# BarcoReality SIM 5plus/SIM 5R

## Owner's Manual

R9040380
R9040381

R5976870/03
04/04/2007

BARCO

Visibly yours

## Product revision

Software version: V1.31

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## Federal Communications Commission (FCC Statement)

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference.

## EN55022/CISPR22 Class A ITE (Information Technology Equipment)

Class A ITE is a category of all other ITE which satisfies the class A ITE limits but not the class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use:

**Warning :** This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

# TABLE OF CONTENTS

# 1. SAFETY INSTRUCTIONS

## 1.1 Warnings

### To prevent personnel injury

Insure that the projector is installed in an easy to evacuate room in case of a lamp explosion.

The customer should never attempt to disassemble the lamp casing or to dispose of the lamp casing other than by returning it to BARCO.

To prevent injuries and physical damage, always read this manual and all labels on the system before connecting to the wall outlet, or adjusting the projector.

NEVER look into the lens ! Due to the high luminance damage to the eye can happen.

Before attempting to remove the projector's cover, you must turn off the projector and disconnect from the wall outlet.

When performing set up work at a ceiling mounted projector, to prevent injury caused by falling objects or the system, set out a keep out area.

Consult a professional structural engineer prior to suspending the ceiling mount from a structure not intended for that use. Always ensure the working load limit of the structure supporting the projector.

The power input at the projector side is considered as the disconnect device. When mentioned to switch of the projector, to access some parts inside, always disconnect the power cord at the projector side.

### To prevent projector damage

If the Air Filters are not regularly replaced, the air flow inside the projector could be disrupted, causing overheating. Overheating may lead to the projector shutting down during operation.

In order to ensure that correct airflow is maintained, and that the projector complies with Electromagnetic Compatibility requirements, it should always be operated with all of it's covers in place.

Ensure that nothing can be spilled on, or dropped inside the projector. If this does happen, switch off and unplug the mains supply immediately. Do not operate the projector again until it has been checked by qualified service personnel.

The projector must always be mounted in a manner which ensures free flow of air into its air inlets and unimpeded evacuation of the hot air exhausted from its cooling system. Heat sensitive materials should not be placed in the path of the exhausted air.

Special care should be used when DLP projectors are used in the same room as performant laser equipment. Direct or indirect hitting of a laser beam on to the lens can severely damage the Digital Mirror Devices (TM) in which case there is a loss of warranty

### To prevent battery explosion

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.

Dispose of used batteries according to the manufacturer's instructions.

## 1.2 Note

### Definitions

Definition Qualified service technicians or Qualified technicians : Persons having appropriate technical training and experience necessary to be aware of hazards to which they are exposed in performing a task and of measures to minimize the danger to themselves or other persons.

### Extra Safety manual

Read also safety instructions in separate manual (**R5976125**).

# 2. PACKAGING AND DIMENSIONS

### Overview

- Box Content
- Projector Packaging
- Weight
- Dimensions

## 2.1 Box Content

**CEE7**

European power plug to connect the power cord to the wall outlet.

**ANSI 73.11**

American power plug to connect the power cord to the wall outlet.

### Box Content

- 1 BarcoReality SIM 5plus Projector
- 1 Remote Control Unit (RCU) + 2 Batteries 1,5V
- 1 European and 1 American Power Cable
- 1 Owners manual
- 1 Safety manual

## 2.2 Projector Packaging

### Way of Packaging

The projector is packed in a carton box. To provide protection during transportation, the projector is surrounded with foam. The package is secured with banding and fastening clips.

### How to Unpack?

1. Release the fastening clips.
2. Remove the banding. Handle as shown in the drawing. (image 2-1)
3. Take the projector out of its shipping carton and place it on a table. (image 2-2)

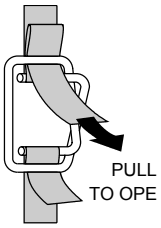



Image 2-1
Remove the banding

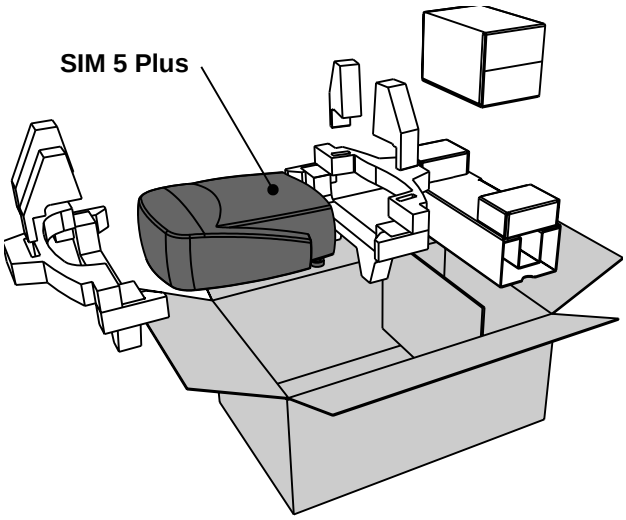



Image 2-2
Take the projector out of its shipping carton

**Save the original shipping carton and packing material, they will be necessary if you ever have to ship your projector. For maximum protection, repack your projector as it was originally packed at the factory.**

**Save the original shipping carton and packing material, they will be necessary if you ever have to ship your projector. For maximum protection, repack your projector as it was originally packed at the factory.**

**CAUTION: Never transport the projector with the lens mounted on it !**

**Always remove the lens before transporting the projector.**

## 2.3 Weight

### Weight

- Projector body: 12.9 kg (28.4 lb)
- Shipping weight: 17.5 kg (38.6 lb)

## 2.4 Dimensions

### Dimensions

The dimensions are given in mm and inch (25,4mm = 1 inch).

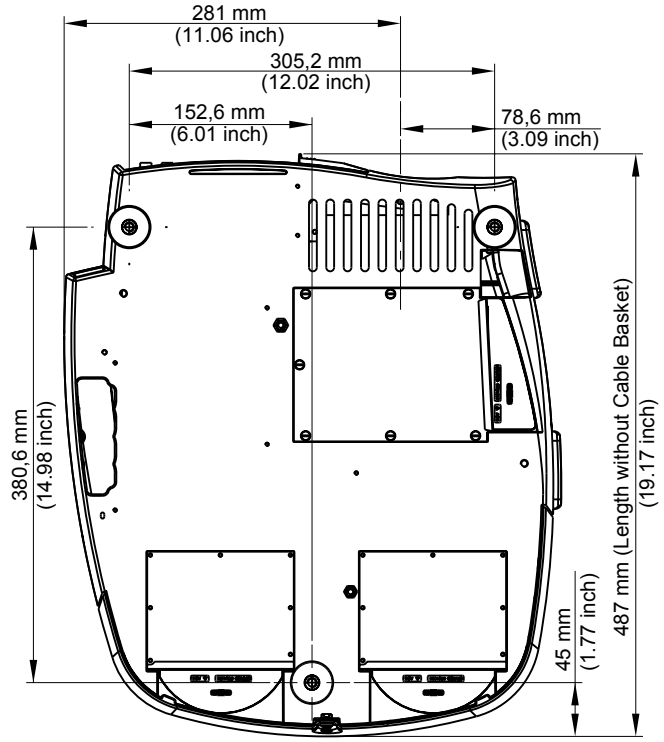



Image 2-3
Bottom view dimensions

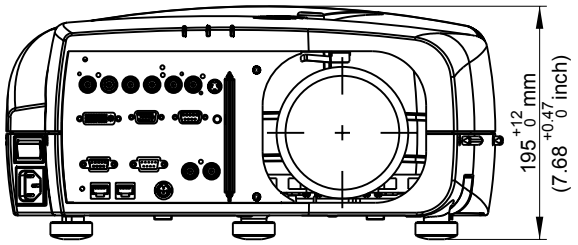
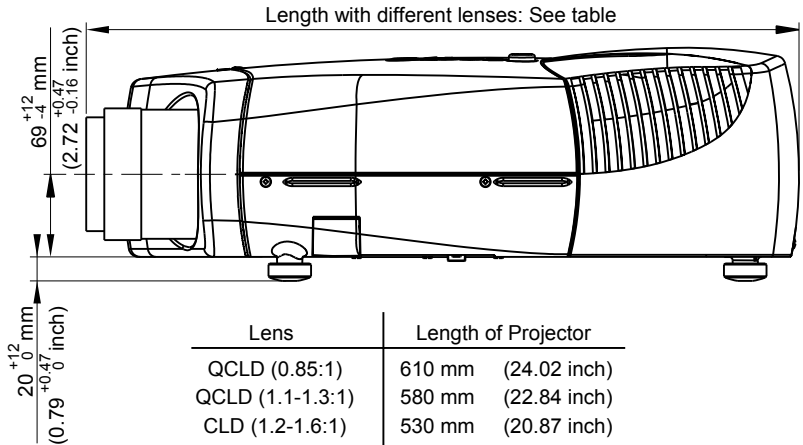



Image 2-4
Front view dimensions




| Lens | Length of Projector | |
|---|---|---|
| QCLD (0.85:1) | 610 mm | (24.02 inch) |
| QCLD (1.1-1.3:1) | 580 mm | (22.84 inch) |
| CLD (1.2-1.6:1) | 530 mm | (20.87 inch) |
| CLD (1.6-2.4:1) | 525 mm | (20.67 inch) |
| CLD (2.4-4.3:1) | 550 mm | (21.65 inch) |

Image 2-5
Left view dimensions

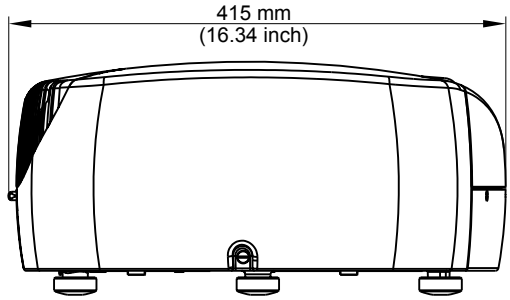



Image 2-6
Rear view dimensions

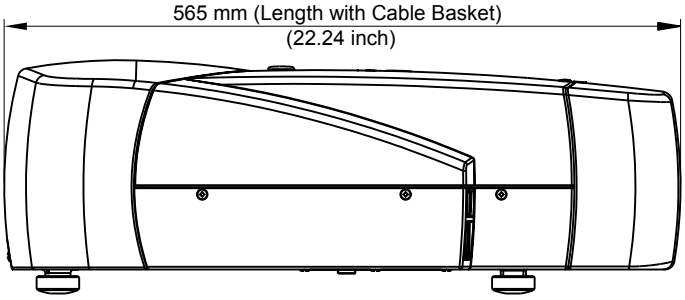



Image 2-7
Right view dimensions

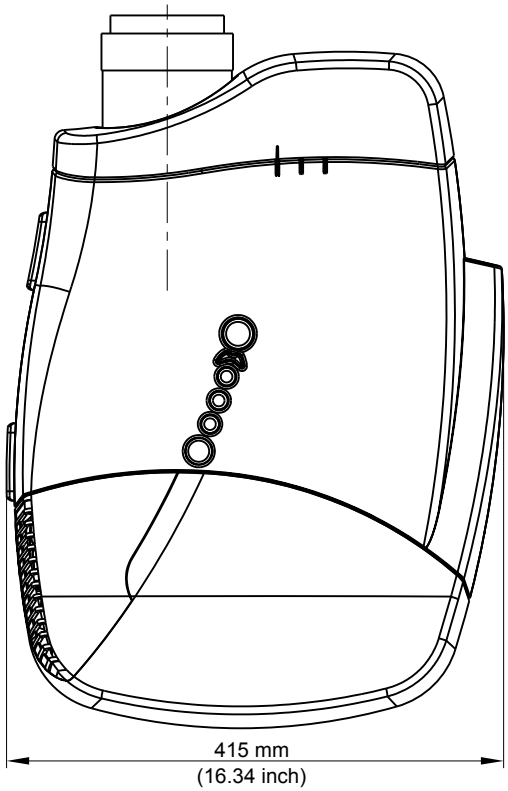



Image 2-8
Top view dimensions

# 3. INSTALLATION GUIDELINES

### Overview

- Safety Warnings
- General Installation Guidelines
- Projector Position
- Airflow
- Projector Configuration
- Available Lens Types
- Lens Formulas
- Lens Installation
- Lens Shift Capability
- Scheimpflug Lens Adjustment
- Cleaning the lens
- Battery Installation

**WARNING: Before installing the projector, read first the safety instructions supplied with the BarcoReality SIM 5plus.**

## 3.1 Safety Warnings

### Mercury Vapor Warnings

Keep the following warnings in mind when using the projector. 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.

## 3.2 General Installation Guidelines

### Ambient Temperature Conditions

Careful consideration of things such as image size, ambient light level, projector placement and type of screen to use are critical to the optimum use of the projection system.

Min. ambient temperature : 10°C or 50°F.

Max. ambient temperature : 40°C or 104°F.

The projector will not operate if ambient air temperature falls outside this range 10°C to 40°C (50°F to 104°F).

Storage temperature: -35°C to +65°C (-31°F to 149°F).

### Humidity Conditions

Storage: 0 to 98 % RH Non-condensing.

Operation: 0 to 95 % RH Non-condensing.

**CAUTION: Harmful Environmental Contamination Precaution**

### Environment

Do not install the projection system in a site near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust or humidity. Be aware that room heat rises to the ceiling; check that temperature near the installation site is not excessive.

### Environment Condition Check

A projector must always be mounted in a manner which ensures the free flow of clean air into the projectors ventilation inlets. For installations in environments where the projector is subject to airborne contaminants such as that produced by smoke machines or similar (these deposit a thin layer of greasy residue upon the projectors internal optics and imaging electronic surfaces, degrading performance), then it is highly advisable and desirable to have this contamination removed prior to it reaching the projectors clean air supply. Devices or structures to extract or shield contaminated air well away from the projector are a prerequisite, if this is not a feasible solution then measures to relocate the projector to a clean air environment should be considered.

Only ever use the manufactures recommended cleaning kit which has been specifically designed for cleaning optical parts, never use industrial strength cleaners on a projectors optics as these will degrade optical coatings and damage sensitive optoelectronics components. Failure to take suitable precautions to protect the projector from the effects of persistent and prolonged air contaminants will culminate in extensive and irreversible ingrained optical damage. At this stage cleaning of the internal optical units will be non-effective and impracticable. Damage of this nature is under no circumstances covered under the manufactures warranty and may deem the warranty null and void. In such a case the client shall be held solely responsible for all costs incurred during any repair. It is the clients responsibility to ensure at all times that the projector is protected from the harmful effects of hostile airborne particles in the environment of the projector. The manufacture reserves the right to refuse repair if a projector has been subject to wantful neglect, abandon or improper use.

### What about Ambient Light?

The ambient light level of any room is made up of direct or indirect sunlight and the light fixtures in the room. The amount of ambient light will determine how bright the image will appear. So, avoid direct light on the screen. Windows that face the screen should be covered by opaque drapery while the set is being viewed. It is desirable to install the projection system in a room whose walls and floor are of non-reflecting material. The use of recessed ceiling lights and a method of dimming those lights to an acceptable level is also important. Too much ambient light will ‘wash out’ of the projected image. This appears as less contrast between the darkest and lightest parts of the image. With bigger screens, the ‘wash out’ becomes more important. As a general rule, darken the room to the point where there is just sufficient light to read or write comfortably. Spot lighting is desirable for illuminating small areas so that interference with the screen is minimal.

### Special Care for Laser Beams

Special care should be used when DLP projectors are used in the same room as performant laser equipment. Direct or indirect hitting of a laser beam on to the lens can severely damage the Digital Mirror Devices (TM) in which case there is a loss of warranty.

### Which Screen Type?

There are two major categories of screens used for projection equipment. Those used for front projected images and those for rear projection applications.

Screens are rated by how much light they reflect (or transmit in the case of rear projection systems) given a determined amount of light projected toward them. The ‘GAIN’ of a screen is the term used. Front and rear screens are both rated in terms of gain. The gain of screens range from a white matte screen with a gain of 1 (x1) to a brushed aluminized screen with a gain of 10 (x10) or more. The choice between higher and lower gain screens is largely a matter of personal preference and another consideration called the Viewing angle. In considering the type of screen to choose, determine where the viewers will be located and go for the highest gain screen possible. A high gain screen will provide a brighter picture but reduce the viewing angle. For more information about screens, contact your local screen supplier.

### What Image Size?

The projector is designed for projecting an image size from 1.00m (3.3ft) to 6.00m (19.7ft) with an aspect ratio of 4 to 3.

## 3.3 Projector Position

**CAUTION: Improper positioning of the projector may reduce the lamp life and result in severe accident or fire hazard.**

### Projector Position

Keep following projector position guidelines in mind when installing the projector:

- +/- 20° roll around projector lens

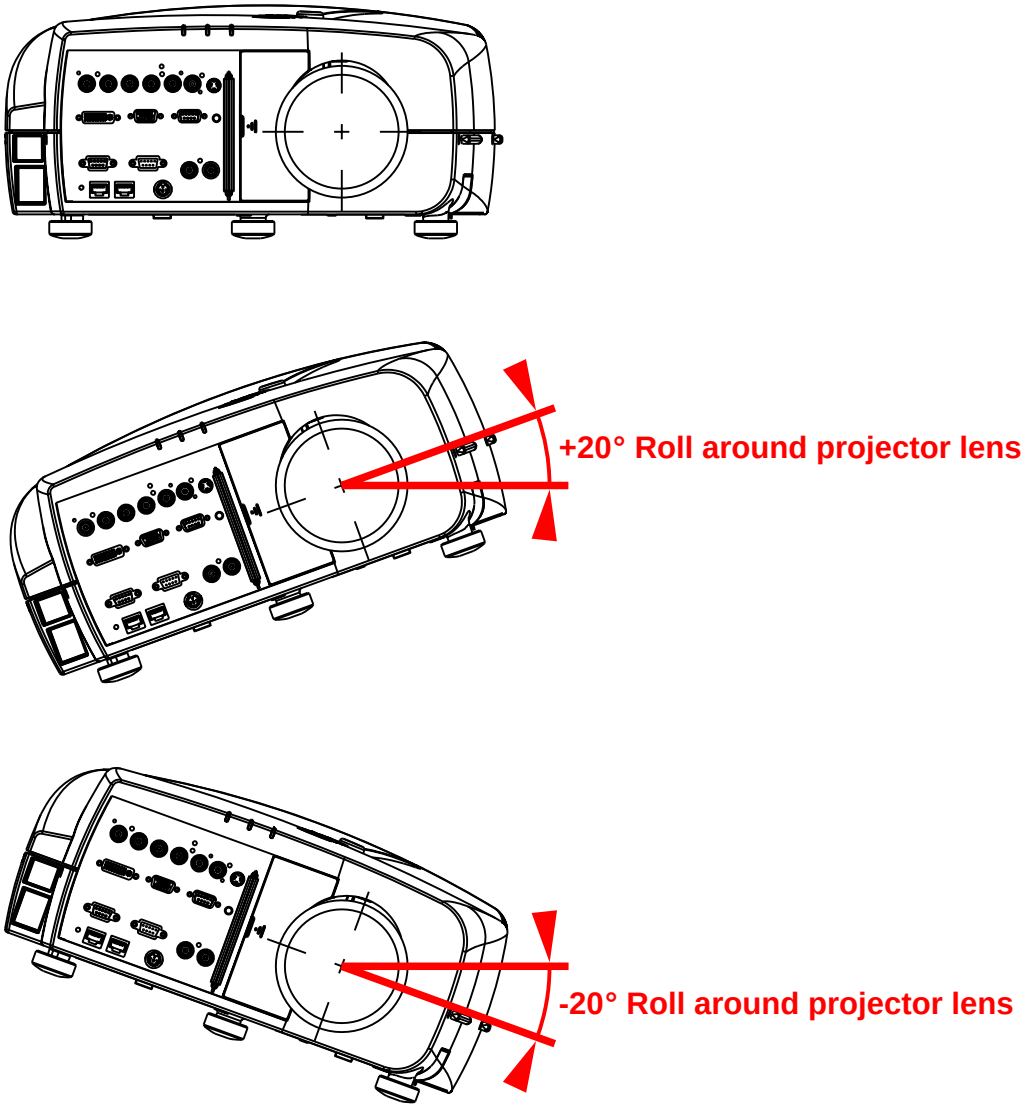



Image 3-1
+/- 20° roll around projector lens

- full pitching allowed (360°)

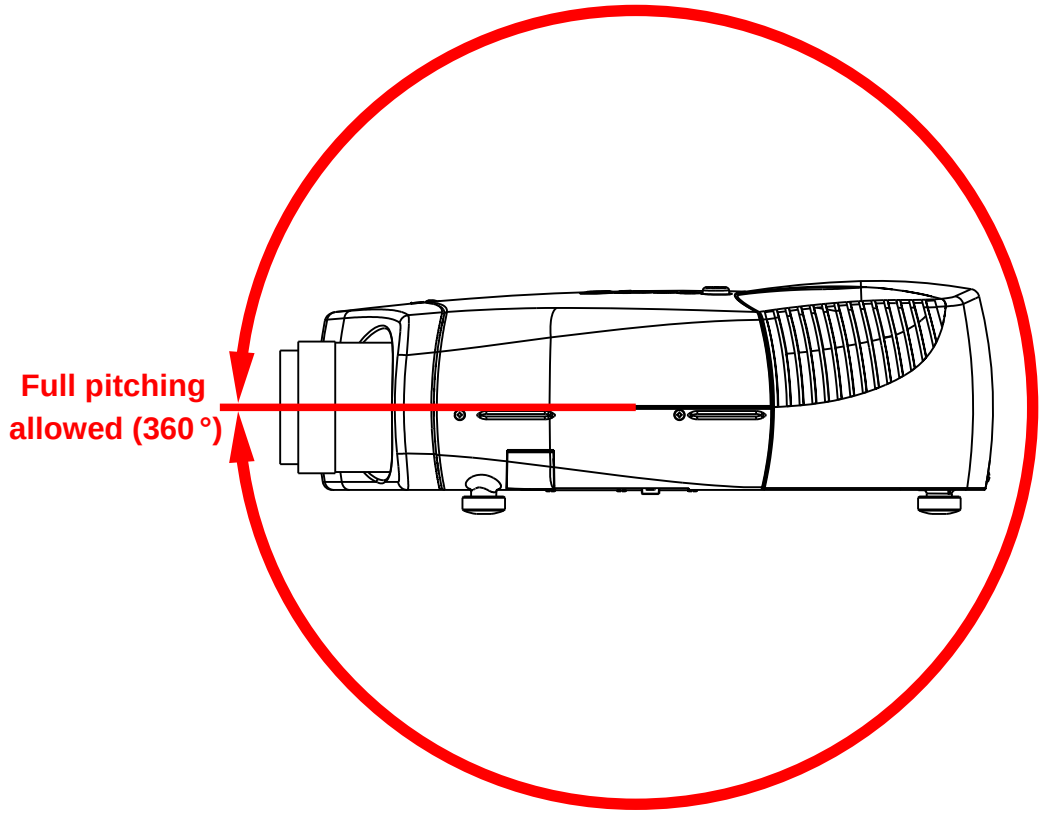



Image 3-2
Full pitching allowed (360°)

- Do not put the projector on either side to project an image

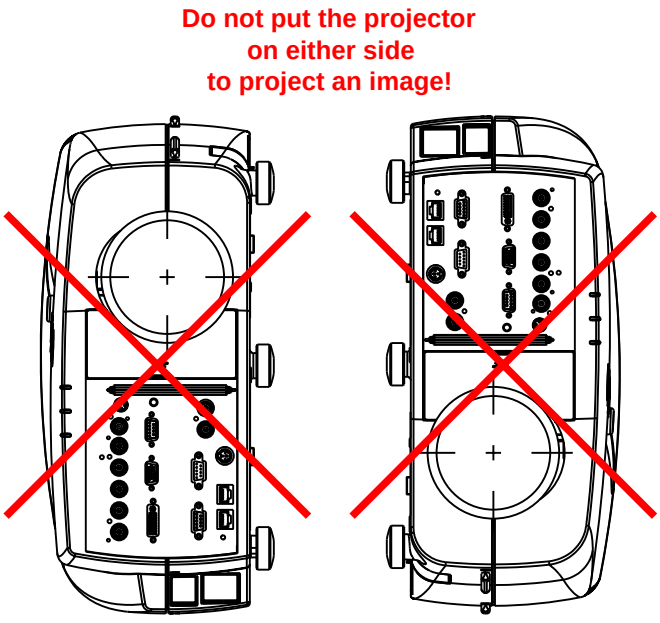



Image 3-3
Do not put the projector on either side to project an image

## 3.4 Airflow

### Airflow

The Air Intake Vent is located on the bottom side of the projector while the Exhaust Vent can be found on the left rear side of the projector. Make sure the projector is installed in a location so that the air inlets and outlets for the cooling system are not obstructed.

- Air intake vent

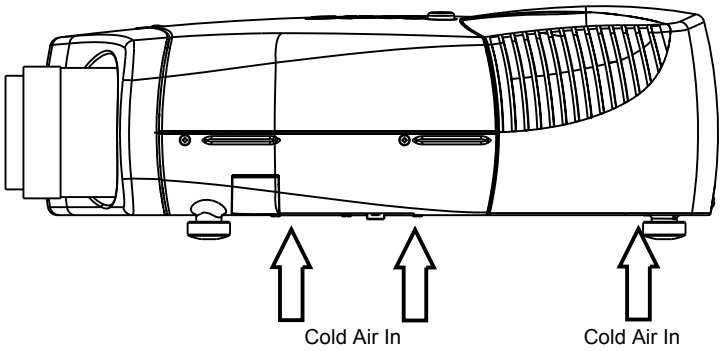



Image 3-4
Air intake vent

- Exhaust vent

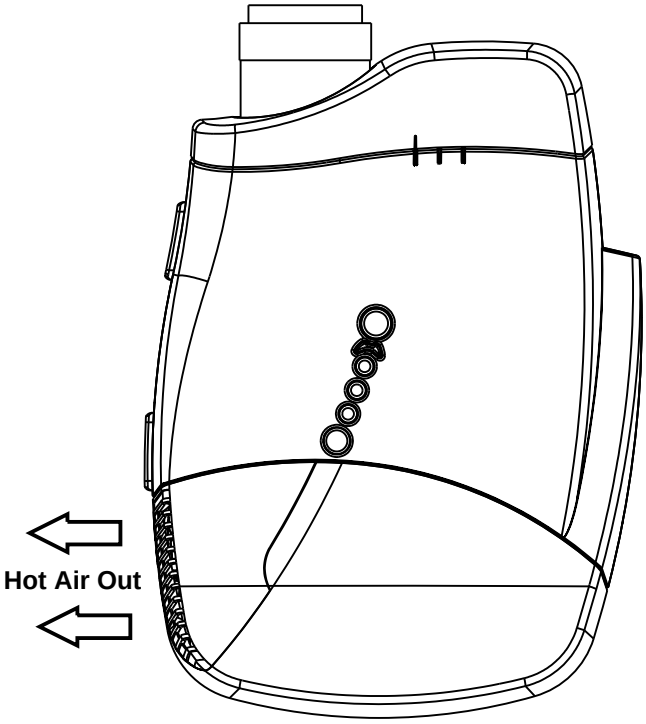



Image 3-5

**CAUTION: To protect the BarcoReality SIM 5plus from overheating do not cover or block the air intake and/or exhaust vent.**

**CAUTION: Do not place flammable objects near the Exhaust Vent.**

**CAUTION: Do not touch the Exhaust Vent Grill when the projector is switched on, this part will become hot during operation.**

## 3.5 Projector Configuration

### Available Configurations

The projector can be installed to project images in four different configurations:

- Front Table
- Front Ceiling
- Rear Table
- Rear Ceiling

### Positioning the Projector

The projector should be installed perpendicular with the screen on a distance PD (Projector Position) and water leveled in both directions. The mounting positions in following images are shown for a nominal lens position.

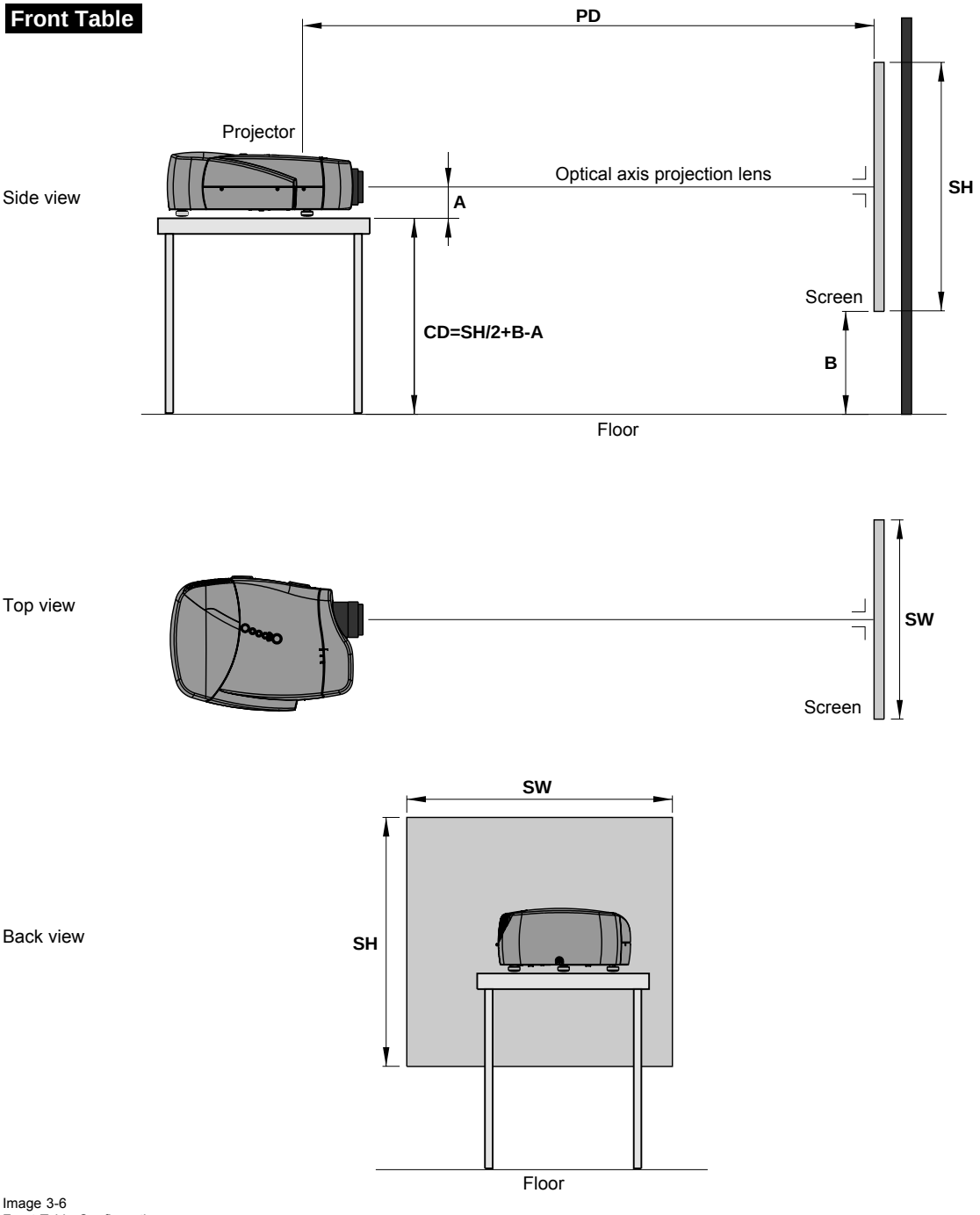



Image 3-6
Front Table Configuration

**Front Ceiling**

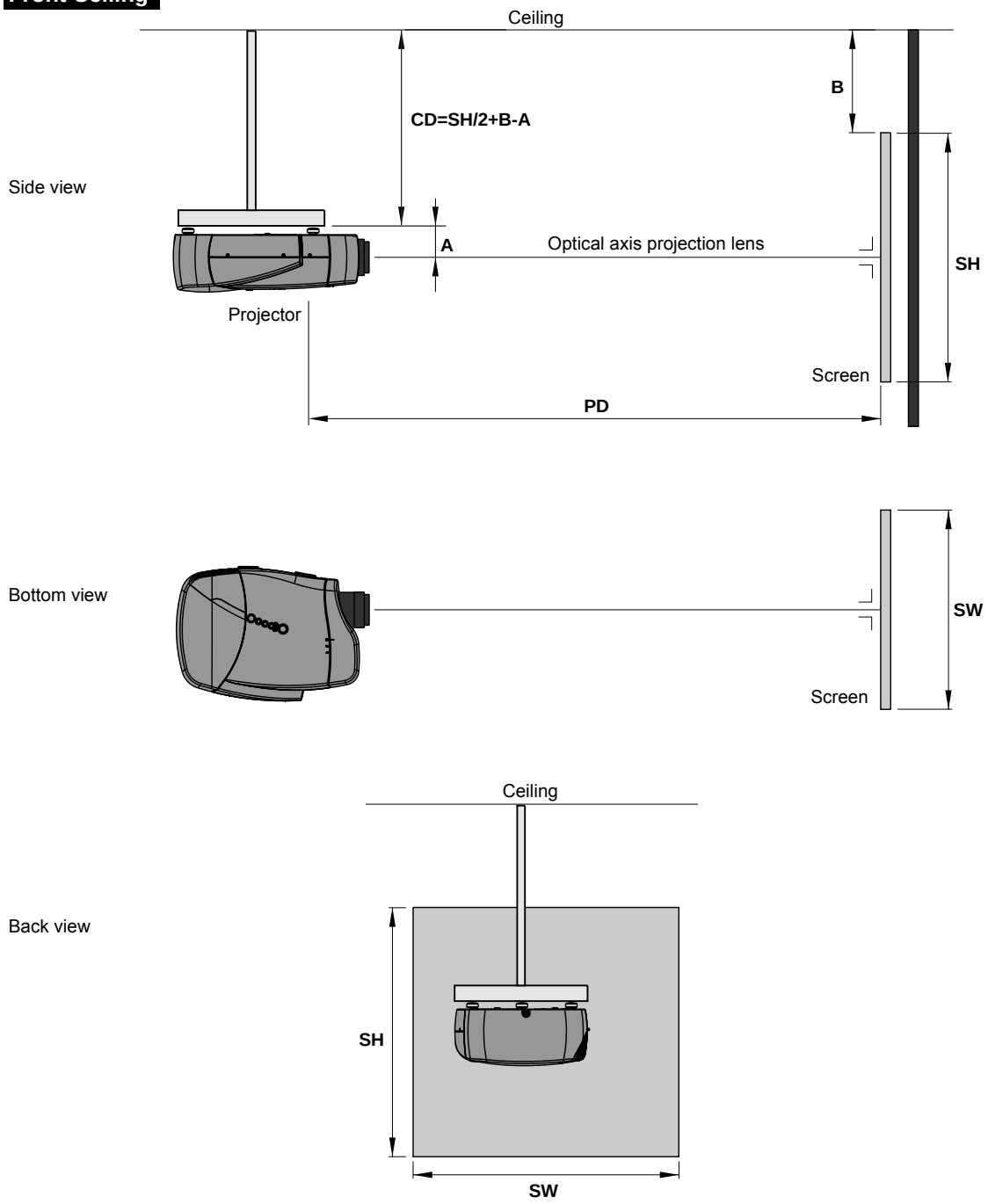



Image 3-7
Front Ceiling Configuration

## 3.6 Available Lens Types

### Standard Non-Motorized Lens

Non-motorized lens: manual zoom and focus adjustment.

- QCLD 1.1 – 1.3 :1 (Full off-axis)

### Optional Motorized Lenses

Motorized lens: motorized zoom and focus adjustment.

- CLD 1.2 – 1.6 :1 (Full off-axis)
- CLD 1.6 – 2.4 :1 (Full off-axis)
- CLD 2.4 – 4.3 :1 (Full off-axis)

### Optional Fixed Lens

Fixed lens: manual focus adjustment.

- QCLD 0.85 :1 (On-axis)

### Product Numbers

| Lens | Product Number | Product Number (Scheimpflug Version) |
|---|---|---|
| QCLD (0.85:1) | R9849860 | R9849862 |
| QCLD (1.1-1.3:1) | R9849850 | R9849852 |
| CLD (1.2-1.6:1) | R9849870 | R9849872 |
| CLD (1.6-2.4:1) | R9849880 | R9849882 |
| CLD (2.4-4.3:1) | R9849890 | R9849892 |

## 3.7 Lens Formulas

### Formulas

| Lenses | Metric Formulas (meter) | Inch formulas (inch) |
|---|---|---|
| QCLD (0.85:1) | PD = 0.86 X SW + 0.06 | PD = 0.86 X SW + 2.36 |
| QCLD (1.1-1.3:1) | $PD_{min}$ = 1.1 X SW + 0.05<br>$PD_{max}$ = 1.3 X SW + 0.06 | $PD_{min}$ = 1.1 X SW + 1.97<br>$PD_{max}$ = 1.3 X SW + 2.36 |
| CLD (1.2-1.6:1) | $PD_{min}$ = 1.19 X SW + 0.02<br>$PD_{max}$ = 1.63 X SW + 0.02 | $PD_{min}$ = 1.19 X SW + 0.79<br>$PD_{max}$ = 1.63 X SW + 0.79 |
| CLD (1.6-2.4:1) | $PD_{min}$ = 1.58 X SW + 0.00<br>$PD_{max}$ = 2.39 X SW - 0.02 | $PD_{min}$ = 1.58 X SW + 0.00<br>$PD_{max}$ = 2.39 X SW - 0.79 |
| CLD (2.4-4.3:1) | $PD_{min}$ = 2.38 X SW - 0.03<br>$PD_{max}$ = 4.32 X SW - 0.01 | $PD_{min}$ = 2.38 X SW - 1.18<br>$PD_{max}$ = 4.32 X SW - 0.39 |

## 3.8 Lens Installation

### Necessary tools

No tools.

### How to install the Lens?

1. Take the lens out of its packing material.
2. Make sure the lens lock holder is in the left position. (image 3-8)
3. Lock the lens by placing it in the housing, push carefully to lock (“click” sound) the lens in the housing. (image 3-9)
   ***Caution:*** *In case of a motorized lens the female jack on the lens (A) must be in front of the male jack (B) located in the upper-left part of the housing in the projector. (image 3-10)*

   ***Note:*** *In case of a Scheimpflug lens, insert the lens with the adjustment bolts located in the left and bottom position. (image 3-11)*

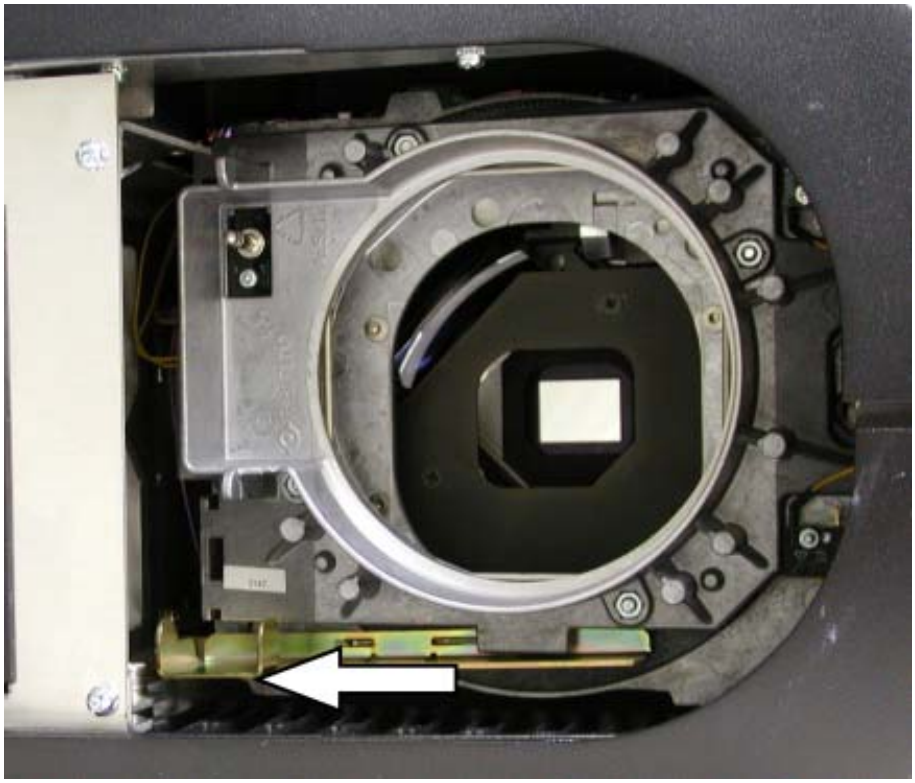


Image 3-8
Make sure the lens lock holder is in the left position.

Image 3-9

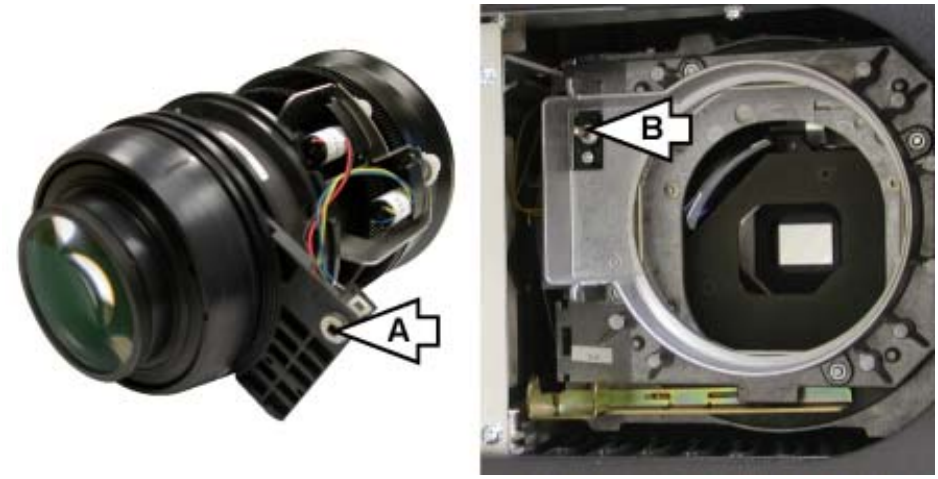



Image 3-10
The female jack on the lens (A) must be in front of the male jack (B) located in the upper-left part of the housing in the projector.

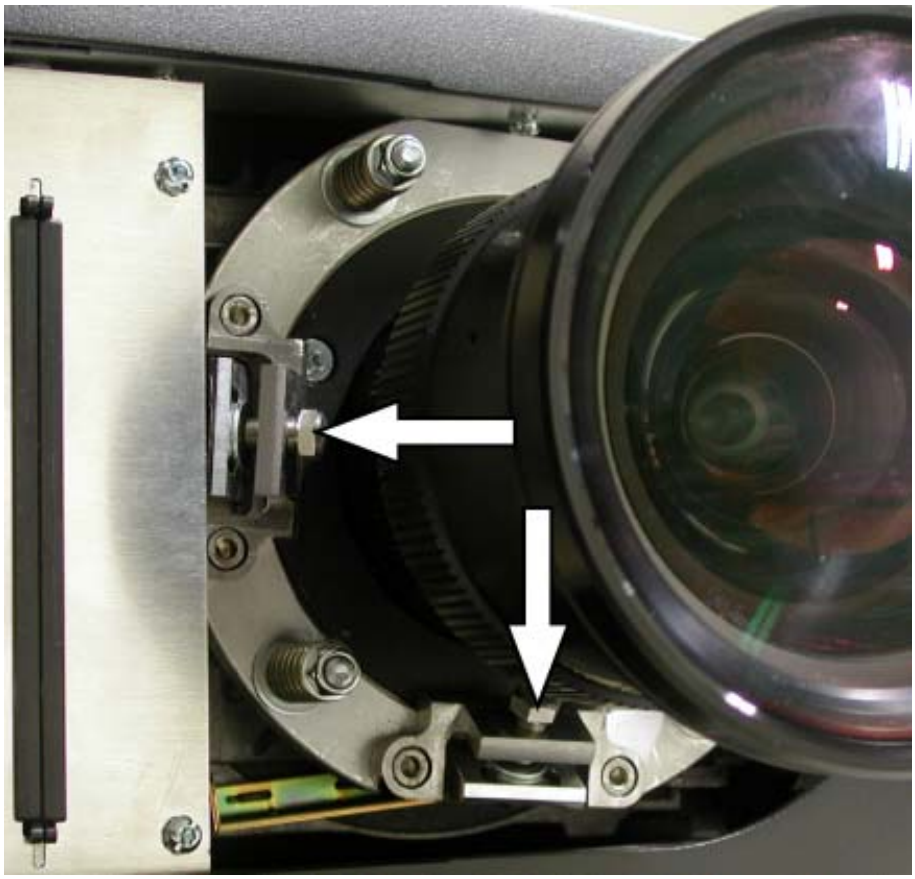


Image 3-11
In case of a Scheimpflug lens, insert the lens with the adjustment bolts located in the left and bottom position.

**A Scheimpflug lens will limit shift possibilities. Mount the lens depending on the application (adjustment bolts located in the left and bottom position to allow maximum shift up and in the left/top position to allow maximum shift down)**

**CAUTION: The projector is delivered by default with a 100% upward shifted position. To mount the Scheimpflug lens, first shift down.**

### How to remove the Lens?

1. Support the lens with one hand.
2. The lens lock handle is located on the front side of the projector, slide this handle to the right. (image 3-12)
3. Remove the lens out of its housing.
4. Slide the lens lock handle back to the left.

Image 3-12
The lens lock handle is located on the front side of the projector, slide this handle to the right.

## 3.9 Lens Shift Capability

### Introduction

The integrated Lens Shift Capabilities make the BarcoReality SIM 5plus easy to install in a variety of positions without the use of special mechanical interfaces.

### Vertical Lens Shift Range

- Off-axis adjustable Vertical Lens Shift Range: +100% to –30%:

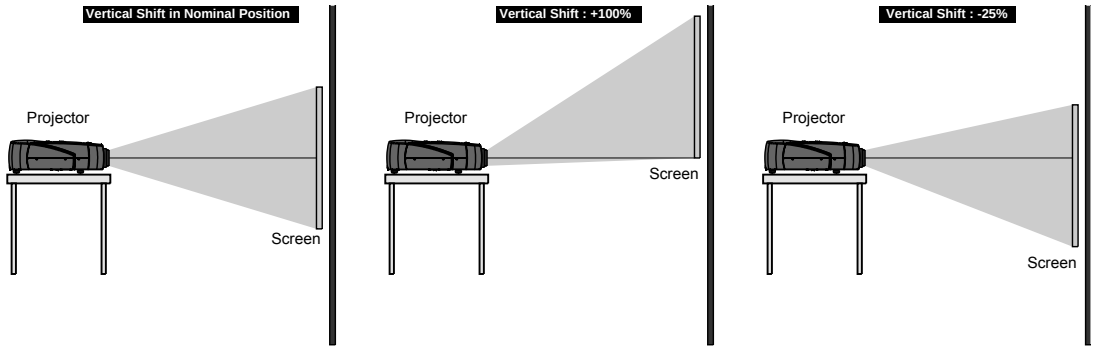



Image 3-13
Vertical Lens Shift Range: +100% to –30%

### Horizontal Lens Shift Range

- Off-axis adjustable Horizontal Lens Shift Range: +100% in one direction (away from the inputs):

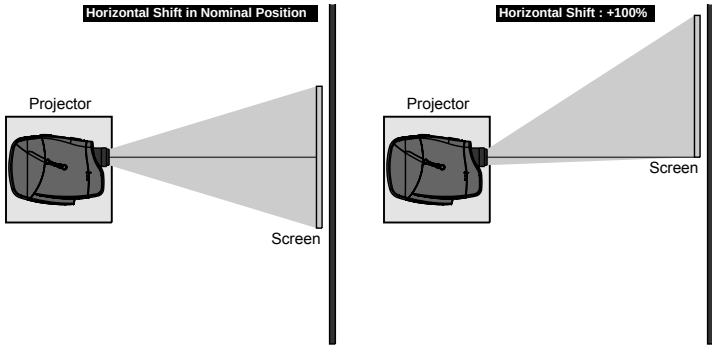



Image 3-14
Horizontal Lens Shift Range: +100% in one direction (away from the inputs)

## 3.10 Scheimpflug Lens Adjustment

**The Scheimpflug Lens Version is available as an option.**

### Scheimpflug Lens Adjustment

For more info on how to perform the Scheimpflug Lens Adjustment on a Scheimpflug lens see "Scheimpflug Lens Adjustment", page 223.

## 3.11 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.**

## 3.12 Battery Installation

### How to install?

The batteries, not yet installed to save the battery life time, are delivered inside the plastic bag with the power cord.

1. Remove the battery cover on the backside of the remote control by pushing the indicated handle a little towards the bottom of the RCU. (image 3-15)
2. Lift up the top side of the cover at the same time. (image 3-16)
3. Insert the 2 new 1,5 V batteries as indicated in the RCU. (image 3-17)
4. Put the battery cover back in place.

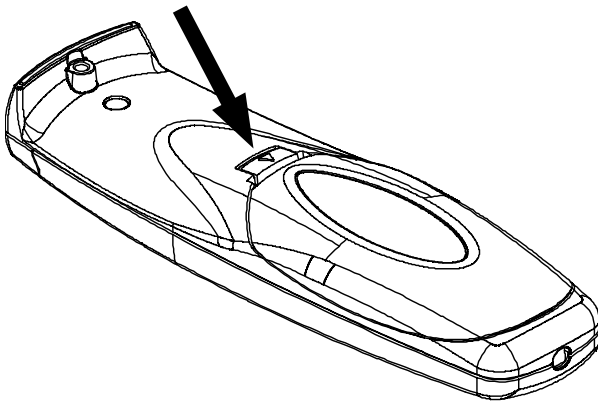


Image 3-15
Push the indicated handle

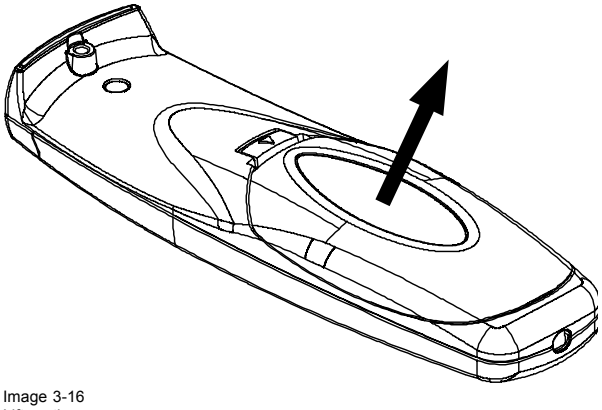


Image 3-16
Lift up the cover

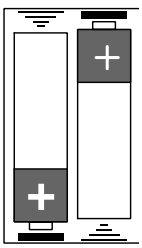



Image 3-17
Insert the 2 batteries

# 4. CONNECTIONS

### Overview

- Connections Overview
- Power Cord Connection
- Source Input Connections
- Communication Connections

## 4.1 Connections Overview

### Connections Overview

The following table gives an overview of the available connections found on the BarcoReality SIM 5plus:

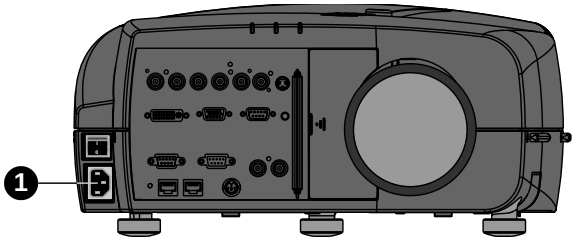



Image 4-1
Power Cord Connection

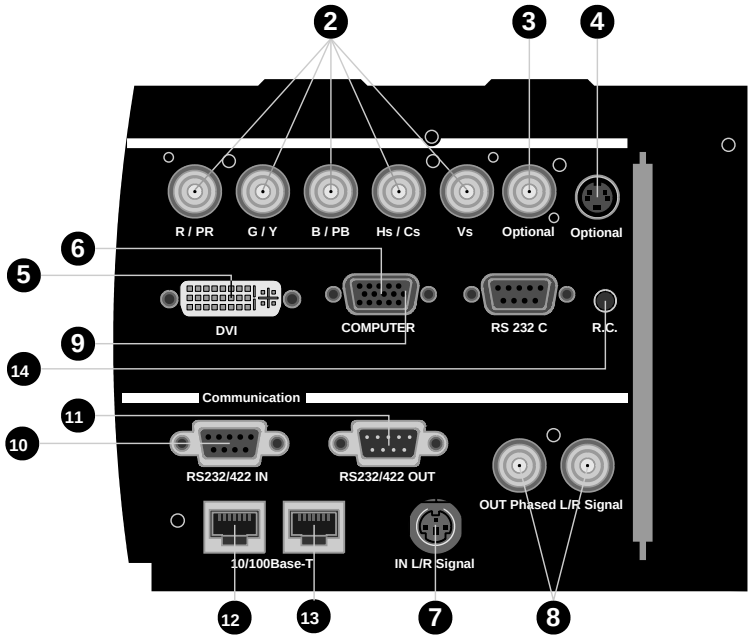



Image 4-2
Connections Overview

| | |
|---|---|
| **Power Cord Connection** | |
| 1 | Power Cord Connection |
| **Source Input Connections** | |
| 2 | 5–BNC Cable Input |
| 3 | For future expansion |
| 4 | For future expansion |

| | |
|---|---|
| 5 | DVI Input (Single link up to 165 MHz) |
| 6 | VGA D15 connector |
| **Stereo Connections** | |
| 7 | Not used |
| 8 | Not used |
| **Communication Connections** | |
| 9 | RS232 Input (DB9 connector) |
| 10 | RS232/422 In (DB9 connector) |
| 11 | RS232/422 Out (DB9 connector) |
| 12 | 10/100 Base-T In |
| 13 | 10/100 Base-T Out / Link |
| 14 | Not used |

## 4.2 Power Cord Connection

### Power Input Range

The power input is auto-ranging from 90–254 VAC @ 50/60 Hz.

### Power Consumption

Power Consumption of 1 BarcoReality SIM 5plus is 750 W.

### Power Cord Connection

1. Use the supplied power cord to connect your projector to the wall outlet. Plug the female power connector into the male connector at the front of the projector. (image 4-3)

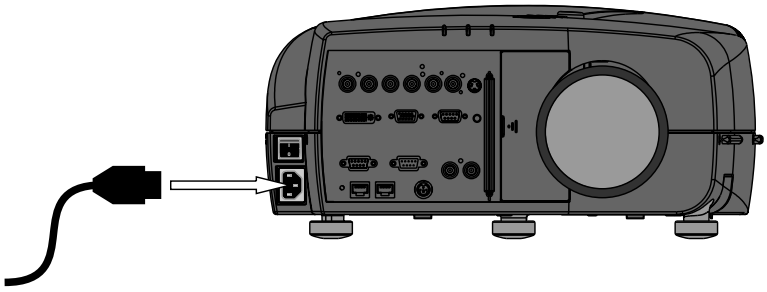



Image 4-3
Power Cord Connection

### Fuses

For continued protection against fire hazard:

- Refer replacement to qualified service personnel.
- Ask to replace with the same type of fuse.

## 4.3 Source Input Connections

### Overview

- 5–Cable Input
- DVI Input
- Computer Input

### 4.3.1 5–Cable Input

#### Which signals can be connected to the 5–Cable Input?

| Input Signal / BNC Connector | R | G | B | H | V |
|---|---|---|---|---|---|
| RGBHV | R | G | B | H | V |
| RGBS | R | G | B | S | – |
| RGsB | R | Gs | B | – | – |

#### Option

To display Component, the software option (ROPT2023) has to be activated.

#### How to connect to the 5–Cable Input?

1. Connect the BNC's from the source signal output cable to the 5–Cable Input on the projector. (image 4-4)

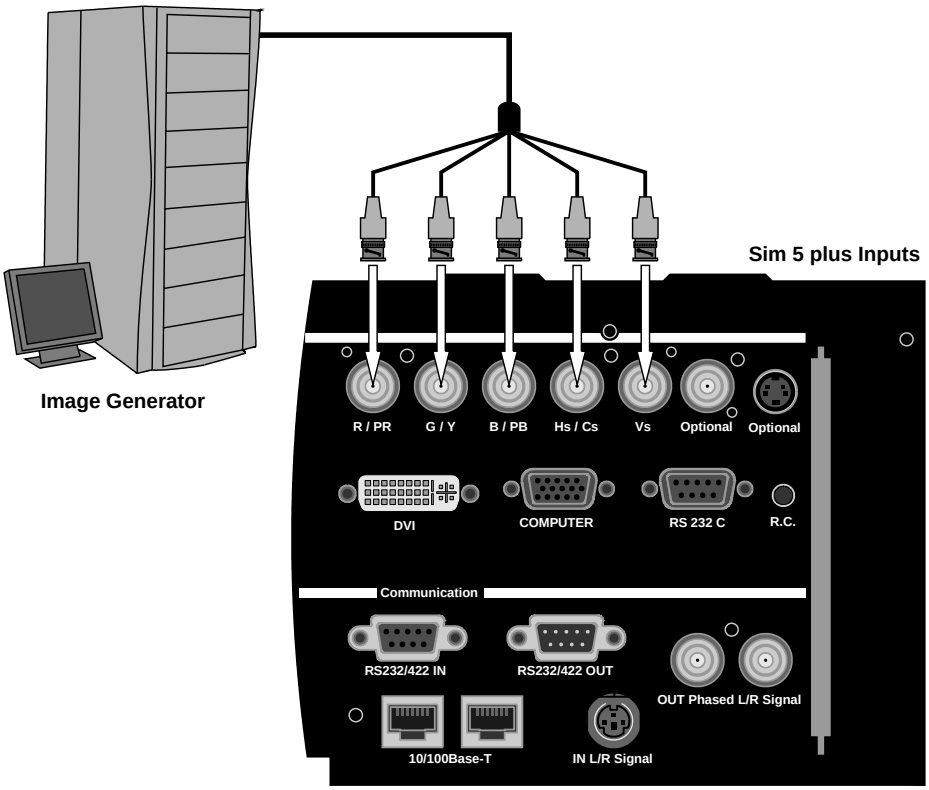



Image 4-4
5–Cable Input

### 4.3.2 DVI Input

**DVI**

Digital Visual Interface is a display interface developed in response to the proliferation of digital flat panel displays.

The digital video connectivity standard that was developed by DDWG (Digital Display Work Group). This connection standard offers two different connectors: one with 24 pins that handles digital video signals only, and one with 29 pins that handles both digital and analog video. This standard uses TMDS (Transition Minimized Differential Signal) from Silicon Image and DDC (Display Data Channel) from VESA (Video Electronics Standards Association).

DVI can be single or dual link.

#### How to connect the DVI Input?

1. Connect the DVI connector from the source signal output cable to the DVI Input on the projector. (image 4-5)

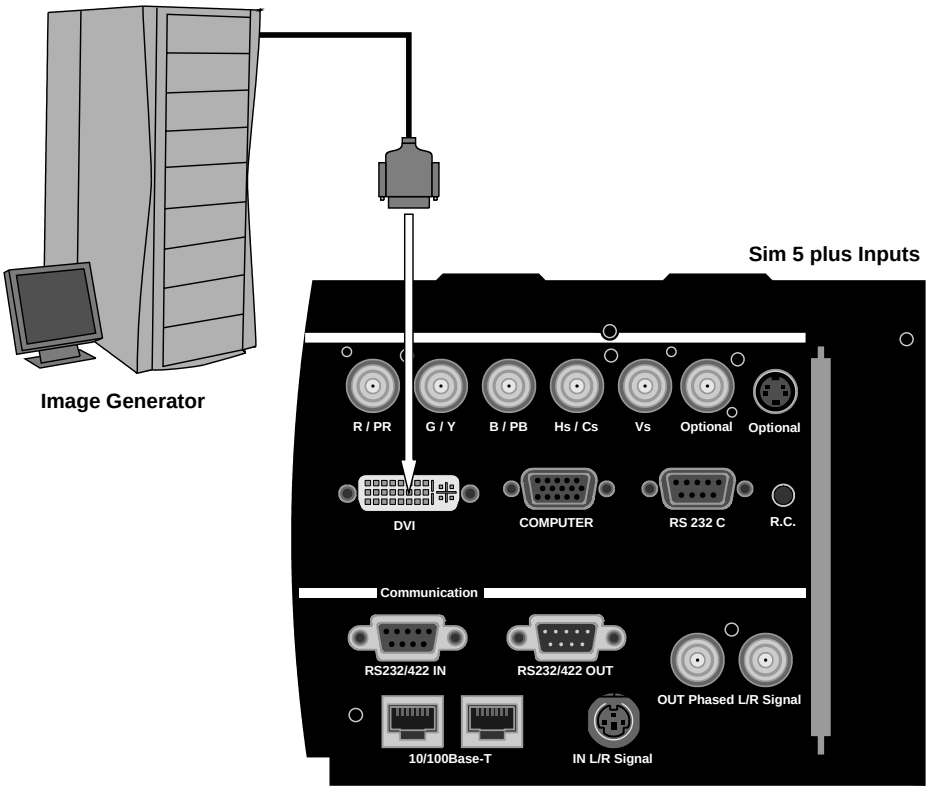



Image 4-5
DVI Input

### 4.3.3 Computer Input

#### How to connect the Computer Input?

1. Connect the VGA D15 connector from the source signal output cable to the DVI Input on the projector. (image 4-6)

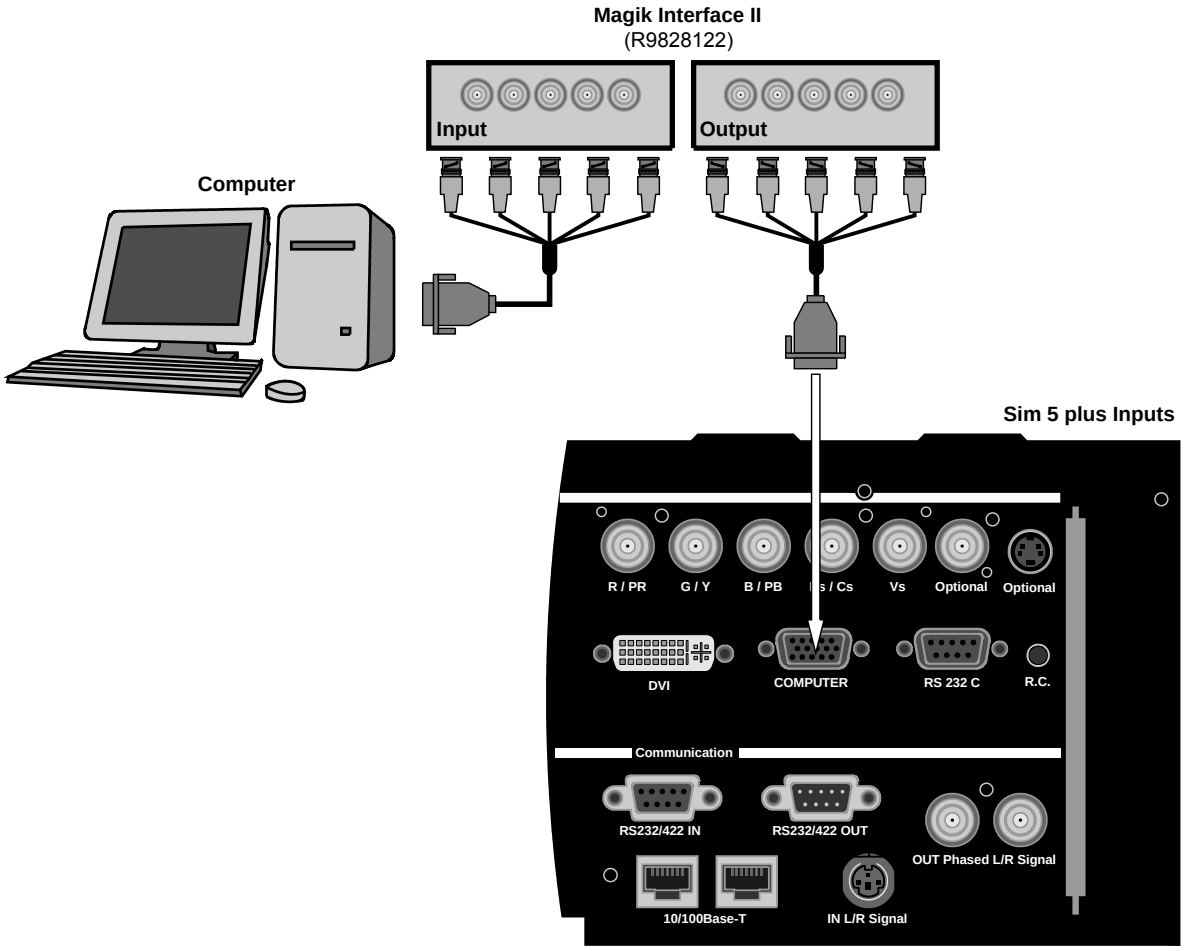



Image 4-6
Computer Input

**Always use an interface (e.g. Barco's Magik II Interface R9828122) when a computer and local monitor have to be connected to the projector as the signal cable coming from the projector is limited to 60 cm due to interferences.**

## 4.4 Communication Connections

### Overview

- RS232/RS422 Connections
- Ethernet Connections

### 4.4.1 RS232/RS422 Connections

#### What is possible with the RS232/RS422 Connections?

1. Remote control :
   - easy adjustment of projector when connected to an IBM PC (or compatible) or Apple computer.
   - allow storage of multiple projector configurations and set ups.
   - wide range of control possibilities.
   - address range from 0 to 255.
2. Data communications: sending data to the projector or copying the data from the projector to a memory device (hard disc, floppy, etc.).

#### How to connect the RS232/RS422 ports?

1. Connect the D9 connector from the RS232/RS422 cable to the RS Input on the projector. (image 4-7)
2. When applicable connect the RS232/RS422 Output to the next projector in the daisy chain setup.

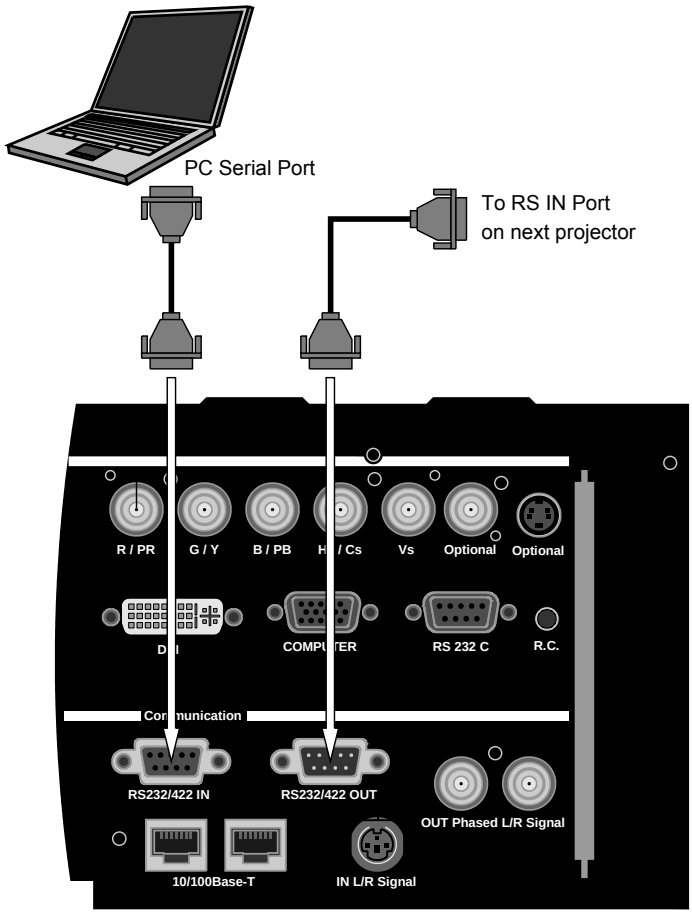



Image 4-7
RS232/RS422 Connections

### 4.4.2 Ethernet Connections

#### What is possible with the Ethernet Connections?

The Ethernet Connections can be used to:

- Upload or download projector software.
- Set up RS232 communication (TCP-packets) with the projector.

#### How to connect the Ethernet ports?

1. Plug one end of the TCP/IP cable into the PC or the network socket. (image 4-8)
2. Connect the other end of the TCP/IP cable into the 'Ethernet In' port on the projector.

   The orange led will light up when network activity is detected.

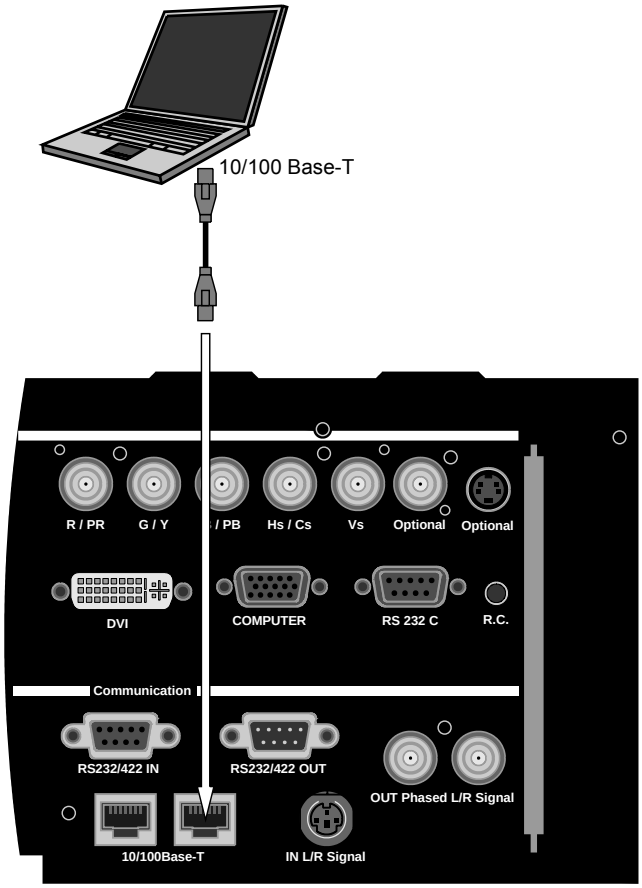



Image 4-8
Ethernet Connections

# 5. GETTING STARTED

## 5.1 Operating the Projector

### How to Operate the Projector?

The projector can be controlled by using:

- the Remote Control Unit (RCU).
- the Local Keypad on top of the Projector.
- the RS232 commands.

## 5.2 RCU Terminology Overview

### What keys can be found on the RCU?

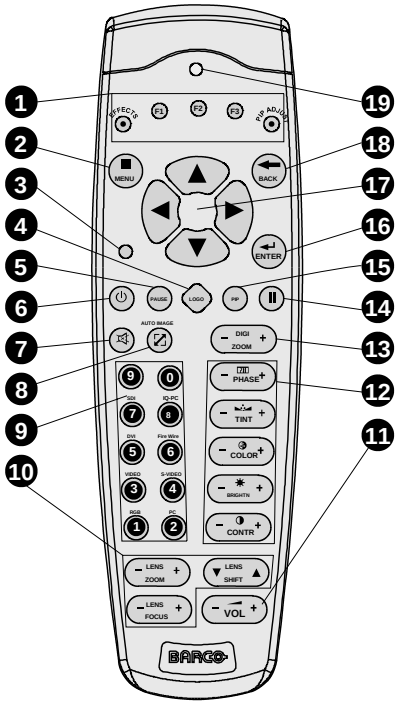



Image 5-1
RCU Overview

The following table gives an overview of the different functionalities of the keys that can be found on the RCU:

| | | |
|---|---|---|
| 1 | Function keys | Not used |
| 2 | MENU | Menu key, to enter or exit the Toolbar menu |
| 3 | Address key | (Recessed key), to enter the address of the projector (between 0 and 9). Press the recessed address key with a pencil, followed by pressing one digit button between 0 and 9 |
| 4 | LOGO | Switch between displaying the internal or external pattern in the Geometry Distortion and the Shape (Blanking) dialogbox. |
| 5 | PAUSE | To stop projection for a short time, press 'PAUSE'. The image disappears but full power is retained for immediate restarting. |
| 6 | STANDBY | Standby button, to start projector when the power switch is switched on and to switch off the projector without switching off the power switch<br>**Attention: Switching to Standby. When the projector is running and you want to go to standby, press the standby key for 2 seconds.** |

| | | |
|---|---|---|
| 7 | MUTE | Not used |
| 8 | Auto image | Not used |
| 9 | Digit buttons | Direct input selection |
| 10 | Lens control | Use these button to obtain the desired ZOOM, SHIFT, FOCUS |
| 11 | VOL | Not used |
| 12 | Picture Controls | Use these buttons to obtain the desired picture analog level |
| 13 | DIGI ZOOM | Not used |
| 14 | FREEZ | Not used |
| 15 | PIP | Not used |
| 16 | ENTER | To confirm an adjustment or selection in the menu |
| 17 | Cursor keys | To make menu selections, to perform bare scale adjustments or to zoom/focus when the direct access is active |
| 18 | BACK | To leave the selected menu or item (go upwards to previous menu) |
| 19 | RCU operation indication led | Lights up when a button on the remote control is pressed. (This is a visual indicator to check the operation of the remote control) |

## 5.3 Local Keypad Terminology Overview

### What keys can be found on the Local Keypad?

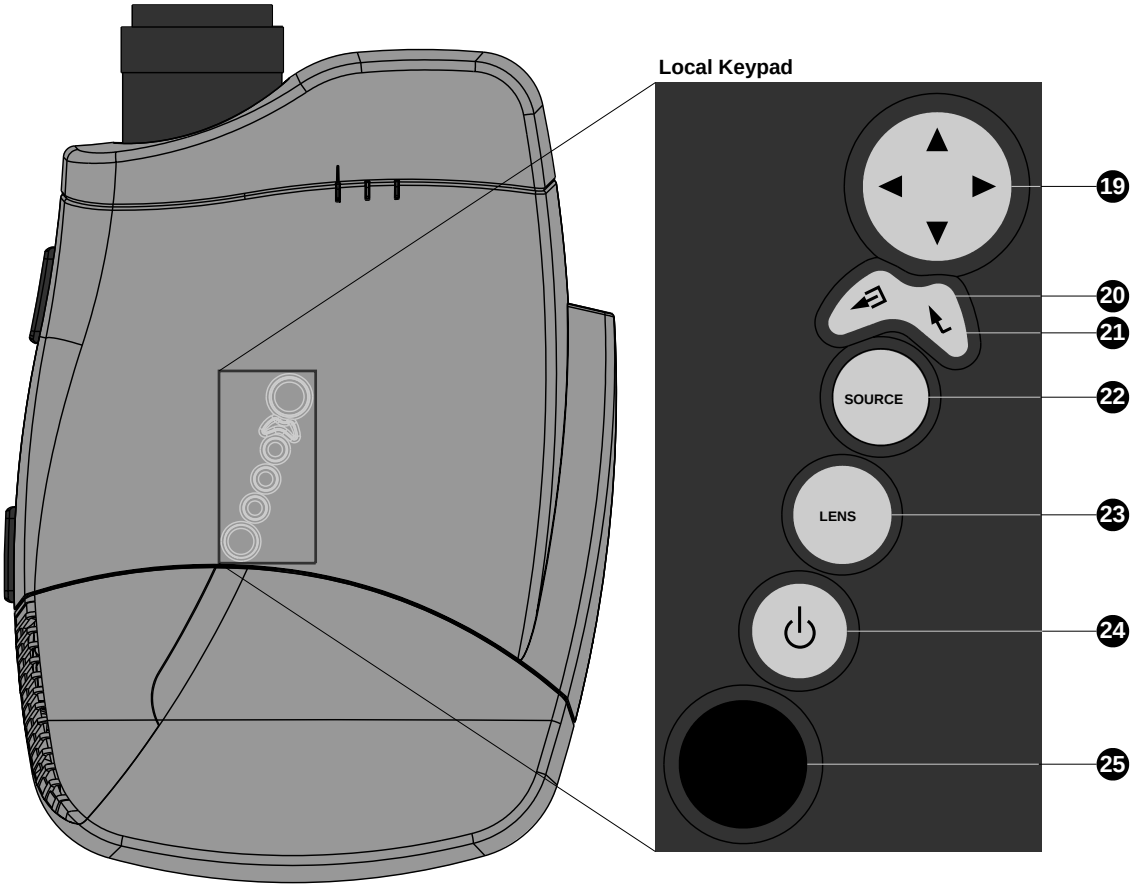



Image 5-2
Local Keypad Overview

The following table gives an overview of the different functionalities of the keys that can be found on the Local Keypad:

| | | |
|---|---|---|
| 19 | Cursor keys | To make menu selections, to perform bare scale adjustments or to zoom/focus when the direct access is active |
| 20 | ENTER | To start up the adjustment mode or to confirm an adjustment or selection in the adjustment mode |
| 21 | BACK | To leave the selected menu or item (go upwards to previous menu) |
| 22 | SOURCE | Not used |
| 23 | Lens control | Use these buttons to obtain the desired ZOOM, SHIFT and FOCUS |
| 24 | STANDBY | Standby button, to start projector when the power switch is switched on and to switch off the projector without switching off the power switch<br>**Attention : Switching to Standby. When the projector is running and you want to go to standby, press the standby key for 2 seconds.** |
| 25 | IR Receiver | IR Receiver |

## 5.4 Diagnose Leds

### Diagnose Leds

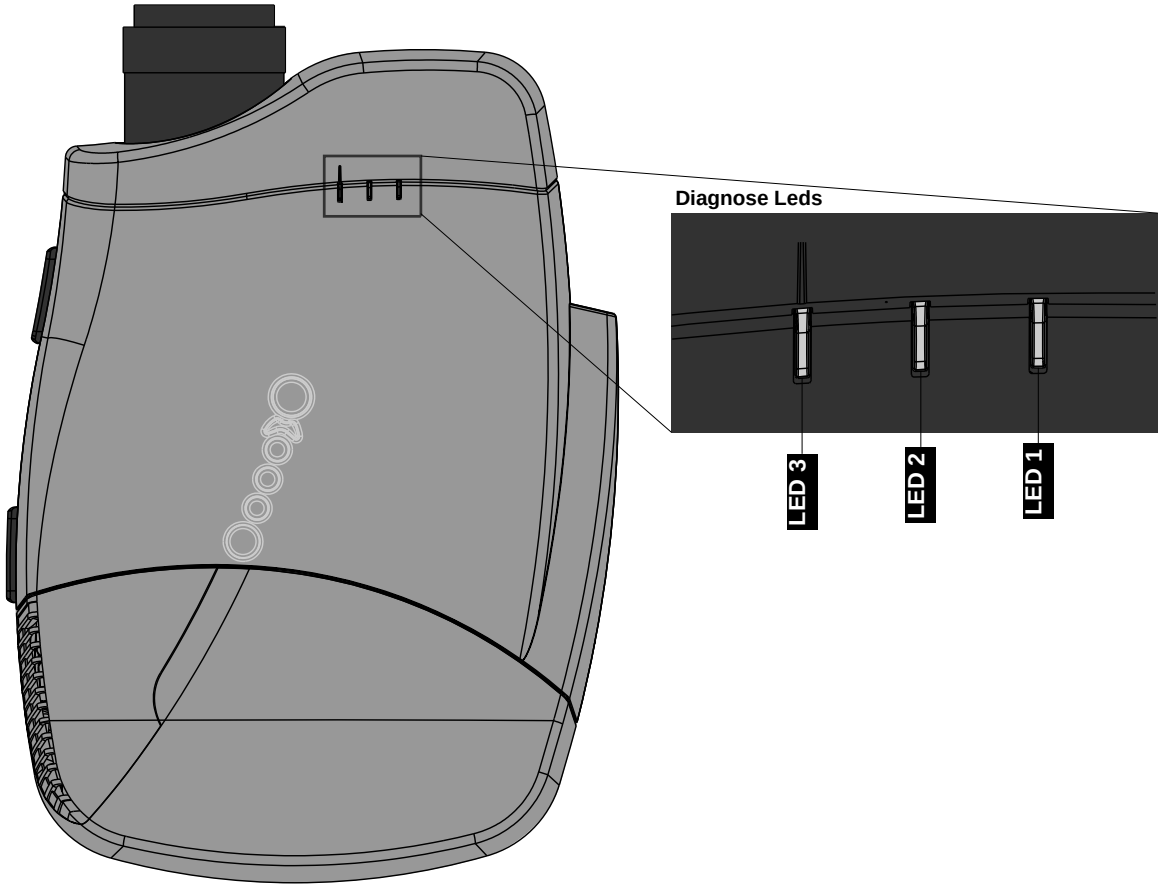



Image 5-3
Diagnose Leds

Following diagnose leds can be found on top of the projector:

| Led # / Led Color | Green | Red |
|---|---|---|
| Led 1 | Cool down sequence: flickers 60 seconds after switching to standby | Rescue program (Software error) |

| Led # / Led Color | Green | Red |
|---|---|---|
| Led 2 | Not used | Hardware error |
| Led 3 | IR acknowledgement | Standby Status |

## 5.5 Switching On

### How to Switch On the Projector?

1. Press the Power Switch on the Left Front of the Projector to switch on the projector. (image 5-4)

   The projector starts up in standby mode and Led 3 will light up red.

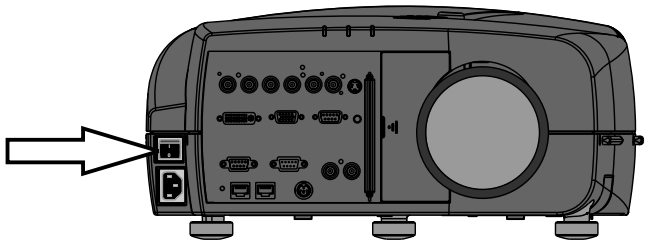


Image 5-4
Power Switch

**When automatic startup is set to 'On', the projector will immediately start with image projection (see "Automatic Startup", page 209).**

### How to Start Image Projection?

1. Press the **STANDBY** key (or the Source Selection Shortcut Digit) on the RCU or on the Local Keypad. (image 5-5)
   ***Note:*** *When automatic startup is set to 'On', the projector will immediately start with image projection when swithing the projector 'On' (see "Automatic Startup", page 209).*

   The projector will start up, following message will be displayed, according to the used Dynacolor™ settings, the message display time can vary between 5 to 30 seconds. (image 5-6)

   The 'Please Wait' message will disappear and the identification box will be displayed together with the selected source. After 2 seconds the identification box will disappear. (image 5-7)

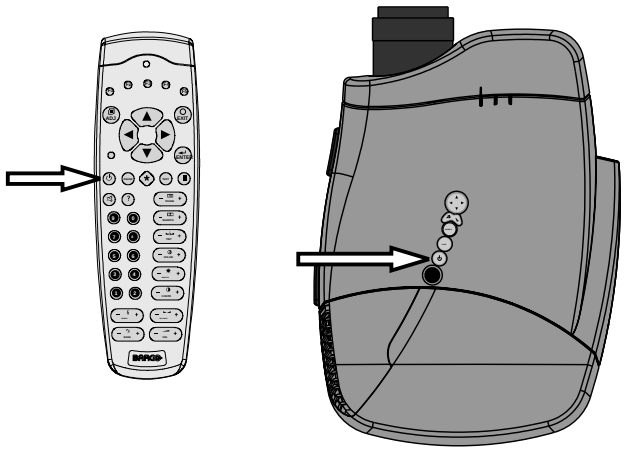


Image 5-5
Standby key on the RCU or Local Keypad


Image 5-6

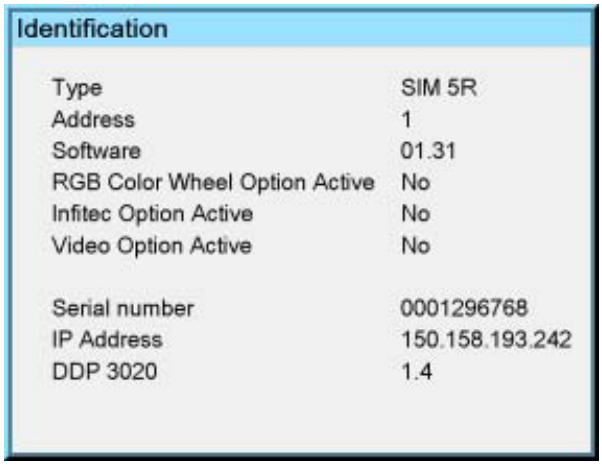



Image 5-7

### Lamp Runtime Warning

The total lamp runtime for a safe operation is max. 1500 hours, do not use it longer.

The Lamp Runtime Warning is default set to 30 hours before the end of the lamp lifetime, to change this setting (see "Lamp Runtime Warning", page 174).

The Lamp runtime warning will be displayed when this setting is reached, e.g. 30 hours before the end of the lamp runtime, and from this moment on, at every start-up of the projector.

**Press the BACK key on the RCU to remove this warning.**

**WARNING: Operating the lamp longer than 1500 hours may damage the projector.**

**WARNING: Always replace with the same type of lamp, call a BARCO authorized service technician to replace the lamp and reset the lamp runtime.**

## 5.6 Switching to Standby

### How to Switch the Projector to Standby?

1. Press the **STANDBY** key for 2 seconds to switch the projector to Standby.

   The cool down sequence is started, Led 1 will flicker for 60 seconds after switching to standby.

## 5.7 Switching Off

### How to Switch Off the Projector?

1. First switch the projector to Standby by pressing the **STANDBY** key for 2 seconds.

   The cool down sequence is started, Led 1 will flicker for 60 seconds after switching to standby.

2. When the cool down sequence is finished switch 'Off' the projector with the power switch.

## 5.8 Pointing the RCU

### Pointing directly to the IR Sensor on the Projector

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

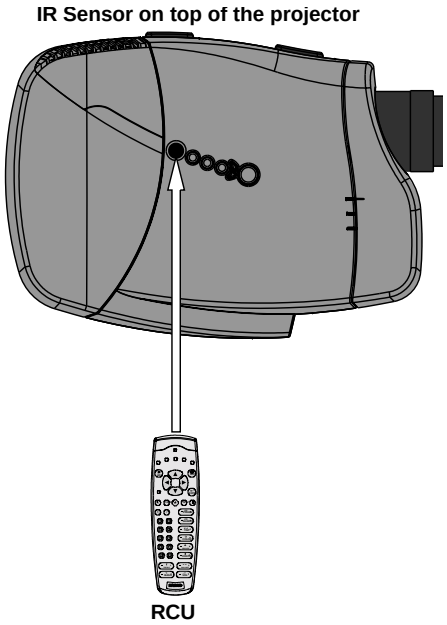



Image 5-8
Pointing to the IR Sensor on the Projector

### Pointing to the Reflective Screen

1. Point the front of the RCU to the reflective screen surface. (image 5-9)

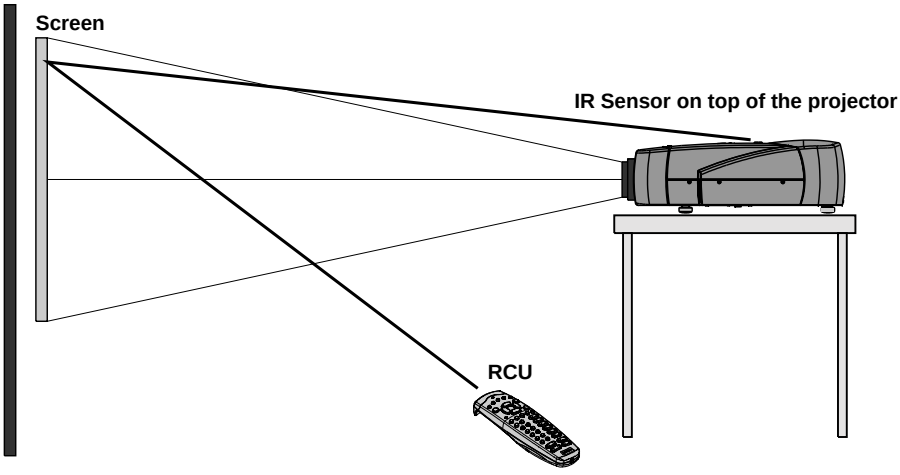



Image 5-9
Point the front of the RCU to the reflective screen surface

## 5.9 Controlling the Projector

### 5.9.1 Common Address

### What is Common Address 0?

Every projector has a Common Address default set to ’0’, when the RCU is set to address ’0’, every projector, without exception will listen to the commands given by this RCU.

### When to use Common Address 0?

- Since the RCU is default set to address ’0’, this is used by default to control the projector in a single projector setup.
- The Common Address is used to control multiple projectors using only a single RCU.

### When to use Common Address 1?

Most RCU’s used by other electronic equipment are set to address ’0’, to disable the interference of other RCU’s the Common Address of the projector(s) can be set to ’1’. When the projector’s RCU is set to address ’1’, every projector, without exception will listen to the commands given by this RCU.

### How to set the Common Address?

See ’Change Common Address’ in the chapter ’Service Mode’.

## 5.9.2 Projector Address

### When to use the Projector Address?

To control a separate projector in a multiple projector setup.

### What is the Projector Address?

Each projector can be set to an individual Projector Address, this can be set between ’0’ and ’255’.

| Projector Address | Controlled by |
|---|---|
| 0–9 | RCU |
| 0–255 | Computer (IBM PC or compatible, Apple, ...) |

**Regardless of the Projector Address, the projector will still respond to a RCU set to address ’0’ or ’1’ through the Common Address.**

### How to set the Projector Address?

See ’Change Projector Address’ in chapter ’Service Mode’.

## 5.9.3 RCU Address

**The RCU Address can be any digit between ’0’ and ’9’.**

### How to set the RCU Address?

1. Press the recessed **Address** key with a pencil. (image 5-10)

   The Projector Address for every projector in the room will be displayed as a 3 digit code in a text box on the screen.

2. Enter the RCU Address by pressing a single digit key, within 5 seconds after pushing the address key.
   ***Note:*** *If the Projector Address displays ’003’ press the digit key **3** on the RCU. Do not enter the 3 digit code ’003’, this will set the RCU to address ’0’.*

   ***Note:*** *If no digit is entered within 5 seconds the RCU will return to the default ’0’ address.*

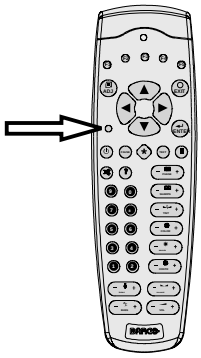


Image 5-10
Address Key

# 6. SOURCE SELECTION

### Overview

- Introduction
- Source Selection Overview
- Source Selection Shortcut Keys
- Source Selection

## 6.1 Introduction

### Introduction

Within the source selection menu it is possible to select the desired Input Slot.

**This is also possible by using the numeric keys on the RCU.**

## 6.2 Source Selection Overview

### Source Selection Overview

Source Selection:

- Data on BNC's
- DVI
- PC

## 6.3 Source Selection Shortcut Keys

### Source Selection Shortcut Keys

Following digit keys on the RCU act as a shortcut key to select the desired source:

| Shortcut Key on the RCU | Source Selection |
|---|---|
| 1 | Data on BNC's |
| 2 | PC |
| 3 | Optional |
| 4 | Optional |
| 5 | DVI |

## 6.4 Source Selection

### How to Select the desired Source?

1. Press the **MENU** key to activate the Menu bar.
2. Use ← or → to highlight *Source Selection*.
3. Press ↓ to pull down the *Source Selection* menu. (image 6-1)
   ***Note:*** *The digit indicates the shortcut key for the source input on the RCU.*

   The Barco logo on the menu indicates the presence of a signal.
4. Use ↑ or ↓ to select the desired source.

5. Press **ENTER** to confirm your choice.

   The selected source will be displayed on the screen.


Image 6-1

# 7. IMAGE MENU

### Overview

- Image Menu Overview
- Input Balance
- Dynacolor™
- Infitec
- Windowing
- Settings
- Video

## 7.1 Image Menu Overview

### Introduction

Within the Image menu it is possible to adjust various image parameters.

### Image Menu Overview

Image:

- Input Balance
  - Black
  - White
  - Preset
- DynaColor™
- Infitec
- Windowing
  - Banking
  - Shift
  - Size
  - Blanking / Soft Edge
- Settings
  - Contrast
  - Brightness
  - Gamma
  - Phase
  - Sharpness
- Video

## 7.2 Input Balance

### What can be done with the Input Balance Adjustment?

The main Input Balance is set by the Preset Input Balance, this is adjusted in the factory. This factory preset is active on all source files.

Due to signal distribution or signal transmission outputs a color imbalance can be the result. For critical applications the Input Balance needs to be adjusted source by source.

The Input Balance in this menu is the source by source additional adjustment, the Input Balance setting is saved for each custom source file.

**This procedure is not so easy and is best done or first demonstrated by an authorized Barco service technician.**

## The objective of input balancing

The objective in input balancing is to “set” the same black level and the same white level for the three colors of a particular input source.

**Black level setting : brightness**

**White level setting : contrast**

The same absolute black and white level for the three colors allows the same reference for Brightness and contrast control of the picture.

These two references also set the range in which the ADC will work for that particular source (this explains also why each input balance setting is linked to a particular source and thus saved in the image file).

## How can it be done ?

To balance the three color signals of a particular source there are conditions; in fact we must know the black and the white level of the source i.e. :

1. The source in question must be able to generate a white signal, ideally a 100% white (background) full screen pattern.
2. The source in question must be able to generate a black signal, ideally a 100 % black (background) full screen pattern.

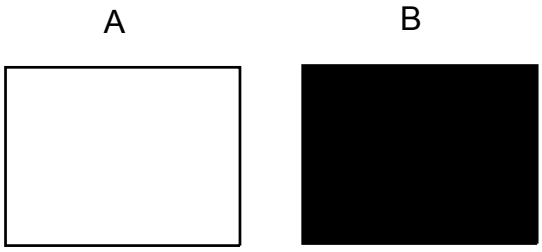



Image 7-1

White balance : In the projector, we will set the contrast for each color until we get a 100% light output picture when projecting a 100% white image (image A)

Black balance : In the projector, we will set the brightness for each color until we get a 0% light output picture when projecting a 100% black image (image B).

**The changeover from min to max is indicated by the apparition of bright spots also called “digital noise”.**

**An alternative to a full screen White/black pattern is the standard gray scale pattern, the white bar will be used for white balance and the black bar for black balance.**

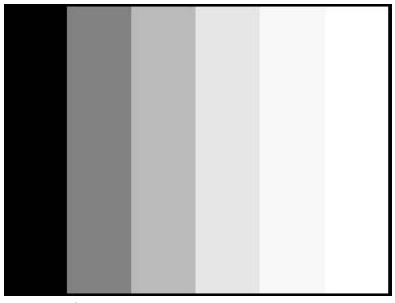


**Image 7-2**

## How to Start Up Input Balance?

1. Push the cursor key ← or → to highlight *Image* in the menubar.
2. Push the ↓ key to pull down the *Image* menu.
3. Push the cursor key ↑ or ↓ to highlight *Input Balance*.
4. Push the → key to pull down the *Input Balance* menu. (image 7-3)

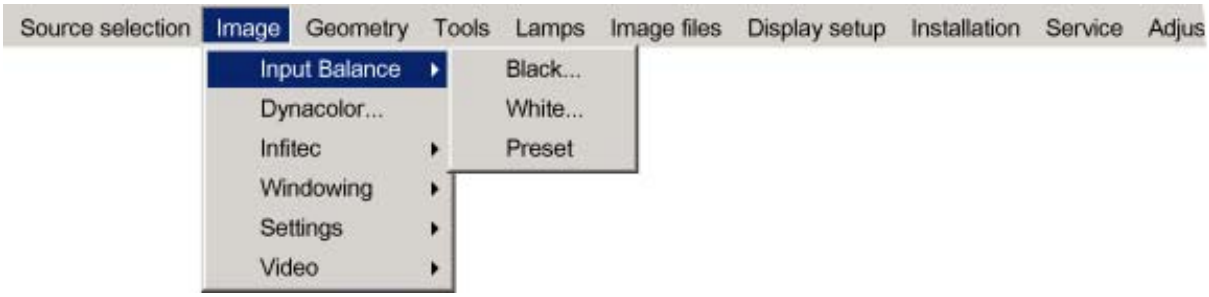



Image 7-3

## How to adjust the Black Input Balance?

1. Generate a black signal, ideally a 100 % black (background) full screen pattern on the source (or gray scale as alternative). (image 7-4)
2. Push the cursor key ↑ or ↓ to highlight *Black Balance* and press **ENTER** to select. (image 7-5)

   The Input Balance slider box will be displayed together with this info bar. (image 7-6)
3. Adjust the Red Black Level on a minimal value. (image 7-7)
4. Adjust the Blue Black Level on a minimal value

   ***Note:*** *This minimal value is not necessary , provided that the 2 other colors are not influencing too much the color to be adjusted, in fact the aim is to minimize the effect of the two other colors since there is a risk of reaching too soon the 50% transition due to the contribution of these two other colors signals.*
5. Adjust the Green black level until bright spots appear on the black part of the image.
6. Adjust the Blue Black Level until bright spots appear on the black part of the image.
7. Adjust the Red Black Level until bright spots appear on the black part of the image.

   The projected image should know be noisy full black. (image 7-8)

Image 7-4
Full black image on the source

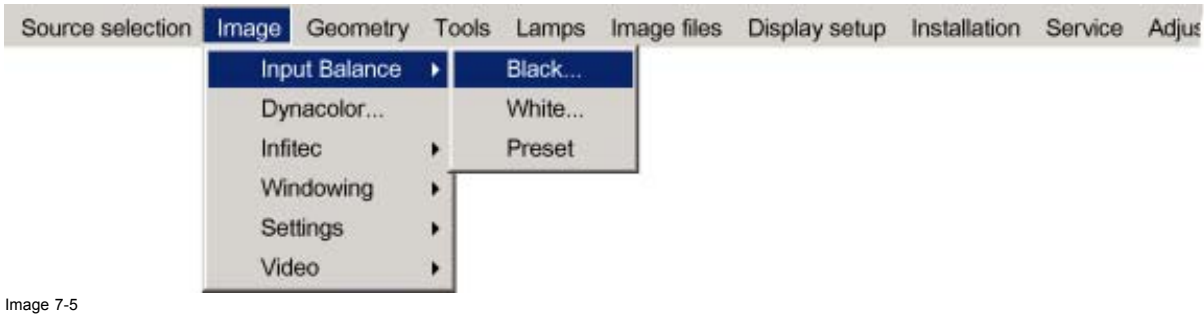



Image 7-5


Image 7-6

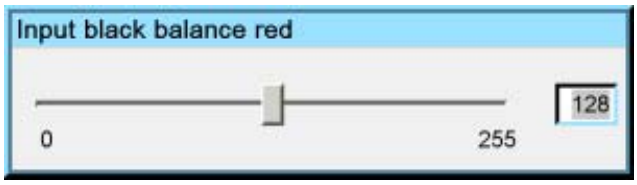



Image 7-7

Image 7-8
Perfect Black Balance setting

**If one uses a gray scale pattern, the bright spots should appear in the black bar.**

## How to adjust the White Input Balance?

1. Generate a white signal, ideally a 100 % white (background) full screen pattern on the source (or gray scale as alternative). (image 7-9)
2. Push the cursor key ↑ or ↓ to highlight *White Balance.* (image 7-10)
3. Adjust the Red White Level (gain) on a minimal value. (image 7-11)
4. Adjust the Blue White Level (gain) on a minimal value.
   ***Note:*** *This minimal value is not necessary , provided that the 2 other colors are not influencing too much the color to be adjusted, in fact the aim is to minimize the effect of the two other colors since there is a risk of reaching too soon the transition (bright spots) due to the contribution of these two other colors signals.*
5. Adjust the Green White Level (gain) until bright spots appear on the white part of the image
6. Adjust the Blue White Level (gain) until bright spots appear on the white part of the image
7. Adjust the Red White Level (gain) until bright spots appear on the white part of the image

   The projected image should now be noisy neutral grey. (image 7-12)

Image 7-9
Full white image on the source

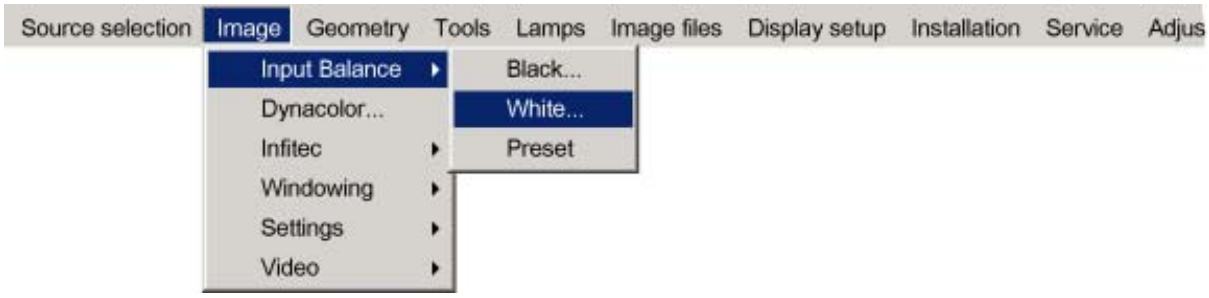



Image 7-10

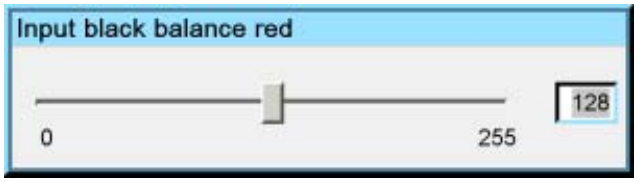



Image 7-11

Image 7-12
Perfect White Balance setting

**If one uses a gray scale pattern, the bright spots should appear in the white bar.**

### How to return to the Factory Preset?

1. Push the cursor key ↑ or ↓ to highlight *Preset* and press **ENTER** to select. (image 7-13)

   The Input Balance is set to the default factory preset input balance setting.

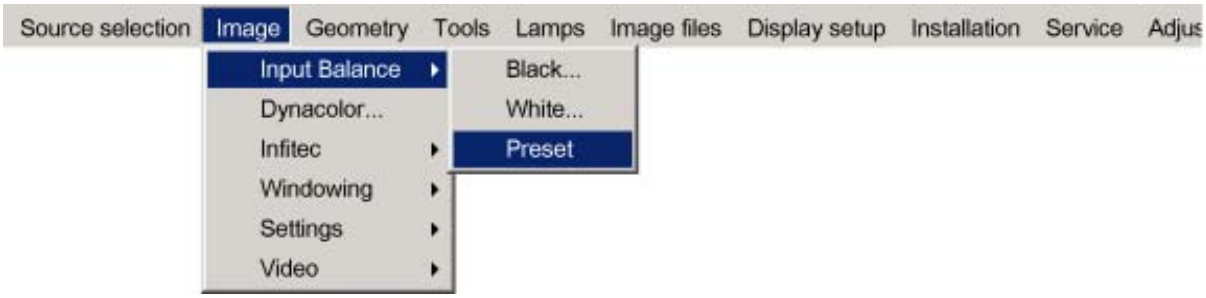



Image 7-13

## 7.3 Dynacolor™

### What can be done?

DynaColor™ will eliminate channel-to-channel color variations.

How to define color?

The CIE chromaticity diagram is one way to plot the colors the human eye can see.

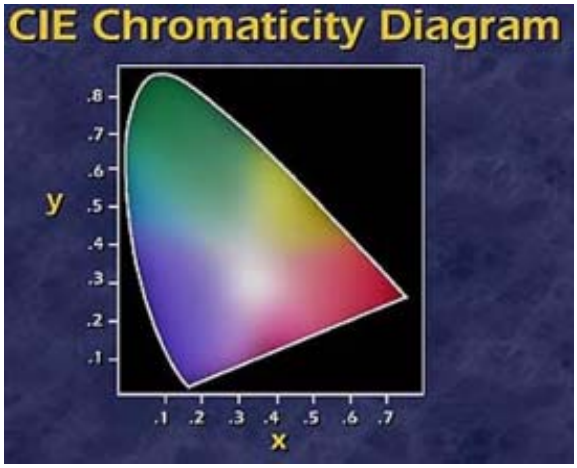



Image 7-14
The CIE chromaticity diagram

A projector can only reproduce a certain color gamut within this diagram. This color gamut is defined by the triangle formed by the x, y coordinates of Red Green and Blue. These parameters are used by the DynaColor™ adjustment in the BarcoReality SIM 5plus.

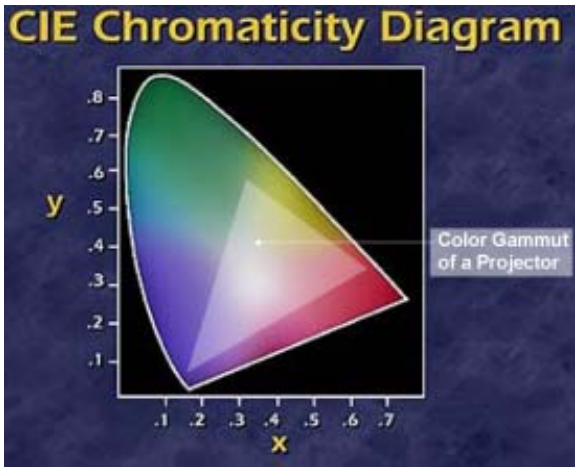



Image 7-15
The projector color gamut is defined by the triangle formed by the x, y coordinates of Red Green and Blue

Due to the tolerance on optical components the x, y values of this color gamut of each projector will differ.

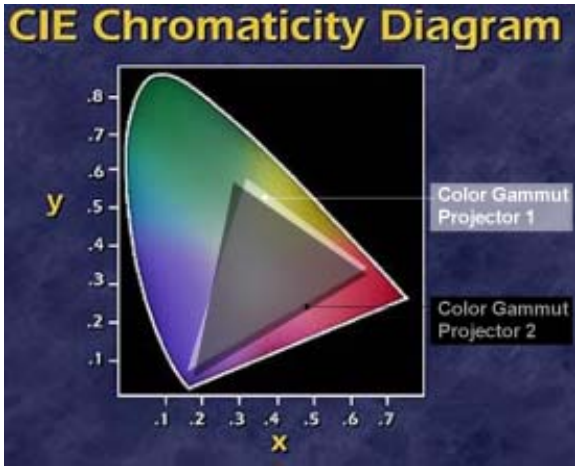



Image 7-16
The color gamut of each projector will differ

When working with a multichannel setup, these color differences between different projectors can be smooth out by matching the color gamuts of the different projectors to a Common Color Gamut.

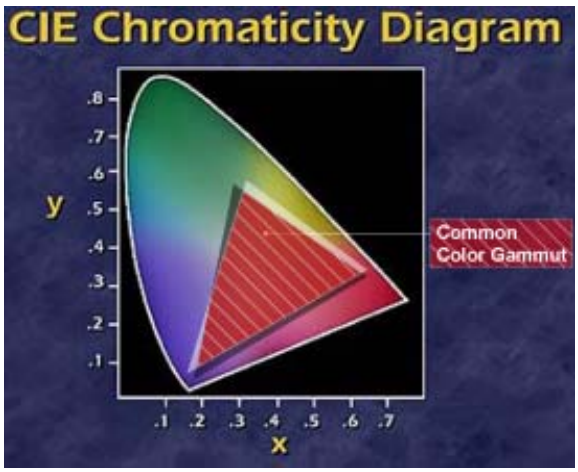



Image 7-17
Common Color Gamut

## The Common Color Gamut

In a basic setup with 2 projectors, the perimeter of the Common Color Gamut is described by the 6 points of intersection of the 2 separate color gamuts.

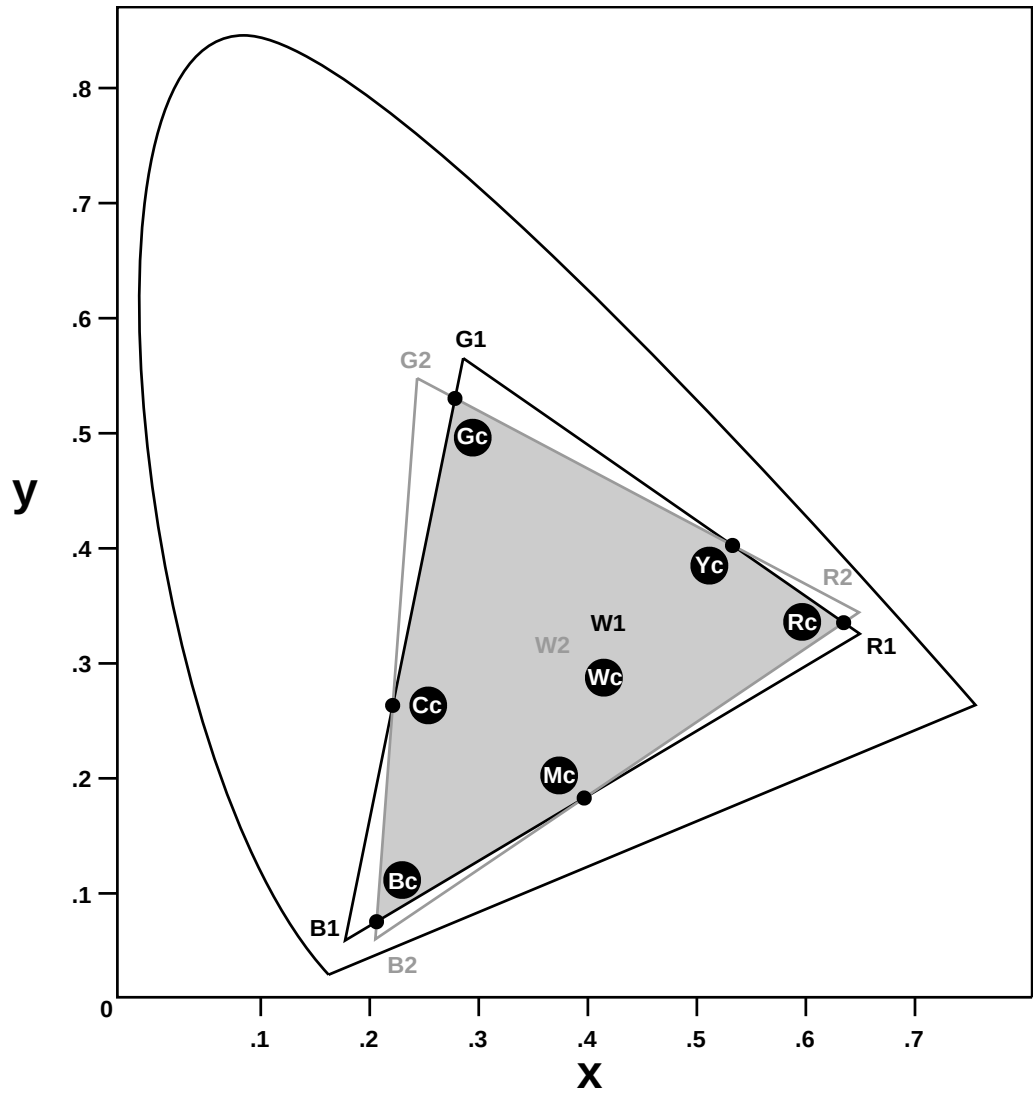



Image 7-18
The Common Color Gamut

R1 Red projector 1
R2 Red projector 2
G1 Green Projector 1
G2 Green Projector 2
B1 Blue Projector 1
B2 Blue Projector 2
W1 White Projector 1
W2 White Projector 2
Rc Red Common Color Gamut
Gc Green Common Color Gamut
Bc Blue Common Color Gamut
Cc Cyan Common Color Gamut
Mc Magenta Common Color Gamut
Yc Yellow Common Color Gamut
Wc White Common Color Gamut

The following parameters can be adjusted within DynaColor™:

- the x, y coordinates and L(ight Output) of the 6 Common Color Gamut perimeter points.
- the x, y coordinates and L(ight Output) of the White point of the Common Color Gamut.

### How to Start up Dynacolor™?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Image* in the menubar.
3. Push the ↓ key to pull down the *Image* menu.
4. Push the cursor key ↑ or ↓ to highlight *Dynacolor* and press **ENTER** to select. (image 7-19)

   The Dynacolor dialog box will be displayed. (image 7-20)

5. Push the cursor key ↑ or ↓ to highlight *Status*.
6. Press **ENTER** to toggle between enable or disable.

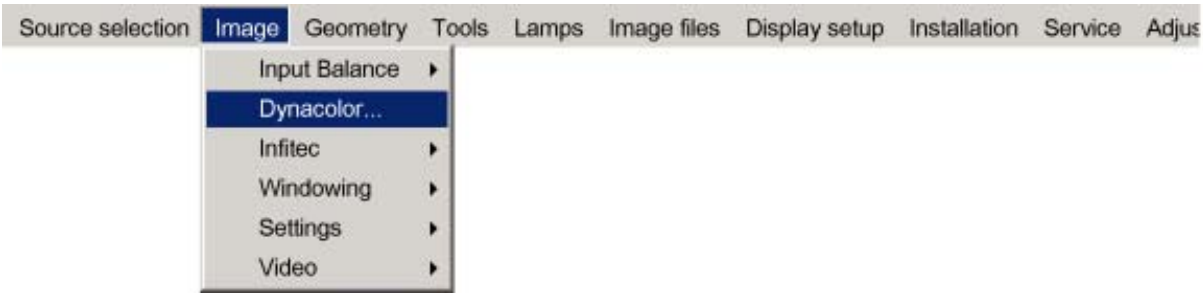



Image 7-19

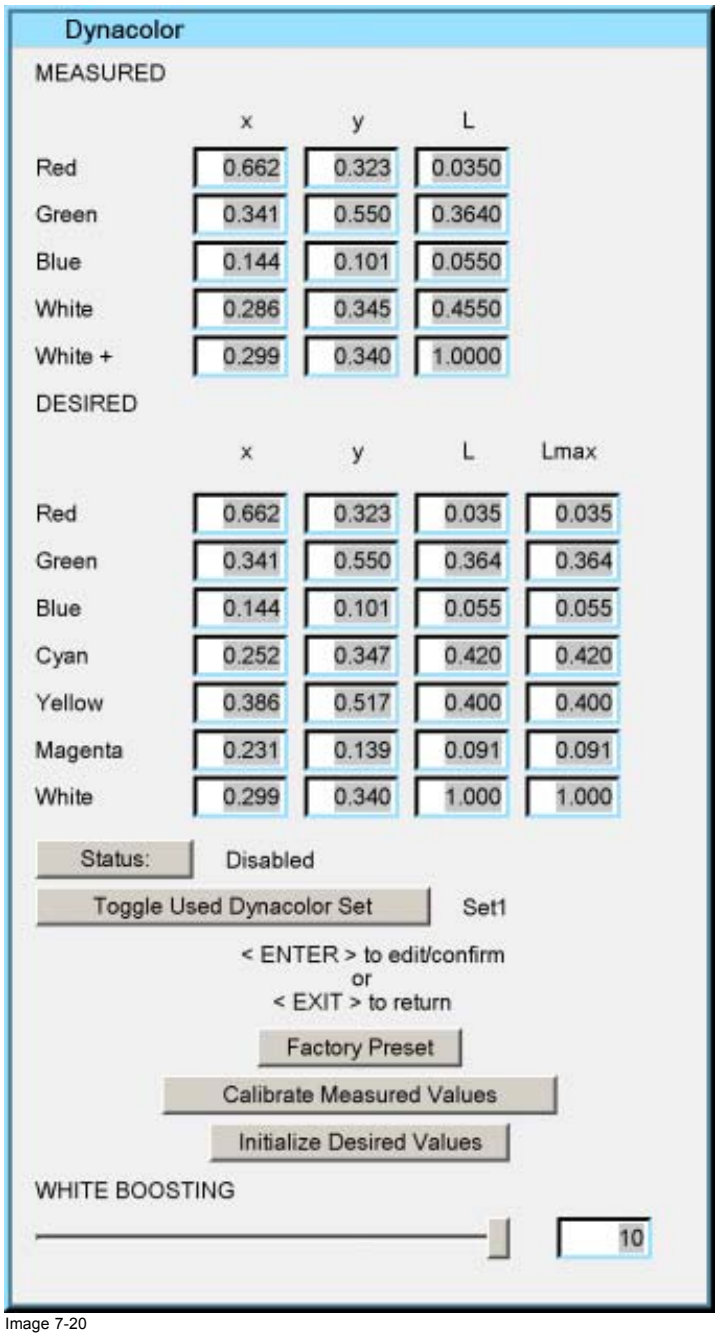



Image 7-20

## Dyancolor™ L (Light Output) Value

The value L in the Dyancolor™ interface represents a relative light output.

**L=1** is the maximum available light output, the current CLO setting is taken into account.

**Assume we have a projector, CLO is set to the desired value and assume the light output is x Lumens. L=1 in the Dyancolor™ interface will correspond with a 'maximum full white light' output of x Lumens.**

**Lmax** will show the max available light output for each color.

## Dynacolor™ Adjustment Preparations

Set the CLO setting to the same value for each projector involved in the Dynacolor™ Adjustment.

This to ensure that the L(ight Output) value is representing an equal Light Output level for each projector.

## Two Dyancolor™ Sets

Two Dyancolor™ sets are available for each source file.

Each Dyancolor™ set will contain its own measured and desired parameters.

The first set can be used for a regular application, the second set can be used for a different optical setup e.g. an application with Infitec filters, and this for the same source file.

## The Dyancolor™ Interface

Following parameters are available in the Dyancolor™ Interface:

| **Measured Values** | These are the colors the projector displays when no color changes are made |
|---|---|
| Red x, y | Coördinates for the Red point |
| Green x, y | Coördinates for the Green point |
| Blue x, y | Coördinates for the Blue point |
| White x, y | Coördinates for the White point |
| White+ x, y | Coördinates for the Maximum White point |
| Red L | Red Light output |
| Green L | Green Light output |
| Blue L | Blue Light output |
| White L | White Light Output = Red + Blue + Green Light output |
| White+ L | Maximum Light Output = 1 |

| **Desired Values** | These are the colors you want the projector to display when the status is enabled |
|---|---|
| Red x, y | Coördinates for the Red point |
| Green x, y | Coördinates for the Green point |
| Blue x, y | Coördinates for the Blue point |
| Cyan x, y | Coördinates for the Cyan point |
| Yellow x, y | Coördinates for the Yellow point |
| Magenta x, y | Coördinates for the Magenta point |
| White x, y | Coördinates for the White point |
| Red L | Red Light Output |
| Red Lmax | Maximum available Red Light Output |

| | |
|---|---|
| Green L | Green Light Output |
| Green Lmax | Maximum available Green Light Output |
| Blue L | Blue Light Output |
| Blue Lmax | Maximum available Blue Light Output |
| Cyan L | Cyan Light Output |
| Cyan Lmax | Maximum available Cyan Light Output |
| Yellow L | Yellow Light Output |
| Yellow Lmax | Maximum available Yellow Light Output |
| Magenta L | Magenta Light Output |
| Magenta Lmax | Maximum available Magenta Light Output |
| White L | White Light Output |
| White Lmax | Maximum available White Light Output |

| | |
|---|---|
| **Status** | Enables or disables Dynacolor™ |
| **Toggle used Dynacolor™ Set** | 2 Dynacolor™ sets are available for each custom source file, the selected set is saved in the current file when leaving the menu. When creating a new file default set is 1. |
| **Factory Preset** | Sets the measured parameters back to the factory preset for the current set |
| **Calibrate Measured Values** | This start the calibration procedure for the measured points of the current set (Changing these settings may seriously affect the performance of the projector). |
| **Initialize Desired Values** | This will reset the desired parameters to no color change values. |

| | |
|---|---|
| **White Boosting** | This parameter (not adjustable) indicates the amount of white boosting for the current desired Dynacolor™ values |

## Calibrate Measured Values

This will start the calibration procedure for the measured points of the current set (see "Calibrate Measured Values", page 229).

**CAUTION: Changing the 'Calibrate Measured Values' may seriously affect the performance of the projector. Press the Factory Preset button to reset the 'Calibrate Measured Values' to the factory preset.**

## Dynacolor™ 'Calculation in progress' message

The message 'Calculation in progress! Please wait!' is displayed in the top right corner of the dialog box when enabling/disabling the Dynacolor™ status and when changing the desired values in the enabled status.

## Dynacolor™ Adjustment in a Multi-Channel Setup (Linked Dynacolor™)

It is advised to use Barco's xRACU control unit to manage the 'linked' Dynacolor™ of multiple projectors in a multi-channel setup.

## Basic Dynacolor™ Adjustment

We assume we have a basic setup with 2 projectors, the Dynacolor™ adjustment is done by using only the Dynacolor™ menu:

1. Enable Dynacolor™ on both projectors.
2. Assume the first projector has the following measured values. (image 7-21)
3. Assume the second projector has the following measured values. (image 7-22)
4. We start by setting both projectors to the common red coordinate.
   ***Tip:*** *Draw a quick sketch of both gamuts as a graphical help. (image 7-23)*
5. Display the internal color bar pattern on both projectors.
6. In the desired values, adjust the red coordinate to a common value for both projectors.
   ***Tip:*** *The color bar of the adjusted coordinate will no longer be displayed in case the coordinate is not present within the gamut of the adjusted projector e.g. with the desired values for red set to x=660 and y= 318. (image 7-24)*

Select a coordinate that is present in the common gamut e.g. with the desired values for red set to x=633 and y= 328. (image 7-25)

7. Repeat step 5 to 6 for all coordinates on both projectors.

   Both projectors will now operate within the same color gamut.

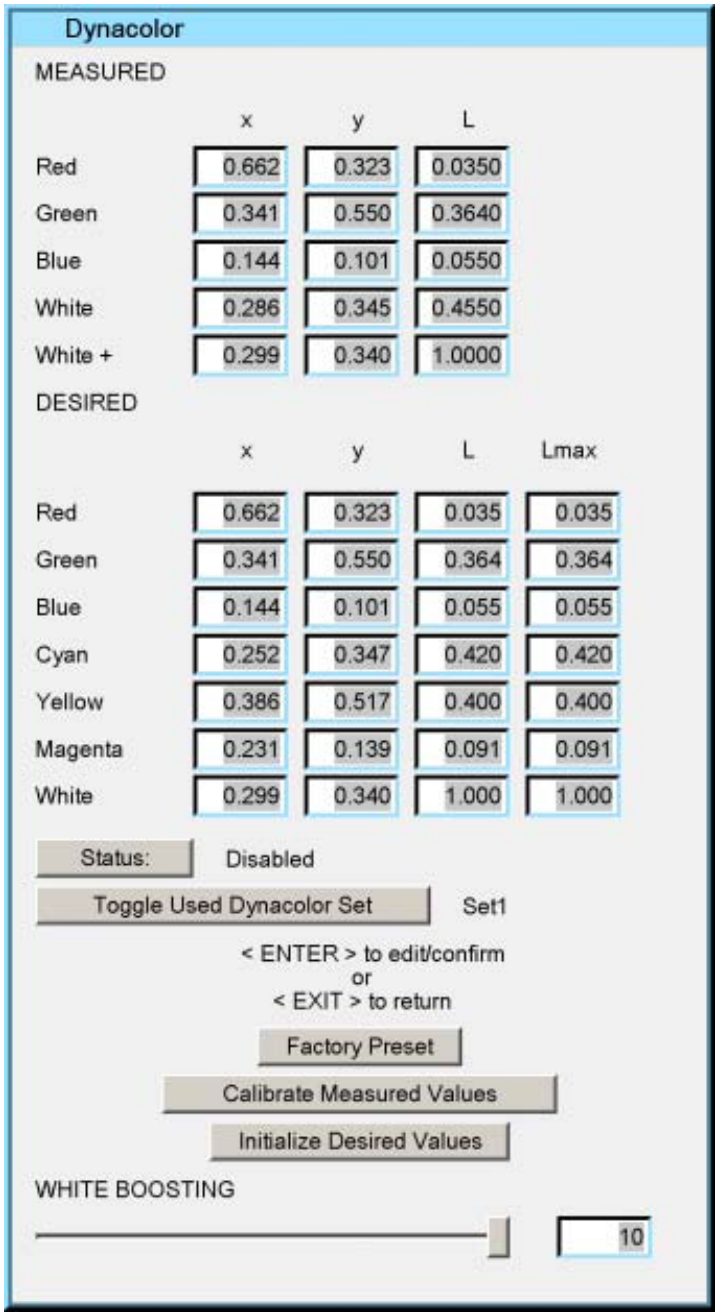
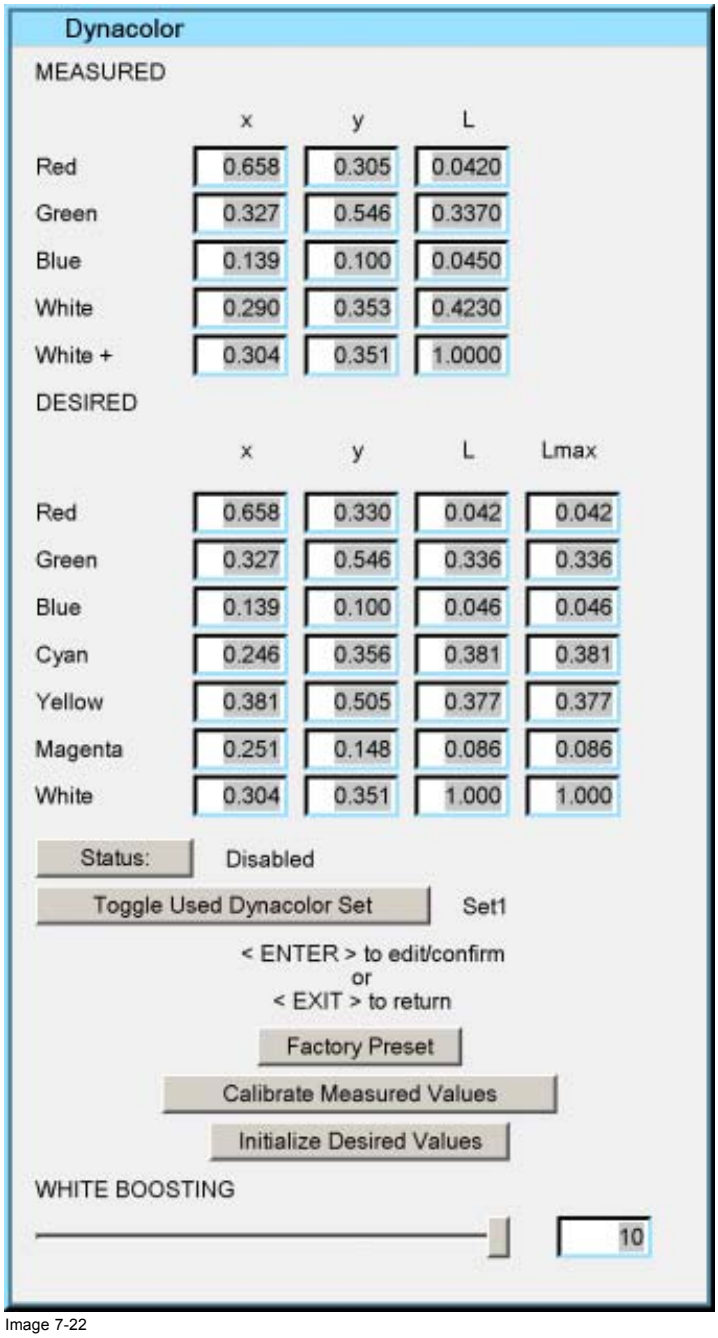



Image 7-21


Dynacolor
MEASURED
x
y
L
Red
0.658
0.305
0.0420
Green
0.327
0.546
0.3370
Blue
0.139
0.100
0.0450
White
0.290
0.353
0.4230
White +
0.304
0.351
1.0000
DESIRED
x
y
L
Lmax
Red
0.658
0.330
0.042
0.042
Green
0.327
0.546
0.336
0.336
Blue
0.139
0.100
0.046
0.046
Cyan
0.246
0.356
0.381
0.381
Yellow
0.381
0.505
0.377
0.377
Magenta
0.251
0.148
0.086
0.086
White
0.304
0.351
1.000
1.000
Status:
Disabled
Toggle Used Dynacolor Set
Set1
< ENTER > to edit/confirm
or
< EXIT > to return
Factory Preset
Calibrate Measured Values
Initialize Desired Values
WHITE BOOSTING
10
Image 7-22

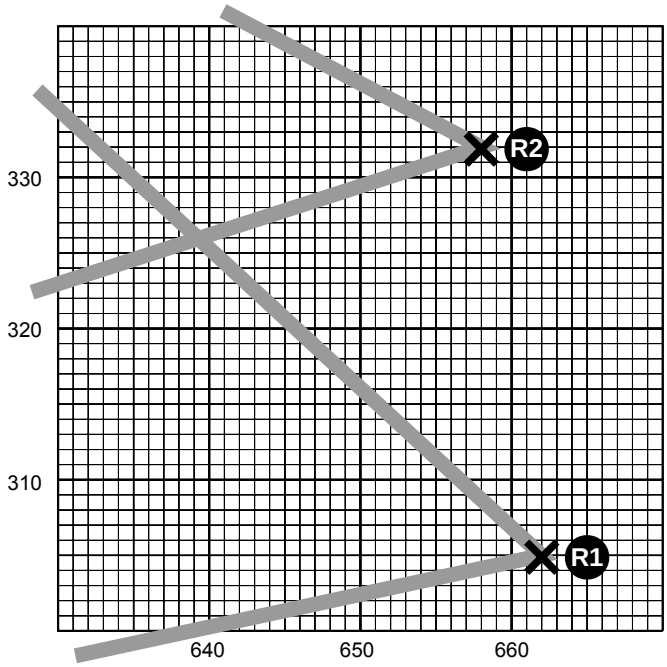



Image 7-23
Red coordinates for both projectors

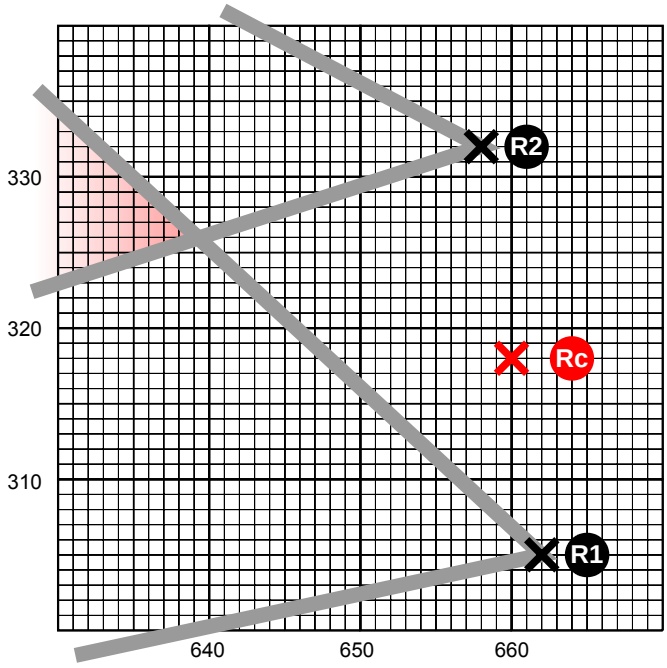



Image 7-24
Coordinate is not present within the gamut of the adjusted projector

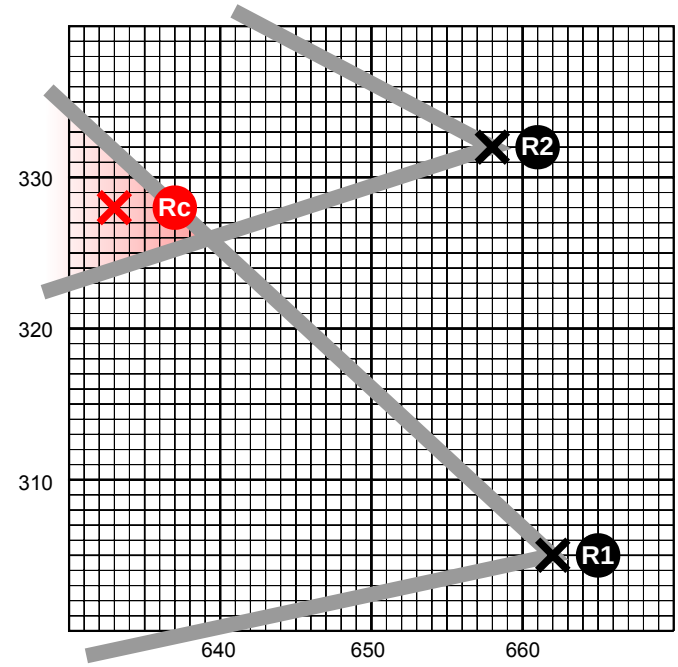



Image 7-25
Select a coordinate that is present in the common gamut

## 7.4 Infitec

### How to activate Infitec?

1. Push the cursor key ↑ or ↓ to highlight *Infitec*. (image 7-26)
2. Push the → key to pull down the Infitec menu.

   A bullet will show the current Infitec status e.g. Off.
3. Push the cursor key ↑ or ↓ to highlight the desired Infitec status and press **ENTER** to select.

   When Infitec is set to On the Infitec filter will be inserted into the light path of the projector.

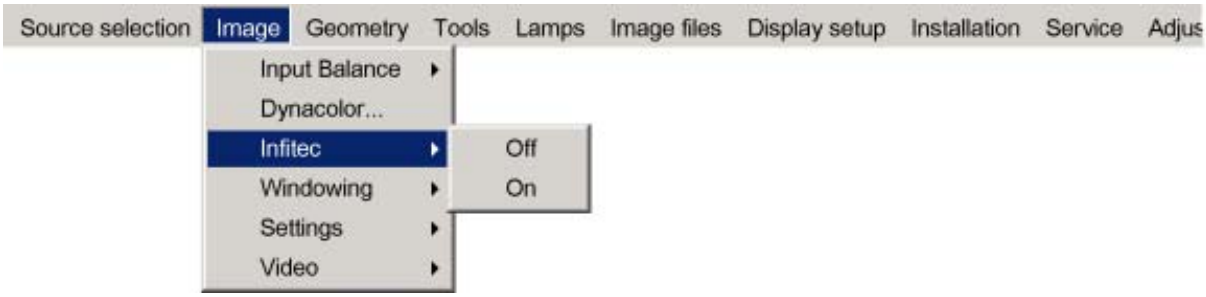



Image 7-26

## 7.5 Windowing

### Overview

- Introduction
- Starting Up Windowing
- Blanking
- Shift
- Size
- Blanking – Softedge

## 7.5.1 Introduction

### What can be done?

Within the Windowing menu it is possible to perform some basic image adjustments while keeping the pre-distorted WARP 6™ geometry settings of the image.

## 7.5.2 Starting Up Windowing

### How to Start Up Windowing?

1. Push the cursor key ↑ or ↓ to highlight *Windowing*.
2. Push the → key to pull down the *Windowing* menu. (image 7-27)

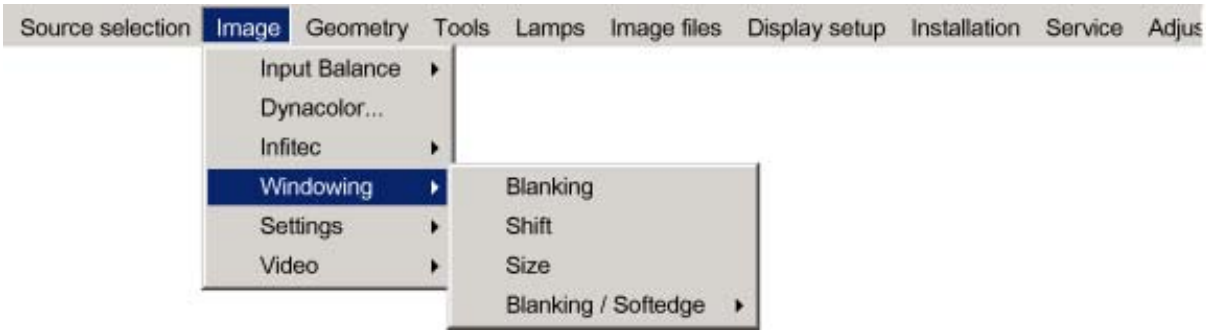



Image 7-27

## 7.5.3 Blanking

### What can be done with the Blanking Adjustment?

With the Blanking function it is possible to black out the side(s) of the image while keeping the pre-distorted WARP 6™ geometry settings of the image.

### How to use the Blanking Adjustment?

1. By default *Blanking* is already selected, press **ENTER** to select. (image 7-28)

   The Blanking dialog box will be displayed. (image 7-29)
2. Use the cursor key ↑ or ↓ to select the desired side e.g. Top.
3. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to black out the side(s) of the image. (image 7-30)

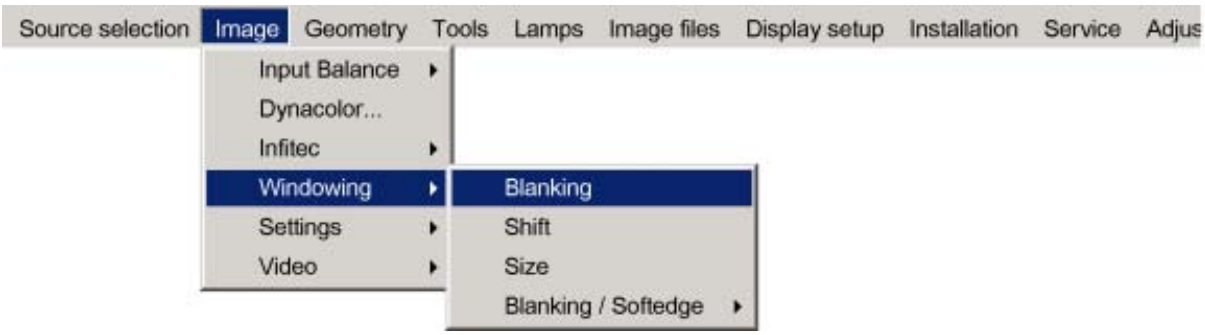



Image 7-28

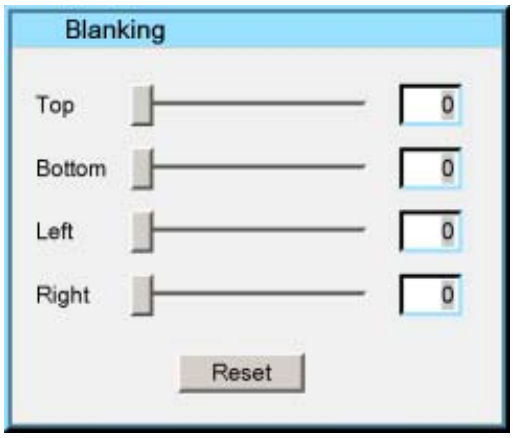



Image 7-29

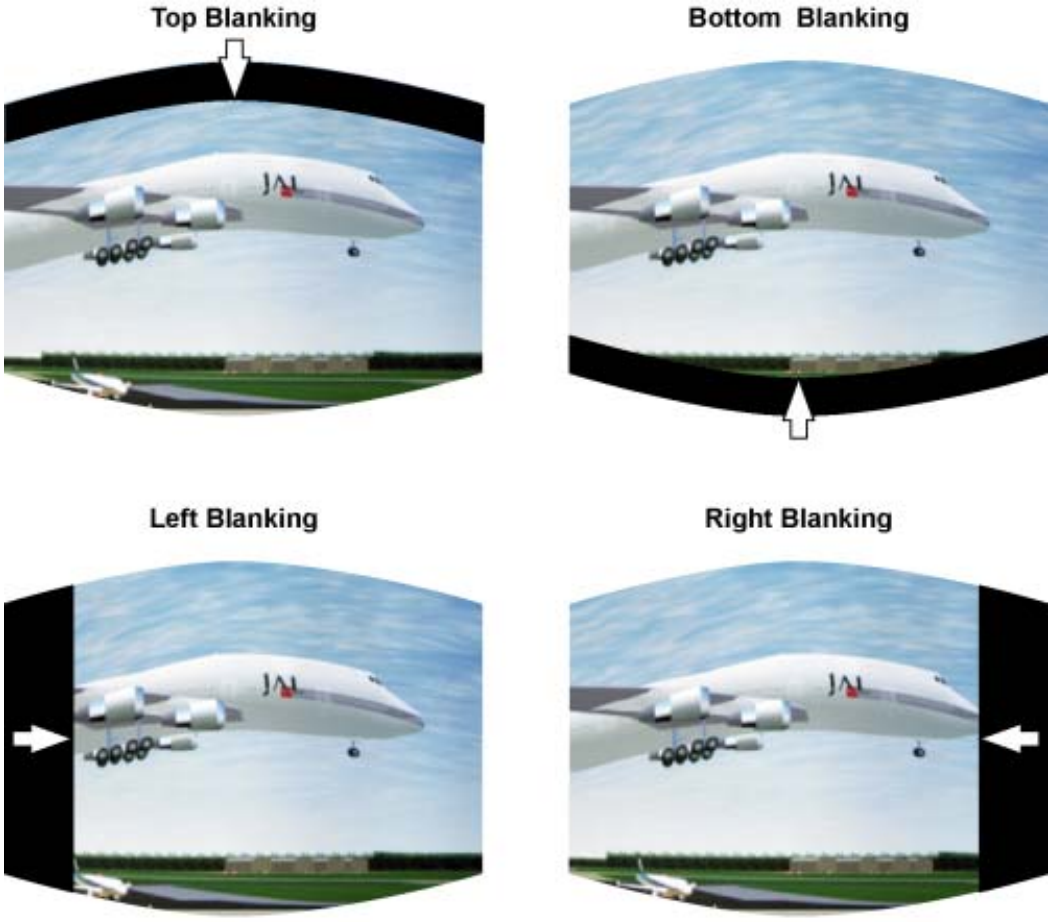



Image 7-30
Blanking (Windowing) adjustment

### 7.5.4 Shift

#### What can be done with the Shift Adjustment?

With the Shift function it is possible to shift the image while keeping the pre-distorted WARP 6™ geometry settings of the image.

#### How to use the Shift Adjustment?

1. Push the cursor key ↑ or ↓ to highlight *Shift* and press **ENTER** to select. (image 7-31)

   The Shift dialog box will be displayed. (image 7-32)

2. Use the cursor key ↑ or ↓ to select the Horizontal or Vertical shift direction.

3. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to shift the image to the desired position. (image 7-33, image 7-34)

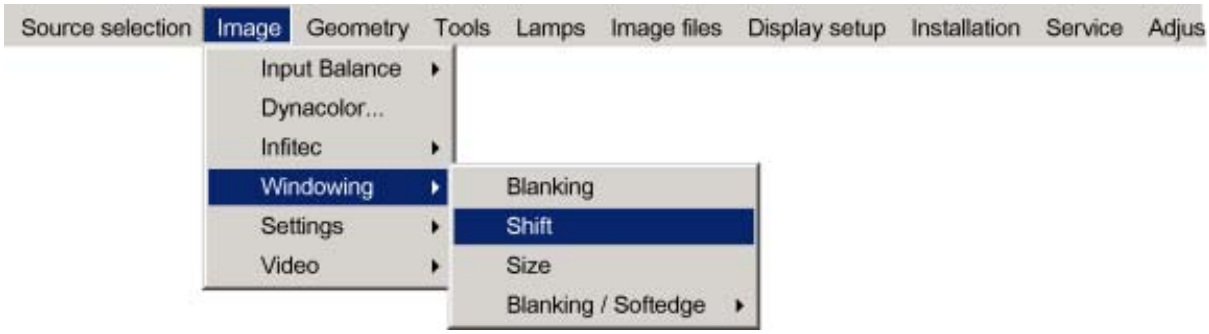



Image 7-31

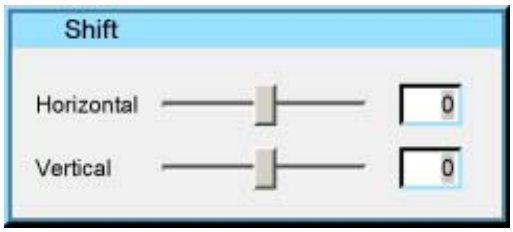



Image 7-32


Image 7-33
Horizontal Shift Adjustment


Image 7-34
Vertical Shift Adjustment

## 7.5.5 Size

### What can be done with Size?

With the Size function it is possible to adjust the size of the image while keeping the pre-distorted WARP 6™ geometry settings of the image.

### How to use the Size Adjustment?

1. Push the cursor key ↑ or ↓ to highlight *Size* and press **ENTER** to select. (image 7-35)

   The Size dialog box will be displayed. (image 7-36)

2. Use the cursor key ↑ or ↓ to select the Horizontal or Vertical size.
3. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to change the size of the displayed image. (image 7-37, image 7-38)

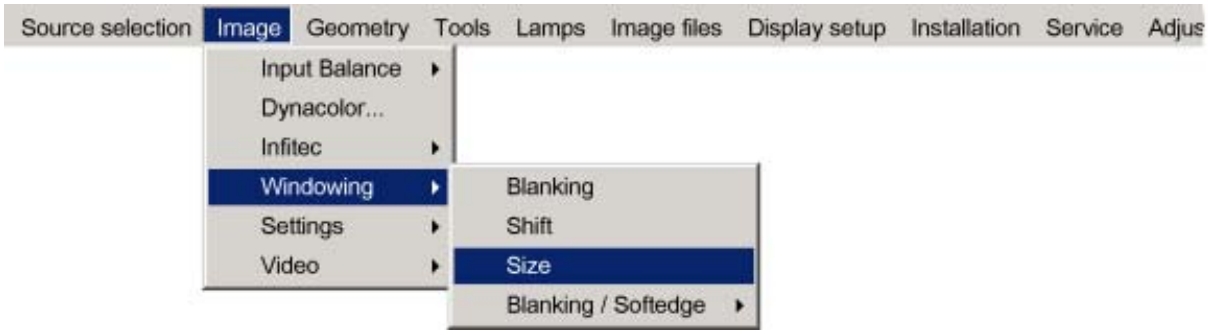



Image 7-35

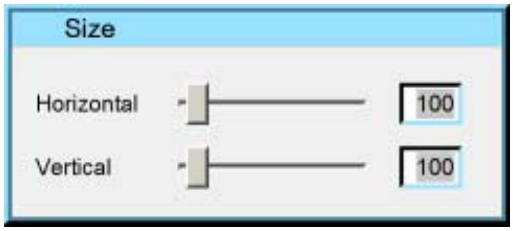



Image 7-36

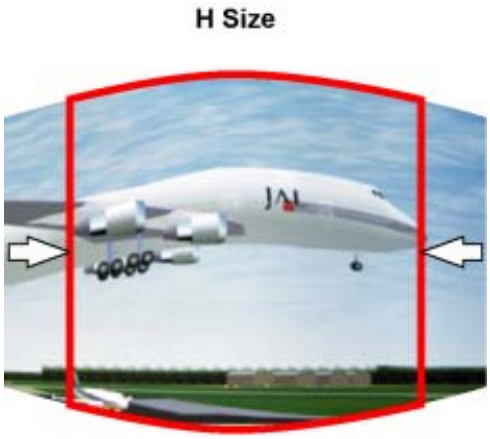



Image 7-37
Horizontal Size Adjustment

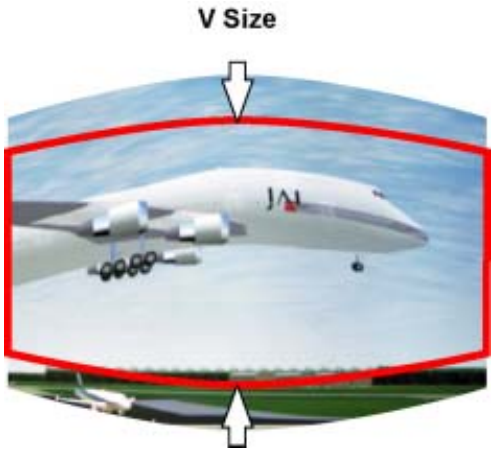



Image 7-38
Vertical Size Adjustment

### 7.5.6 Blanking – Softedge

#### What can be done with Blanking – Softedge?

When setting up a soft edge (see Electronic Softedge), these settings are by default applied on all sources (source files). With the Blanking – Softedge toggle it is possible to disable the Blanking – Softedge settings for the current source file.

**Blanking – Soft Edge is default set to On.**

#### How to change the Blanking – Softedge Setting?

1. Push the cursor key ↑ or ↓ to highlight *Blanking – Softedge* and press **ENTER** to select.

   The Blanking – Softedge Setting will be displayed. (image 7-39)

2. Use the cursor key ↑ or ↓ to select On or Off.
3. Press **ENTER** to confirm.

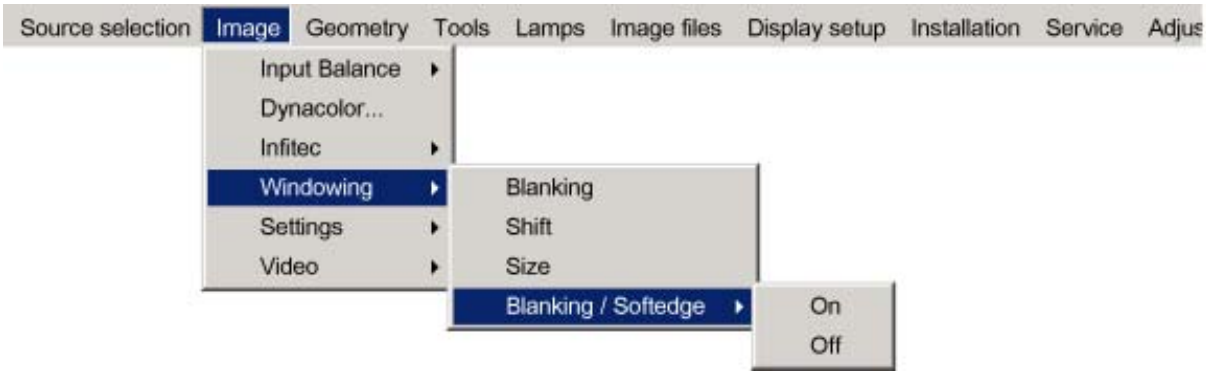



Image 7-39

## 7.6 Settings

#### Overview

- Introduction
- Contrast
- Brightness
- Gamma
- Phase
- Sharpness

### 7.6.1 Introduction

#### Introduction

Within the Settings menu it is possible to adjust the general image settings.

### 7.6.2 Contrast

**It is advised not to use the Contrast Adjustment in a multi channel application.**

#### How to use the Contrast Adjustment?

1. Push the cursor key ↑ or ↓ to highlight *Contrast...* and press **ENTER** to select. (image 7-40)
   ***Note:*** *The Contrast value is by default set to 100.*

   The Contrast Sliderbox will be displayed. (image 7-41)

2. Use the cursor keys ← or → or the numeric keys on the RCU to change the contrast of the displayed image.

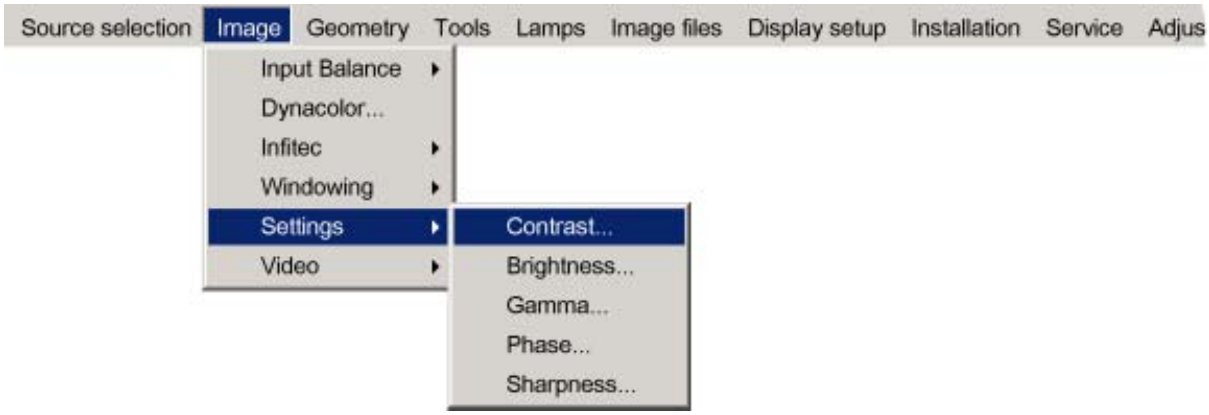



Image 7-40


Image 7-41

### 7.6.3 Brightness

**It is advised not to use the Brightness Adjustment in a multi channel application.**

#### How to use the Brightness Adjustment?

1. Push the cursor key ↑ or ↓ to highlight *Brightness* and press **ENTER** to select. (image 7-42)
   ***Note:*** *The Brightness value is by default set to 0.*

   The Brightness Sliderbox will be displayed. (image 7-43)

2. Use the cursor keys ← or → or the numeric keys on the RCU to change the contrast of the displayed image.

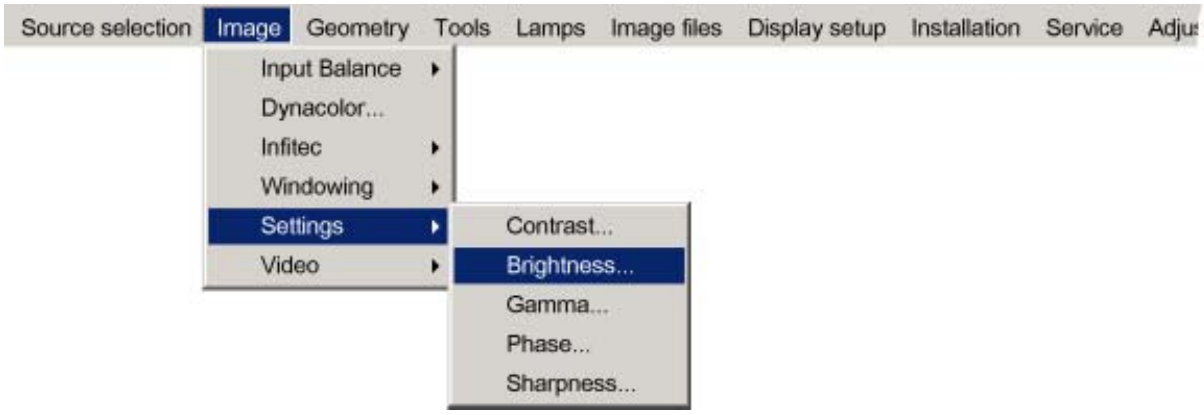



Image 7-42


Image 7-43

### 7.6.4 Gamma

**In a multi channel application it is advised to set the gamma values of all projectors to the same setting.**

#### How to use the Gamma Adjustment?

1. Push the cursor key ↑ or ↓ to highlight *Gamma* and press **ENTER** to select. (image 7-44)

   The Gamma Sliderbox will be displayed. (image 7-45)

2. Use the cursor keys ← or → or the numeric keys on the RCU to change the Gamma of the displayed image.

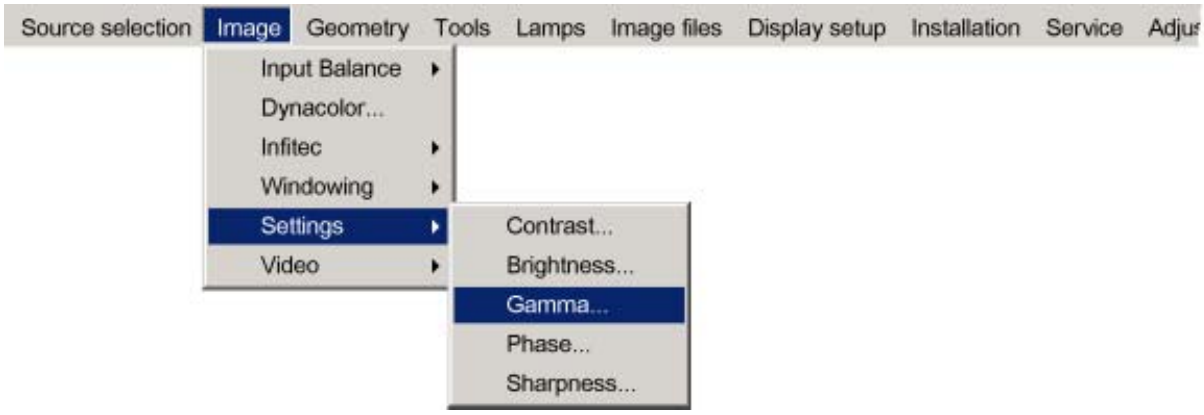



Image 7-44


Image 7-45

### 7.6.5 Phase

#### How to use the Phase Adjustment?

1. Push the cursor key ↑ or ↓ to highlight *Phase* and press **ENTER** to select. (image 7-46)

   The Phase Sliderbox will be displayed. (image 7-47)

2. Use the cursor keys ← or → or the numeric keys on the RCU to change the Gamma of the displayed image.

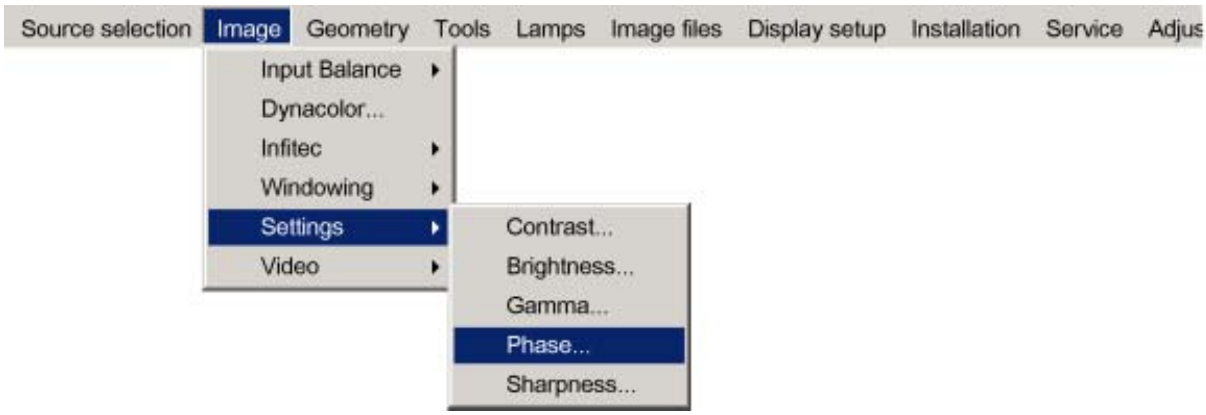



Image 7-46


Image 7-47

### 7.6.6 Sharpness

#### How to use the Sharpness Adjustment?

1. Push the cursor key ↑ or ↓ to highlight *Sharpness* and press **ENTER** to select. (image 7-48)

   The Sharpness Sliderbox will be displayed. (image 7-49)

2. Use the cursor keys ← or → or the numeric keys on the RCU to change the Sharpness of the displayed image.

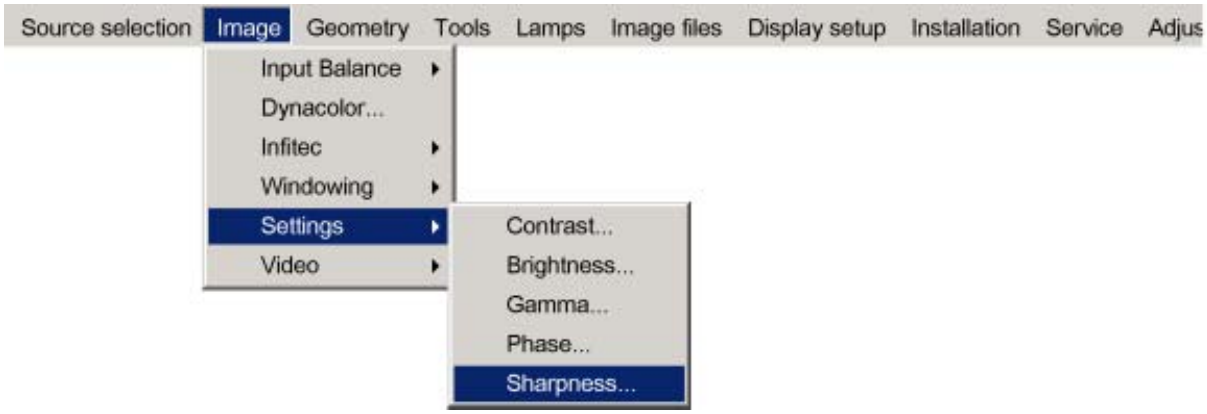



Image 7-48


Image 7-49

## 7.7 Video

### 7.7.1 Tint (Hue)

#### How to use the Tint Adjustment?

1. Push the cursor key ↑ or ↓ to highlight *Tint* and press **ENTER** to select. (image 7-50)

   The Tint Sliderbox will be displayed. (image 7-51)

2. Use the cursor keys ← or → or the numeric keys on the RCU to change the Tint of the displayed image.

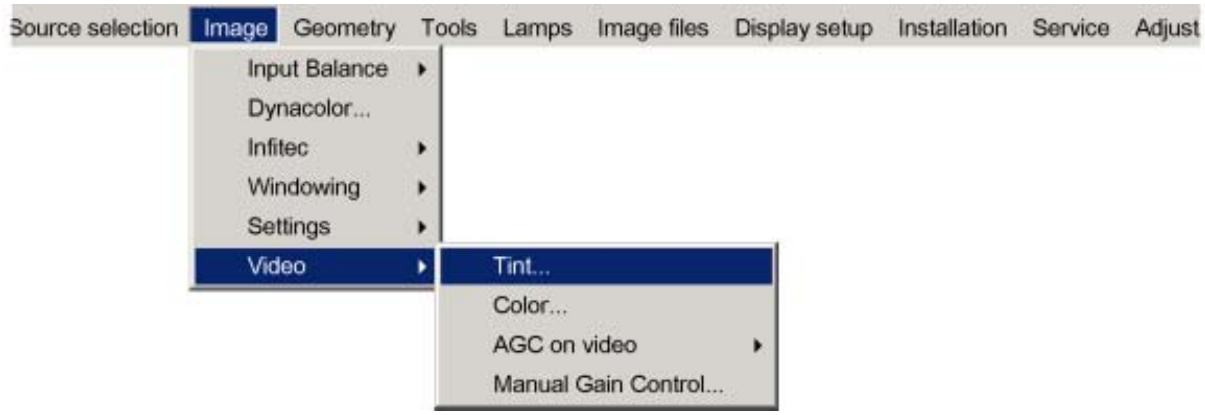



Image 7-50


Image 7-51

### 7.7.2 Color

#### How to use the Color Adjustment?

1. Push the cursor key ↑ or ↓ to highlight *Color* and press **ENTER** to select. (image 7-52)

   The Color Sliderbox will be displayed. (image 7-53)

2. Use the cursor keys ← or → or the numeric keys on the RCU to change the Color of the displayed image.

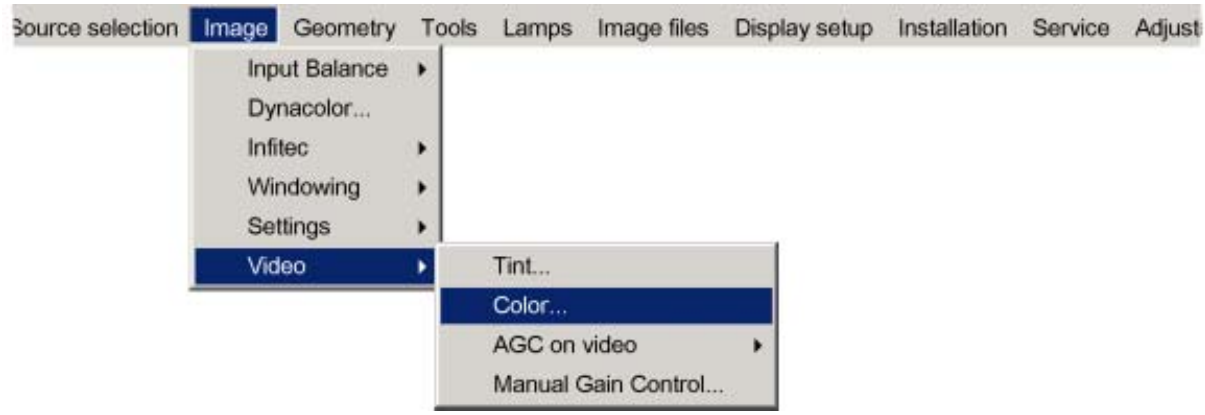



Image 7-52


Image 7-53

### 7.7.3 AGC on video

**AGC**

Automatic Gain Control: Allows an automatic amplitude (gain) control of the incoming video signal.

**AGC is only for video signals.**

### How use AGC on video?

1. Push the cursor key ↑ or ↓ to highlight *AGC on video* and press **ENTER** to continue. (image 7-54)
2. Push the → key to pull down the *AGC on video* menu.

   A bullet will show the current *AGC on video* status e.g. On.
3. Push the cursor key ↑ or ↓ to enable or disable AGC.

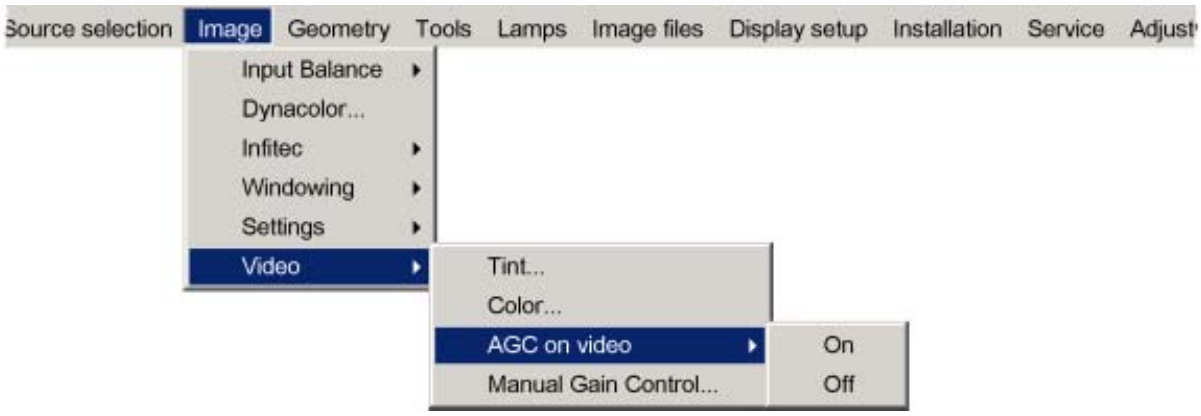



Image 7-54

**AGC can be disturbing in case of Macrovision encoded signals, therefore AGC can be disabled (Off) at any time.**

## 7.7.4 Manual Gain Control

**Manual Gain Control is only available when Automatic Gain Control (AGC) is disabled.**

### What can be done?

Beside AGC there is the possibility to manually set the gain of the incoming video signal. When the AGC is enabled (On), the manual setting does not affect the gain, AGC must therefore be disabled.

The manual gain control must be done on an external pattern with white areas (Grey scale bar pattern).

### How to set the Manual Gain Control?

1. Push the cursor key ↑ or ↓ to highlight *Manual Gain Control* and press **ENTER** to continue. (image 7-55)

   The Manual Gain Control sliderbox will be displayed. (image 7-56)
2. Use the cursor keys ← or → or the numeric keys on the RCU to change the Manual Gain Control of the displayed image.

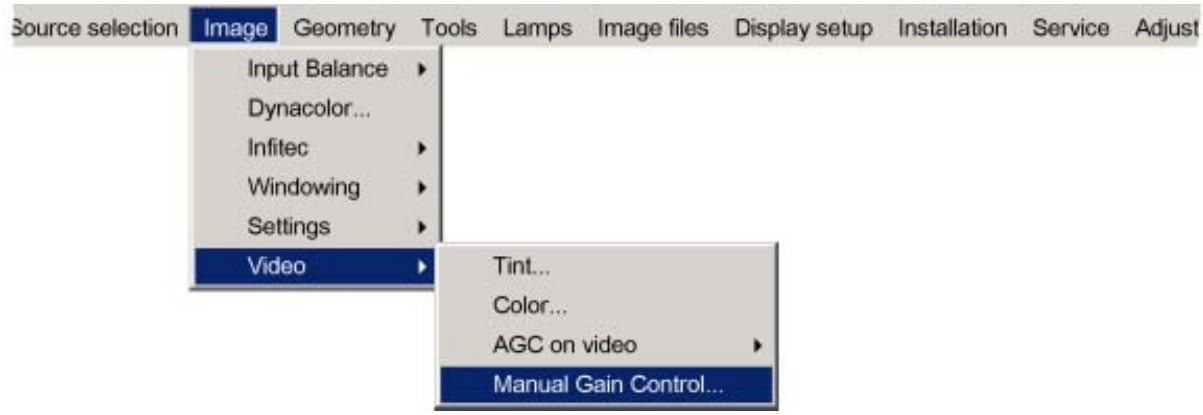



Image 7-55

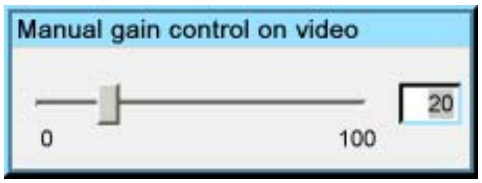



Image 7-56

# 8. GEOMETRY MENU

### Overview



## 8.1 Introduction

### What can be done with the WARP 6™ Geometry adjustments?

With the new WARP 6™ fitted in the BarcoReality SIM 5plus, fixed-matrix projectors can be used in a wide variety of curved-screen applications, ranging from straightforward cylindrical displays to the wildest shapes that can be imagined: by pre-distorting the image inside the projector, a correct geometry can be achieved on curved screens, without requiring additional computational power on the IG's side. Since WARP 6™ is integrated in the BarcoReality SIM 5plus Pixel Map Processor, it is an elegant and user-friendly solution for even the most demanding applications.

Using the intuitive user interface, bows can be set up and modified in a flash, giving the user real-time access to the distortion characteristics. For fine-tuning the image, the user has to access to individual grid points that can be shifted to their desired location.

## 8.2 Geometry Menu Overview

### Geometry Menu Overview

Geometry:

- Load
- Edit
  - 3x3
  - 5x5
  - 9x9
  - 17x17
  - Shift
  - Transport Delay
  - Blanking / Softedge
    - Shape (Blanking)
    - Width
  - Reset
    - Reset all levels
    - Restore 3x3
    - Restore 5x5
    - Restore 9x9
    - Restore Softedge Width
    - Reset Softedge All
    - Full Reset
- Rename
- Copy
- Delete

## 8.3 Geometry Files

### What can be done?

Geometry settings are stored into geometry files, some geometry preset files are already available in the projector. These preset files can be edited to the desired shape, these settings are automatically saved into an geometry custom file when leaving the *Edit* menu.

### Geometry File Notation

The file notation in the *Geometry files* menu is built up in different parts. Let us have a look to these parts.

Take the following notation: xxxxxxxx.eee

| | |
|---|---|
| xxxxxxxx | base name, 8 characters |
| eee | file extension:<br>first character t : geometry preset file.<br>first character g : geometry custom file.<br>The second and third character is used for a following number (= file index). The file index range for custom files goes from 00 to 63. |

### Available Geometry Preset Files

Following Geometry Preset Files Are available:

- t_nodist.t01 (No distortion)

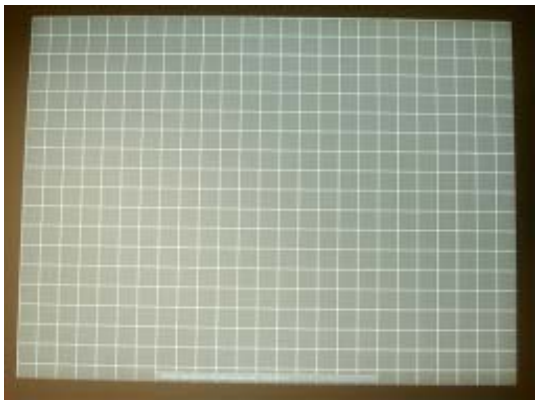


Image 8-1
Geometry Preset: nodist

- t_zenith.t02

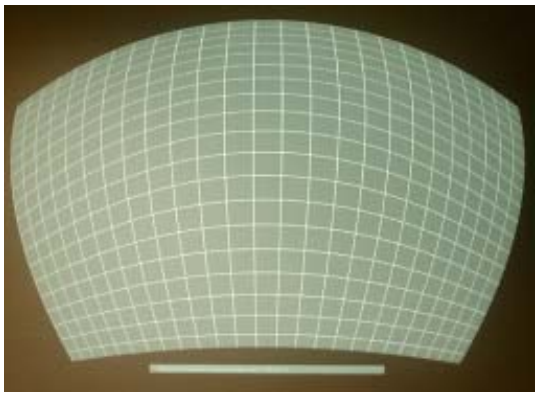


Image 8-2
Geometry Preset: zenith

- t_globe.t03

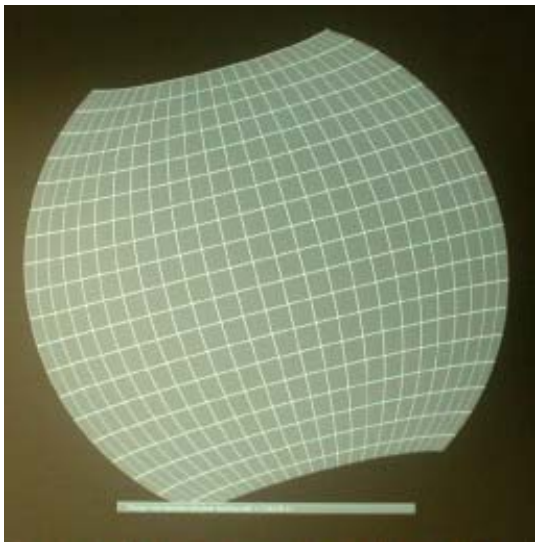


Image 8-3
Geometry Preset: globe

- t_sphear.t04

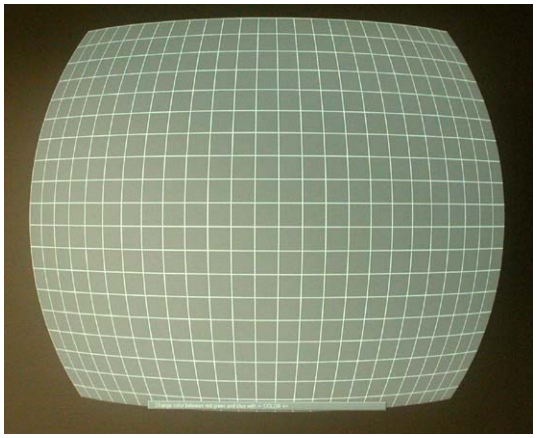


Image 8-4
Geometry Preset: sphear

- t_keystn.t05

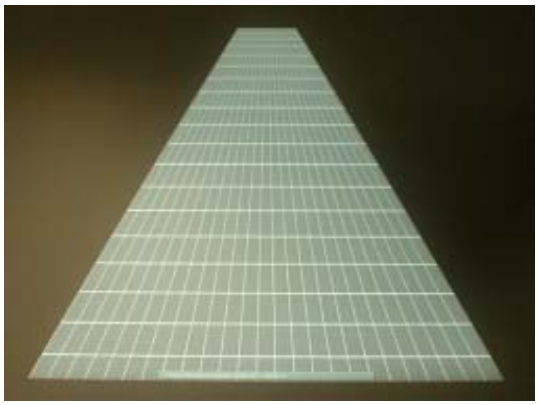


Image 8-5
Geometry Preset: keystn

- t_fishey.t06

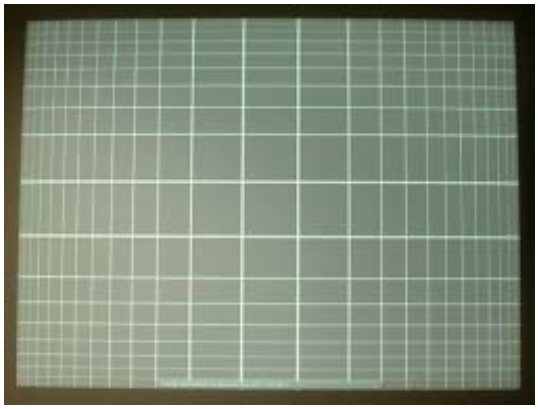


Image 8-6
Geometry Preset: fishey

### Available Geometry File Manipulations

The following geometry file manipulations are possible:

- Load : load a geometry file or starting up a new geometry set up.
- Edit : editing a geometry file.
- Rename : renaming a geometry custom file.
- Copy : copying a geometry file.
- Delete : deleting a geometry custom file

## 8.4 Load Geometry File

### What can be done?

This menu item is used to load any desired preset or custom geometry file.

### How to Load a Geometry File?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Geometry* in the menubar.
3. Push the ↓ key to pull down the *Geometry* menu.
4. Push the cursor key ↑ or ↓ to highlight *Load* and press **ENTER** to select. (image 8-7)

   The *Load file* dialogbox will be displayed. (image 8-8)
5. Use the cursor key ↑ and ↓ to select the desired geometry file and press **ENTER** to select.
   ***Tip:*** *When starting a new geometry setup it is advised to select the "t_nodist.t01" file.*

   The file is loaded and the geometry settings are adapted.

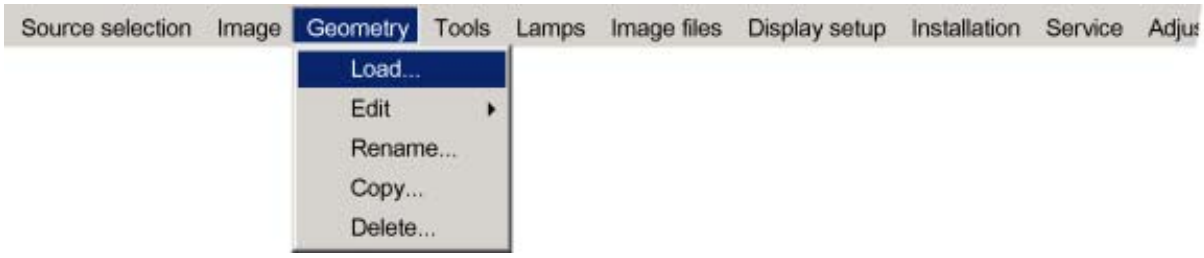



Image 8-7

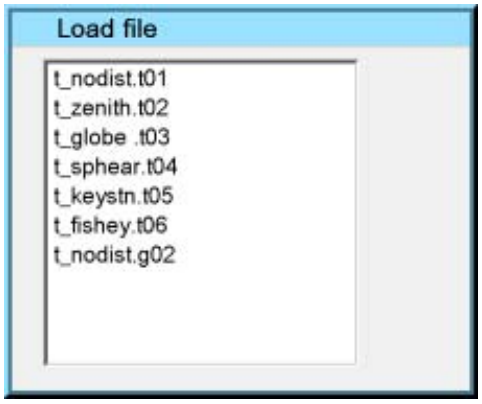



Image 8-8

## 8.5 Edit Geometry File

### Overview

- Introduction
- 3x3 Adjustment (Level 1-3)
- 5x5 Adjustment (Level 4-6)
- 9x9 Adjustment (Level 7-10)
- 17x17 Adjustment (Level 11-15)
- Shift Adjustment
- Transport Delay
- Blanking
- Softedge
- Geometry Reset

### 8.5.1 Introduction

#### How does it work?

- The geometry adjustment is devided in 4 groups, representing 15 levels, each level represents a group of grid points, these can be shifted to the desired location. Each level will interact with other levels in a hierarchic way, adjusting a grid point on a certain hierarchic level will affect grid points in the levels underneath.

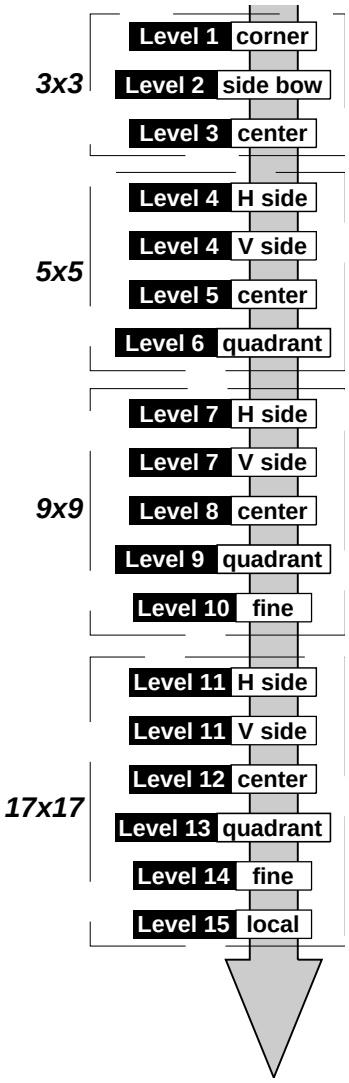



Image 8-9
Overview hierarchic levels

- This interaction is also visible in the adjustment menu, when selecting a grid point of a certain level, a selection box is placed round the selected grid point, a second box with a dotted line will indicate the interaction zone on the levels underneath.

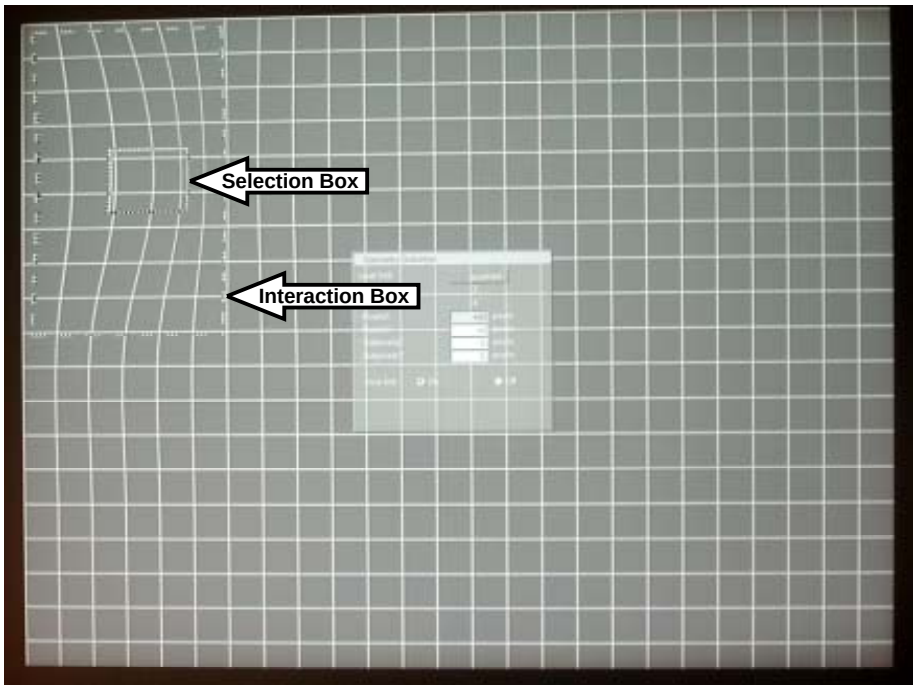



Image 8-10
Selection Box + Interaction Box

- On top of this hierarchy is a matrix with 3 x 3 points, adjusting grid points on level 1 (corners) will affect level 2 till 15.

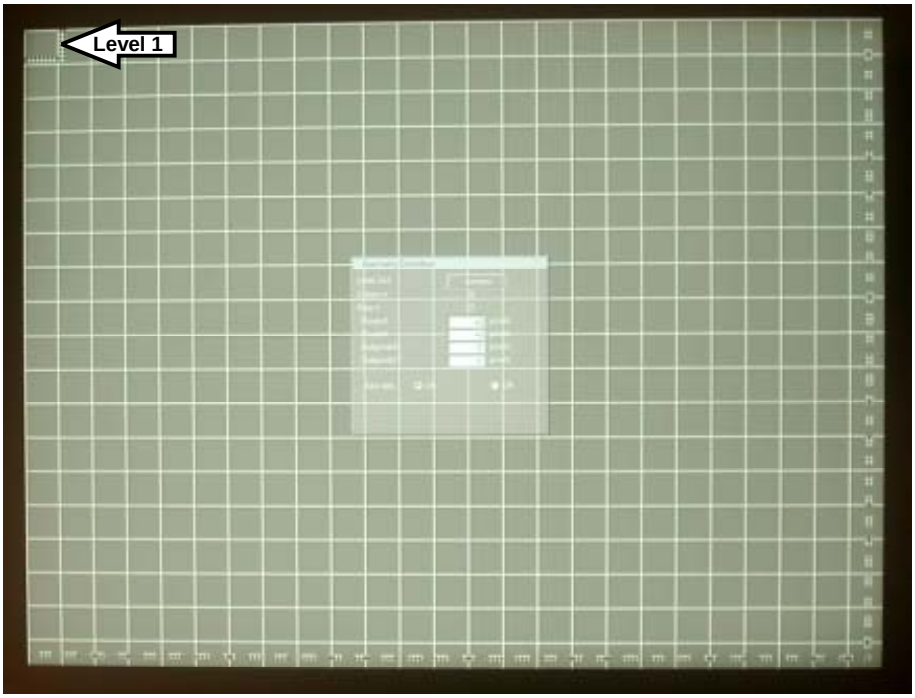



Image 8-11
Level 1: 3x3 corner point

- At the bottom of the structure we find the matrix with 17 x 17 points, adjusting grid points on level 15 will not affect any other grid points, these are called local points.

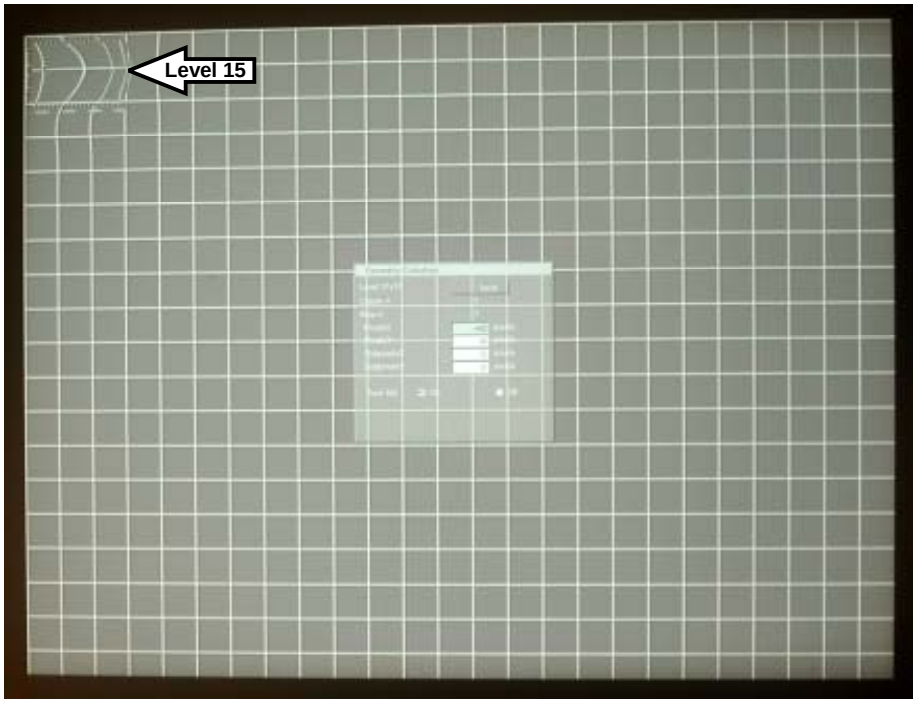



Image 8-12
Level 15: 17x17 local point

- The best result is obtained by applying the geometry settings in the same hierarchic top to bottom order as listed in the menu interface.

### 8.5.2 3x3 Adjustment (Level 1-3)

#### 8.5.2.1 Starting up the 3x3 adjustment (Level 1-3)

**How to Start up the 3x3 adjustment (Level 1-3)?**

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Geometry* in the menubar.
3. Push the ↓ key to pull down the *Geometry* menu.
4. Push the cursor key ↑ or ↓ to to highlight Edit in the menubar.
5. Push the → key to pull down the Edit menu.
6. By default *3x3* and is selected, press **ENTER** to select. (image 8-13)

   The *Geometry Distortion* dialogbox will be displayed. (image 8-14)

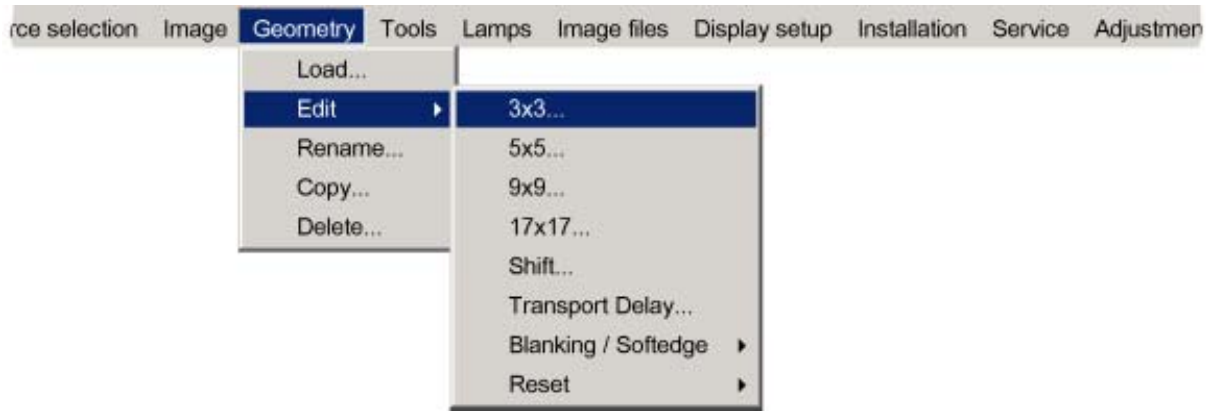



Image 8-13

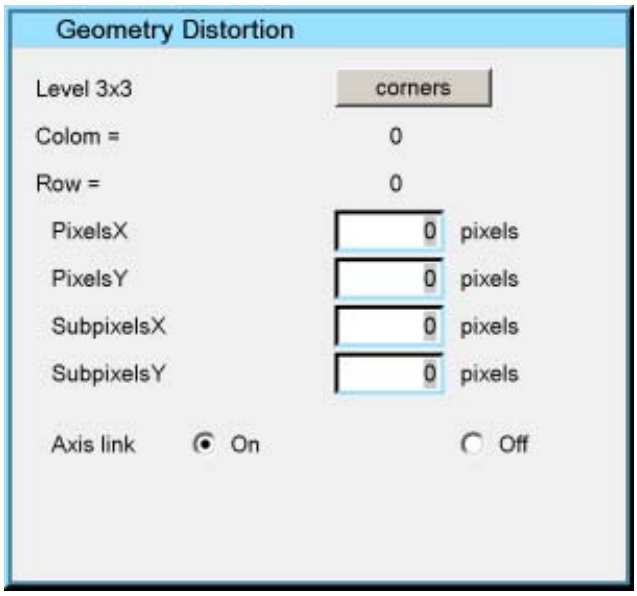



Image 8-14

**Press the LOGO key on the RCU to switch between displaying the internal or external pattern.**

### 8.5.2.2 Selecting the 3x3 Corners (Level 1)

#### What can be done?

With the 3x3 Corner selection it is possible to adjust the basic geometry and size of the projected image.

#### How to select the 3x3 Corners (Level 1)?

1. By default *corner*s is already selected, if not, press **ENTER** until *corner*s is displayed. (image 8-15)
2. Push the cursor key ← or → to select the desired Corner. (image 8-16)

   The *COL* & *ROW* (Column and Rows) indicator[1] will show the corresponding position of the selected Corner and an indication box will be displayed on the screen.

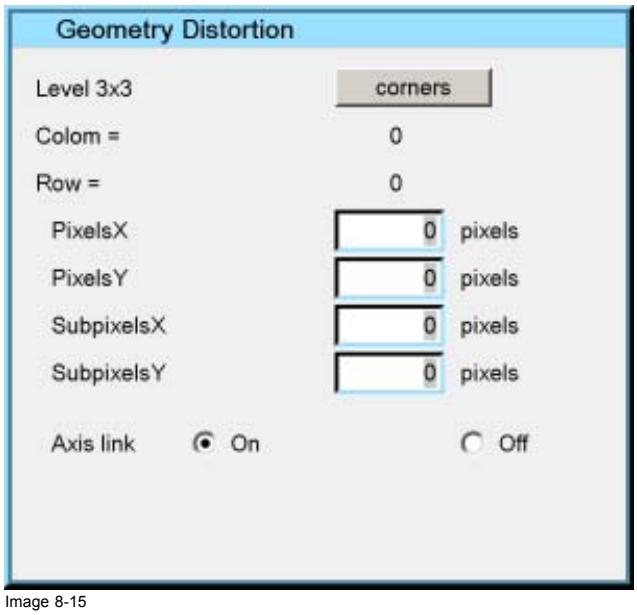



Image 8-15

1. This *COL* & *ROW* indicates the position of the selected grid point within the 17 x 17 matrix.

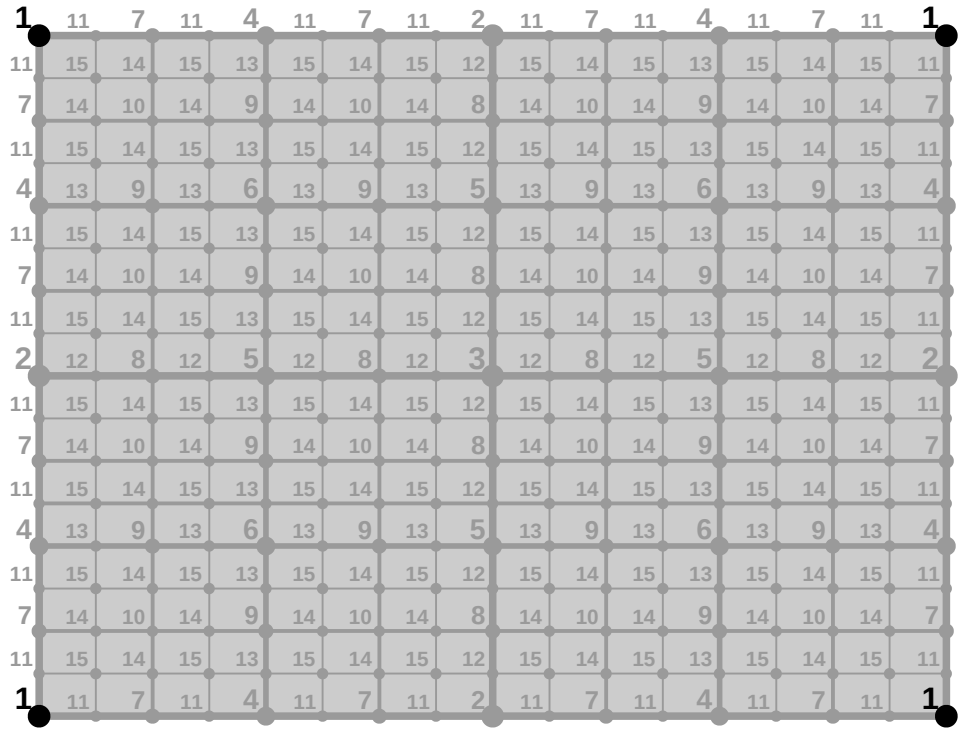


Image 8-16
3x3 Corner (Level 1) selections

### 8.5.2.3 Adjusting the 3x3 Corners (Level 1)

#### What is Pixel and Subpixel adjustment?

| | |
|---|---|
| Pixel | Coarse adjustment, this will shift the Corner in steps of 1 pixel |
| Subpixel | Fine tuning adjustment, this will shift the Corner in steps of 1/32 of a pixel |

#### What is AxisLink ?

When AxisLink is set to On, the adjustment coordinate system will coincide with the edges of the distorted image.
Following example will show a basic 3x3 corner adjustment with AxisLink On and Off.

1. Start with a non distorted image, assume the left top corner is selected.

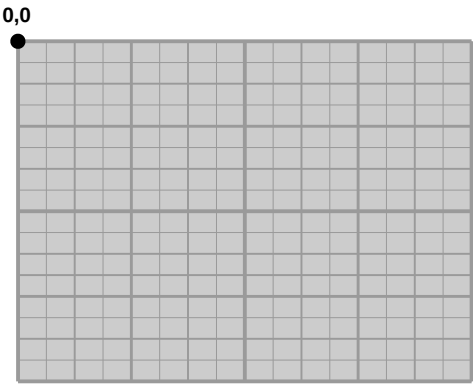



Image 8-17
Non distorted image.

2. Shift the left top corner +300 pixels to the left.

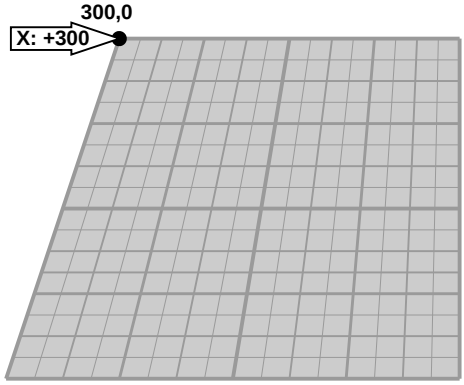



Image 8-18
Shift the left top corner 300 pixels to the left.

3. Shift the left corner +300 pixels downwards.

| | |
|---|---|
| AxisLink [ON] | The coordinate system used for the adjustment will coincide with the edges of the distorted image, this will result in an quick adjustment when dealing with complex setups. |
| AxisLink [OFF] | The coordinate system used for the adjustment is absolute. |

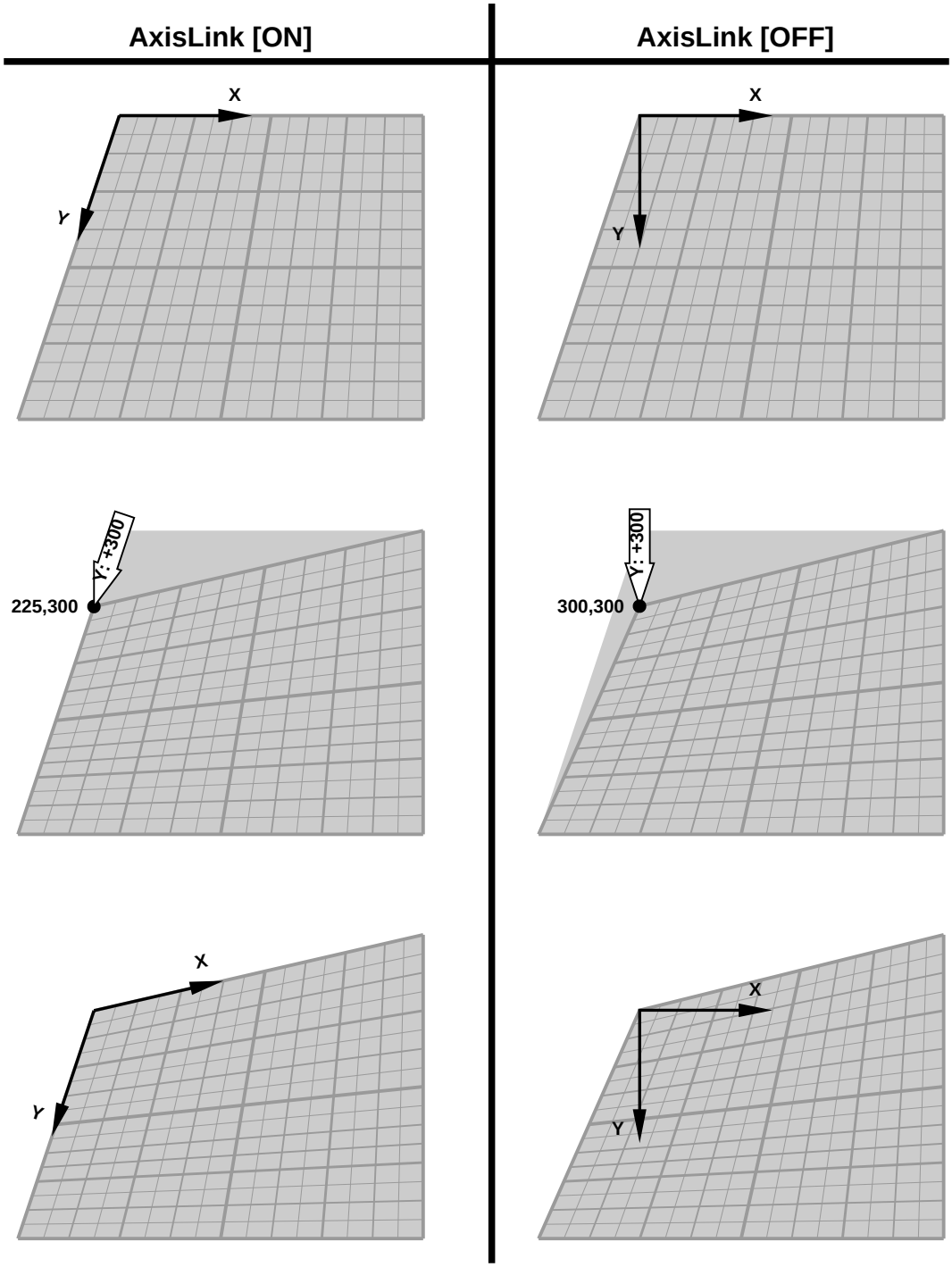



Image 8-19
Shift the left corner +300 pixels downwards

## How to adjust the 3x3 Corners (Level 1)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-20)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Corner in a horizontal way. Press **ENTER** to confirm. (image 8-21)

3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Corner in a vertical way (Follow this procedure in a similar way to adjust any desired corner position). Press **ENTER** to confirm. (image 8-22)
   ***Note:*** *Apply this procedure to perform a keystone correction: this is used to align the image if the projector is mounted at a non standard projector angle. (image 8-23)*
5. Use the subpixel adjustments to fine shift the selected corners.
6. Press **BACK** to return to the *Geometry Edit* menu.

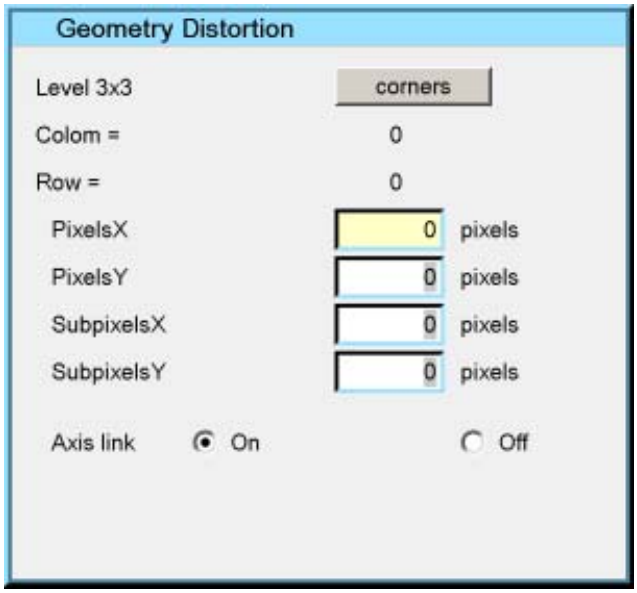



Image 8-20

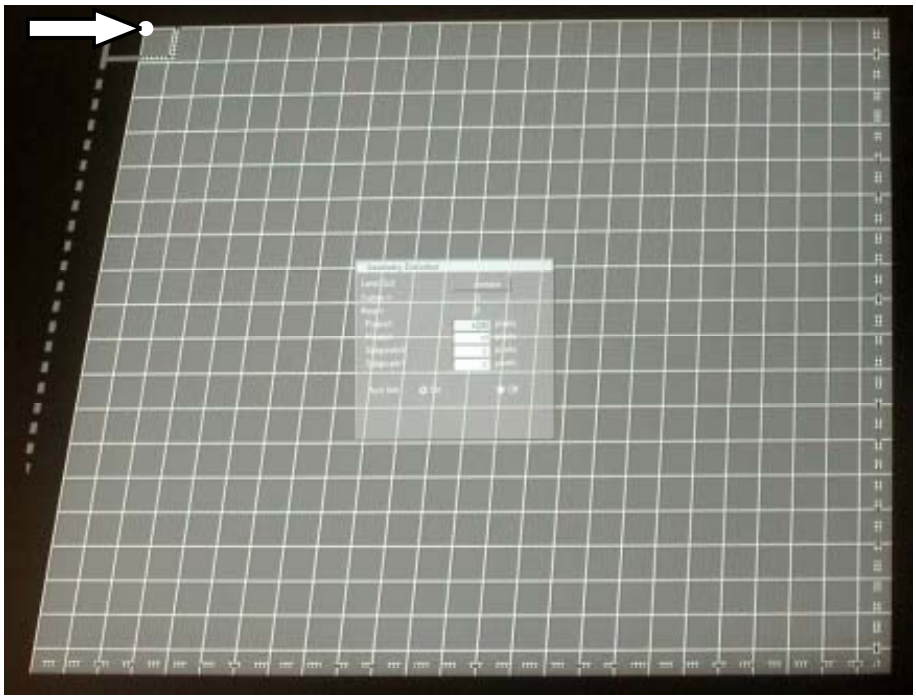


Image 8-21
3x3 corner (Level 1) Pixel X adjustment

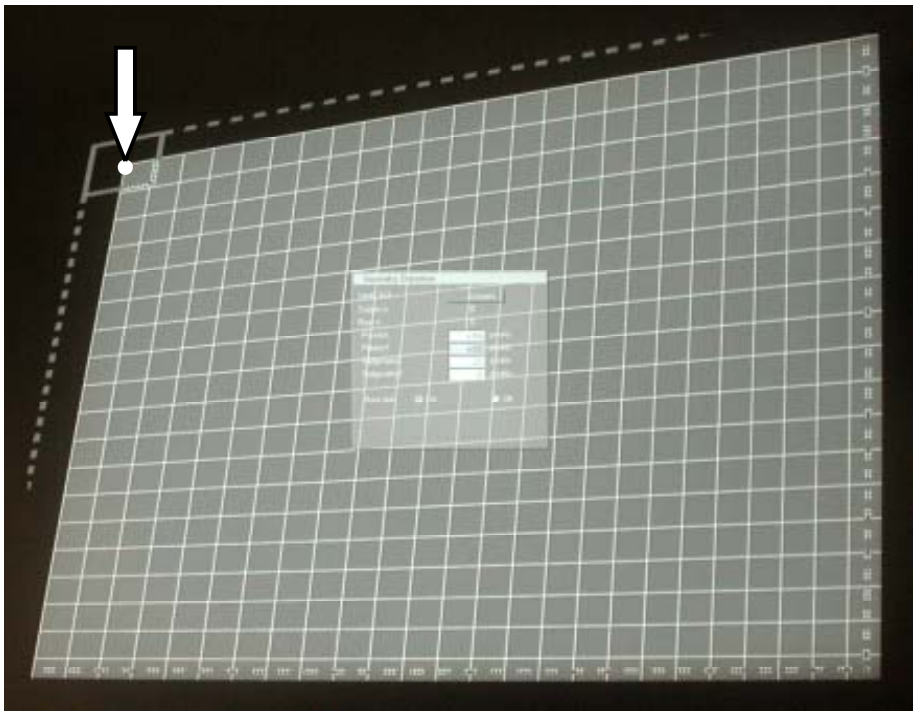


Image 8-22
3x3 corner (Level 1) PixelY adjustment

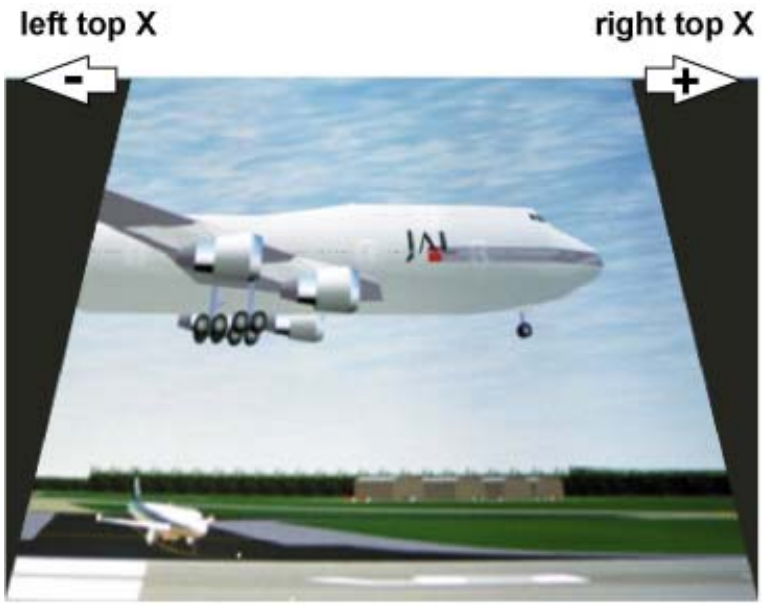



Image 8-23
Keystone correction

### 8.5.2.4 Selecting the 3x3 Side Bows (Level 2)

#### What can be done?

With the 3x3 Side Bow selection it is possible to:

- apply a bow shaped pre-distortion on the projected image.
- perform a coarse linearity adjustment off the projected image.

#### How to select the 3x3 Side Bows (Level 2)?

1. Push the cursor key ↑ or ↓ to highlight the 3x3 selection box.

2. Press **ENTER** to scroll through the available 3x3 selections until *side bow*s is displayed. (image 8-24)
3. Push the cursor key ← or → to select the desired Side Bow. (image 8-25)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected Side Bow and an indication box will be displayed on the screen.

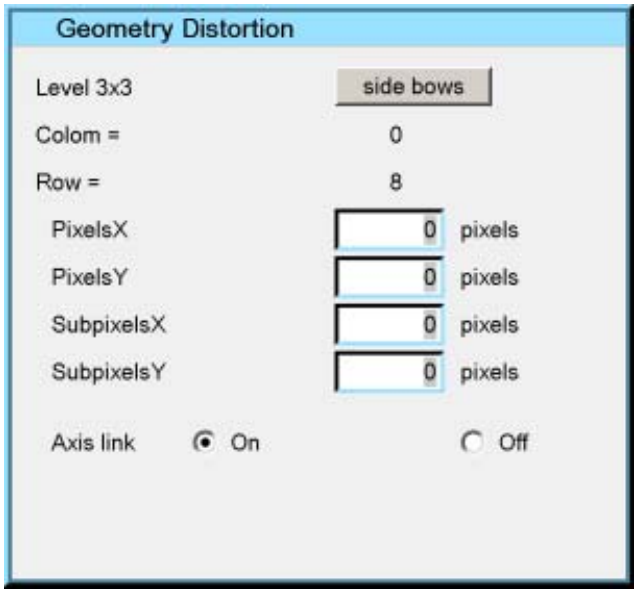



Image 8-24

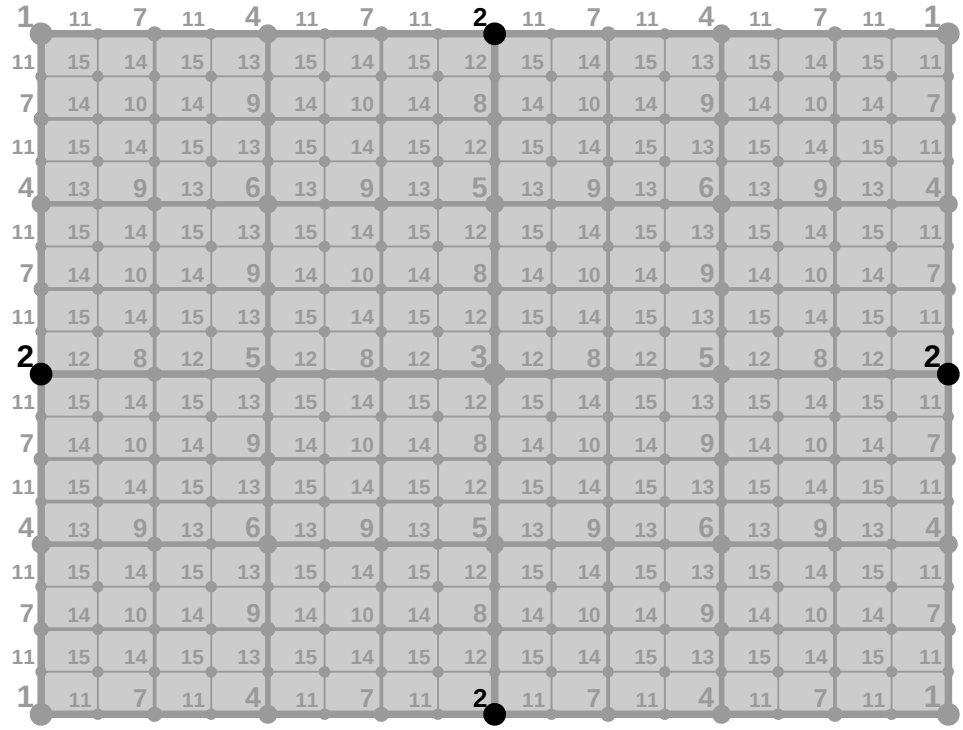


Image 8-25
3x3 Side Bow (Level 2) selections

### 8.5.2.5 Setting up a bow shaped pre-distortion

#### How to set up a bow shaped pre-distortion?

We assume the *side bow* on top is selected.

1. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select. (image 8-26)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Side Bow in a vertical way. Press **ENTER** to confirm.

This will result in a bow shaped pre-distorted image (Follow this procedure in a similar way to apply the desired bow shaped distortion). (image 8-27)

3. Use the subpixel adjustments to fine shift the selected Side Bows.
4. Press **BACK** to return to the *Geometry Edit* menu.

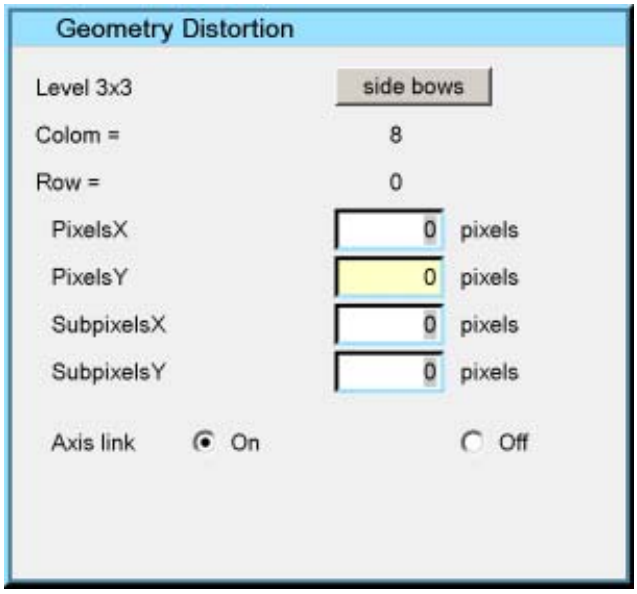



Image 8-26

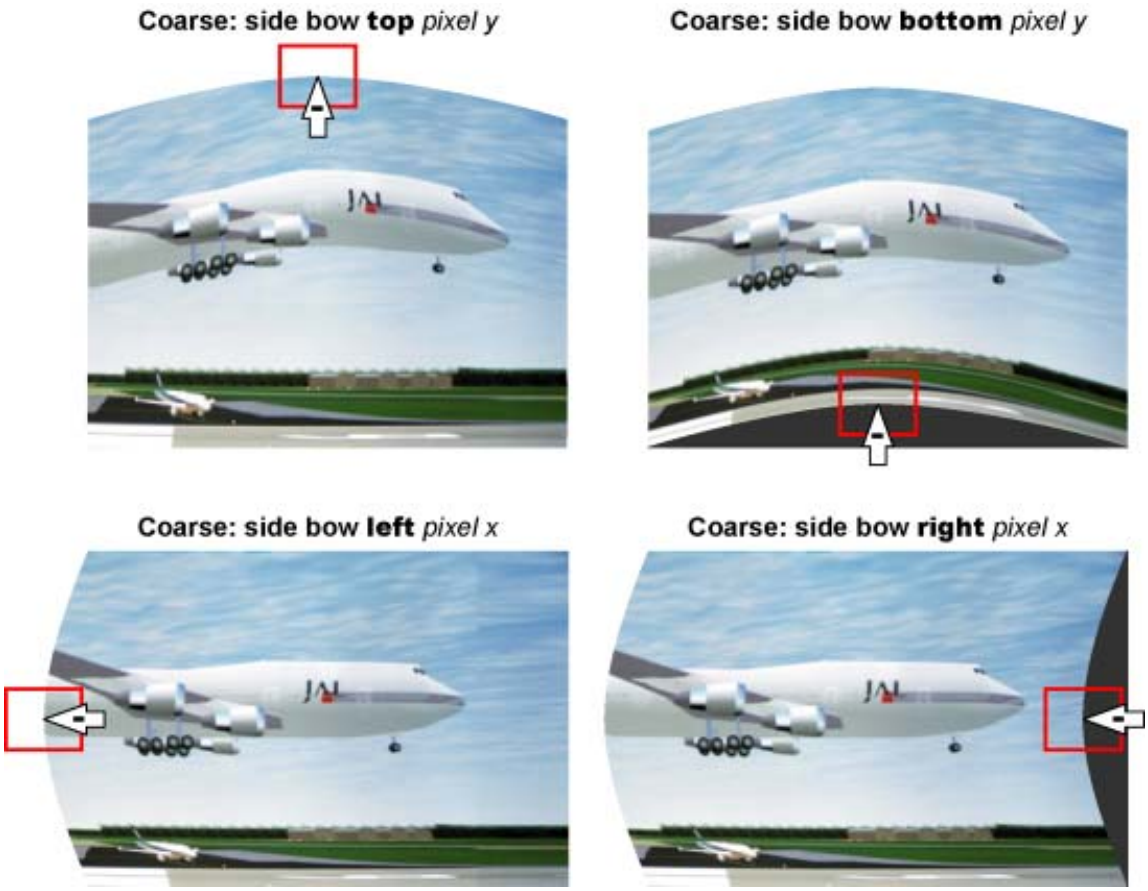



Image 8-27
Bow shaped pre-distortions

### 8.5.2.6 Linearity adjustment using 3x3 Side Bows

**The Linearity adjustment is best done when a reference test pattern is projected on the screen.**

#### How to perform a linearity adjustment by using the 3x3 Side Bows?

We assume the *side bow* on top is selected.

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-28)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Side Bow in a horizontal way. Press **ENTER** to continue.
3. Repeat step 1 to 2 for the 3x3 *side bow* selection on the bottom.

   This will shift the vertical center line, resulting in a coarse horizontal linearity adjustment (Follow this procedure in a similar way to shift the horizontal center line). (image 8-29)
4. Use the subpixel adjustments to fine shift the selected Side Bows.
5. Press **BACK** to return to the *Geometry Edit* menu.

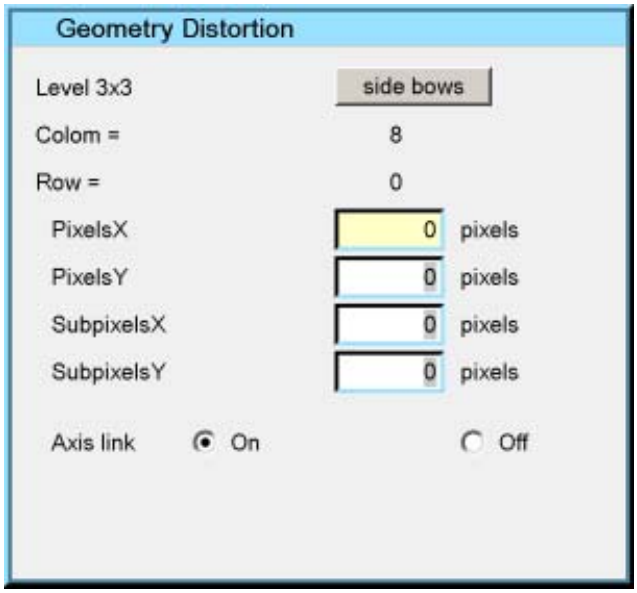



Image 8-28

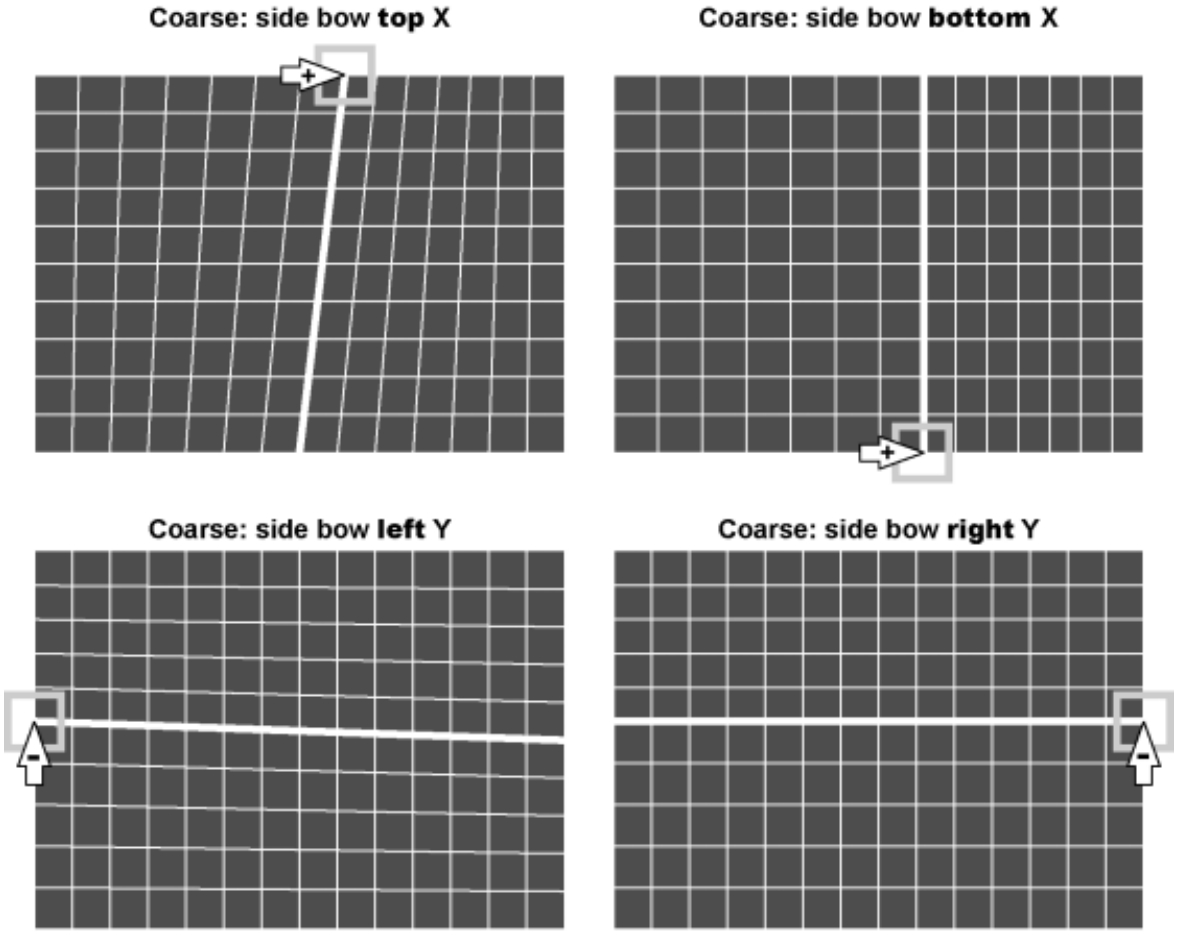



Image 8-29
Using side bows to perform a coarse linearity adjustment

### 8.5.2.7 Selecting the Center (Level 3)

#### What can be done?

With the 3x3 Center selection it is possible to perform a coarse bow correction on the projected image.

#### How to select the 3x3 Center?

1. Push the cursor key ↑ or ↓ to highlight the 3x3 selection box.
2. Press **ENTER** to scroll through the available 3x3 selections until *center* is displayed. (image 8-30, image 8-31)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected Center and an indication box will be displayed on the screen.

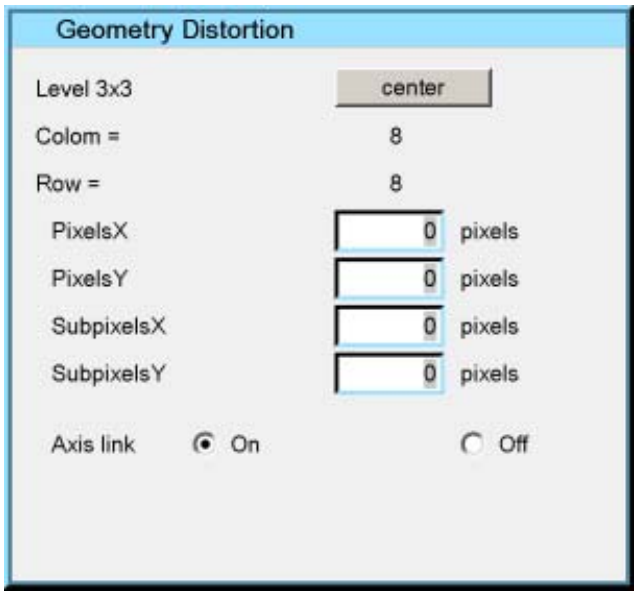



Image 8-30

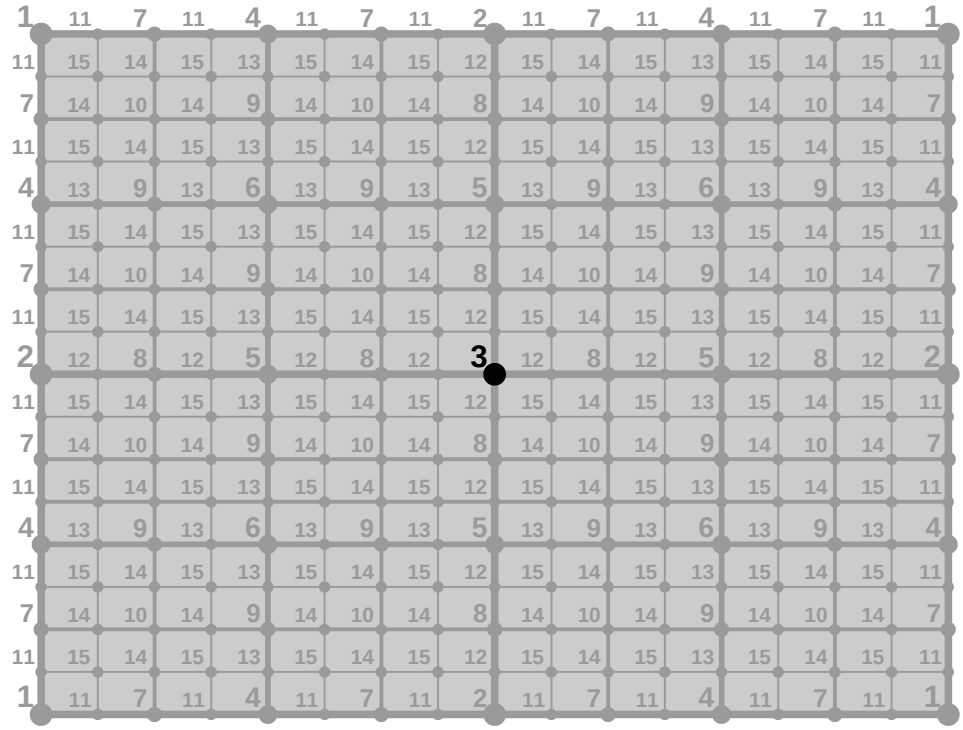



Image 8-31
3x3 Center (Level 3) selections

### 8.5.2.8 Adjusting the 3x3 Center (Level 3)

#### How to adjust the 3x3 Center (Level 3)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-32)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the Center in a horizontal way. Press **ENTER** to continue. (image 8-33)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the Center in a vertical way. Press **ENTER** to continue. (image 8-34)
5. Use the subpixel adjustments to fine shift the Center.

6. Press **BACK** to return to the *Geometry Edit* menu.

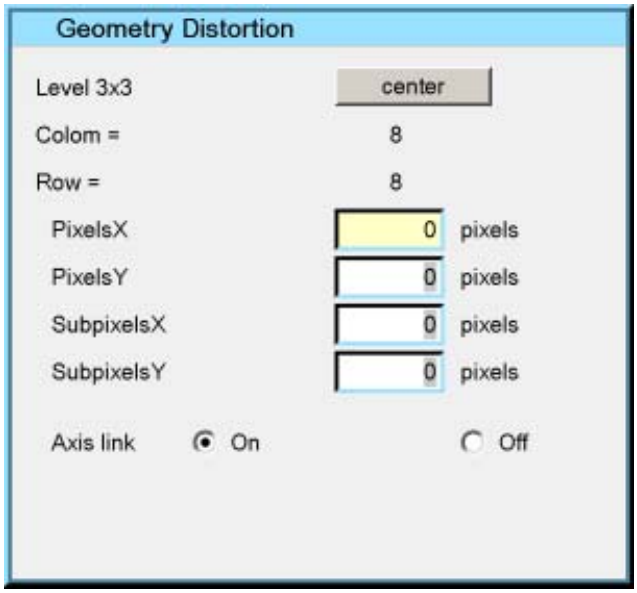



Image 8-32

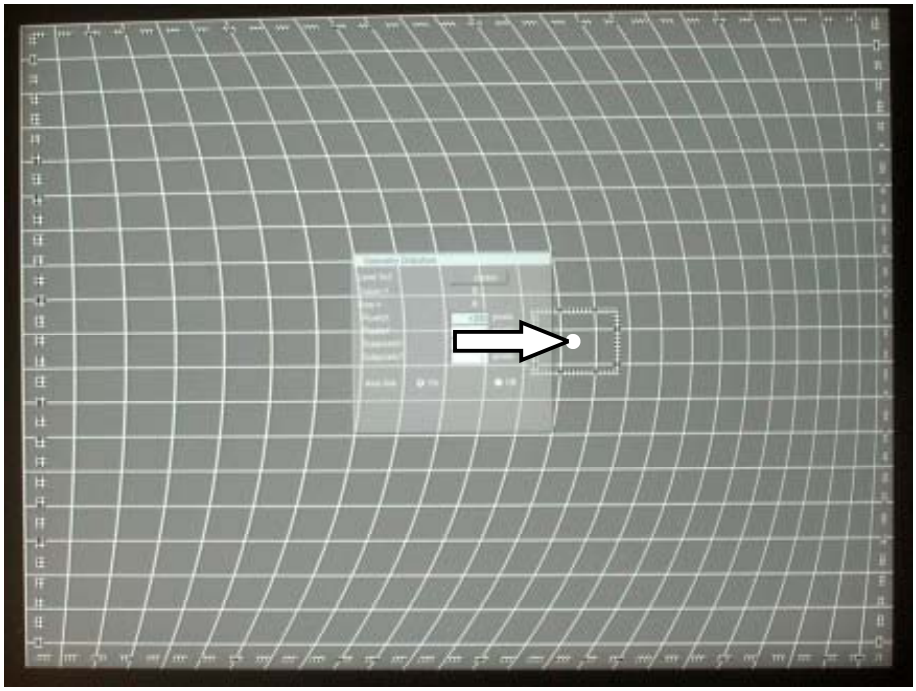


Image 8-33
3x3 corner (Level 3) Pixel X adjustment

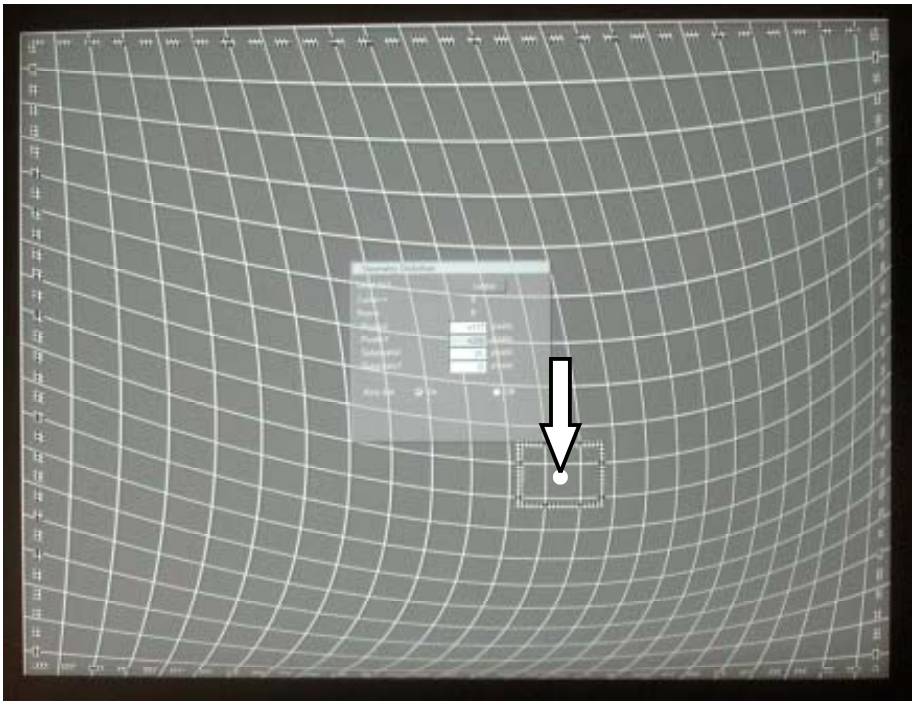


Image 8-34
3x3 corner (Level 3) Pixel Y adjustment

### 8.5.3 5x5 Adjustment (Level 4-6)

#### Overview

- Starting Up the 5x5 Adjustment (Level 4-6)
- Selecting the 5x5 H-side (Level 4)
- Adjusting the 5x5 H-side (Level 4)
- Selecting the 5x5 V-side (Level 4)
- Adjusting the 5x5 V-side (Level 4)
- Selecting the 5x5 Center (Level 5)
- Adjusting the 5x5 Center (Level 5)
- Selecting the 5x5 Quadrant (Level 6)
- Adjusting the 5x5 Quadrant (Level 6)

#### 8.5.3.1 Starting Up the 5x5 Adjustment (Level 4-6)

#### What can be done?

While the previous 3x3 adjustments are used to shape the basic geometry , the 5x5 adjustments will allow geometry adjustments at a medium level.

#### How to Start up the 5x5 adjustment (Level 4-6)?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Geometry* in the menubar.
3. Push the ↓ key to pull down the *Geometry* menu.
4. Push the cursor key ↑ or ↓ to to highlight Edit in the menubar.
5. Push the → key to pull down the Edit menu.
6. Push the cursor key ↑ or ↓ to highlight *5x5* and press **ENTER** to select. (image 8-35)

   The *Geometry Distortion* dialogbox will be displayed. (image 8-36)

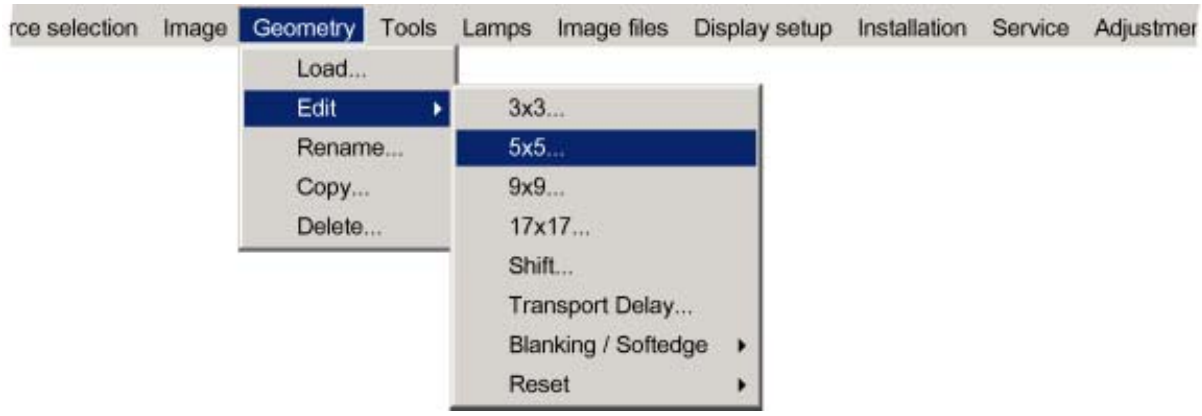



Image 8-35

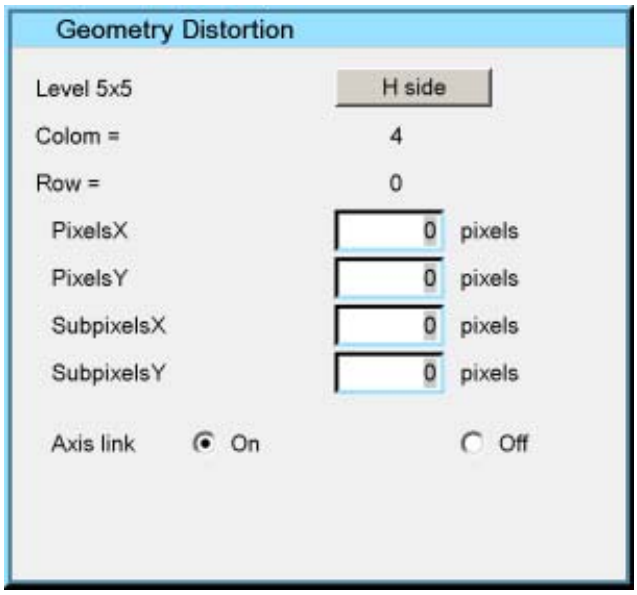



Image 8-36

### 8.5.3.2 Selecting the 5x5 H-side (Level 4)

#### What can be done?

This adjustment can be used to correct e.g. the vertical nonlinearity in the left or right half of the screen.

**The Linearity adjustment is best done when a hatch pattern is projected on the screen.**

#### How to select the 5x5 H-side (Level 4)?

1. By default *H-side* is already selected, if not, press **ENTER** until *H-side* is displayed. (image 8-37)
2. Push the cursor key ← or → to select the desired H-side. (image 8-38)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected H-side and an indication box will be displayed on the screen.

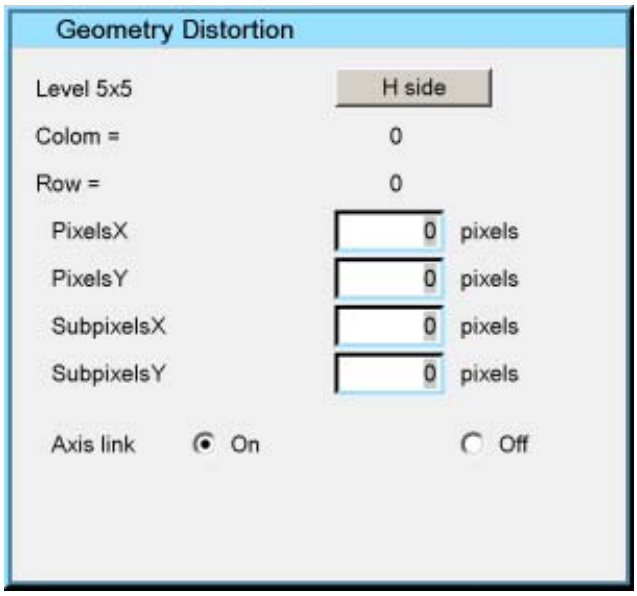



Image 8-37

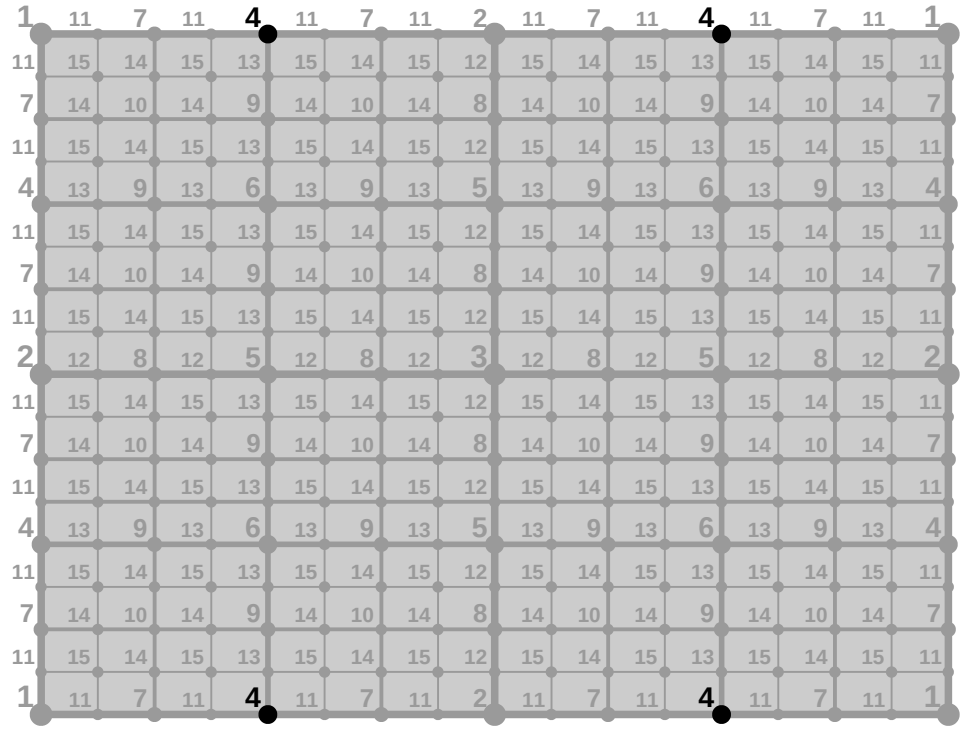


Image 8-38
5x5 H-side (Level 4) selections

### 8.5.3.3 Adjusting the 5x5 H-side (Level 4)

#### How to adjust the 5x5 H-side (Level 4)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-39)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected H-side in a horizontal way. Press **ENTER** to confirm. (image 8-40)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected H-side in a vertical way (Follow this procedure in a similar way to adjust any desired H-side position). Press **ENTER** to confirm. (image 8-41)
5. Use the subpixel adjustments to fine shift the selected H-side.

6. Press **BACK** to return to the *Geometry Edit* menu.

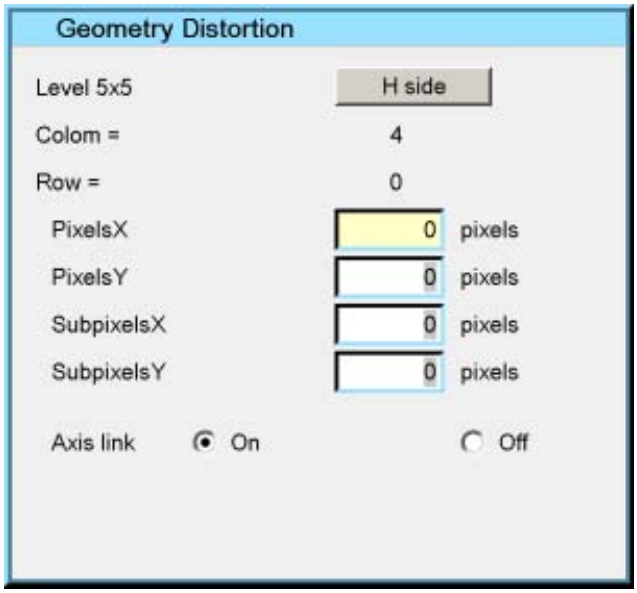



Image 8-39

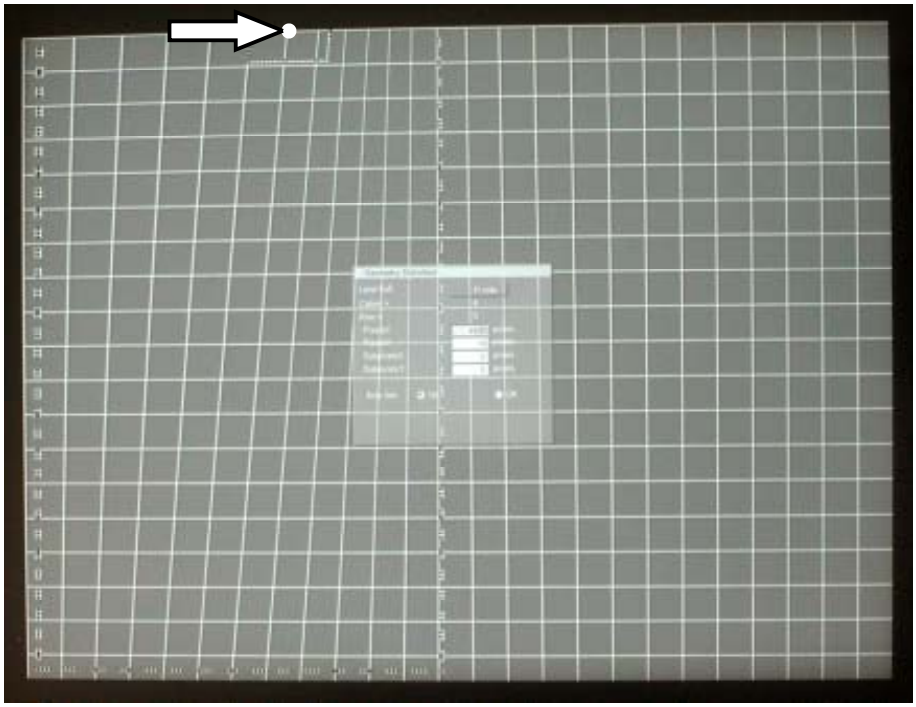


Image 8-40
5x5 H side (Level 4) Pixel X adjustment

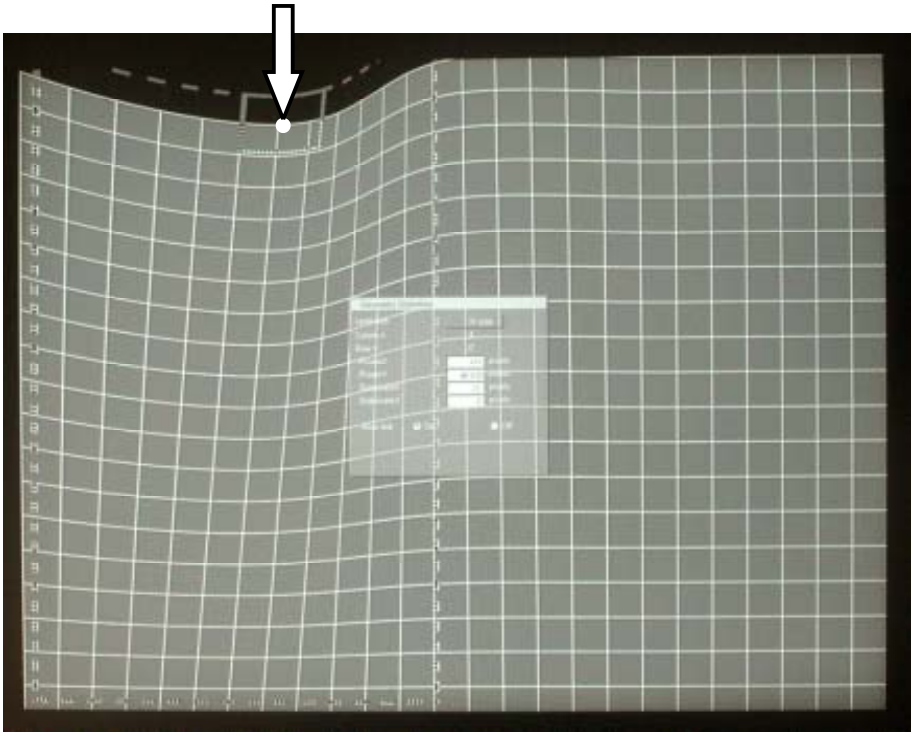


Image 8-41
5x5 H side (Level 4) Pixel Y adjustment

### 8.5.3.4 Selecting the 5x5 V-side (Level 4)

#### What can be done?

This adjustment can be used to correct e.g. the horizontal nonlinearity in the upper or lower half of the screen.

#### How to select the 5x5 V-side (Level 4)?

1. Push the cursor key ↑ or ↓ to highlight the 5x5 selection box.
2. Press **ENTER** to scroll through the available 5x5 selections until *V-side* is displayed. (image 8-42)
3. Push the cursor key ← or → to select the desired V-side. (image 8-43)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected V-side and an indication box will be displayed on the screen.

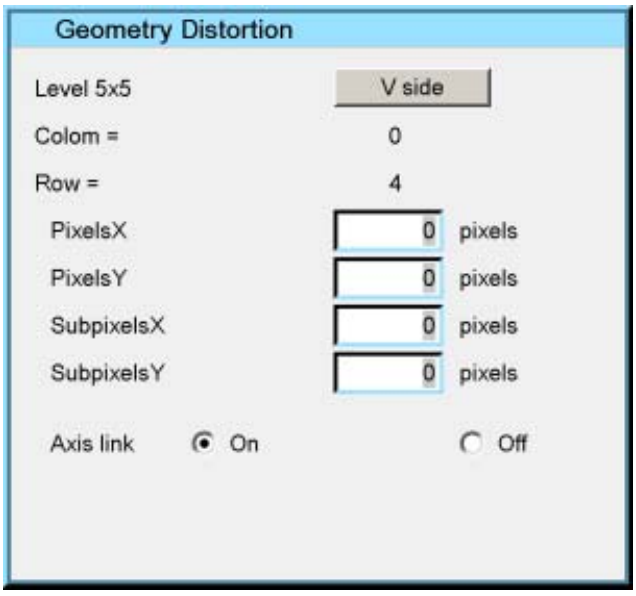



Image 8-42

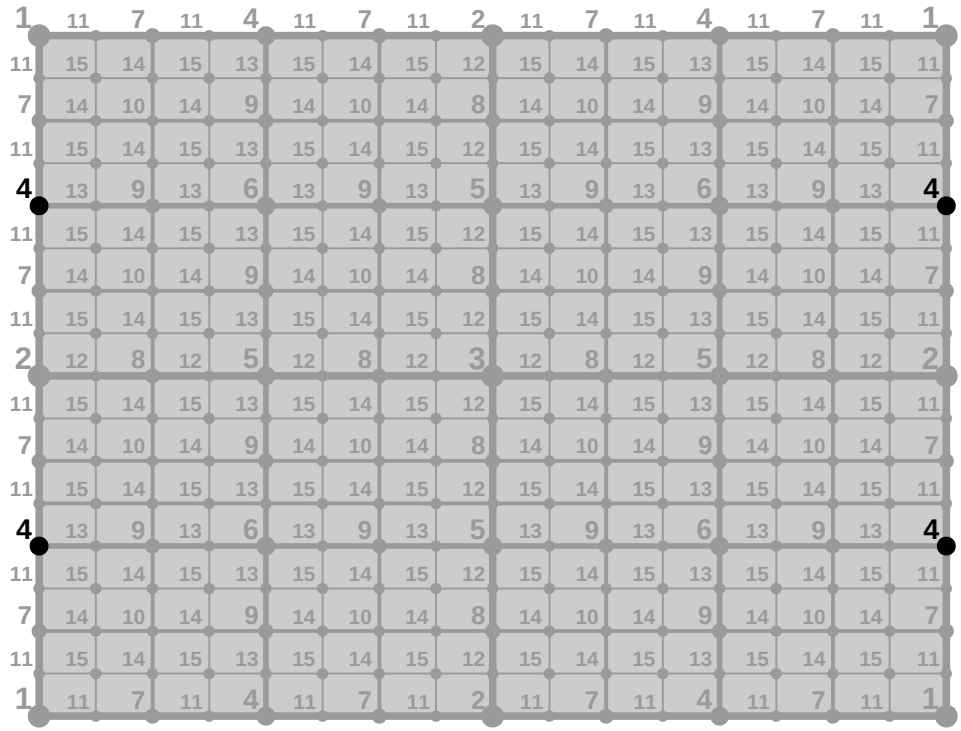


Image 8-43
5x5 V-side (Level 4) selections

### 8.5.3.5 Adjusting the 5x5 V-side (Level 4)

#### How to adjust the 5x5 V-side (Level 4)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-44)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected V-side in a horizontal way. Press **ENTER** to continue. (image 8-45)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected V-side in a vertical way (Follow this procedure in a similar way to adjust any desired V-side position). Press **ENTER** to continue. (image 8-46)
5. Use the subpixel adjustments to fine shift the selected V-side.
6. Press **BACK** to return to the *Geometry Edit* menu.

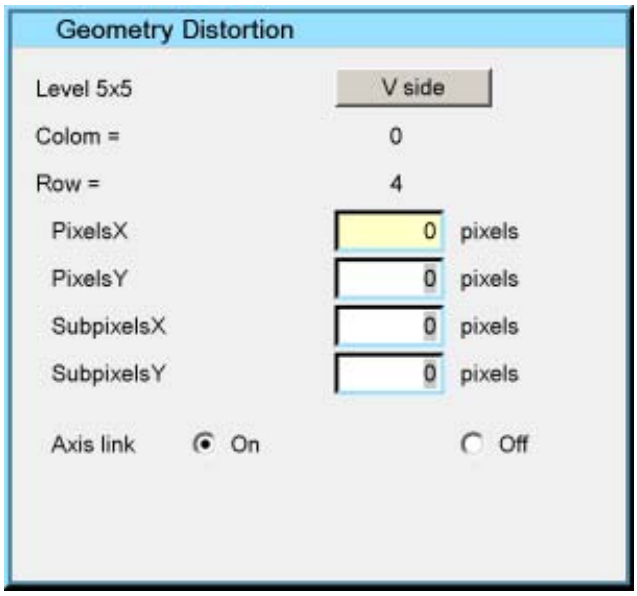



Image 8-44

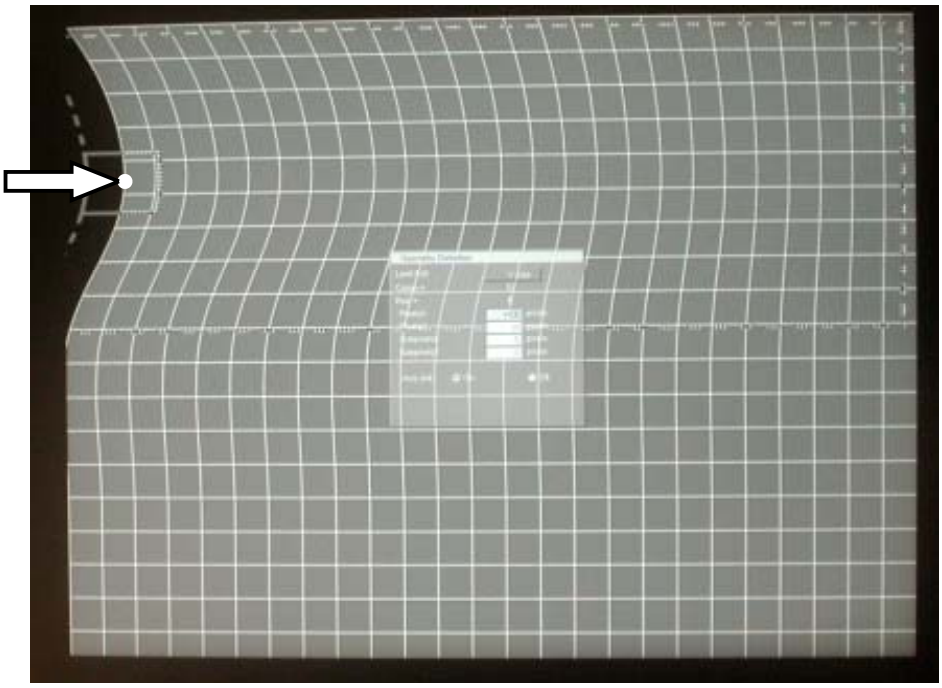


Image 8-45
5x5 V side (Level 4) Pixel X adjustment

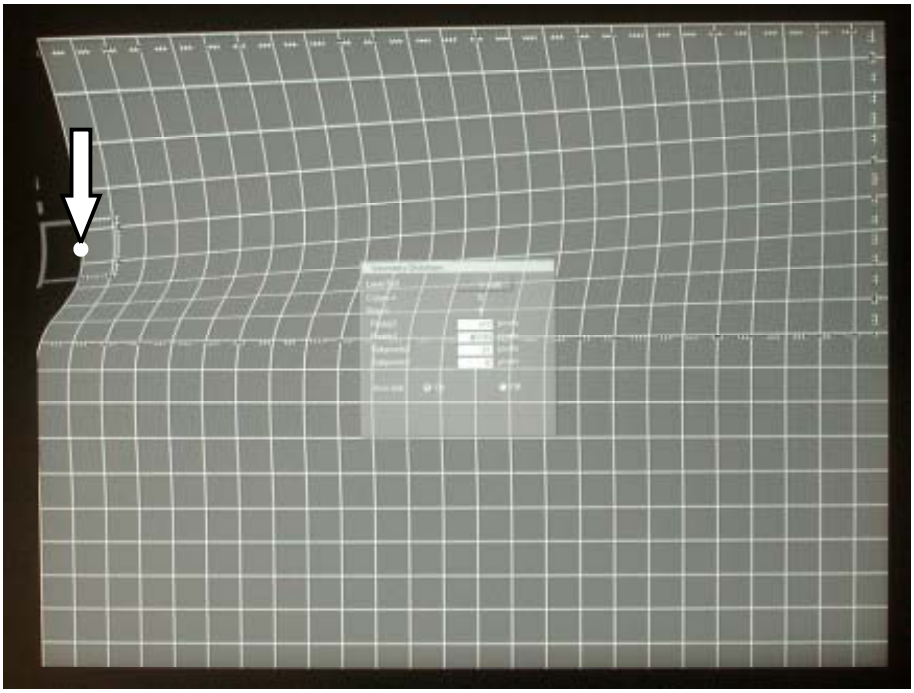


Image 8-46
5x5 V side (Level 4) Pixel X adjustment

### 8.5.3.6 Selecting the 5x5 Center (Level 5)

#### How to select the 5x5 Center (Level 5)?

1. Push the cursor key ↑ or ↓ to highlight the 5x5 selection box.
2. Press **ENTER** to scroll through the available 5x5 selections until *Center* is displayed. (image 8-47)
3. Push the cursor key ← or → to select the desired *Center*. (image 8-48)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected V-side and an indication box will be displayed on the screen.

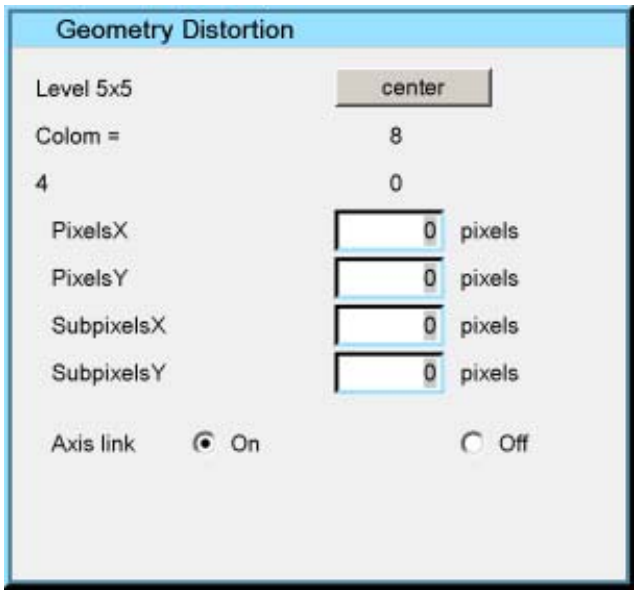



Image 8-47

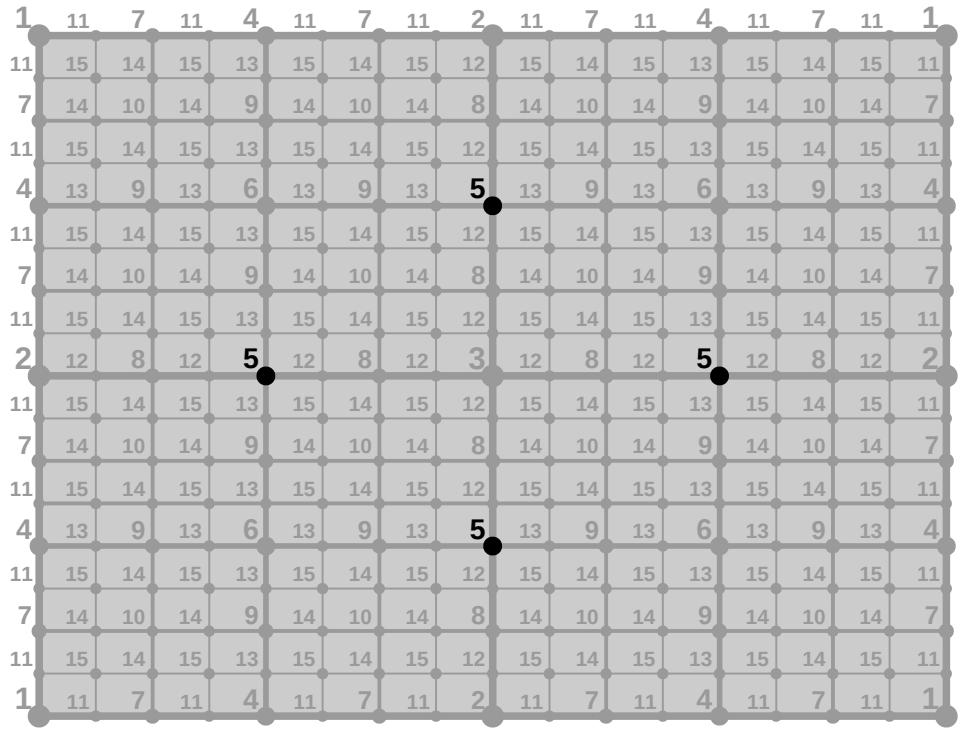


Image 8-48
5x5 Center (Level 5) selections

### 8.5.3.7 Adjusting the 5x5 Center (Level 5)

#### How to adjust the 5x5 Center (Level 5)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-49)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the Center in a horizontal way. Press **ENTER** to continue. (image 8-50)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the Center in a vertical way (Follow this procedure in a similar way to adjust any desired Center position). Press **ENTER** to continue. (image 8-51)
5. Use the subpixel adjustments to fine shift the selected Center.
6. Press **BACK** to return to the *Geometry Edit* menu.

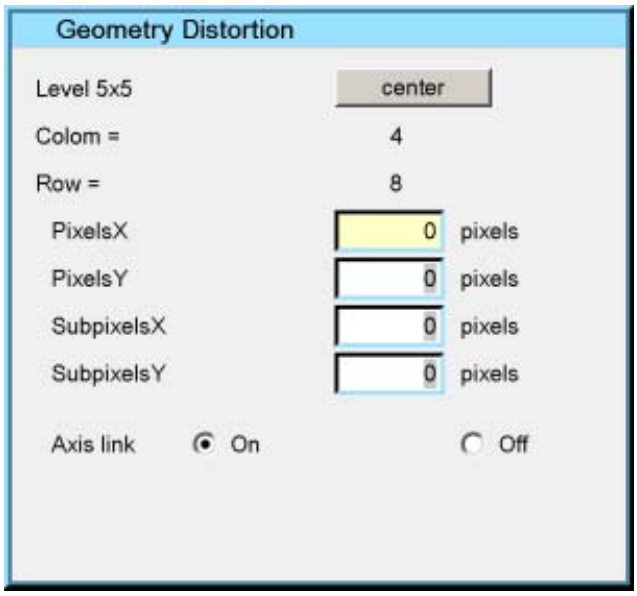



Image 8-49

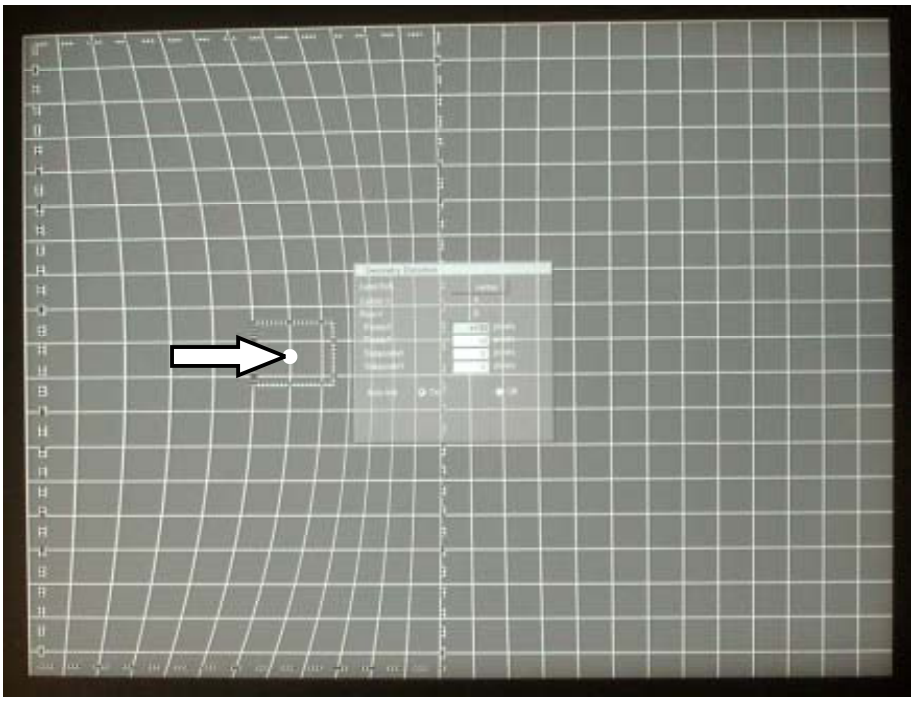


Image 8-50
5x5 center (Level 5) Pixel X adjustment

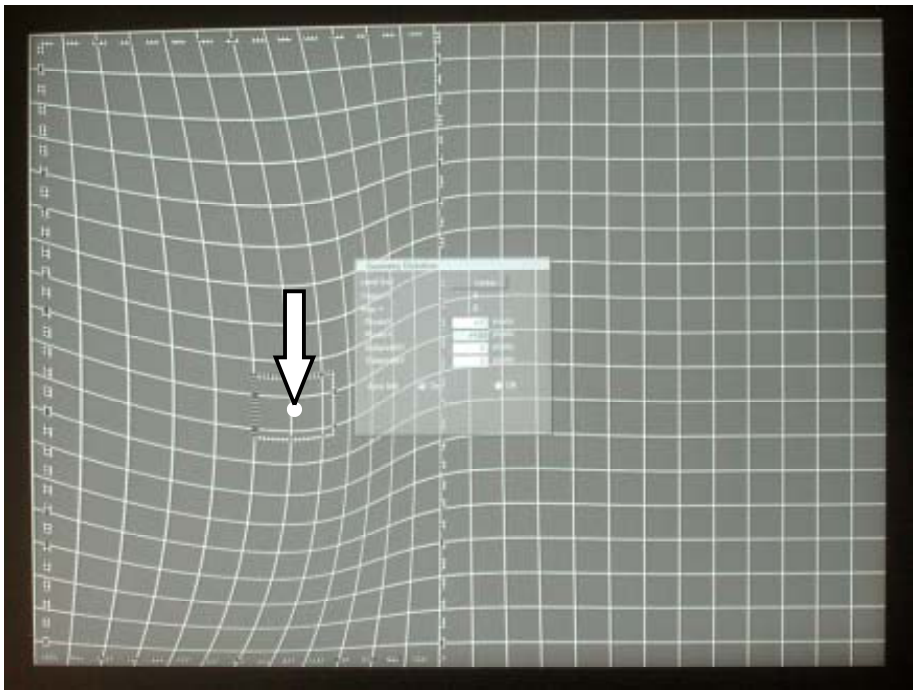


Image 8-51
5x5 center (Level 5) Pixel Y adjustment

### 8.5.3.8 Selecting the 5x5 Quadrant (Level 6)

#### How to select the 5x5 Quadrant (Level 6)?

1. Push the cursor key ↑ or ↓ to highlight the 5x5 selection box.
2. Press **ENTER** to scroll through the available 5x5 selections until *Quadrant* is displayed. (image 8-52)
3. Push the cursor key ← or → to select the desired Quadrant. (image 8-53)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected Quadrant and an indication box will be displayed on the screen.

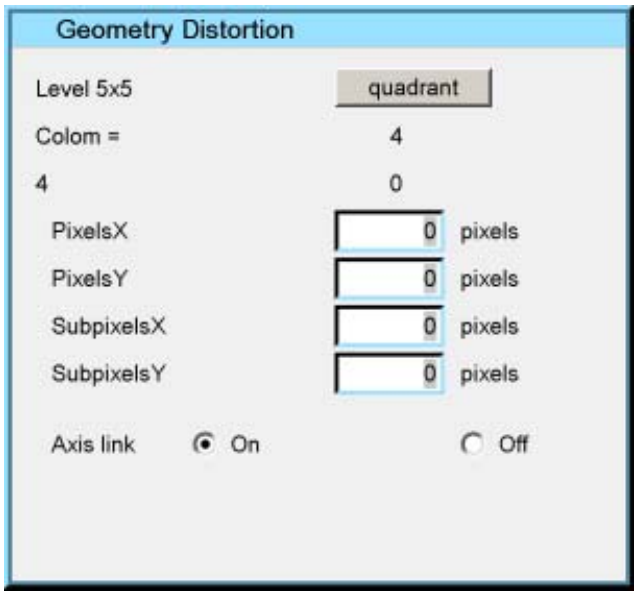



Image 8-52

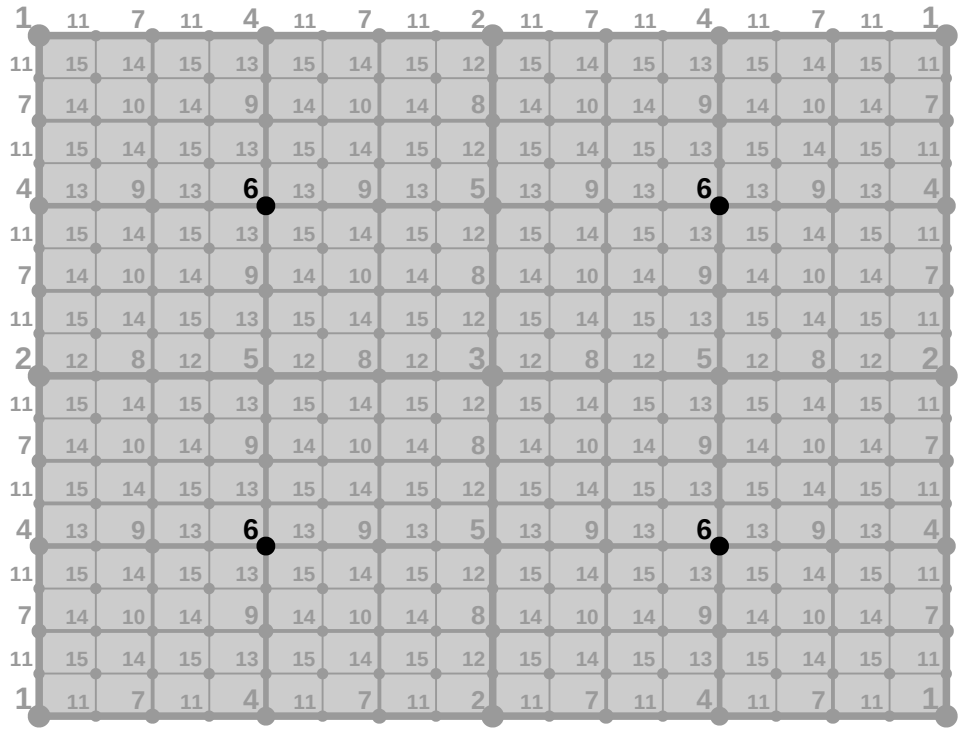


Image 8-53
5x5 Quadrant (Level 6) selections

### 8.5.3.9 Adjusting the 5x5 Quadrant (Level 6)

#### How to adjust the 5x5 Quadrant (Level 6)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-54)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the Quadrant in a horizontal way. Press **ENTER** to continue. (image 8-55)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the Quadrant in a vertical way (Follow this procedure in a similar way to adjust any desired Quadrant position). Press **ENTER** to continue. (image 8-56)
5. Use the subpixel adjustments to fine shift the selected Quadrant.
6. Press **BACK** to return to the *Geometry Edit* menu.

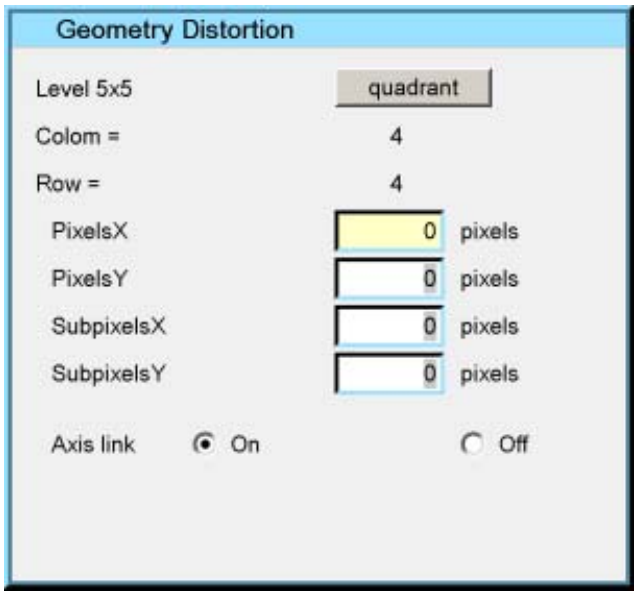



Image 8-54

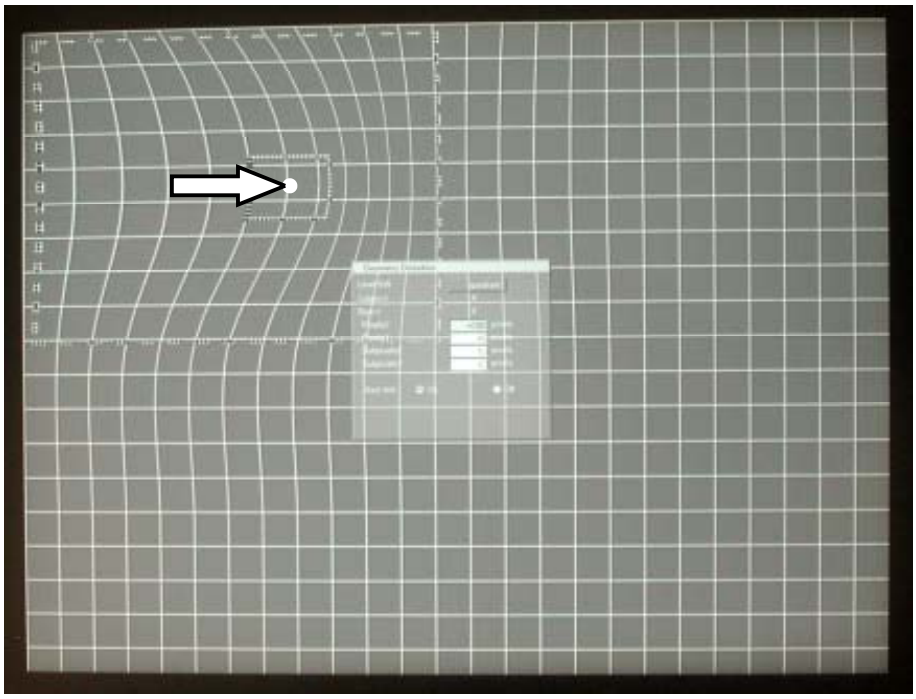


Image 8-55
5x5 quadrant (Level 6) Pixel X adjustment

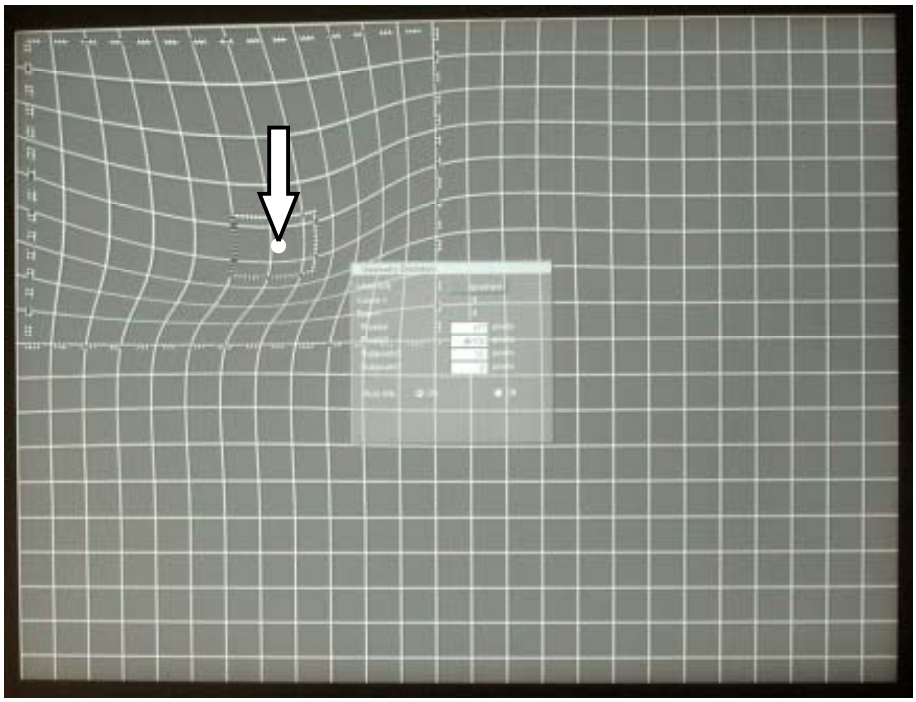


Image 8-56
5x5 quadrant (Level 6) Pixel Y adjustment

### 8.5.4 9x9 Adjustment (Level 7-10)

#### Overview

- Starting up the 9x9 Adjustment (Level 7-10)
- Selecting the 9x9 H-side (Level 7)
- Adjusting the 9x9 H-side (Level 7)
- Selecting the 9x9 V-side (Level 7)
- Adjusting the 9x9 V-side (Level 7)
- Selecting the 9x9 Center (Level 8)
- Adjusting the 9x9 Center (Level 8)
- Selecting the 9x9 Quadrant (Level 9)
- Adjusting the 9x9 Quadrant (Level 9)
- Selecting the 9x9 Fine points (Level 10)
- Adjusting the 9x9 Fine points (Level 10)

#### 8.5.4.1 Starting up the 9x9 Adjustment (Level 7-10)

##### What can be done?

The 9x9 is used for the fine geometry adjustments.

##### How to Start up the 9x9 adjustment (Level 7-10)?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Geometry* in the menubar.
3. Push the ↓ key to pull down the *Geometry* menu.
4. Push the cursor key ↑ or ↓ to to highlight Edit in the menubar.
5. Push the → key to pull down the Edit menu.
6. Push the cursor key ↑ or ↓ to highlight *9x9* and press **ENTER** to select. (image 8-57)

   The *Geometry Distortion* dialog box will be displayed. (image 8-58)

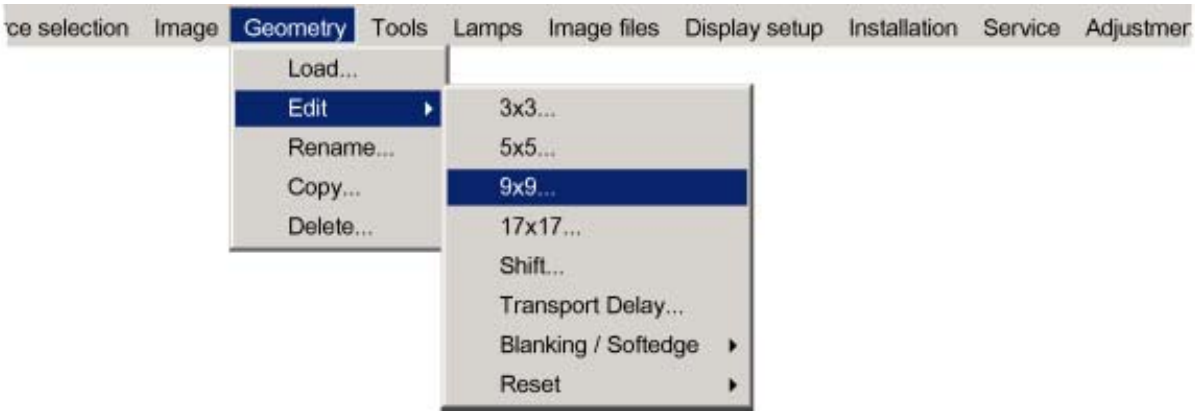



Image 8-57

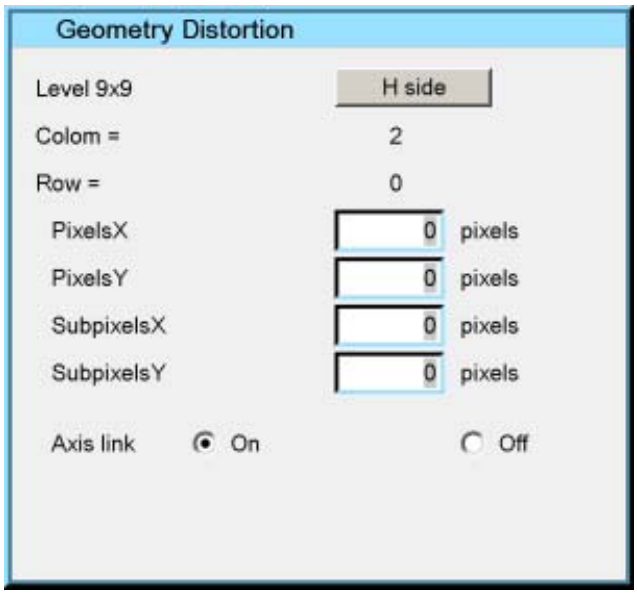



Image 8-58

### 8.5.4.2 Selecting the 9x9 H-side (Level 7)

#### How to select the 9x9 H-side (Level 7)?

1. By default *H-side* is already selected, if not, press **ENTER** until *H-side* is displayed. (image 8-59)
2. Push the cursor key ← or → to select the desired H-side. (image 8-60)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected H-side and an indication box will be displayed on the screen.

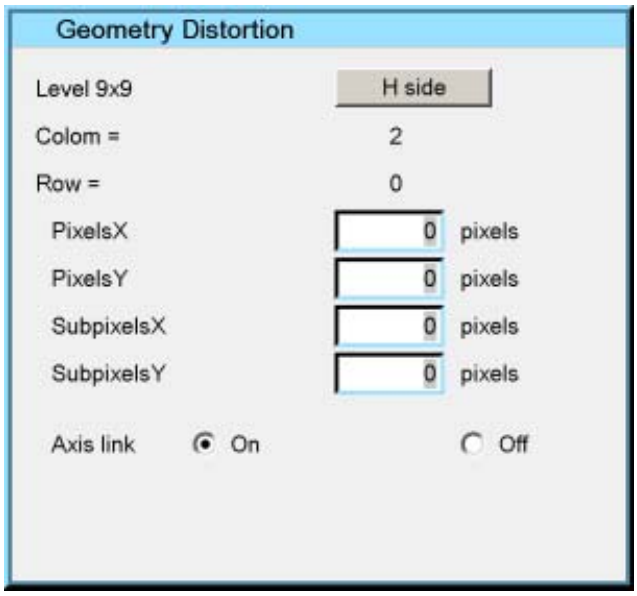



Image 8-59

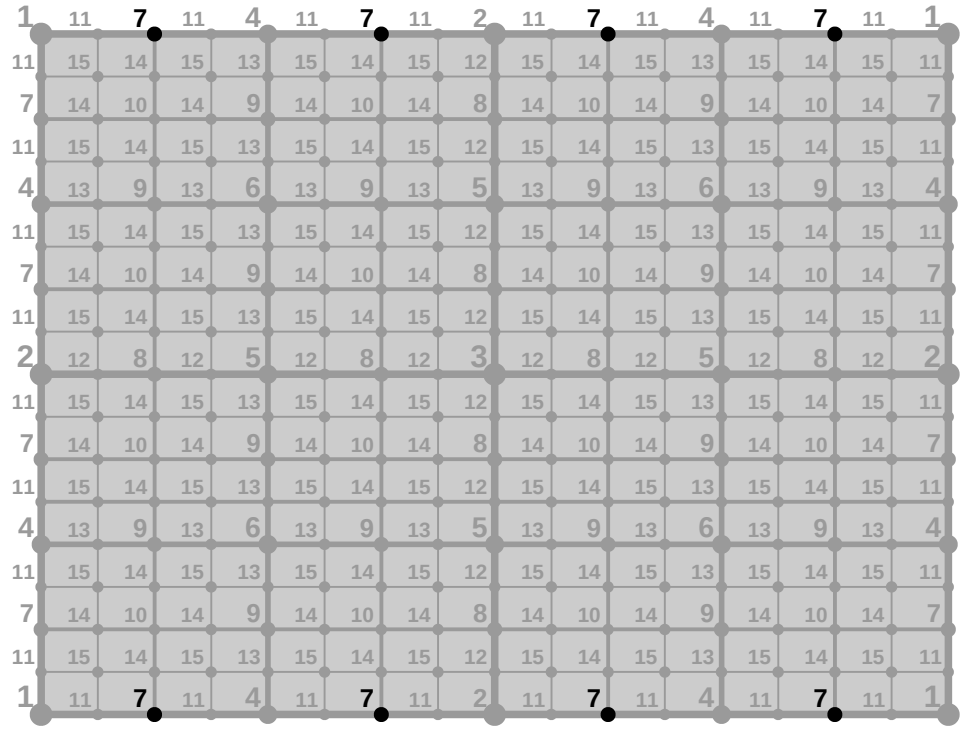


Image 8-60
9x9 H-side (Level 7) selections

### 8.5.4.3 Adjusting the 9x9 H-side (Level 7)

#### How to adjust the 9x9 H-Side (Level 7)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-61)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected H-side in a horizontal way. Press **ENTER** to continue. (image 8-62)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to continue.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected H-side in a vertical way (Follow this procedure in a similar way to adjust any desired H-side position). Press **ENTER** to continue. (image 8-63)
5. Use the subpixel adjustments to fine shift the selected H-side.

6. Press **BACK** to return to the *Geometry Edit* menu.

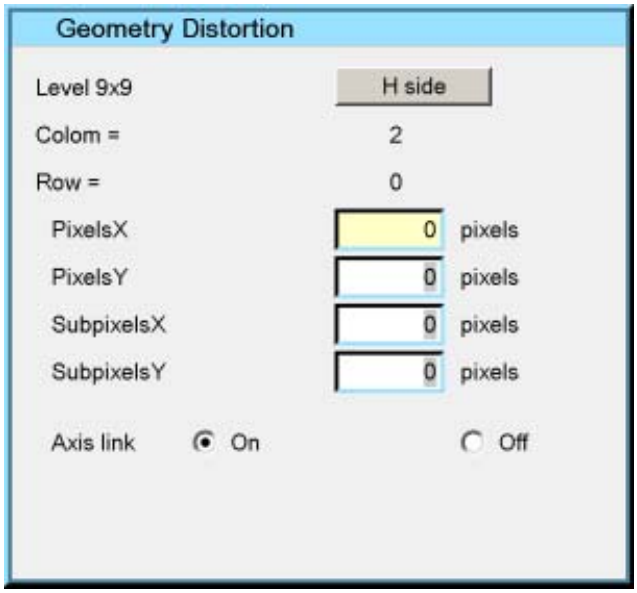



Image 8-61

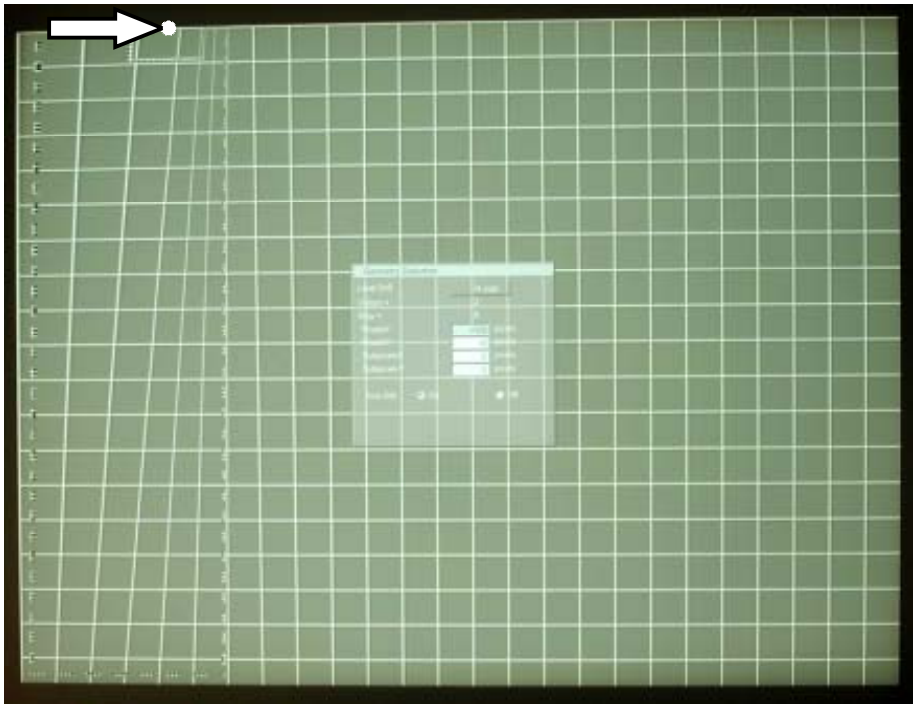


Image 8-62
9x9 H side (Level 7) Pixel X adjustment

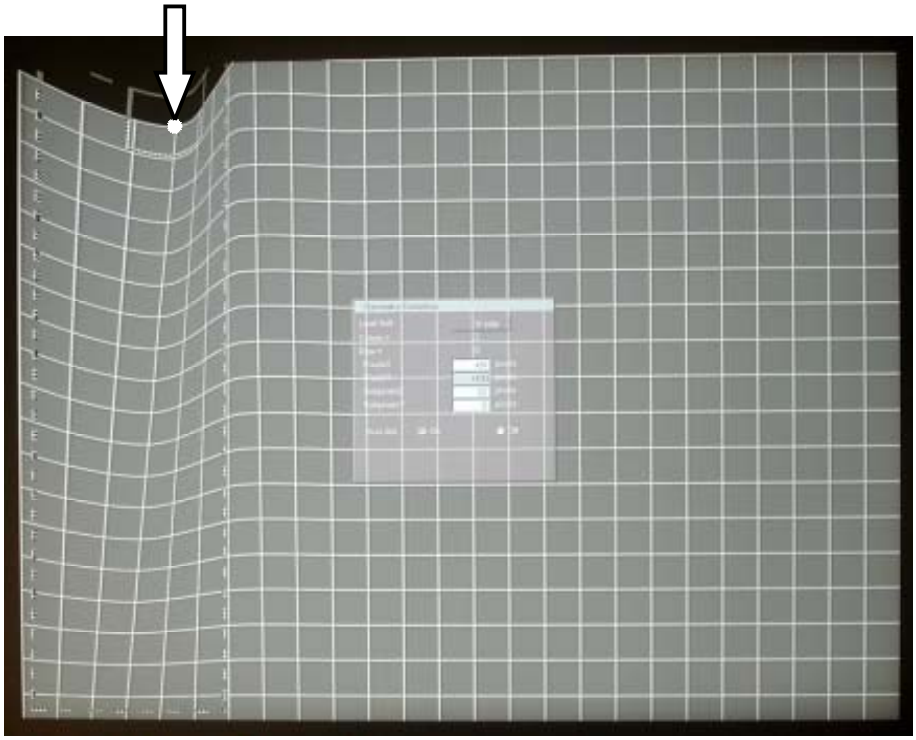


Image 8-63
9x9 H side (Level 7) Pixel Y adjustment

### 8.5.4.4 Selecting the 9x9 V-side (Level 7)

#### How to select the 9x9 V-side (Level 7)?

1. Push the cursor key ↑ or ↓ to highlight the 9x9 selection box.
2. Press **ENTER** to scroll through the available 9x9 selections until *V-side* is displayed. (image 8-64)
3. Push the cursor key ← or → to select the desired V-side. (image 8-65)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected V-side and an indication box will be displayed on the screen.

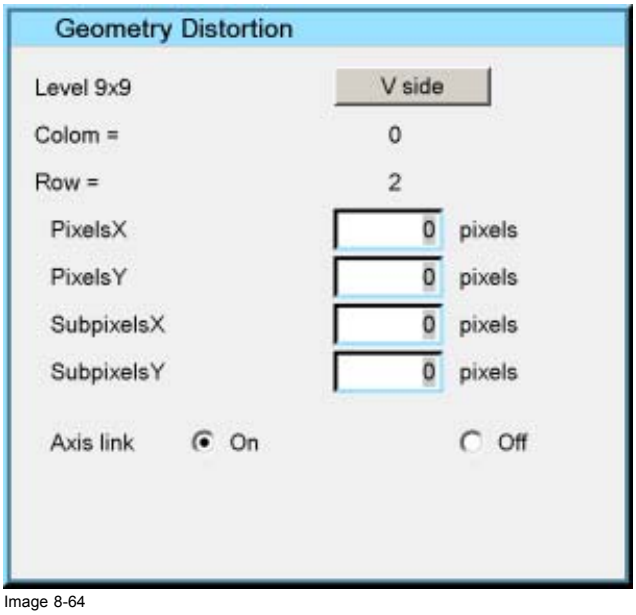



Image 8-64

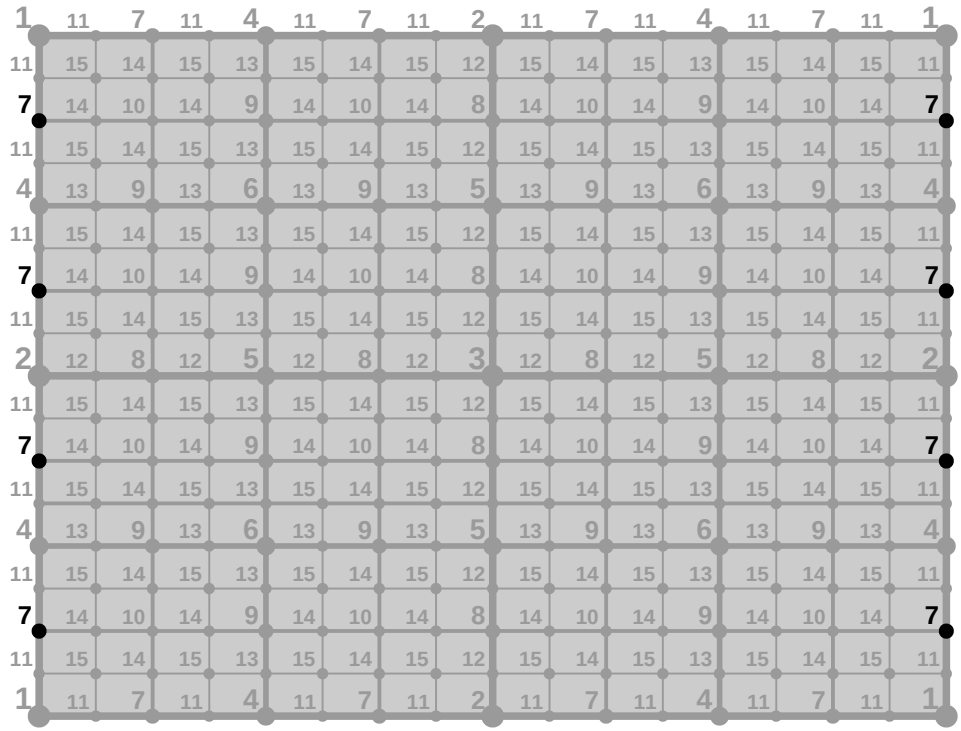


Image 8-65
9x9 V-side (Level 7) selections

### 8.5.4.5 Adjusting the 9x9 V-side (Level 7)

#### How to adjust the 9x9 V-Side (Level 7)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-66)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected V-side in a horizontal way. Press **ENTER** to continue. (image 8-67)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected V-side in a vertical way (Follow this procedure in a similar way to adjust any desired V-side position). Press **ENTER** to continue. (image 8-68)
5. Use the subpixel adjustments to fine shift the selected V-side.
6. Press **BACK** to return to the *Geometry Edit* menu.

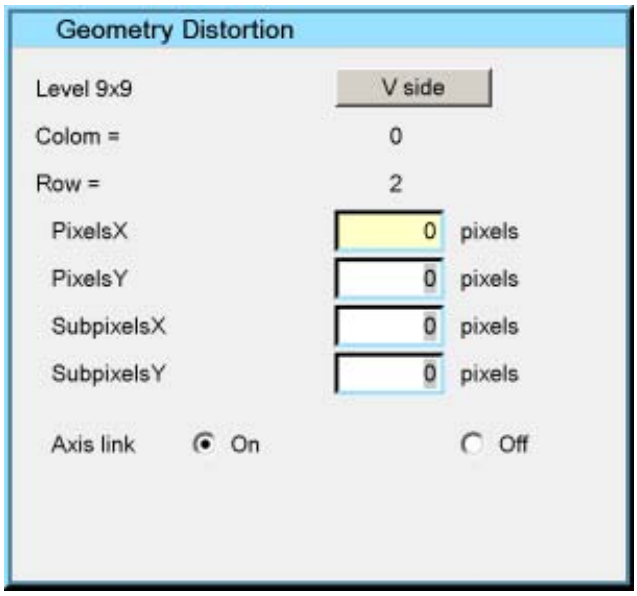



Image 8-66

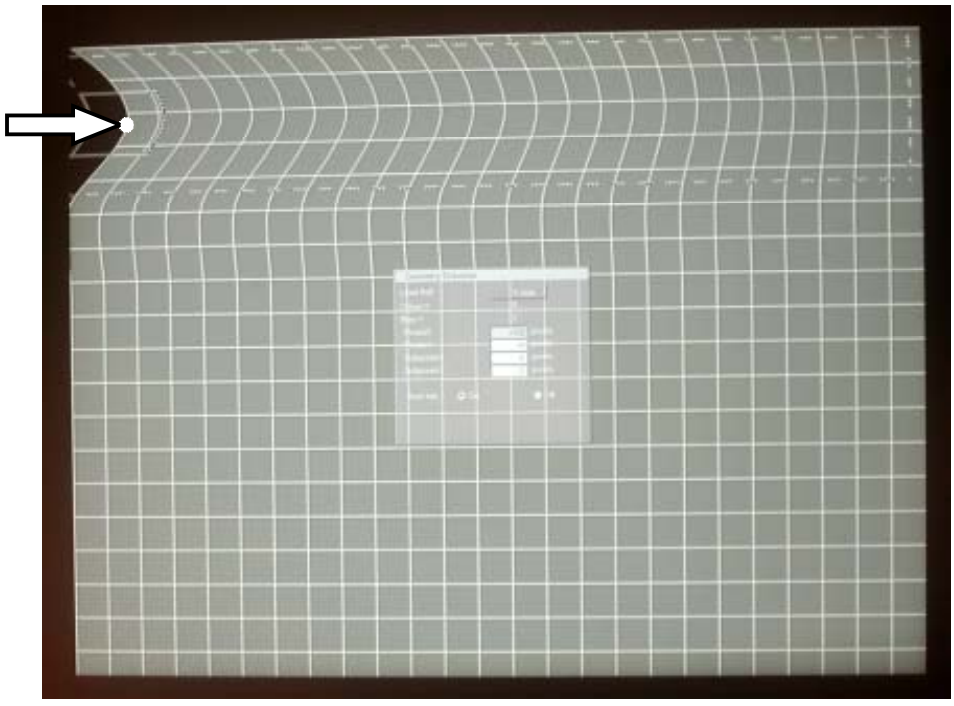


Image 8-67
9x9 V side (Level 7) Pixel X adjustment

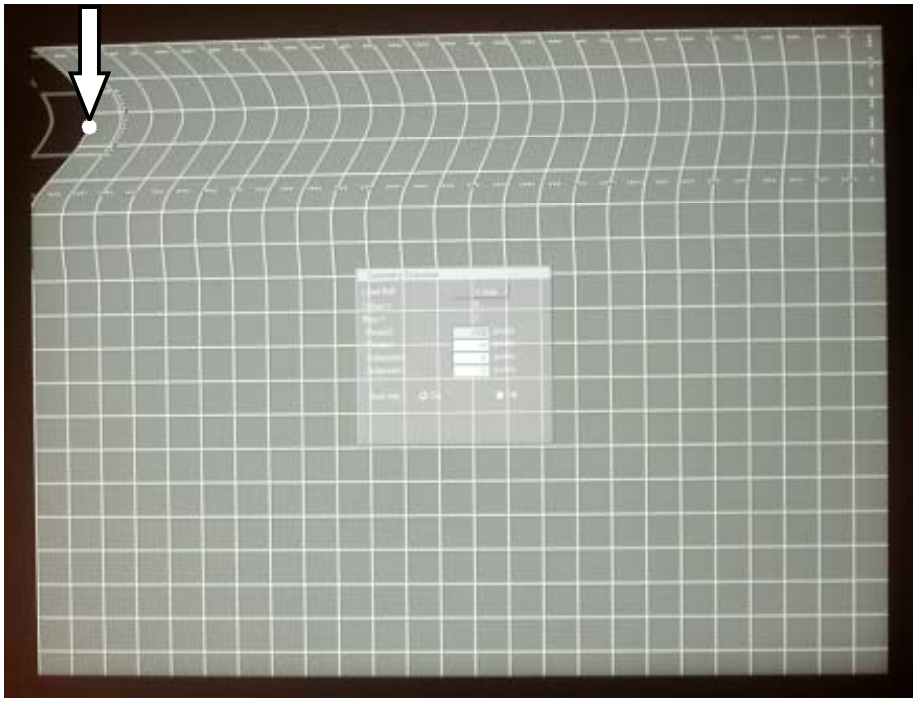


Image 8-68
9x9 V side (Level 7) Pixel Y adjustment

### 8.5.4.6 Selecting the 9x9 Center (Level 8)

#### How to select the 9x9 Center (Level 8)?

1. Push the cursor key ↑ or ↓ to highlight the 9x9 selection box.
2. Press **ENTER** to scroll through the available 9x9 selections until *center* is displayed. (image 8-69)
3. Push the cursor key ← or → to select the desired Center. (image 8-70)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected Center and an indication box will be displayed on the screen.

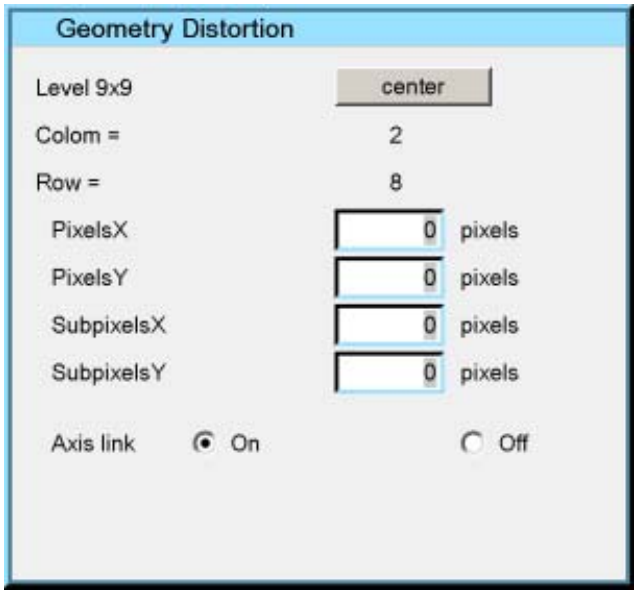



Image 8-69

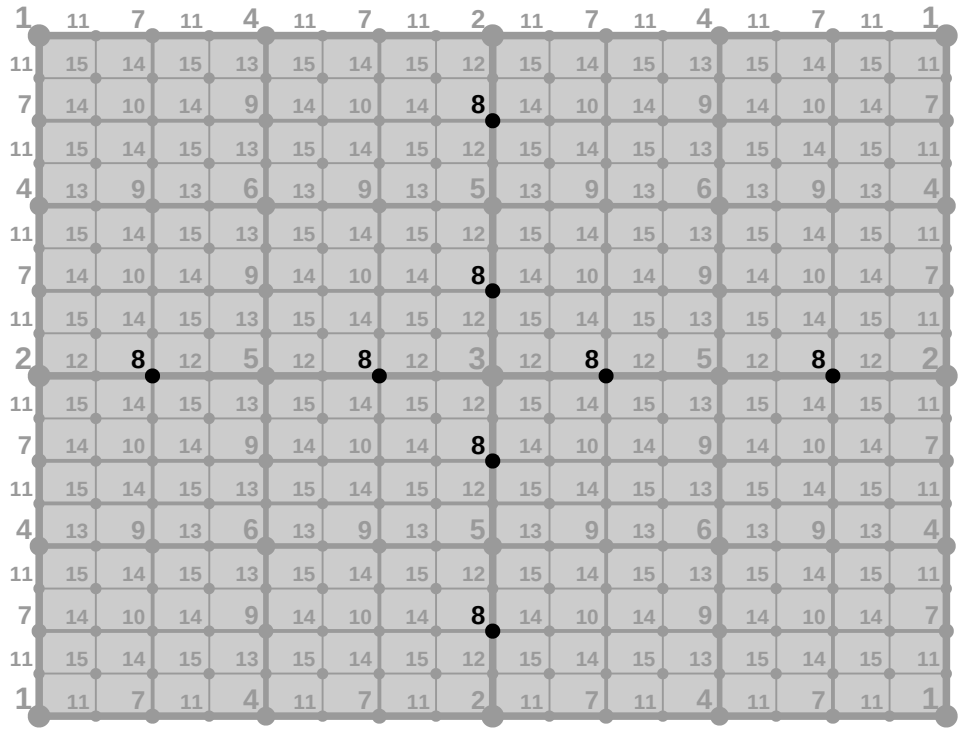


Image 8-70
9x9 Center (Level 8) selections

### 8.5.4.7 Adjusting the 9x9 Center (Level 8)

#### How to adjust the 9x9 Center (Level 8)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-71)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Center in a horizontal way. Press **ENTER** to continue. (image 8-72)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Center in a vertical way (Follow this procedure in a similar way to adjust any desired Center position). Press **ENTER** to continue. (image 8-73)
5. Use the subpixel adjustments to fine shift the selected Center.
6. Press **BACK** to return to the *Geometry Edit* menu.

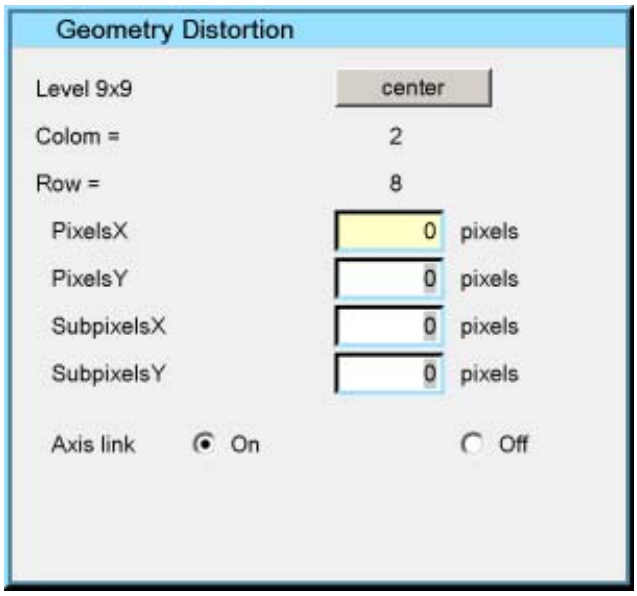



Image 8-71

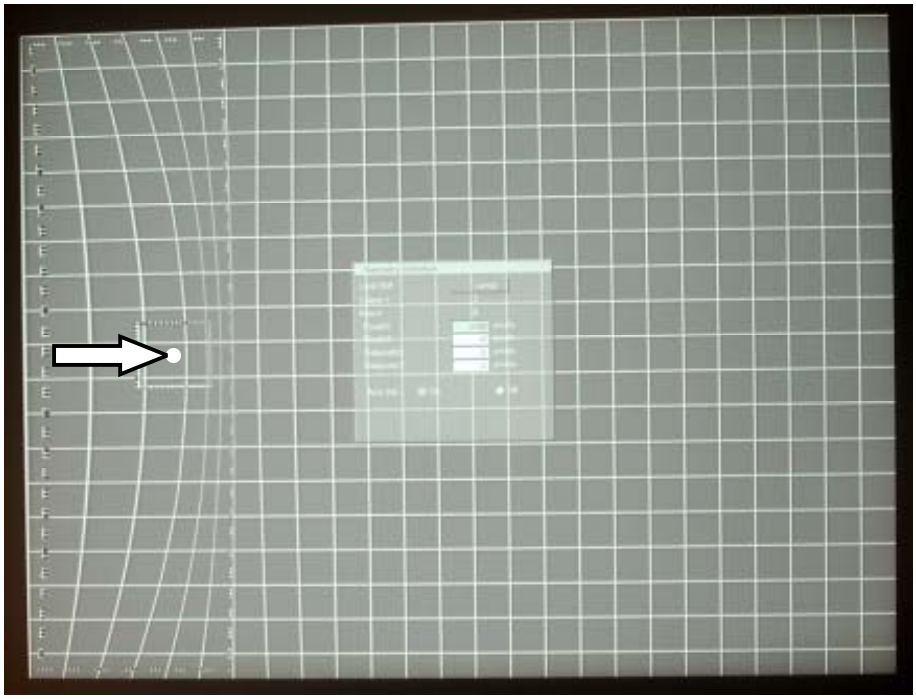


Image 8-72
9x9 center (Level 8) Pixel X adjustment

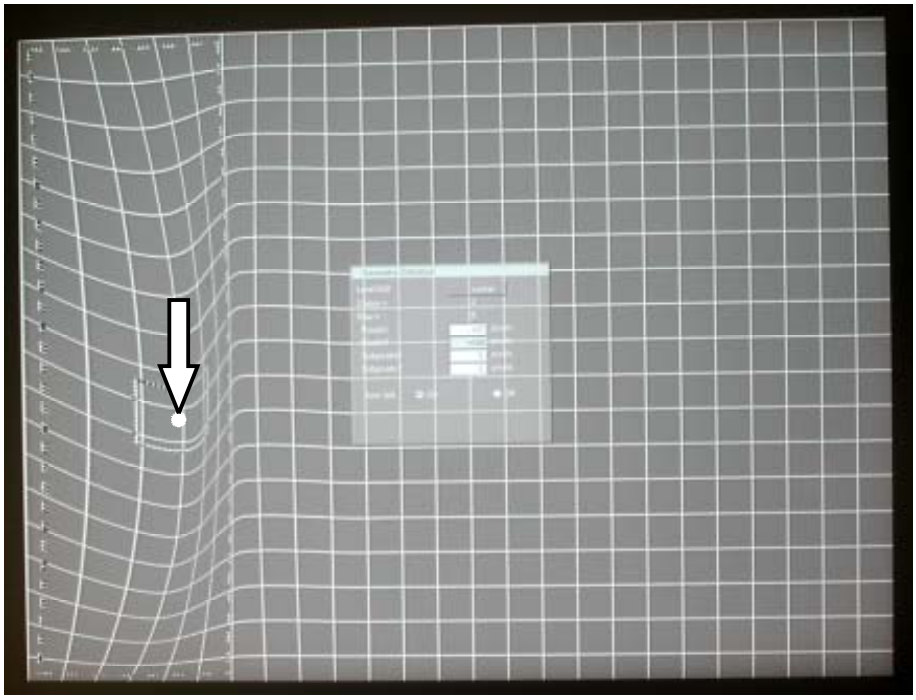


Image 8-73
9x9 center (Level 8) Pixel Y adjustment

### 8.5.4.8 Selecting the 9x9 Quadrant (Level 9)

#### How to select the 9x9 Quadrant (Level 9)?

1. Push the cursor key ↑ or ↓ to highlight the 9x9 selection box.
2. Press **ENTER** to scroll through the available 9x9 selections until *quadrant* is displayed. (image 8-74)
3. Push the cursor key ← or → to select the desired Quadrant. (image 8-75)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected Quadrant and an indication box will be displayed on the screen.

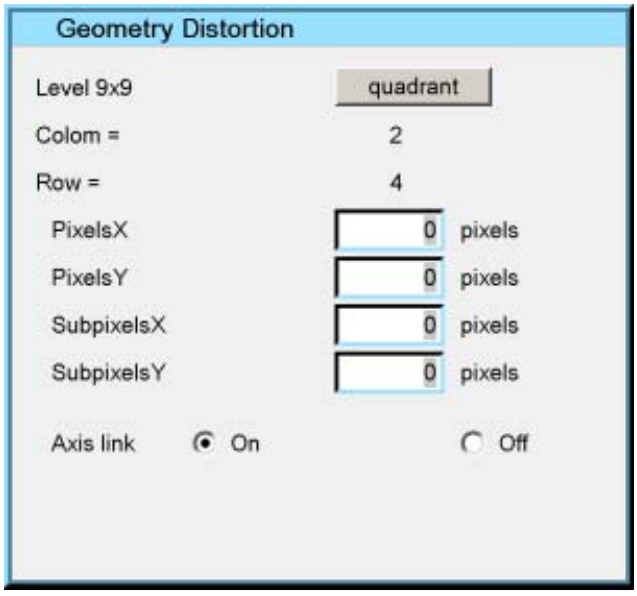



Image 8-74

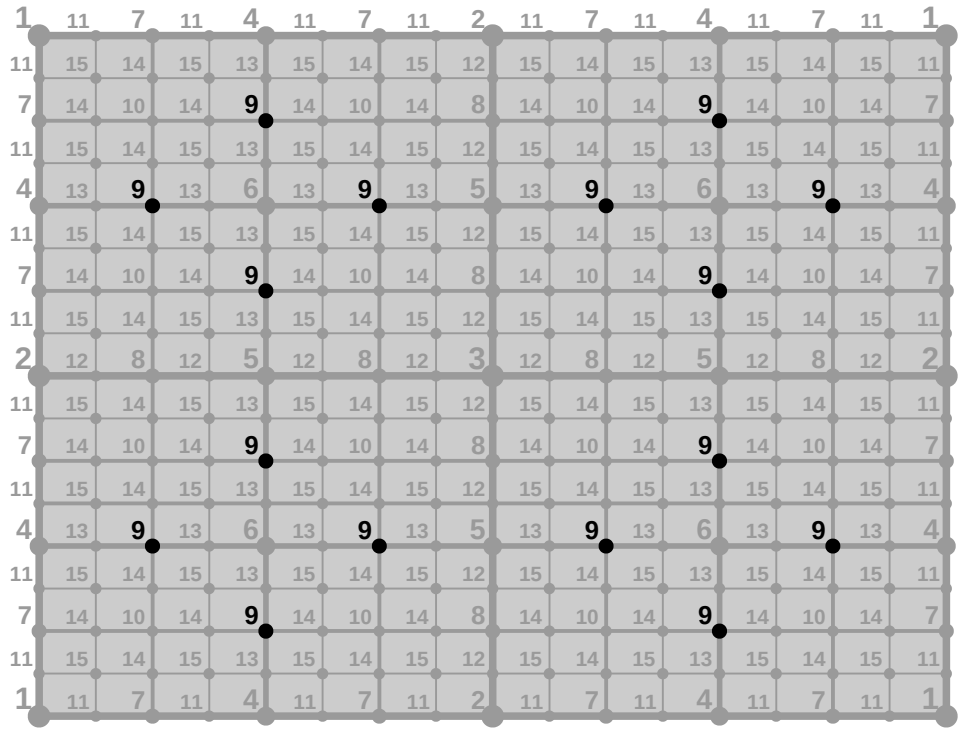


Image 8-75
9x9 Quadrant (Level 9) selections

### 8.5.4.9 Adjusting the 9x9 Quadrant (Level 9)

#### How to adjust the 9x9 Quadrant (Level 9)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-76)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Quadrant in a horizontal way. Press **ENTER** to continue. (image 8-77)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Quadrant in a vertical way (Follow this procedure in a similar way to adjust any desired Quadrant position). Press **ENTER** to continue. (image 8-78)
5. Use the subpixel adjustments to fine shift the selected Quadrant.
6. Press **BACK** to return to the *Geometry Edit* menu.

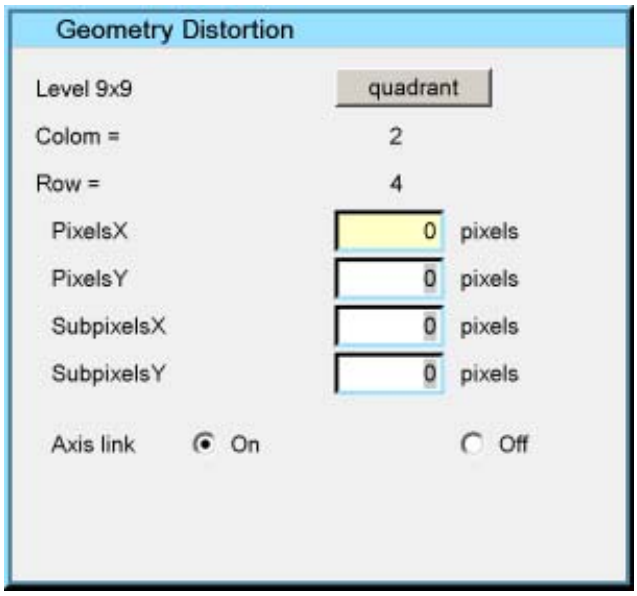



Image 8-76

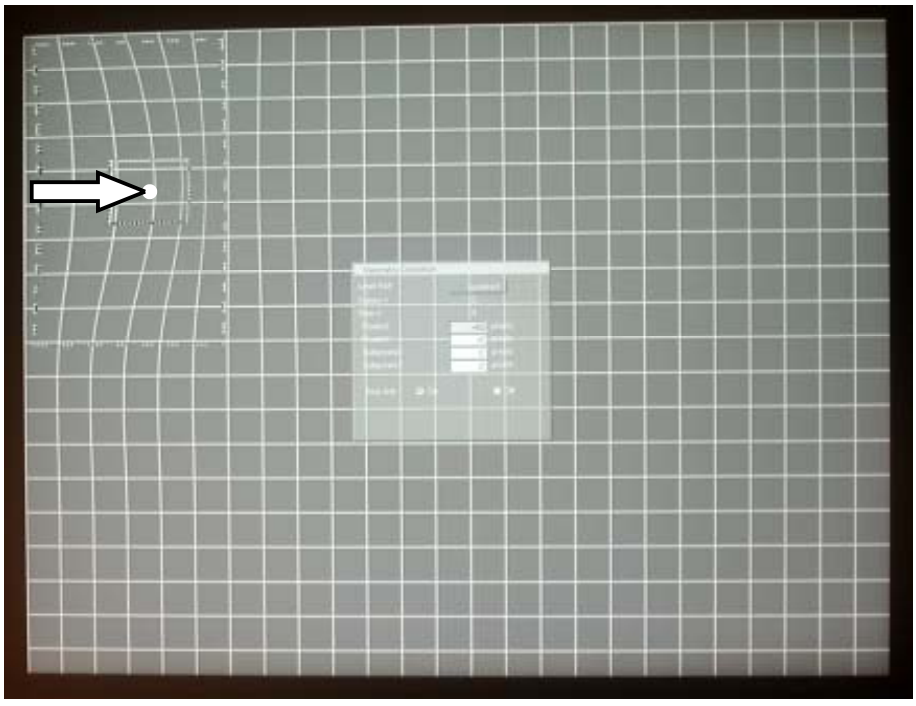


Image 8-77
9x9 quadrant (Level 9) Pixel X adjustment

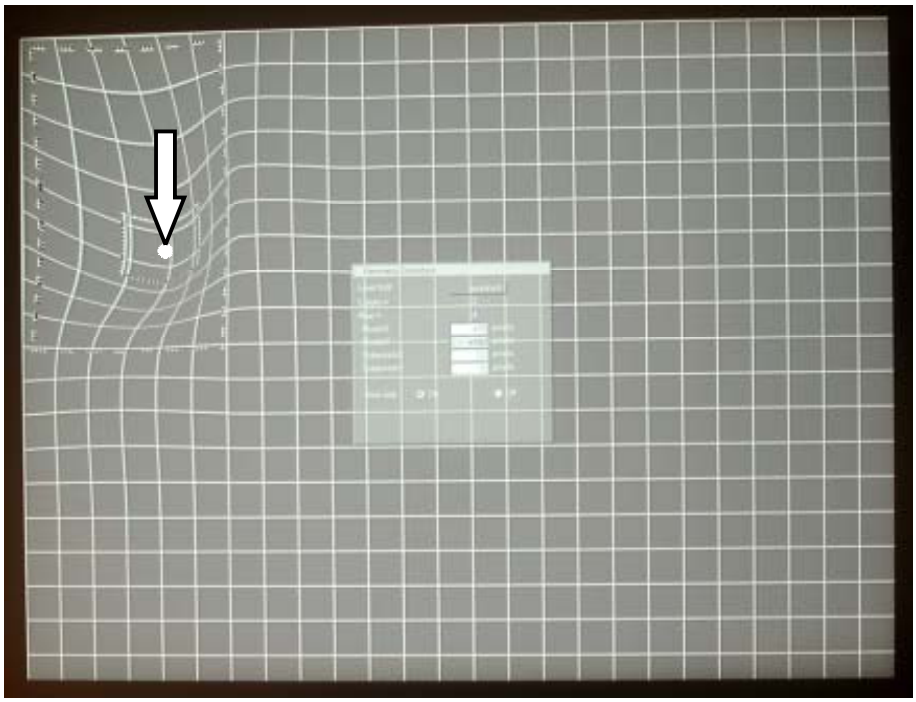


Image 8-78
9x9 quadrant (Level 9) PixelY adjustment

### 8.5.4.10 Selecting the 9x9 Fine points (Level 10)

#### How to select the 9x9 Fine points (Level 10)?

1. Push the cursor key ↑ or ↓ to highlight the 9x9 selection box.
2. Press **ENTER** to scroll through the available 9x9 selections until *fine* is displayed. (image 8-79)
3. Push the cursor key ← or → to select the desired Fine points. (image 8-80)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected Fine points and an indication box will be displayed on the screen.

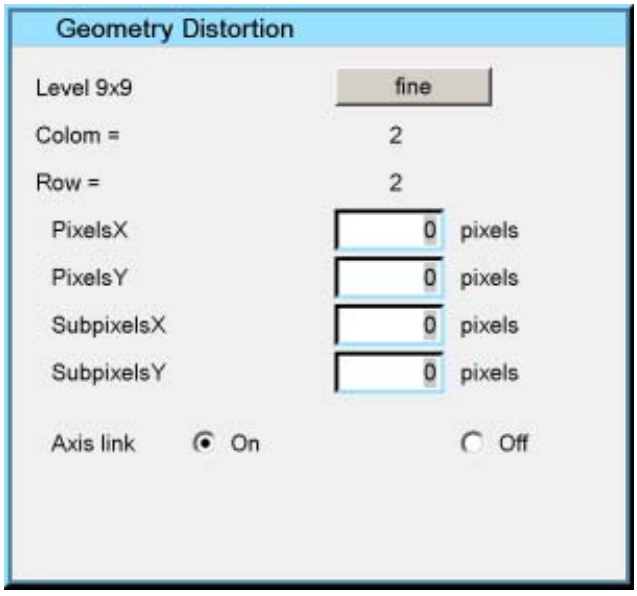



Image 8-79

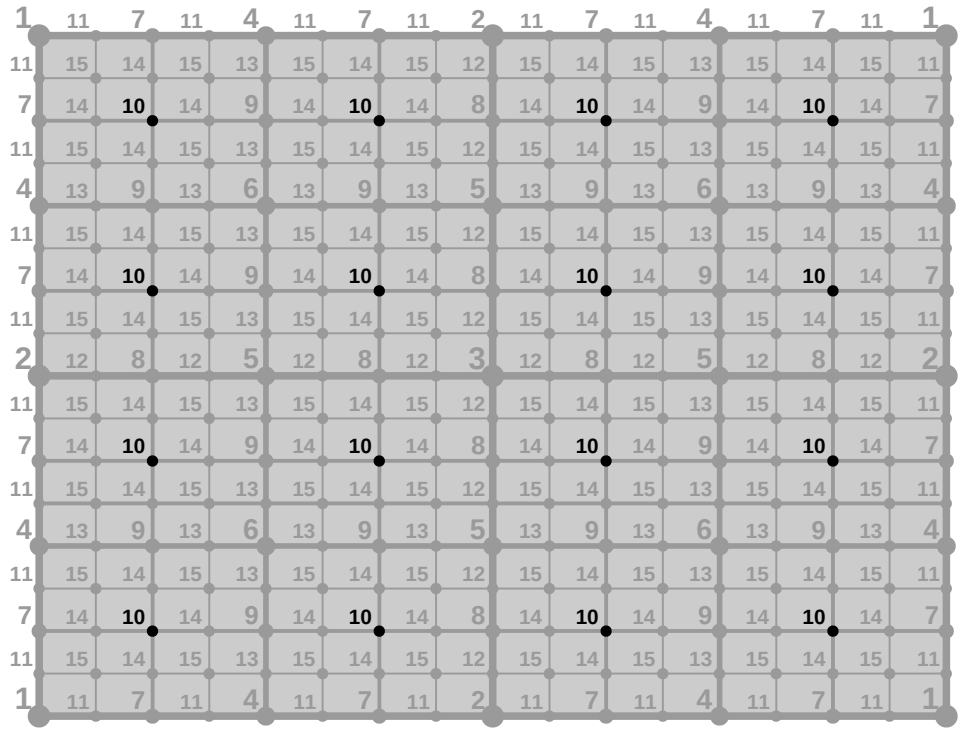


Image 8-80
9x9 Fine (Level 10) selections

### 8.5.4.11 Adjusting the 9x9 Fine points (Level 10)

#### How to adjust the 9x9 Fine points (Level 10)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-81)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Fine points in a horizontal way. Press **ENTER** to continue. (image 8-82)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Fine points in a vertical way (Follow this procedure in a similar way to adjust any desired Fine point position). Press **ENTER** to continue. (image 8-83)
5. Use the subpixel adjustments to fine shift the selected Fine points.
6. Press **BACK** to return to the *Geometry Edit* menu.

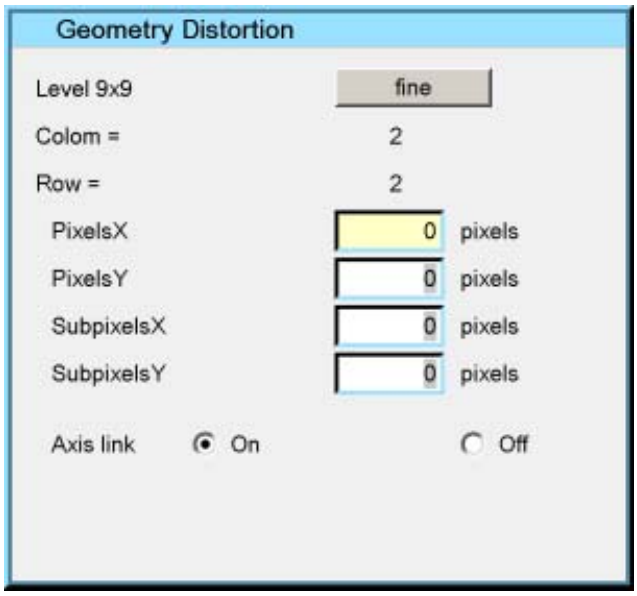



Image 8-81

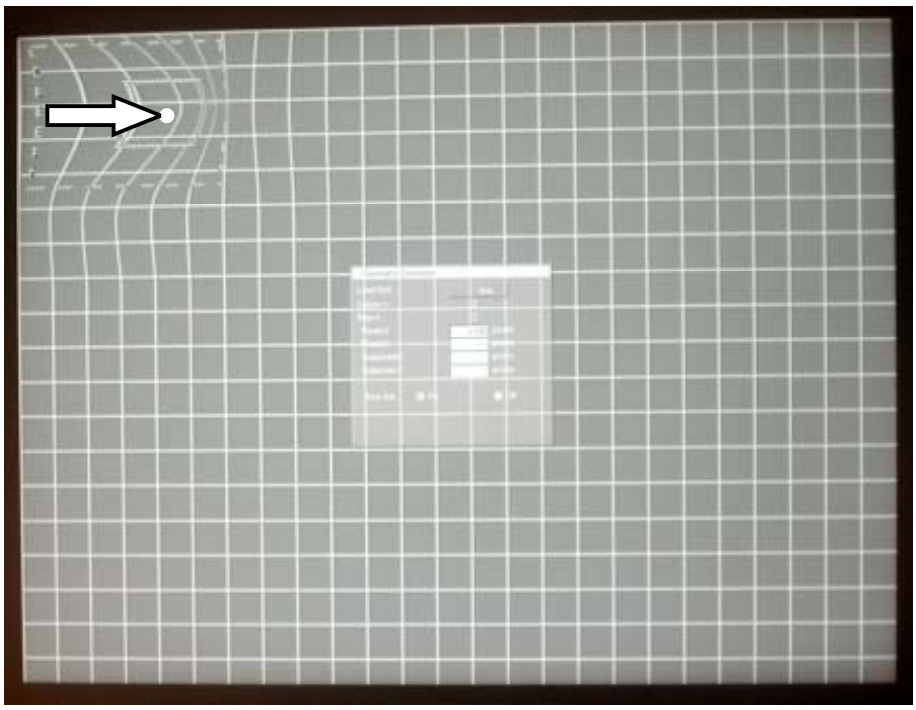


Image 8-82
9x9 quadrant (Level 10) Pixel X adjustment

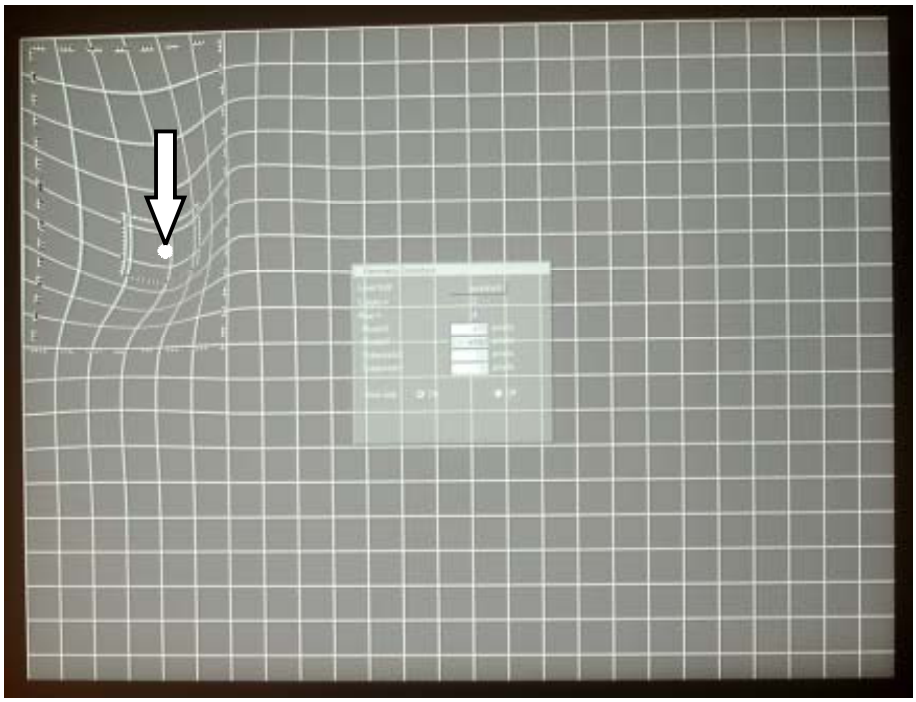


Image 8-83
9x9 quadrant (Level 10) Pixel Y adjustment

### 8.5.5 17x17 Adjustment (Level 11-15)

#### 8.5.5.1 Starting up the 17x17 Adjustment (Level 11-15)

**What can be done?**

The 17x17 adjustments are used to fine tune the slightest detail of the geometry shape.

**How to Start up the 17x17 adjustment (Level 11-15)?**

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Geometry* in the menubar.
3. Push the ↓ key to pull down the *Geometry* menu.
4. Push the cursor key ↑ or ↓ to to highlight Edit in the menubar.
5. Push the → key to pull down the Edit menu.
6. Push the cursor key ↑ or ↓ to highlight *17x17* and press **ENTER** to select. (image 8-84)

   The *Geometry Distortion* dialog box will be displayed. (image 8-85)

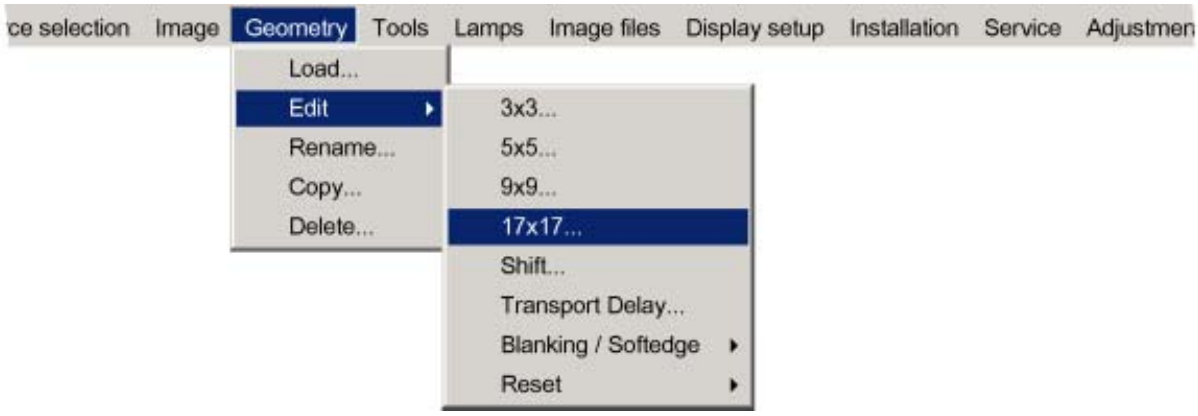



Image 8-84

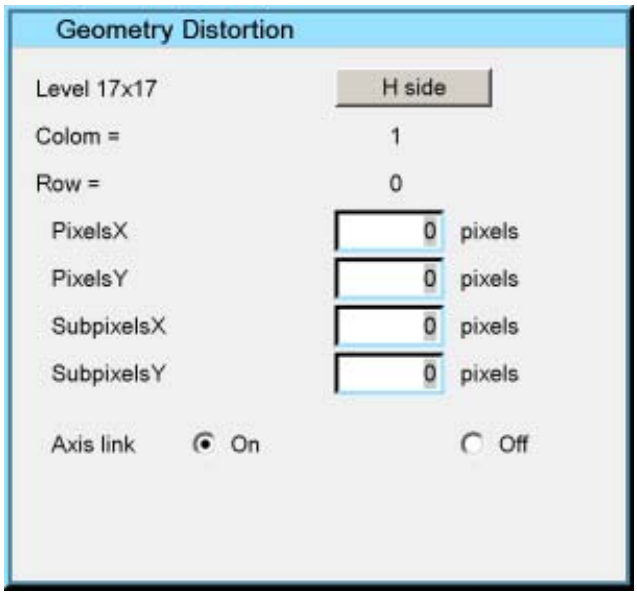



Image 8-85

### 8.5.5.2 Selecting the 17x17 H-side (Level 11)

#### How to select the 17x17 H-side (Level 11)?

1. Push the cursor key ↑ or ↓ to highlight the 17x17 selection box.
2. Press **ENTER** to scroll through the available 17x17 selections until *H-side* is displayed. (image 8-86)
3. Push the cursor key ← or → to select the desired H-side. (image 8-87)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected H-side and an indication box will be displayed on the screen.

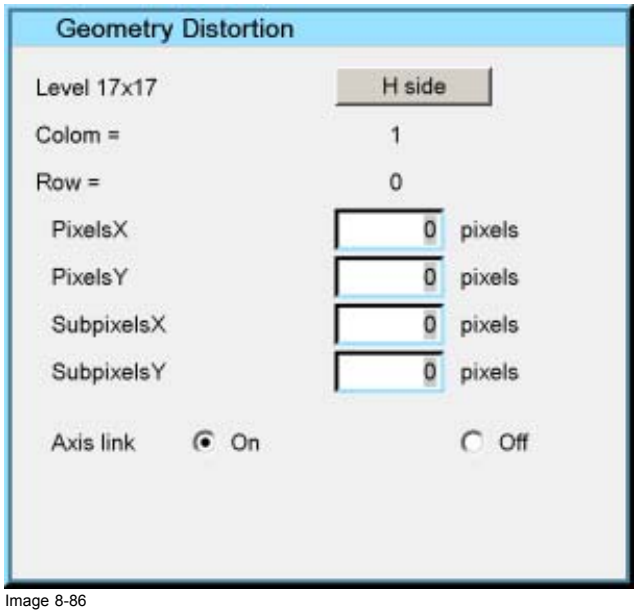



Image 8-86

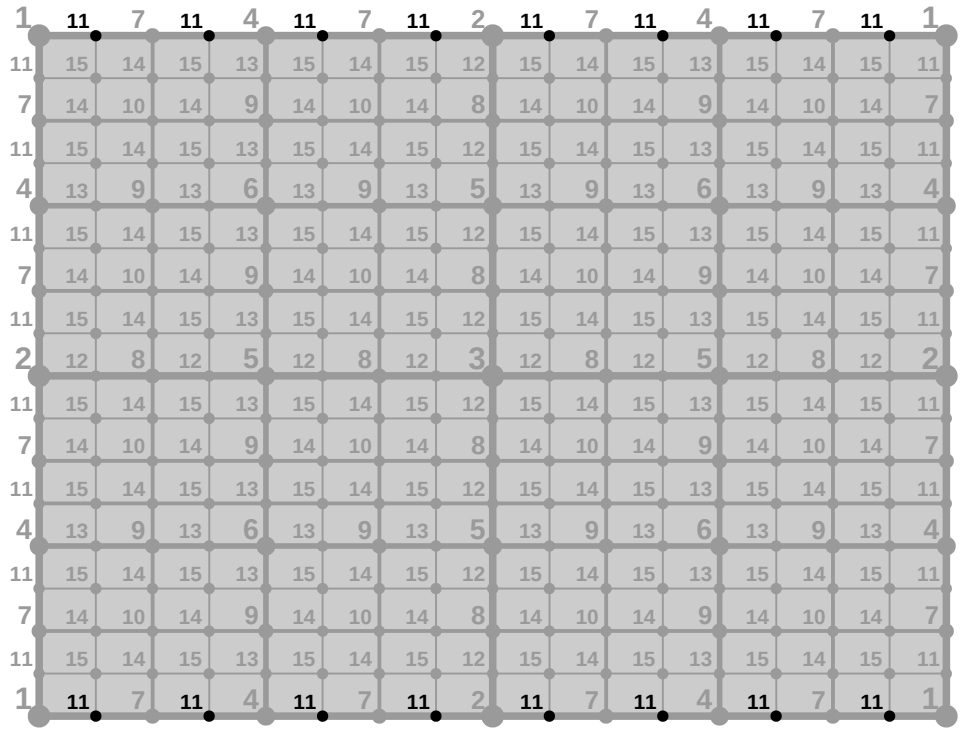


Image 8-87
17x17 H side (Level 11) selections

### 8.5.5.3 Adjusting the 17x17 H-side (Level 11)

#### How to adjust the 17x17 H-Side (Level 11)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-88)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected H-side in a horizontal way. Press **ENTER** to continue. (image 8-89)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected H-side in a vertical way (Follow this procedure in a similar way to adjust any desired H-side position). Press **ENTER** to continue. (image 8-90)
5. Use the subpixel adjustments to fine shift the selected H-side.
6. Press **BACK** to return to the *Geometry Edit* menu.

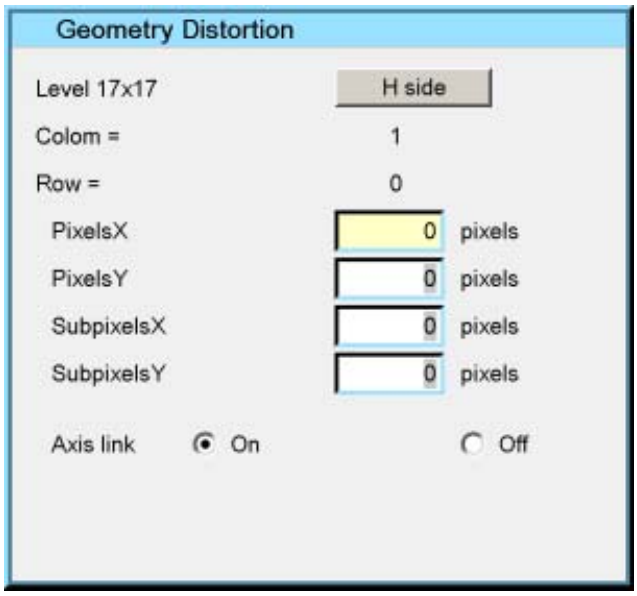



Image 8-88

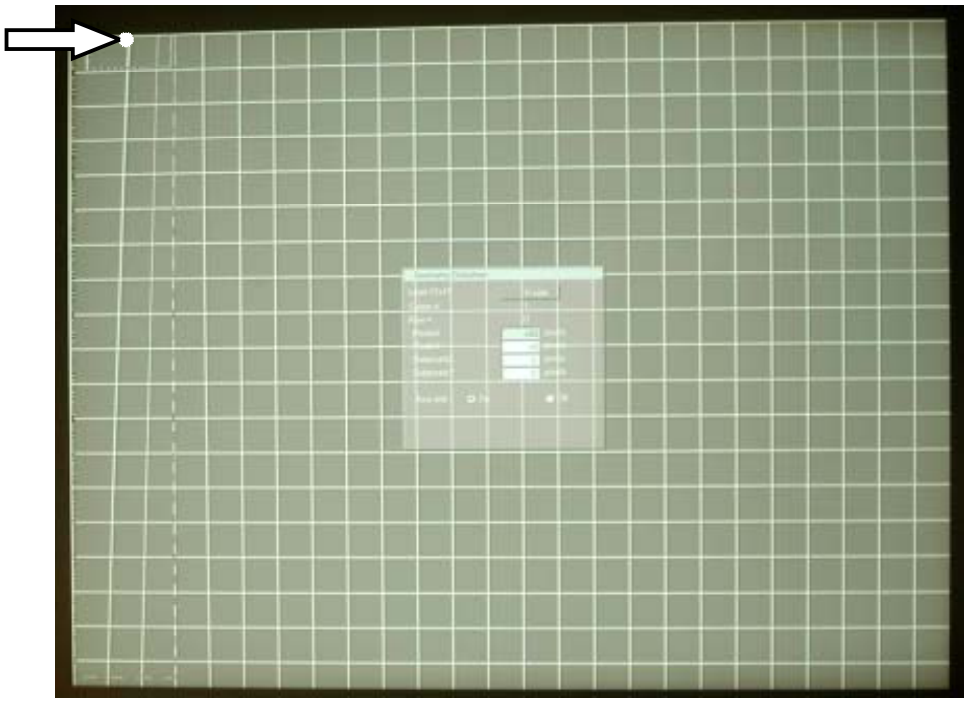


Image 8-89
17x17 H side (Level 11) Pixel X adjustment

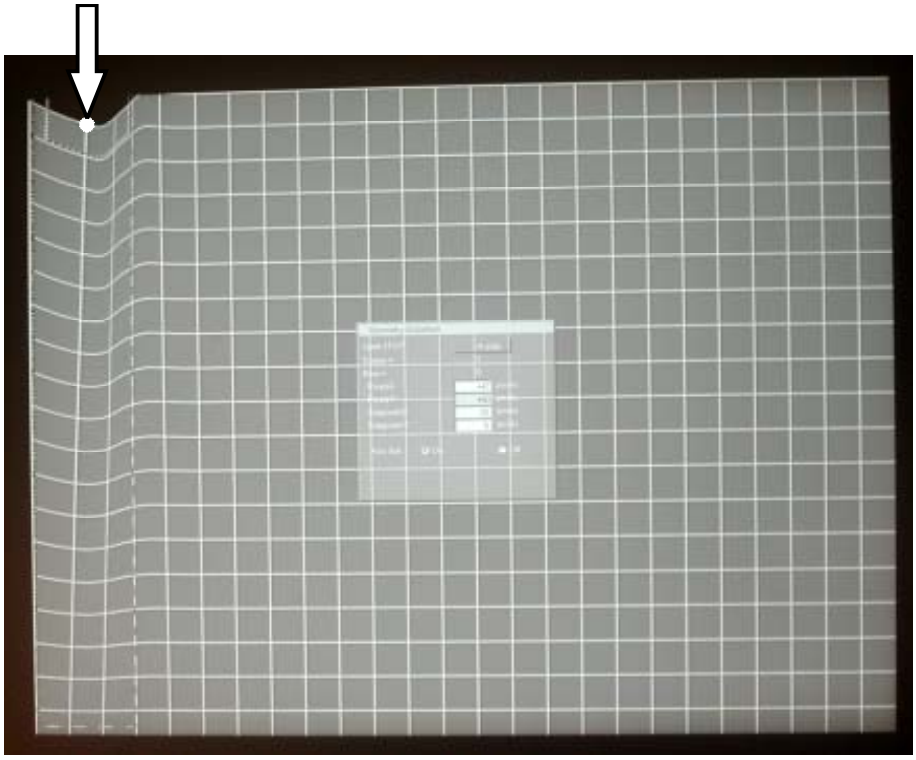


Image 8-90
17x17 H side (Level 11) Pixel Y adjustment

### 8.5.5.4 Selecting the 17x17 V-side (Level 11)

#### How to select the 17x17 V-side (Level 11)?

1. Push the cursor key ↑ or ↓ to highlight the 17x17 selection box.
2. Press **ENTER** to scroll through the available 17x17 selections until *V-side* is displayed. (image 8-91)
3. Push the cursor key ← or → to select the desired V-side. (image 8-92)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected V-side and an indication box will be displayed on the screen.

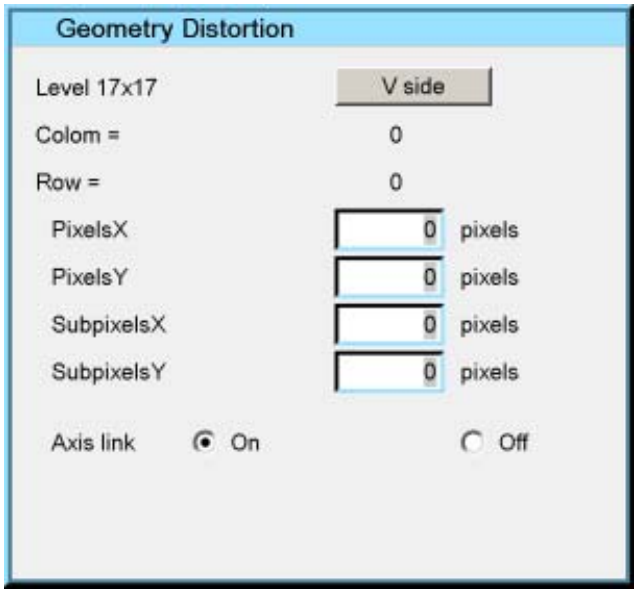



Image 8-91

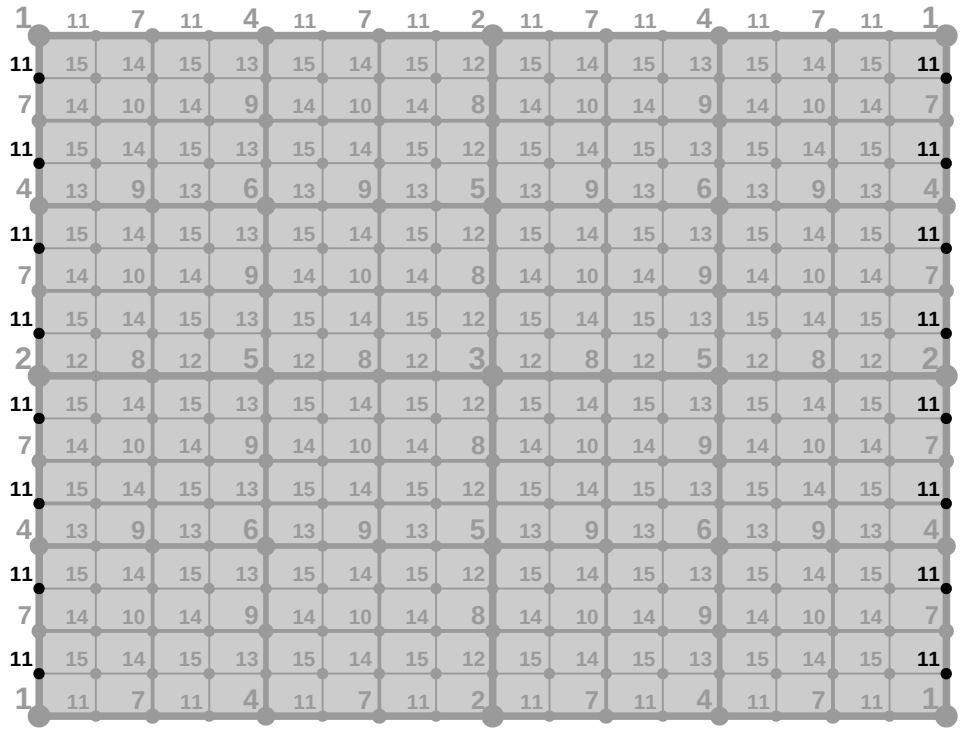


Image 8-92
17x17 V side (Level 11) selections

### 8.5.5.5 Adjusting the 17x17 V-side (Level 11)

#### How to adjust the 17x17 V-Side (Level 11)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-93)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected V-side in a horizontal way. Press **ENTER** to continue. (image 8-94)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected V-side in a vertical way (Follow this procedure in a similar way to adjust any desired V-side position). Press **ENTER** to continue. (image 8-95)
5. Use the subpixel adjustments to fine shift the selected V-side.
6. Press **BACK** to return to the *Geometry Edit* menu.

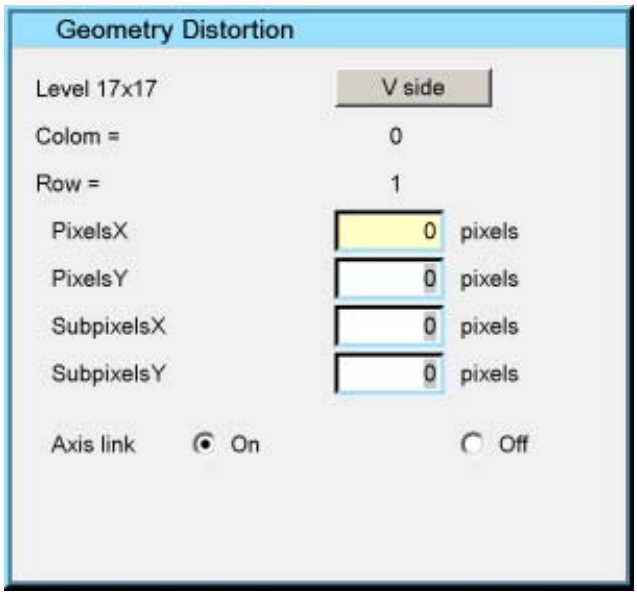



Image 8-93

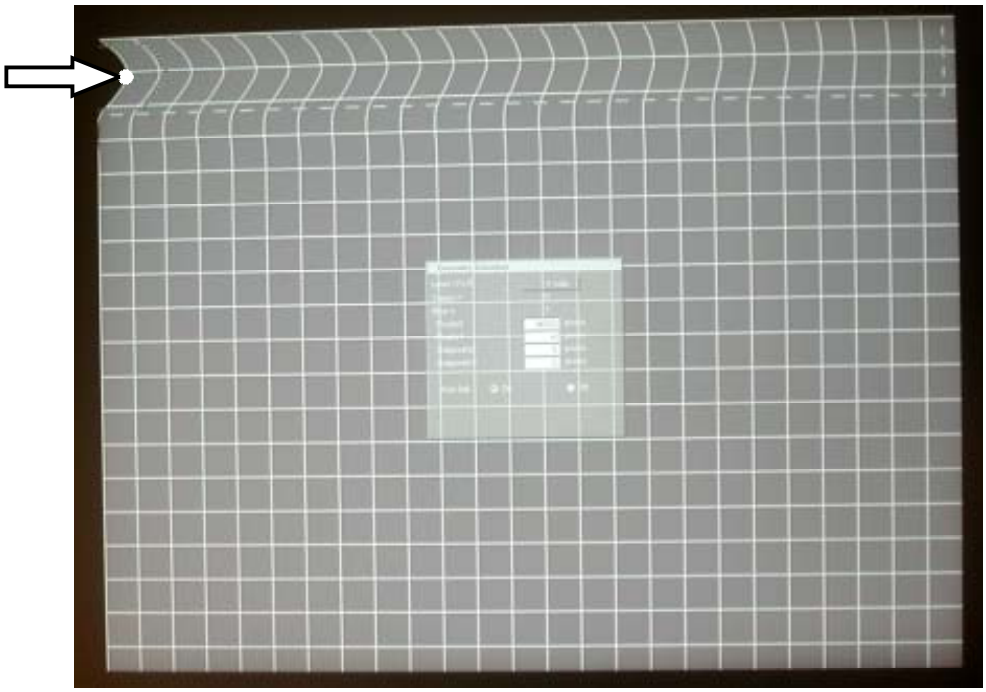


Image 8-94
17x17 V side (Level 11) Pixel X adjustment

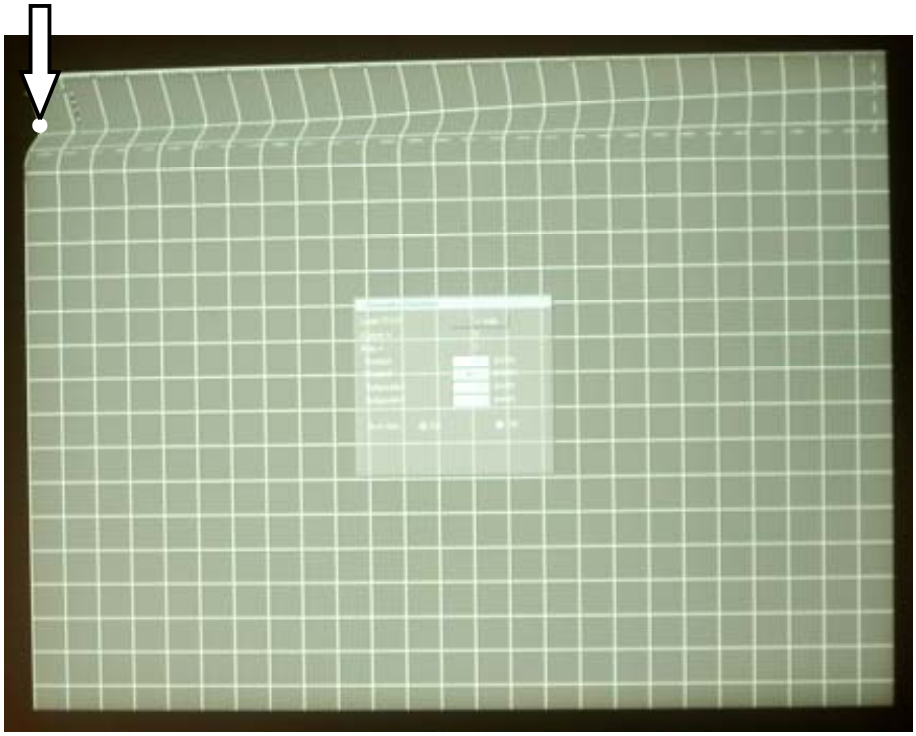


Image 8-95
17x17 V side (Level 11) Pixel Y adjustment

### 8.5.5.6 Selecting the 17x17 Center (Level 12)

#### How to select the 17x17 Center (Level 12)?

1. Push the cursor key ↑ or ↓ to highlight the 17x17 selection box.
2. Press **ENTER** to scroll through the available 17x17 selections until *center* is displayed. (image 8-96)
3. Push the cursor key ← or → to select the desired Center. (image 8-97)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected Center and an indication box will be displayed on the screen.

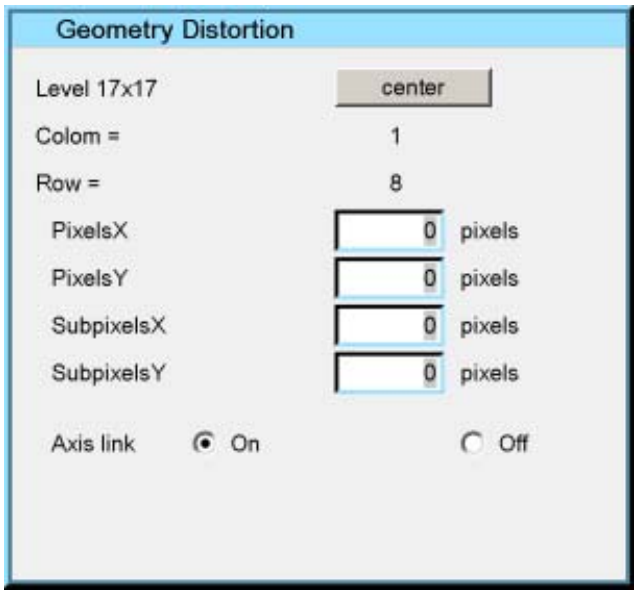



Image 8-96

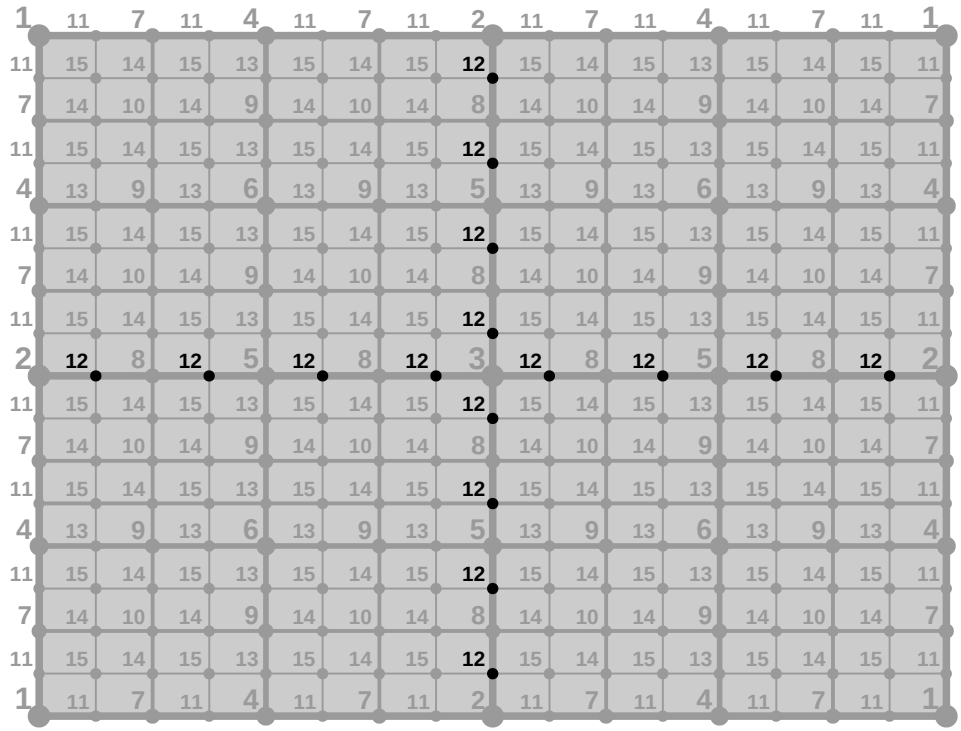


Image 8-97
17x17 Center (Level 12) selections

### 8.5.5.7 Adjusting the 17x17 Center (Level 12)

#### How to adjust the 17x17 Center (Level 12)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-98)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Center in a horizontal way. Press **ENTER** to continue. (image 8-99)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Center in a vertical way (Follow this procedure in a similar way to adjust any desired Center position). Press **ENTER** to continue. (image 8-100)
5. Use the subpixel adjustments to fine shift the selected Center.
6. Press **BACK** to return to the *Geometry Edit* menu.

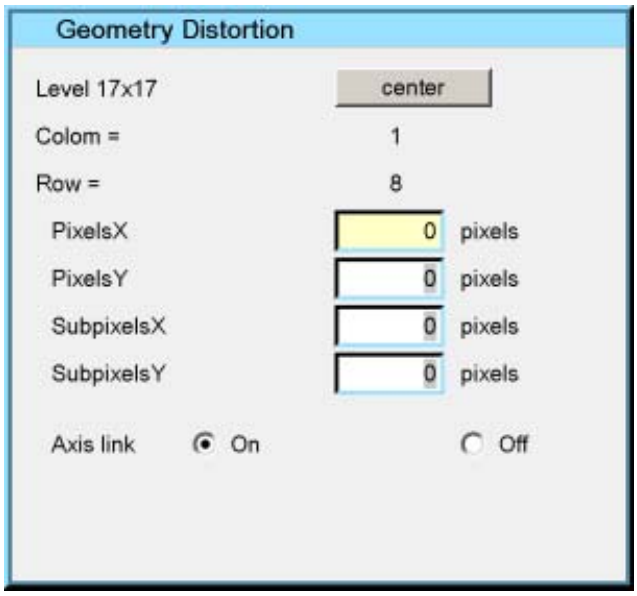



Image 8-98

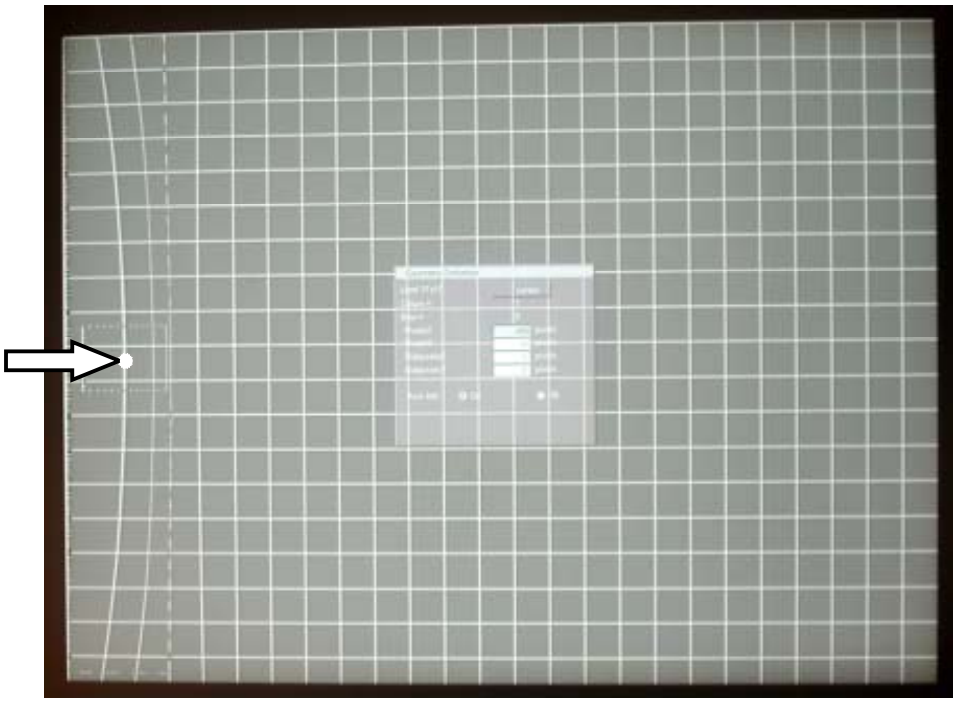


Image 8-99
17x17 Center (Level 12) Pixel X adjustment

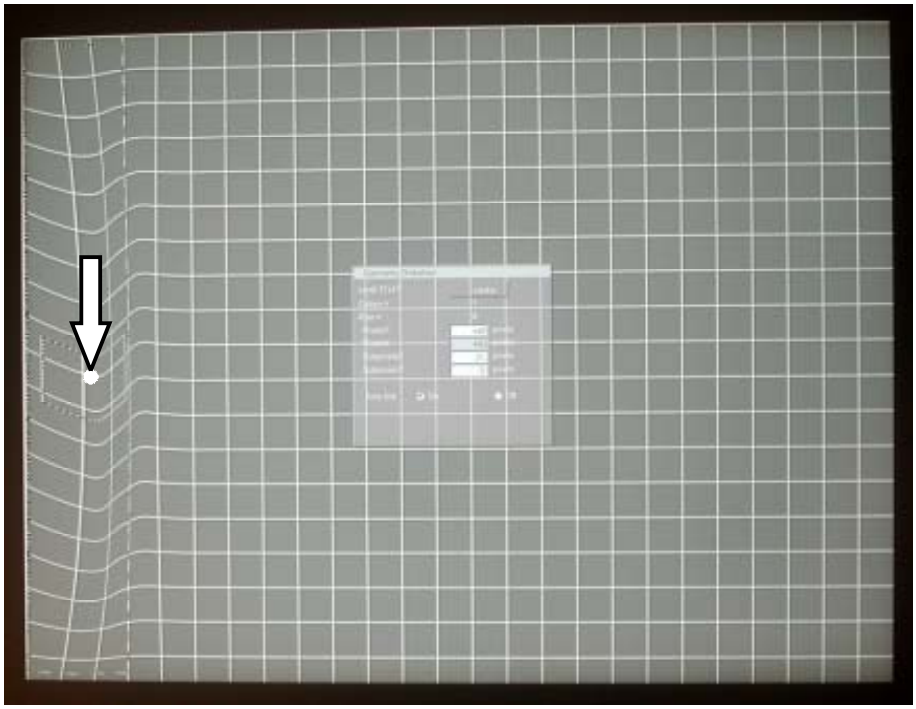


Image 8-100
17x17 Center (Level 12) Pixel Y adjustment

### 8.5.5.8 Selecting the 17x17 Quadrant (Level 13)

#### How to select the 17x17 Quadrant (Level 13)?

1. Push the cursor key ↑ or ↓ to highlight the 17x17 selection box.
2. Press **ENTER** to scroll through the available 17x17 selections until *quadrant* is displayed. (image 8-101)
3. Push the cursor key ← or → to select the desired Center. (image 8-102)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected Center and an indication box will be displayed on the screen.

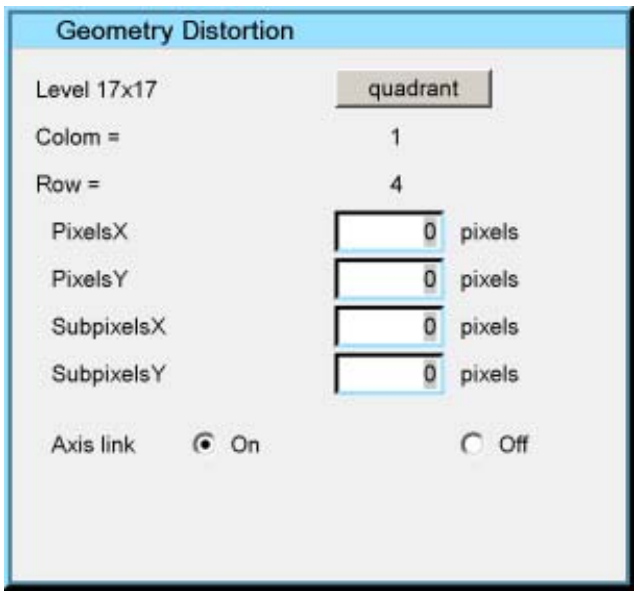



Image 8-101

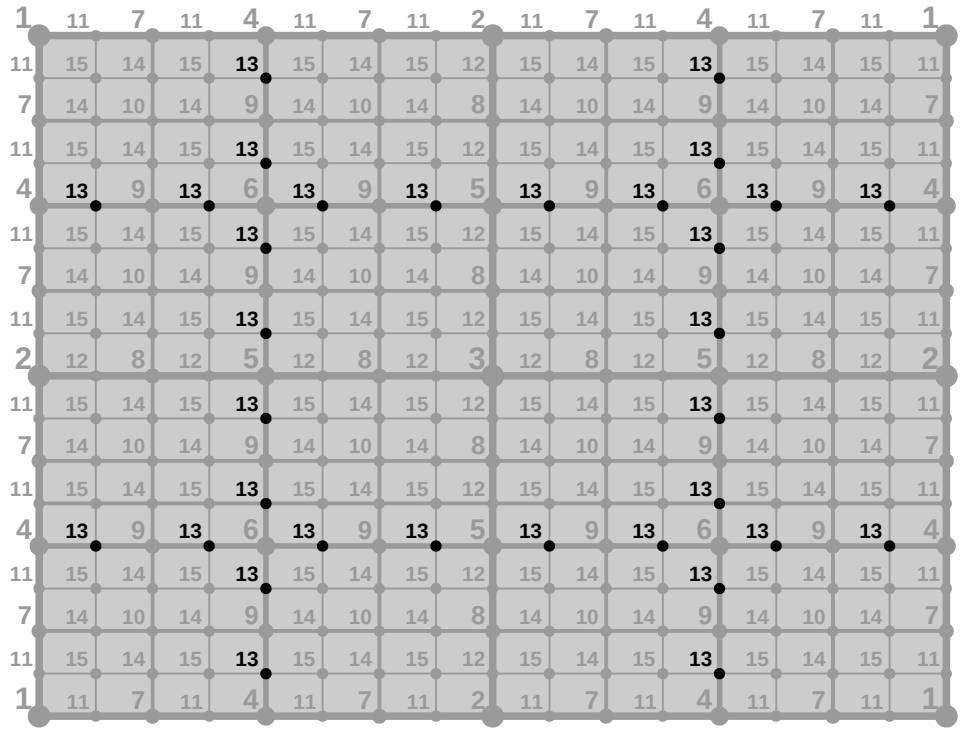


Image 8-102
17x17 Quadrant (Level 13) selections

### 8.5.5.9 Adjusting the 17x17 Quadrant (Level 13)

#### How to adjust the 17x17 Quadrant (Level 13)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-103)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Quadrant in a horizontal way. Press **ENTER** to continue. (image 8-104)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Quadrant in a vertical way (Follow this procedure in a similar way to adjust any desired Quadrant position). Press **ENTER** to continue. (image 8-105)
5. Use the subpixel adjustments to fine shift the selected Quadrant.
6. Press **BACK** to return to the *Geometry Edit* menu.

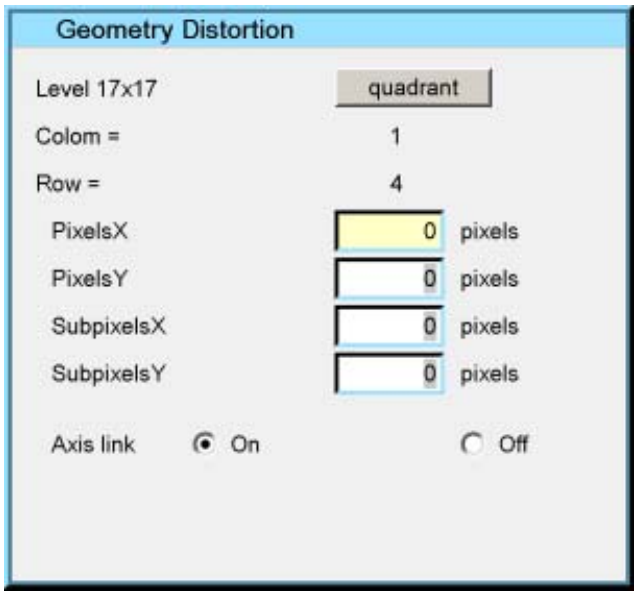



Image 8-103

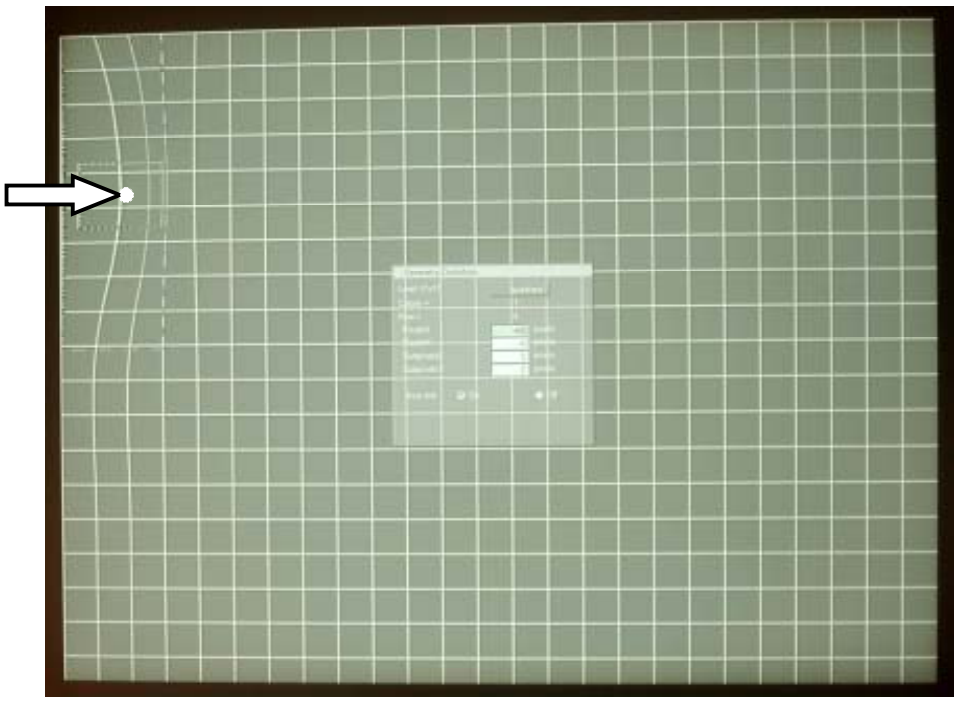


Image 8-104
17x17 Quadrant (Level 13) Pixel X adjustment

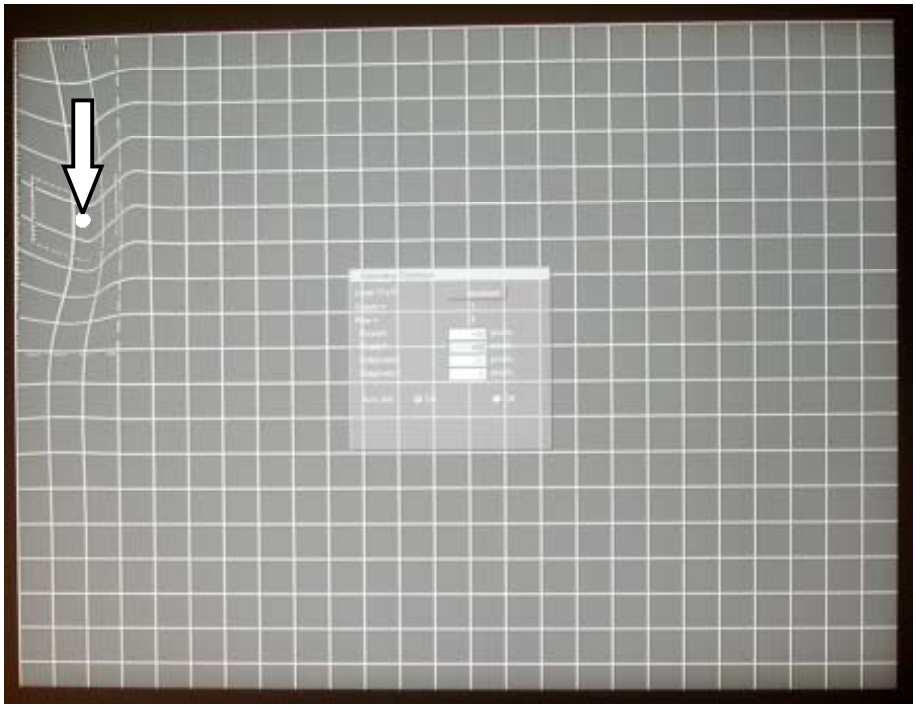


Image 8-105
17x17 Quadrant (Level 13) Pixel Y adjustment

### 8.5.5.10 Selecting the 17x17 Fine points (Level 14)

#### How to select the 17x17 Fine points (Level 14)?

1. Push the cursor key ↑ or ↓ to highlight the 17x17 selection box.
2. Press **ENTER** to scroll through the available 17x17 selections until *fine* is displayed. (image 8-106)
3. Push the cursor key ← or → to select the desired Fine points. (image 8-107)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected Fine points and an indication box will be displayed on the screen.

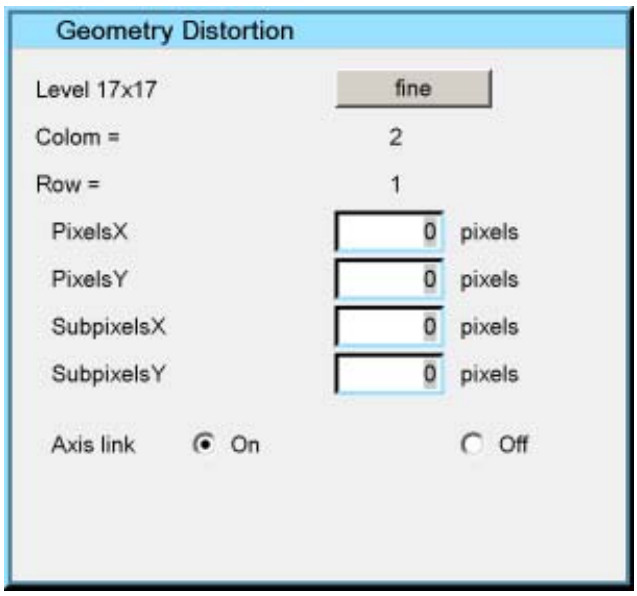



Image 8-106

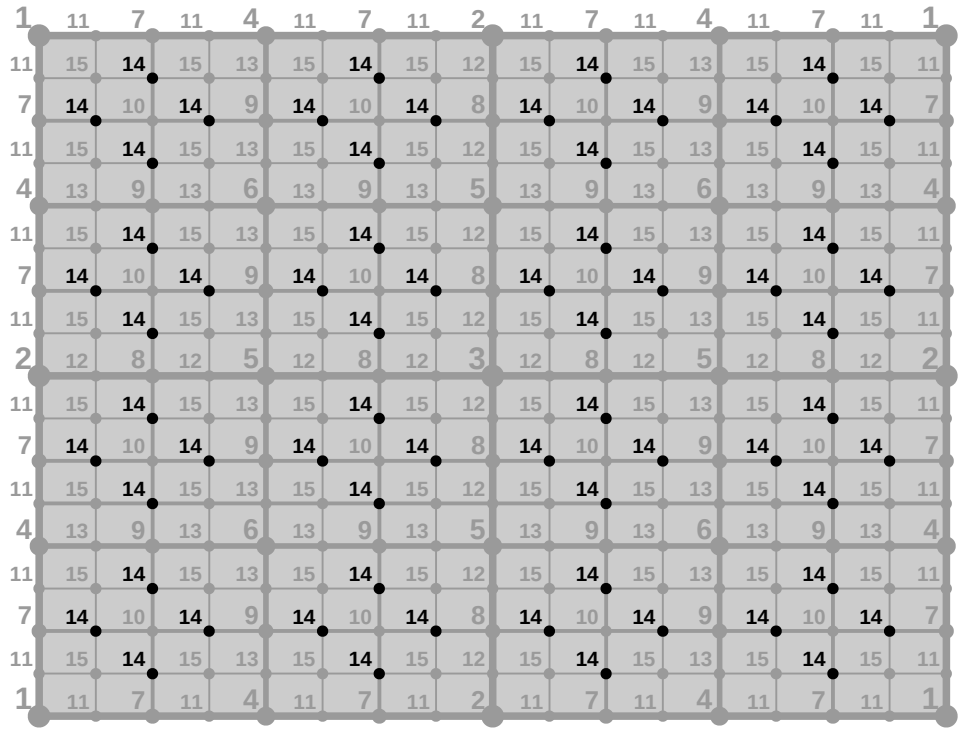


Image 8-107
17x17 Fine (Level 14) selections

### 8.5.5.11 Adjusting the 17x17 Fine points (Level 14)

#### How to adjust the 17x17 Fine points (Level 14)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-108)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Fine points in a horizontal way. Press **ENTER** to continue. (image 8-109)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Fine points in a vertical way (Follow this procedure in a similar way to adjust any desired Fine point position). Press **ENTER** to continue. (image 8-110)
5. Use the subpixel adjustments to fine shift the selected Fine points.
6. Press **BACK** to return to the *Geometry Edit* menu.

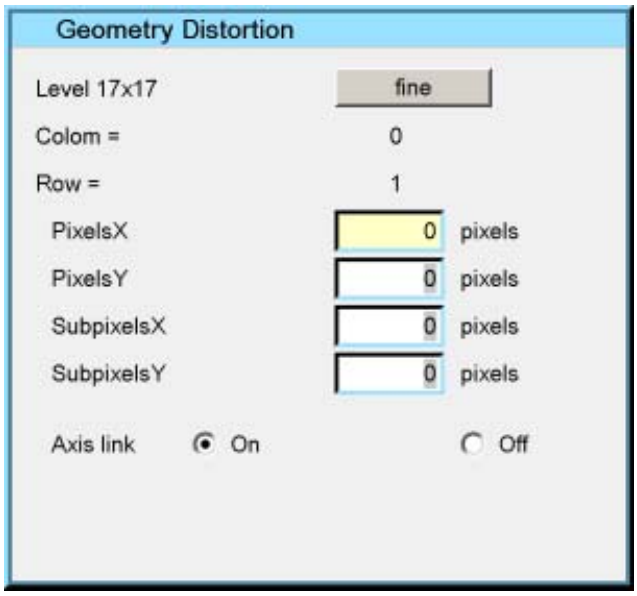



Image 8-108

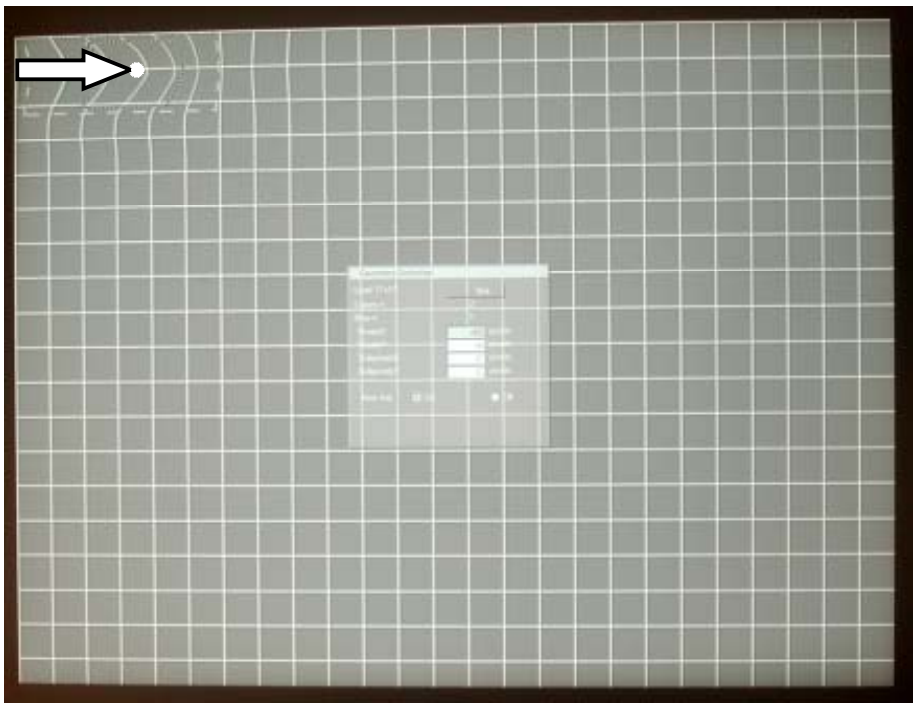


Image 8-109
17x17 Fine (Level 14) Pixel X adjustment

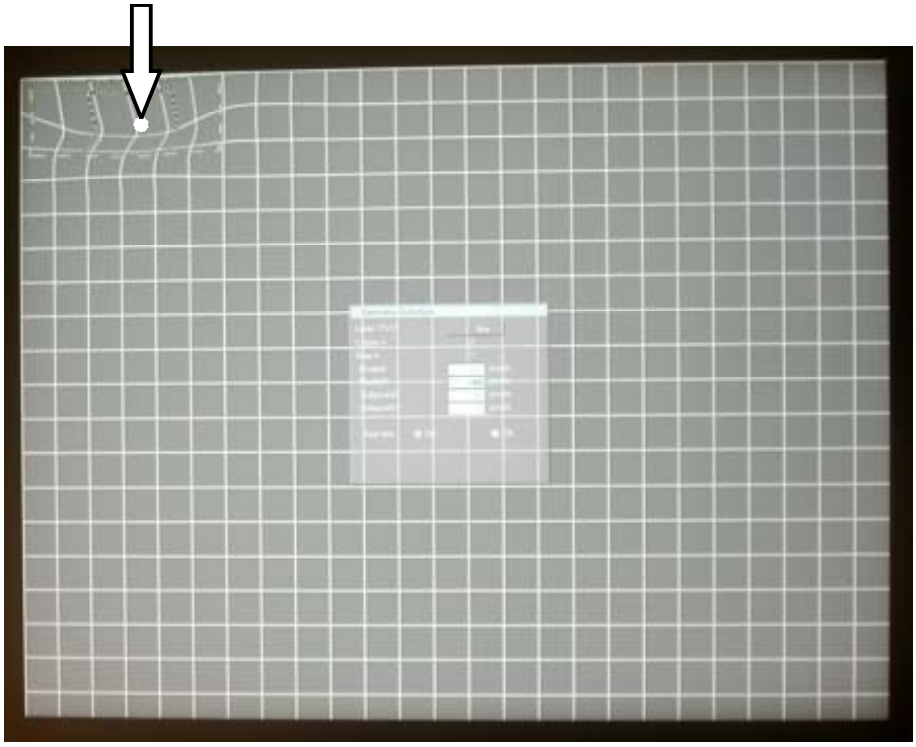


Image 8-110
17x17 Fine (Level 14) Pixel Y adjustment

### 8.5.5.12 Selecting the 17x17 Local points (Level 15)

#### How to select the 17x17 Local points (Level 15)?

1. Push the cursor key ↑ or ↓ to highlight the 17x17 selection box.
2. Press **ENTER** to scroll through the available 17x17 selections until *local* is displayed. (image 8-111)
3. Push the cursor key ← or → to select the desired Local point. (image 8-112)

   The *COL* & *ROW* (Column and Rows) indicator will show the corresponding position of the selected Local points and an indication box will be displayed on the screen.

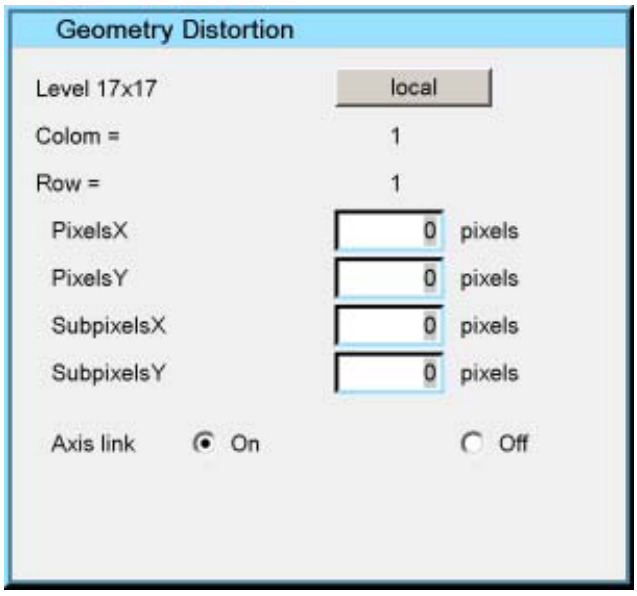



Image 8-111

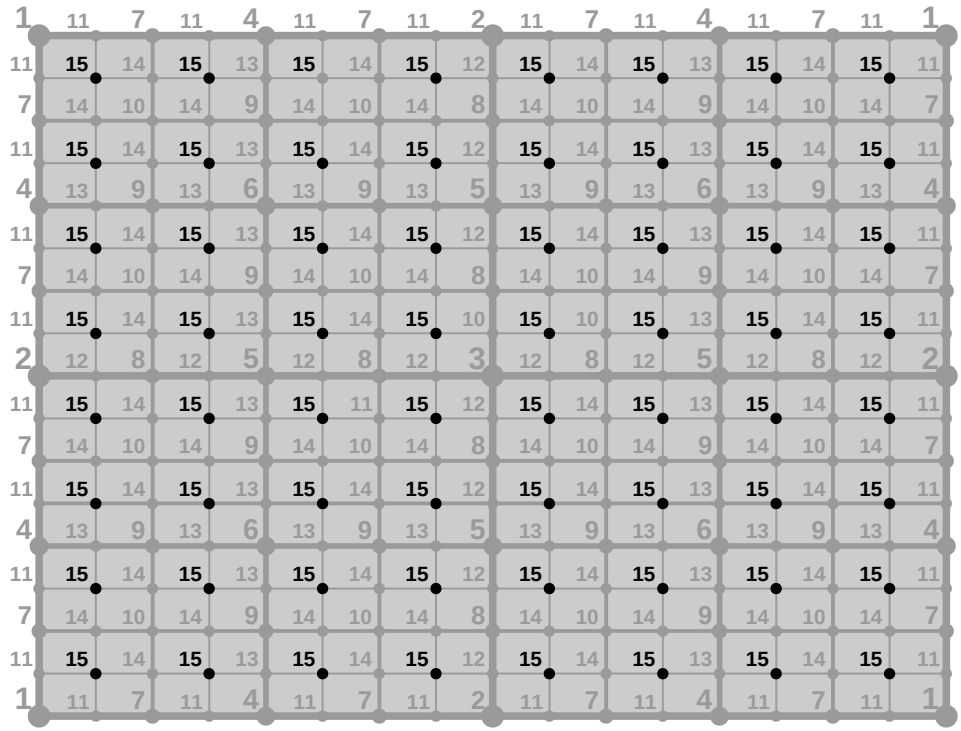


Image 8-112
17x17 Local (Level 15) selections

### 8.5.5.13 Adjusting the 17x17 Local points (Level 15)

#### How to adjust the 17x17 Local points (Level 15)?

1. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-113)
2. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Local points in a horizontal way. Press **ENTER** to continue. (image 8-114)
3. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
4. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to coarse shift the selected Local points in a vertical way (Follow this procedure in a similar way to adjust any desired Local point position). Press **ENTER** to continue. (image 8-115)
5. Use the subpixel adjustments to fine shift the selected Local points.
6. Press **BACK** to return to the *Geometry Edit* menu.

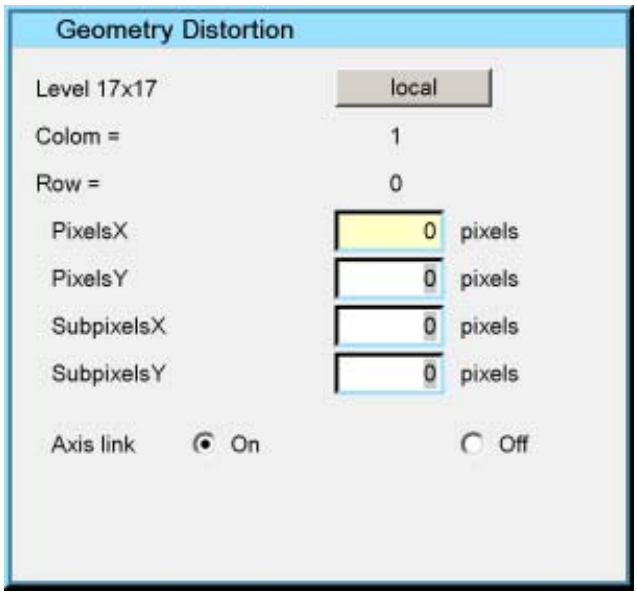



Image 8-113

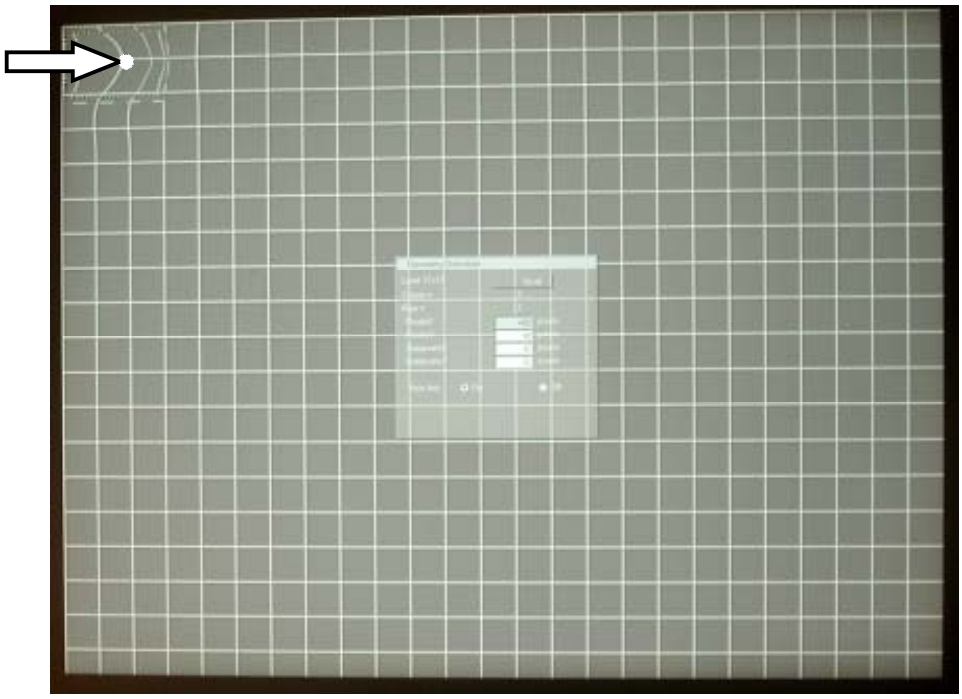


Image 8-114
17x17 Local (Level 15) Pixel X adjustment

Image 8-115
17x17 Local (Level 15) Pixel Y adjustment

### 8.5.6 Shift Adjustment

#### What can be done with the Shift adjustment ?

With Shift adjustment it is possible to shift the whole image.

#### How to use the Shift adjustment?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight Edit in the menubar.
3. Push the → key to pull down the Edit menu.
4. Push the cursor key ↑ or ↓ to highlight *Shift...* and press **ENTER** to select. (image 8-116)

   The *Shift* dialog box will be displayed.
5. Push the cursor key ↑ or ↓ to highlight the *Pixels X* edit box and press **ENTER** to select. (image 8-117)
6. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to shift the whole image in a horizontal way. Press **ENTER** to continue.
7. Push the cursor key ↑ or ↓ to highlight the *Pixels Y* edit box and press **ENTER** to select.
8. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to shift the whole image in a vertical way. Press **ENTER** to continue.
9. Use the subpixel adjustments to fine shift the whole image.
10. Press **BACK** to return to the *Geometry Edit* menu.

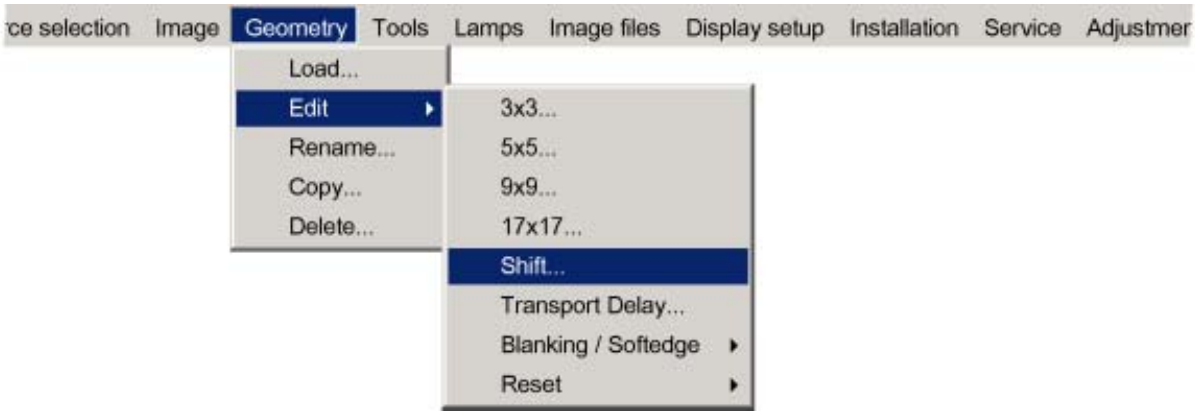



Image 8-116

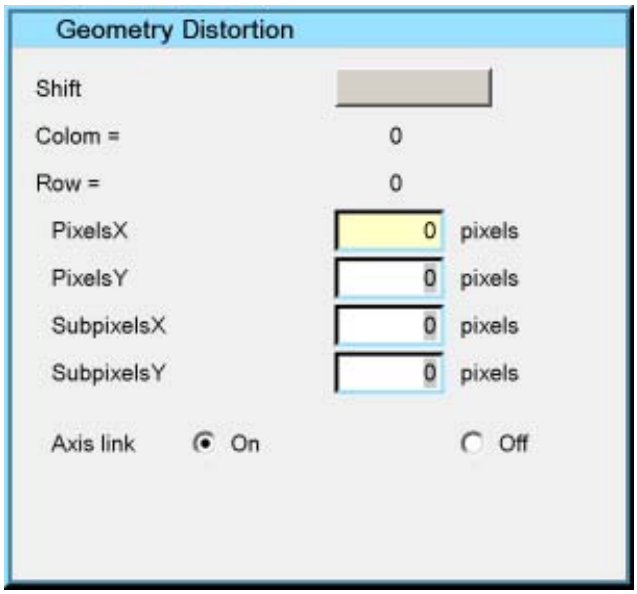



Image 8-117

## 8.5.7 Transport Delay

### What can be done?

The Transport Delay is the interval between T1 = the time when the image information is received by the projector and T2 = the time when the processed image information is put on the DMD.

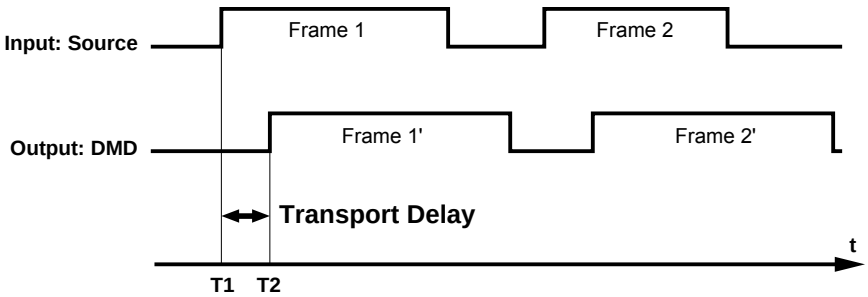



Image 8-118
Transport Delay

During this delay all image information is gathered and processed by the projector.

A Transport Delay set to the max. value 1023, corresponds with a delay of 16 ms.

### How to adjust the Transport Delay?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Geometry* in the menubar.

3. Push the ↓ key to pull down the *Geometry* menu.
4. Push the cursor key ↑ or ↓ to highlight *Edit.*
5. Push the → key to pull down the Edit menu.
6. Push the cursor key ↑ or ↓ to highlight *Transport Delay...* and press **ENTER** to select. (image 8-119)

   The *Transport Delay* dialog box will be displayed. (image 8-120)
7. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the value of the Transport Delay.

   ***Note:*** *The Transport Delay is by default set to 200.*

   *The Transport Delay Range can be set from 0 to 1023.*

   ***Tip:*** *When the transport delay needs to be adjusted In a multi channel setup, first adjust the transport delay of all projectors one by one, leave the projector with the maximum value, then set all other projectors to this maximum value.*
8. Press **BACK** to return to the *Geometry Edit* menu.

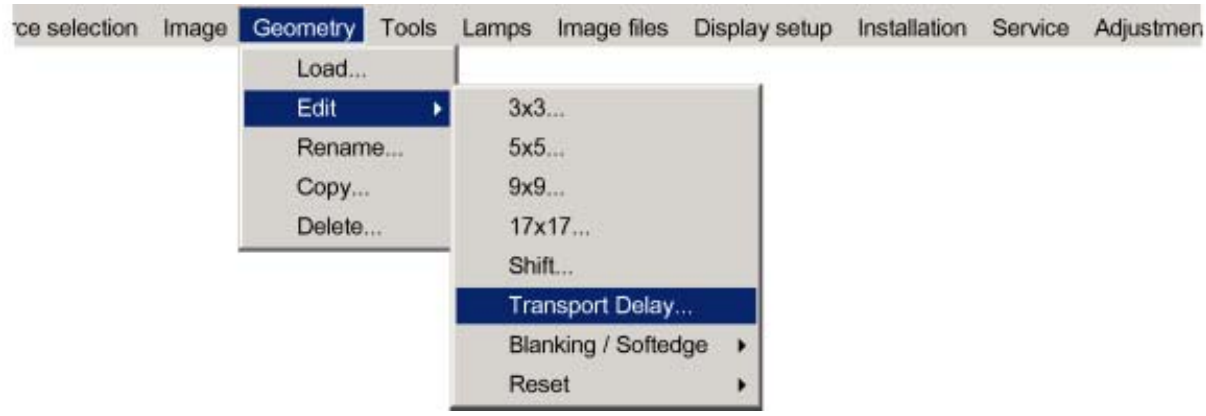



Image 8-119

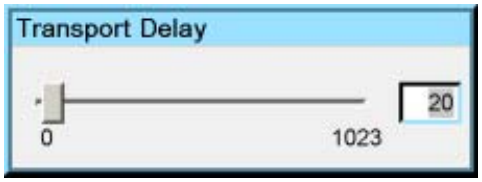



Image 8-120

## 8.5.8 Blanking

**This menu item will be grayed out when Blanking / Softedge is set to Off (see "Blanking – Softedge", page 62).**

### What can be done?

Blanking adjustments affect only the edges of the projected image and are used to frame the projected image on the screen and to hide unwanted image information (or noise).

### How to setup a Blanking Shape?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Geometry* in the menubar.
3. Push the ↓ key to pull down the *Geometry* menu.
4. Push the cursor key ↑ or ↓ to to highlight Edit in the menubar.
5. Push the → key to pull down the Edit menu.
6. Push the cursor key ← or → to highlight *Blanking / Softedge* in the menubar.
7. Push the → key to pull down the *Blanking / Softedge* menu.
8. By default *Shape (Blanking)* is already selected, press **ENTER** to select. (image 8-121)

   The *Shape (Blanking)* dialog box will be displayed. (image 8-122)

9. Press **ENTER** to scroll through the available coarse shape selections: top, bottom, left and right. (image 8-123)
10. Push the cursor key ← or → to scroll through the available fine shape selections: left, center, right and all (image 8-123).
11. Push the cursor key ↑ or ↓ to select *% of image*.

| | |
|---|---|
| % of image | Coarse adjustment, this will shift the selected shape in steps of 1/100 of the total image shape. |
| %% of image | Fine adjustment, this will shift the selected shape in steps of 1/10000 of the total image shape. |

12. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, e.g. to black out the left top side of the image (Follow this procedure in a similar way to apply a desired blanking adjustment).
13. Use the *%% of image* adjustment to perform a fine blanking adjustment.
14. Press **BACK** to return to the *Geometry Edit* menu.

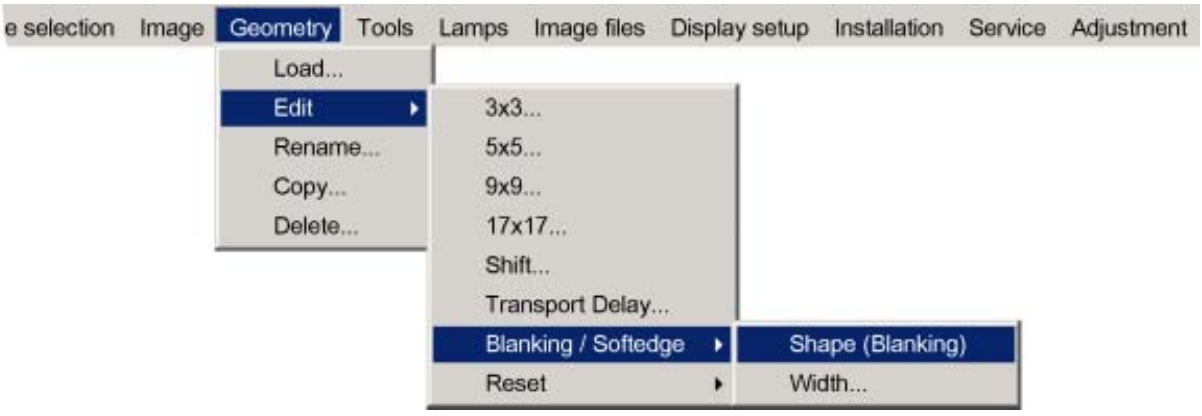



Image 8-121

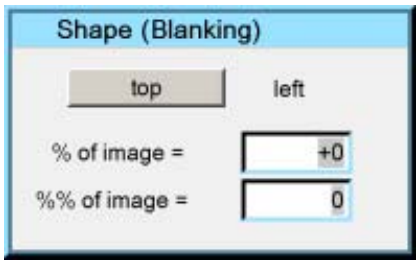



Image 8-122

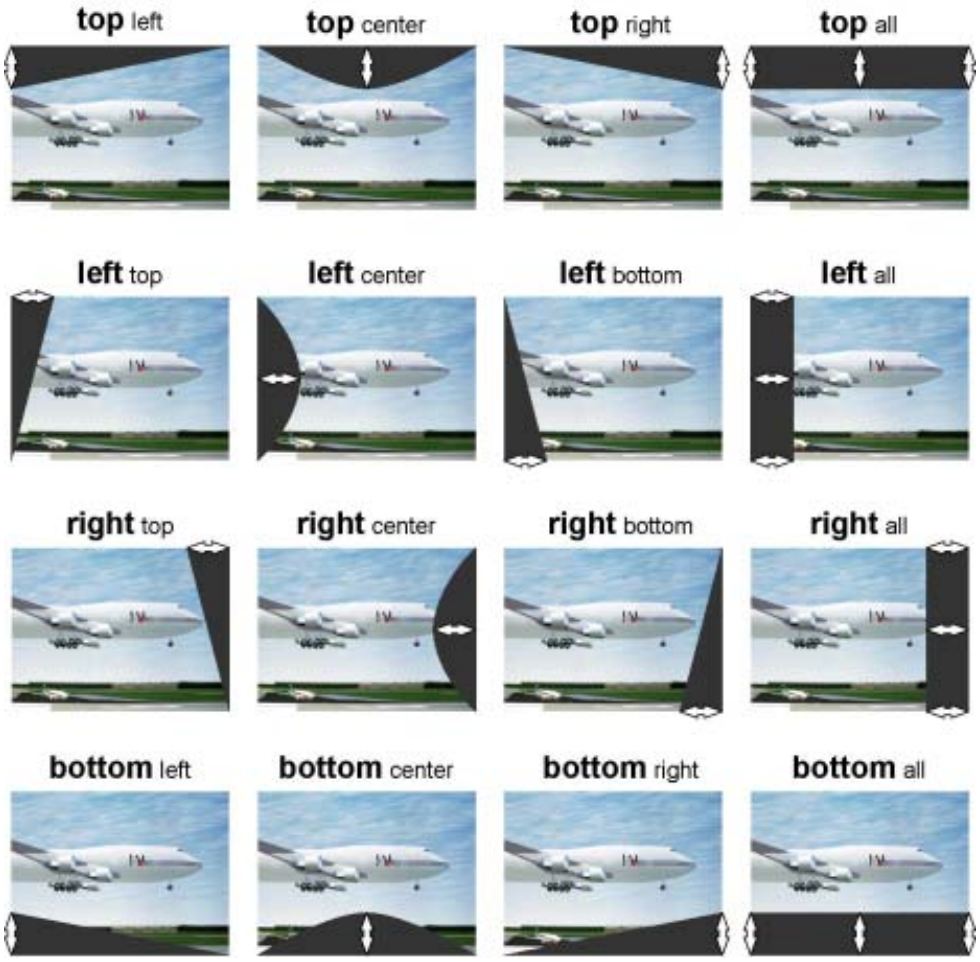



Image 8-123
Shape selections

### 8.5.9 Softedge

**Whenever Softedge is mentioned in this chapter this always refer to Electronic Soft Edge.**

**This menu item will be grayed out when Blanking / Softedge is set to Off (see "Blanking – Softedge", page 62).**

#### 8.5.9.1 Introduction

**What can be done?**

When working in a multichannel setup the WARP 6™ and its extensive Soft Edge possibilities enable an image blending that gives the appearance of a single view, thus achieving realistic immersion for the majority of simulation and virtual reality applications.

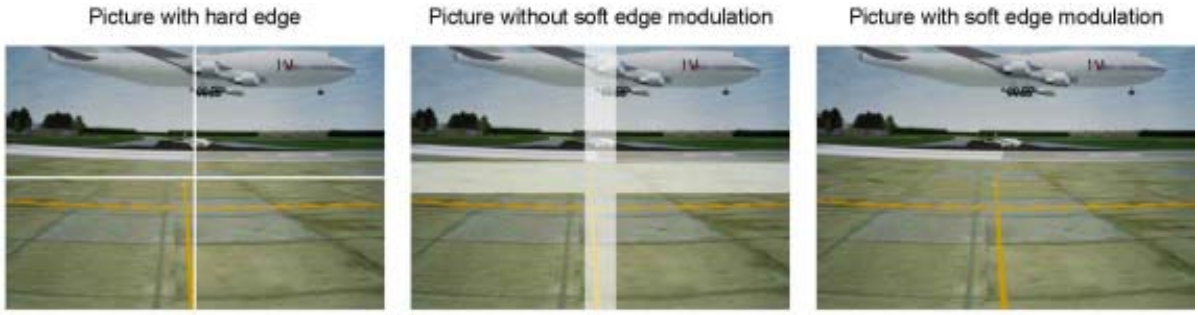



Image 8-124
What can be done?

### What is the Basic Principal of Soft Edge ?

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.

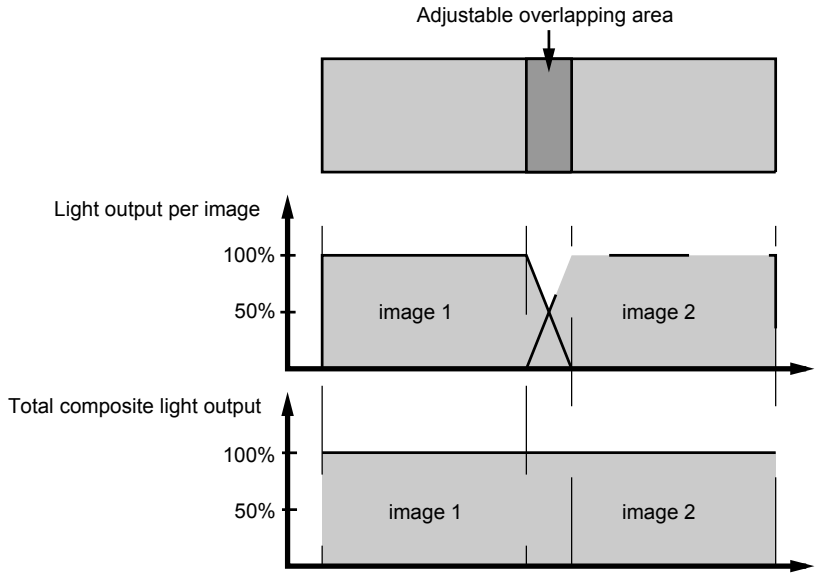



Image 8-125
Soft Edge Basic Principle

### Soft Edge Preparations

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

- Geometry
- Color Matching (Input Balance, Gamma)

**When projecting on a cylindrical screen, the adjustments mentioned above can be done by using the projector adjustments in combination with Polaris.**

**Polaris is a Test Pattern Generator software that can generate a user-defined test pattern that is used to align projection systems. It also has the ability to generate predefined patterns for standardized projection systems. The software is developed to run on IRIX (Order numbers for Polaris: R9898300 for a 6 months license, R9893301 for a full license).**

## 8.5.9.2 Starting Up the Softedge Adjustment

### How to Start Up the Softedge Adjustment?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Geometry* in the menubar.
3. Push the ↓ key to pull down the *Geometry* menu.
4. Push the cursor key ↑ or ↓ to to highlight Edit in the menubar.
5. Push the → key to pull down the Edit menu.
6. Push the cursor key ← or → to highlight *Blanking / Softedge* in the menubar.

7. Push the → key to pull down the *Blanking / Softedge* menu. (image 8-126)

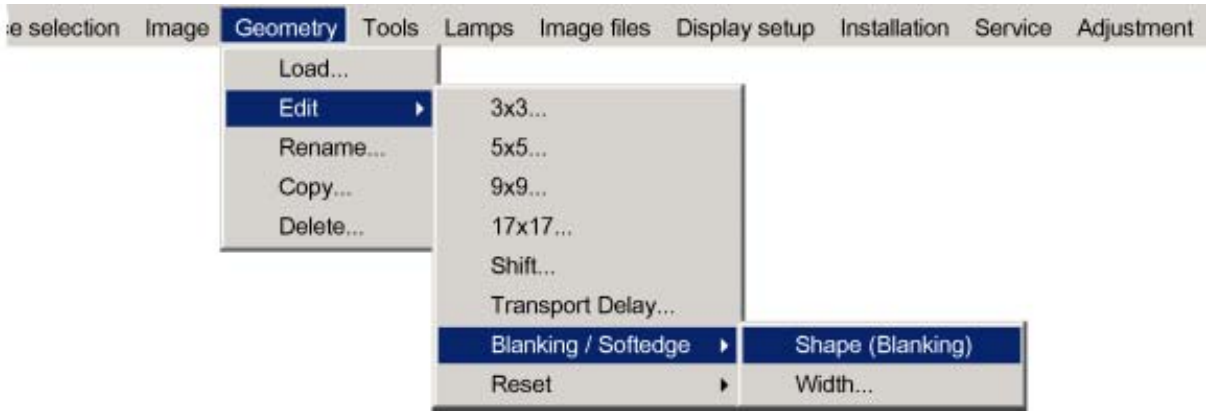



Image 8-126

### 8.5.9.3 Softedge Shape

#### What can be done?

Before creating a softedge, an overlap zone is created, the shape of this overlap zone is fully adjustable, within this menu the shape of the blending zone is aligned with the shape of the overlap zone.

#### Softedge Shape Selections

1. By default Softedge Shape is selected, press **ENTER** to select.

   The *Shape (Blanking)* dialog box will be displayed. (image 8-127)

2. Press **ENTER** to scroll through the available coarse shape selections: top, bottom, left and right. (image 8-128)
3. Push the cursor key ← or → to scroll through the available fine shape selections: left, center, right and all (image 8-128).

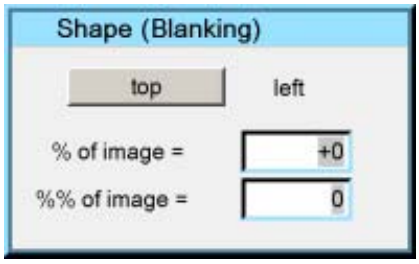



Image 8-127

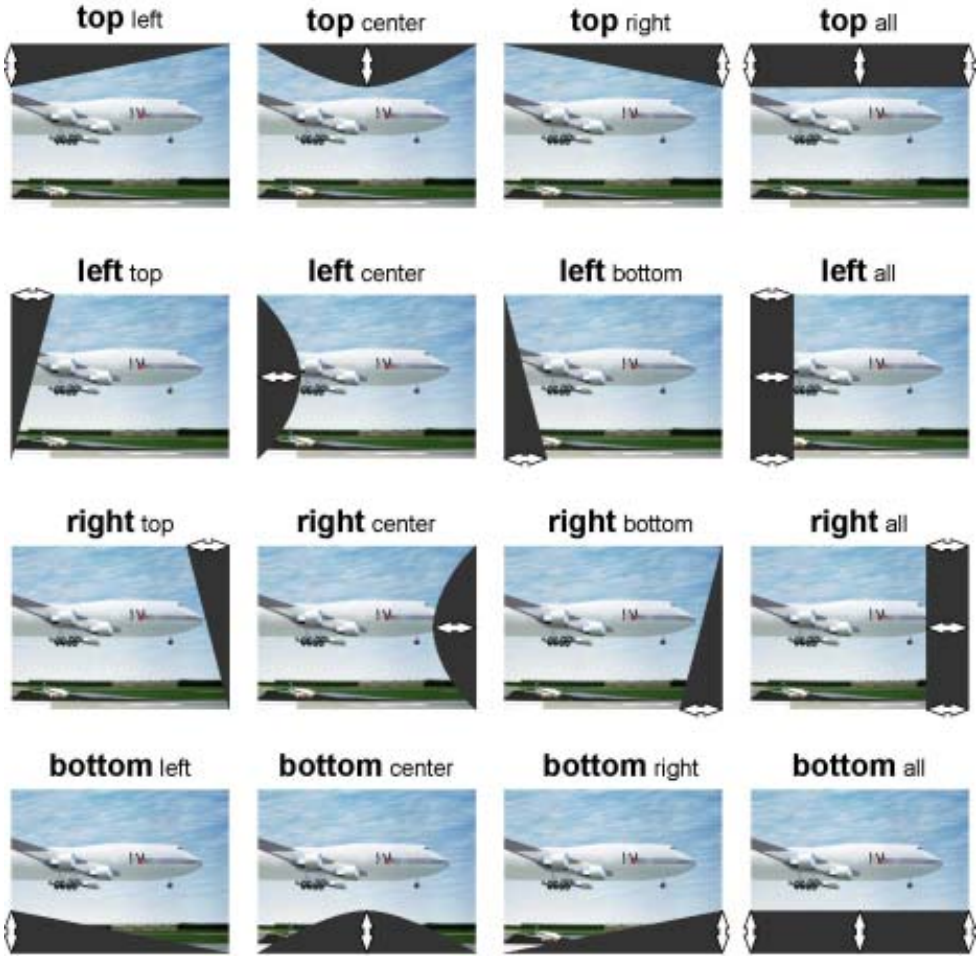



Image 8-128
Shape selections

**Press the LOGO key on the RCU to switch between displaying the internal or external pattern.**

### 8.5.9.4 Basic Softedge Shape Setup

**The following procedures will adjust the Shape of a basic Electronic Soft Edge set up with 2 projectors and a 12.5 % overlap zone, apply the same procedures for every Electronic Soft Edge you want to create in a multi-projector system.**

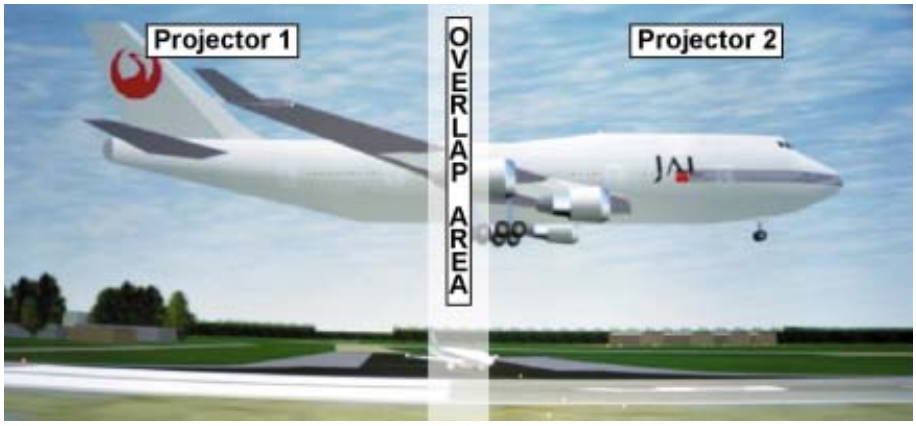



**Image 8-129**
**Basic Electronic Soft Edge set up**

**Be sure Blanking / Softedge is set to On for both projectors (see "Blanking – Softedge", page 62).**

#### Setting up the Shape for Projector 1

1. Use the combination of **ENTER** and the cursor key ← or → to select *right all*. (image 8-130)
2. Push the cursor key ↑ or ↓ to select % of image.

| | |
|---|---|
| % of image | Coarse adjustment, this will shift the blending zone in steps of 1/100 of the total image shape. |
| %% of image | Fine adjustment, this will shift the blending zone in steps of 1/10000 of the total image shape. |

3. Push the cursor key ← or → to coincide the right side of the image of Projector 1 with the center of the overlap area. (image 8-131)
4. Use the %% of image selection for fine adjustments.

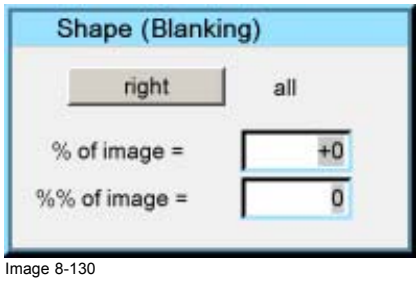



Image 8-130

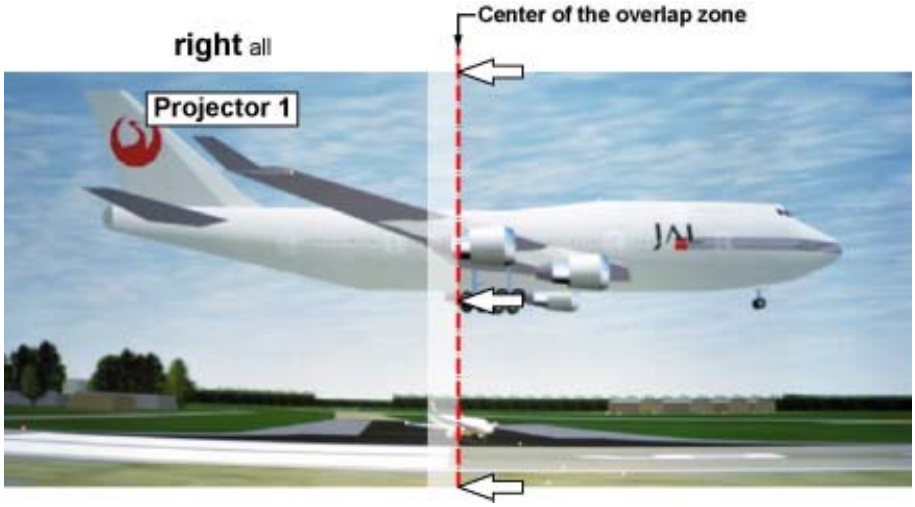



Image 8-131
Basic Shape set up for Projector 1

### Setting up the Shape for Projector 2

1. Use the combination of **ENTER** and the cursor key ← or → to select *left all*. (image 8-132)
2. Push the cursor key ↑ or ↓ to select % of image.
3. Push the cursor key ← or → to coincide the left side of the image of Projector 2 with the center of the overlap area. (image 8-133)
4. Use the %% of image selection selections for fine adjustments.
5. Press **BACK** to return to the *Geometry Edit* menu.

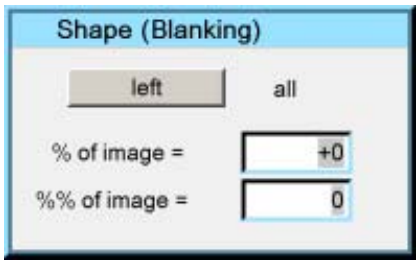



Image 8-132

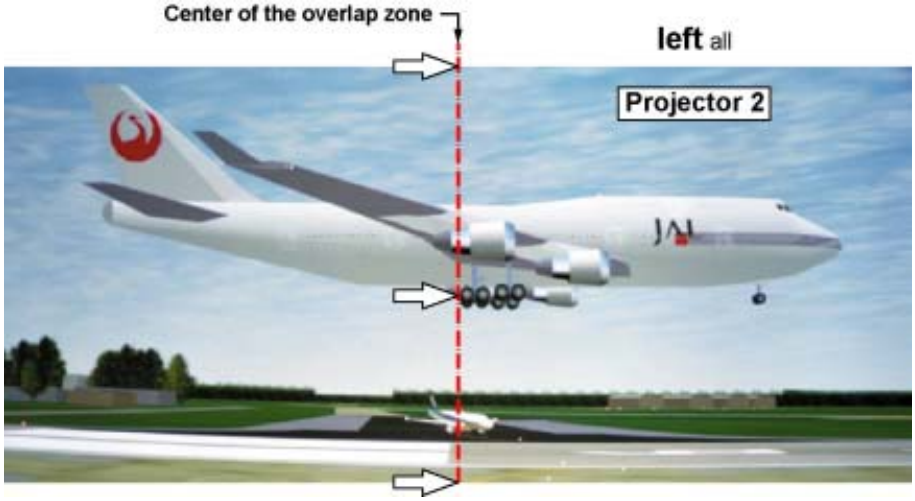



Image 8-133
Basic Shape set up for Projector 2

### 8.5.9.5 Softedge Width

#### What can be done?

Within this menu the width of the blending zone is set up.

#### Softedge Width Selections

1. Push the cursor key ↑ or ↓ to select *Width* and press **ENTER** to select. (image 8-134)

   The *Width* dialog box will be displayed.

   Following Softedge Width Selections are possible: (image 8-135)

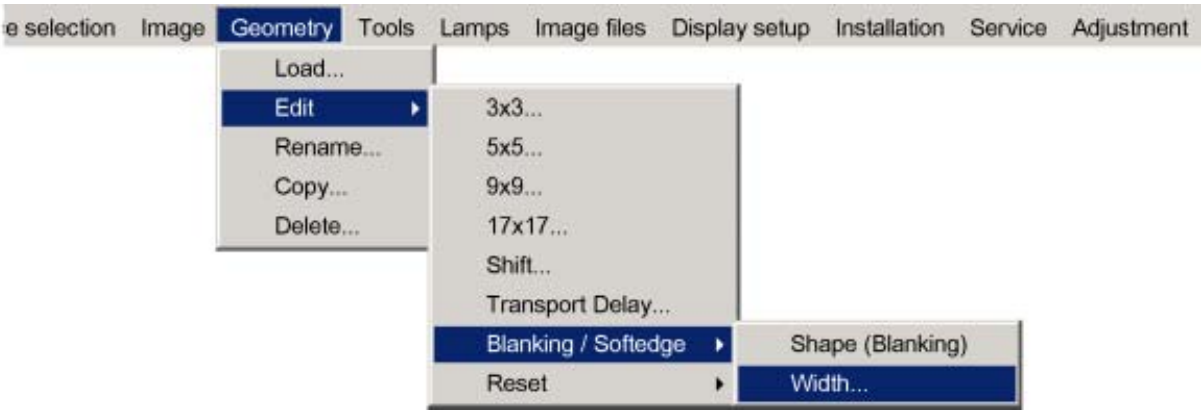



Image 8-134

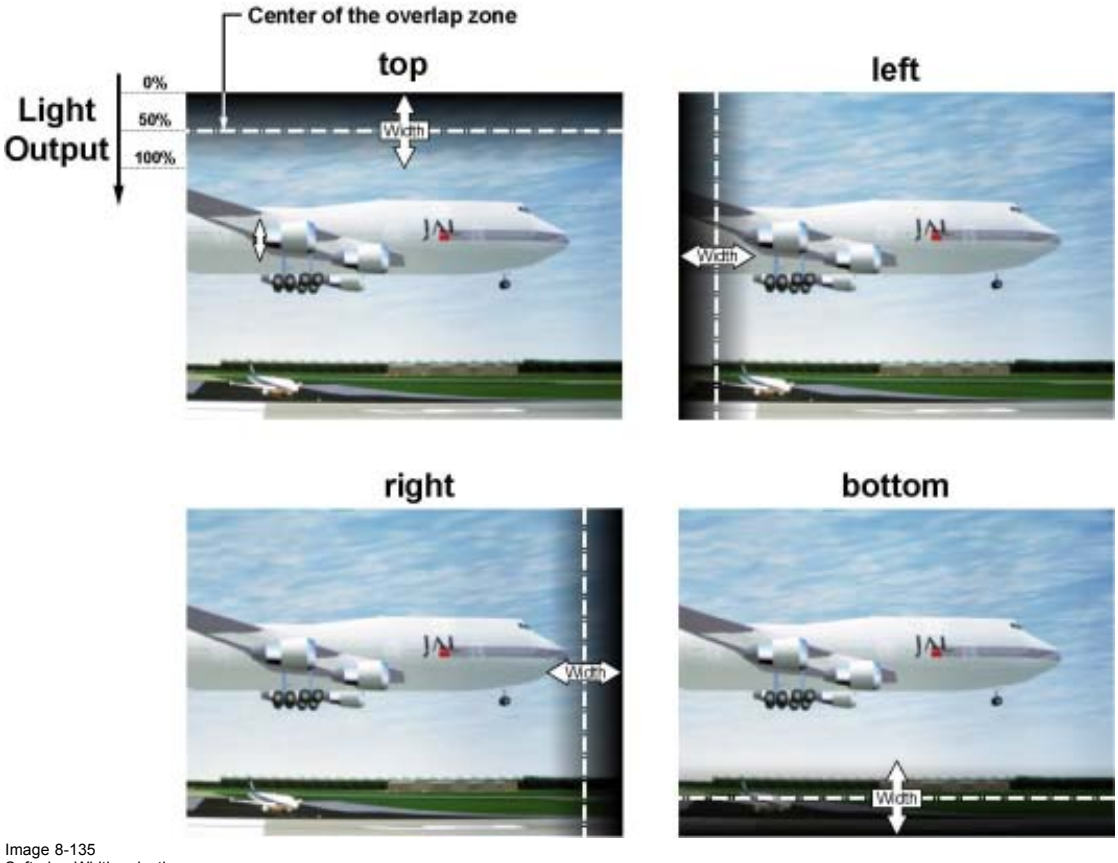



Image 8-135
Softedge Width selections

### 8.5.9.6 Basic Softedge Width Setup

#### Setting up the Width for Projector 1

1. Push the cursor key ↑ or ↓ to select *Softedge width right* and press **ENTER** to select. (image 8-136)

2. Push the cursor key ← or → to adjust the right width until it matches or exceeds the width of the overlap zone. (image 8-137)

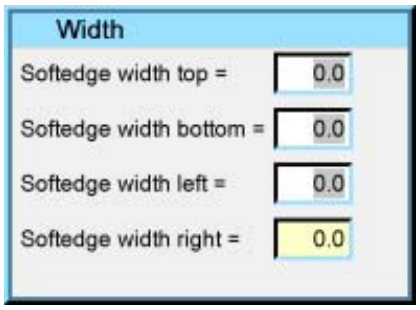



Image 8-136

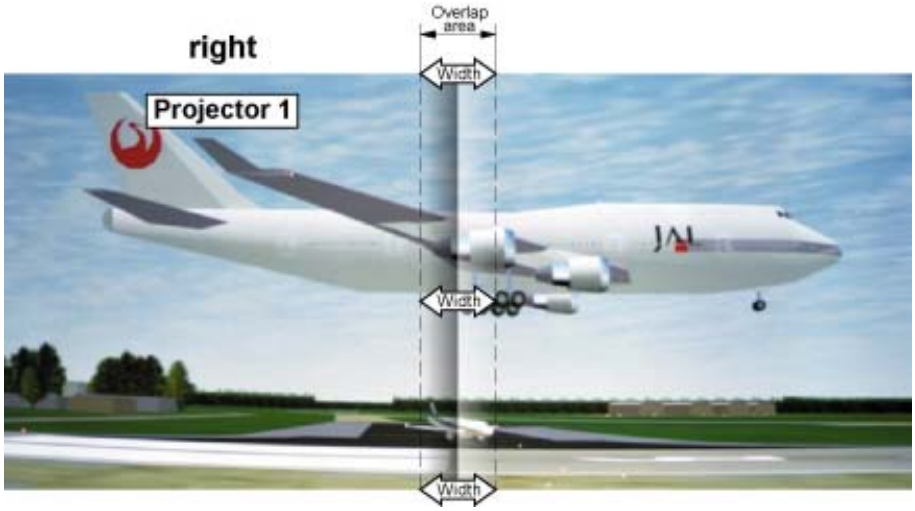



Image 8-137
Basic Width set up for Projector 1

### Setting up the Width for Projector 2

1. Push the cursor key ↑ or ↓ to select *Softedge width left* and press **ENTER** to select. (image 8-138)
2. Push the cursor key ← or → to adjust the *left width* until it matches the right width of projector 1. (image 8-139)
3. Press **BACK** to return to the *Geometry Edit* menu.

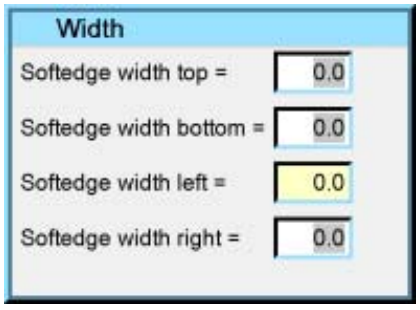



Image 8-138

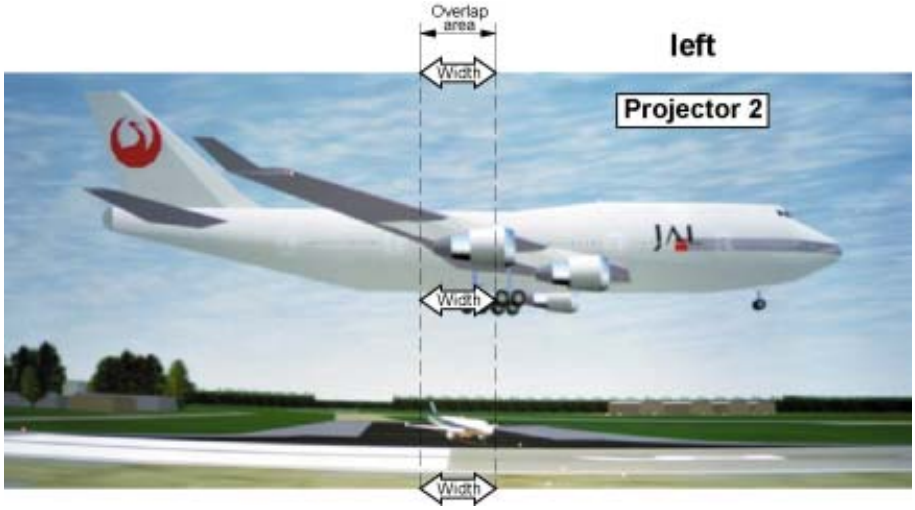



Image 8-139
Basic Width set up for Projector 2

## 8.5.10 Geometry Reset

### 8.5.10.1 Starting Up

#### How to Start Up Geometry Reset?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Geometry* in the menubar.
3. Push the ↓ key to pull down the *Geometry* menu.
4. Push the cursor key ↑ or ↓ to highlight *Edit.*
5. Push the → key to pull down the Edit menu.
6. Push the cursor key ↑ or ↓ to highlight *Reset.*
7. Push the → key to pull down the *Reset* menu. (image 8-140)

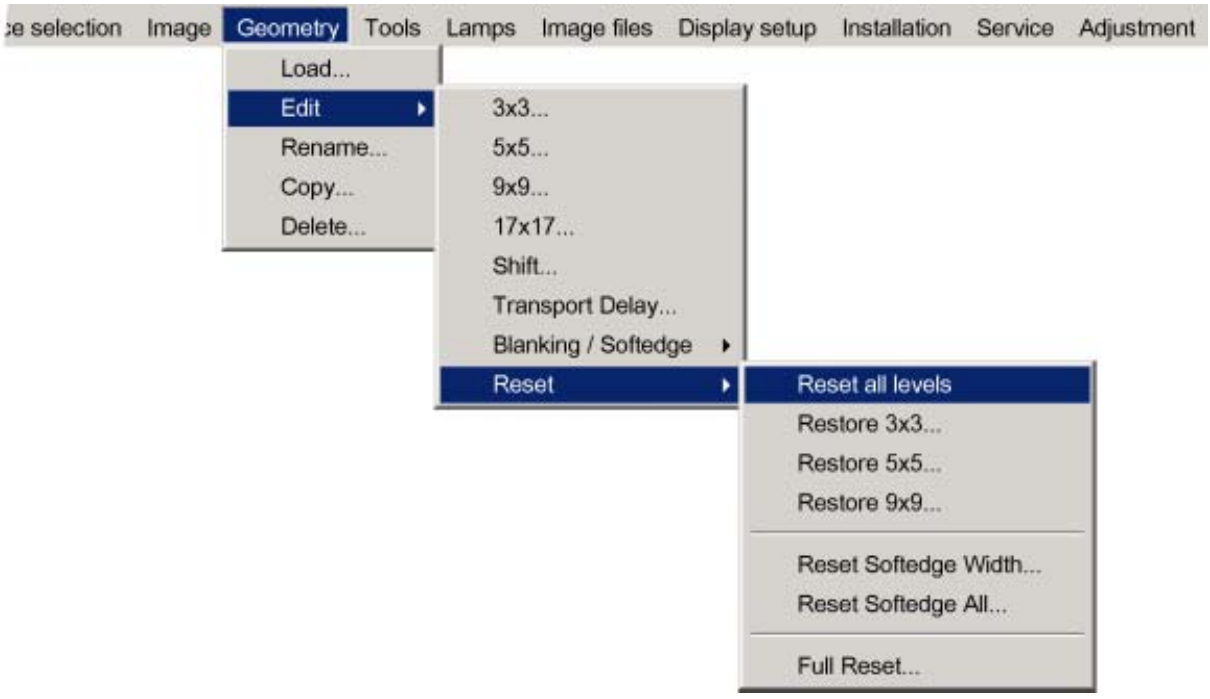



Image 8-140

### 8.5.10.2 Reset All Levels

#### What can be done?

This will restore the geometry setting for all 15 adjustment levels.

#### How to reset all Geometry Settings?

1. Push the cursor key ↑ or ↓ to highlight *Reset all levels.* (image 8-141)
2. Press **ENTER** to select.

   A message will be displayed. (image 8-142)
3. Press **ENTER** to reset all geometry settings.

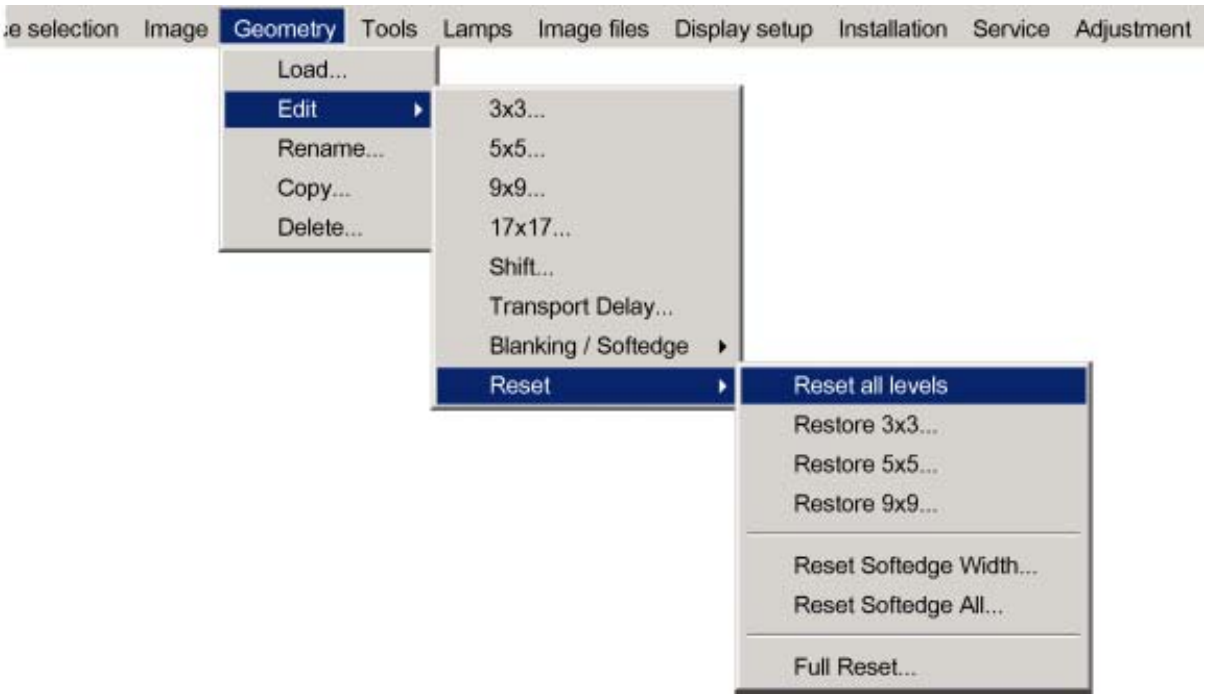



Image 8-141

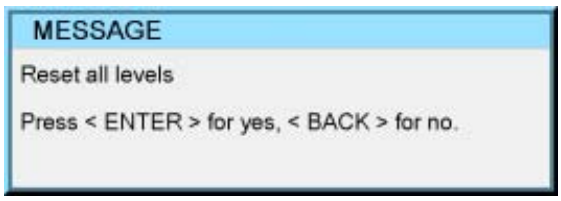



Image 8-142

### 8.5.10.3 Restore 3x3

#### What can be done?

This will restore to 3x3 geometry settings, this is a reset of levels 4 to 15.

#### How to restore the 3x3 Geometry Settings?

1. Push the cursor key ↑ or ↓ to highlight *Restore 3x3.* (image 8-143)
2. Press **ENTER** to select.

   A message will be displayed. (image 8-144)
3. Press **ENTER** to reset to 3x3 geometry settings.

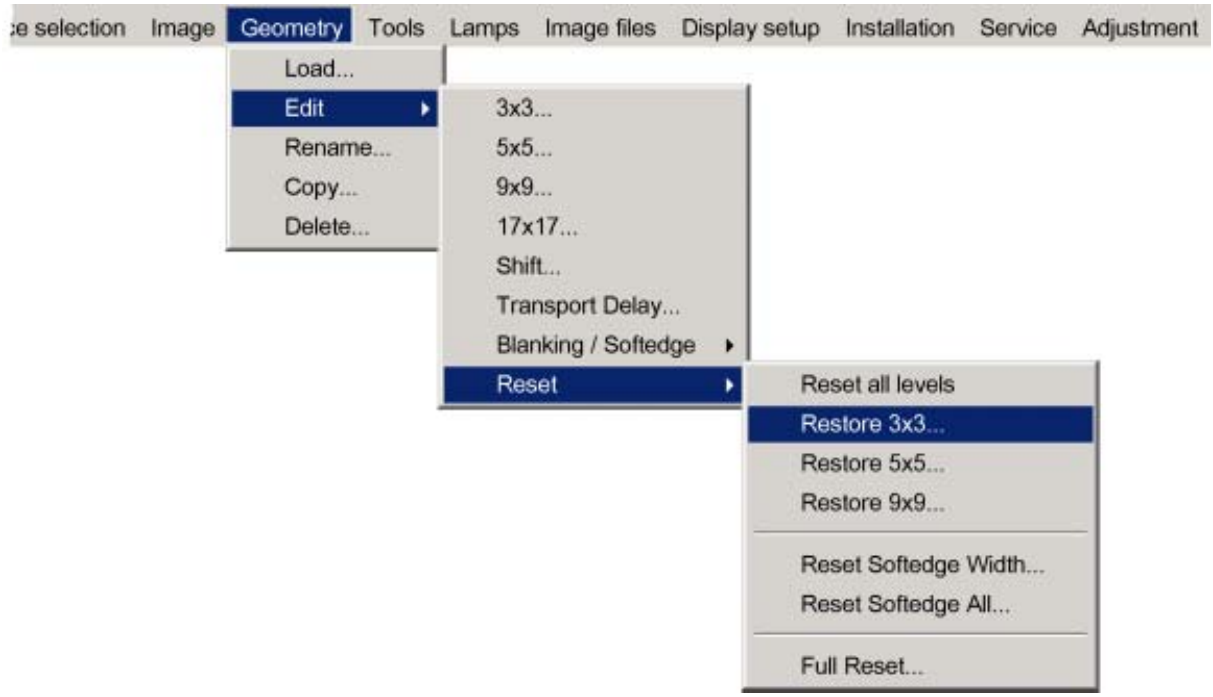



Image 8-143

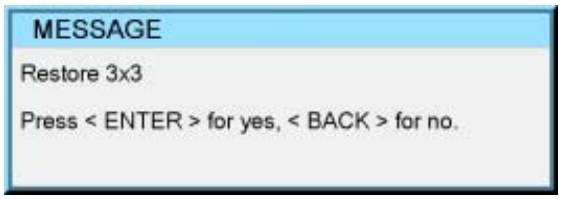



Image 8-144

### 8.5.10.4 Restore 5x5

#### What can be done?

This will restore to 5x5 geometry settings, this is a reset of levels 7 to 15.

#### How to restore the 5x5 Geometry Settings?

1. Push the cursor key ↑ or ↓ to highlight *Restore 5x5*. (image 8-145)
2. Press **ENTER** to select.

   A message will be displayed. (image 8-146)
3. Press **ENTER** to reset to 5x5 geometry settings.

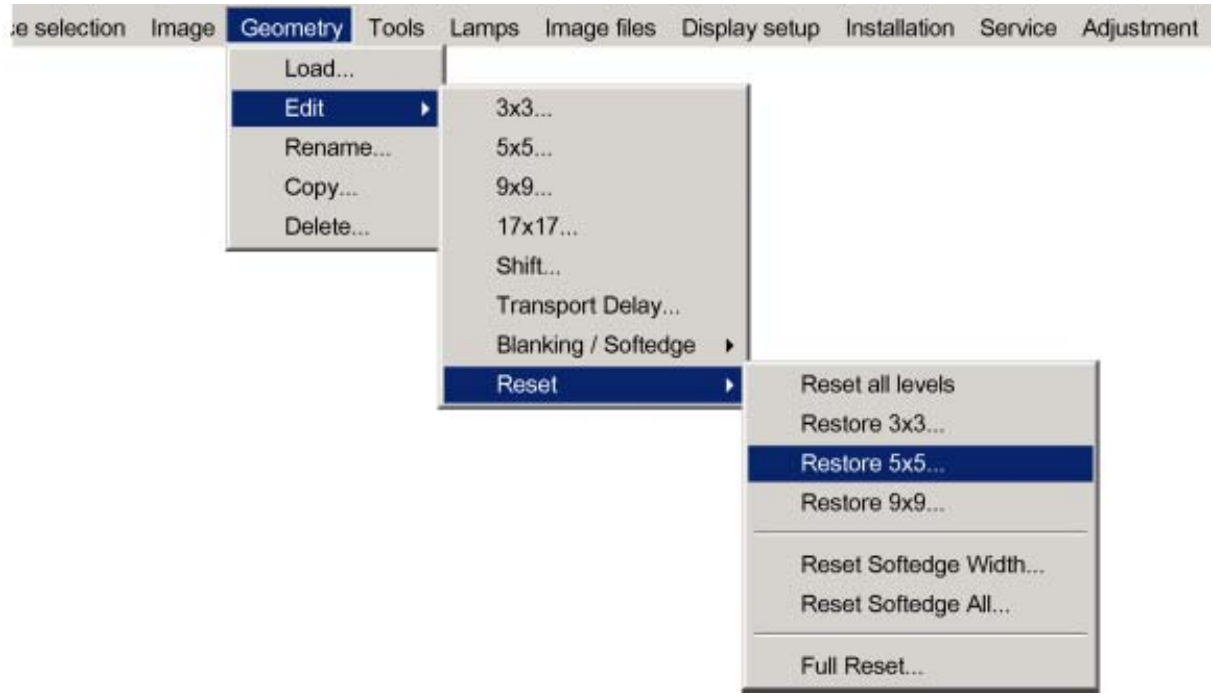



Image 8-145

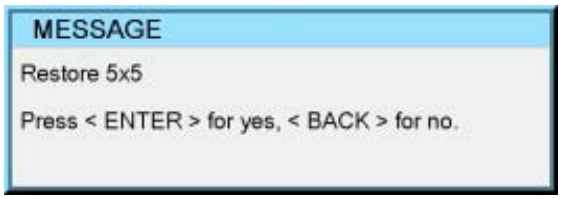



Image 8-146

### 8.5.10.5 Restore 9x9

#### What can be done?

This will restore to 9x9 geometry settings, this is a reset of levels 7 to 15.

#### How to restore the 9x9 Geometry Settings?

1. Push the cursor key ↑ or ↓ to highlight *Restore 9x9*. (image 8-147)
2. Press **ENTER** to select.

   A message will be displayed. (image 8-148)
3. Press **ENTER** to reset to 9x9 geometry settings.

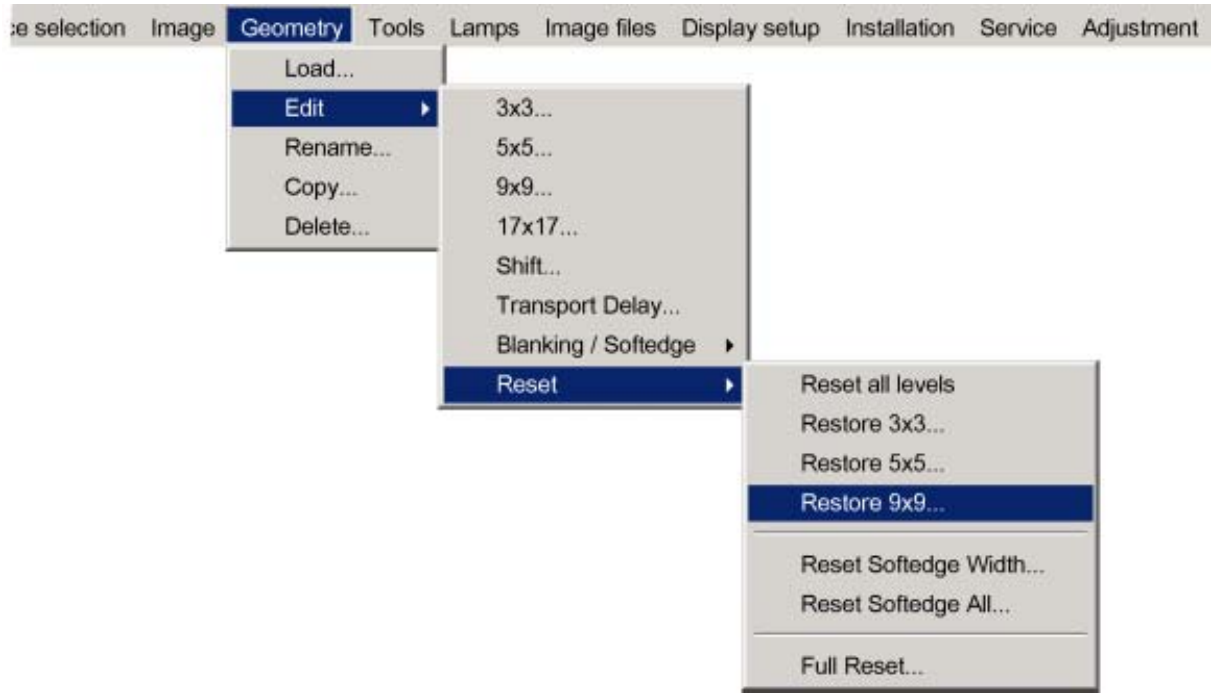



Image 8-147

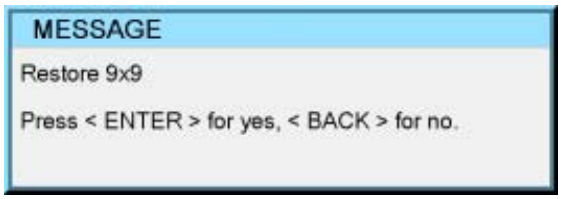



Image 8-148

### 8.5.10.6 Reset Softedge Width

#### What can be done?

This will restore all Softedge Width settings.

#### How to reset the Softedge Width?

1. Push the cursor key ↑ or ↓ to highlight *Reset Softedge Width*. (image 8-149)
2. Press **ENTER** to select.

   A message will be displayed. (image 8-150)
3. Press **ENTER** to reset the Softedge Width settings.

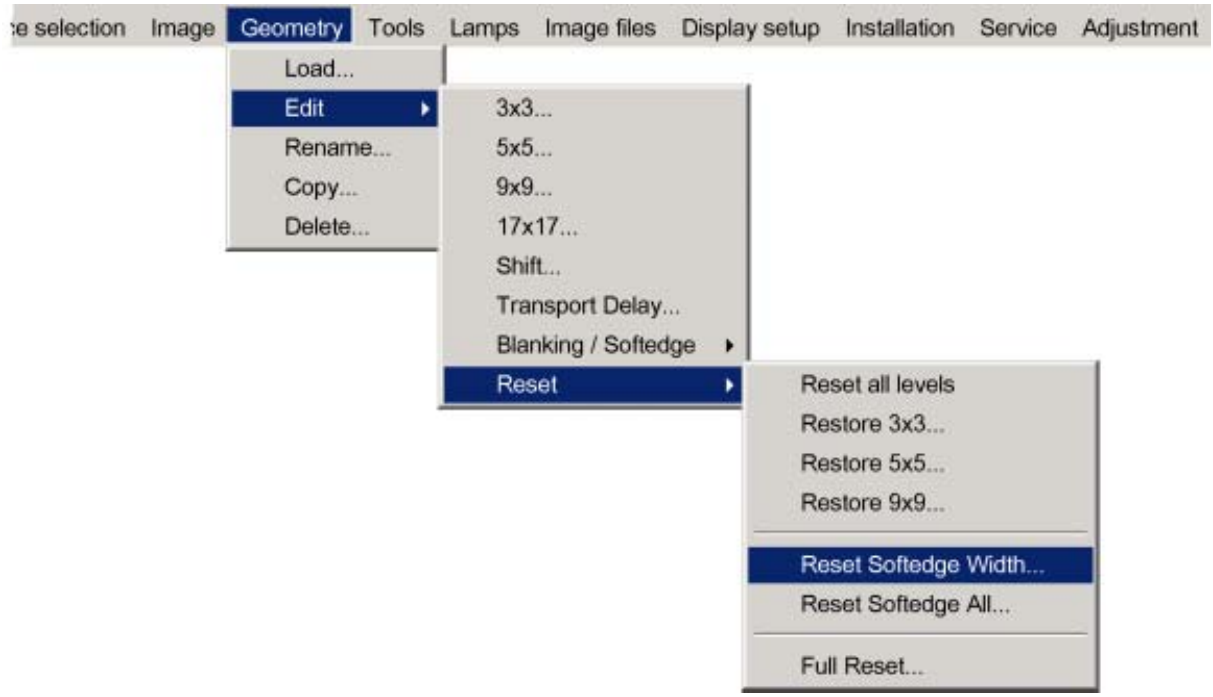



Image 8-149

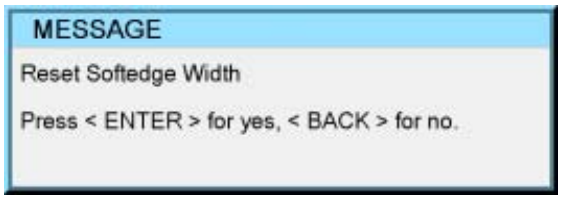



Image 8-150

### 8.5.10.7 Reset Softedge All

#### What can be done?

This will restore all Softedge settings.

#### How to reset Softedge All?

1. Push the cursor key ↑ or ↓ to highlight *Reset Softedge Width*. (image 8-151)
2. Press **ENTER** to select.

   A message will be displayed. (image 8-152)
3. Press **ENTER** to reset all Softedge settings.

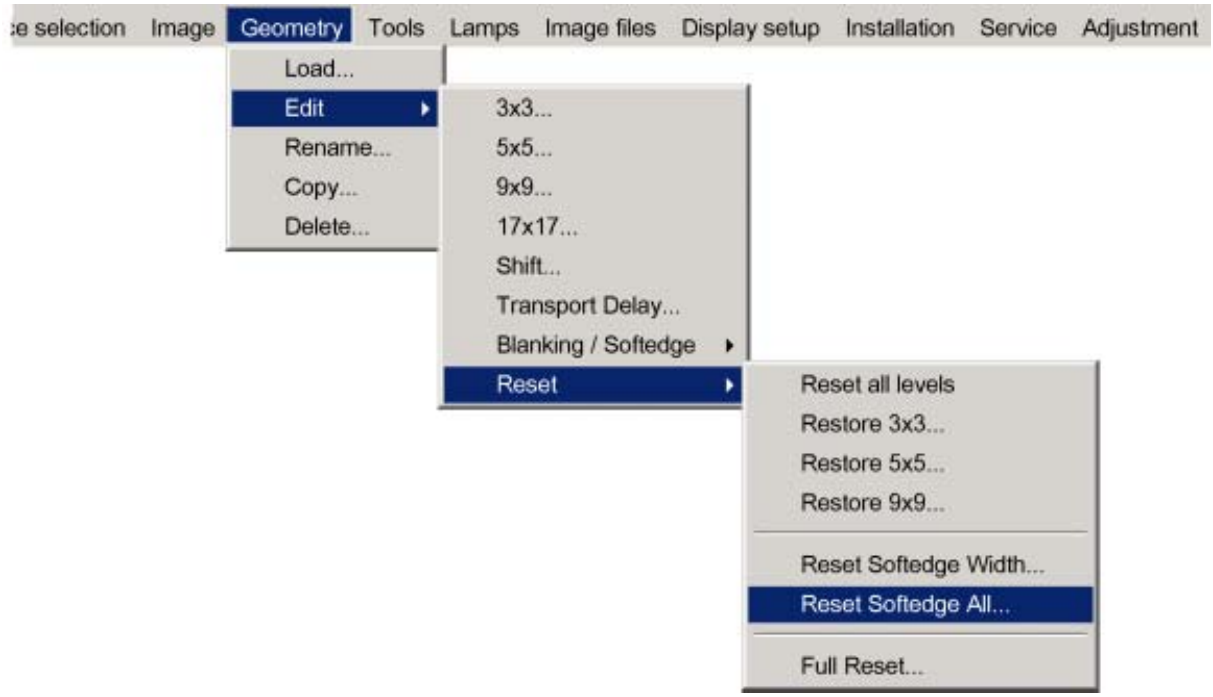



Image 8-151

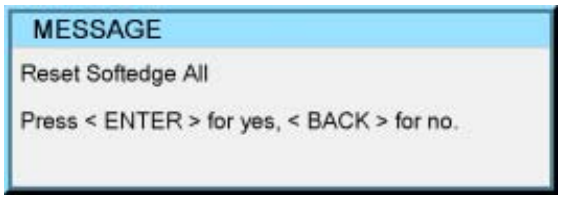



Image 8-152

### 8.5.10.8 Full Reset

#### What can be done?

This will reset all Geometry and Softedge settings.

#### How to perform a Full Reset?

1. Push the cursor key ↑ or ↓ to highlight *Reset Softedge Width*. (image 8-153)
2. Press **ENTER** to select.

   A message will be displayed. (image 8-154)
3. Press **ENTER** to reset all Softedge settings.

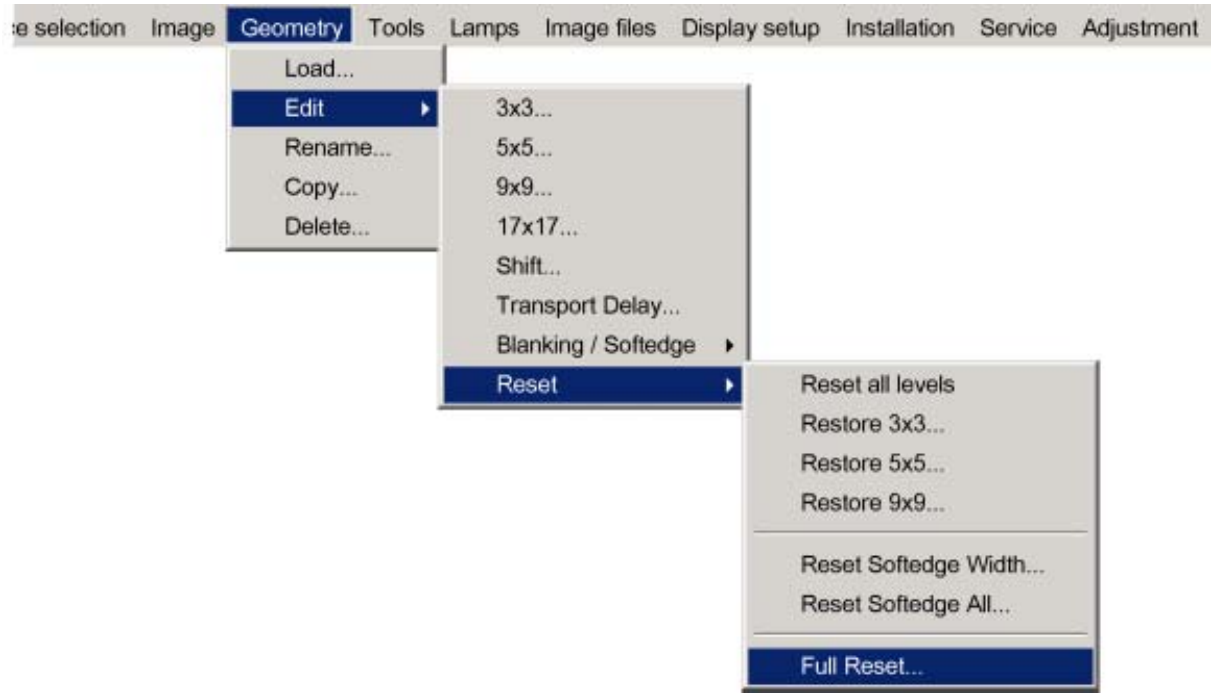



Image 8-153

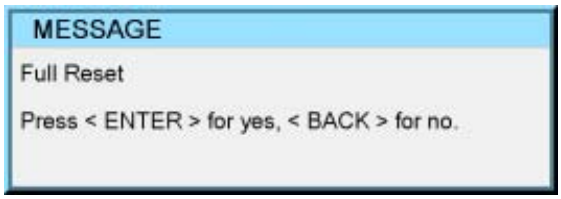



Image 8-154

## 8.6 Rename Geometry File

### What can be done?

This menu item is used to rename a geometry custom file.

### How to Rename a Geometry File?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Geometry* in the menubar.
3. Push the ↓ key to pull down the *Geometry* menu.
4. Push the cursor key ↑ or ↓ to highlight *Rename* and press **ENTER** to select. (image 8-155)

   The *Rename file* dialog box will be displayed. (image 8-156)
5. Use the cursor key ↑ and ↓ to select the desired geometry file and press **ENTER** to select.

   The Rename custom file dialog box will be displayed. (image 8-157)
6. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, confirm with **ENTER**.
7. Press **BACK** to return to the *Geometry Edit* menu.

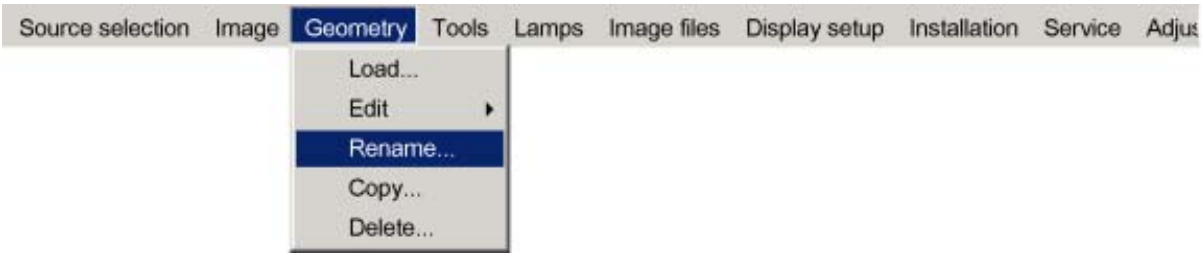



Image 8-155

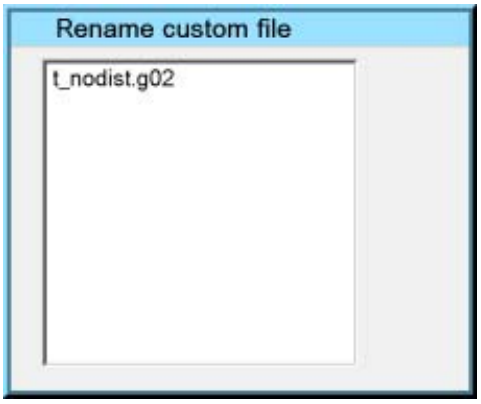



Image 8-156


Image 8-157

## 8.7 Copy Geometry File

### What can be done?

This menu item is used to copy a preset or custom geometry file to a new geometry user file.

### How to Copy a Geometry File?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Geometry* in the menubar.
3. Push the ↓ key to pull down the *Geometry* menu.
4. Push the cursor key ↑ or ↓ to highlight *Copy* and press **ENTER** to select. (image 8-158)

   The *Copy file* dialog box will be displayed. (image 8-159)
5. Use the cursor key ↑ and ↓ to select the desired geometry file and press **ENTER** to select.

   The Copy file rename box will be displayed, the file name is copied in the edit field. (image 8-160)
6. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, confirm with **ENTER**.
7. Press **BACK** to return to the *Geometry Edit* menu.

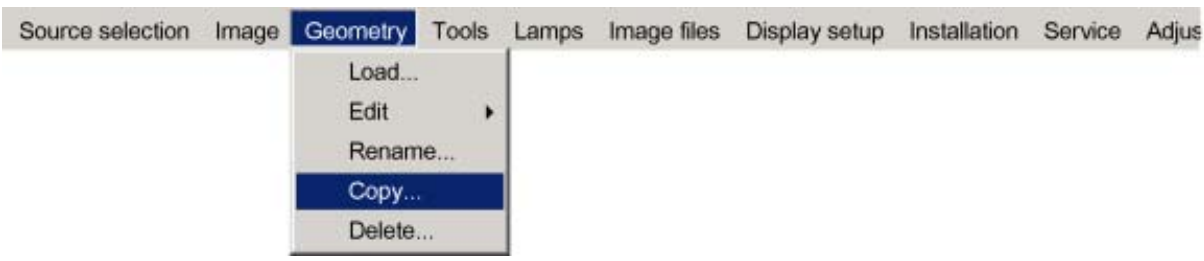



Image 8-158

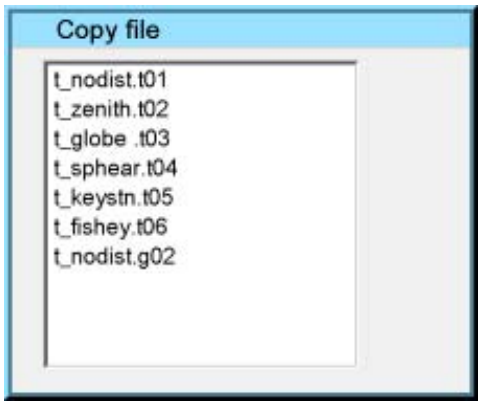



Image 8-159


Image 8-160

## 8.8 Delete Geometry File

### What can be done?

This menu item is used to delete a geometry custom file.

### How to Delete a Geometry File?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Geometry* in the menubar.
3. Push the ↓ key to pull down the *Geometry* menu.
4. Push the cursor key ↑ or ↓ to highlight *Delete* and press **ENTER** to select. (image 8-161)

   The *Delete file* dialog box will be displayed. (image 8-162)
5. Use the cursor key ↑ and ↓ to select the desired geometry file and press **ENTER** to select.

   A message will be displayed. (image 8-163)
6. Press **ENTER** to confirm.

   The selected file is deleted and removed from the list.
7. Press **BACK** to return to the *Geometry Edit* menu.

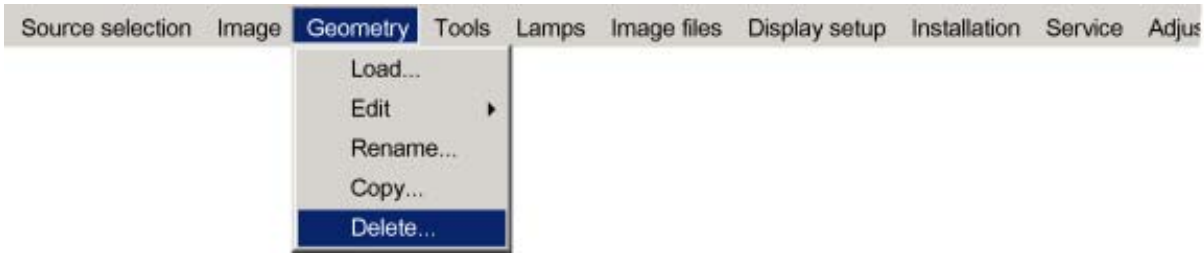



Image 8-161


Image 8-162

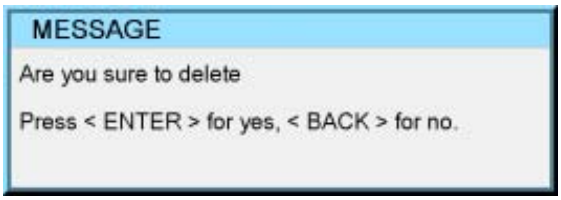



Image 8-163

# 9. TOOLS MENU

### Overview

- Tools Menu Overview
- Diagnostics
- Ethernet Connection
- Picture in Picture

## 9.1 Tools Menu Overview

### Tools Menu Overview

- Diagnostics
  - I2C...
  - Lamps and power supply...
  - Formatter...
- Ethernet Connection...
- Picture in Picture

## 9.2 Diagnostics

### Overview

- I²C
- Lamps and Power Supply
- Formatter

### 9.2.1 I²C

#### What can be done?

This info screen will give an overview of the status and the hex. value of the slave address of the I²C controlled IC's.

- Green Radio Button = OK
- Red Radio Button = Error

Following IC's are shown in the I²C info screen:

- Lamp driver
- Motor driver
- Formatter
- Dimmer Driver
- Light Sensor
- FPGA Backplane 1
- ADC 9887A Layer 1
- Video decoder

#### How to consult the I²C menu?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Tools* in the menubar.
3. Push the ↓ key to pull down the *Tools* menu.
4. Push the cursor key ↑ or ↓ to highlight *Diagnostics*.
5. Push the → key to pull down the *Diagnostics* menu.
6. Push the cursor key ↑ or ↓ to highlight *I2C* and press **ENTER** to select. (image 9-1)

   The *I2C* Diagnostics screen will be displayed. (image 9-2)
7. Press **BACK** to return to the *Tools* menu.

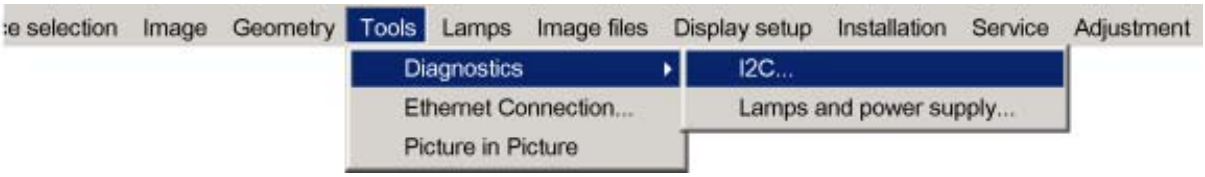



Image 9-1

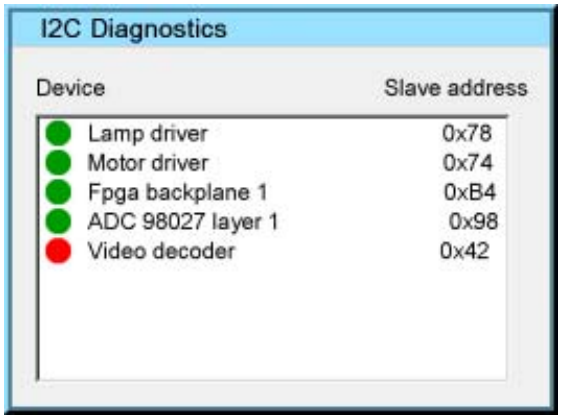



Image 9-2

### 9.2.2 Lamps and Power Supply

#### What can be done?

Following errors are logged into the Lamp and Power Supply menu:

- Ambient temperature error
- DMD temperature error
- Fan error
- Lamp temperature error
- Heat sink temperature error
- Lamp 1 error
- Lamp 2 error
- Lamp 1 & 2 error
- Multiple temperature error

#### How to consult the Lamps and Power Supply menu?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Tools* in the menubar.
3. Push the ↓ key to pull down the *Tools* menu.
4. Push the cursor key ↑ or ↓ to highlight *Diagnostics*.
5. Push the → key to pull down the *Diagnostics* menu.
6. Push the cursor key ↑ or ↓ to highlight *Lamps and Power Supply* and press **ENTER** to select. (image 9-3)

   The *Lamps and Power Supply* Diagnostics screen will be displayed. (image 9-4)
7. Press **BACK** to return to the *Tools* menu.

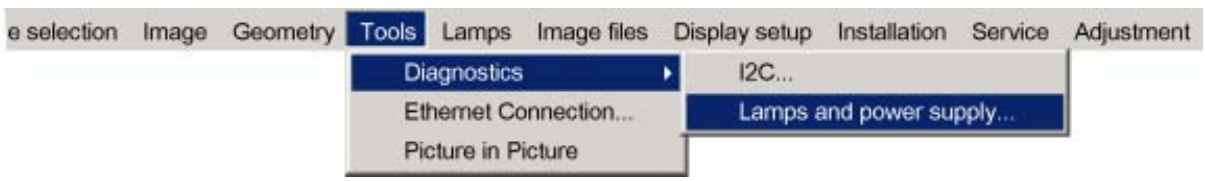



Image 9-3

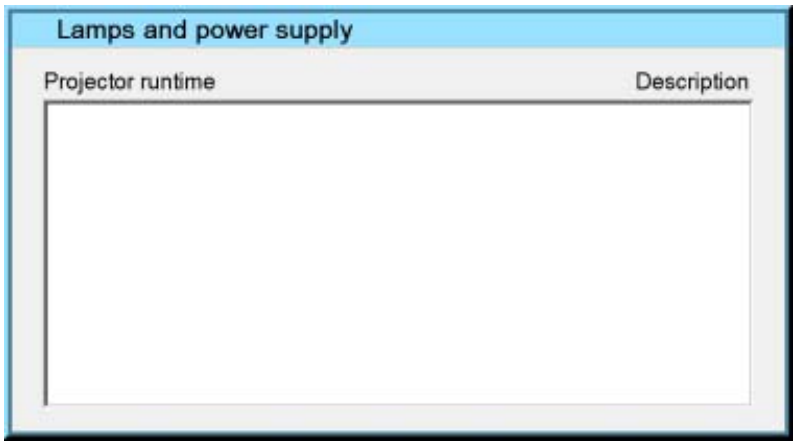



Image 9-4

### 9.2.3 Formatter

#### Picture in Picture

This menu item is grayed out and will be implemented in the near future.

## 9.3 Ethernet Connection

#### What can be done?

This menu item is used to set the Ethernet Communication parameters.

This Ethernet connection can be used to upload/download projector software and/or to set up RS232 communication (TCP-packets) with the projector.

Following parameters are available

| | |
|---|---|
| **IP Address** | IP Address of the projector (This is a non-adjustable value programmed into the Ethernet board). |
| **MAC Address** | MAC Address of the projector (This is a non-adjustable value programmed into the Ethernet board). |
| **DHCP** | DHCP setting:<br>• Yes: The projector will dynamically obtain its IP address from the DHCP server.<br>• No: The IP address needs to be entered manually. |
| **IP Address** | Dynamic IP Address of the projector. |
| **FTP Port** | FTP Port is always set to 21, do not adjust this setting. |
| **FTP User** | FTP user name used by the FTP client program |
| **FTP Password** | FTP password by the FTP client program |
| **Communication Port** | Communication Port is set to 6363, do not adjust this setting |

#### How to set up the Ethernet Connection?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Tools* in the menubar.
3. Push the ↓ key to pull down the *Tools* menu.
4. Push the cursor key ↑ or ↓ to highlight *Ethernet Connection* and press **ENTER** to select. (image 9-5)

   The *Ethernet Connection* dialog box will be displayed. (image 9-6)
5. Push the cursor key ↑ or ↓ to highlight the desired parameter.
6. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values.
7. Press **BACK** to return to the *Tools* menu.

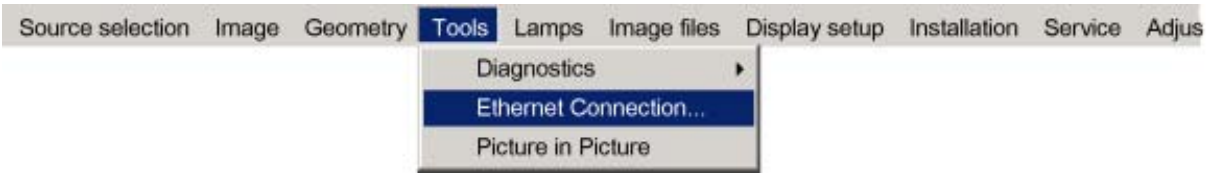



Image 9-5

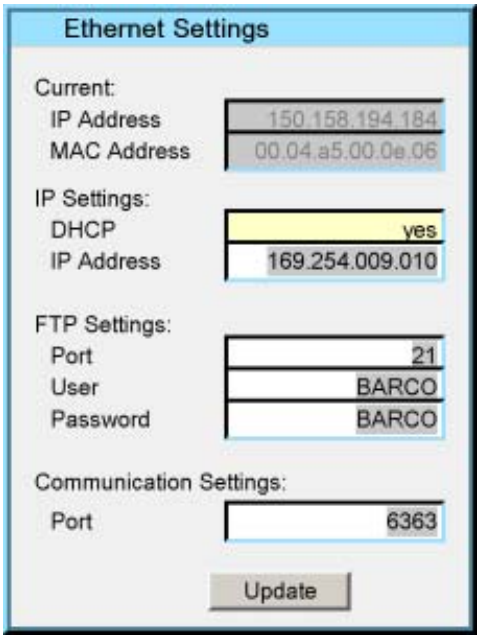



Image 9-6

## 9.4 Picture in Picture

### How to Start Up Picture in Picture?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Tools* in the menubar.
3. Push the ↓ key to pull down the *Tools* menu.
4. Push the cursor key ↑ or ↓ to highlight *Picture in Picture* and press **ENTER** to select. (image 9-7)

   The *Picture in Picture* dialog box will be displayed. (image 9-8)

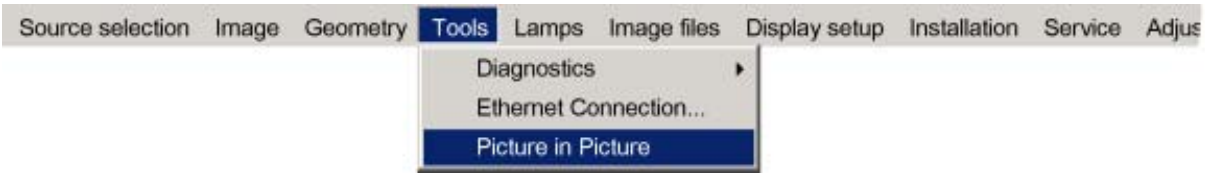



Image 9-7

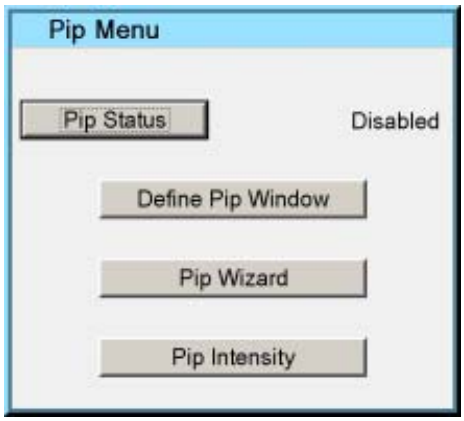



Image 9-8

### How to select the Picture in Picture Source?

1. Push the cursor key ↑ or ↓ to highlight *Pip Wizard* and press **ENTER** to select. (image 9-9)

   The *Select Pip Source* dialog box will be displayed. (image 9-10)

2. Push the cursor key ↑ or ↓ to select the desired *Pip Source* and press **ENTER** to select.

   According to the selected main source, following Pip Source selections are available:

| **Main Source Selection** | **Available Pip Source Selection(s)** |
|---|---|
| Data on BNC's | • Data on BNC's<br>• DVI<br>• PC<br>• Composite Video[2]<br>• S-video[2] |
| DVI | • Data on BNC's<br>• DVI<br>• Composite Video[2]<br>• S-video[2] |
| PC | • Data on BNC's<br>• PC<br>• Composite Video[2]<br>• S-video[2] |
| Composite Video[2] | Pip is not available |
| S-video[2] | Pip is not available |

   The selected Pip Source will be displayed full screen together with the following dialog box. (image 9-11)

3. Select *Proceed* and press **ENTER** to continue or select other Pip Source to return to the Pip Source selection.

2. Optional

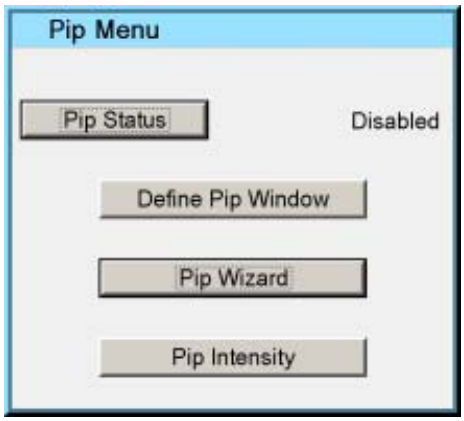



Image 9-9

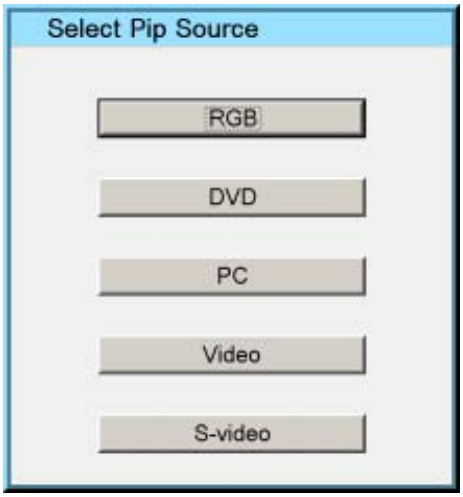



Image 9-10

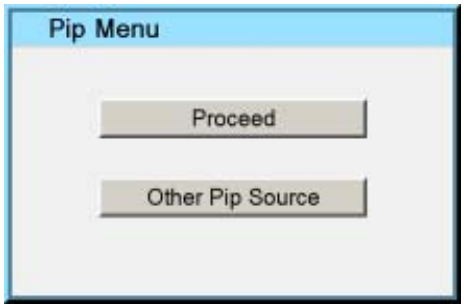



Image 9-11

### How to activate the Pip Status?

1. Push the cursor key ↑ or ↓ to highlight *Pip Status*. (image 9-12)
2. Press **ENTER** to enable or disable Picture in Picture.

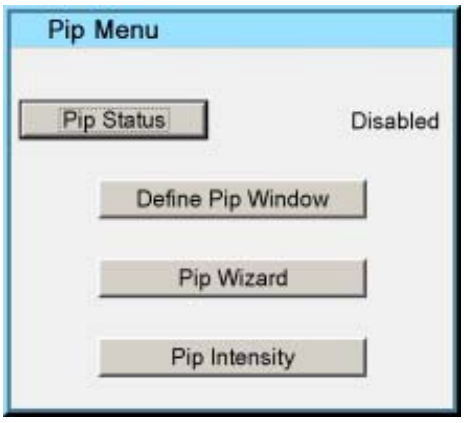



Image 9-12

### How to define the Pip Window?

1. Push the cursor key ↑ or ↓ to highlight *Define Pip Window* and press **ENTER** to select. (image 9-13)

   The Picture in Picture will be displayed together with the Pip Position info box on the bottom of the screen. (image 9-14)
2. Use the arrow keys to move the Pip window to the desired position and press **ENTER** to continue with the Top adjustment. (image 9-15)
3. Push the cursor key ↑ or ↓ to adjust the Pip window by moving the top side, press **ENTER** to continue with the Right adjustment. (image 9-16)
4. Push the cursor key ↑ or ↓ to adjust the Pip window by moving the right side, press **ENTER** to continue with the Bottom adjustment.
5. Push the cursor key ↑ or ↓ to adjust the Pip window by moving the bottom side, press **ENTER** to continue with the Left adjustment.

6. Push the cursor key ↑ or ↓ to adjust the Pip window by moving the left side, press **EXIT** to return to the *Pip menu*.

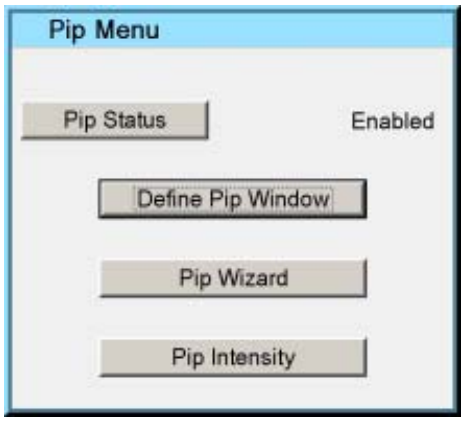



Image 9-13


Image 9-14

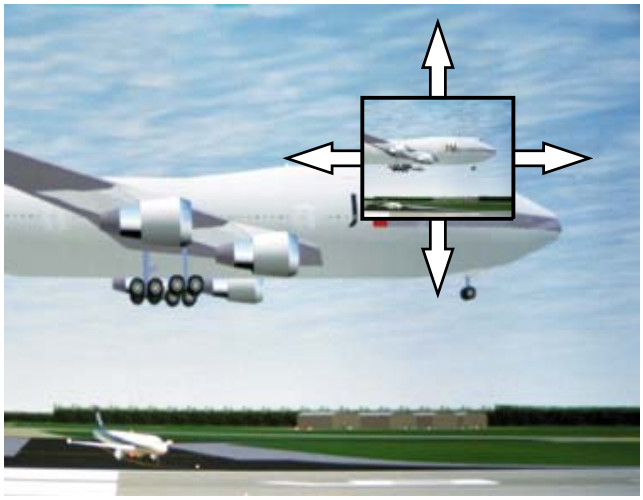


Image 9-15
Use the arrow keys to move the Pip window to the desired position

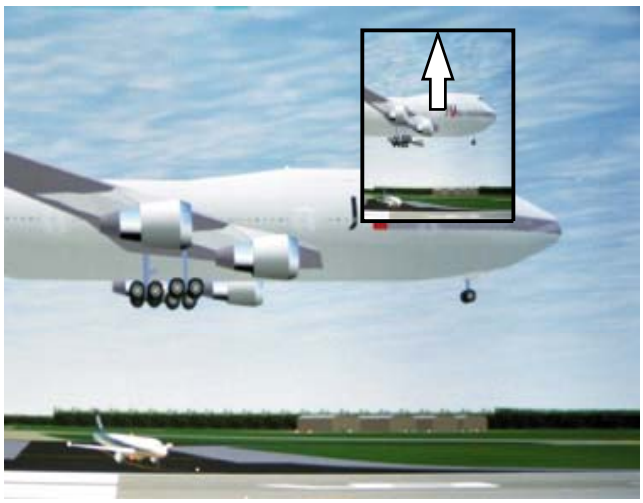


Image 9-16
Push the cursor key ↑ or ↓ to adjust the Pip window by moving the top side

### How to adjust the Pip Intensity?

1. Push the cursor key ↑ or ↓ to highlight *Pip Intensity* and press **ENTER** to select. (image 9-17)

   The Pip Intensity sliderbox will be displayed. (image 9-18)

2. Use the cursor keys or the numeric keys on the RCU to change the intensity of the Picture in Picture window. (image 9-19)
   ***Note:*** *The Pip Intensity value is by default set to 128.*

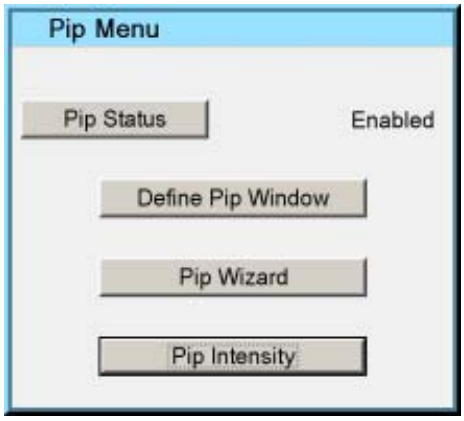



Image 9-17


Image 9-18

Image 9-19
Use the cursor keys or the numeric keys on the RCU to change the intensity of the Picture in Picture window

# 10. LAMPS MENU

### Overview

- Lamps Menu Overview
- Lamp Runtimes
- Mode
- Lamp History
- Lamp Reset Runtime
- Clear Lamp Error
- Lamp Runtime Warning
- Light Output

## 10.1 Lamps Menu Overview

### Lamps Menu Overview

- Runtimes
- Mode
  - Single
  - Dual
- History
- Reset Runtime
  - Lamp 1
  - Lamp 2
- Clear lamp error
- Runtime Warning
- Ligt Output
  - Light Sensor
  - CLO
  - Dimmer
  - Dimemr Reference Positions
- Lamp Power Mode
  - Normal
  - Economic

## 10.2 Lamp Runtimes

### What can be done?

This menu will give an overview of the following runtimes:

- Lamp 1
- Lamp 2
- Total Runtime of the Projector

### How to consult the Runtime menu?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Lamps* in the menubar.
3. Push the ↓ key to pull down the *Lamps* menu.
4. Push the cursor key ↑ or ↓ to highlight *Runtime* and press **ENTER** to select. (image 10-1)

   The *Runtime* screen will be displayed. (image 10-2)

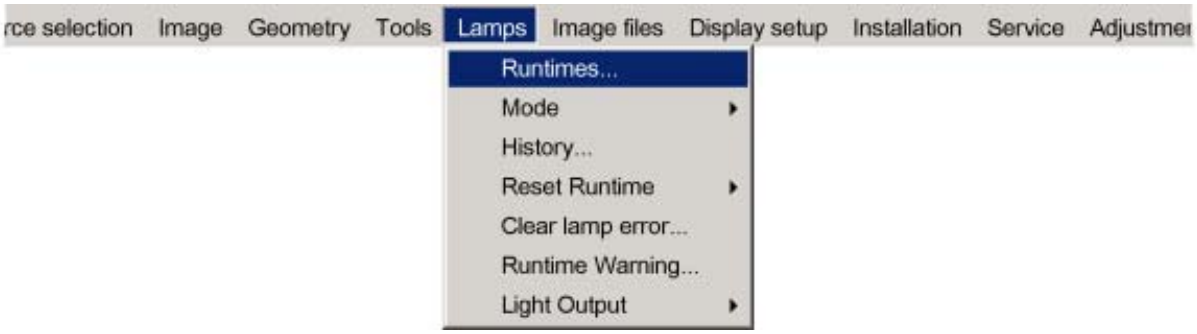



Image 10-1

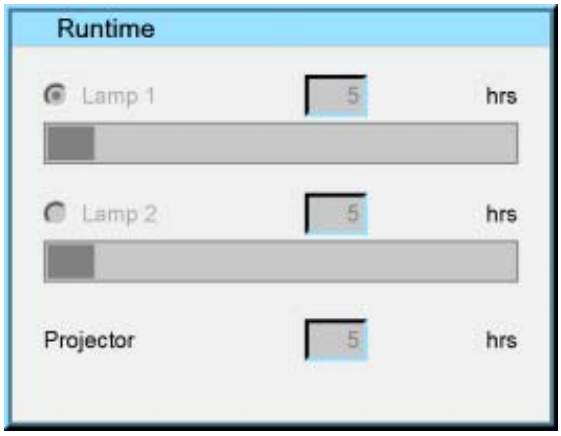



Image 10-2

## 10.3 Mode

### What can be done?

The BarcoReality SIM 5plus projector can be used in 2 different lamp modes:

- Single Mode
- Dual Mode

### Single Mode

The projector will always switch to the lamp with the shortest runtime when the difference between the runtimes of lamp 1 and lamp 2 reaches **100 hours**, switching from one lamp to another happens only at switching on of the projector and not during operation.

When the lamp fails or reaches its maximum runtime the projector switches automatically to the other lamp without interrupting the projection. The failure is logged and the lamp will never be initialized in the future.

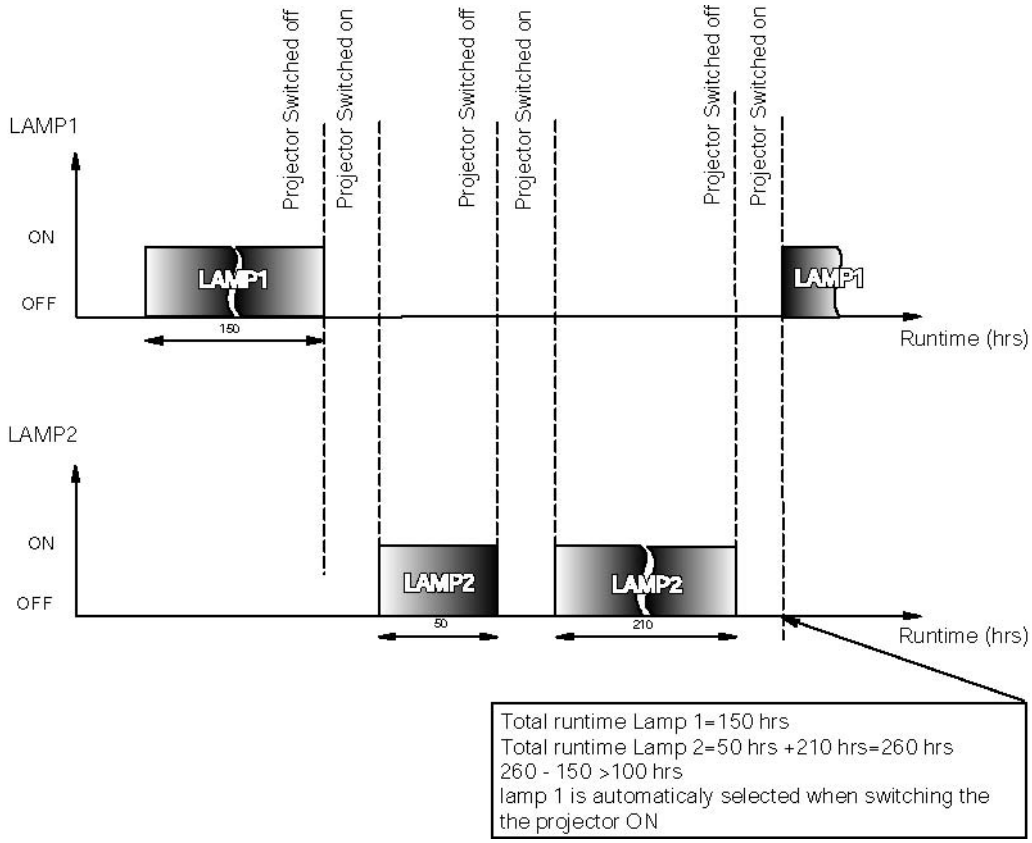



Image 10-3
Single mode operation: switching principle

## Dual Mode

Both lamps are working.

When one lamp fails, the projector continues the projection using the remaining lamp.

## How to select the Lamp Mode?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Lamps* in the menubar.
3. Push the ↓ key to pull down the *Lamps* menu.
4. Push the cursor key ↑ or ↓ to highlight *Mode*.
5. Push the → key to pull down the *Mode* menu.

   A bullet shows the active mode e.g. Single. (image 10-4)
6. Push the cursor key ↑ or ↓ to select the desired Lamp Mode and press **ENTER** to select.

   The following message will be displayed. (image 10-5)
7. Press the 'Yes' button to confirm, the 'No' button to cancel.

   ***Note:*** *When switching from dual mode to single mode the lamp with the longest runtime is switched off.*

   *If the runtimes are equal, and if the projector has always been operated in dual mode, then lamp 1 is switched off.*

   ***Note:*** *When switching to single mode, returning to the dual mode will not be possible in the first 60 seconds, in the menu Dual is grayed out and LED1 is flickering, thereby preventing a hot restrike which may damage the lamp.*
8. Press **BACK** to return to the *Lamp* menu.

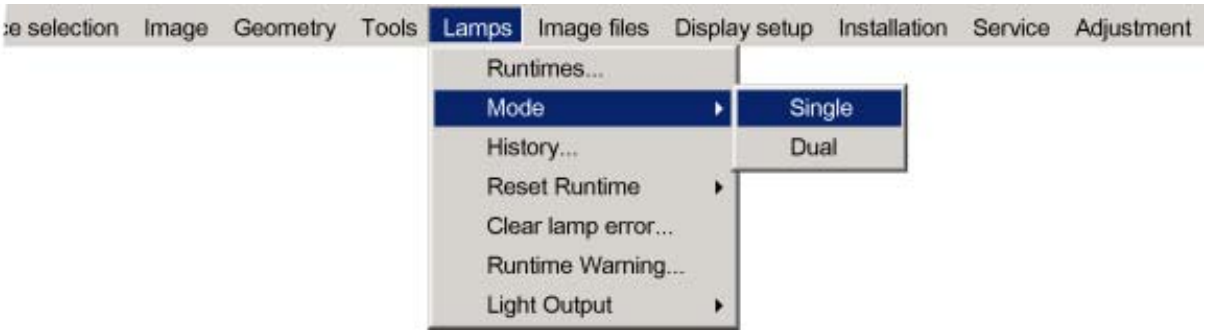



Image 10-4

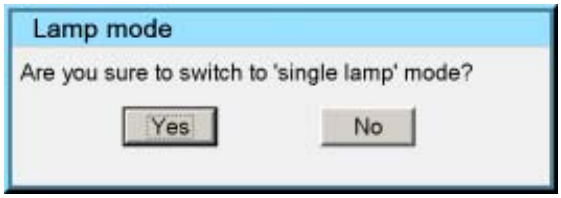



Image 10-5

## 10.4 Lamp History

### What can be done?

This overview will display the serial number and the total runtime of the current lamps and the lamps that were previously used with this projector.

### How to consult the History menu?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Lamps* in the menubar.
3. Push the ↓ key to pull down the *Lamps* menu.
4. Push the cursor key ↑ or ↓ to highlight *History* and press **ENTER** to select. (image 10-6)

   The History screen will be displayed. (image 10-7)

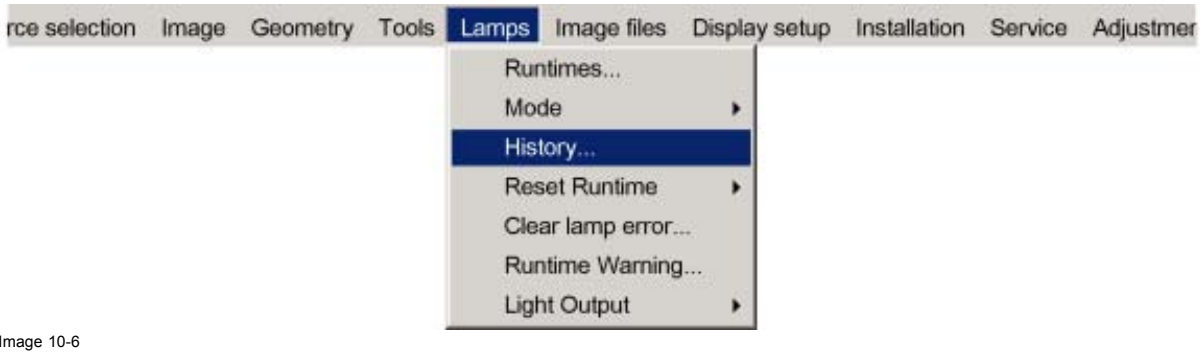



Image 10-6

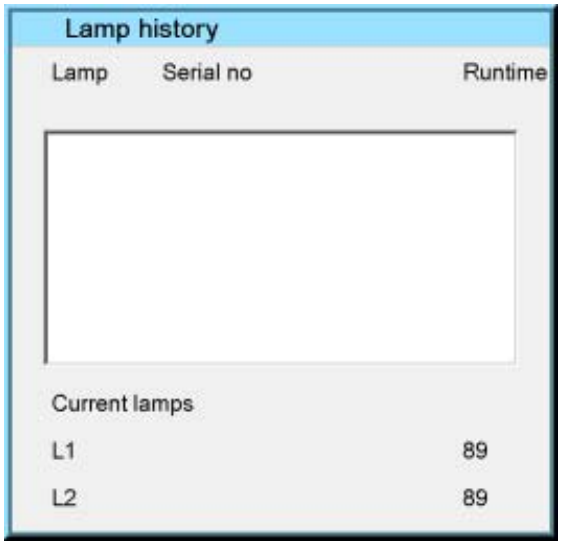


Image 10-7

## 10.5 Lamp Reset Runtime

### When to reset the Runtime?

This will reset the Lamp Runtime to 0.

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

**WARNING: Reset Lamp Runtime is reserved for qualified service personnel, inappropriate use may result in a Lamp explosion.**

### How to reset the Runtime?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Lamps* in the menubar.
3. Push the ↓ key to pull down the *Lamps* menu.
4. Push the cursor key ↑ or ↓ to highlight *Reset Runtime*.
5. Push the → key to pull down the *Reset Runtime* menu.
6. Push the cursor key ↑ or ↓ to select the desired lamp e.g. Lamp 1 and press **ENTER** to select. (image 10-8)

   The *Reset Runtime* dialog box will be displayed. (image 10-9)
7. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to enter the serial number of the new lamp.
   ***Note:*** *Only valid lamp serial number are accepted.*
8. Press **ACCEPT** to activate the new lamp history.
9. Press **BACK** to return to the *Lamp* menu.

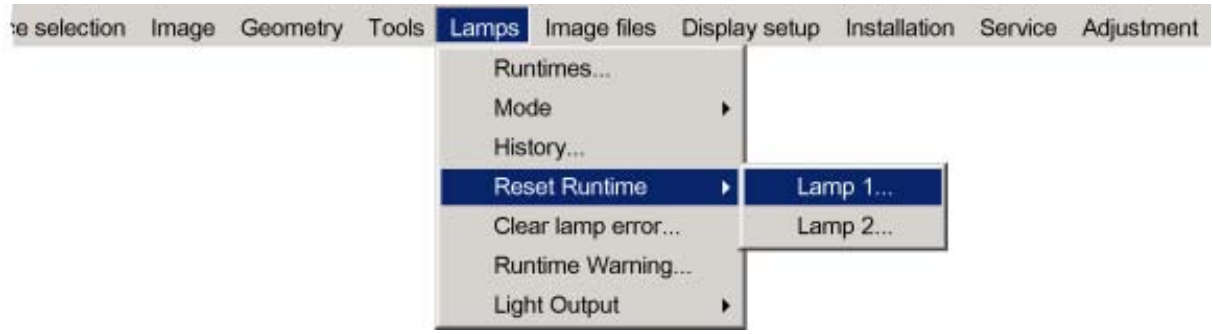



Image 10-8

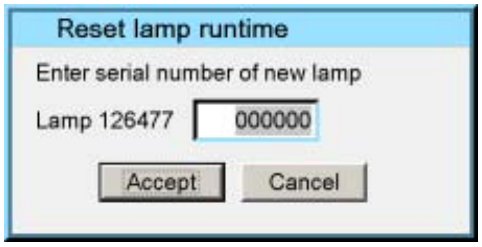



Image 10-9

## 10.6 Clear Lamp Error

### Clear Lamp Error

This menu item is grayed out and will be implemented in the near future.

## 10.7 Lamp Runtime Warning

### What can be done?

When the lamp has reached a certain predetermined runtime, a warning message will be displayed on the screen. The lamp runtime warning can be set in a range from 30 to 200 hours.

**Runtime Warning is default set to 30 hours before end of lamp lifetime.**

### How to set the Runtime Warning?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Lamps* in the menubar.
3. Push the ↓ key to pull down the *Lamps* menu.
4. Push the cursor key ↑ or ↓ to highlight *Runtime Warning* and press **ENTER** to select. (image 10-10)

   The *Lamp Runtime Warning* dialog box will be displayed. (image 10-11)
5. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to change the Runtime Warning setting.
6. Press **ENTER** to activate the new Runtime Warning setting.

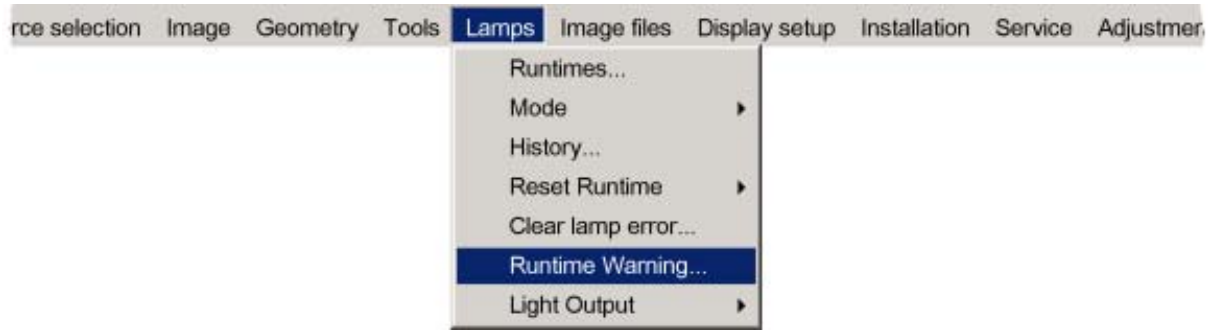



Image 10-10

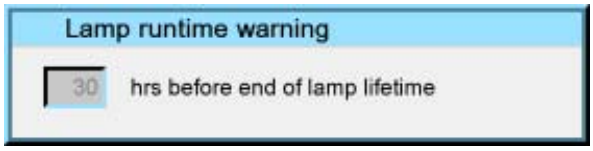



Image 10-11

## 10.8 Light Output

### Overview

- Light Sensor
- Constant Light Output (CLO)
- Dimmer
- Dimmer Reference Positions

### 10.8.1 Light Sensor

#### What can be done?

The Light Sensor inside the Projector is calibrated in function of the installed Lamp.

To ensure an optimal performance it maybe needed to re-calibrate the Light Sensor when a new Lamp is installed.

During this calibration following Light Sensor info can be displayed by the Light Sensor menu:

- Light Output (This is measured in A.U. = Arbituary Units)
- Pulse Count

#### How to consult the Light Sensor?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Lamps* in the menubar.
3. Push the ↓ key to pull down the *Lamps* menu.
4. Push the cursor key ↑ or ↓ to highlight *Light Output*.
5. Push the → key to pull down the *Light Output* menu.
6. Push the cursor key ↑ or ↓ to select *Light Sensor* and press **ENTER** to select. (image 10-12)

   The *Light Sensor* dialog box and the *Dimmer* dialog box will be displayed. (image 10-13, image 10-14)

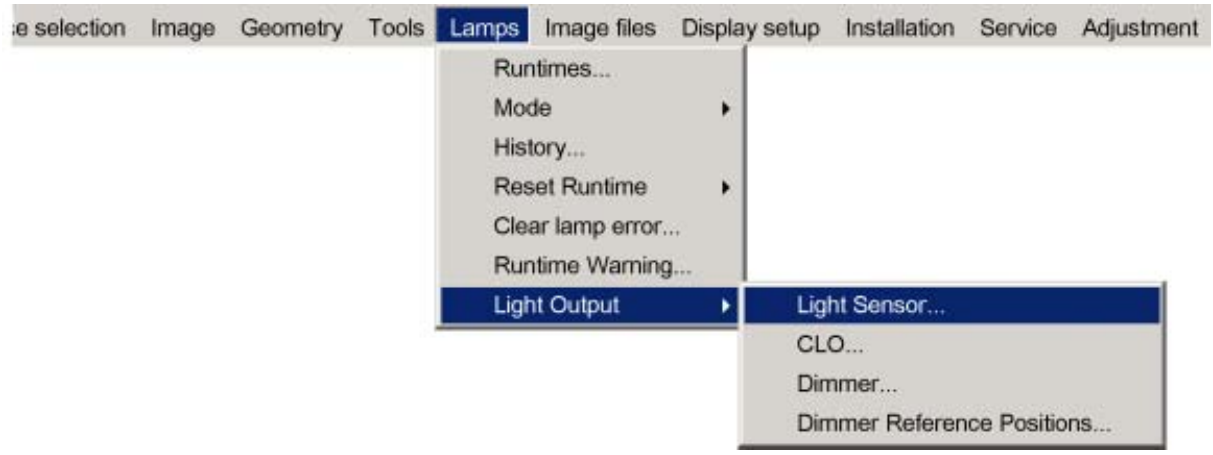



Image 10-12

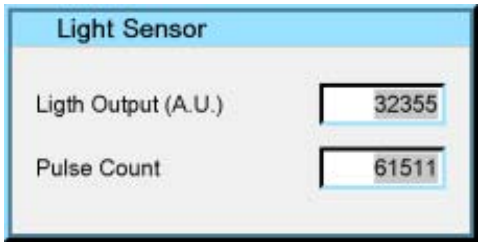



Image 10-13


Image 10-14

**The use of the *Dimmer* catalog box is explained in the paragraph *Dimmer.***

**CAUTION: The automatic adjustment of the CLO works prior to the manual dimmer adjustment.**

### 10.8.2 Constant Light Output (CLO)

#### What can be done?

Projectors in a multichannel setup may have different Lamp Runtimes, this will result in a difference in light output between the projectors.

Within this menu it is possible to track and maintain the brightness level of the projector, the projectors will deliver a Constant Light Output=CLO.

When CLO is set to 'Enabled' the projector will measure and adjust the light output every 15 minutes.

**CLO will overrule the dimmer setting, when CLO is on and the dimmer is adjusted, the light output will be set back to the CLO setting during the next CLO measurement+adjustment (every 15 minutes).**

**Use Barco's xRACU control unit to manage the 'linked' CLO level of multiple projectors in a multi channel setup.**

#### How to use CLO?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Lamps* in the menubar.
3. Push the ↓ key to pull down the *Lamps* menu.

4. Push the cursor key ↑ or ↓ to highlight *Light Output*.
5. Push the → key to pull down the *Light Output* menu.
6. Push the cursor key ↑ or ↓ to select *CLO* and press **ENTER** to select. (image 10-15)
   The *CLO* dialog box will be displayed. (image 10-16)
7. Push the cursor key ↑ or ↓ to select *CLO Value* and press **ENTER** to select.
8. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to set CLO to the desired value.
9. Push the cursor key ↑ or ↓ to select *CLO Status*.
10. Press **ENTER** to enable or disable the *CLO Status*.
11. Press **BACK** to return to the *Lamp* menu.

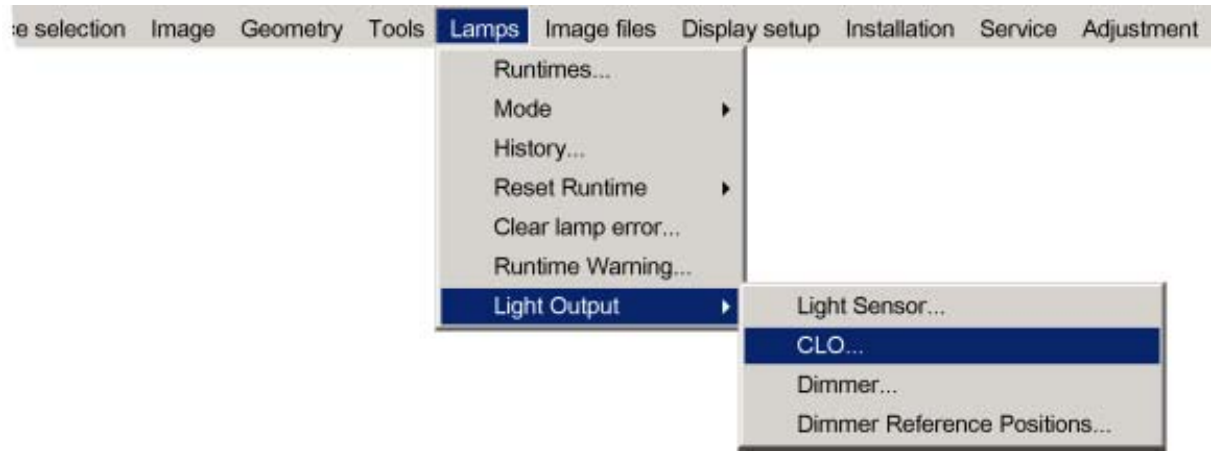



Image 10-15

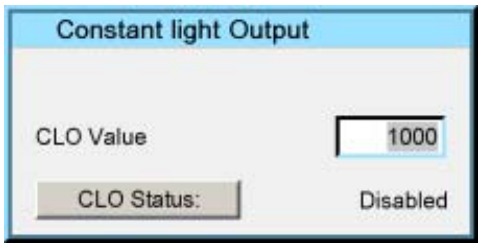



Image 10-16

### 10.8.3 Dimmer

#### What can be done?

The Light Output of the projector can be dimmed by using the Dimming adjustment.

**The Dimmer Range can be set from 100% to 3% of the Light Output.**

#### How to set the Dimmer?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Lamps* in the menubar.
3. Push the ↓ key to pull down the *Lamps* menu.
4. Push the cursor key ↑ or ↓ to highlight *Light Output*.
5. Push the → key to pull down the *Light Output* menu.
6. Push the cursor key ↑ or ↓ to select *Dimmer* and press **ENTER** to select. (image 10-17)
   The *Dimmer* dialog box will be displayed. (image 10-18)
7. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to set the Dimmer to the desired value.
8. Press **ENTER** to activate the new Dimmer setting.

9. Press **BACK** to return to the *Lamp* menu.

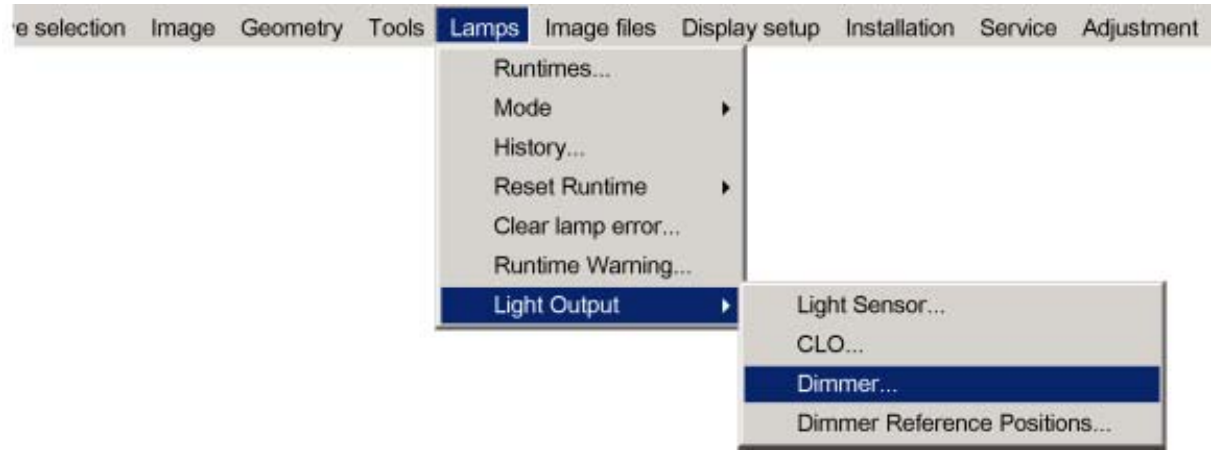



Image 10-17


Image 10-18

### 10.8.4 Dimmer Reference Positions

**CAUTION: Changing these settings may seriously affect the performance of the projector.**

#### What can be done?

This will calibrate the dimmer, the dimmer is set to the reference positions

#### How to Start Up the Dimmer Reference Positions?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Lamps* in the menubar.
3. Push the ↓ key to pull down the *Lamps* menu.
4. Push the cursor key ↑ or ↓ to highlight *Light Output*.
5. Push the → key to pull down the *Light Output* menu.
6. Push the cursor key ↑ or ↓ to select *Dimmer Reference Positions* and press **ENTER** to select. (image 10-19)

   Following warning will be displayed. (image 10-20)
7. Press **ENTER** to continue with the Dimmer Reference Positions calibration.

   The Dimmer Reference Positions will be displayed together with a full white pattern. (image 10-21)

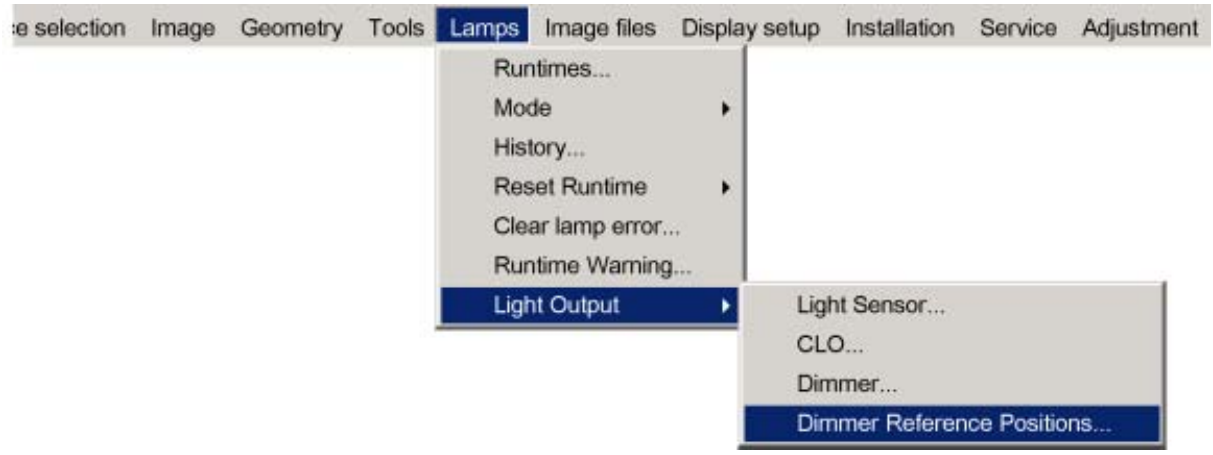



Image 10-19

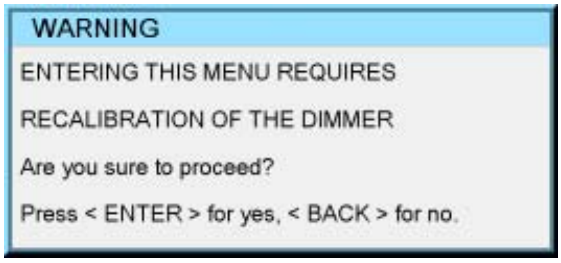



Image 10-20

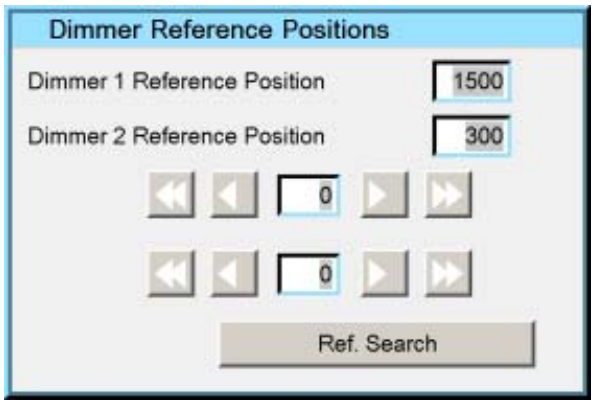



Image 10-21

### How to perform the Dimmer Reference Positions calibration?

1. Use the arrow keys on the RCU to highlight the Ref. Search Button and press **ENTER**. (image 10-22)
   The dimmers are set to the reference positions.
2. Use the arrow keys on the RCU to highlight the double right arrow button for Dimmer 1. (image 10-23)
3. Press the double right arrow key until the dimmer appears on the top edge of the screen. (image 10-24)
4. Use the fine adjustment buttons to move the dimmer back until it is just no longer visible on the full white pattern. (image 10-25)
   This is the correct reference position for Dimmer 1.
5. Use the arrow keys on the RCU to highlight the double left arrow button for Dimmer 2. (image 10-26)
6. Press the double right arrow key until the dimmer appears on the bottom edge of the screen. (image 10-27)
7. Use the fine adjustment buttons to move the dimmer back until it is just no longer visible on the full white pattern. (image 10-28)
   This is the correct reference position for Dimmer 2.
8. Press **BACK** to return to the *Lamp* menu.
   The new Dimmer Reference Points are saved.

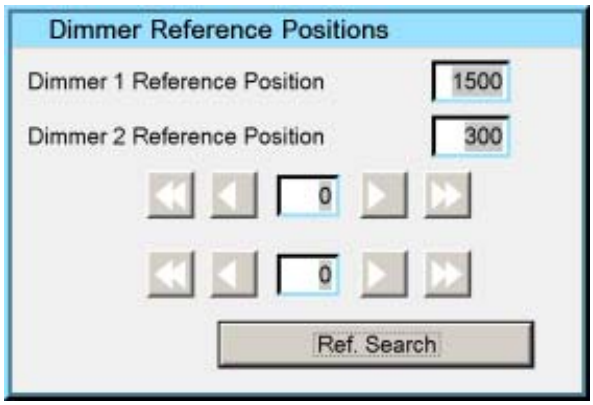



Image 10-22

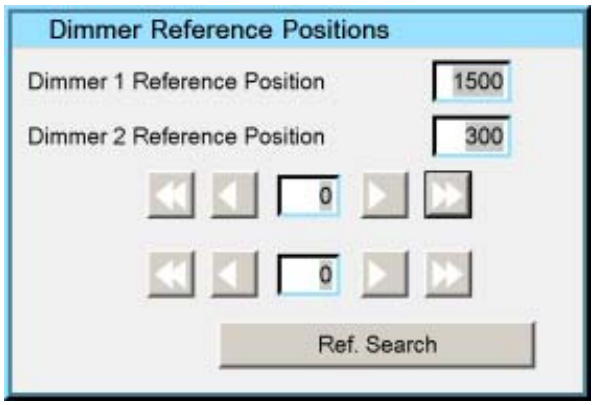



Image 10-23

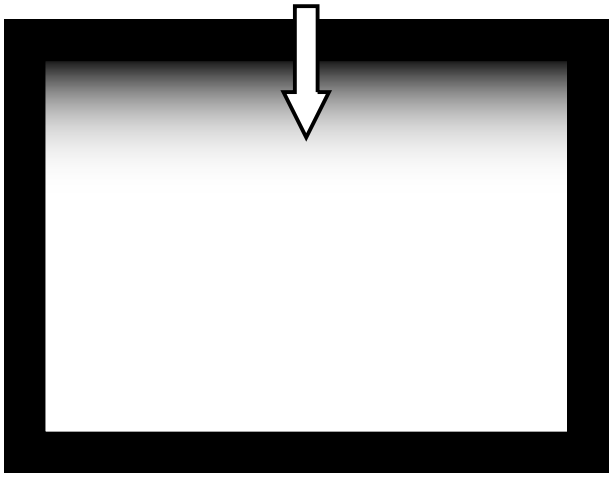


Image 10-24
Press the double right arrow key until the dimmer appears on the top edge of the screen.

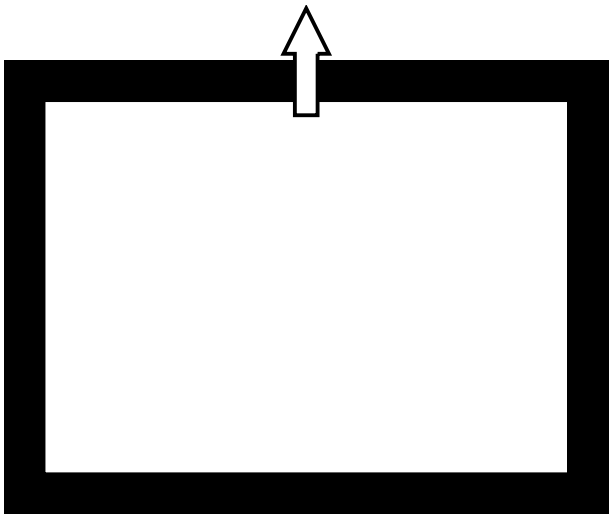


Image 10-25
Use the fine adjustment buttons to move the dimmer back until it is no longer visible

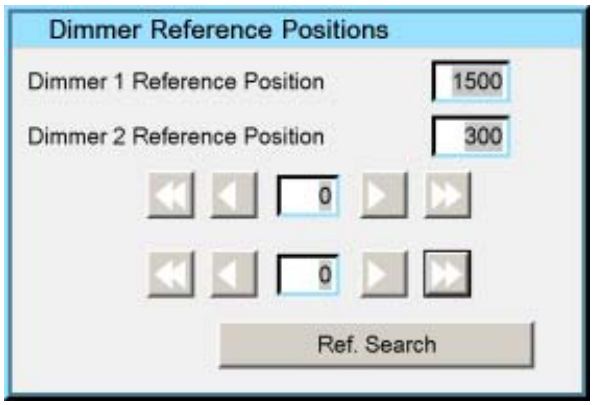



Image 10-26

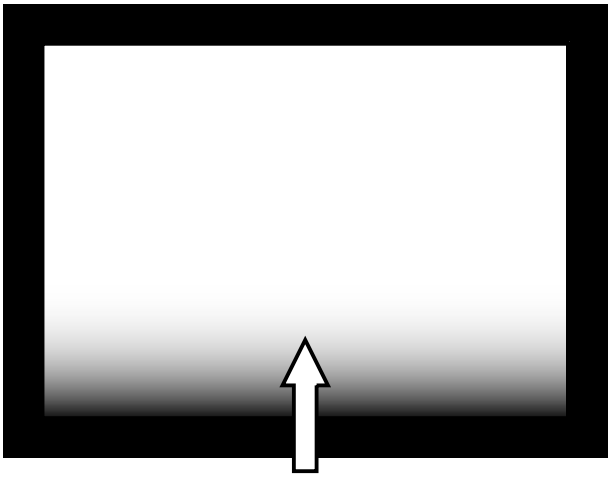


Image 10-27
Press the double right arrow key until the dimmer appears on the bottom edge of the screen

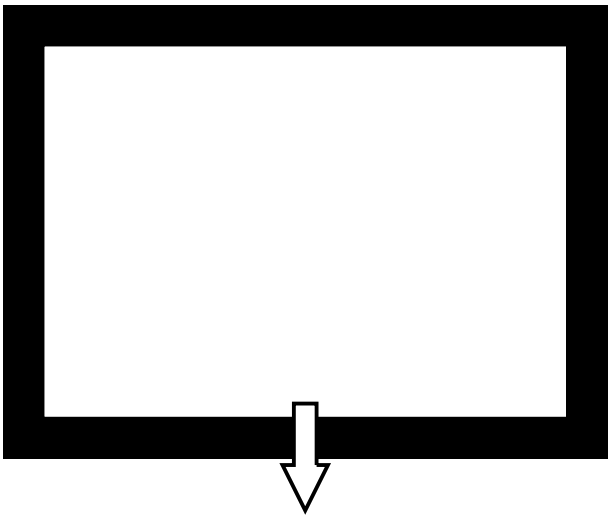


Image 10-28
Use the fine adjustment buttons to move the dimmer back until it is no longer visible

# 11. IMAGE FILES MENU

### Overview

- Image Files Menu Overview
- Source Files
- Load
- File Load
- Edit
- Rename
- Copy
- Delete

## 11.1 Image Files Menu Overview

### Image Files Menu Overview

- Load
  - Matching Files
  - All Files
- File Load
  - Manual
  - Automatic
- Edit
- Rename
- Copy
- Delete

## 11.2 Source Files

### What can be done?

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

**File loading can be done automatically. Files with a ~ in front of the file name are temporary files. These files will be deleted when switching to another source.**

### Source File Notation

The file notation on a menu is built up in different parts. Let us have a look to these parts.

Take the following notation: xxxxxxxx.eee n ppppXppppi

| | |
|---|---|
| xxxxxxxx | base name, 8 characters |
| eee | file extension<br>first character c : custom made file<br>first character s : standard file<br>The second and third character is used for a following number (= file index). The file index for custom files : 01 to 20. |
| n | source number |

| | |
|---|---|
| ppppXpppp | active pixel rating |
| i | i or blank<br>i = interlaced file<br>blank = not interlaced |

### Available Source File Manipulations

The following file manipulations are possible:

- Load: installation of a file for a new source.
- Edit: editing a loaded file to the source specs.
- Rename: renaming a file.
- Copy: copying a file.
- Delete: deleting a file

## 11.3 Load

### What can be done?

This menu item is used to load any desired standard or custom source file.

### How to Load a file?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Image Files* in the menubar.
3. Push the ↓ key to pull down the *Image Files* menu.
4. Push the cursor key ↑ or ↓ to highlight *Load*.
5. Push the → key to pull down the *Load* menu.
6. Push the cursor key ↑ or ↓ to select *Matching Files* or *All Files*. (image 11-1)

| | |
|---|---|
| **Matching Files** | Only the best fitting files will be displayed (with a distinction of ± 2 lines and line duration of ± 300 ns. , if nothing is found within this small area, the projector continues searching until it finds something). |
| **All Files** | All files that can be loaded will be displayed |

7. Press **ENTER** to select.

   The *Load file* dialog box will be displayed. (image 11-2)

8. Use the cursor key ↑ and ↓ to select the desired file and press **ENTER** to select.

   The file is loaded and the image is adapted.

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

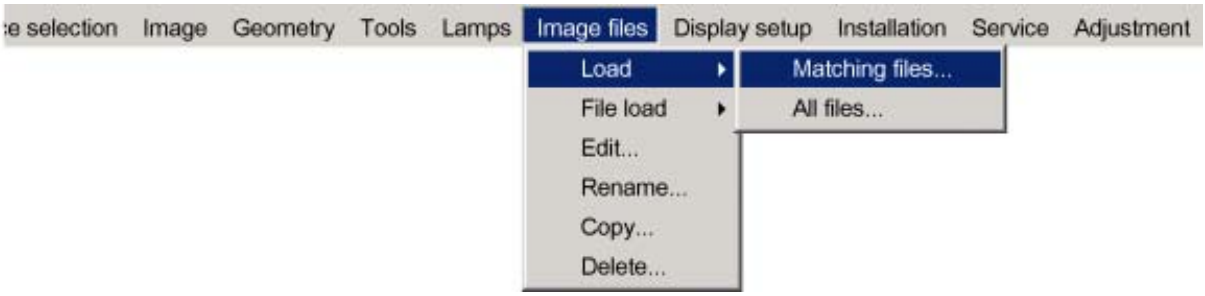



Image 11-1

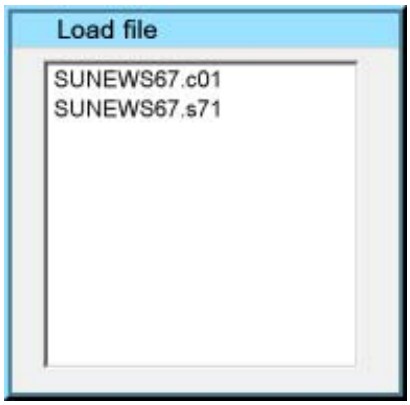



Image 11-2

## 11.4 File Load

### What can be done?

This menu item will set the desired File Load Setting.

| | |
|---|---|
| **Automatic** | The projector will automatically load the file that is best suited for the selected Input Slot. |
| **Manual** | The user will select and load the desired file. |

### How to set File Load?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Image Files* in the menubar.
3. Push the ↓ key to pull down the *Image Files* menu.
4. Push the cursor key ↑ or ↓ to highlight *File Load*.
5. Push the → key to pull down the *File Load* menu.
6. Push the cursor key ↑ or ↓ to select *Manual* or *Automatic*. (image 11-3)
7. Press **ENTER** to activate the new File Load setting.

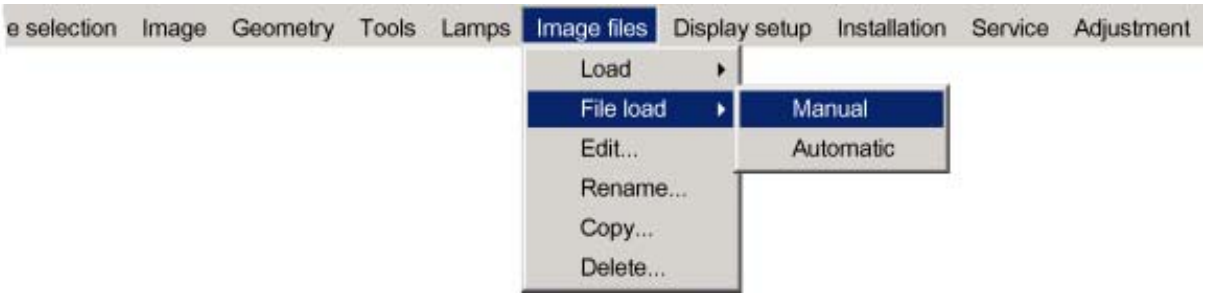



Image 11-3

## 11.5 Edit

### What can be done?

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

Following items can be adjusted in the main dialog box:

| | |
|---|---|
| **Horizontal Total Pixels** | If the value for "Horizontal Total Pixels" is wrong, sampling mistakes (small vertical bars with noisy and unsharp data in the projected image) will be seen in the image.<br>Project a pixel on/of pattern, select "Total" and adjust the pixel quantity. Adjust for zero bars. If the number of bars increase, adjust in the other direction. |
| **Active Pixels** | The "Active Pixels": determine the width of the window on the screen. This value is normally given in the source specifications. If not, adjust until full image is displayed (no missing pixels). |
| **Horizontal Start** | Number of pixels between the beginning of the input signal and the start of the video information in the signal. |
| **Horizontal Period** | Already filled in with the correct value when active file. |
| **Vertical Total Lines** | Already filled when an active file is selected to be edited. |
| **Active Lines** | Number of horizontal lines determining the height of the projected image. This value is normally given in the specification of the source. If not, adjust until full image height is displayed (no missing lines). |
| **Vertical Start** | Number of lines between the start of the input signal and start of the image on the screen. |

## How to Edit a file?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Image Files* in the menubar.
3. Push the ↓ key to pull down the *Image Files* menu.
4. Push the cursor key ↑ or ↓ to highlight *Edit* and press **ENTER** to select. (image 11-4)

   The *Edit custom file* selection box will be displayed. (image 11-5)
5. Push the cursor key ↑ or ↓ to highlight the desired file and press **ENTER** to select.

   The *Edit custom file* dialog box will be displayed. (image 11-6)
6. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, confirm with **ENTER**.
   ***Note:*** *Fields that are grayed out are not updated (Total Pixels).*

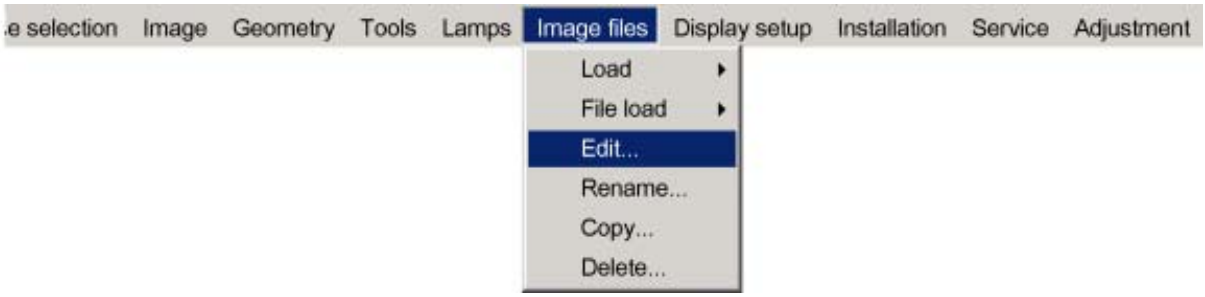



Image 11-4


Image 11-5

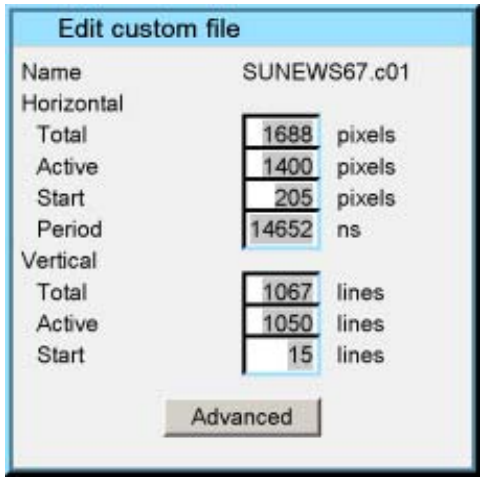



Image 11-6

## How to use the Advanced Edit mode?

1. Push the cursor key ↑ or ↓ to highlight *Advanced* and press **ENTER** to select.

   The Advanced Edit dialog box will be displayed. (image 11-7)

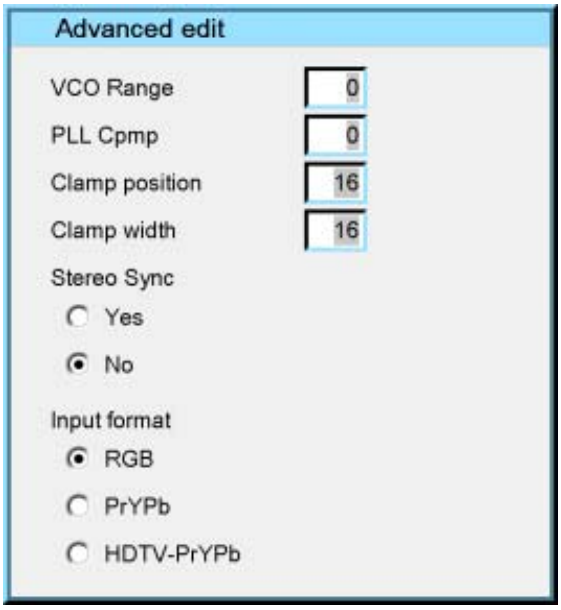



Image 11-7

## Advanced Edit Settings

Following Advanced Parameters can be adjusted:

| | |
|---|---|
| **VCO Range** | This setting determines the frequency range of the VCO (Voltage Controlled Oscillator), changing these settings is only indicated in for special purposes. |
| **PLL Cpmp** | Charge pump current, sets the low pass filter current, changing these settings is only indicated in for special purposes. |
| **Clamp position** | Clamping determines the black level of the signal. The position of the clamp pulse can be any value between 0 and 255. |

| | |
|---|---|
| **Clamp width** | The width of the clamp pulse can be any value between 0 and 255. |
| **Input format** | These settings are used to "tell more" about the signals connected on the BNC's, it completes the information in the source selection menu:<br>• RGB is selected by default and means that an RGB signal is connected to the BNC's.<br>• Pr/Y/Pb must be selected whenever:<br>- A progressive signal (32 kHz frequency video signal ) is connected to the BNC's (select the source with *Data on BNC's* in the Source selection menu).<br>- One wants (in PiP mode) to visualize the component video signal in a Data window hereby adding a video image in the PiP layout.<br>• HDTV-PR/Y/PB is used for high definition component video signals. |

## 11.6 Rename

### What can be done?

This menu item is used to rename a custom source file.

### How to Rename a file?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Image Files* in the menubar.
3. Push the ↓ key to pull down the *Image Files* menu.
4. Push the cursor key ↑ or ↓ to highlight *Rename* and press **ENTER** to select. (image 11-8)

   The Rename custom file selection box will be displayed. (image 11-9)
5. Push the cursor key ↑ or ↓ to highlight the desired file and press **ENTER** to select.

   The Rename custom file dialog box will be displayed. (image 11-10)
6. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, confirm with **ENTER**.

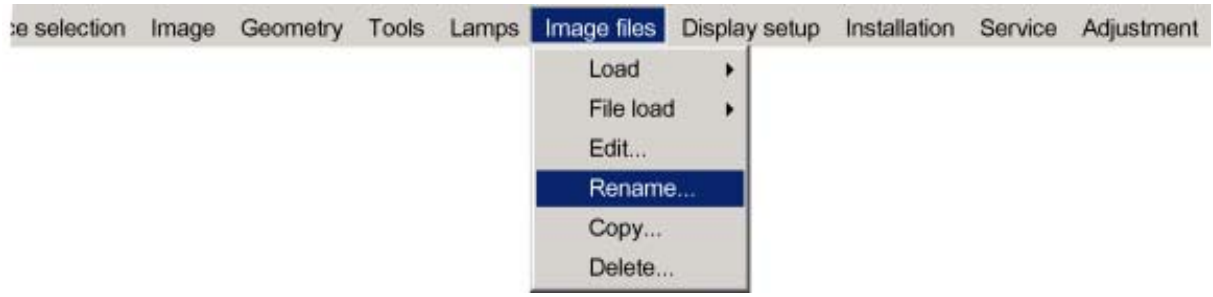



Image 11-8

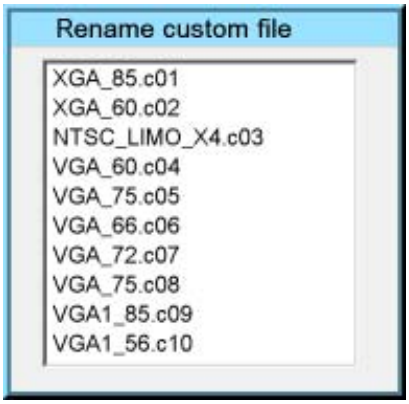



Image 11-9

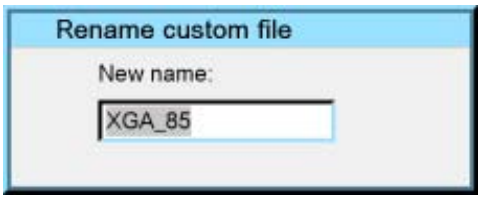



Image 11-10

## 11.7 Copy

### What can be done?

This menu item is used to copy a preset or custom source file to a new custom source file.

### How to Copy a file?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Image Files* in the menubar.
3. Push the ↓ key to pull down the *Image Files* menu.
4. Push the cursor key ↑ or ↓ to highlight *Copy* and press **ENTER** to select. (image 11-11)

   The Copy file selection box will be displayed. (image 11-12)
5. Push the cursor key ↑ or ↓ to highlight the desired file to be copied and press **ENTER** to confirm.

   The Copy file rename box will be displayed, the file name is copied in the edit field. (image 11-13)
6. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, confirm with **ENTER**.

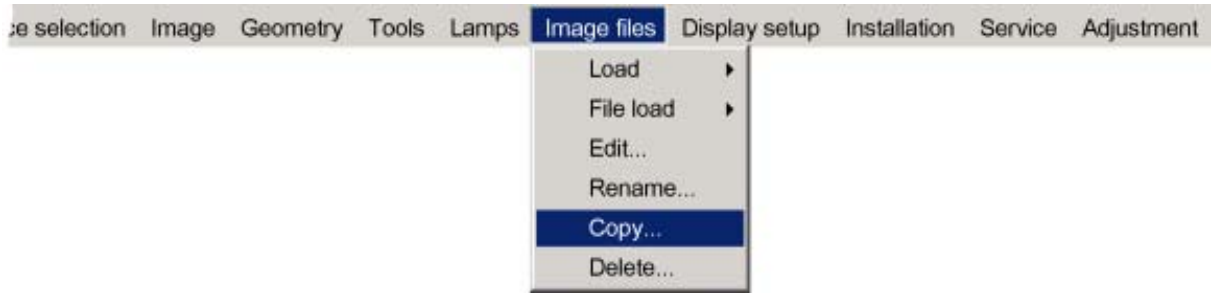



Image 11-11

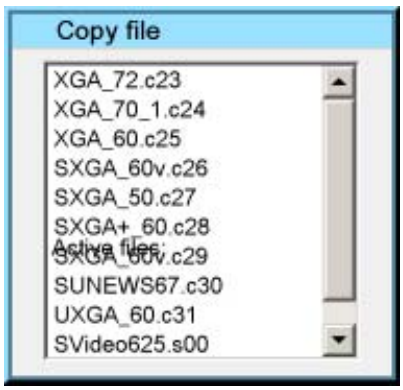



Image 11-12


Image 11-13

## 11.8 Delete

### What can be done?

This menu item is used to delete a custom source file.

### How to Delete a file?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Image Files* in the menubar.
3. Push the ↓ key to pull down the *Image Files* menu.
4. Push the cursor key ↑ or ↓ to highlight *Delete* and press **ENTER** to select. (image 11-14)

   The Delete custom file selection box will be displayed. (image 11-15)
5. Push the cursor key ↑ or ↓ to highlight the desired file.
6. Press **ENTER** to confirm.

The selected file is deleted and removed from the list.

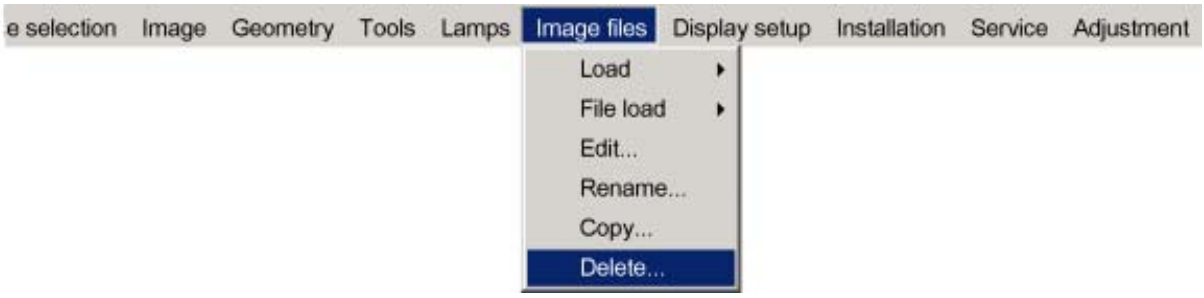



Image 11-14


Image 11-15

# 12. DISPLAY SETUP MENU

### Overview

- Menu Bar Position
- Status Bar position
- Sliderbox Position
- Text Box

## 12.1 Menu Bar Position

### What can be done?

The position of the menu toolbar can be adjusted vertically, this can be useful in applications where the top image content is not displayed e.g. when a softegde is used on the top side.

**The Range for the Menu Bar Position is from the top to the middle of the screen.**

### How to adjust the Menu Bar Position?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Display Setup* in the menubar.
3. Push the ↓ key to pull down the *Display Setup* menu.
4. Push the cursor key ↑ or ↓ to highlight *Menu Bar Position* and press **ENTER** to select. (image 12-1)

   The Menu Bar Position info box will be displayed on the bottom of the screen. (image 12-2)
5. Use the cursor keys ↑ and ↓ to move the Menu Bar to the desired position.
6. Press **ENTER** to confirm.

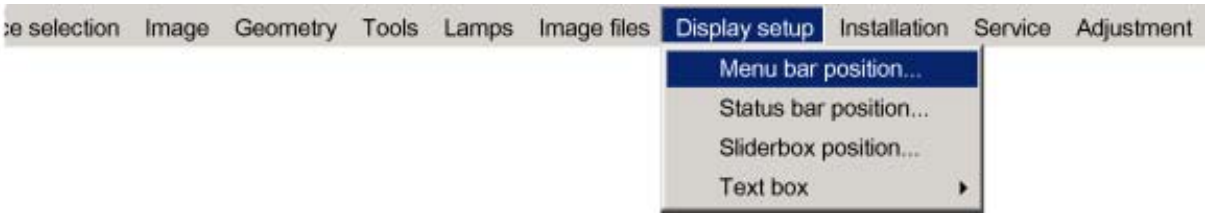



Image 12-1


Image 12-2

## 12.2 Status Bar position

### What can be done?

The position of the status bar can be adjusted vertically, this can be useful in applications where the bottom image content is not displayed e.g. when a soft egde is used on the bottom side.

**The Range for the Status Bar Position is from the bottom of the screen to the middle of the screen.**

### How to adjust the Status Bar Position

1. Press the **MENU** key to activate the Menu bar.

2. Push the cursor key ← or → to highlight *Display Setup* in the menubar.
3. Push the ↓ key to pull down the *Display Setup* menu.
4. Push the cursor key ↑ or ↓ to highlight *Status Bar Position* and press **ENTER** to select. (image 12-3)

   The Status Bar Position info box will be displayed on the bottom of the screen. (image 12-4)
5. Use the cursor keys ↑ and ↓ to move the Menu Bar to the desired position.
6. Press **ENTER** to confirm.

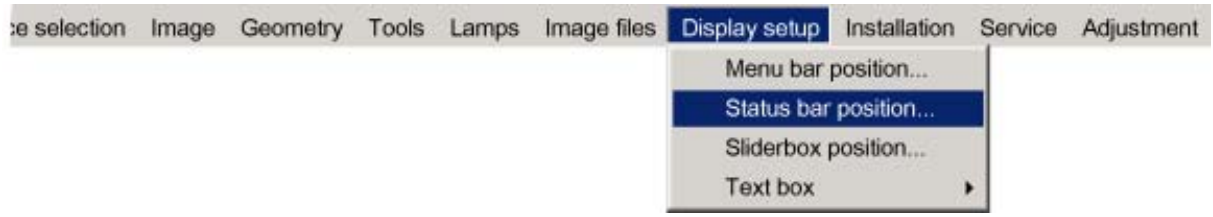



Image 12-3


Image 12-4

## 12.3 Sliderbox Position

### What can be done?

The Sliderbox can be displayed anywhere on the screen, within this menu it is possible to adjust the position of the sliderbox.

### How to adjust the Sliderbox Position?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Display Setup* in the menubar.
3. Push the ↓ key to pull down the *Display Setup* menu.
4. Push the cursor key ↑ or ↓ to highlight *Sliderbox Position* and press **ENTER** to select. (image 12-5)

   The Sliderbox dialog box will be displayed. (image 12-6)
5. Use the cursor keys to move the Sliderbox to the desired position.
   ***Note:*** *Press **ENTER** for fine adjustment.*

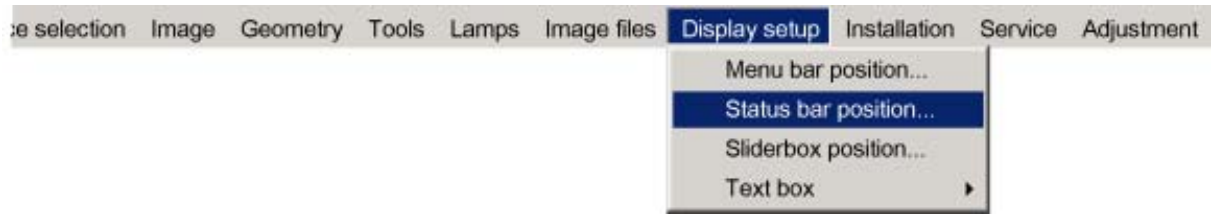



Image 12-5

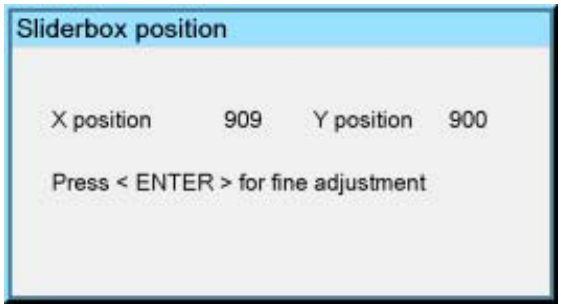



Image 12-6

## 12.4 Text Box

### What can be done?

The text box function is used to display different sliderboxes for e.g. picture settings, contrast, ..., this also displays the source information windows, displayed in the right lower corner of the screen.

Within this menu it is possible to set the Text Box On or Off.

**By default Test Box is set to On.**

### How to change the Text Box Setting?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Display Setup* in the menubar.
3. Push the ↓ key to pull down the *Display Setup* menu.
4. Push the cursor key ↑ or ↓ to highlight *Text Box* and press **ENTER** to select.
5. Push the → key to pull down the *Text Box* menu.
6. Push the cursor key ↑ or ↓ to select *On* or *Off*. (image 12-7)
7. Press **ENTER** to confirm.

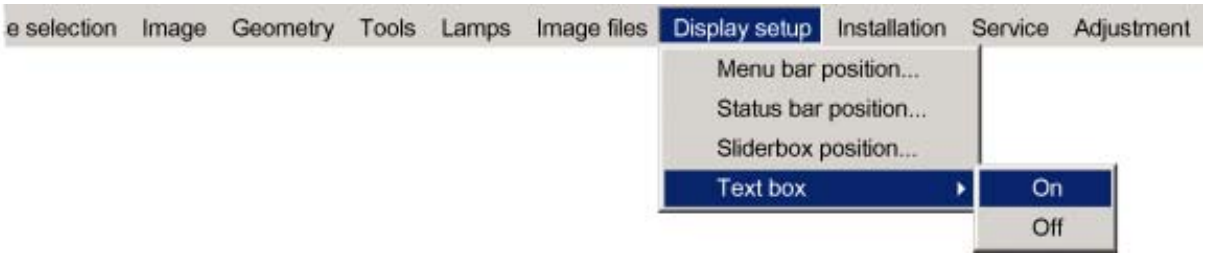



Image 12-7

# 13. INSTALLATION MENU

### Overview

- Lens Adjustment
- Identification
- Projector Address
- Orientation
- Color Wheel Index
- RS232
- Internal Patterns
- Scaled Patterns
- Automatic Startup
- Background
- Factory Preset CWI

## 13.1 Lens Adjustment

### What can be done?

Motorized lenses can be adjusted in the installation menu or via the dedicated keys on the remote.

Following lens parameters can be adjusted:

- Zoom[3]
- Focus[3]
- Shift

### How to use the Lens Adjustment?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Installation* in the menubar.
3. Push the ↓ key to pull down the *Installation* menu.
4. Push the cursor key ↑ or ↓ to highlight *Lens Adjustment* and press **ENTER** to select. (image 13-1)

   The Lens Adjustment dialog box will be displayed.

| **Keys** | **Zoom+Focus Mode** | **Shift Mode** |
|---|---|---|
| **ENTER** | Toggles between Zoom+Focus and Shift Mode | |
| ↑ and ↓ keys | Zoom | Vertical Shift Adjustment |
| ← and → keys | Focus | Horizontal Shift Adjustment |
| **LOGO** or **LENS** | Lens Adjustment Test Pattern | - (image 13-2, image 13-3) |

3. Only for motorized lenses

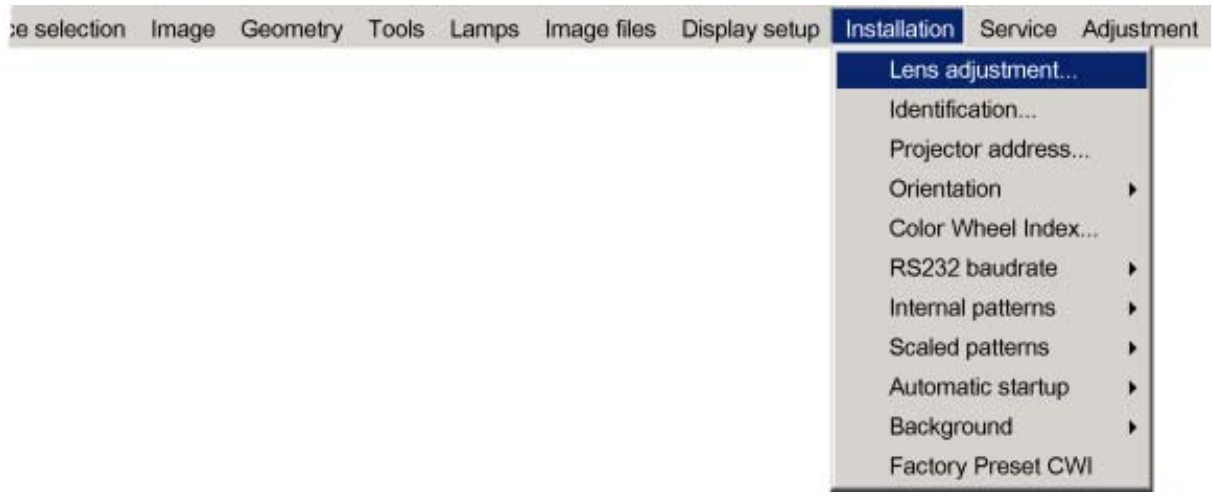



Image 13-1

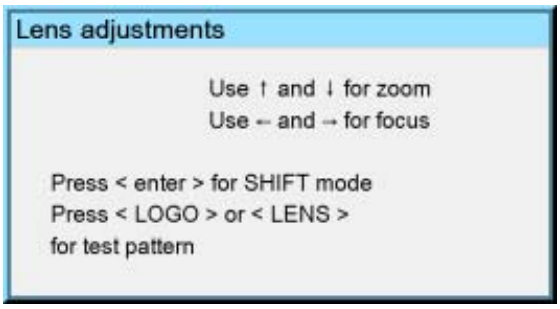



Image 13-2

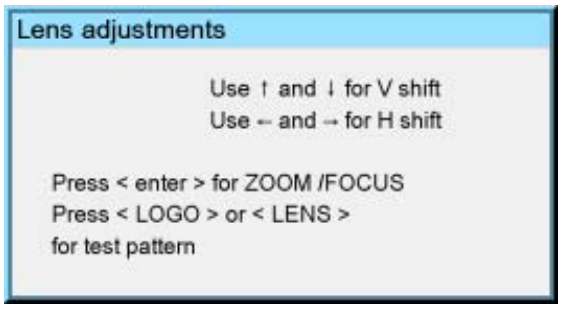



Image 13-3

**The BarcoReality SIM 5plus has a off-axis adjustable Vertical Lens Shift Range from +115% to –25% and a off-axis adjustable Horizontal Lens Shift Range: +100% in one direction (away from the inputs) (see "Lens Shift Capability", page 21).**

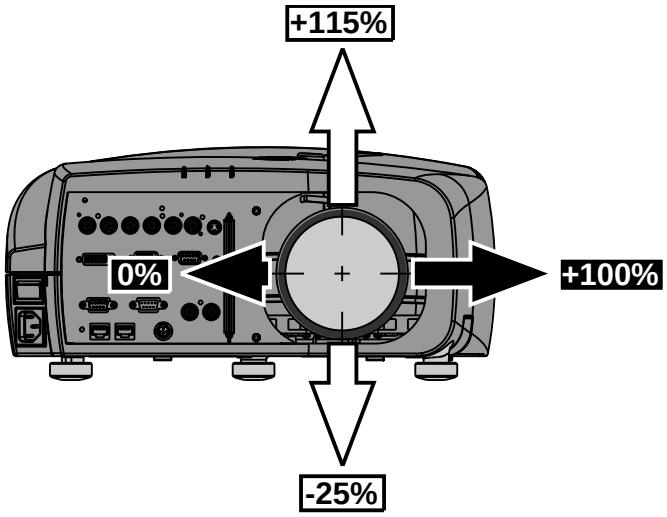



**Image 13-4**
**BarcoReality SIM 5plus Lens Shift Range**

## 13.2 Identification

### What can be done?

The identification screen displays the projector's main characteristics.

Following information is displayed:

- Projector Type
- Projector Address
- Software Version
- Pip Option Status
- Video Selector Option Active
- Serial Number
- IP Address

### How to consult the Identification screen?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Installation* in the menubar.
3. Push the ↓ key to pull down the *Installation* menu.
4. Push the cursor key ↑ or ↓ to highlight *Identification* and press **ENTER** to select. (image 13-5)

   The *Identification* screen will be displayed. (image 13-6)

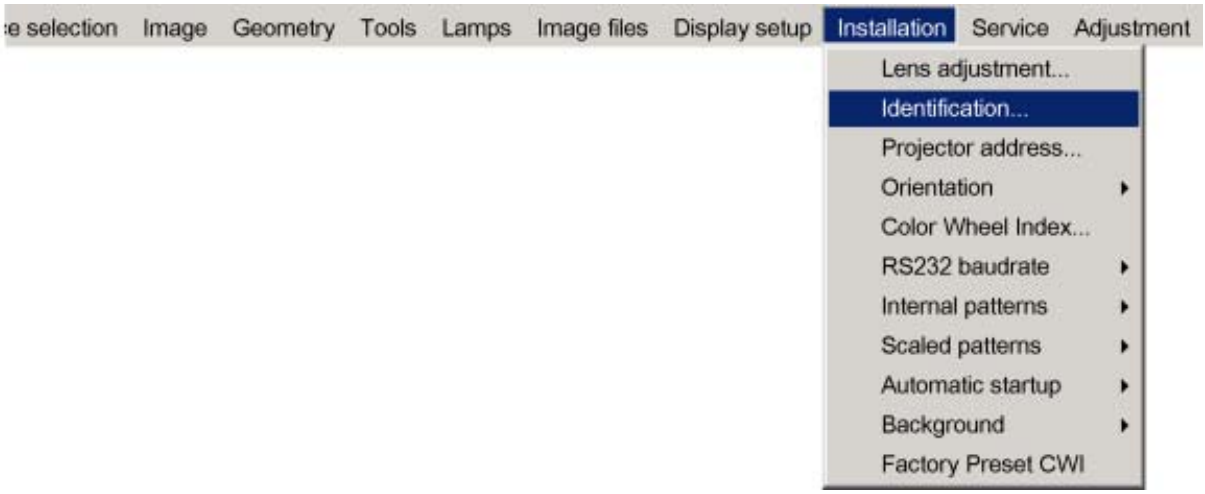



Image 13-5

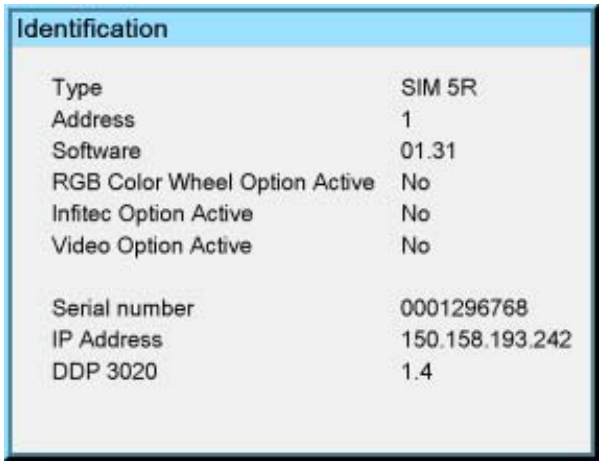



Image 13-6

## 13.3 Projector Address

### What can be done?

The Projector Address and Common Address can be set within this menu.

## What is Projector Address?

Each projector can be set to an individual Projector Address, this can be set between ’0’ and ’255’.

| Projector Address | Controlled by |
|---|---|
| 0–9 | RCU |
| 0–255 | Computer (IBM PC or compatible, Apple, ...) |

**Regardless of the Projector Address, the projector will still respond to a RCU set to address ’0’ or ’1’ through the Common Address.**

## What is Common Address 0?

Every projector has a Common Address default set to ’0’, when the RCU is set to address ’0’, every projector, without exception will listen to the commands given by this RCU.

## When to use Common Address 0?

- Since the RCU is default set to address ’0’, this is used by default to control the projector in a single projector setup.
- The Common Address is used to control multiple projectors using only a single RCU.

## When to use Common Address 1?

Most RCU’s used by other electronic equipment are set to address ’0’, to disable the interference of other RCU’s the Common Address of the projector(s) can be set to ’1’. When the projector’s RCU is set to address ’1’, every projector, without exception will listen to the commands given by this RCU.

## How to set the Projector and Common Address?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Installation* in the menubar.
3. Push the ↓ key to pull down the *Installation* menu.
4. Push the cursor key ↑ or ↓ to highlight *Projector Address* and press **ENTER** to select. (image 13-7)

   The *Projector Address* screen will be displayed. (image 13-8)
5. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to edit and change the values, confirm with **ENTER**. (image 13-9)

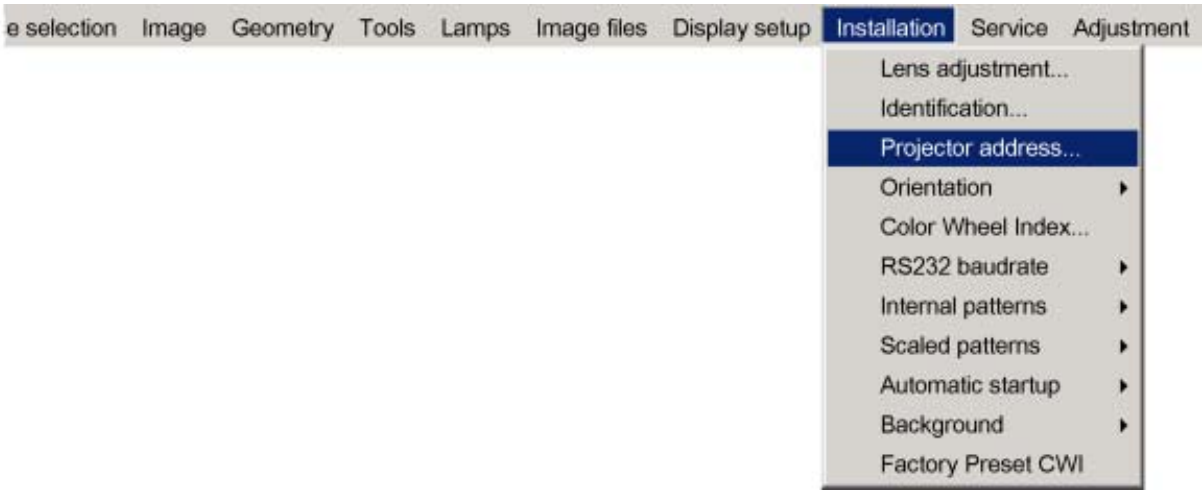



Image 13-7

Image 13-8

Image 13-9

## 13.4 Orientation

### What can be done?

The way of physical installation of the projector can be defined to the projector.

The following installation configurations are possible:

- Front / table
- Front / ceiling
- Rear / table
- Rear / ceiling

### How to set Orientation?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Installation* in the menubar.
3. Push the ↓ key to pull down the *Installation* menu.
4. Push the cursor key ↑ or ↓ to highlight *Orientation* and press **ENTER** to select.

   The *Orientation* screen will be displayed.
5. Push the cursor key ↑ or ↓ to highlight the desired orientation and press **ENTER** to confirm. (image 13-10)

   The projection is adapted and a bullet shows the active configuration.

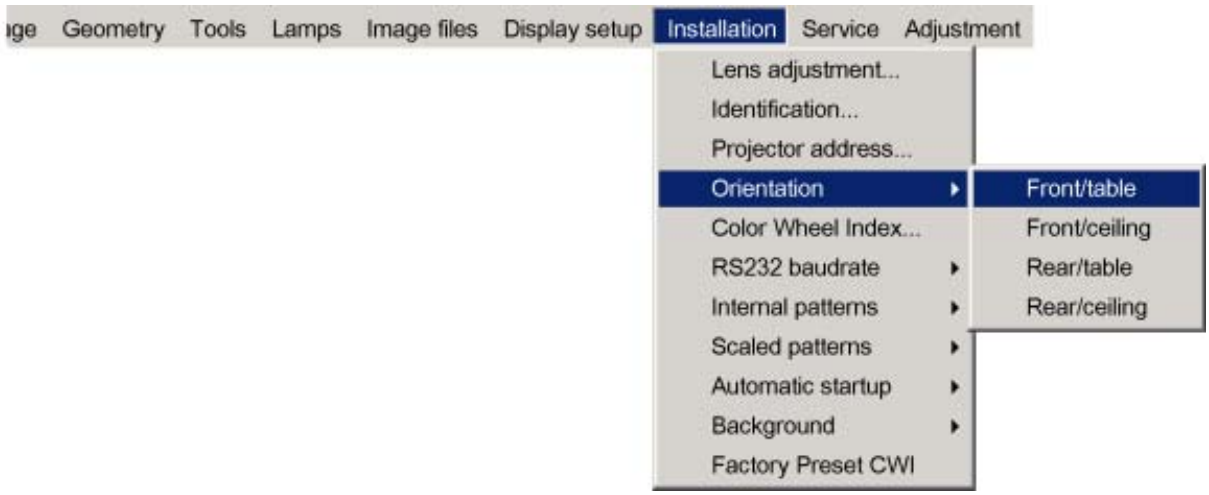


Image 13-10

## 13.5 Color Wheel Index

**CAUTION: Changing these settings may seriously affect the performance of the projector, return to the factory setting by pressing Factory Preset CWI.**

### What can be done?

This adjustment has to be done by qualified service personnel when a new color wheel is installed.

### How to set the Color Wheel Index?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Installation* in the menubar.
3. Push the ↓ key to pull down the *Installation* menu.
4. Push the cursor key ↑ or ↓ to highlight *Color Wheel Index* and press **ENTER** to select. (image 13-11)
   ***Tip:*** *Press the **LOGO** key to display a full white pattern.*

   The Color Wheel Index bar scale will be displayed. (image 13-12)
5. Use the cursor key ← or → , the numeric keys on the RCU, or the local keypad, to adjust the Color Wheel Index, confirm with **ENTER**.
6. Press **BACK** to return to the *Installation* menu.

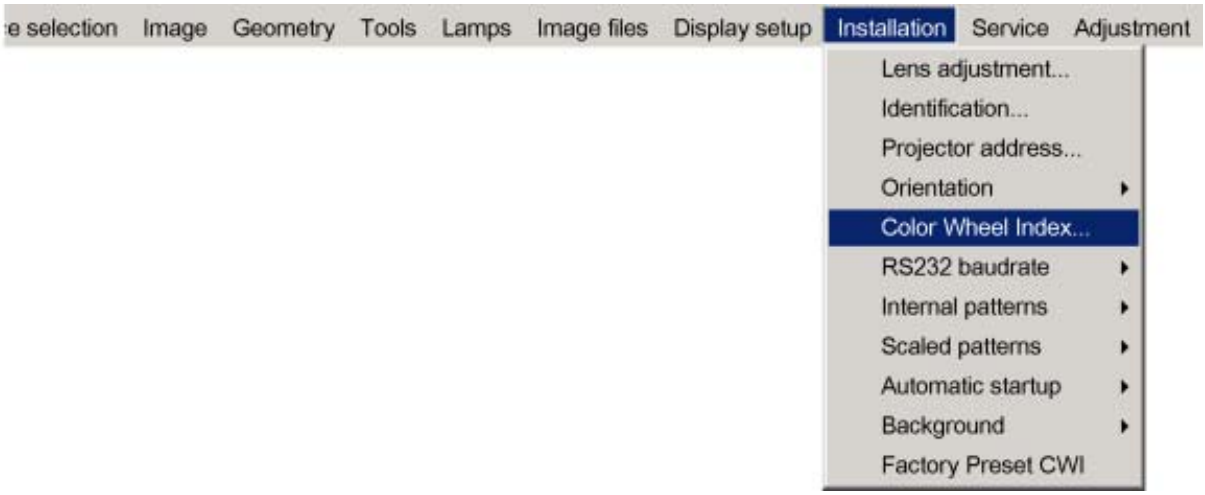



Image 13-11


Image 13-12

## 13.6 RS232

### What can be done?

Within this menu it is possible to set the baudrate on the projector for the RS232 communication.

Following baurates are available:

- 9600
- 19200
- 38400
- 57600

### How to set the RS232 Baudrate?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Installation* in the menubar.
3. Push the ↓ key to pull down the *Installation* menu.
4. Push the → key to pull down the *RS232...* menu.
5. Push the cursor key ↑ or ↓ to highlight the desired RS232 baurate e.g. 38400 and press **ENTER** to confirm. (image 13-13)

   The selected RS232 baudrate will be used during the RS communication.
6. Press **BACK** to return to the *Installation* menu.

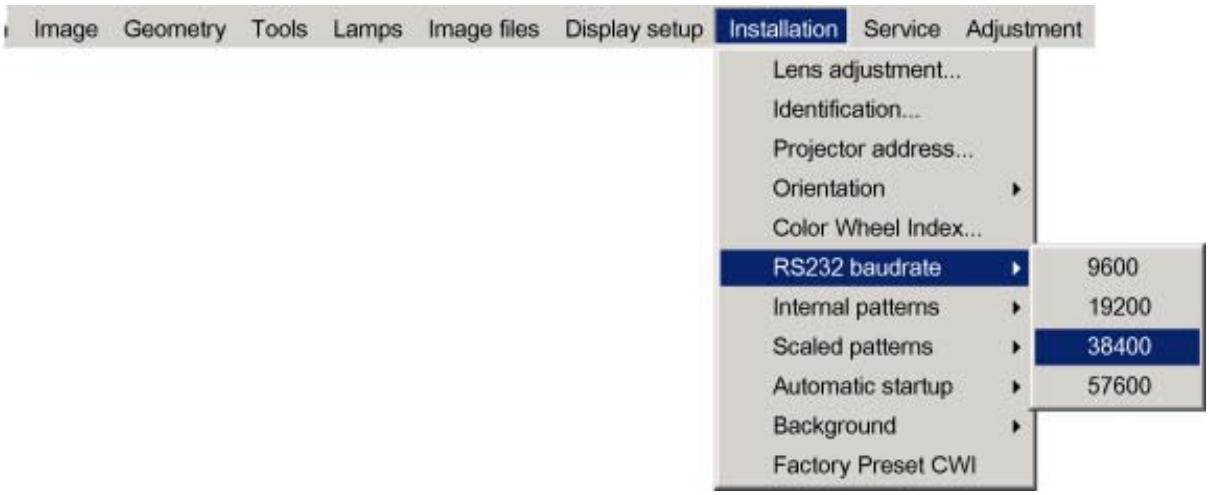



Image 13-13

## 13.7 Internal Patterns

### What can be done?

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

**WARP 6™ Geometry adjustments can not be used on these internal patterns.**

## Available Internal Patterns

- Outline

Image 13-14
Internal Outline pattern

- Hatch

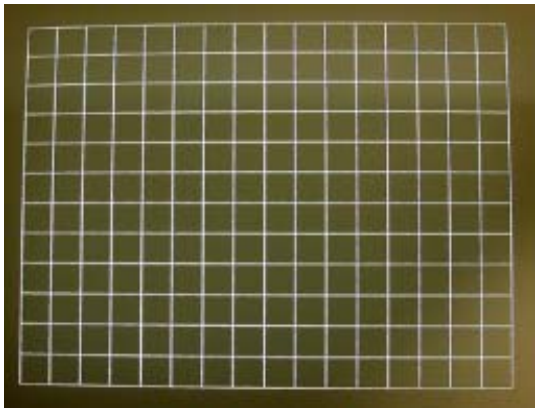


Image 13-15
Internal Hatch pattern

- Color Bars

Image 13-16
Internal Color Bars pattern

- Checkerboard

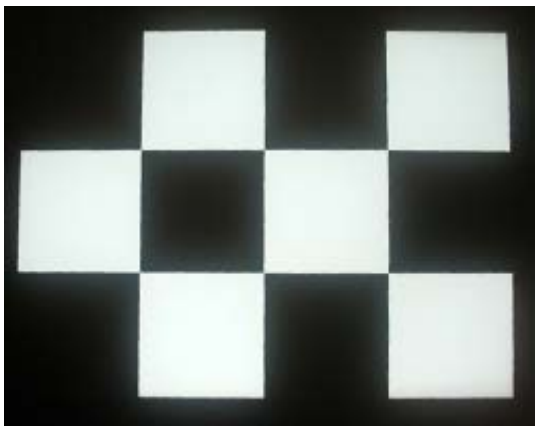


Image 13-17
Internal Checkerboard pattern

- Full White

Image 13-18
Internal Full White pattern

- RGBWS

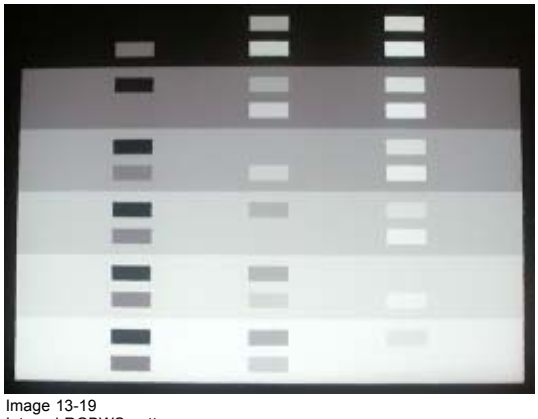


Image 13-19
Internal RGBWS pattern

- Character Set

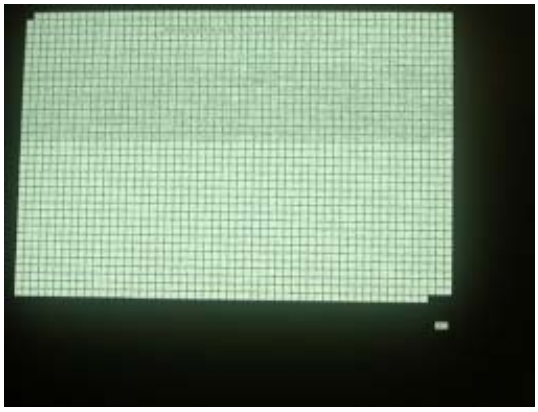


Image 13-20
Internal Character Set pattern

- Purity

## Purity Pattern

This allows the user to check the gradual transition between the different color levels (=Purity).

**These colors are generated by the projector.**

Following dialog box is displayed when the internal purity pattern is selected, use the buttons to change the transition level:

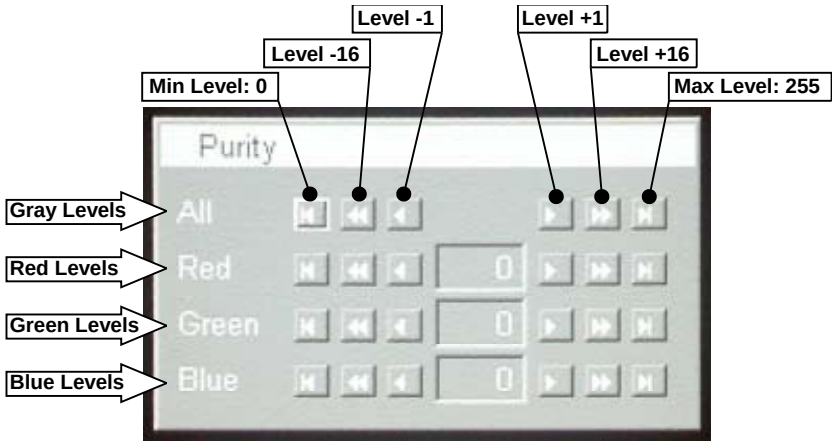



Image 13-21
Internal Purity Dialog Box

## How to display an Internal Pattern?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Installation* in the menubar.
3. Push the ↓ key to pull down the *Installation* menu.
4. Push the cursor key ↑ or ↓ to highlight *Internal Pattern*.
5. Push the → key to pull down the *Internal Pattern* menu.
6. Push the cursor key ↑ or ↓ to highlight the desired Internal Pattern e.g. *Checkerboard* and press **ENTER** to confirm. (image 13-22)
   The Internal Pattern will be displayed.
7. Press **BACK** to return to the *Installation* menu.

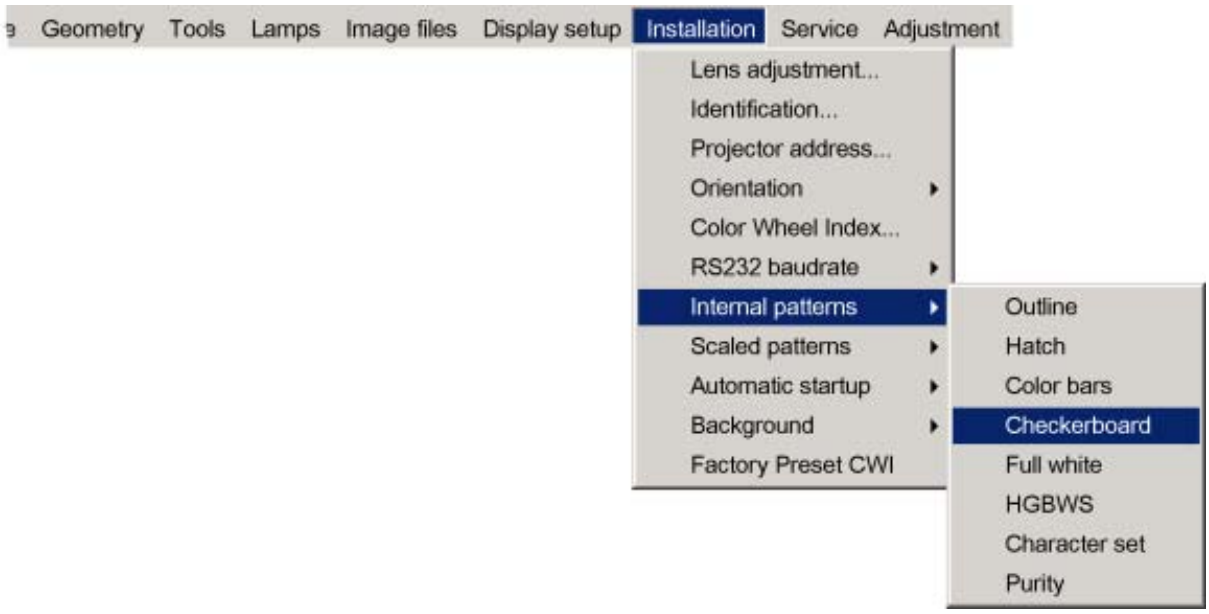



Image 13-22

## 13.8 Scaled Patterns

### What can be done?

These Scaled Patterns can be used for measurement purposes, unlike the Internal Pattern, the Scaled Patterns will be distorted according to the active Geometry File.

### Available Scaled Patterns

**Following pictures show the available Scaled Patterns with an active zenith geometry file.**

- none
- Outline

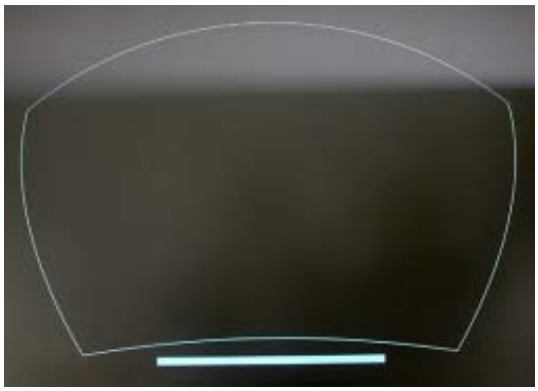


Image 13-23
Scaled Outline pattern

- Hatch

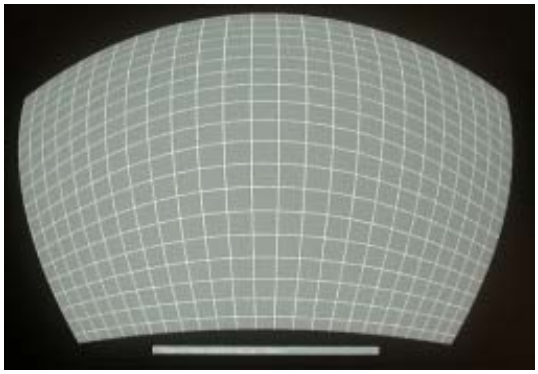


Image 13-24
Scaled Hatch pattern

- Horizontal Grayscale

Image 13-25
Scaled Horizontal Grayscale pattern

- Vertical Grayscale

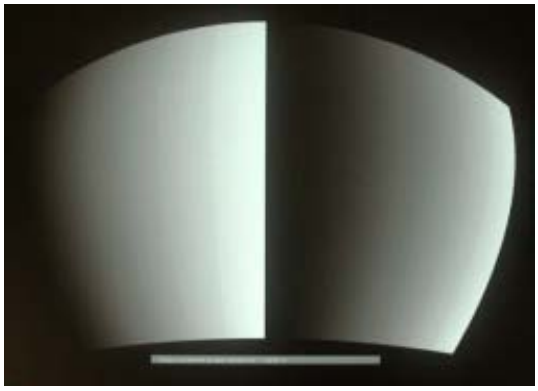


Image 13-26
Scaled Vertical Grayscale pattern

- Horizontal Graybars

Image 13-27
Scaled Horizontal Graybars pattern

- Vertical Graybars

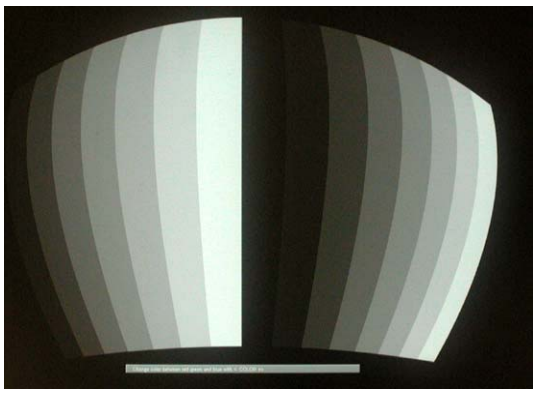


Image 13-28
Scaled Vertival Graybars pattern

- Checkerboard

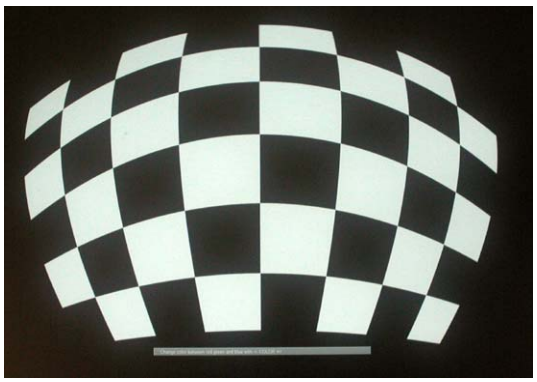


Image 13-29
Scaled Checkerboard pattern

- Horizontal Colorbars

Image 13-30
Scaled Horizontal pattern

- Vertical Colorbars

Image 13-31
Scaled Vertical Colorbars pattern

- Purity

Image 13-32
Scaled Purity pattern

- Horizontal Colorscale

Image 13-33
Scaled Horizontal Colorscale pattern

- Vertical Colorscale

Image 13-34
Scale Vertical Colorscale pattern

### How to display an Scaled Pattern?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Installation* in the menubar.
3. Push the ↓ key to pull down the *Installation* menu.
4. Push the cursor key ↑ or ↓ to highlight *Scaled Pattern*.
5. Push the → key to pull down the *Scaled Pattern* menu.
6. Push the cursor key ↑ or ↓ to highlight the desired Scaled Pattern e.g. *Horizontal Grayscale* and press **ENTER** to confirm. (image 13-35)

   The selected Scaled Pattern is displayed.
7. Press the **– COLOR** + key to change color between Red, Green and Blue. (image 13-36)
8. Press **BACK** to return to the *Installation* menu.

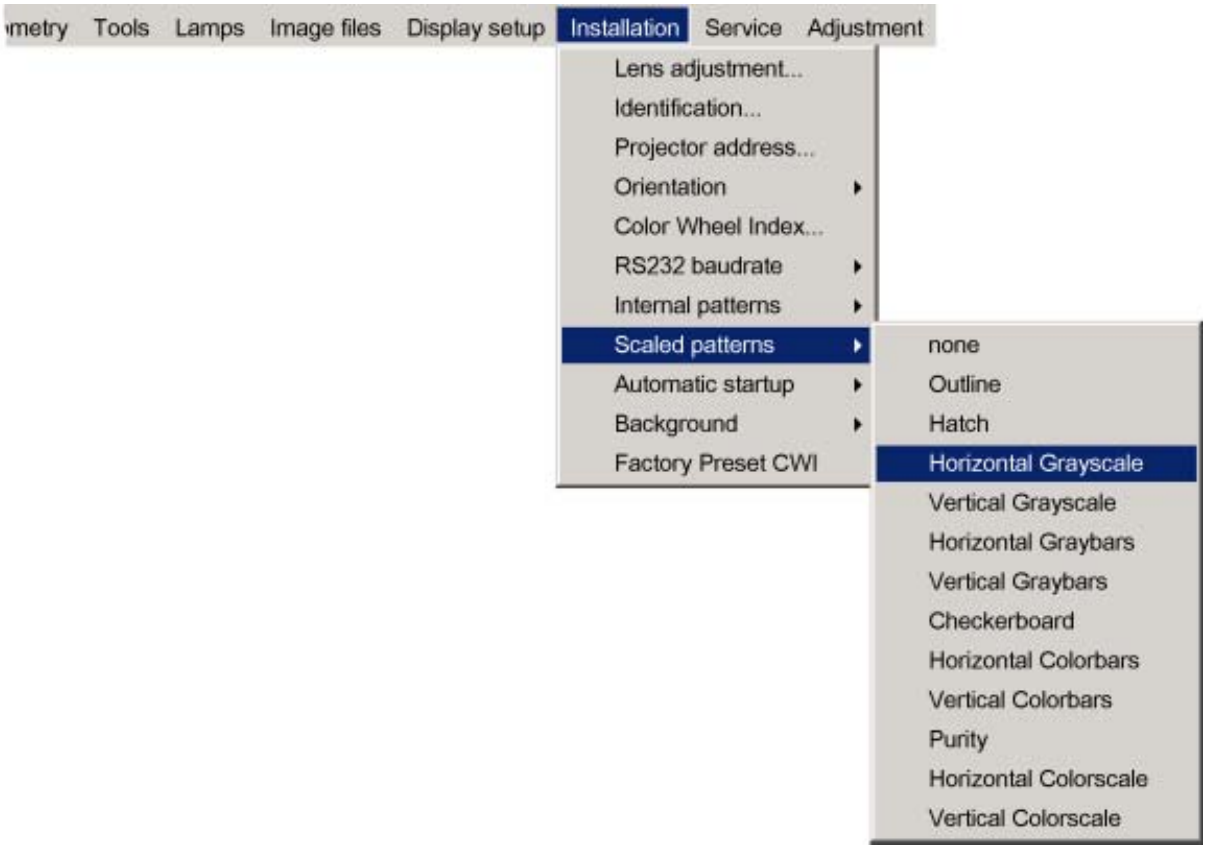



Image 13-35


Image 13-36

## 13.9 Automatic Startup

### What can be done?

By default, when switching on the projector with the power switch, the projector will start up in standby mode. Setting Automatic Startup to On will force the projector to start immediately with image projection.

### How to set Automatic Startup?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Installation* in the menubar.
3. Push the ↓ key to pull down the *Installation* menu.

4. Push the cursor key ↑ or ↓ to highlight *Automatic Startup*.
5. Push the → key to pull down the *Automatic Startup* menu.
6. Push the cursor key ↑ or ↓ to highlight the desired Automatic Startup setting. (image 13-37)

| Automatic Startup Setting | Starting up the projector with the Power Switch |
|---|---|
| On | The projector will start to image projection. |
| Off | The projector will start up to standby mode |

7. Press **ENTER** to activate the selected Automatic Startup Setting.
8. Press **BACK** to return to the *Installation* menu.

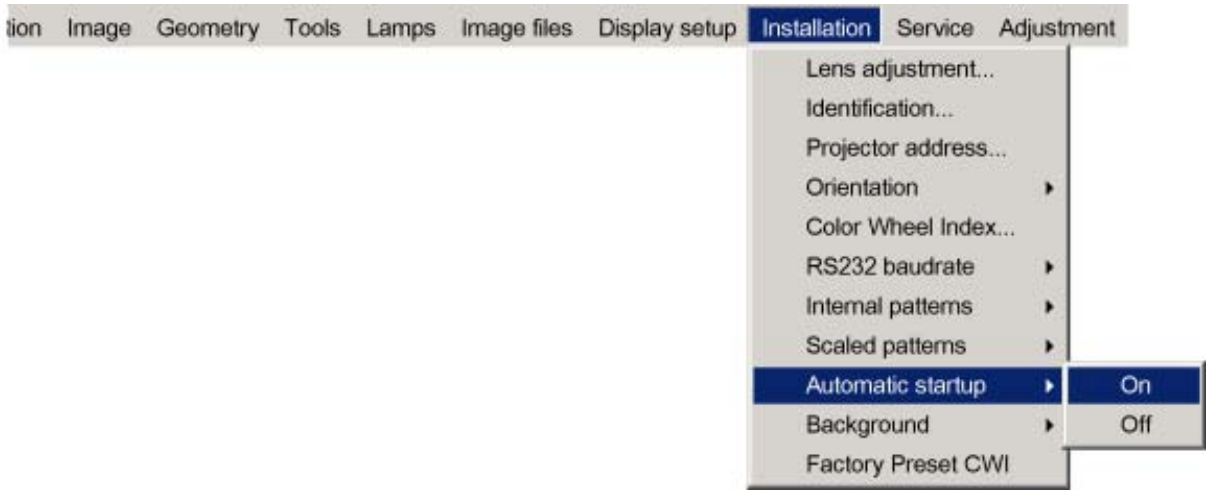



Image 13-37

## 13.10 Background

### What can be done?

If there is no signal connected, the projector will display a black or blue screen, depending on the background setting.

### How to set Background?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Installation* in the menubar.
3. Push the ↓ key to pull down the *Installation* menu.
4. Push the cursor key ↑ or ↓ to highlight *Background*.
5. Push the → key to pull down the *Background* menu.
6. Push the cursor key ↑ or ↓ to highlight the desired *Background* setting e.g. Blue. (image 13-38)

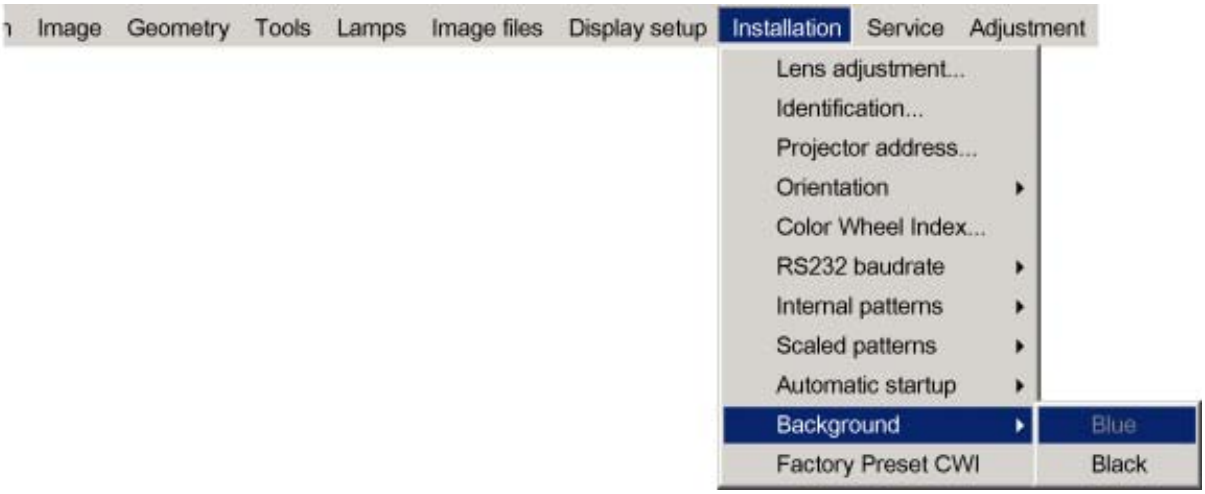



Image 13-38

## 13.11 Factory Preset CWI

### What can be done?

This will reset the Color Wheel Index (CWI) to the Factory Preset.

### How to set the CWI to the Factory Preset?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Installation* in the menubar.
3. Push the ↓ key to pull down the *Installation* menu.
4. Push the cursor key ↑ or ↓ to highlight *Factory Preset CWI*. (image 13-39)
5. Press **ENTER** to reset the CWI to the Factory Preset.
6. Press **BACK** to return to the *Installation* menu.

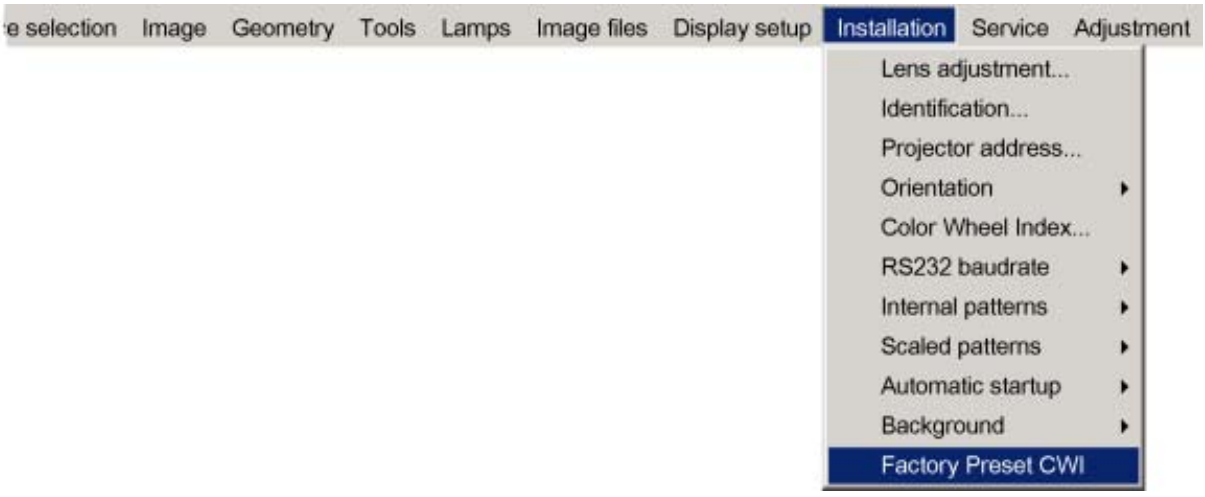



Image 13-39

# 14. SERVICE MENU

### Overview

- Options
- Version Table

## 14.1 Options

### Options

This menu item is grayed out and will be implemented in the near future.

## 14.2 Version Table

### What can be done?

This menu item gives an overview of the versions of all the different software blocks used by the projector:

| | |
|---|---|
| Default program | Main projector software used in default mode |
| Standard program | Main projector software used in normal mode |
| Standard Cpu config | Software used by the CPU |
| Standard Cpu Config Backup 00.11 | Software used by the CPU (Backup) |
| PMP Config | Software used on the PMP board |
| Backplane Config1 | Software used on the Backplane |
| Backplane Config2 | Software used on the Backplane |
| Character map | Software used by the OSD |
| Bitmaps | Software used by the OSD |
| Dvi Eeprom L1 | Software used on the DVI input board |

### How to consult the Version Table?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Service* in the menubar.
3. Push the ↓ key to pull down the *Service* menu.
4. Push the cursor key ↑ or ↓ to highlight *Version Table* and press **ENTER** to select. (image 14-1)

   The Version Table will be displayed. (image 14-2)


Image 14-1

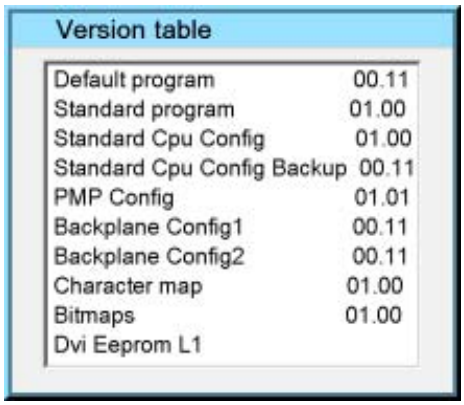

Version table
Default program 00.11
Standard program 01.00
Standard Cpu Config 01.00
Standard Cpu Config Backup 00.11
PMP Config 01.01
Backplane Config1 00.11
Backplane Config2 00.11
Character map 01.00
Bitmaps 01.00
Dvi Eeprom L1

Image 14-2

# 15. ADJUSTMENT MENU

### Overview

- Preset Input Balance
- Force Lamp Mode

## 15.1 Preset Input Balance

**CAUTION: Changing these settings may seriously affect the performance of the projector.**

### What can be done?

The main Input Balance is set by the Preset Input Balance, this is adjusted in the factory. This factory preset is active on all source files.

It is advised not to adjust the Preset Black or White Input Balance.

## 15.2 Force Lamp Mode

### What can be done?

This setting will force the projector to run in one of the following modes:

| | |
|---|---|
| **Lamp1** | Only Lamp 1 is used |
| **Lamp2** | Only Lamp 1 is used |
| **Dual** | Both Lamps are used |

### How to set the Force Lamp Mode?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Adjustment* in the menubar.
3. Push the ↓ key to pull down the *Adjustment* menu.
4. Push the cursor key ↑ or ↓ to highlight *Force Lamp Mode*.
5. Push the → key to pull down the *Force Lamp Mode* menu.
6. Push the cursor key ↑ or ↓ to highlight the desired *Force Lamp Mode* e.g. *Lamp 1*. (image 15-1)
7. Press **ENTER** to activate the selected *Force Lamp Mode*.


Image 15-1

# A. STANDARD IMAGE FILES

## A.1 Table overview

### Table overview

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

| Name[4] | Resolution[5] | Fvert Hz[6] | FHor kHz[7] | Fpix MHz[8] | Ptot[9] | Pact[10] | Ltot[11] | Lact[12] |
|---|---|---|---|---|---|---|---|---|
| 1600_48V | 1600x600i | 48,040 | 62,500 | 135,000 | 2160 | 1600 | 651 | 600 |
| CGA | 640x200i | 59,924 | 15.700 | 14.318 | 912 | 640 | 262 | 200 |
| COMPUSC4 | 1024x480i | 29,945 | 30,694 | 39,779 | 1296 | 1024 | 512 | 480 |
| DOS1_70 | 720x400 | 70 | 31,500 | 28,350 | 900 | 720 | 449 | 400 |
| DOS3_56 | 640x400 | 56 | 24,800 | 21,030 | 848 | 640 | 440 | 400 |
| DOS4_85 | 640x400 | 85 | 37,860 | 31,500 | 832 | 640 | 445 | 400 |
| ED | 735x480 | 59,943 | 31,470 | 28,638 | 910 | 735 | 525 | 480 |
| EGA | 640x350 | 59,702 | 21,851 | 16,257 | 744 | 640 | 366 | 350 |
| ESVGA_75 | 832x624 | 73 | 47,900 | 53,648 | 1120 | 832 | 660 | 624 |
| EXGA_60 | 1152x864 | 60 | 54,900 | 79,934 | 1456 | 1152 | 916 | 864 |
| EXGA_80 | 1152x864 | 80,000 | 76,499 | 110,159 | 1140 | 1152 | 958 | 864 |
| EXGA_85 | 1152x864 | 85 ,000 | 77,202 | 121,671 | 1576 | 1152 | 907 | 864 |
| EXGA1_70 | 1152x864 | 70 | 63,800 | 94,424 | 1480 | 1152 | 912 | 864 |
| EXGA1_75 | 1152x864 | 75 | 67,499 | 107,999 | 1600 | 1152 | 900 | 864 |
| EXGA2_70 | 1152x864 | 70 | 66,098 | 99,941 | 1512 | 1152 | 945 | 864 |
| EXGA2_75 | 1152x864 | 75 | 75,199 | 110,092 | 1464 | 1152 | 1002 | 864 |
| FMR | 640x400i | 42,323 | 36,440 | 28,570 | 784 | 640 | 431 | 400 |
| GE_50 | 640x400 | 50 | 31,200 | 44,928 | 1440 | 1163 | 625 | 522 |
| GE_60 | 1085x480 | 60 | 30,700 | 41,261 | 1344 | 1085 | 512 | 480 |
| hd_1080i | 1920x540 | 60 | 33,750 | 74,249 | 2200 | 1920 | 563 | 540 |
| hd_24p | 1920x1080 | 24,000 | 27,000 | 74,000 | 2750 | 1920 | 1125 | 1080 |
| hd_24sf | 1950x540 | 48,000 | 27,000 | 74,000 | 2750 | 1950 | 562 | 540 |
| hd_25i | 1920x540 | 50,000 | 28,125 | 74,000 | 2640 | 1920 | 562 | 540 |
| hd_25p | 1920x1080 | 25,000 | 28,125 | 74,000 | 2640 | 1920 | 1125 | 1080 |

4. Name: name of file, contains the settings.
5. Resolution: image resolution, when followed by ..i means interlaced.
6. Fvert Hz: vertical frame frequency of the source
7. FHor kHz: horizontal frequency of the source
8. Fpix MHz: pixel frequency
9. Ptot : total pixels on one horizontal line.
10. Pact: active pixels on one horizontal line.
11. Ltot: total lines in one field
12. Lact: active lines in one field.

| Name[4] | Resolution[5] | Fvert Hz[6] | FHor kHz[7] | Fpix MHz[8] | Ptot[9] | Pact[10] | Ltot[11] | Lact[12] |
|---|---|---|---|---|---|---|---|---|
| hd_30p | 1920x1080 | 30,000 | 33,750 | 74,000 | 2200 | 1920 | 1125 | 1080 |
| hd_60p | 1280x720 | 60,000 | 45,000 | 74,000 | 1650 | 1280 | 750 | 720 |
| INTER_GR | 1184x886 | 67,170 | 61,796 | 92,941 | 1504 | 1184 | 920 | 886 |
| IQPC_SXGA_2 | 1366x1024 | 59 | 62,933 | 106,230 | 1688 | 1366 | 1067 | 1024 |
| IQPC_SXGA_D | 1280x1024 | 60 | 63,857 | 107,791 | 1688 | 1280 | 1063 | 1024 |
| IQPC_XGA_1 | 1024x768 | 61 | 49,005 | 65,863 | 1344 | 1024 | 807 | 768 |
| IQPC_XGA_2 | 1024x768 | 60 | 48,485 | 65,164 | 1344 | 1024 | 807 | 768 |
| IQPC_XGA_D | 1024x768 | 61 | 49,005 | 65,863 | 1344 | 1024 | 806 | 768 |
| MAC_3 | 512x384 | 60,147 | 24,480 | 15,667 | 640 | 512 | 407 | 384 |
| MAC_4 | 560_384 | 60,147 | 24,480 | 17,234 | 704 | 560 | 407 | 384 |
| MAC_5 | 512x342 | 60,158 | 22,259 | 16,670 | 704 | 512 | 370 | 342 |
| MAC_6 | 832x624 | 74,546 | 49,722 | 57,280 | 1152 | 832 | 667 | 624 |
| MAC_7 | 1024x768 | 74,907 | 60,150 | 80,000 | 1330 | 1024 | 803 | 768 |
| MAC_LC | 640x480 | 66,619 | 34,975 | 31,338 | 896 | 640 | 525 | 480 |
| MAC_POR | 640x870 | 74,996 | 68,846 | 57,280 | 932 | 640 | 918 | 870 |
| METH_BOOT1 | 720x400 | 70 | 31,500 | 28,350 | 900 | 720 | 448 | 400 |
| METH_BOOT2 | 640x480 | 59 | 31,000 | 24,800 | 800 | 640 | 524 | 480 |
| MXGA_100 | 1152x864 | 100 | 92,997 | 145,820 | 1568 | 1152 | 930 | 864 |
| NTSC | 675x240 | 60 | 15,748 | 13,512 | 858 | 675 | 263 | 240 |
| NTSC_LIMO_x2 | 834x482 | 60 | 31,496 | 32,252 | 1024 | 834 | 525 | 482 |
| NTSC_LIMO_x3 | 834x715 | 60 | 46,646 | 47,766 | 1024 | 834 | 778 | 715 |
| NTSC_LIMO_x4 | 834x961 | 60 | 62,992 | 64,504 | 1024 | 834 | 1050 | 961 |
| PAL | 675x286 | 50 | 15,625 | 13,500 | 864 | 675 | 313 | 286 |
| PAL_LIMO_x2 | 834x574 | 50 | 31,250 | 32,000 | 1024 | 834 | 626 | 574 |
| PAL_LIMO_x3 | 834x850 | 50 | 46,296 | 47,407 | 1024 | 834 | 926 | 850 |
| PAL_LIMO_x4 | 834x1146 | 50 | 62,500 | 64,000 | 1024 | 834 | 1250 | 1146 |
| PAM500 | 640x400 | 60,000 | 26,400 | 22,810 | 864 | 640 | 440 | 400 |
| PAM800 | 1120x375i | 44,936 | 36,443 | 50,000 | 1372 | 1120 | 406 | 375 |
| PC98_2 | 1120x375i | 39,994 | 32,835 | 47,840 | 1457 | 1120 | 411 | 375 |
| PC98_3 | 1120x750 | 60,000 | 50,000 | 78,569 | 1571 | 1120 | 833 | 750 |
| S1152_66 | 1152x900 | 66,004 | 61,846 | 94,500 | 1528 | 1152 | 937 | 900 |
| S1152_76 | 1152x900 | 76,637 | 71,809 | 108,000 | 1504 | 1152 | 937 | 900 |

| Name[4] | Resolution[5] | Fvert Hz[6] | FHor kHz[7] | Fpix MHz[8] | Ptot[9] | Pact[10] | Ltot[11] | Lact[12] |
|---|---|---|---|---|---|---|---|---|
| S1600_67 | 1600x1280 | 67 | 89,286 | 200,000 | 2240 | 1600 | 1334 | 1280 |
| SDI_625 | 675x278i | 25,000 | 15,625 | 13,500 | 864 | 720 | 313 | 278 |
| SDI_525 | 675x240i | 29,970 | 15,734 | 13,500 | 858 | 720 | 263 | 240 |
| SG_50 | 1600x1200 | 50,000 | 62,500 | 130,313 | 2085 | 1600 | 1250 | 1200 |
| SG_60_1 | 1280x1024 | 60,000 | 63,900 | 107,352 | 1680 | 1280 | 1065 | 1024 |
| SG_60_2 | 1024x768 | 60,000 | 48,780 | 64,390 | 1320 | 1024 | 813 | 768 |
| SG_60_3 | 960x680 | 60,000 | 43,200 | 54,432 | 1260 | 960 | 720 | 680 |
| SG_60_4 | 1600x1200 | 60,000 | 75,000 | 156,375 | 2085 | 1600 | 1250 | 1200 |
| STOR_100 | 764x287 | 100 | 31,300 | 30,361 | 970 | 764 | 313 | 287 |
| STOR_120 | 810x247 | 119 | 31,300 | 30,361 | 970 | 810 | 263 | 247 |
| STOR_50 | 1024x512 | 50 | 31,300 | 40,064 | 1280 | 1024 | 625 | 512 |
| STOR_60 | 1024x512 | 60 | 31,300 | 40,064 | 1280 | 1024 | 525 | 512 |
| SUNEWS67 | 1280x1024 | 67,189 | 71,691 | 117,000 | 1632 | 1280 | 1067 | 1024 |
| SUNEWS76 | 1280x1024 | 76,107 | 81,130 | 135,000 | 1664 | 1280 | 1066 | 1024 |
| SUNXGA60 | 1024x768 | 59,984 | 48,287 | 64,125 | 1328 | 1024 | 805 | 768 |
| SUNXGA70 | 1024x768 | 70,041 | 56,596 | 74,250 | 1312 | 1024 | 808 | 768 |
| SUNXGA77 | 1024x768 | 77,069 | 62,040 | 84,375 | 1360 | 1024 | 805 | 768 |
| SUP_MAC | 1024x768 | 60,000 | 48,780 | 63,999 | 1312 | 1024 | 813 | 768 |
| SVGA_56V | 800x600 | 56,250 | 35,156 | 36,000 | 1024 | 800 | 625 | 600 |
| SVGA_60V | 800x600 | 60,317 | 37,879 | 40,000 | 1056 | 800 | 628 | 600 |
| SVGA_72_1 | 800x600 | 72,084 | 48,080 | 50,003 | 1040 | 800 | 666 | 600 |
| SVGA_72_2 | 800x600 | 72,084 | 48,080 | 50,003 | 1040 | 800 | 667 | 600 |
| SVGA_75 | 800x600 | 75,000 | 46,875 | 75,000 | 1056 | 800 | 625 | 600 |
| SVGA_85 | 800x600 | 85,000 | 53,635 | 56,250 | 1048 | 800 | 631 | 600 |
| SXGA_72_1 | 1280x1024 | 72 | 76,699 | 128,854 | 1680 | 1280 | 1061 | 1024 |
| SXGA_72_2 | 1280x1024 | 72 | 76,970 | 130,080 | 1690 | 1280 | 1069 | 1024 |
| SXGA_75 | 1280x1024 | 75 | 79,974 | 134,997 | 1688 | 1280 | 1066 | 1024 |
| SXGA_76 | 1280x1024 | 76 | 81,103 | 134,955 | 1664 | 1280 | 1066 | 1024 |
| SXGA_85 | 1280x1024 | 85 | 91,149 | 157,506 | 1728 | 1280 | 1072 | 1024 |
| SXGA_L | 1280x1024 | 60 | 62,500 | 84,000 | 1344 | 1280 | 1041 | 1024 |

| Name[4] | Resolution[5] | Fvert Hz[6] | FHor kHz[7] | Fpix MHz[8] | Ptot[9] | Pact[10] | Ltot[11] | Lact[12] |
|---|---|---|---|---|---|---|---|---|
| SXGA+_60 | 1280x1024 | 60 | 63,980 | 107,997 | 1688 | 1280 | 1066 | 1024 |
| SXGA2_60 | 1280x960 | 60 | 59,999 | 107,998 | 1800 | 1280 | 1000 | 960 |
| SXGA2_85 | 1280x960 | 85 | 85,940 | 148,505 | 1728 | 1280 | 1011 | 960 |
| SXGA50 | 1280x1024 | 50 | 52,351 | 88,368 | 1688 | 1280 | 1047 | 1024 |
| SXGA60v | 1280x1024 | 60 | 63,658 | 110,001 | 1728 | 1280 | 1056 | 1024 |
| SXGAP_70 | 1024x1280 | 70 | 92,902 | 133,779 | 1440 | 1024 | 1326 | 1280 |
| SXGAP1_60 | 1024x1280 | 60 | 77,700 | 83,916 | 1080 | 1024 | 1297 | 1280 |
| SXGAP2_60 | 1024x1280 | 60 | 79,498 | 110,661 | 1392 | 1024 | 1325 | 1280 |
| UXGA_60 | 1600x1200 | 60 | 75,002 | 162,004 | 2160 | 1600 | 1250 | 1200 |
| UXGA_65 | 1600x1200 | 65 | 81,248 | 175,496 | 2160 | 1600 | 1250 | 1200 |
| UXGA_L | 1600x1200 | 60 | 72,801 | 119,977 | 1648 | 1600 | 1216 | 1200 |
| UXGAP1_60 | 1200x1600 | 59 | 95,804 | 119,946 | 1252 | 1200 | 1620 | 1600 |
| UXGAP2_60 | 1200x1600 | 60 | 99,404 | 163,817 | 1648 | 1200 | 1656 | 1600 |
| VGA_60 | 640x480 | 60 | 31,326 | 25,061 | 800 | 640 | 525 | 480 |
| VGA_66 | 640x480 | 67 | 35,100 | 30,326 | 864 | 640 | 525 | 480 |
| VGA_72 | 640x480 | 73 | 37,860 | 31,500 | 832 | 640 | 520 | 480 |
| VGA_75 | 640x480 | 75,000 | 37,500 | 31, 500 | 840 | 640 | 500 | 480 |
| VGA1_85 | 640x480 | 85,000 | 43,369 | 36,000 | 832 | 640 | 509 | 480 |
| VGA2_85 | 720x400 | 85,000 | 37,900 | 35,475 | 936 | 720 | 446 | 400 |
| VGA75ISO | 640x480 | 75,000 | 39,375 | 31,500 | 800 | 640 | 525 | 480 |
| VIDEO525 | 1302x239i | 29,970 | 15,734 | 32,207 | 1302 | 1024 | 263 | 239 |
| VIDEO625 | 1024x278i | 25,000 | 15,625 | 31,984 | 1310 | 1024 | 313 | 278 |
| XGA_43 | 1024x384 | 87 | 35,500 | 44,872 | 1264 | 1024 | 409 | 384 |
| XGA_60 | 1024x768 | 60,000 | 48,360 | 64,996 | 1344 | 1024 | 806 | 768 |
| XGA_70_1 | 1024x768 | 70,000 | 56,475 | 74,999 | 1328 | 1024 | 806 | 768 |
| XGA_70_2 | 1024x768 | 70,000 | 57,052 | 78,047 | 1368 | 1024 | 815 | 768 |
| XGA_72 | 1024x768 | 71,955 | 58,140 | 80,000 | 1376 | 1024 | 808 | 768 |
| XGA_75_1 | 1024x768 | 75 | 60,024 | 78,752 | 1312 | 1024 | 800 | 768 |
| XGA_75_2 | 1024x768 | 76 | 61,080 | 86,000 | 1408 | 1024 | 806 | 768 |
| XGA_85 | 1024x768 | 85,000 | 68,680 | 94,500 | 1376 | 1024 | 808 | 768 |

| **Name**[4] | **Resolution**[5] | **Fvert Hz**[6] | **FHor kHz**[7] | **Fpix MHz**[8] | **Ptot**[9] | **Pact**[10] | **Ltot**[11] | **Lact**[12] |
|---|---|---|---|---|---|---|---|---|
| XGA_EOS | 1024x768 | 63,000 | 50,000 | 67,200 | 1344 | 1024 | 796 | 768 |
| XGA75_GS | 1024x768 | 74,534 | 59,701 | 79,284 | 1328 | 1024 | 801 | 768 |
| SXGA_60 | 1280x1024 | 60 | 63,980 | 107.997 | 1688 | 1280 | 1066 | 1024 |
| SXGA+_60_2 | 1400x1050 | 60 | 65,574 | 122,230 | 1864 | 1400 | 1089 | 1050 |
| SXGA+_60_3 | 1400x1050 | 60 | 65,104 | 122,396 | 1880 | 1400 | 1085 | 1050 |

Table A-1

# B. SCHEIMPFLUG LENS ADJUSTMENT

**The Scheimpflug Lens Version is available as an option.**

## B.1 Introduction

### Why performing the Scheimpflug Adjustment?

Scheimpflug Adjustment is needed If an image is still unsharp, even after the focus adjustment.

This means the image lies in a plane which is not parallel to the screen plane, as the deviation between the image plane and the screen plane can be in both the Top-Bottom and Left-Right directions, it is necessary to proceed in two distinct steps in following order).

### Scheimpflug Adjustment Overview

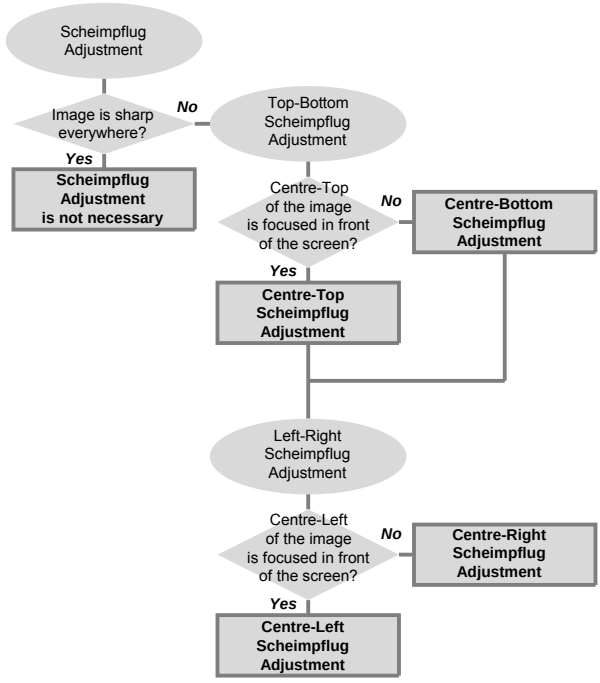



Image B-1
Scheimpflug Adjustment Overview

### Necessary Tools

- Piece of white cardboard.
- Open ended spanner 8 mm.

## B.2 Top–Bottom Scheimpflug Adjustment

### How to start the Top–Bottom Scheimpflug Adjustment?

1. Find out whether the centre-top or centre-bottom area of the image is focused in front of the screen. To do this, hold the piece of white cardboard parallel to the screen plane and displace it from the screen towards the projector, along the line joining the centre of the screen and the projection lens.
2. Is the centre-top area of the image focused in front of the screen?
   If yes, Proceed with the Centre–Top Scheimpflug Adjustment.
   If no, The centre-bottom area of the image is focused in front of the screen, proceed with the Centre–Bottom Scheimpflug Adjustment.

### Centre–Top Scheimpflug Adjustment

1. Turn bolt A counterclockwise (max 1/8th of a turn) to tilt the lens from top to bottom. (image B-2, image B-3)
2. Check if the top area of the image is still focused in front of the screen.
3. Repeat steps 1 and until the centre-top of the image is focused on the screen, together with the centre and centre-bottom areas).

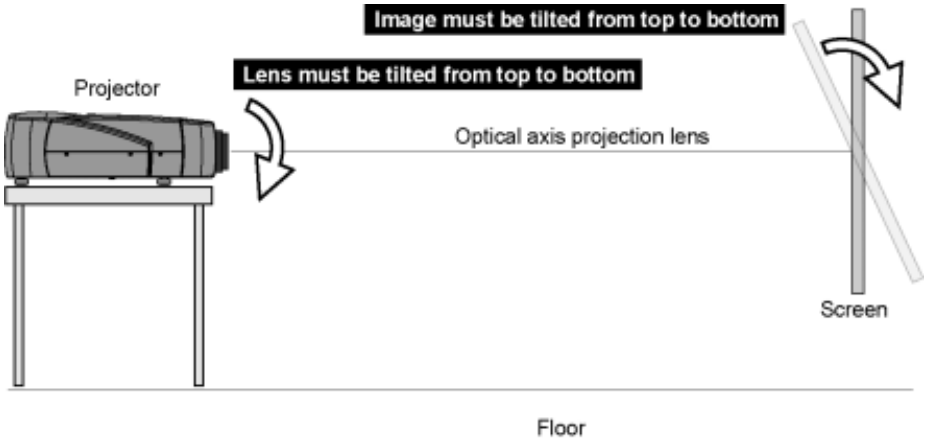



Image B-2
Lens must be tilted from top to bottom.

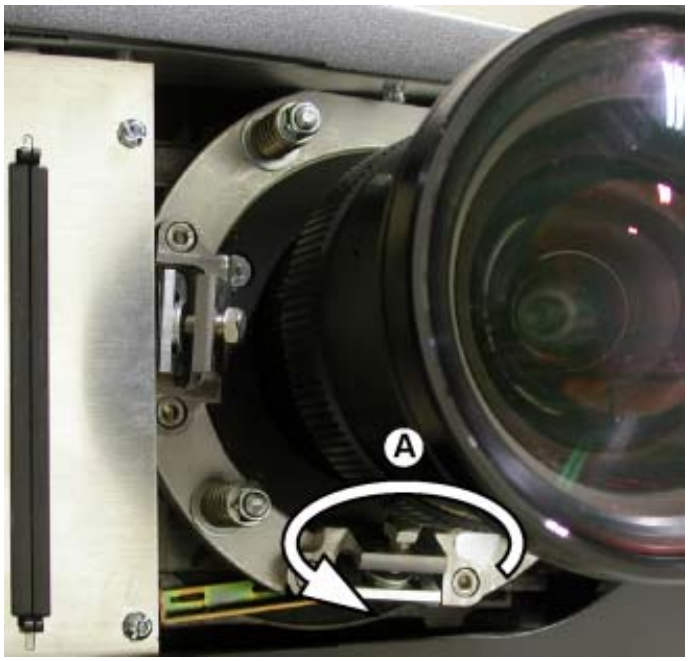



Image B-3
Turn bolt A counterclockwise to tilt the lens from top to bottom.

### Centre–Bottom Scheimpflug Adjustment

1. Turn bolt A clockwise (max 1/8th of a turn) to tilt the lens from bottom to top. (image B-4, image B-5)
2. Check if the bottom area of the image is still focused in front of the screen.
3. Repeat steps 1 and 2 until the centre-bottom of the image is focused on the screen, together with the centre and centre-top areas).

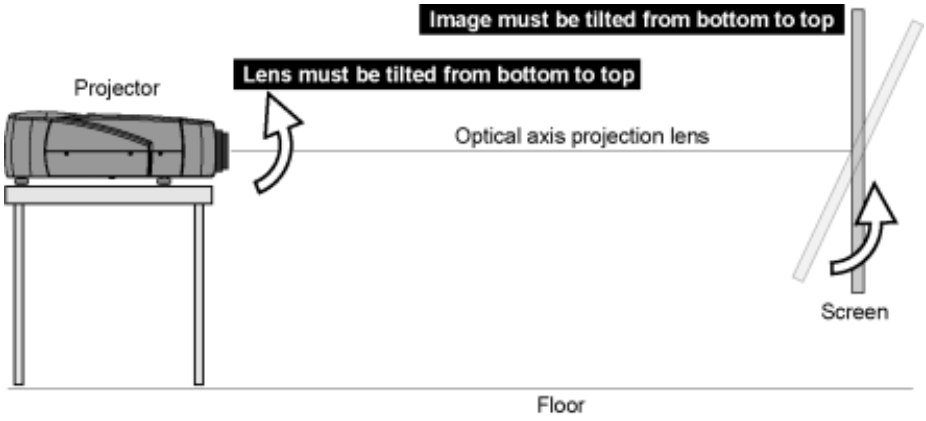



Image B-4
Lens must be tilted from bottom to top


Image B-5
Turn bolt A clockwise to tilt the lens from bottom to top.

## B.3 Left-Right Scheimpflug Adjustment

### How to start the Left–Right Scheimpflug Adjustment?

1. By using the same piece of white cardboard, find out whether the centre–left or centre–right area of the image is focused in front of the screen.
2. Is the centre–left area of the image focused in front of the screen?
   If yes, Proceed with the Centre–Left Scheimpflug Adjustment.
   If no, The centre-right area of the image is focused in front of the screen, proceed with the Centre–Right Scheimpflug Adjustment.

### Centre-Left Scheimpflug Adjustment

1. Unscrew bolt B (max 1/8$^{th}$ of a turn) to tilt the lens from left to right (when standing behind the projector). (image B-6, image B-7)
2. Check if the left area of the image is still focused in front of the screen.
3. Repeat steps 1 and 2 until the centre–left area of the image is focused on the screen (together with the centre and the centre–right areas).


Image B-6
Lens must be tilted from left to right.

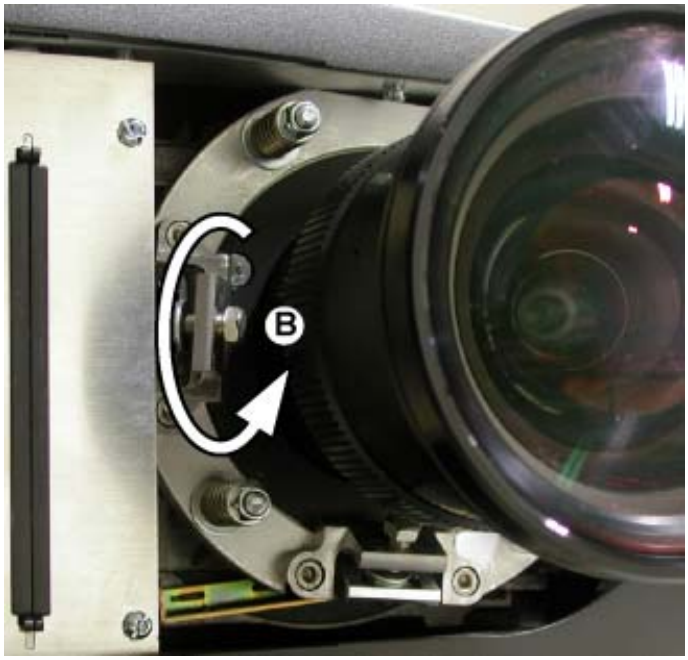



Image B-7
Unscrew bolt B to tilt the lens from left to right.

### Centre-Right Scheimpflug Adjustment

1. Screw bolt B (max 1/8th of a turn) to tilt the lens from right to left (when standing behind the projector). (image B-8, image B-9)
2. Check if the right area of the image is still focused in front of the screen.
3. Repeat steps 1 and 2 until the centre–right area of the image is focused on the screen (together with the centre and the centre–left areas).


Image B-8
Lens must be tilted from right to left.


Image B-9
Screw bolt B to tilt the lens from right to left.

# C. CALIBRATE MEASURED VALUES

### Overview

- Calibrate Measured Values

## C.1 Calibrate Measured Values

### Necessary tools

Color meter (e.g. PhotoResearch 650 or LMT).

### How to Start Calibrate Measured Values?

1. Put the color meter at the center of the image and switch to option X-Y-Z (X=Red, Y=Green, Z=Blue). (image C-1)
2. On the projector press the **MENU** key to activate the Menu bar.
3. Push the cursor key ← or → to highlight *Image* in the menubar.
4. Push the ↓ key to pull down the *Image* menu.
5. Push the cursor key ↑ or ↓ to highlight *Dynacolor* and press **ENTER** to select. (image C-2)
   The Dynacolor dialog box will be displayed.
6. Push the cursor key ↑ or ↓ to highlight *Calibrate Measured Values* and press **ENTER** to select. (image C-3)
   This will start up the calibration procedure.

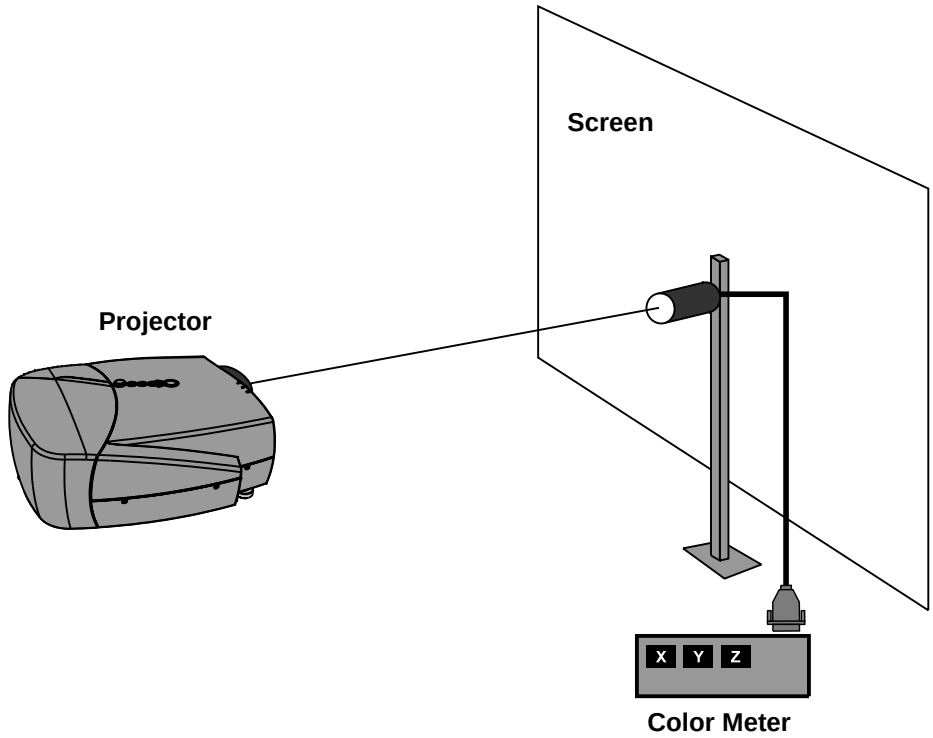



Image C-1
Put the color meter at the center of the image and switch to option X-Y-Z (X=Red, Y=Green, Z=Blue)

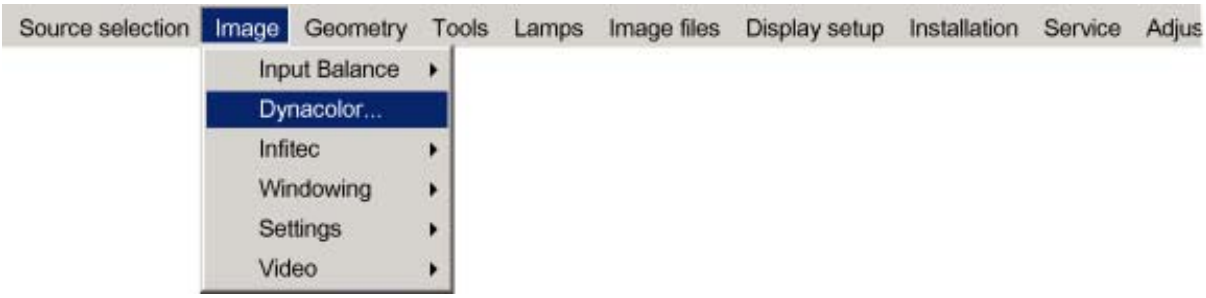



Image C-2

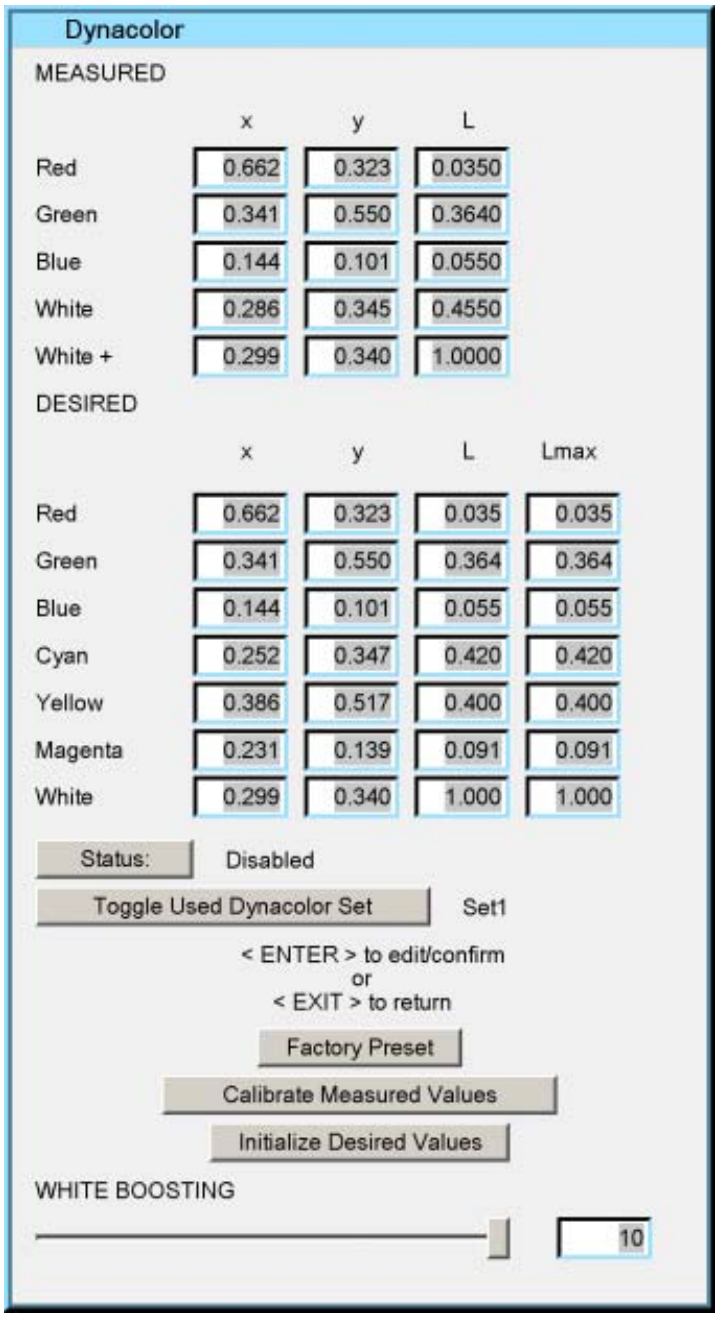



Image C-3

### How to Calibrate the Measured Values?

1. A full red pattern is displayed, note the Red X, Y and Z values of the Color meter and press **ENTER** to continue.

   The Calibrate Measured Values dialog box is displayed. (image C-4)

2. Enter the Red X, Y and Z values, measured with the Color meter, and press **ENTER** to continue.
3. A full green pattern is displayed, note the Green X, Y and Z values of the Color meter and press **ENTER** to continue.
4. Enter the Green X, Y and Z values, measured with the Color meter, and press **ENTER** to continue.
5. A full blue pattern is displayed, note the Green X, Y and Z values of the Color meter and press **ENTER** to continue.
6. Enter the Blue X, Y and Z values, measured with the Color meter, and press **ENTER** to continue.
7. A full white pattern is displayed, note the Green X, Y and Z values of the Color meter and press **ENTER** to continue.
8. Enter the White X, Y and Z values, measured with the Color meter, and press **ENTER** to continue.
9. A full maximum white pattern is displayed, note the Green X, Y and Z values of the Color meter and press **ENTER** to continue.
10. Enter the Maximum White X, Y and Z values, measured with the Color meter, and press **ENTER** to continue.

    The Measured values are implemented into the Dynacolor™ tabel.

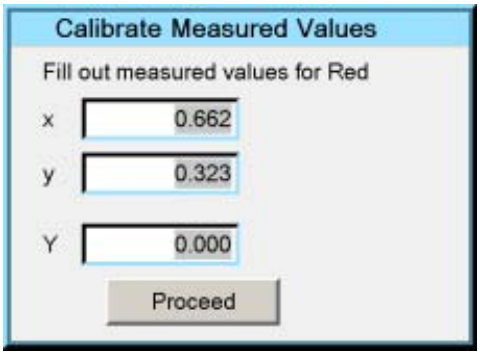



Image C-4

# D. SOFTWARE UPDATE

### Overview

- Software Update

## D.1 Software Update

**CAUTION: Do not switch off the projector during the upload process with Led 1 + Led 3 on.**

**The projector works as a single client FTP server, only one FPT client can communicate with the projector.**

### Necessary tools

PC running Internet Explorer or a FTP client program.

### Projector Flash Software

We assume the desired projector flash software 'bin' file was downloaded form Barco's partnerzone website.

### How to Update the Projector Software?

1. Start up the Projector and the PC.
2. Press the **MENU** key to activate the Menu bar.
3. Push the cursor key ← or → to highlight *Tools* in the menubar.
4. Push the ↓ key to pull down the *Tools* menu.
5. Push the cursor key ↑ or ↓ to highlight *Ethernet Connection* and press **ENTER** to select. (image D-1)

   The *Ethernet Connection* dialog box will be displayed. (image D-2)
6. Note the following Ethernet parameters of the projector:
   - IP address, in this case e.g. 150.158.194.184
   - FTP Port
   - FTP User Name
   - FTP Password
7. Are you using Internet Explorer to upload the Projector Software?
   If yes, Start Internet Explorer and fill in the IP address in the address bar on top.
   a) The FTP error window will be displayed. Press OK to remove this window. (image D-3)
   b) On the projector, press the *Update* button in the Ethernet Settings dialog box. Wait until the Please Wait message box disappears.
   c) On the PC, select *Login as* from the File menu of Internet Explorer. (image D-4)
   d) Fill in the FTP User Name and Password and press the Log On button. (image D-5)
   e) The projector directory will be displayed. (image D-6)
   f) Drag the 'bin' file into the firmware folder.

   If no, Start the FTP Client program.
   a) Fill in the Host settings, in his case the projector's: IP address, Port, FTP User Name and Password.
   b) Copy the 'bin' file to the firmware folder on the projector.
8. The download process will be started, the new flash software is copied to the projector.
9. After the download process, the software is loaded into the projector's memory, this will take a while, during this upload process Led 1 + Led 3 will light up red.
   ***Caution: Do not switch off the projector during the upload process with Led 1 + Led 3 on.***

   When the upload is finished, only Led 3 will light up red, indicating the Standby Status.


Image D-1

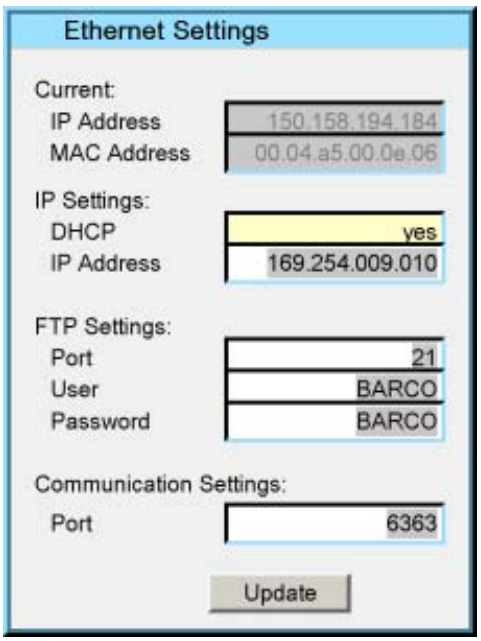



Image D-2

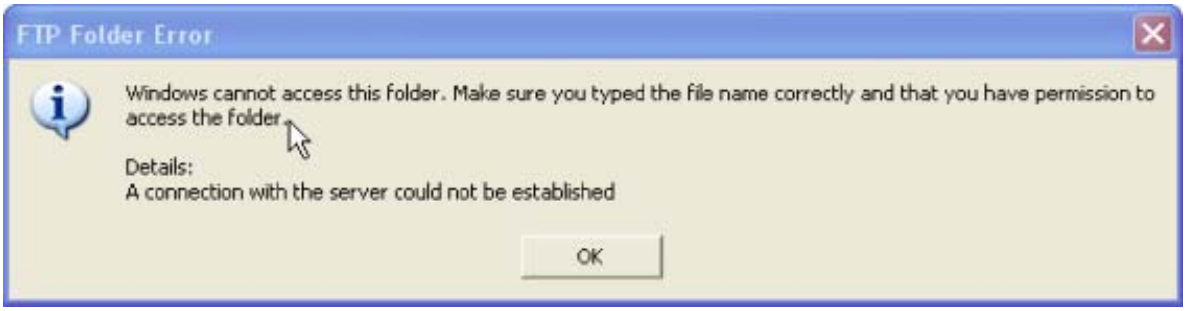



Image D-3
The FTP error window


Image D-4
Select *Login as* from the File menu of Internet Explorer

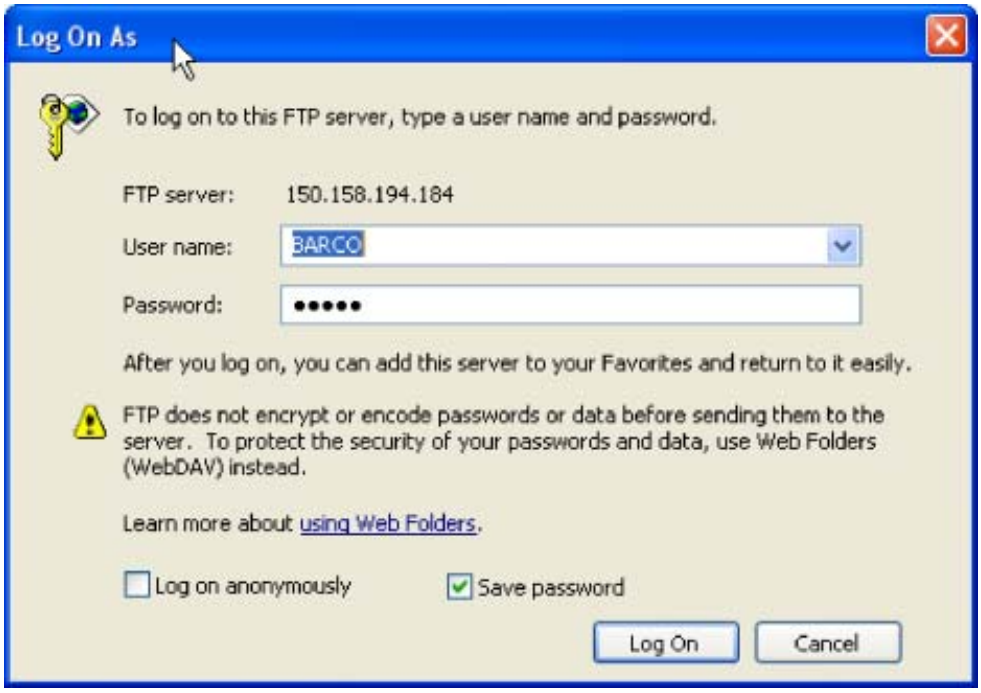



Image D-5
The Login as window


Image D-6
The projector directory

# E. TROUBLESHOOT

## E.1 Troubleshoot

### Troubleshoot

Before calling the Barco Service Center try the correct the operating problem by consulting the following troubleshoot list:

| Operating Problem | Solutions |
|---|---|
| No Power | • Check if the mains power is OK<br>• Check if the power cord is connected to the wall outlet (see "Power Cord Connection", page 26).<br>• Check if the Power Switch is set to ON (see "Switching On", page 36).<br>• Check if Led 3 lights red (see "Diagnose Leds", page 35). |
| No Image | • Check the connection between the source equipment and the projector (see "Connections", page 25).<br>• Check if the source equipment is connected to the wall outlet and the power is turned on.<br>• Select the correct input source again in the menu (see "Source Selection", page 41). |
| Displayed Image is reversed | • Check the orientation settings of the projector (see "Orientation", page 199). |
| Displayed image is Dark | • Adjust the Brightness and Contrast (see "Contrast", page 62). |
| Only part of the image is displayed | • Load the correct source file (see "Load", page 184).<br>• Edit the source file settings to the correct values (see "Edit", page 185).<br>• (When applicable) Switch OFF Blanking - Softedge (see "Blanking – Softedge", page 62). |
| RCU is not working | • Make sure the RCU is set to the correct Projector Address, check the Common and Projector Address (see "Common Address", page 38).<br>• Check the RCU batteries, replace batteries when necessary (see "Battery Installation", page 23).<br>• Make sure you are within the RCU's operating range 30m (100ft), and you are pointing the RCU correctly (see "Pointing the RCU", page 38). |

**WARNING: Do no try to service this product yourself, as opening or removing covers may expose you to dangerous voltage potentials and risk of electric shock!**

**Refer all servicing to qualified Barco service personnel!**

# INDEX

## Numerics/Symbols



## A



## B



## C



## D

## E



## F



## G



## H



## I



## L

## M



## O



## P



## R



## S



## T

## V



## W

## Revision Sheet

To:

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From: _____

Date: _____

Please correct the following points in this documentation (**R5976870/03**):

| page | wrong | correct |
|---|---|---|
| | | |