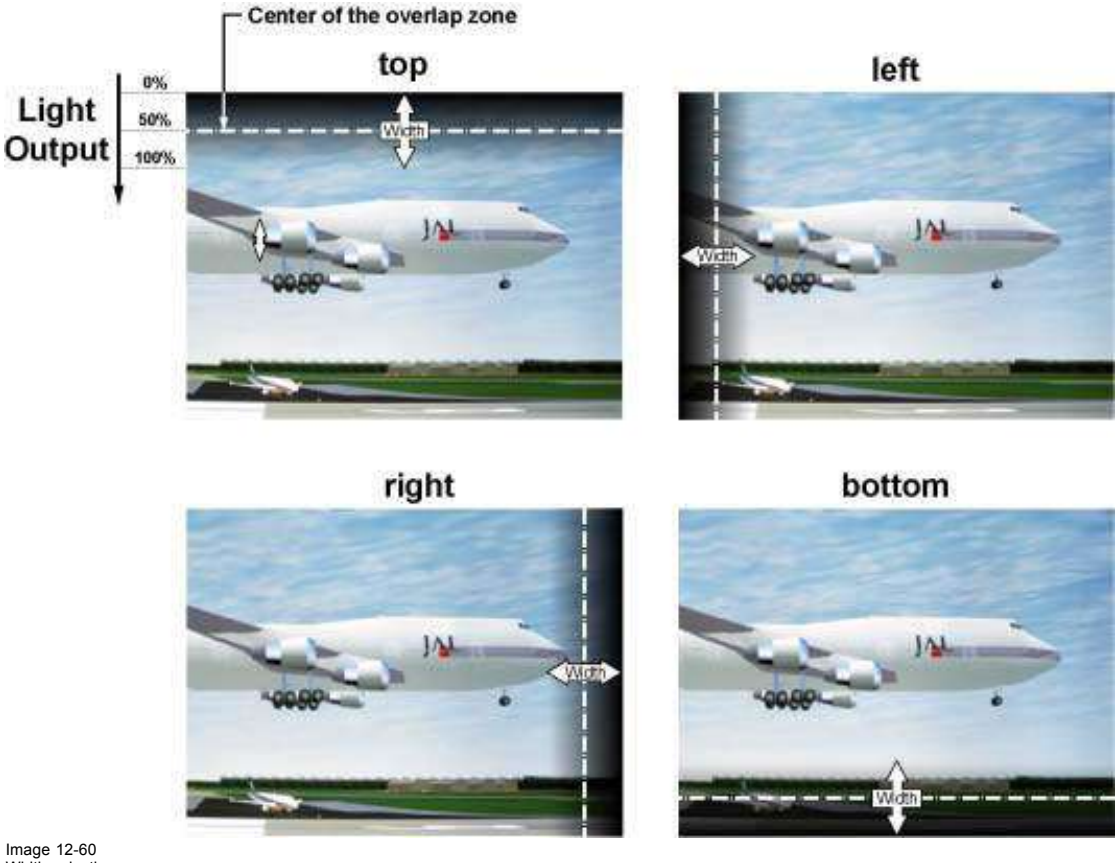


Image 12-60
Width selections

5. Use the cursor keys to move the border of the overlap area to the desired position (value between 0 and 255). Set first the width for the first projector and repeat for the second one.

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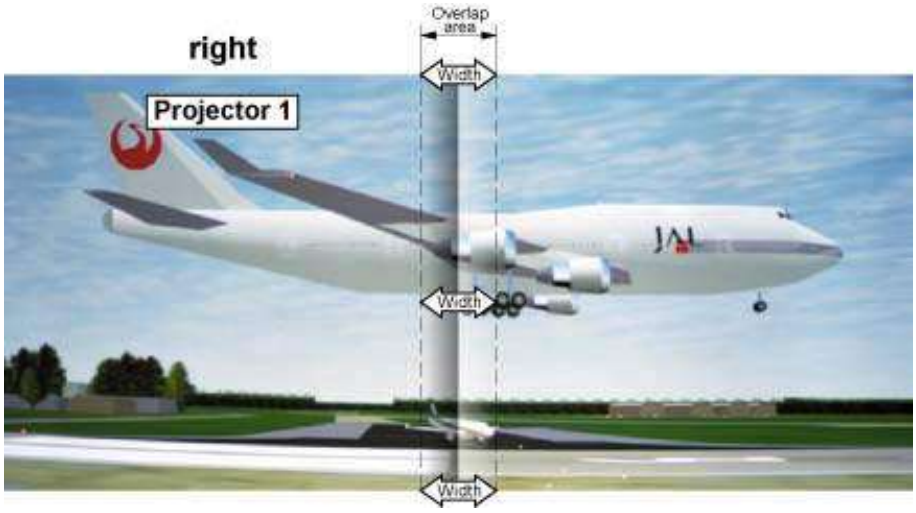


Image 12-61
Width set up for projector 1

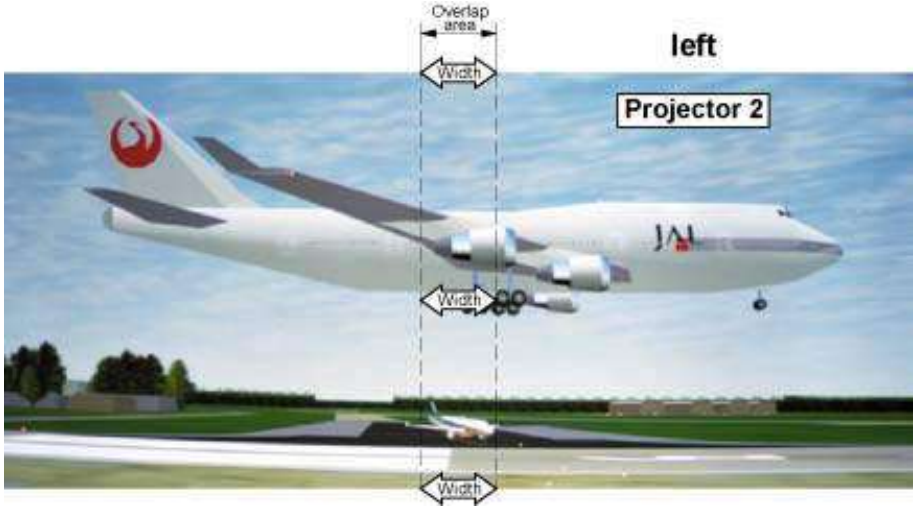


Image 12-62
Width set up for projector 2

12.11.8 Adjusting the black level of the images

Why black level adjustment

For dark images, the overlap zone will be brighter then the rest of the images. Therefore we can rise the black level of the remaining image (excluding the overlap zone).

How to adjust

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Alignment* and press **ENTER**.
3. Use the ▲ or ▼ key to select *ScenergiX* and press **ENTER**.
4. Use the ▲ or ▼ key to select *Black level* and press **ENTER**.

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Image 12-63



Image 12-64



Image 12-65

5. Adjust the black level of area A until the black level of area A, B and C are equal.

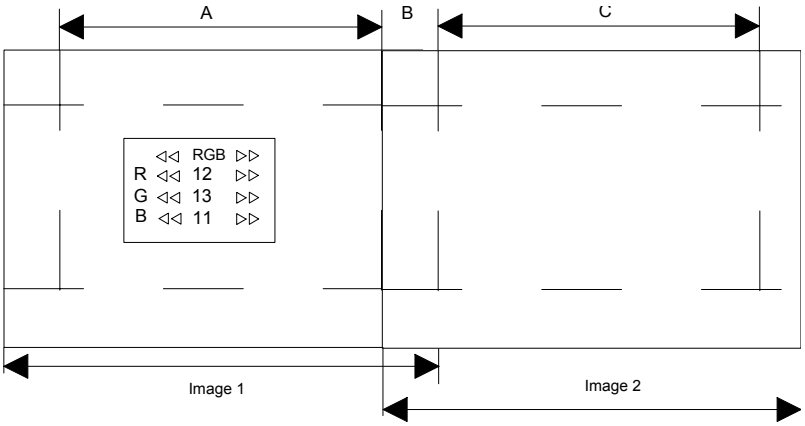


Image 12-66
Black level adjustment

Use the *Reset* function to bring all ScenergiX settings back to zero.

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13. PROJECTOR CONTROL

About this chapter

This chapter explains the setup of the control part of the software such as projector address and all types of communication with the external world.

Overview

- Overview flow
- Projector address
- Serial communication
- Network
- IR control switching
- DMX
- Buttons
- Menu position
- Local LCD contrast

13.1 Overview flow

Overview

Level 1	Level 2	Level 3
Projector control		
	Projector address	
		Projector address
		Common address
	Serial communication	
		Baud rate [115200]
		Interface standard [RS232/RS422]
		RS422 termination [Off/On]
	Network	
		DHCP [ON/OFF]
		IP-address
		Subnet mask
		Default gateway
	IR control	
		IR Front [On/Off]
		IR Back [On/Off]
		IR Side [On/Off]
	DMX	
		DMX address
		DMX monitor
	Buttons	
		Standby [Lamp only]

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Level 1	Level 2	Level 3
		AUTO [auto image menu]
		Overtemp DMD safety [ON]
	Menu position	
		Menu [Center]
		Bar scale [Bottom]
	Local LCD contrast	

13.2 Projector address

Overview

- Individual projector address
- Common address

13.2.1 Individual projector address

About individual projector address

Before a projector, and only this projector, can be controlled via a remote control, an individual address must be entered in the projector.

This individual projector address can then be used to control the projector via remote control or via a serial connection.

Next to an individual projector address, each projector has also a common address for group control.

How to set an individual address?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Projector address* and press **ENTER**.
4. Use the ▲ or ▼ key to select *Projector Address* and press **ENTER**.

   The edit projector address window opens.
5. Use the ▲ or ▼ key to select a new value
   Or,
   enter a new value with the digit keys on the remote control or local keypad.
6. Use the ◄ or ► key to select the next digit and repeat step 5.
7. When the desired address is entered, press **ENTER** to store that address.



Image 13-1



Image 13-2

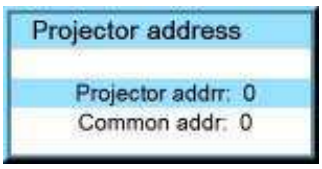


Image 13-3

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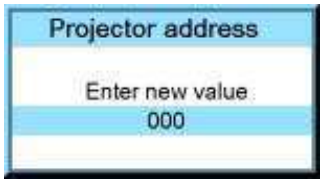


Image 13-4

13.2.2 Common address

About common address

A common address can be ’0’ or ’1’.

Any command coming from a remote control programmed with that common address will be executed.

How to change the common address?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Projector address* and press **ENTER**.
4. Use the ▲ or ▼ key to select *Common address* and press **ENTER**.

   The edit common address window opens.
5. Use the ▲ or ▼ key to select ’0’ or ’1’
   Or,
   enter ’0’ or ’1’ with the digit keys on the remote control or local keypad.
6. When the desired address is entered, press **ENTER** to store that address.



Image 13-5



Image 13-6

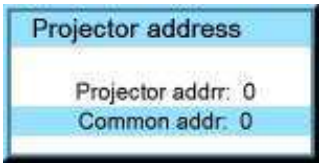


Image 13-7

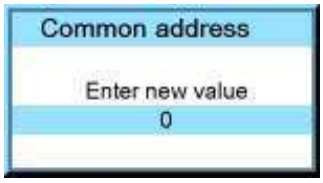


Image 13-8

13.3 Serial communication

Overview

- Baud rate setup
- Interface standard
- RS422 termination

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13.3.1 Baud rate setup

What can be done?

The baudrate for a serial connection with a computer can be set up.

How to set up?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Serial communication* and press **ENTER**.

   The serial communication menu opens.
4. Use the ▲ or ▼ key to select *Baudrate* and press **ENTER** to toggle between the available baud rates.
   The following baud rates can be selected:
   - 9600
   - 19200
   - 38400
   - 57600
   - 115200
5. Press **EXIT** to return.



Image 13-9



Image 13-10



Image 13-11

13.3.2 Interface standard

What can be done?

The communication protocol for the communication between the projector and a computer can be set to RS232 or RS422.

How to set up

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Serial communication* and press **ENTER**.

   The serial communication menu opens.
4. Use the ▲ or ▼ key to select *Interface standard* and press **ENTER** to toggle between [RS232] or [RS422].

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Default: [RS232]



Image 13-12



Image 13-13



Image 13-14

13.3.3 RS422 termination

What can be done?

When the interface standard is set to RS422, the last projector in a line should be RS422 terminated (ON position). All others in the line should be in the OFF position.

How to set

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Serial communication* and press **ENTER**.

   The serial communication menu opens.
4. Use the ▲ or ▼ key to select *RS422 termination* and press **ENTER** to toggle between [On] or [Off].

   Default: [On]



Image 13-15



Image 13-16



Image 13-17

13.4 Network

Overview

- Introduction to a Network connection
- DHCP setup
- IP-address set up
- Subnet-mask set up
- Default Gateway set up

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13.4.1 Introduction to a Network connection

DHCP

Dynamic host configuration protocol. DHCP is a communications protocol that lets network administrators manage centrally and automate the assignment of IP addresses in an organization's network. Using the Internet Protocol, each machine that can connect to the Internet needs a unique IP address. When an organization sets up its computer users with a connection to the Internet, an IP address must be assigned to each machine. Without DHCP, the IP address must be entered manually at each computer and, if computers move to another location in another part of the network, a new IP address must be entered. DHCP lets a network administrator supervise and distribute IP addresses from a central point and automatically sends a new IP address when a computer is plugged into a different place in the network.

IP

Internet Protocol. The network layer of TCP/IP. Required for communication with the internet.

Subnet mask

A number that is used to identify a subnetwork so that IP addresses can be shared on a local area network.

Default Gateway

A router that serves as an entry point into and exit point out of a network. For example, a local network (LAN) may need a gateway to connect it to a wide area network (WAN) or to the Internet.

MAC address

Media Access Control address. Unique hardware number, used in combination with the IP-address to connect to the network (LAN or WAN).

What should be set up for an Ethernet address?

2 ways can be used to assign an address:

- use the DHCP setting so that an automatic address will be assigned.
- Assign manually an IP address, Net-mask (subnet-mask), (default) gateway address.
  - Set the IP-Address field to the desired value. This must NOT be 0.0.0.0 for static IP-Address assignment. The IP address identifies a projector's location on the network in the same way a street address identifies a house on a city block. Just as a street address must identify a unique residence, an IP address must be globally unique and have a uniform format.
  - Set the Subnet-Mask as appropriate for the local subnet.
  - Set the Default-Gateway to the IP-Address of the local router (MUST be on the local subnet!) on the same network as this projector that is used to forward traffic to destinations beyond the local network. This must not be 0.0.0.0. If there is no router on the projector's local subnet then just set this field to any IP-Address on the subnet.

13.4.2 DHCP setup

How to switch DHCP setting?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Ethernet* and press **ENTER**.

   The Ethernet menu opens.
4. Use the ▲ or ▼ key to select *DHCP*.
5. Press **ENTER** to toggle the DHCP setting.

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[ON] = DHCP is activated. Automatic assigning of an address is activated.

[OFF] = DHCP is deactivated. A fixed address will be used.



Image 13-18



Image 13-19

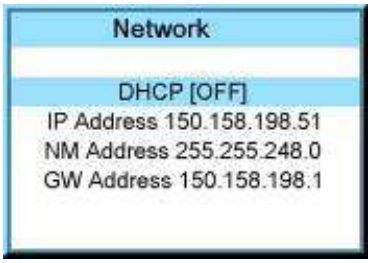


Image 13-20

13.4.3 IP-address set up

How to set up?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Network* and press **ENTER**.

   The Network menu opens.
4. Use the ▲ or ▼ key to select *IP-address* and press **ENTER** to select.
   Note: *An address contains 4 octets with a maximum value of 255.*

   This must NOT be 0.0.0.0 for static IP-Address assignment.
5. Use the ▲ or ▼ key to select the desired digit and press ◄ or ► key to select the next digit in the address.
   Or,
   enter the value with the digit keys on the remote control or local keypad. The next digit in the address will be selected automatically.
6. Press **EXIT** to return.



Image 13-21



Image 13-22

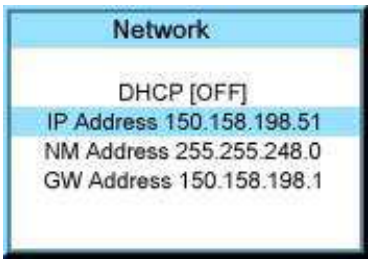


Image 13-23



Image 13-24

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13.4.4 Subnet-mask set up

How to set up?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Network* and press **ENTER**.

   The Ethernet menu opens.
4. Use the ▲ or ▼ key to select *Subnet mask* and press **ENTER** to select.
   Note: *An address contains 4 octets with a maximum value of 255.*

   Fill out the 4 fields as appropriate for the local subnet.
5. Use the ▲ or ▼ key to select the desired digit and press ◄ or ► key to select the next digit in the address.
   Or,
   enter the value with the digit keys on the remote control or local keypad. The next digit in the address will be selected automatically.
6. Press **EXIT** to return.

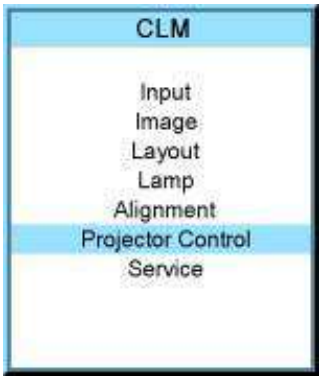


Image 13-25



Image 13-26

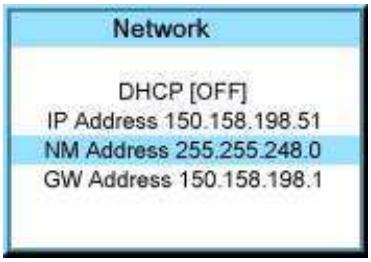


Image 13-27



Image 13-28

13.4.5 Default Gateway set up

How to set up?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Network* and press **ENTER**.

   The Ethernet menu opens.
4. Use the ▲ or ▼ key to select *Default Gateway* and press **ENTER** to select.
   Note: *An address contains 4 octets with a maximum value of 255.*

   Set the default gateway to the IP-address of the router (MUST be on the local subnet!). If there is no router on the projector's local subnet then just set this field to any IP-address on the subnet.
5. Use the ▲ or ▼ key to select the desired digit and press ◄ or ► key to select the next digit in the address.

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Or,
enter the value with the digit keys on the remote control or local keypad. The next digit in the address will be selected automatically.
Note: *This must NOT be 0.0.0.0*



Image 13-29



Image 13-30

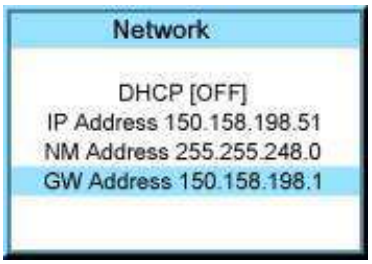


Image 13-31

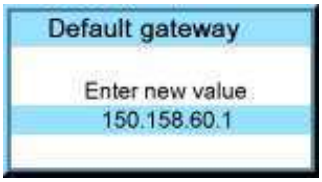


Image 13-32

6. Press **EXIT** to return.

13.5 IR control switching

What can be done?

Each IR receiver inside the projector can be activated or deactivated. When an IR receiver is deactivated, no IR signal send to this IR receiver will be processed.

How to switch

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *IR Control* and press **ENTER**.
4. Use the ▲ or ▼ key to select the desired IR receiver and press **ENTER** to toggle this receiver [on] or [off].



Image 13-33



Image 13-34



Image 13-35

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13.6 DMX

Overview

- DMX address
- DMX monitor

While the local LCD display on the CLM is active (backlight is on), the DMX response time may increase.

13.6.1 DMX address

How to set the DMX address

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *DMX* and press **ENTER**.
4. Use the ▲ or ▼ key to select *DMX address* and press **ENTER**.

   The edit DMX address window opens.
5. Use the ▲ or ▼ key to select a new value
   Or,
   enter a new value with the digit keys on the remote control or local keypad.
6. Use the ◄ or ► key to select the next digit and repeat step 5.
7. When the desired address is entered, press **ENTER** to store that address.



Image 13-36



Image 13-37

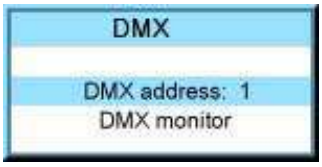


Image 13-38



Image 13-39

13.6.2 DMX monitor

What can be done?

If a DMX device is connected, the settings per channel can be displayed in an on screen menu.

How to start up the monitoring

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *DMX* and press **ENTER**.
4. Use the ▲ or ▼ key to select *DMX monitor* and press **ENTER**.

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The *DMX monitor* window opens.



Image 13-40



Image 13-41

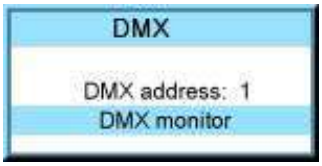


Image 13-42

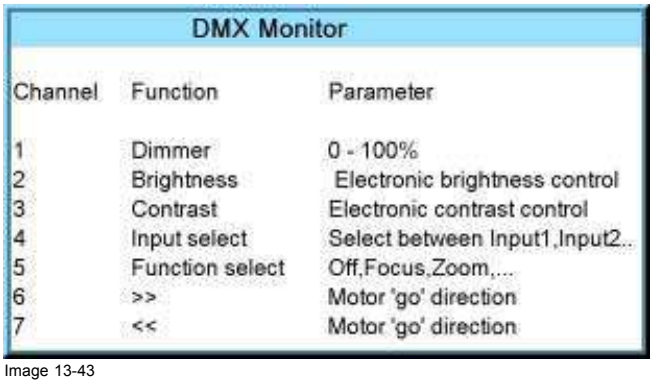


Image 13-43

When selecting DMX monitor and no DMX device is connected, the message “No DMX data, check connection <ENTER> to display channels” appears on the screen. When ENTER is pressed the same window appears as DMX Monitor but without values.

About motor control (channel 6 and 7)

If channel #6 is brought to 32 or more, this is the same as “motor” forward (as pushing the button on the side panel). It also disables control of channel 7.

If channel #7 is brought to 32 or more, this is the same as “motor” reverse (as pushing the button on the side panel). It also disables control of channel 6.

Both channels above 32 means no action.

Channel 6 and 7:

0 - 31	No action
31 - 255	Action start

About channel 4 and 5

Channel 4:

0 - 31	Input 1
32 - 63	Input 2
64 - 255	No image (pause)

Channel 5:

0 - 31	Off
32 - 63	Focus

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64 - 95	Zoom
96 - 127	Horizontal shift
128 - 255	Vertical shift

13.7 Buttons

Functionality

Some buttons on the RCU or local keypad can have a different functionality depending on the need of the projector owner.

Overview

- Standby button
- Auto button
- Over temperature DMD safety

13.7.1 Standby button

What is possible?

When going to standby by pressing the standby button, the following can happen:

- Only the lamp will be switched off.
- The lamp and the power will be switched off.

How to set

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Buttons* and press **ENTER**.
4. Use the ▲ or ▼ key to select *Standby* and press **ENTER** to toggle between [Lamp on/off] and Power up/down].



Image 13-44



Image 13-45



Image 13-46

13.7.2 Auto button

What can be done?

The function of the Auto button can be configured according the wishes of the user.

The function can be:

- Auto align (only aligning of the preview window is executed).
- Auto-image menu. This function opens a auto image menu where the user can make his choice between auto align, auto contrast/brightness and auto phase.

How to configure the Auto button?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.

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3. Use the ▲ or ▼ key to select *Buttons* and press **ENTER**.
4. Use the ▲ or ▼ key to select *Auto* and press **ENTER** to toggle between [Align only] and [Auto-image menu].



Image 13-47



Image 13-48



Image 13-49

13.7.3 Over temperature DMD safety

What can be done

When the temperature of the DMD becomes higher than the normal operation temperature (between 60 and 64 °C) it is possible to switch the lamp mode of the projector automatically from 4 lamps to 2 lamps so that the DMD temperature can cool down. A warning remains on the local LCD panel and the warning LED is on as long as the temperature is too high. When the temperature exceeds 64°C then the projector is switched to standby and an error is displayed on the LCD panel.

How to configure the over temperature safety

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Buttons* and press **ENTER**.
4. Use the ▲ or ▼ key to select *Overtemp DMD* and press **ENTER** to toggle between [On] and [Off].

On	When temperature is too high, lamp mode is switched from 4 to 2 lamps. The 4 lamps mode can only be restored after switching first to standby and restarting the projector. If the temperature exceeds 64 °C, the projector is switched to standby.
Off	for a temperature between 60 and 64 °C the projector continues in normal operation but the warning is set on the LCD display. Once the temperature is higher then 64 °C, then the projector is switched to standby.



Image 13-50



Image 13-51



Image 13-52

13.8 Menu position

What is possible?

The on screen menu and the bar scale can be positioned on different places on the screen.

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Both can be positioned :

- Center
- Top
- Bottom

How to change the position?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Menu position* and press **ENTER**.

   The *Menu position* window opens
4. Use the ▲ or ▼ key to select *Menu* or *Barscale* and press **ENTER** to toggle between [Center], [Bottom] or [Top].



Image 13-53



Image 13-54



Image 13-55

13.9 Local LCD contrast

What is possible?

The contrast of the local LCD can be adapted to the needs of the environment.

How to change?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Projector control* and press **ENTER**.
3. Use the ▲ or ▼ key to select *Local LCD contrast* and press **ENTER**.
4. Use the ▲ or ▼ key to adjust the local contrast.



Image 13-56



Image 13-57

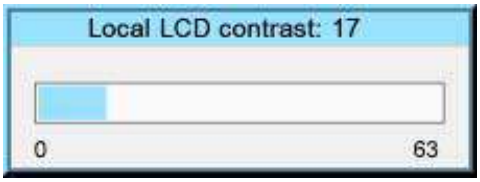


Image 13-58

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14. SERVICE MENU

About this chapter

This chapter refers to the Service menu in which the owner can find valuable information when calling the Barco help desk.

Overview

- Overview flow
- Identification
- Diagnosis
- Internal service patterns
- Restore factory defaults
- Save custom settings

14.1 Overview flow

Overview

Level 1	Level 2	Level 3
Service		
	Identification	
	Diagnosis	
		Version
		Voltages
		Temperatures
		Fan speeds
		Error logging
	Internal service patterns	
		PNP IN
		OSD
		PMP OUT
		FIB
		Formatter
	Restore factory defaults	
	Save custom settings	
	Color wheel index delay	

14.2 Identification

What can be seen on the identification screen?

The identification screen shows the general information about the projector.

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The following items will be displayed:

- Projector address
- Type of projector
- Package
- Configuration
- Baud rate
- IP address
- MAC address
- Text
- Serial number of projector: this number can be useful when calling for technical assistance.
- Runtime
- Lamp runtime
- Customer ID

How to display the screen?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Service* and press **ENTER**.

   The service window opens.
3. Use the ▲ or ▼ key to select *Identification* and press **ENTER**.

   The identification screen is displayed.



Image 14-1



Image 14-2



Image 14-3

Add a customer ID to identification window

When on the identification window:

1. Use the ▲ or ▼ key to select *Customer ID* and press **ENTER**.

   The Customer ID input window opens.



Image 14-4

2. Use the ▲ or ▼ key to change the selected character.
   Use the ◄ or ► key to selected another character.
   Note: *Digits can be entered with the digit keys on the remote control or on the local keypad. When a digit is entered in that way, the next character will be selected automatically.*

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14.3 Diagnosis

What can be seen?

The diagnosis menu gives the possibility to get an overview of the working of the projector.

14.3.1 How to start up the diagnosis?

Start up

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Service* and press **ENTER**.

   The service window opens.
3. Use the ▲ or ▼ key to select *Diagnosis* and press **ENTER**.

   The diagnosis screen will be displayed.



Image 14-5



Image 14-6

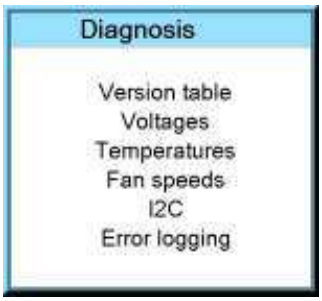


Image 14-7

14.3.2 Versions

How to display an overview?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Service* and press **ENTER**.

   The service window opens.
3. Use the ▲ or ▼ key to select *Diagnosis* and press **ENTER**.

   The diagnosis screen is displayed.
4. Use the ▲ or ▼ key to select *Versions* and press **ENTER**.

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The Versions overview is displayed.



Image 14-8



Image 14-9

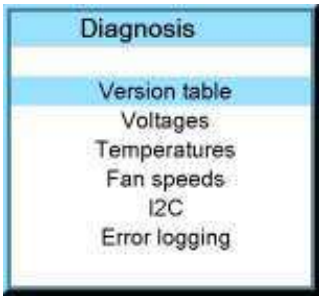


Image 14-10

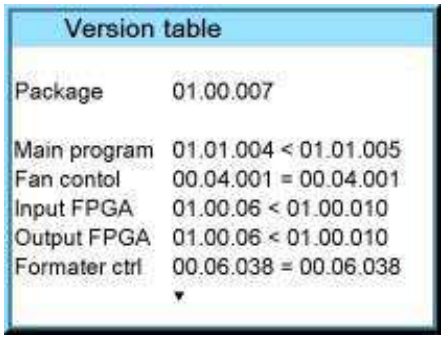


Image 14-11

Use the ▲ or ▼ item in the menu to select the previous or next page with information.

14.3.3 Voltages

How to display an overview?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Service* and press **ENTER**.

   The service window opens.
3. Use the ▲ or ▼ key to select *Diagnosis* and press **ENTER**.

   The diagnosis screen will be displayed.
4. Use the ▲ or ▼ key to select *Voltages* and press **ENTER**.

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The Voltage overview menu will be displayed.



Image 14-12



Image 14-13

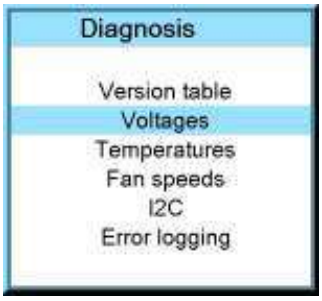


Image 14-14

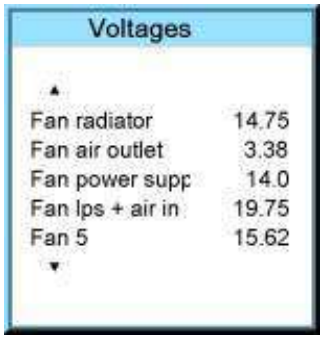


Image 14-15

Use the ▲ or ▼ item in the menu to select the previous or next page with information.

14.3.4 I²C diagnosis

How to select?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Service* and press **ENTER**.

   The service window opens.
3. Use the ▲ or ▼ key to select *Diagnosis* and press **ENTER**.

   The diagnosis screen is displayed.
4. Use the ▲ or ▼ key to select *I2C* and press **ENTER**.

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The I²C diagnosis overview is displayed.



Image 14-16



Image 14-17

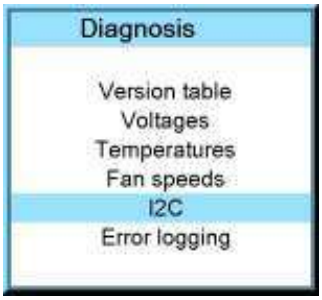


Image 14-18

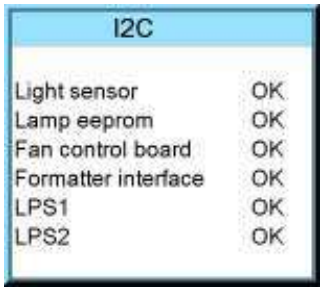


Image 14-19

14.3.5 Temperatures

How to get an overview?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Service* and press **ENTER**.

   The service window opens.
3. Use the ▲ or ▼ key to select *Diagnosis* and press **ENTER**.

   The diagnosis screen will be displayed.
4. Use the ▲ or ▼ key to select *Temperatures* and press **ENTER**.

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The Temperature overview menu will be displayed.



Image 14-20



Image 14-21

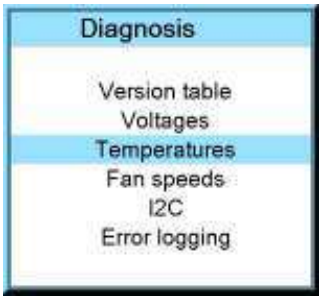


Image 14-22

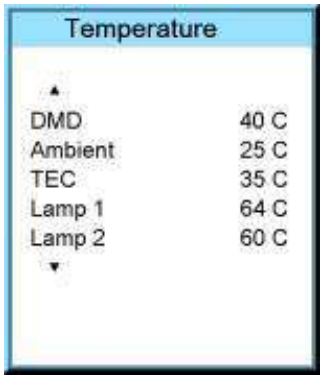


Image 14-23

Use the ▲ or ▼ item in the menu to select the previous or next page with information.

14.3.6 Fan speeds overview

How to get an overview?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Service* and press **ENTER**.
   The service window opens.
3. Use the ▲ or ▼ key to select *Diagnosis* and press **ENTER**.
   The diagnosis screen will be displayed.
4. Use the ▲ or ▼ key to select *Fan speeds* and press **ENTER**.

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The Fan speeds overview menu will be displayed.



Image 14-24



Image 14-25

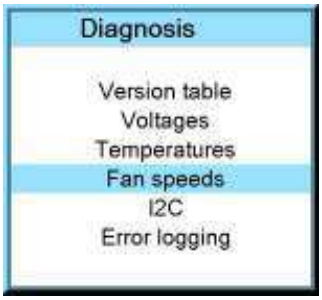


Image 14-26



Image 14-27

Use the ▲ or ▼ item in the menu to select the previous or next page with information.

14.3.7 Error logging overview

How to get an overview?

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Service* and press **ENTER**.

   The service window opens.
3. Use the ▲ or ▼ key to select *Diagnosis* and press **ENTER**.

   The diagnosis screen will be displayed.
4. Use the ▲ or ▼ key to select *Error logging* and press **ENTER**.

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The Error logging overview menu is displayed.

For more explanation about the stored error message, see "Error codes", page 175.



Image 14-28



Image 14-29

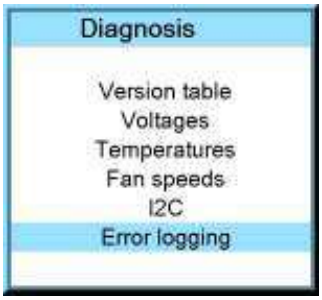


Image 14-30

14.4 Internal service patterns

How to select

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Service* and press **ENTER**.

   The service window opens.
3. Use the ▲ or ▼ key to select *Internal service patterns* and press **ENTER**.

   The internal service pattern window opens.
4. Use the ▲ or ▼ key to select the desired patterns and press **ENTER**.

   When a pattern is selected, press **ENTER** to toggle to other patterns of the selected type. Press **EXIT** to return to the internal service pattern menu.



Image 14-31



Image 14-32

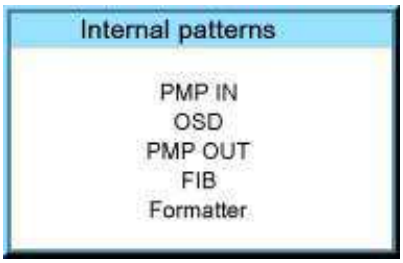


Image 14-33

14.5 Restore factory defaults

What can be done?

All settings of the projector will be set to the original factory settings. All user settings are erased with this operation.

How to return to the default settings

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Service* and press **ENTER**.

   The service window opens.

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3. Use the ▲ or ▼ key to select *Restore factory defaults* and press **ENTER**.

   The factory defaults confirmation window opens.

4. Use the ▲ or ▼ key to select *Yes* or *No* and press **ENTER**.

   If you are sure to restore the factory defaults and to erase the custom settings, select *Yes*.

   If you are not sure, select *No*.



Image 14-34



Image 14-35

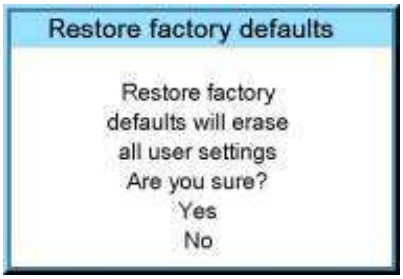


Image 14-36

14.6 Save custom settings

What is done?

The current custom settings can be saved to the internal backup device in the same way as it would be done when the projector was switched to standby.

How to save

1. Press **MENU** to activate the menus.
2. Use the ▲ or ▼ key to select *Service* and press **ENTER**.

   The service window opens.

3. Use the ▲ or ▼ key to select *Save custom settings* and press **ENTER**.

   The custom settings are written to the internal backup device. A message menu “Save data ...” is displayed during the save operation.



Image 14-37



Image 14-38

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15. MAINTENANCE

About this chapter

This chapter contains detailed maintenance procedures like lens cleaning, etc. These procedures can easily be performed by the operator of the projector.

Overview

- Cleaning the lens
- Cleaning the exterior of the projector

15.1 Cleaning the lens



To minimize the possibility of damage to optical coatings, or scratches to lens surfaces, we have developed recommendations for cleaning. FIRST, we recommend you try to remove any material from the lens by blowing it off with clean, dry deionized air. DO NOT use any liquid to clean the lenses.

Necessary tools

Toraysee™ cloth (delivered together with the lens kit). Order number : R379058.

How to clean the lens ?

Proceed as follow :

1. Always wipe lenses with a CLEAN Toraysee™ cloth.
2. Always wipe lenses in a single direction.
   Warning: *Do not wipe back and forwards across the lens surface as this tends to grind dirt into the coating.*
3. Do not leave cleaning cloth in either an open room or lab coat pocket, as doing so can contaminate the cloth.
4. If smears occur when cleaning lenses, replace the cloth. Smears are the first indication of a dirty cloth.



CAUTION: Do not use fabric softener when washing the cleaning cloth or softener sheets when drying the cloth.

Do not use liquid cleaners on the cloth as doing so will contaminate the cloth.



Other lenses can also be cleaned safely with this Toraysee™ cloth.

15.2 Cleaning the exterior of the projector

How to clean the exterior of the projector ?

1. Switch off the projector and unplug the power cord at the projector side.
2. Clean the housing of the projector with a damp cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution.

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16. SERVICING

About this chapter

This chapter contains general servicing procedures like lamp replacement, input unit replacement etc. Note that some of these procedures may only be performed by qualified technical service personnel. These procedure are marked with a warning.

Extra service information

Extra service information for qualified service technicians can be found on Barco's Partnerzone (URL:www.partner-zone.events.barco.com). Registration is necessary.

If you are not yet registered, click on Partnerzone registration and follow the instructions. With the created login and password, it is possible to enter the partnerzone where you can find extra service information about the projector.

HEPA

High Efficiency Particulate Absorbing

Overview

- Replacement of the dust filter on the top side
- Replacement of the dust filters on the front side
- Lens installation
- Lens removal
- Removal of a lamp unit
- Mounting a new lamp unit
- Removal of an input module
- Inserting an input module

CAUTION: All HEPA filters of the CLM R10+ projector must be replaced on a regular basis, depending on the environment conditions of the projector.

16.1 Replacement of the dust filter on the top side

All dust filters in the projector are identical.

Necessary parts

New HEPA dust filter.

How to replace the filter on top of the projector

1. Switch off the projector and unplug the power cord from the wall outlet.
2. Remove the lamp door, see "Removal of the lamp door", page 162.
3. Take the filter on the side parallel with the cover and pull it upwards (A). Pivot it a little and take it out (B).

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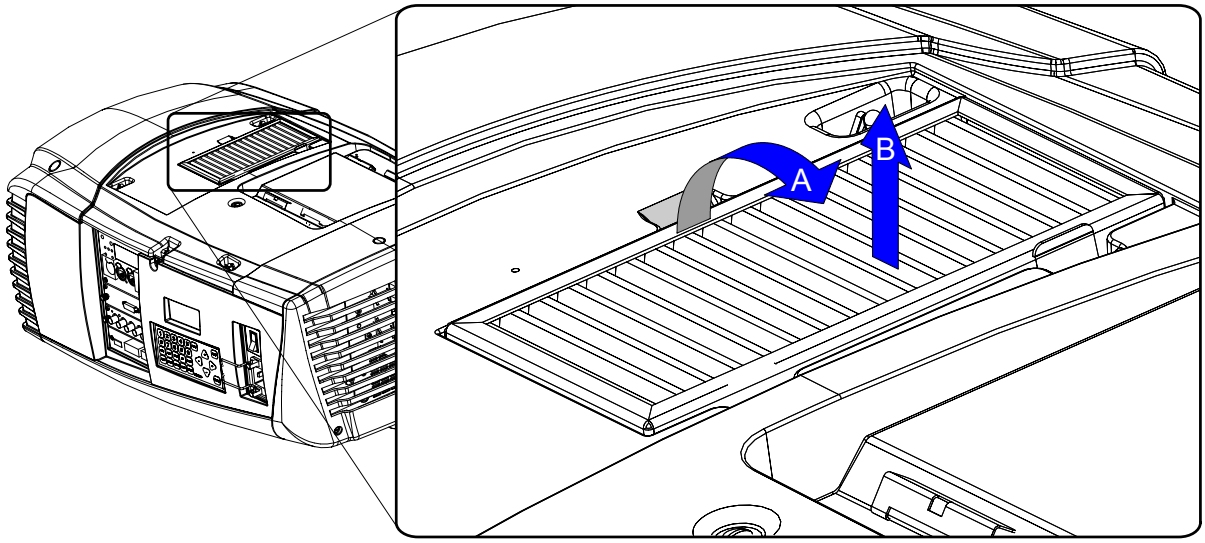


Image 16-1
Filter top replacement

4. Insert a new HEPA filter first with the side next to the lamp housing and pull down the other side to lock the filter.
5. Reinstall the lamp door, see "Installation of the lamp door", page 164.

CAUTION: Never install a used HEPA filter. Always install a new HEPA filter.

CAUTION: Never use the projector with a removed cover. Always reinstall the removed cover.

16.2 Replacement of the dust filters on the front side

Necessary parts

Two new HEPA dust filters.

How to replace the filters on the front side of the projector

1. Switch off the projector and unplug the power cord from the wall outlet.
2. Remove the front cover, see "Removal of the front cover", page 161.
3. Remove the HEPA filter on the front side by pulling the spring clamp (A) on the upper side away from the filter and then pivot the filter a little (B) and take it out (C).

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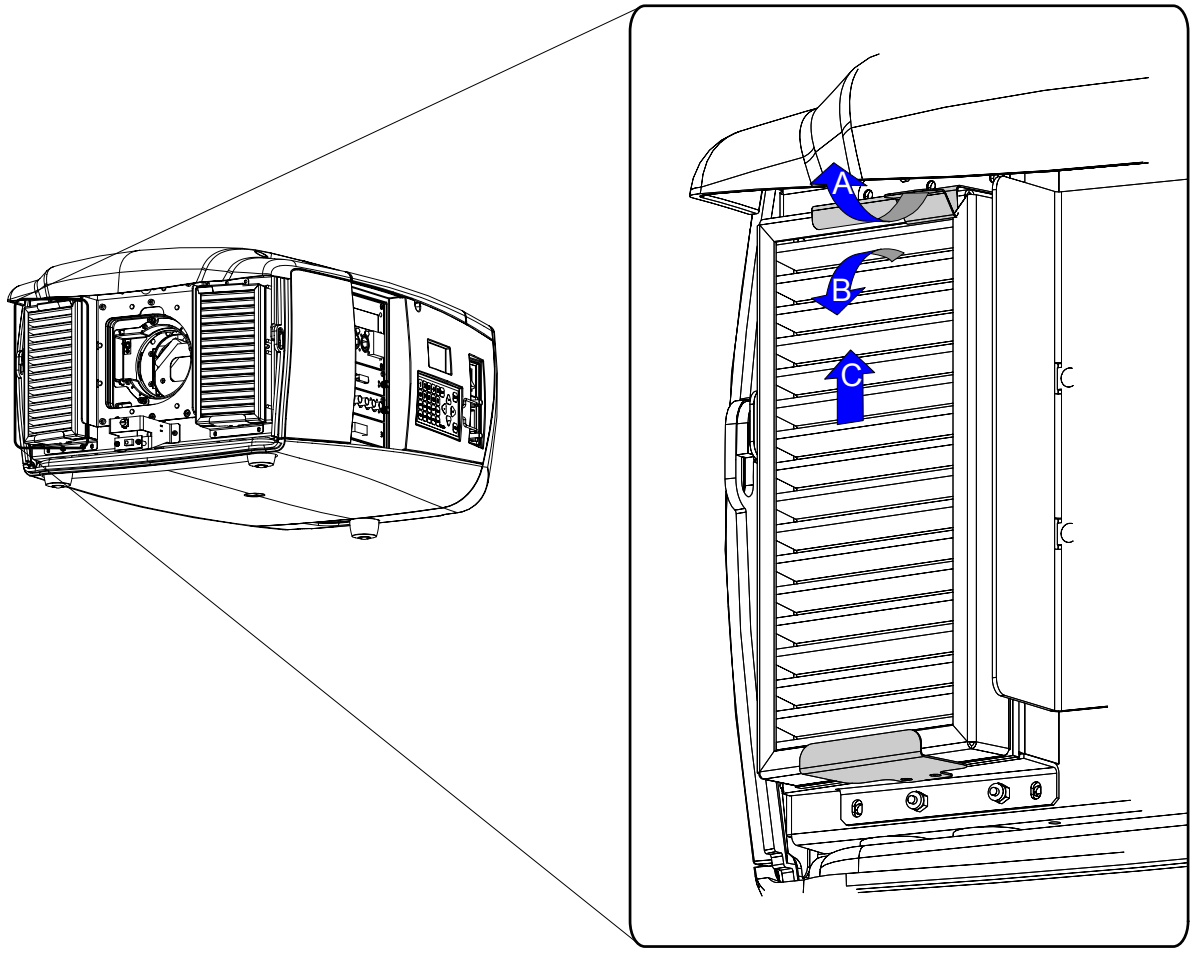


Image 16-2
Front filter replacement

4. Insert a new HEPA filter by pulling the spring clamp away and insert the filter into its position. Release the spring clamp.
5. Reinstall the front cover of the projector, see "Installation of the front cover", page 163.

CAUTION: Never install a used HEPA filter. Always install a new HEPA filter.

CAUTION: Never use the projector with a removed cover. Always reinstall the removed cover.

16.3 Lens installation

How to install the lens

1. Remove the front cover of the projector. See "Removal of the front cover", page 161.
2. Remove the foam rubber in the opening of the lens holder if not yet removed.
3. Place the lock handle A is in its right position (table mounted projector).

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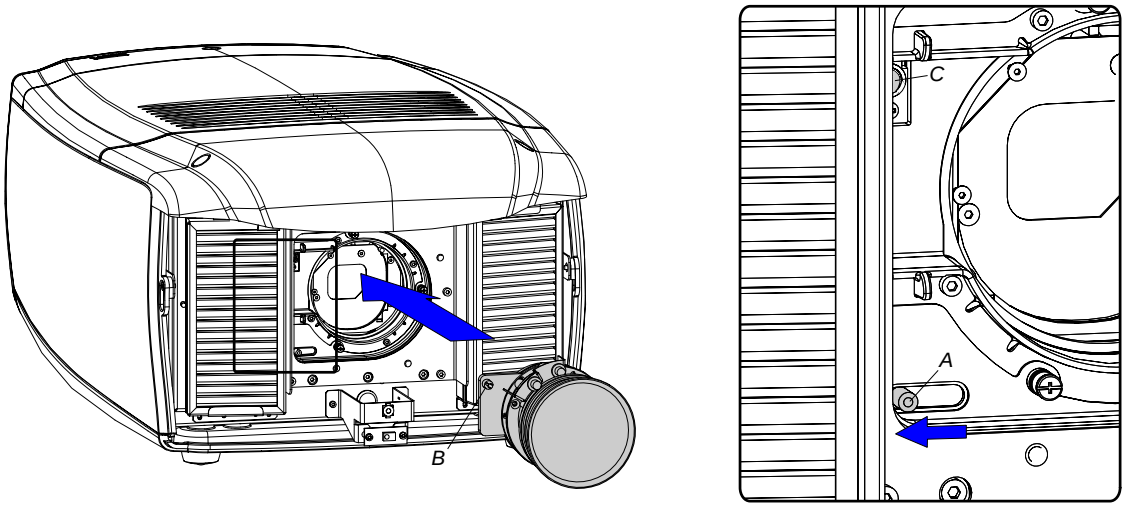


Image 16-3
Mounting the lens

4. Insert the lens in such a way that the female jack (C) is in front of the male jack (upper left corner) (B) and ensure the lens touches the front plate of the lens holder.
   Caution: *Do not release the lens yet, as the lens may fall out of the lens holder.*
5. Secure the lens in the lens holder by sliding the lens lock handle A into the “locked” position (left position for table mounted projector).
6. Check if the lens is really secured by trying to pull the lens out of the lens holder.

CAUTION: Never transport the projector with a lens mounted in the lens holder. Always remove the lens before transporting the projector. Neglecting this can damage the lens holder and prism.

16.4 Lens removal

How to remove the lens

1. Remove the front cover of the projector. See "Removal of the front cover", page 161.
2. Support the lens with one hand and push the lens lock handle to the right.

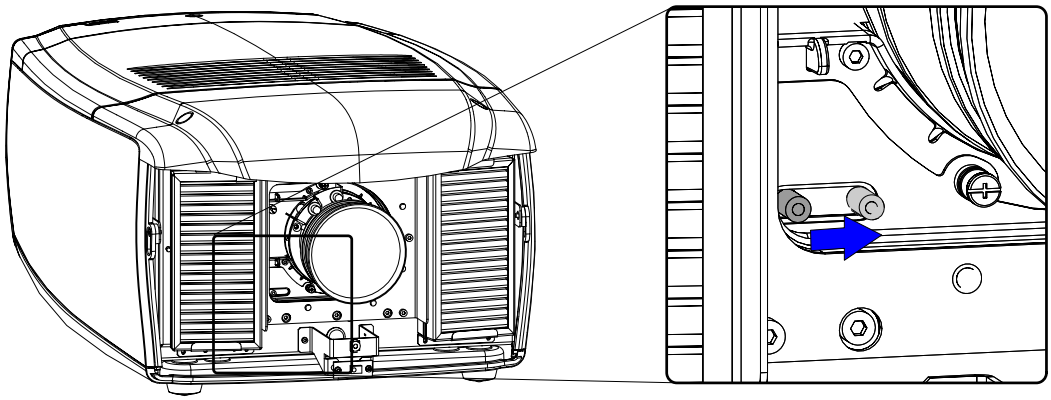


Image 16-4
Lens removal

3. Pull out the lens backward until the jack connection is open (A). Slide the lens out of the lens holder.

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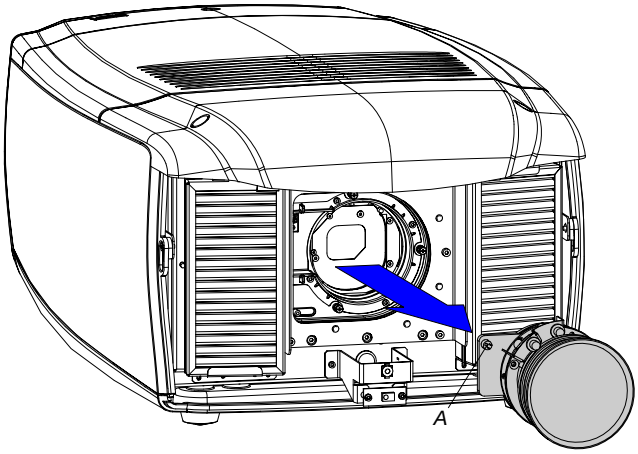


Image 16-5
Slide out lens

16.5 Removal of a lamp unit

WARNING: This procedure may only be performed by qualified technical service personnel.

CAUTION: Never attempt to disassemble the lamp from its housing or to dispose of it. Due to its high internal pressure, the lamp may explode in either hot or cold states if improperly handled. For recycling guidelines, see "Recycling guidelines", page 9.

About the lamps

The projector contains 4 lamps, each of them in a separate lamp house. Each lamp can be individually replaced by a spare lamp. Each lamp position has a number. That number is also used in the software to identify the parameters of the corresponding lamp.

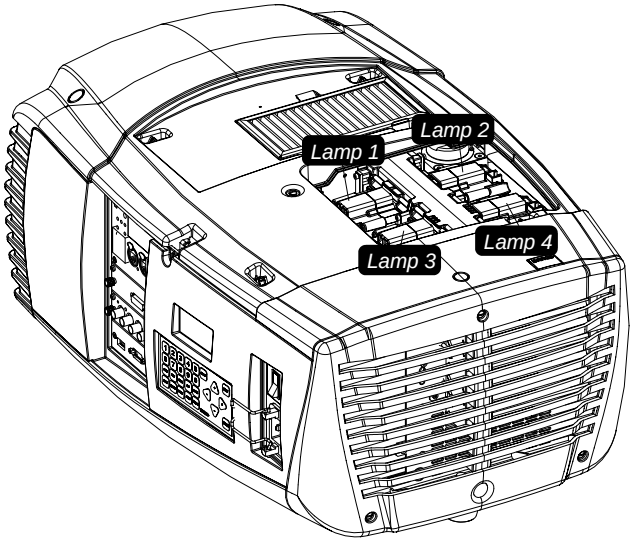


Image 16-6
Lamp position

When servicing a projector with exploded lamp

Keep the following warning in mind when servicing a projector with exploded lamp.

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Mercury Vapor Warnings: The lamp used in the projector contains mercury. In case of a lamp rupture, explosion there will be a mercury vapor emission. In order to minimize the potential risk of inhaling mercury vapors:

- Ensure the projector is installed only in ventilated rooms.
- Replace the lamp module before the end of its operational life.
- Promptly ventilate the room after a lamp rupture, explosion has occurred, evacuate the room (particularly in case of a pregnant woman).
- Seek medical attention if unusual health conditions occur after a lamp rupture, explosion, such as headache, fatigue, shortness of breath, chest-tightening coughing or nausea.

Necessary tools

No tools.

How to remove a lamp

1. Switch off the projector and unplug the power cord from the wall outlet.
2. Remove the lamp door, see "Removal of the lamp door", page 162.
3. Unplug the cable of the lamp which must be removed.

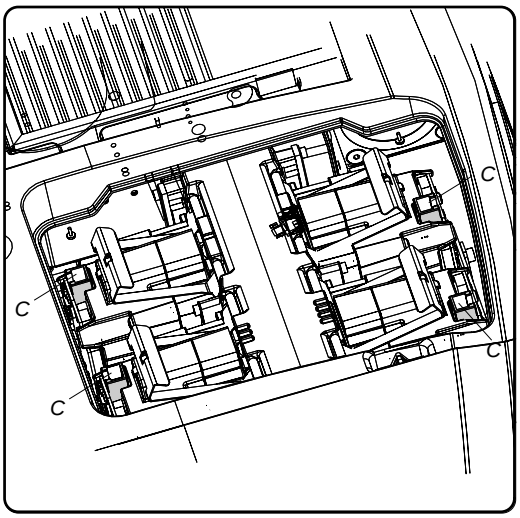


Image 16-7

4. Pull up the fixation handle and rotate it fully upwards.

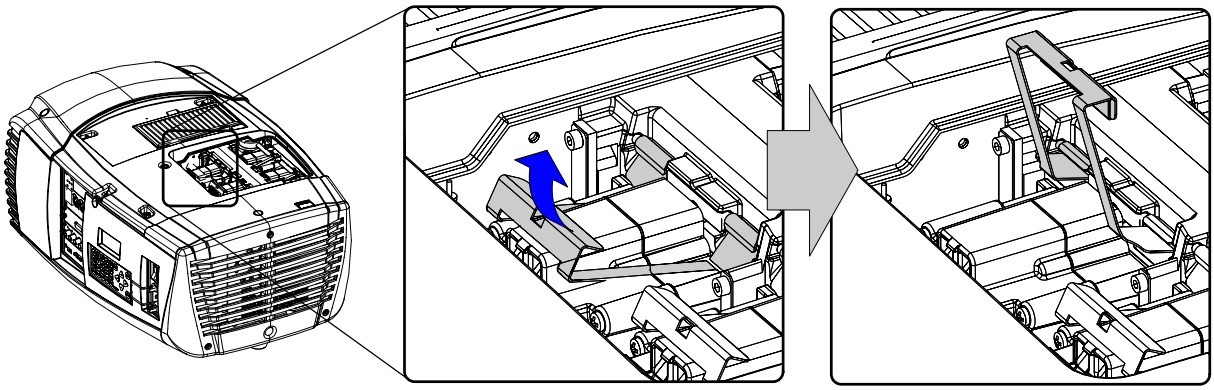


Image 16-8
Lamp removal

5. Clasp the lamp and pull upwards.

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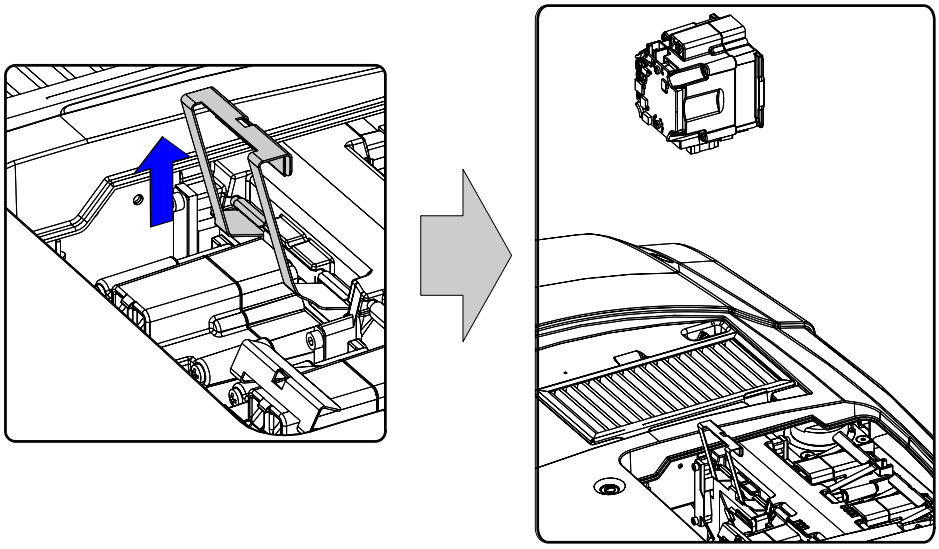


Image 16-9
Take out the lamp

For recycling guidelines of the lamp, see "Recycling guidelines", page 9.

16.6 Mounting a new lamp unit

About the lamp units

All four lamp units are equal. A spare lamp can be inserted in any position without problems. See "Order info", page 187 for the order numbers.

WARNING: This procedure may only be performed by qualified technical service personnel.

CAUTION: Never attempt to disassemble the lamp from its housing or to dispose of it. Due to its high internal pressure, the lamp may explode in either hot or cold states if improperly handled. For recycling guidelines, see "Recycling guidelines", page 9.

CAUTION: Never touch the reflector or the lamp bulb with your fingers. That will reduce the lifetime of the lamp.

Never touch the UV filter when a lamp is removed.

Necessary tools

No tools.

How to insert a lamp unit

1. Insert the lamp vertically into the housing, with the front of the lamp facing the middle of the projector.

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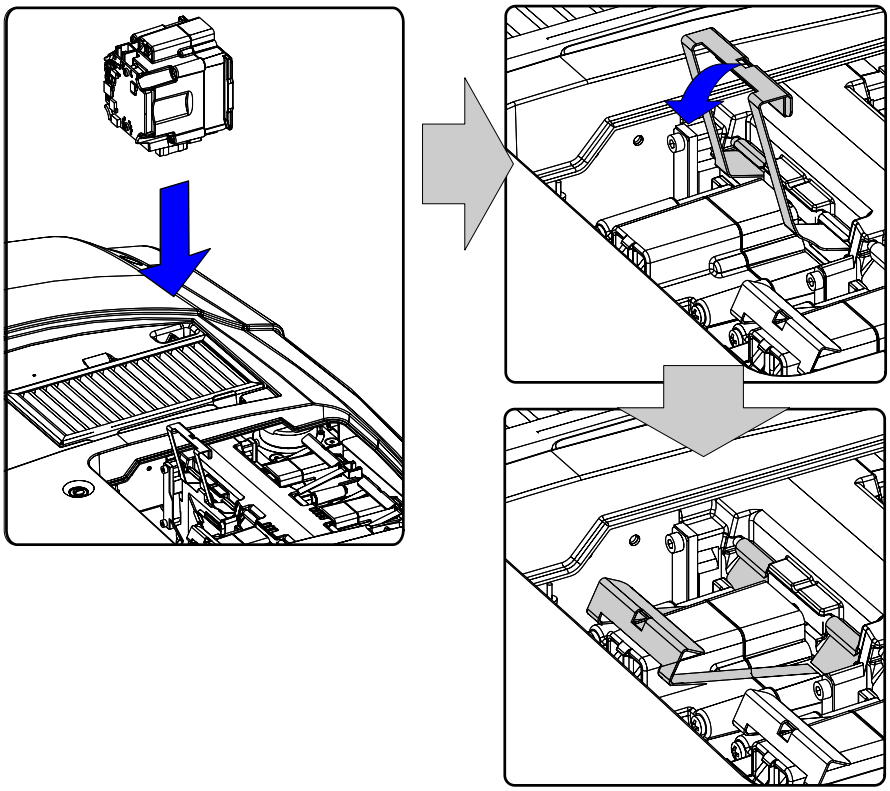


Image 16-10
Lamp insertion

2. Rotate the fixation handle and close it. Push till it clicks.
3. Insert the cable connector into lamp unit socket.

16.7 Removal of an input module

Necessary tools

Phillips screw driver PH1

How to remove an input module

1. Switch off the projector and unplug the power cord at the projector side.
2. Release the two captive screws of the input module.

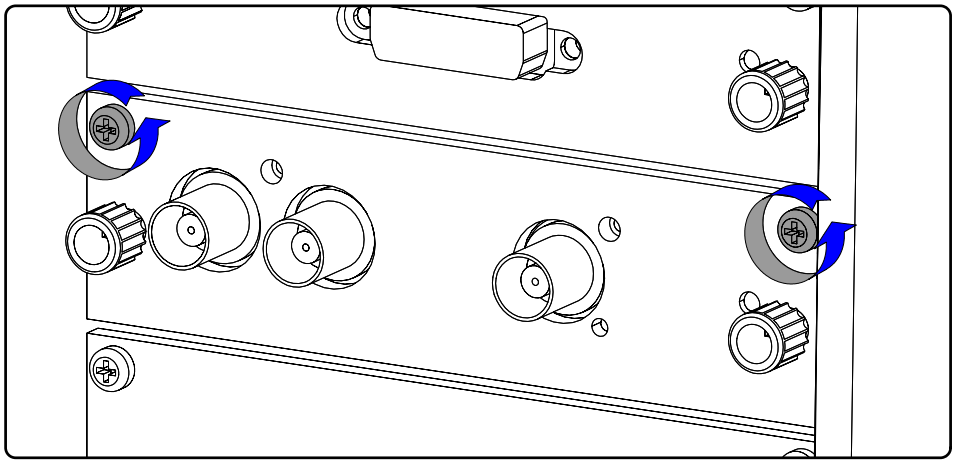


Image 16-11
Input module removal

3. Pull out the input module via the two provided knobs.

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CAUTION: Ensure that an unused slot is always covered with a dummy front plate. Immediately install after removing an input module a new input module or a dummy front cover.

16.8 Inserting an input module

Necessary tools

Phillips screw driver PH1

How to insert an input module

1. Ensure the projector is switched off and the power cord at the projector side is unplugged.
2. Slide the input module into the guides of the input slot.

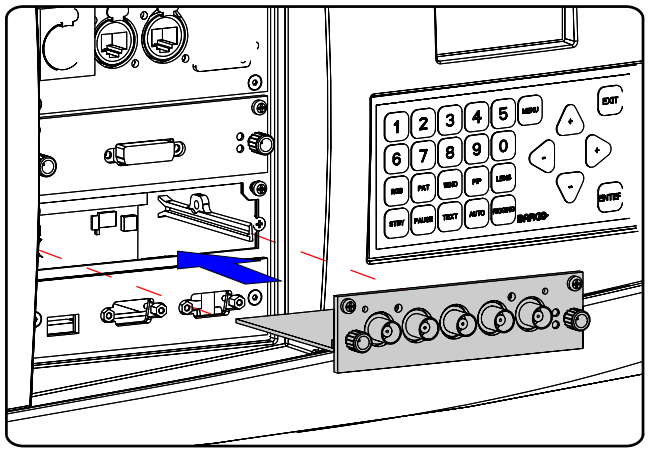


Image 16-12
Insert module

3. Push the input module forward until you feel that the connector of the input module fit in the socket of the input slot. The back of the front plate of the module must touch the front plate of the input unit.
4. Secure the input module by fastening both captive screws in the top corners of the module.

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17. PROJECTOR COVERS, REMOVAL AND INSTALLATION

Overview

- Removal of the front cover
- Removal of the lamp door
- Installation of the front cover
- Installation of the lamp door

WARNING: The cover removal procedures may only be performed by qualified technical service personnel.

17.1 Removal of the front cover

Necessary tools

Flat screwdriver

How to remove the front cover

1. Release the captive screw at the middle bottom of the front cover (a)

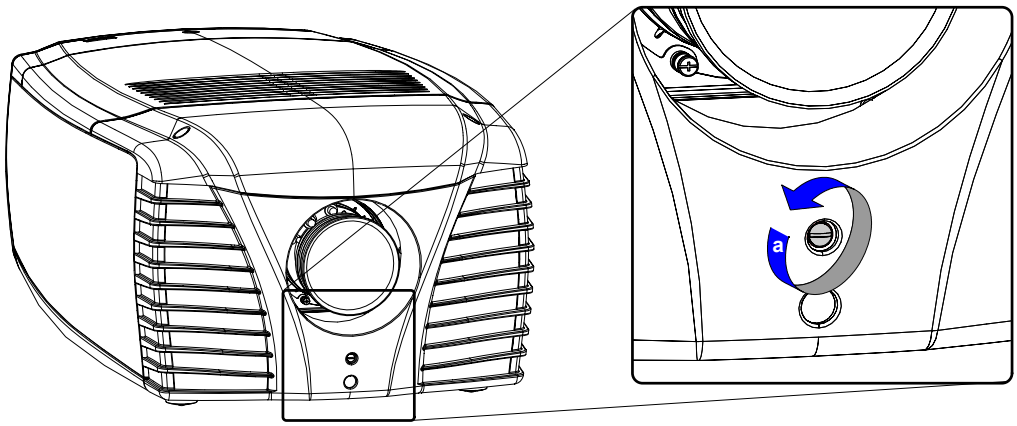


Image 17-1
Release captive screw

2. Release the front cover from the projector doing the following:
   a) stand in front of the projector and pull the bottom side of the cover a little toward you (b)
   b) In that slightly pivoted position, pull the cover downwards to release it from the top cover (c)

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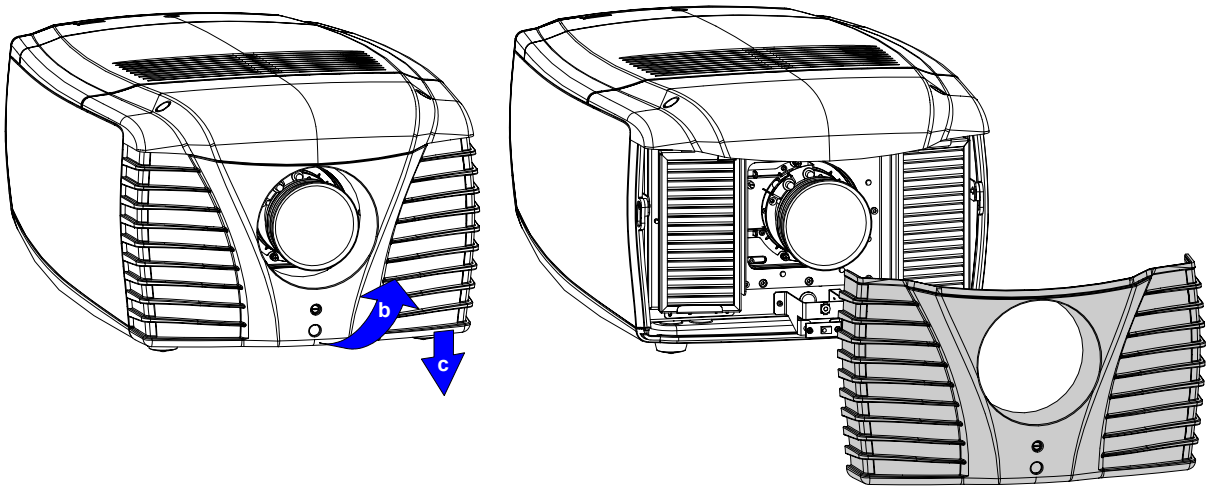


Image 17-2
Remove the front cover

17.2 Removal of the lamp door

WARNING: This procedure may only be performed by qualified technical service personnel.

Necessary tools

Flat screwdriver

How to remove the lamp door

1. Release the captive screw at the middle upper side of the side cover on the input side.

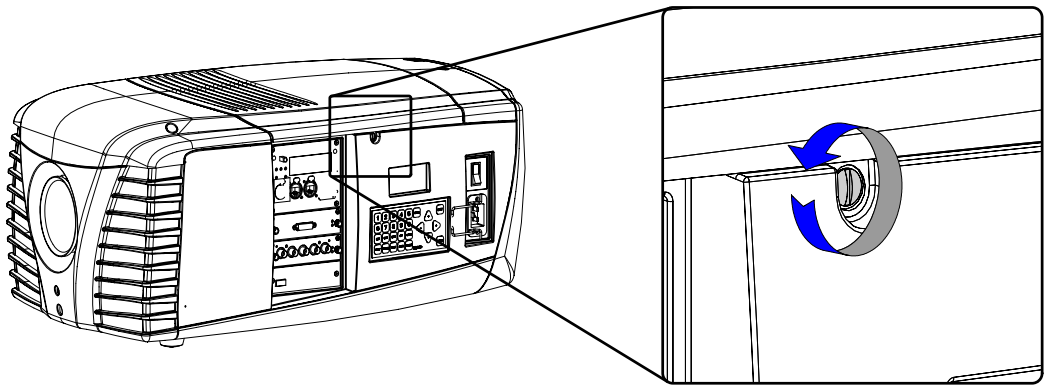


Image 17-3
Release captive screw

2. Take the lamp door with both hands, one on each side, and pull it upward until the cover comes free from its 4 locks.

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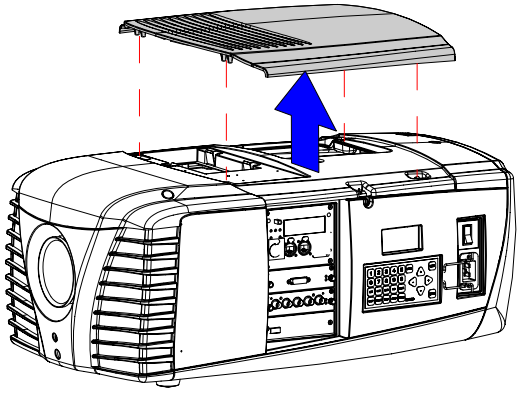


Image 17-4
Remove lamp door

17.3 Installation of the front cover

Front cover can only be installed after that the side covers and top cover are installed.

Necessary tools

Flat screwdriver

How to install the front cover

1. Insert the top of the front cover behind the front of the top cover (slant the cover a little bit before inserting (A)).

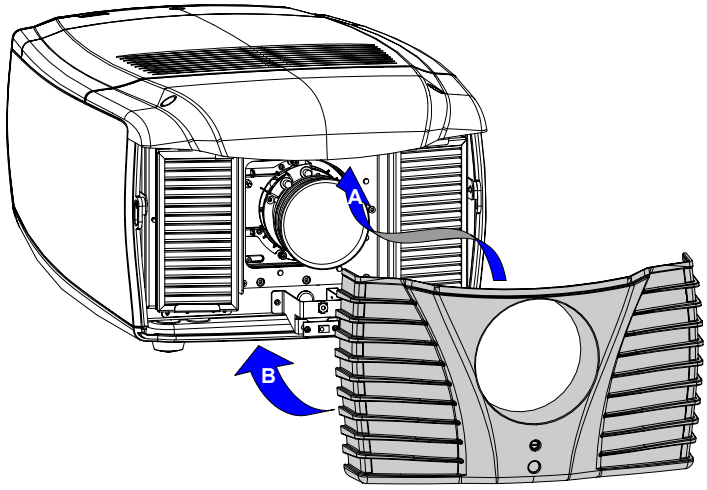


Image 17-5
Install front cover

2. Pull the bottom side of the front cover toward the projector (B).

   The sides of the front cover overlap the sides of the side covers.

3. Fasten the captive screw at the middle bottom of the front cover (C).

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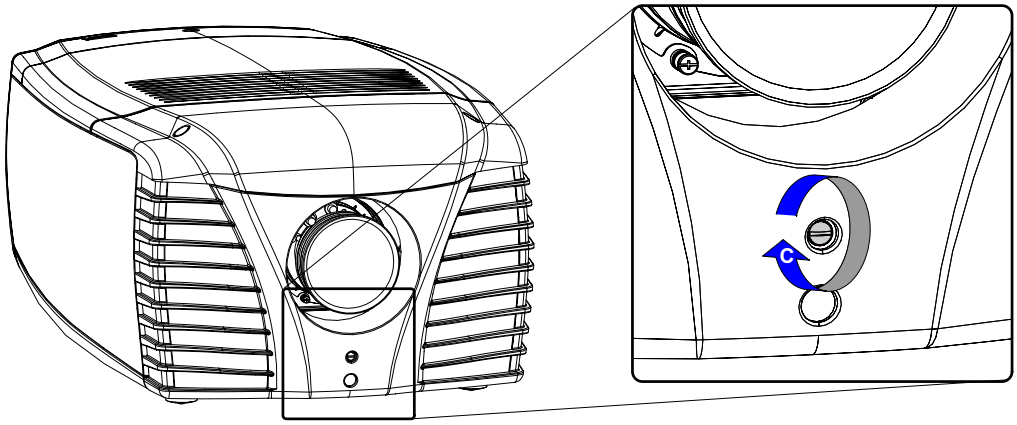


Image 17-6
Secure front cover

17.4 Installation of the lamp door

Lamp door can only be installed when the top cover is installed.

Necessary tools

Flat screwdriver

How to install the lamp door

1. Place the lamp door with its pins (B) on its sockets (A) and push on it until clicks

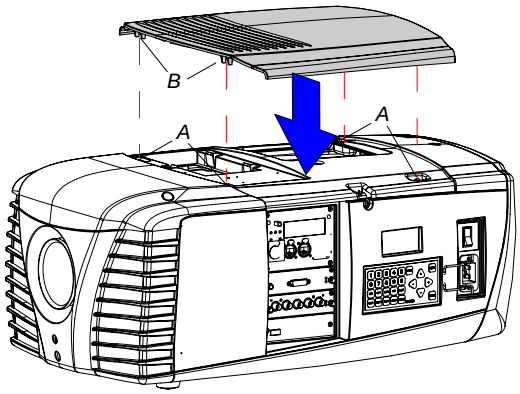


Image 17-7
Lamp door installation

2. Fasten the captive screw at the middle upper side of the side cover on the input side.

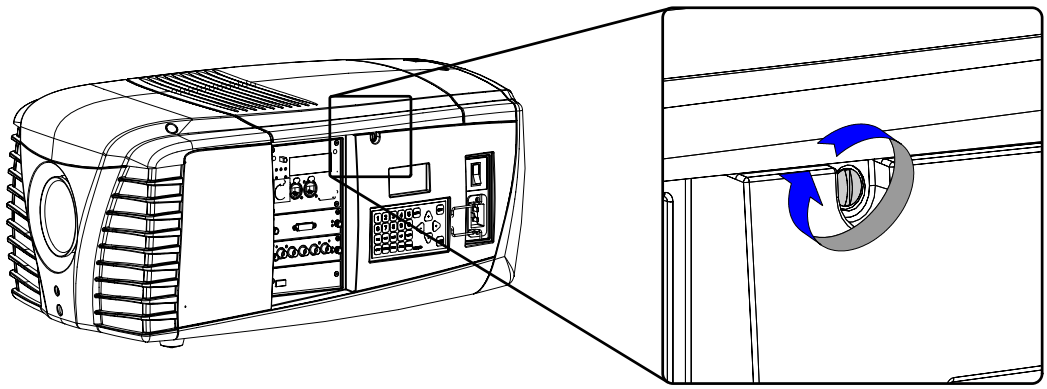


Image 17-8
Secure the lamp door

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A. DIMENSIONS

Overview

- Dimensions of the CLM R10+

A.1 Dimensions of the CLM R10+

Dimensions without carry handle

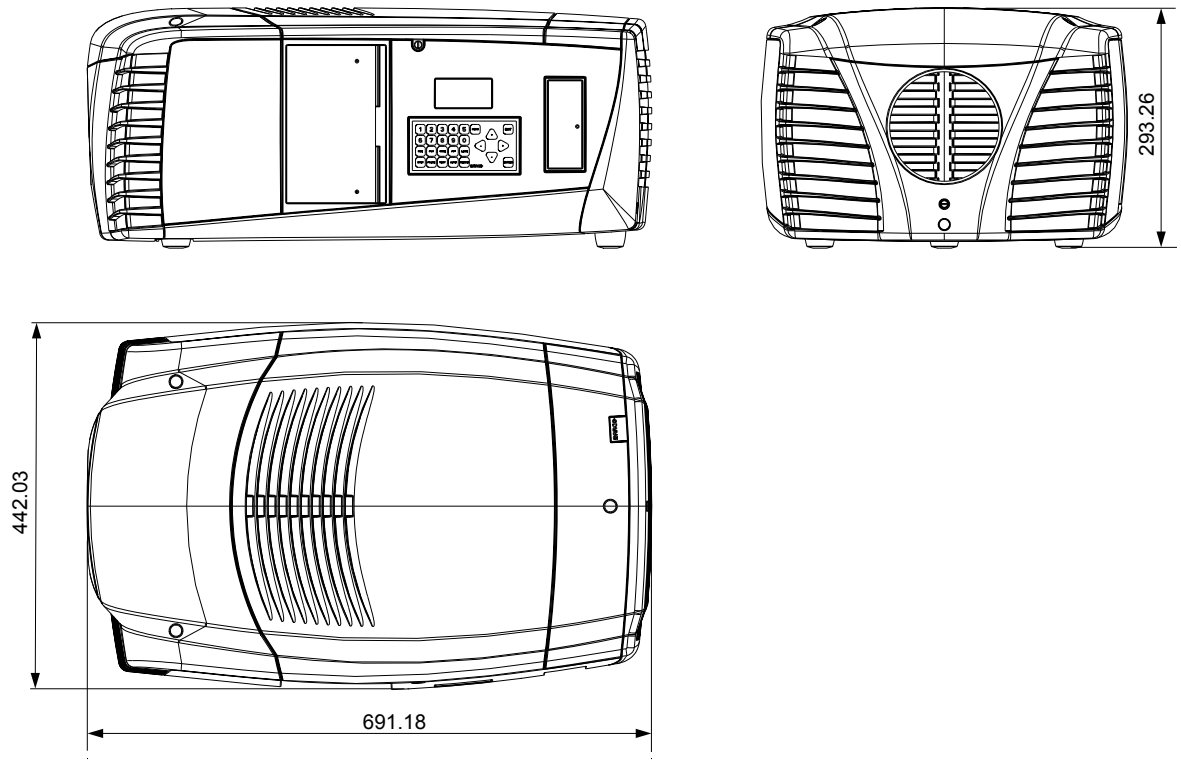


Image A-1
Dimensions

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Dimensions with optional carry handle

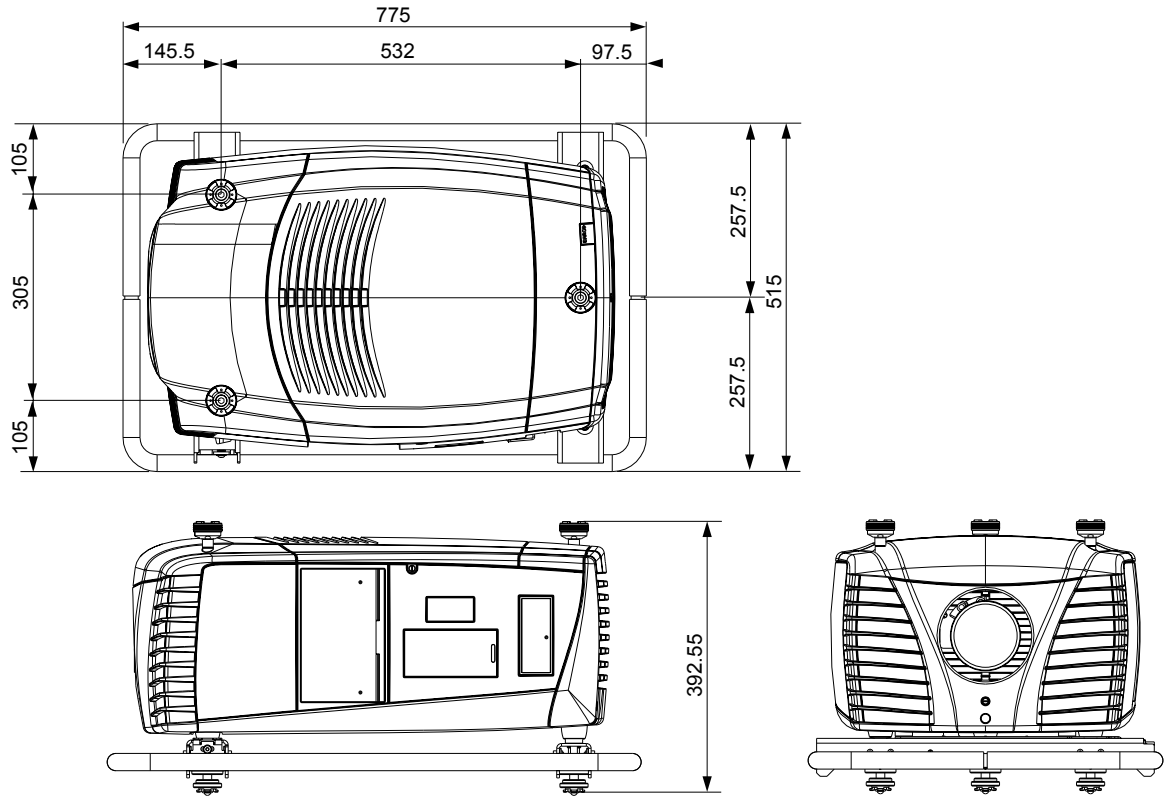


Image A-2

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B. STANDARD SOURCE FILES

B.1 Table overview

Table overview

The following standard image files are pre-programmed in the projector.

Name[1]	Fvert Hz[2]	FHor kHz[3]	Fpix MHz[4]	Ptot[5]	Pact[6]	Ltot[7]	Lact[8]
640x350@85	85,079	37,860	31,500	832	640	445	350
640x400@85	85,079	37,860	31,500	832	640	445	400
640x480@60	59,940	31,668	25,175	800	640	525	480
640x480@72	72,888	30,288	19,687	832	640	520	480
640x480@75	74,999	37,500	31,500	840	640	500	480
640x480@85	85,009	43,270	36,000	832	640	509	480
720x400@85	85,040	37,928	35,500	936	720	446	400
800x600@56	56,251	35,157	36,001	1024	800	625	600
800x600@60	60,317	37,879	40,000	1056	800	628	600
800x600@72	72,188	48,077	50,000	1040	800	666	600
800x600@75	75,001	46,876	49,501	1056	800	625	600
800x600@85	85,062	53,674	56,250	1048	800	631	600
848x480@60	60,000	31,020	33,750	1088	848	517	480
1024x768@60	60,004	48,363	65,000	1344	1024	806	768
1024x768@70	70.068	56,475	74,999	1328	1024	806	768
1024x768@75	75,030	60,024	78,751	1312	1024	800	768
1024x768@85	84,996	68,677	94,499	1376	1024	808	768
1152x864@75	74,999	67,499	107,999	1600	1152	900	864
1280x768@60	59,870	47,776	79,499	1664	1280	798	768
1280x768@75	74,992	60,288	102,249	1696	1280	805	768
1280x768@85	84,838	68,634	117,502	1712	1280	809	768
1280x768RB@60	59,994	47,396	68,250	1440	1280	790	768
1280x960@60	59,999	59,999	107,998	1800	1280	1000	960
1280x960@85	85,005	85,940	128,505	1728	1280	1011	960
1280x1024@60	60,018	63,980	107,997	1688	1280	1066	1024
1280x1024@75	75,023	79,974	134,997	1688	1280	1066	1024

1. Name: name of file, contains the settings.
2. Fvert Hz: vertical frame frequency of the source
3. FHor kHz: horizontal frequency of the source
4. Fpix MHz: pixel frequency
5. Ptot : total pixels on one horizontal line.
6. Pact: active pixels on one horizontal line.
7. Ltot: total lines in one field
8. Lact: active lines in one field.

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Name[1]	Fvert Hz[2]	FHor kHz[3]	Fpix MHz[4]	Ptot[5]	Pact[6]	Ltot[7]	Lact[8]
1280x1024@85	85,027	91,149	157,506	1728	1280	1072	1024
1360x768@60	59,898	47,619	85,333	1792	1360	795	768
1400x1050@50	50,015	54,517	94,641	1736	1400	1090	1050
1400x1050@60	59,979	65,317	121,751	1864	1400	1089	1050
1400x1050@75	74,866	82,277	155,998	1896	1400	1099	1050
1400x1050@85	84,958	93,879	179,497	1912	1400	1105	1050
1400x1050RB@60	59,946	64,742	100,997	1560	1400	1080	1050
1600x1200@60	60,001	75,002	162,004	2160	1600	1250	1200
1600x1200@65	64,998	81,248	175,496	2160	1600	1250	1200
1600x1200@70	69,997	87,497	188,993	2160	1600	1250	1200
1600x1200@75	74,998	93,747	202,414	2160	1600	1250	1200
1600x1200@85	84,998	106,247	229,494	2160	1600	1250	1200
1792x1344@60	60,000	83,640	204,751	2448	1792	1394	1344
1792x1344@75	74,996	106,270	260,999	2456	1792	1417	1344
1856x1392@60	59,995	86,333	218,251	2528	1856	1439	1392
1920x1140@60	60,001	90,001	234,002	2600	1920	1500	1140
1920x1200@60	59,883	74,555	193,235	2592	1920	1245	1200
1920x1200RB@60	59,952	74,041	154,006	2080	1920	1235	1200
1920x1440@60	60,001	90,001	234,002	2600	1920	1500	1200
hd-1280x720@60p	60,001	45,000	74,251	1650	1280	750	720
hd-1920x1035@30i	60,000	33,720	74,184	2200	1920	562	517
hd-1920x1080@24p	24,000	27,000	74,250	2750	1920	1125	1080
hd-1920x1080@24sf	48,001	54,002	148,504	2750	1920	1125	1080
hd-1920x1080@25i	50,044	28,125	74,249	2640	1920	562	540
hd-1920x1080@25p	25,000	28,125	74,249	2640	1920	1125	1080
hd-1920x1080@30i	60,000	33,720	74,184	2200	1920	562	540
hd-1920x1080@30p	30,000	33,750	74,249	2200	1920	1125	1080
hd-1920x1080@60p	60,011	67,513	148,528	2200	1920	1125	1080
VIDEO525	62,437	15,734	13,500	858	712	252	242
VIDEO525p	59,940	31,468	27,000	858	712	525	484
VIDEO625	50,080	15,625	13,500	864	702	312	287
VIDEO625p	50,080	31,250	27,000	864	702	625	574
no-signal	100,00	20,000	8,000	400	300	200	100
no-signal-i	100,00	20,000	8,000	400	300	200	100

Table B-1

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C. SPECIFICATIONS

Overview

- Specifications CLM R10+
- Specifications CLM 5 cable input (multi purpose)
- Specifications CLM HDSDI – SDI input
- Specifications CLM DVI input

C.1 Specifications CLM R10+

Overview

Light Output	9 500 ANSI Lumen 10 000 Center Lumen
Resolution	1400 x 1050 (native, SXGA+)
Contrast ratio	1200:1 (full field) High Contrast Mode: contrast enhancement by optical dowser
Lamp	4 x 300 W Lamp warranty: 750 Hrs
Ambient temperature	Max 40°C (104°F)
Power consumption	- 1450W at 4x300W (170V-264V) - 1100W at 3x282W (100V-140V) - 1000W at 3x250W (90V-100V)
Mains Voltage	100-120/200-240V 12/8A 50/60Hz
Weight	31 kg excl. lens and rigging frame
Dimensions	W x L x H 692 x 442 x 293 mm (27.24 x 17.40 x 11.54 inch) excl. carrying handle + rigging points
Noise Level	51.4 dB(A) (at 25°C ambient)
Sealed DLP™ core	Standard
Network connection	10/100 Base-T, RJ-45 connection Optical dowser (dimmer): 0 - 100% brightness control by DMX512 signal
ScenergiX	Standard horizontal and vertical electronic edge blending
Picture-in-picture	two sources simultaneously
Input source compatibility	1600 x 1200 (max. input)
Inputs	**Standard inputs** • configurable 5 cable (BNC) • DVI

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Lenses	Zoom lens CLD 1.2 - 1.6:1 Zoom lens CLD 1.6 - 2.4:1 Zoom lens CLD 2.4 - 4.3:1 Wide lens QCLS 0.85:1
Brightness uniformity	> 85%
Display	1 Chip DLP SXGA+ (resolution of 1400 x 1050 pixels (aspect ratio 4:3))
Features	• DMX512 control of optical dimming, electronic dimming, zoom, focus, lens shift, input select • Advanced picture-in-picture • Seamless switching with effects • Rigging points • Carrying handle • Frame • Brilliant Color processing
Communication	• 1x RS-232C/RS-422 IN (D-9 connector) • 1x RS-232C/RS-422 OUT (D-9 connector) • 1x RS-232C IN (XLR connector)
Lens Shift	Vertical: -20% to +110% Horizontal: 15% to -100% (small differences occur per lens type)
Dust filters	High density filters
Safety Regulations	EN 60950-1 (for Europe) UL 60950-1 (for USA)
Electromagnetic Interference	Complies with FCC rules & regulations, part 15 Class A and CE EN55022 Class A
Compatibility	• All current video sources (PAL, SECAM, NTSC) in Composite, S-VHS, Component or RGB formats • All currently proposed HDTV, extended and improved television standards (1080i, 720p) • All computer graphics formats from VGA, SVGA, XGA, SXGA,full HD to UXGA • Most Macintosh computers • Electronic workstations with a resolution up to 1600 x 1200 pixels at 75 Hz • Most computer sources with a pixel clock up to 200 MHz • DVI sources up to SXGA+
Order Information	R90501001

C.2 Specifications CLM 5 cable input (multi purpose)

Front view 5 cable input

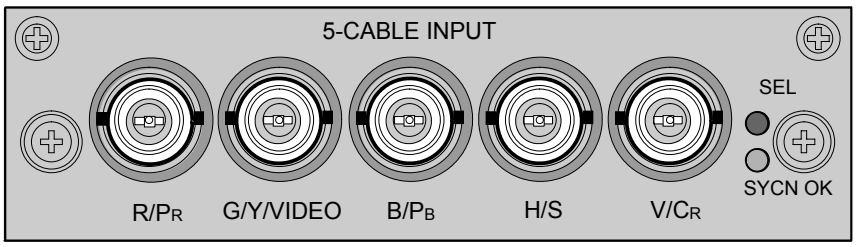


Image C-1

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Signal connectivity

Input signal	R / P_R	G / Y / VIDEO	B / P_B	H / S	V / C_R
RGBHV	R	G	B	H	V
RGBS	R	G	B	S composite sync or VIDEO as sync	—
RGsB	R	Gs sync on green	B	—	—
Composite Video	—	VIDEO	—	—	—
Super Video	—	Y Luma	—	—	C Chroma
Component Video - SS	P_R / (R - Y)	Y	P_B / (B - Y)	S composite sync or VIDEO as sync	—
Component Video - SOY	P_R / (R - Y)	Ys	P_B / (B - Y)	—	—

Specifications

- Data and HD sources RGB and YUV [HS/VS, CS or SOG(Y)]:
  - Pixel clock maximum 275 MHz
  - 8 bit digital output
- Video sources CVBS, S-VIDEO, RGB and YUV [CS, CV or SOG(Y)]:
  - PAL B/D/I/G/H, PAL60, PAL M, PAL N, PAL Nc
  - NTSC M/J, NTSC 4.43
  - SECAM B/D/G/K/L
  - 525i, 625i, 525p, 625p
  - Macrovision copy protection robust
  - 10 bit digital output
  - Standard images “video525” and “video625”
- Automatic detection of sync inputs but with manual override:
  - automatic modes : RGB, YUV, VIDEO
  - manual modes : RGB HS/VS - CS, RGB CV, RGB SOG, YUV HS/VS - CS, YUV CV, YUV SOY, CVBS, S-VIDEO
- Possible to disconnect 75 Ohm terminations on HS and VS (TTL sync level selection)
- Signal requirements:
  - Component Video (BNC)
    - R-Y : 0,7Vpp ±3dB 75 Ohm termination.
    - Ys : 1Vpp ±3dB (0,7V Luma +0,3V Sync) 75 Ohm termination.
    - B-Y : 0,7Vpp ±3dB 75 Ohm termination.
  - RG(s)B
    - R : 0,7Vpp ±3dB 75 Ohm termination.
    - G(s) : 1Vpp ±3dB (0,7Vpp G + 0,3Vpp Sync) 75 Ohm termination.
    - B : 0,7Vpp ±3dB 75 Ohm termination.
- Diagnostic LED’s on front panel:
  - Green LED: Lights up in case input module is selected
  - Yellow LED: Lights up in case sync detected

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C.3 Specifications CLM HDSDI – SDI input

Input front view HDSDI – SDI input

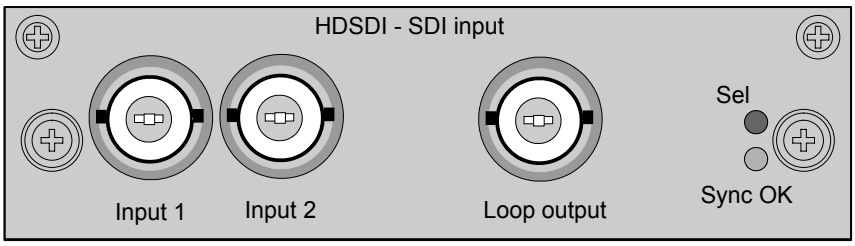


Image C-2

Specifications

- SD SMPTE 259M-C and HD SMPTE 292M input data
- 2 inputs (BNC), 1 active loop-through output (BNC) of selected input
- Automatic selection of active input with manual override
- 10 bit digital output
- Diagnostic LED's on front panel:
  - Green LED: Lights up in case input module is selected
  - Yellow LED: Lights up in case sync detected
- SDI: 270 Mbit/s transmission (SMPTE 259M-C).
- SDI: 525/625 interlaced.
- Coax (75 Ohm).
- Supported HDSDI standards:
  - Progressive:
    - 1280x720/60/1:1/ (SMPTE 296M)
    - 1280x720/59.94/1:1/ (SMPTE 296M)
    - 1920x1080/30/1:1/ (SMPTE 274M)
    - 1920x1080/29.97/1:1/ (SMPTE 274M)
    - 1920x1080/25/1:1/ (SMPTE 274M)
    - 1920x1080/24/1:1/ (SMPTE 274M)
    - 1920x1080/23.98/1:1/ (SMPTE 274M)
  - Interlaced:
    - 1920x1035/60/2:1/ (SMPTE 260M)
    - 1920x1035/59.94/2:1/ (SMPTE 260M)
    - 1920x1080/60/2:1/ (SMPTE 274M)
    - 1920x1080/59.94/2:1/ (SMPTE 274M)
    - 1920x1080/50/2:1/ (SMPTE 274M)
    - 1920/1080/50/2:1 (1250)/ (SMPTE 295M)
    - 1920x1080/24/Segmented/ (SMPTE 274M)
    - 1920x1080//23.98/Segmented/ (SMPTE 274M)

C.4 Specifications CLM DVI input

Input front view

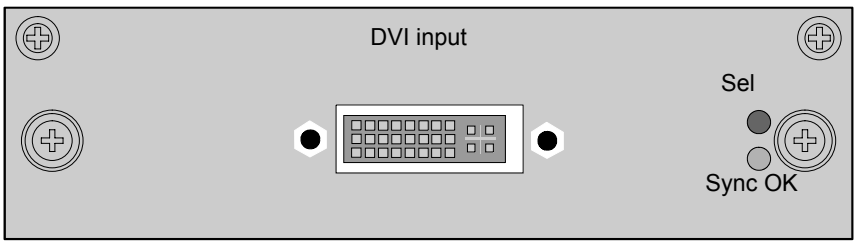


Image C-3

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Specifications

- DVI type: DVI-I (DVI-Integrated), but the analog signals are not supported. Single-link configuration.
- Single link dvi for pixelclocks up to 165MHz
- Vertical frequencies: 24 - 75 Hz
- Horizontal frequencies: 20 - 90 kHz
- Supported resolutions: up to UXGA (1600 x 1200) at 60 Hz.
- Cable lengths: up to 3 meter at UXGA speed.
- Compliance: DDC2B support according to VESA EDID Version 1.2
- Diagnostic LED's on front panel:
  - Green LED: Lights up in case input module is selected
  - Yellow LED: Lights up in case sync detected

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D. TROUBLESHOOTING

D.1 Error codes

Overview

When the error code is preceded by a '-' sign, then the error means a real error for the projector.

When the error code is preceded by a '+' sign, then the error code means a warning. The projector does not fail yet, but take care for the warning and try to resolve the problem. A warning state can turn into an error state.

Not all error codes can have two states. When the state is available, it is indicated by a Yes in the overview table. When the state is not available, it is indicated by a No.

Error code	Description	Error	Warning	Caused by	Action
1000	Wrong lamp parameters	Yes	-	Wrong lamp/ no communication with lamp	Check lamp type Call a qualified service engineer
1399	I²C open error	Yes			
1398	I²C read error	Yes			
1397	I²C write error	Yes			
1499	Video input invalid				
1498					
1699	Formatter busy				
1698	Formatter address				
1697	Formatter init failed	Yes	-	no communication with formatter ctrl	Call a qualified service engineer
1696	Formatter ctrl init failed	Yes	-	no communication with formatter ctrl	Call a qualified service engineer
1695	Formatter start failed	Yes	-	no communication with formatter	Call a qualified service engineer
1694	Formatter PWGGood	Yes	-	formatter 'Power Good' signal not OK	Call a qualified service engineer
1999	MAX7301 not initialized	Yes			
2000	No lps detected	Yes	-	no communication with lamp power supply	Call a qualified service engineer
2001	Mains voltage too low	Yes	-	mains voltage too low	
2002	Lamp start failed	Yes	-	Hot restrike Lamp with many strikes maximum run time exceeded Lamp or LPS or SPG failed	Let cool down the lamp for at least 5 minutes. Retry a few times. Replace the lamp with a new one Replace LPS or SPG or cabling.
2003	Main voltage too high	Yes	-	mains voltage too high	
2004	Lamp goes out	Yes	-		Call qualified service engineer

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Error code	Description	Error	Warn-ing	Caused by	Action
2005	Lamp stop failed	Yes	-		Call qualified service engineer
2100	LPS 1 error	Yes	-		Replace LPS
2400	LPS 2 error	Yes	-		Replace LPS
2700	LPS 3 error	Yes	-		Replace LPS
3000	LPS 4 error	Yes	-		Replace LPS
3899	Spi flash invalid type	Yes			
3898	Spi flash busy	Yes			
3999	IR buffer full	Yes			
4000	Incompatible hardware	Yes	No	Incompatible hardware used	Change to correct hardware
4199	FIB reset failed	Yes	-	no communication with FIB	Call a qualified service engineer
4198	FPGA PMP init failed	Yes	-		
6099	Board ID unkown version	Yes			
6098	Board ID invalid string	Yes			
7999	DMD temp low	Yes	Yes	Low temperature on DMD	turning on the lamp(s) will heat up the DMD
7998	DMD temp high	Yes	Yes	High temperature on DMD	check if air slots are free, clean air filters. If problem persists, call a qualified service engineer.
7997	Ambient temp low	Yes	Yes	Ambient temperature out of specifications	take measurements to increase the temperature
7996	Ambient temp high	Yes	Yes	Ambient temperature out of specifications	check ambient conditions check if air slots are free, clean air filter.
7994	TEC temp high	Yes	Yes		
7992	LPS1 temp high	Yes	Yes	High temperature on LPS1	check if air slots are free, clean air filters. If problem persists, call a qualified service engineer.
7990	LPS2 temp high	Yes	Yes	High temperature on LPS2	check if air slots are free, clean air filters. If problem persists, call a qualified service engineer.
7988	LPS3 temp high	Yes	Yes	High temperature on LPS3	check if air slots are free, clean air filters. If problem persists, call a qualified service engineer.

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Error code	Description	Error	Warning	Caused by	Action
7986	LPS4 temp high	Yes	Yes	High temperature on LPS4	check if air slots are free, clean air filters. If problem persists, call a qualified service engineer.
7984	Lamp1 temp high	Yes	Yes	High temperature on lamp 1	check if air slots are free, clean air filters. If problem persists, call a qualified service engineer.
7982	Lamp2 temp high	Yes	Yes	High temperature on lamp 2	check if air slots are free, clean air filters. If problem persists, call a qualified service engineer.
7980	Lamp3 temp high	Yes	Yes	High temperature on lamp 3	check if air slots are free, clean air filters. If problem persists, call a qualified service engineer.
7978	Lamp4 temp high	Yes	Yes	High temperature on lamp 4	check if air slots are free, clean air filters. If problem persists, call a qualified service engineer.
7924	Fan radiator A low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7923	Fan radiator A high	-	Yes		
7922	Fan radiator B low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7921	Fan radiator B high	-	Yes		
7920	Fan outlet A low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7919	Fan outlet A high	-	Yes		
7918	Fan outlet B low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7917	Fan outlet B high	-	Yes		
7916	Fan power supply A low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7915	Fan power supply A high	-	Yes		
7914	Fan power supply B low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7913	Fan power supply B high	-	Yes		
7912	Fan LPS A low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7911	Fan LPS A high	-	Yes		
7910	Fan LPS B low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer

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Error code	Description	Error	Warn-ing	Caused by	Action
7909	Fan LPS B high	-	Yes		
7908	Fan inlet A low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7907	Fan inlet A high	-	Yes		
7906	Fan inlet B low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7905	Fan inlet B high	-	Yes		
7904	Fan lamp 1 back low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7903	Fan lamp 1 back high	-	Yes		
7902	Fan lamp 2 back low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7901	Fan lamp 2 back high	-	Yes		
7900	Fan lamp 3 back low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7899	Fan lamp 3 back high	-	Yes		
7898	Fan lamp 4 back low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7897	Fan lamp 4 back high	-	Yes		
7896	Fan prism low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7895	Fan prism high	-	Yes		
7894	Fan color wheel low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7893	Fan color wheel high	-	Yes		
7892	Fan lamp 1 front low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7891	Fan lamp 1 front high	-	Yes		
7890	Fan lamp 2 front low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7889	Fan lamp 2 front high	-	Yes		
7888	Fan lamp 3 front low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer
7887	Fan lamp 3 front high	-	Yes		
7886	Fan lamp 4 front low	Yes	Yes	Fan is running too slow or not at all	If problem persists, call a qualified service engineer

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Error code	Description	Error	Warn-ing	Caused by	Action
7885	Fan lamp 4 front high	-	Yes		
7884	Pump speed low	Yes	Yes	Bad or no water flow in the cooling circuit	If problem persists, call a qualified service engineer
7883	Pump speed high	-	Yes		
7878	Overtemp	Yes	Yes	extreme overheading of DMD or lamps	If problem persists, call a qualified service engineer
7875	DMD temp open	Yes	Yes	Sensor not connected	If problem persists, call a qualified service engineer
7874	DMD temp short	Yes	Yes	short circuit in sensor circuit	If problem persists, call a qualified service engineer
7873	Ambient temp open	Yes	Yes	Sensor not connected	If problem persists, call a qualified service engineer
7872	Ambient temp short	Yes	Yes	short circuit in sensor circuit	If problem persists, call a qualified service engineer
7871	Tec temp open	Yes	Yes	Sensor not connected	If problem persists, call a qualified service engineer
7870	Tec temp short	Yes	Yes	short circuit in sensor circuit	If problem persists, call a qualified service engineer
7600	Color wheel not spinning	Yes	Yes		If problem persists, call a qualified service engineer
7500	Failed to set FCB mode				
7499	FCB time out				
8000	Opening shutter failed	No	Yes		If problem persists, call a qualified service engineer
8001	Closing shutter failed	No	Yes		If problem persists, call a qualified service engineer
8002	Failed reading lamp info mode	No	Yes		If problem persists, call a qualified service engineer
9199	Scaler unit failed	Yes	-	Initialization of the scaler failed	If problem persists, call a qualified service engineer
9198	Scaler pixel clock too high	Yes	-	BW or refresh rate of input source too high	
9398	Maximum image files reached	Yes	No	Reaching the maximum allowed number of files	Delete some unnecessary files
10498	Unsupported module	Yes	No	Module with obsolete firmware	Call a qualified service engineer
27999	OSD no font	Yes			Call a qualified service engineer
27998	OSD font error	Yes			Call a qualified service engineer
27997	OSD memory	Yes			Call a qualified service engineer
27996	OSD out of range	Yes			Call a qualified service engineer

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Error code	Description	Error	Warn-ing	Caused by	Action
27995	OSD out of pos.	Yes			Call a qualified service engineer
27994	OSD fifo full	Yes			Call a qualified service engineer

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E. MOUNTING OPTIONAL CARRY HANDLE

About this chapter

This chapter describes the procedures to mount the optional carry handle to CLM projector. When this optional carry handle is mounted, the projector can be suspended with the rigging clamps and stacking of projector is possible.

Overview

- Mounting stacking points on top cover
- Preparing the new carry handle
- Preparing the projector
- Mounting the carry handle

E.1 Mounting stacking points on top cover

Why mounting the stacking points ?

The stacking points must be mounted for the following reasons:

- To turn the projector upside down and place it on the top cover.
- To stack two projectors on each other.

How to mount the stacking points

1. Break out the circular holes in the top cover.

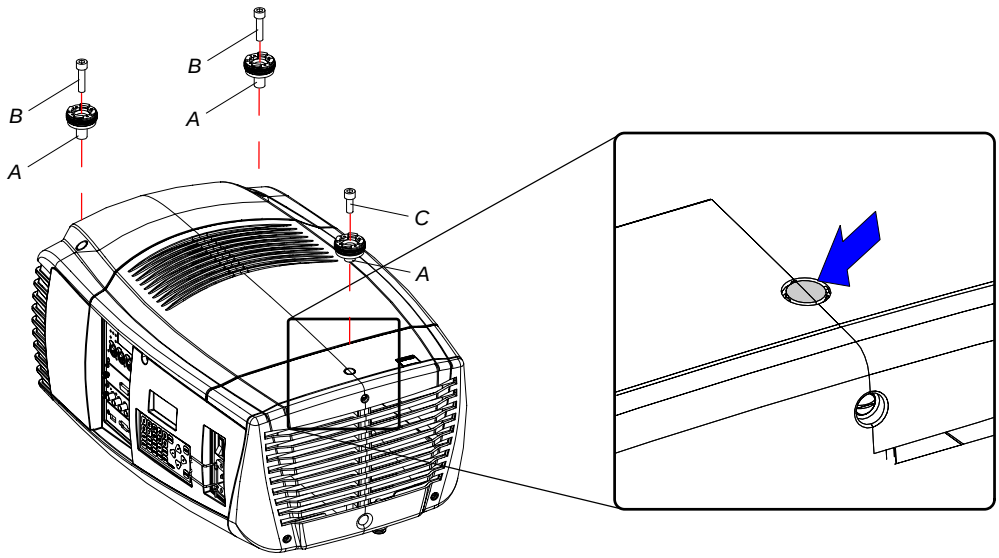


Image E-1
Mounting the stacking points

2. Place a stacking point (A) in each hole.
3. For the front stacking points, turn in for each a long bolt (B). For the back stacking point, turn in a short bolt (C).

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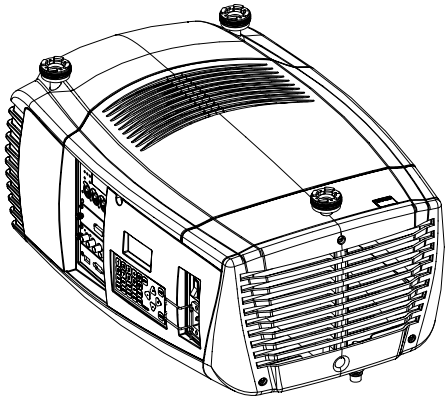


Image E-2
Stacking points mounted

E.2 Preparing the new carry handle

What has to be done?

The back stacking point must be removed before the carry handle can be mounted on the CLM projector. The fixation hole for the fixation bolt of the carry handle is covered by the stacking point construction.

How to remove the stacking point construction

1. Turn out the 4 bolts, 2 on each side. Be aware that there is a nut for each bolt on the inside of the carry handle.

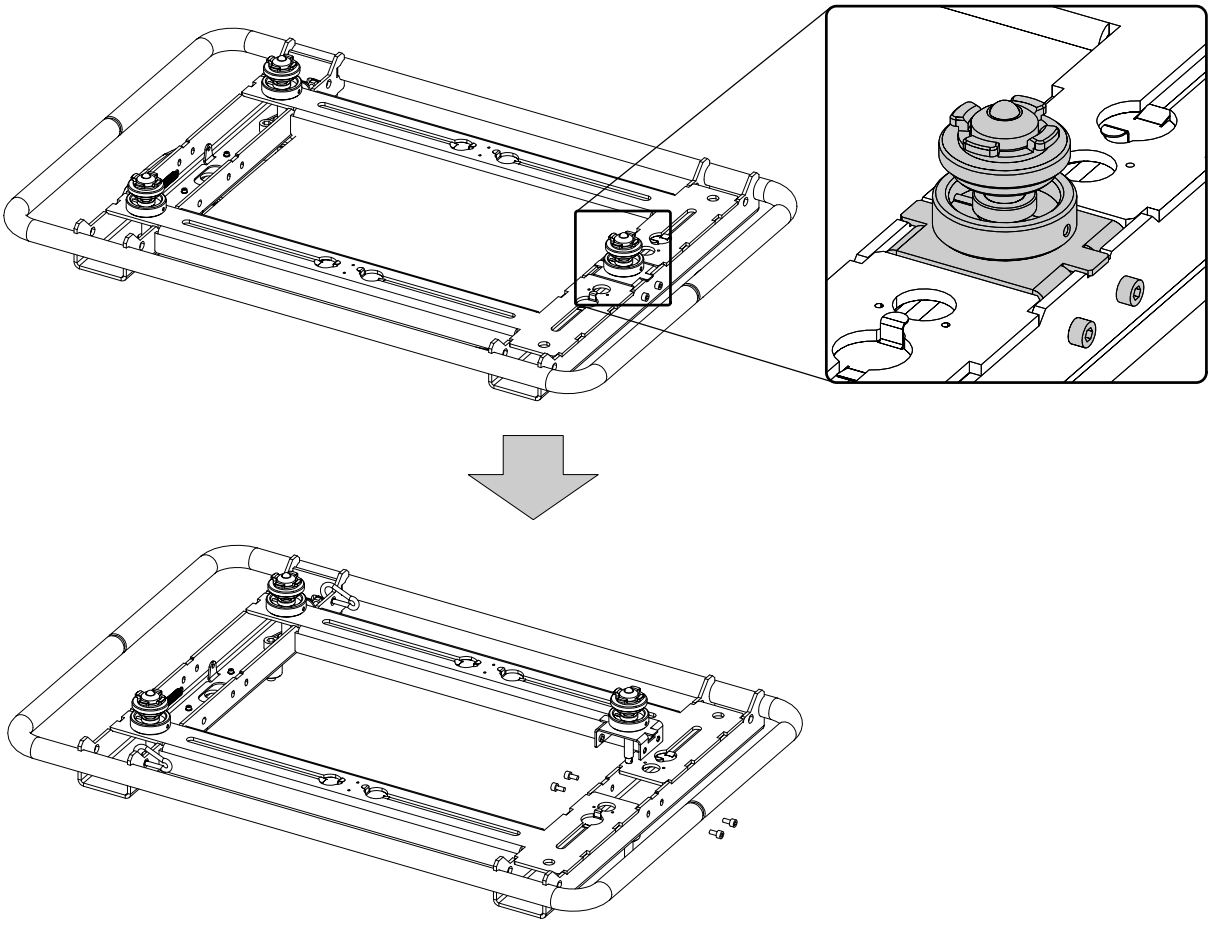


Image E-3
Remove stacking point construction

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E.3 Preparing the projector

CAUTION: Before turning the projector upside down, be sure the stacking points on the top cover are mounted.

What has to be done?

Before the carry handle can be mounted, the projector feet must be removed and an extra support point must be added.

How to handle

1. Turn the projector upside down.
2. Turn out the 3 feet. No tool is needed to turn out the feet.

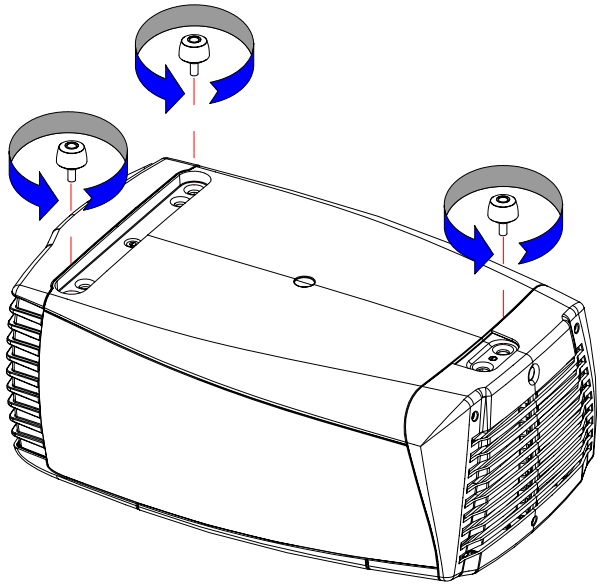


Image E-4

3. Insert next to the removed back foot the extra support point.
4. Place a washer on it and insert a bolt. Secure the bolt.

   Due to its construction, the support is still a bit movable.

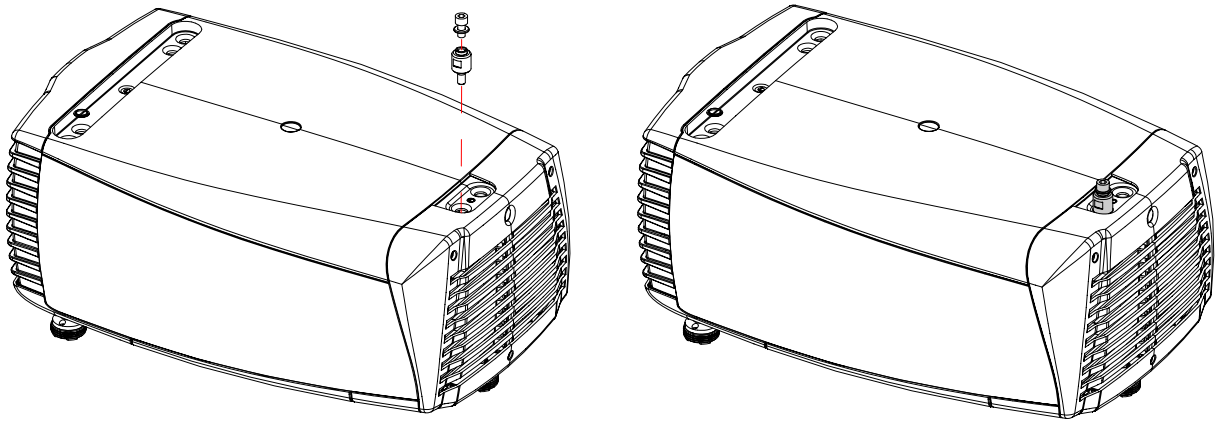


Image E-5
Insert extra foot

5. Insert the small ring into the hole of the removed foot.

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E.4 Mounting the carry handle

How to mount the carry handle

1. Place the handle on to the projector.
2. Insert a spacer (A) in the back fixation hole so that a small rotation of the carry handle is still possible.
3. Insert a bolt into each fixation hole and secure the carry handle (B).

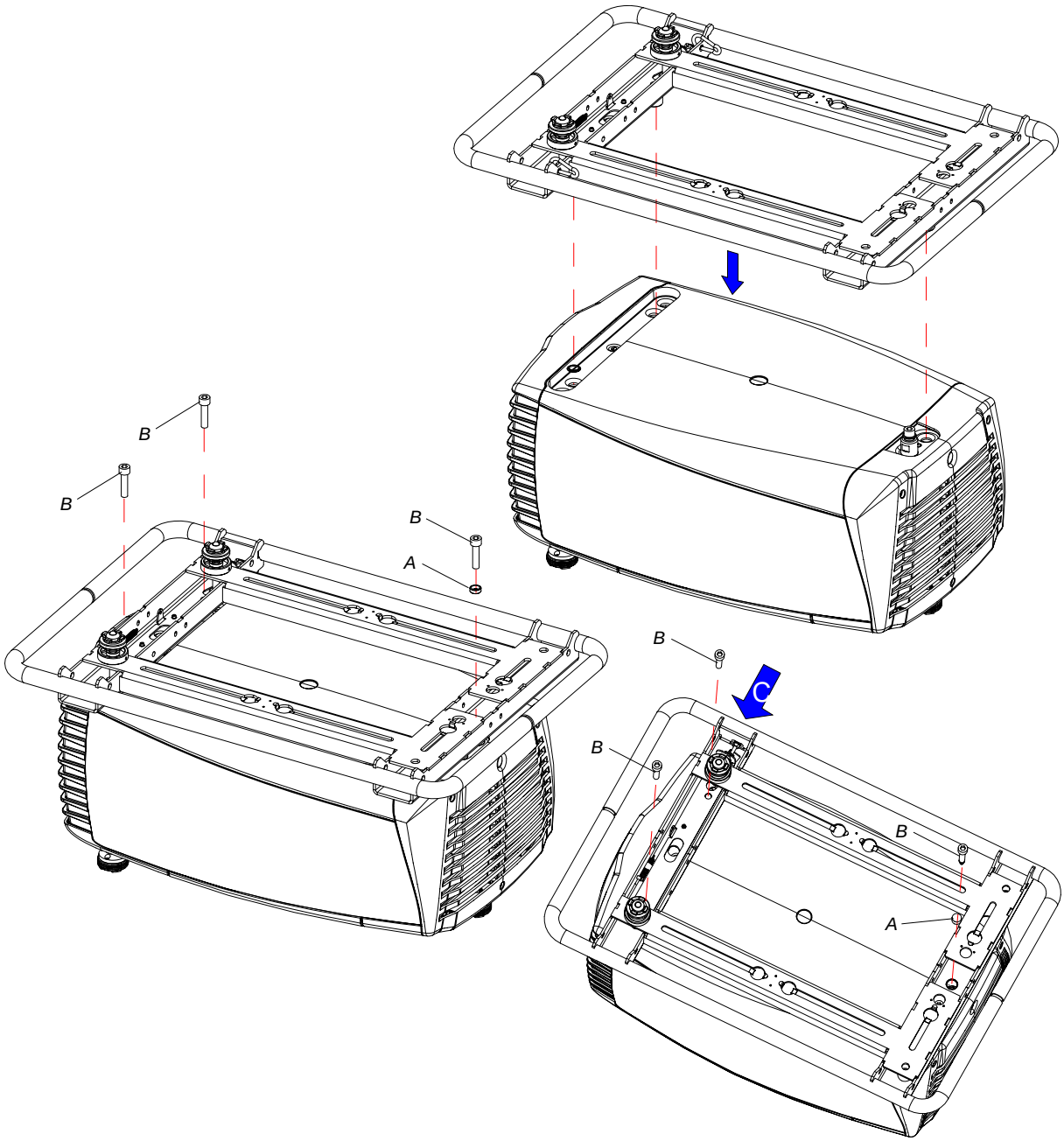


Image E-6
Carry handle mounting

Note: *If both front holes are not completely free, turn on the skew adjustment (C) at the right side of the carry handle until the holes are free.*

4. Place the removed stacking point construction back on its place and secure the 4 bolts and nuts. The nuts must be mounted on the inside of the carry handle.

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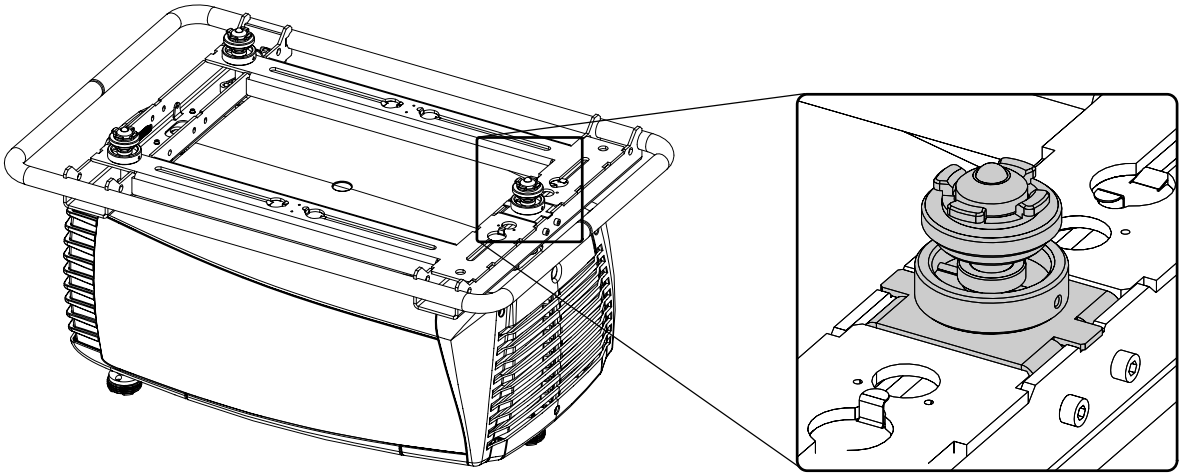


Image E-7
Mounting stacking foot

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F. ORDER INFO

F.1 Spare part order info

Order info:

Order info	Description
R9854430	5 cable input module
R9854450	HDSDI - SDI input module
R9854460	DVI input module
R848607	Cover plate for unused input slot
R98610206	CLM dust filter kit, 6 pack
R986102012	CLM dust filter kit, 12 pack
R9861030	CLM lamp kit, single lamp
R9861040	CLM lamp kit, two lamps
R9861050	CLM lamp kit, four lamps
R9861000	Optional rigging kit for CLM + rugged remote control
R9861010	CLM flight case
R764988	CLM remote control unit
R9849870	CLD (1.2-1.6:1) zoom lens
R9861080	CLD (1.6-2.4:1)[zoom lens
R9849890	CLD (2.4-4.3:1) zoom lens

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