

iCon H250/400



Owners manual (Preliminary)

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1. INTRODUCTION

Overview

- About this manual
- Network centric visualization

1.1 About this manual

How to use this Manual ?

This manual contains 5 main parts :

1. **Installation** : The mechanical setup of the projector : removing from the shipping box , getting the projector ready to be started.
2. **Setup**: Adjusting the projection parameters in order to get the best image reproduction.
3. **Getting started** : Start the projector, create your desktop.
4. **Desktop management** : Adapting the desktop to the presenter's needs.
5. **Advanced operation** : Using the remote control and the projector's OSD for advanced setup.

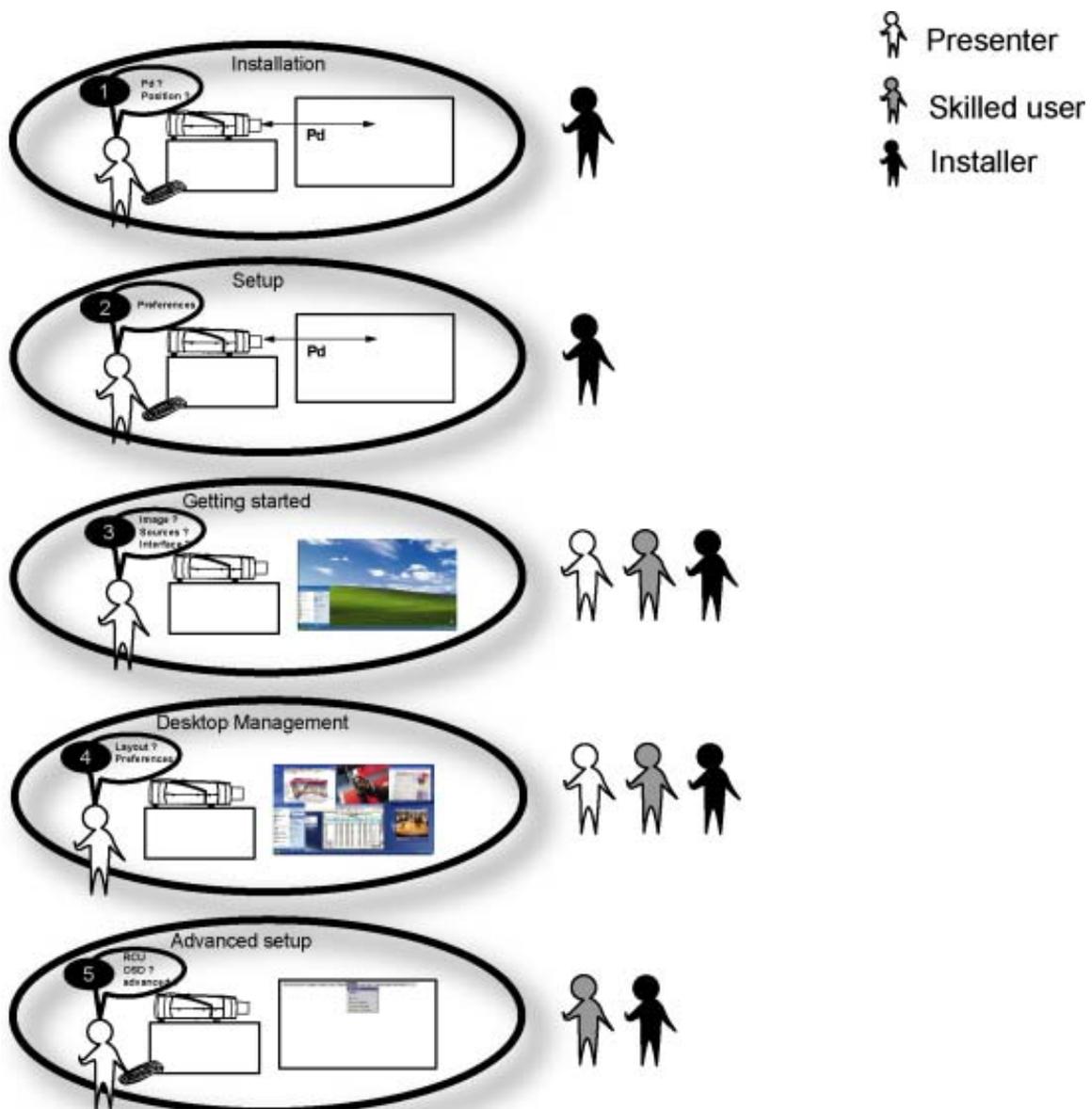


Image 1-1

1.2 Network centric visualization

Architecture : Parts and Tools

- Barco Client software : runs on a client PC and allows control/diagnostics of the projector
- Barco DropZone : presentation tool, running on a client PC and allowing file manipulations (launch,...) and sharing with the projector
- Barco Server software : runs on the projector (Server) and allows communication with the clients.
- Desktop integration : software running on the projector (Server) and allowing display content management on a Windows XP™ desktop.

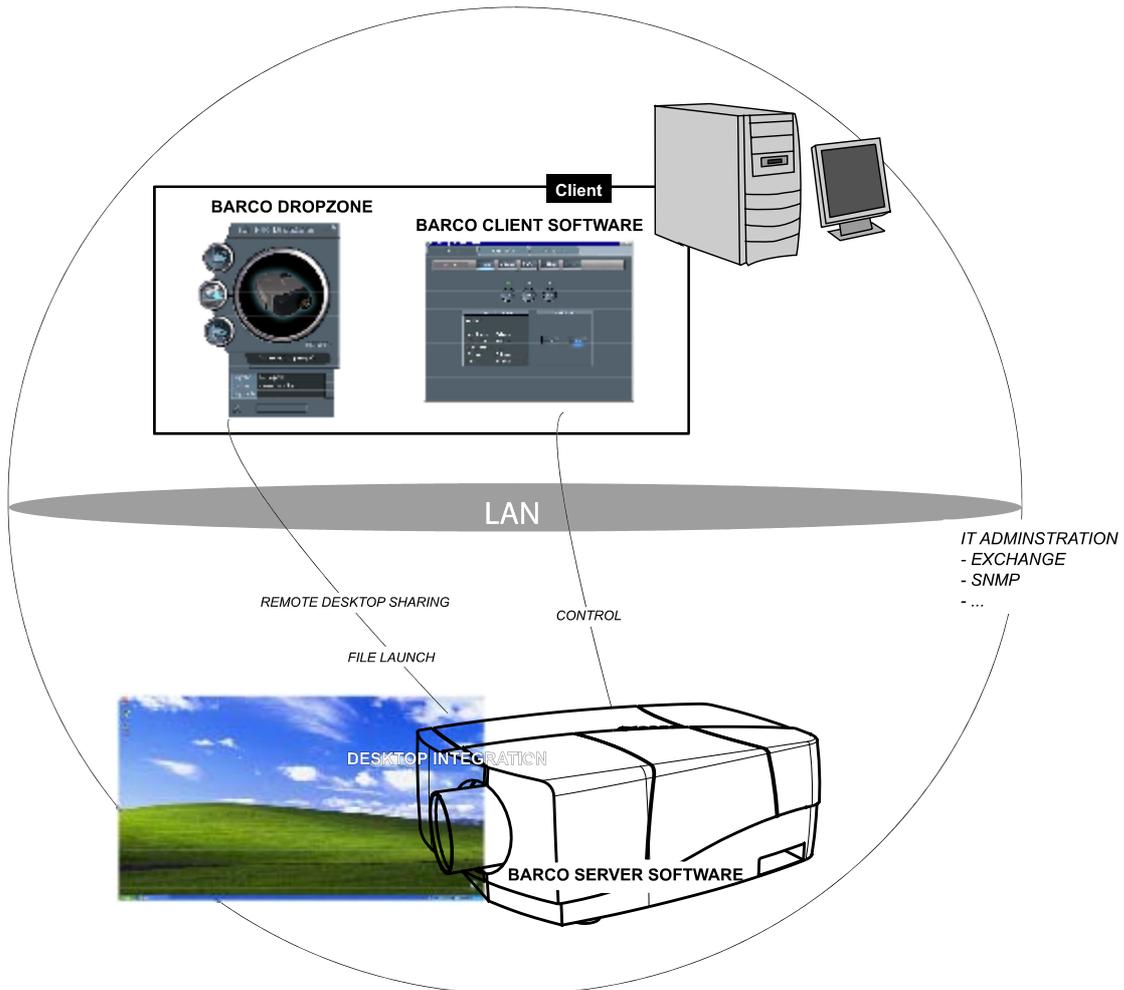


Image 1-2

2. PACKAGING

2.1 Unpacking



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.

Content

- 1 projector (weight \pm 14 kg or 31 lbs)
- 1 remote control unit RCU + 2 batteries.
- 2 power cables with outlet plug type CEE7 and ANSI 73.11.
- 1 owners manual
- 1 safety manual
- 1 CDROM (containing manuals)

Form

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.

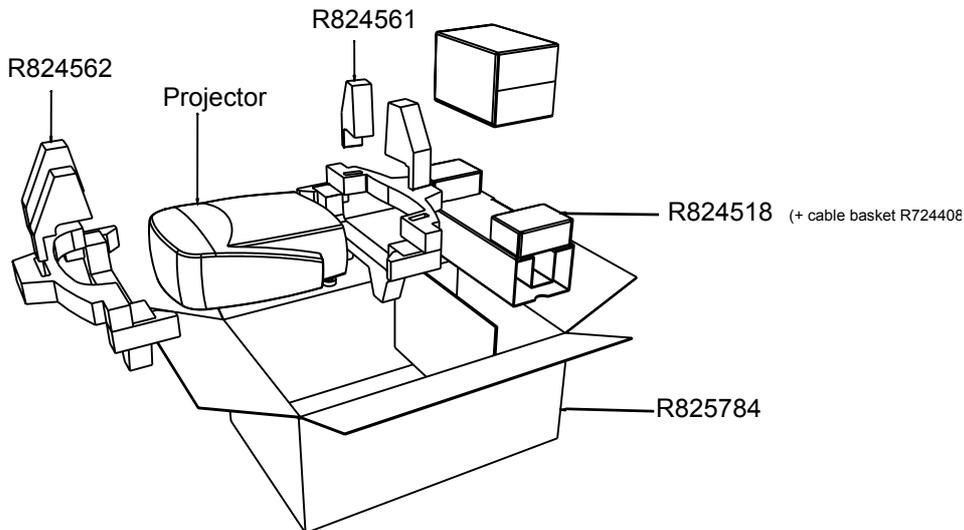


Image 2-1

Lens packaging

The Lens is supplied as an individual item.

The lens is packed in a carton box.



Save the original shipping carton and packing material, they will be necessary if you ever have to transport the lens.



CAUTION: Never transport the projector with the lens mounted on it !
Always remove the lens before transporting the projector.

How to unpack the projector

1. Release the cord straps.

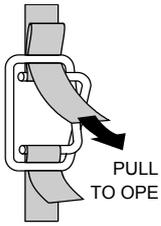


Image 2-2

2. Remove the assembly from the pallet
3. Remove the cardboard cover
4. Remove the large cardboard
5. Remove the 8 foam parts
6. Loosen and remove the 3 screws spacers fixing the projector to the wooden board
7. Remove the projector from the board



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.

3. INSTALLATION GUIDELINES

Overview

- Safety warnings
- Installation guidelines
- Network implementation

3.1 Safety warnings



WARNING: Before installing the projector, read first the safety instructions in the safety manual (R5975258) delivered with the projector.

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

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 Installation guidelines

Ambient temperature check

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.

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

Min. ambient temperature : 0 °C or 32 °F

The projector will not operate if ambient air temperature falls outside this range (0°C- 40°C or 32°F-104°F).

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



CAUTION: Harmful Environmental Contamination Precaution

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 as well as free flow at the ventilation outlets. The installation must also allow easy access to the consumable parts (dustfilters, lamps, ...) 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. Make sure that the projector never runs with dirty dustfilters as this will dramatically reduce the lifetime of the consumables. It is advised to clean the dustfilters on a regular basis and to replace them at any lamp change. Barco reserves itself the right to refuse warranty replacement of consumables if they have been used in a projector with dirty airfilters. Only 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 .

3. Installation guidelines

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 manufacturer's 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 client's 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 manufacturer reserves the right to refuse warranty 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.

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.

Image size

The projector is designed for projecting an image size with a screenwidth from 1.00m (3.3ft) to 6.00m (19.7ft) with an aspect ratio of 16 to 9.

3.3 Network implementation

Network installation

The installation of the server in a Local Area Network must be done in the same way as the installation of a standard PC in that particular network meaning that the same rules and accepted practice should be respected.

The assistance of qualified IT personnel is advised.



CAUTION: Important !

A Virus protection program should be installed and kept up to date to prevent virus infections.



CAUTION: The maintenance of the Server must be done in the same way as a PC meaning that the same rules and accepted practice should be respected.

Backups should be taken on a regular basis.

In the same way virus updates should be done regularly.

Barco will not be held responsible for destroyed information in case of a hard disk breakdown or virus infection and has no obligation to pay for or reimburse for the cost of recovering data.

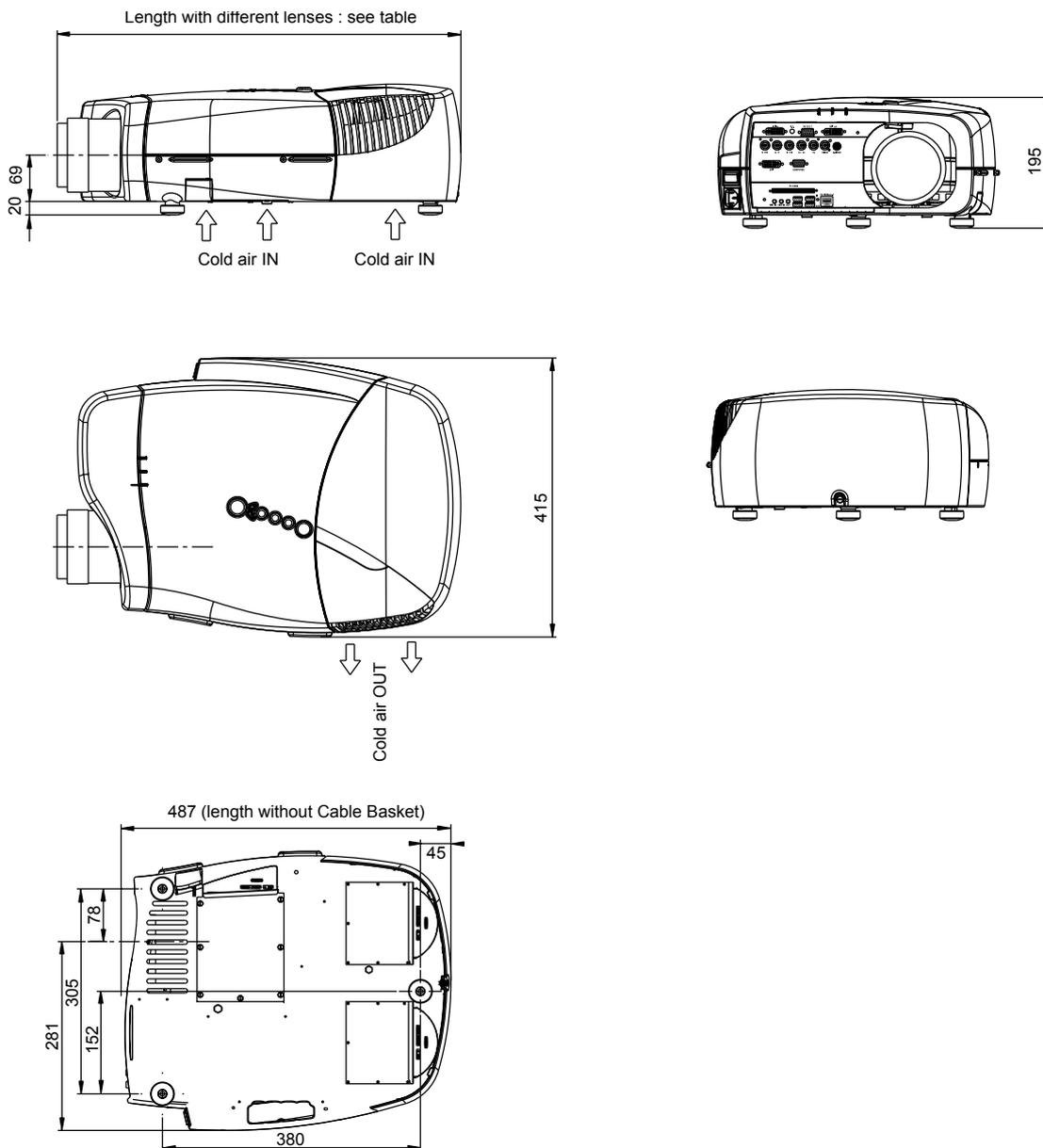
4. INSTALLATION

Overview

- Battery installation in the RCU
- Lens installation
- Removing the lens
- Lens range
- Lens Formulas
- Projector configuration
- Positioning the projector

Dimensions

Dimensions are given in mm and inch (1inch = 25.4 mm)



4. Installation

Lens	Length of projector
CLD (1.2-1.6:1)	530 mm
CLD (1.6-2.4:1)	525 mm
CLD (2.4-4.3:1)	550 mm
QCLD (1.1-1.3:1)	580 mm
QCLD (0.85:1)	610 mm

4.1 Battery installation in the RCU

How to install the battery

Two batteries are packed together with the RCU. Before using your RCU, install first these batteries.

1. Remove the battery cover on the backside by pushing the handle a little towards the bottom of the RCU.
2. Lift up the top side of the cover at the same time.
3. Insert the batteries as indicated in the RCU.
4. Put the battery cover on its place.

How to replace the batteries in the RCU

To replace the batteries :

1. Remove the battery cover on the backside by pushing the handle a little towards the bottom of the RCU.
2. Lift up the top side of the cover at the same time.
3. Push on the + side of the battery towards the - side
4. Lift up the battery at the same time.
5. Repeat for the second battery.
6. Insert the batteries as indicated in the RCU (battery type AA or LR6 or equivalent).
7. Put the battery cover on its place.

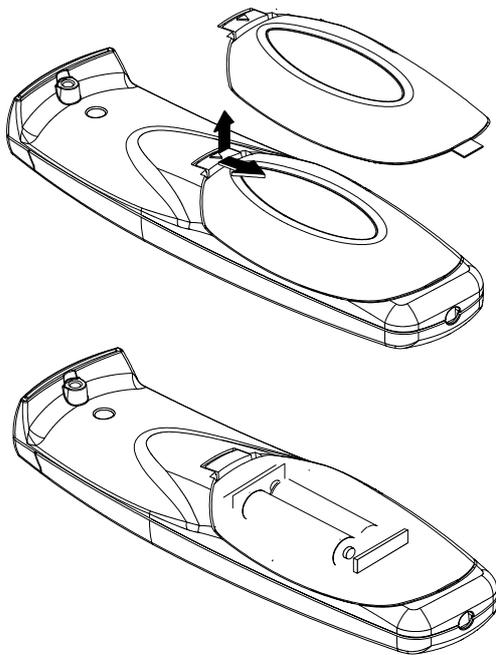


Image 4-2

4.2 Lens installation

How to install ?

1. Take the lens out of its packing material
2. Fix the lens by placing it in the housing



Image 4-3

Note: In case of a motorized lens the female jack must be in front of the male jack located in the upper-left part of the housing in the projector

3. Push carefully to lock the lens in the housing

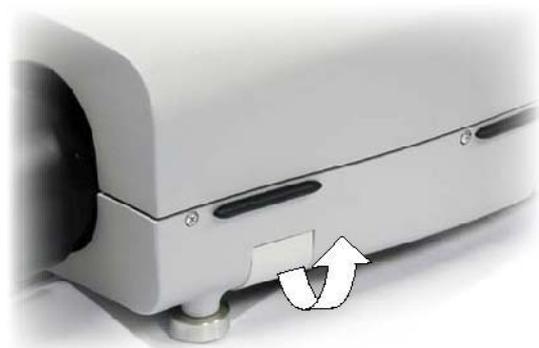
4.3 Removing the lens

How to remove the lens ?

1. Unlock the lens by pulling the handle located on the right side of the projector



Image 4-4

Image 4-5
location of the lens handle

2. Remove the lens out of its housing



CAUTION: Never transport the projector with the lens mounted on it !
Always remove the lens before transporting the projector.

4.4 Lens range

Overview table

Lens	Partnumber
QCLD (0.85:1)	R9849860
QCLD (1.1-1.3:1)	R9849850
CLD (1.2-1.6:1)	R9849870
CLD (1.6-2.4:1)	R9849880
CLD (2.4-4.3:1)	R9849890



See the Maintenance appendix for more information about lens cleaning.

4.5 Lens Formulas

Formulas

Lenses	Metric Formulas (meter)	Inch formulas (inch)
QCLD (0.85:1)	$PD = 0.79 \times SW + 0.06$	$PD = 0.79 \times SW + 2.36$
QCLD (1.1-1.3:1)	$PD_{min} = 1.02 \times SW + 0.05$ $PD_{max} = 1.2 \times SW + 0.06$	$PD_{min} = 1.02 \times SW + 1.97$ $PD_{max} = 1.2 \times SW + 2.36$
CLD (1.2-1.6:1)	$PD_{min} = 1.1 \times SW + 0.02$ $PD_{max} = 1.51 \times SW + 0.02$	$PD_{min} = 1.1 \times SW + 0.79$ $PD_{max} = 1.51 \times SW + 0.79$
CLD (1.6-2.4:1)	$PD_{min} = 1.46 \times SW + 0.00$ $PD_{max} = 2.21 \times SW - 0.02$	$PD_{min} = 1.46 \times SW + 0.00$ $PD_{max} = 2.21 \times SW - 0.79$
CLD (2.4-4.3:1)	$PD_{min} = 2.2 \times SW - 0.03$ $PD_{max} = 3.99 \times SW - 0.01$	$PD_{min} = 2.2 \times SW - 1.18$ $PD_{max} = 3.99 \times SW - 0.39$

4.6 Projector configuration

The different configurations

Depending on the installation the projector can be mounted in different ways, the 4 different configurations are:

1. Rear/Ceiling
2. Rear/Table
3. Front/Ceiling
4. Front/Table

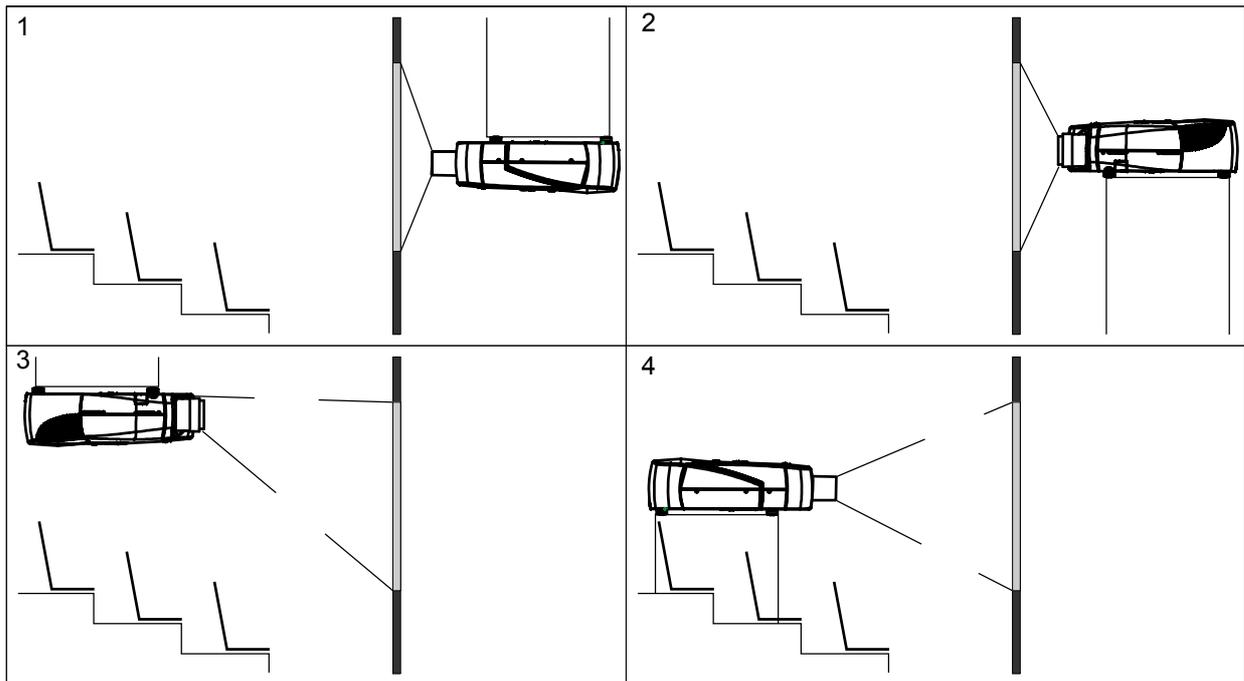


Image 4-6



The configuration should also be communicated to the projector. This is done in the *Installation* menu through the *Projector Configuration* parameter. (See Setup section)

4.7 Positioning the projector



On-Axis projection

Projection where the projector is positioned so as to have the centre of the lens coinciding with the centre of the screen.

Positioning the projector

The position of the projector with reference to the screen may also be different depending on the installation. Basically the projector can be positioned in an On-Axis or Off-Axis configuration. Several parameters can be calculated determining the position in any installation.

4. Installation

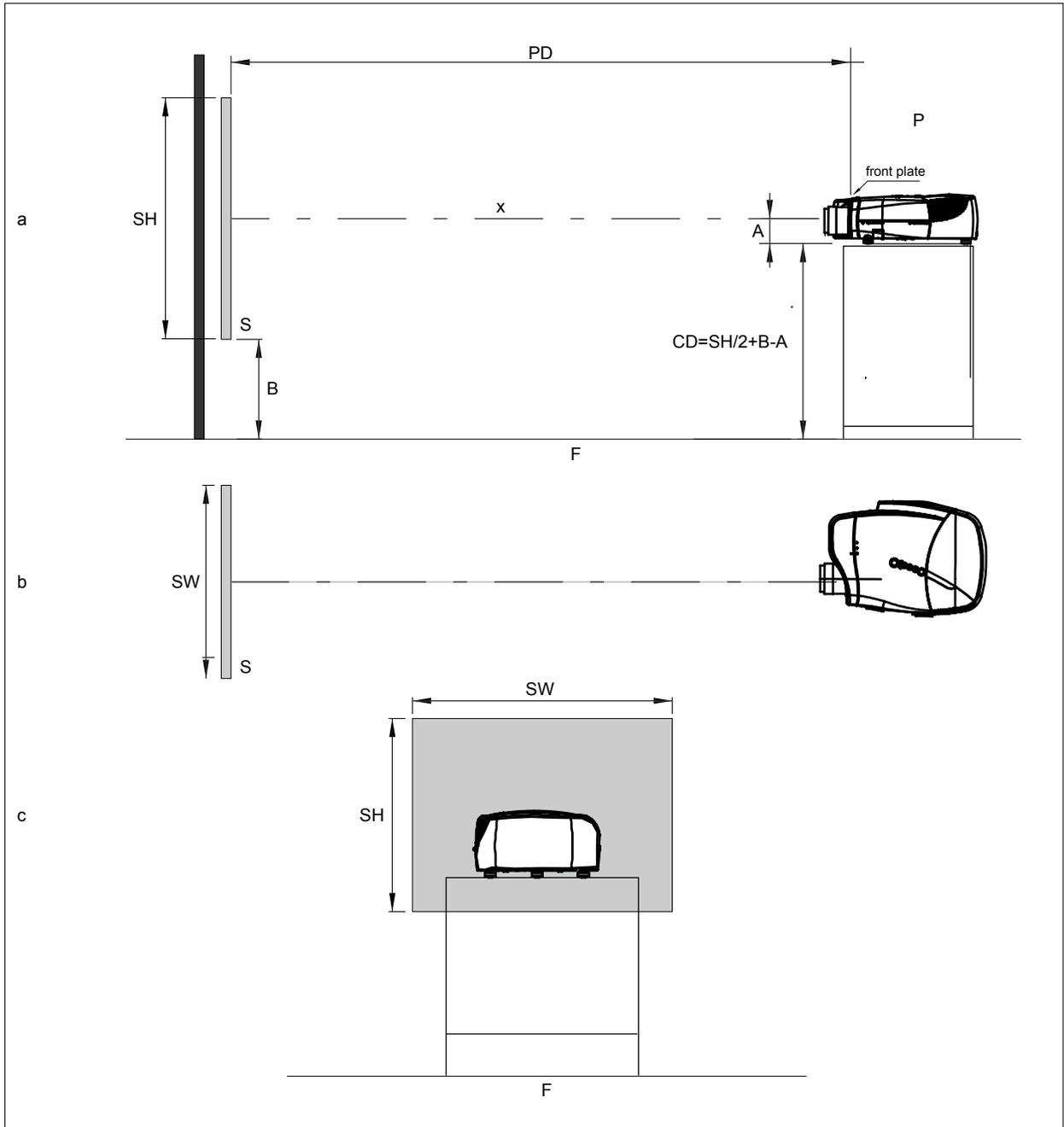


Image 4-7

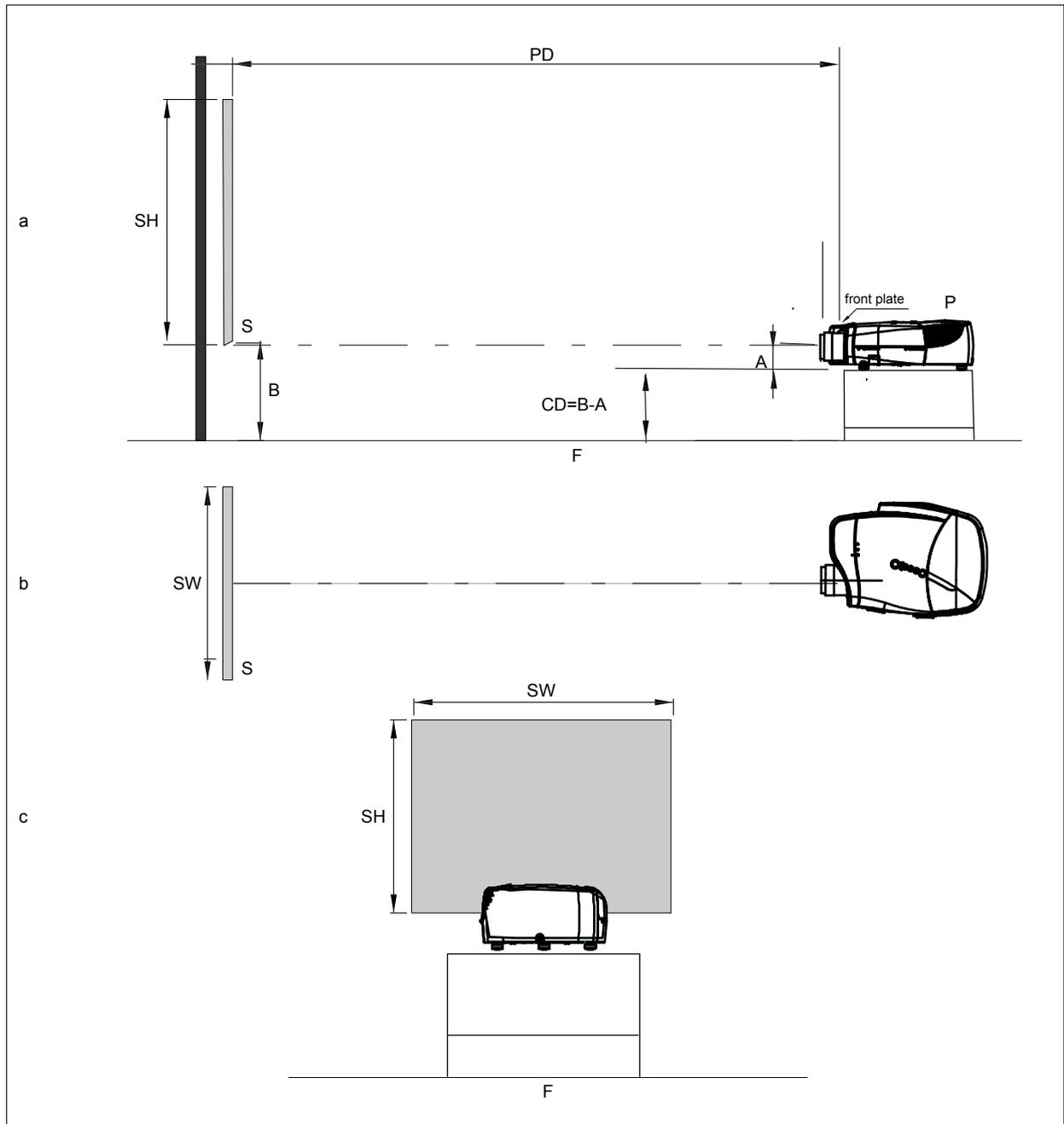


Image 4-8



A 100% Off-Axis position means that the position of the centre of the lens is shifted by half the screen height.



Never use a short throw lens in an Off-Axis installation. Shifting the lens will not guarantee optimal image quality.



CAUTION: Only for projectors containing a Server (Single Board Computer) : The harddisk in the server is formatted in horizontal position but can operate in all axes (6 directions). The projector should not be tilted more then +/- 5 degrees from these positions, otherwise error rates will increase.



CAUTION: Never place the projector on either side !

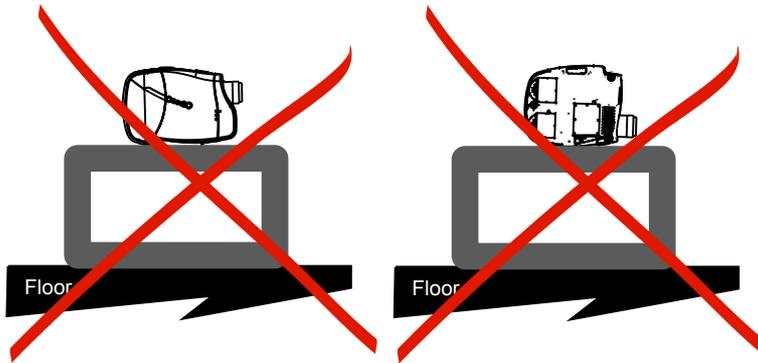


Image 4-9

5. CONNECTIONS

Overview

- Power connection
- Connections
- Signal connections

5.1 Power connection

Power connection

1. Use the supplied power cord to connect the projector to the power outlet.
2. Plug the female power connector into the male connector at the front of the projector.

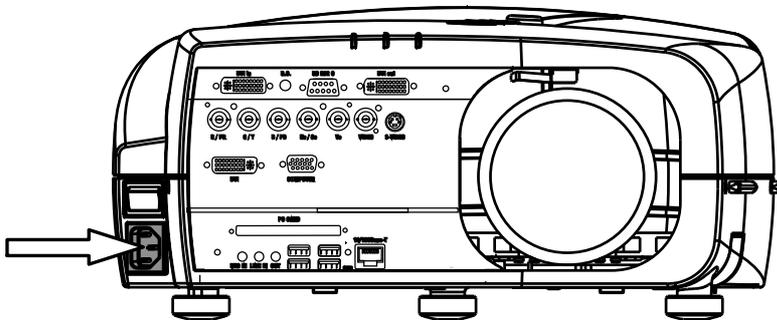


Image 5-1
Power connection

5.2 Connections

Server section layout

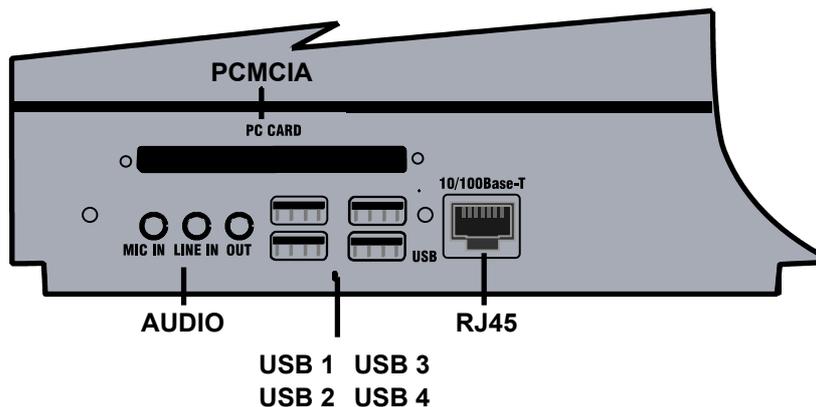


Image 5-2

How to connect the iCon server ?

1. Use the 2 RJ45 connector to connect the server to the installed network.
2. Use the USB ports to connect peripherals such as a mouse or a keyboard, ...
3. Use the PCMCIA slot to connect a Wireless LAN card or other optional inputs like Bluetooth, Modem cards,...

Note: recommended card type:

-The card should be a type II card.

-The card should be Windows™ XP compatible

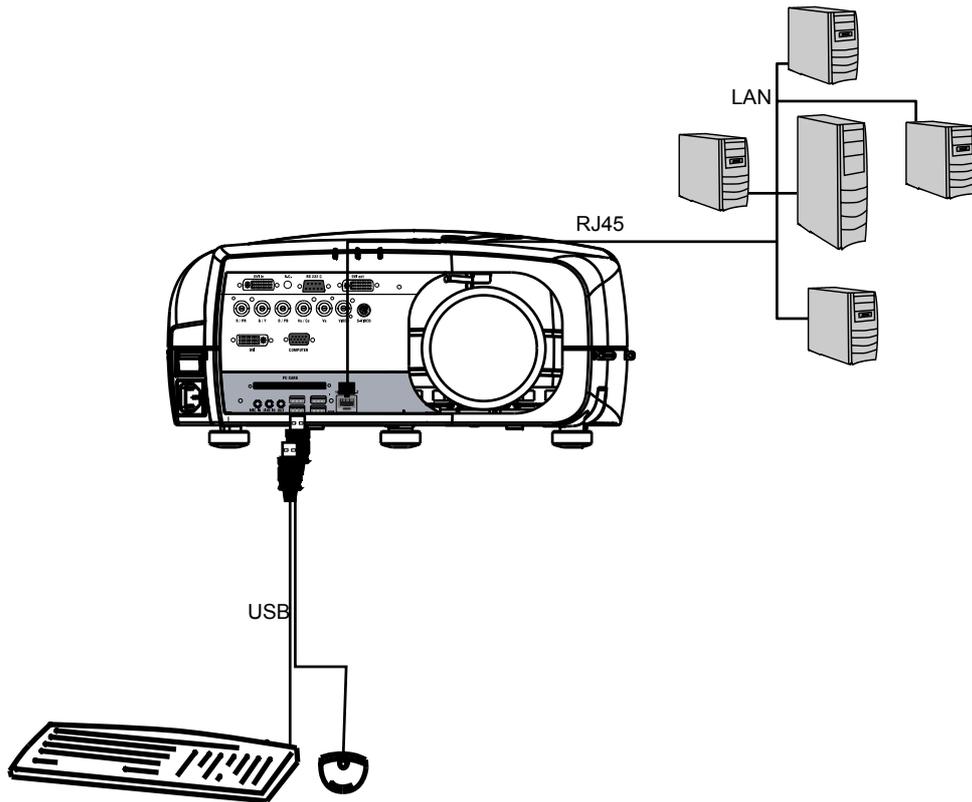


Image 5-3



Point to point configuration



Image 5-4

In case of a temporary configuration (demo purposes) one can use the point to point configuration, the connection being done via RJ45 connections using a crossed UTP cable.



The connection of the server section of the projector should be done in the same way as for a standard PC. If necessary, contact your local IT administrator.

5.3 Signal connections

Overview

- The input section
- Connecting a Composite video signal
- Connecting an S-Video signal
- Connecting an RGB signal
- Connecting a Component Video signal
- Connecting a DVI signal
- Connecting a computer signal
- The DVI output

5.3.1 The input section

Input layers

The input section is located at the front of the projector and is composed of 3 layers which can be equipped with different input modules depending on the ordered options .

The standard layers :

- Layer 1: DVI Input/Output module:
- Layer 2: RGBHV & Video analog input module
- Layer 3: DVI & Computer (D15) input module
- Layer 4 : Single Board Computer connections

The different available options :

- One extra RGBHV & Video analog input module on Layer 3
- HD SDI/SDI input output input module on Layer 3

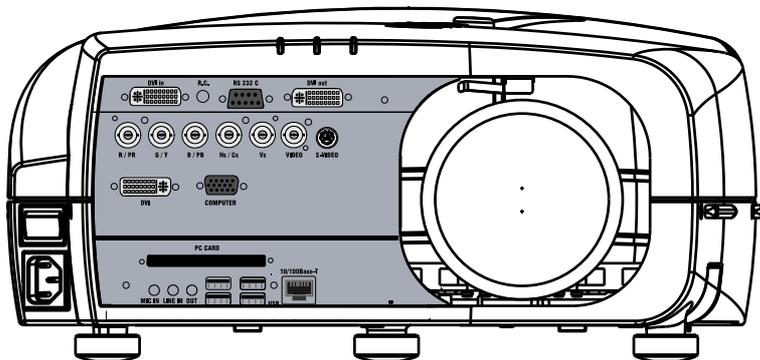


Image 5-5

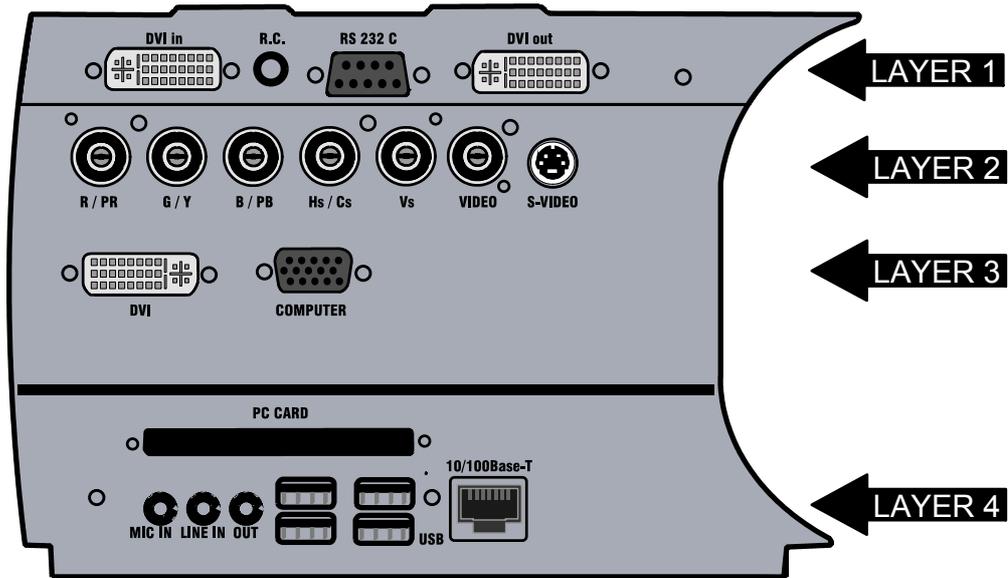


Image 5-6
Input section

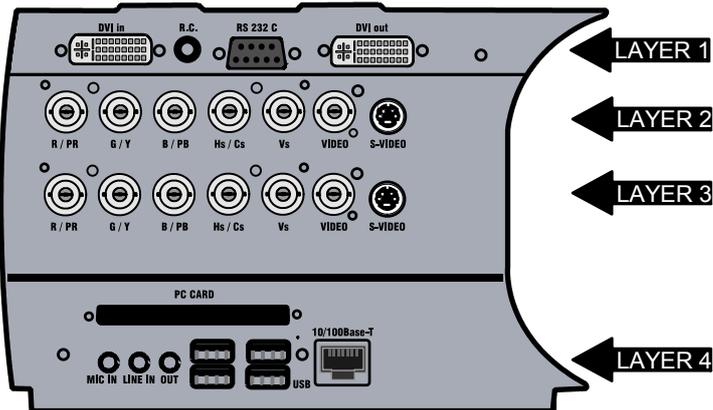


Image 5-7
Input with 2 RGB analog input modules (ordered with RGB Option)

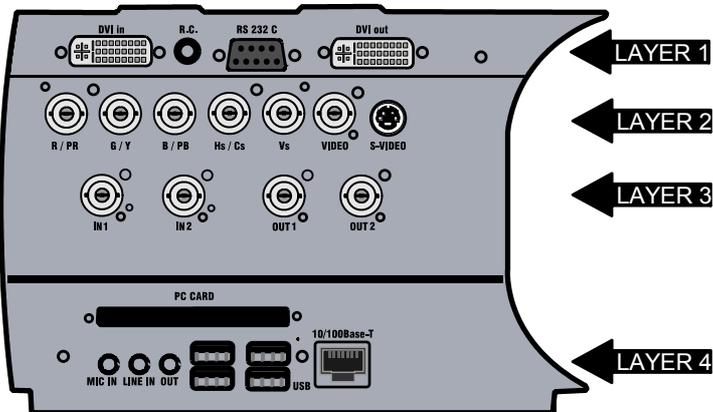


Image 5-8
Input with HDSDI/SDI module (ordered with HDSDI/SDI Option)

5.3.2 Connecting a Composite video signal

Composite video connection

A Composite video signal is often available on a yellow cinch connector of a Camera, VCR or DVD player, in this case you will need an adapter cable cinch/BNC to connect to Video input of the RGB board.

How to connect a composite video signal

1. Connect the BNC connector to the projector's BNC video input

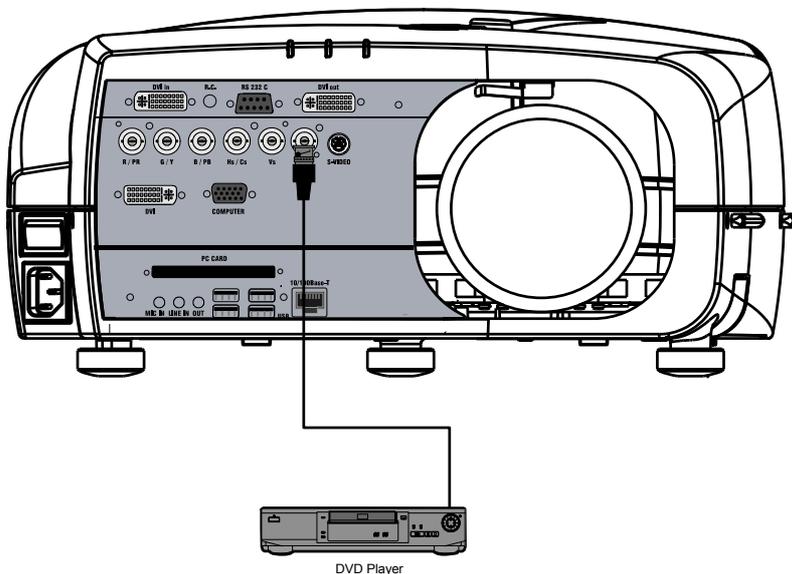


Image 5-9

5.3.3 Connecting an S-Video signal

S-Video connection

An S-Video signal is available on the Mini-Din connector of a camera, VCR or DVD player.

How to connect an S-Video connection

1. Connect the mini din connector to the projector's S-Video input

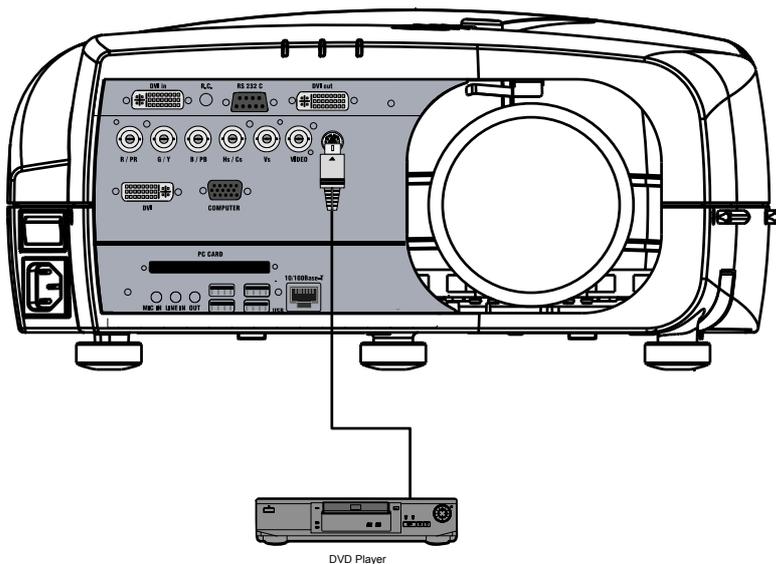


Image 5-10

5.3.4 Connecting an RGB signal

RGB data connection

The RGB input consists of 5 BNC

5. Connections

- 3 for the color signals R,G,B
- 2 for the sync signals H (horizontal sync), V (vertical sync)

RG_SB : If the source disposes of a composite sync output i.e. one wire includes the horizontal **and** the vertical sync than the V BNC must not be connected, resulting in 4 BNC being connected (V is free).

RG_SB : If the source disposes of a sync on Green output i.e. the Green color signal includes the horizontal **and** the vertical sync than the H and V BNC's must not be connected, resulting in 3 BNC being connected (H and V are free).

	BNC Connector				
	R	G	B	H	V
RGBHV	R	G	B	H	V
RG _S B	R	G _S	B	-	-
RG _S B	R	G	B	S	-

Table 5-1
How to use the BNC's in case of different RGB signals



The RGB 5 BNC input can also be used to connect a component video source : see *Connecting a Component video source*.

How to connect an RGB signal

1. Connect the 5 or 4 BNC cables to the projector's RGB input

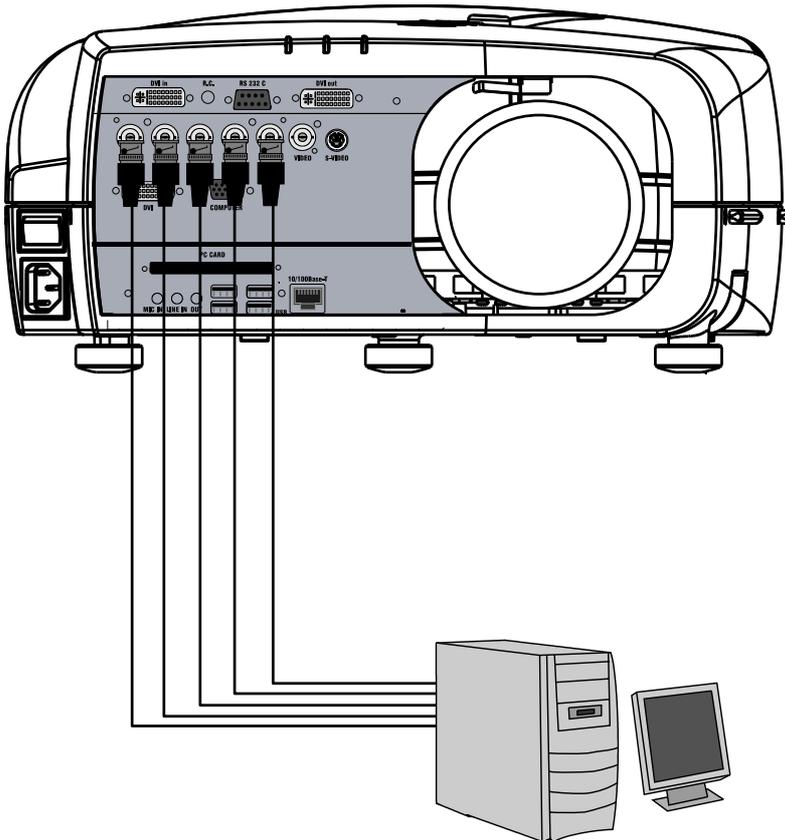


Image 5-11

5.3.5 Connecting a Component Video signal



Component Video

In Component Video the term component describes a number (3) of elements that are needed to make up the video picture, these components are R-Y/Y/B-Y. A composite video signal on the other hand contains all the information needed for the color picture in a single channel of information

How to connect a Component video signal

1. Connect the 3 BNC connectors to the projector's RGB input

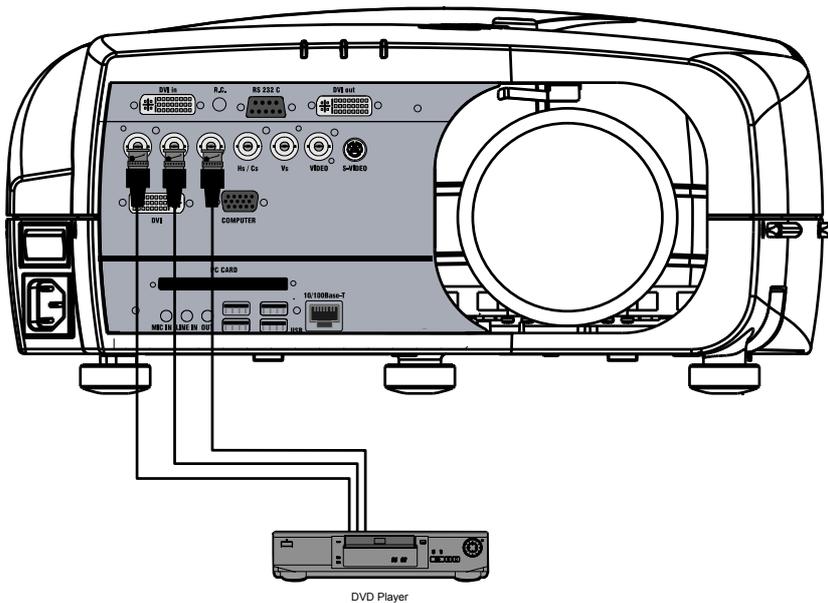


Image 5-12



In case of a “progressive scan” component video source, the notation used is PR/Y/PB

5.3.6 Connecting a DVI signal



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.

Input specifications

Single link DVI

Differential input voltage: 200 mV - 800mV

How to connect a DVI signal ?

1. Connect the DVI cable to the DVI input on Layer 0 or on Layer 2

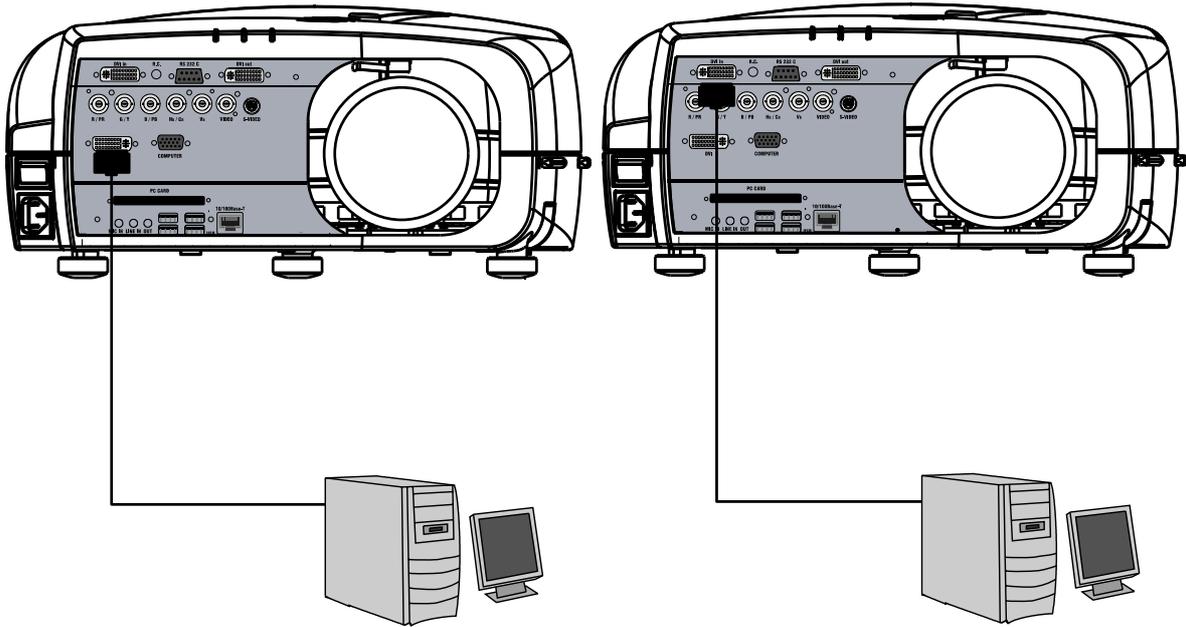


Image 5-13
Left side : DVI connection on Layer 2, right side : DVI connection on Layer 0



Note that the 2 DVI outputs are identical and are processed in the same way in the projector

5.3.7 Connecting a computer signal

How to connect a computer signal

1. Connect the D15 connector to the projector's Computer input

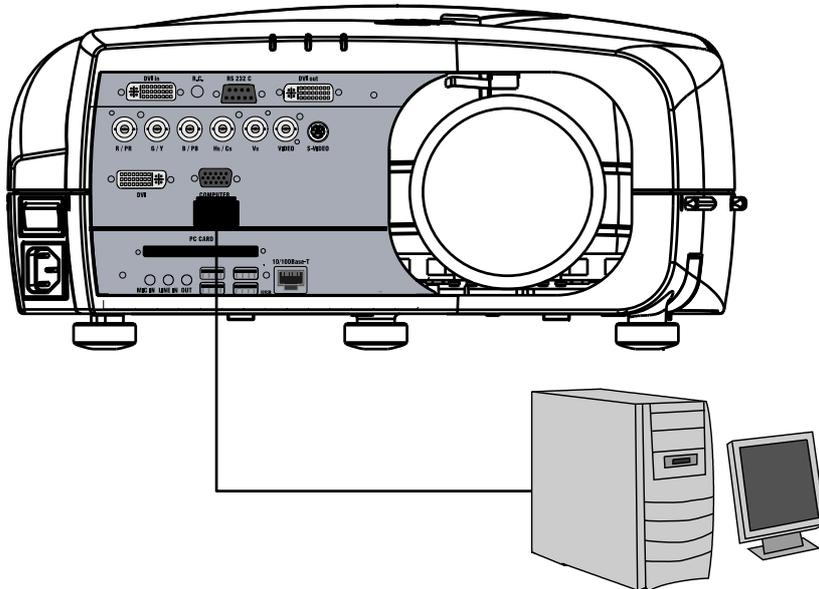


Image 5-14

5.3.8 The DVI output

What can be done ?

The DVI output is a copy of the projector's complete desktop image (containing also the source windows) and can be connected to an external monitor. Some monitors can fail to synchronize on the DVI signal, in this case disable the *Full screen synchronous representation* function in the *Display Settings* menu.

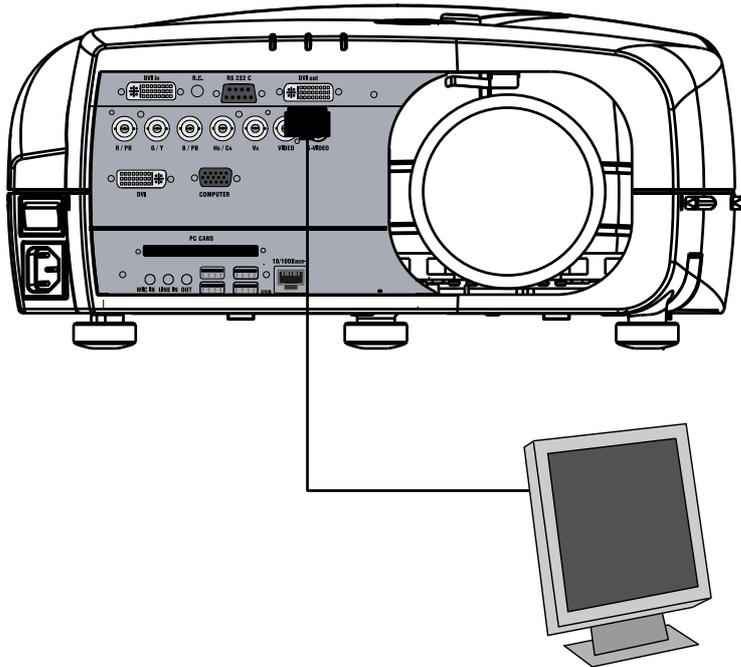


Image 5-15



The DVI output is at 1920x1080 (projector's native resolution)



Image 5-16

6. SETUP

Overview

- RCU & Local keypad
- Terminology overview
- Switching on
- Setting up the RCU address
- Setting up the projector address (only if necessary)
- Setting up the orientation
- Adjusting the lens
- Setup the baudrate for serial communication
- Setting the server ON/OFF state
- Preferences
- Installing the software
- Configuring the client software
- Configuring the Server software
- DropZone settings
- Start up

6.1 RCU & Local keypad

How controlling the projector ?

The projector can be controlled by the local keypad or by the remote control unit.

Location of the local keypad ?

The local keypad is located on the topside of the projector.

For key overview: "Terminology overview", page 31

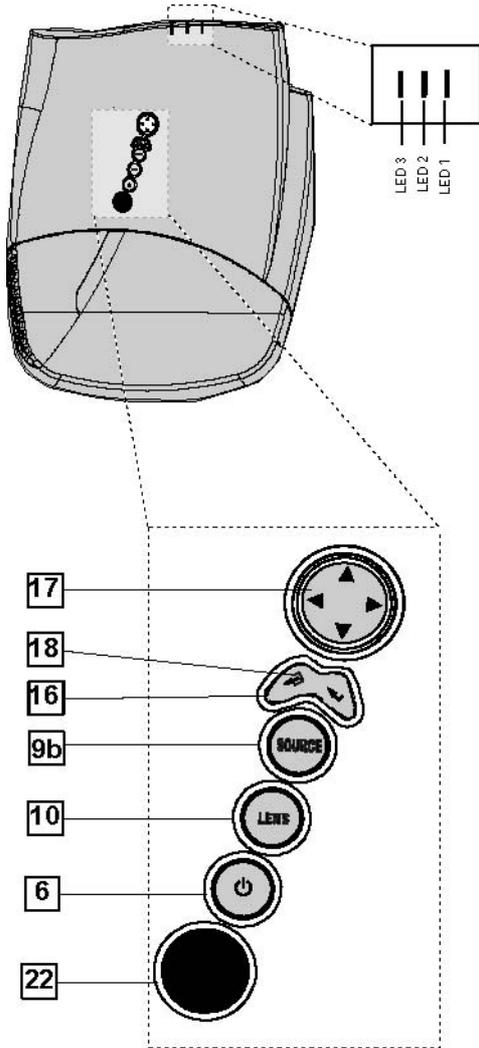


Image 6-1
Local keypad layout

Remote control functions.

This remote control includes a battery powered infrared (IR) transmitter that allows the user to control the projector remotely. This remote control is used for source selection, control, adaptation and set up. It includes automatic storing of picture controls (Brightness, Sharpness...) and settings.

Other functions of the remote control are :

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

Diagnose LED's

	Green	Red
LED1	cool down sequence: flickers 60 seconds (120 seconds in case of iQ 400 series) after switching to standby	rescue program (software error)
LED2	only for the versions containing a server: shows when projector is in standby and server is active.	hardware error
LED3	IR acknowledgement	continue : standby flickers : Security = ON

6.2 Terminology overview

Overview

The following table gives an overview of the keys.

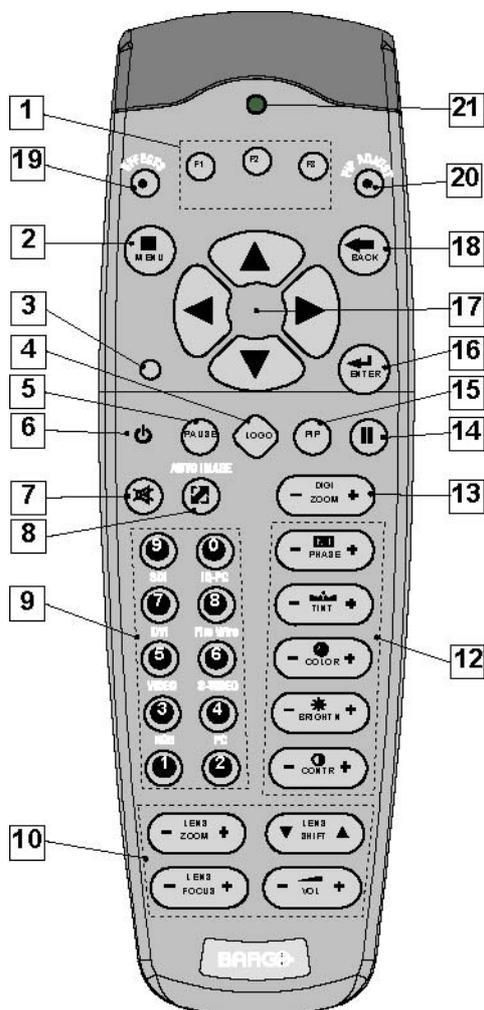


Image 6-2

1	Function keys	user programmable keys with functions for direct access.
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 key	allows to recall the stored Logo (not in PiP mode)
5	PAUSE	to stop projection for a short time, press 'PAUSE'. The image disappears but full power is retained for immediate restarting.
6	STBY	standby button, to start projector when the power switch is switched on and to switch off the projector without switching off the power switch. 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	to interrupt the sound reproduction (audio = optional).
8	AUTOIMAGE	Auto image, to center the image on the active LCD surface.
9	Digit buttons	direct input selection.
9b	SOURCE button	this button allows to switch through the active (scanned) inputs

10	Lens control	use these buttons to obtain the desired ZOOM, SHIFT, FOCUS.
11	VOL	use this button to obtain the desired sound level (audio = optional)
12	Picture controls	use these buttons to obtain the desired picture analog level.
13	DIGI ZOOM	allows a digital Zoom of a part of the image
14	FREEZ	press to freeze the projected image.
15	PIP	allows to activate the PICTURE IN PICTURE mode
16	ENTER	to confirm an adjustment or selection in the MENU. On the local keypad the ENTER button additionally accesses the PIP window resize function
17	Cursor keys	Cursor Keys on RCU or on the local keypad : to make menu selections or to access the toolbar.
18	BACK	to leave the selected menu or item (go upwards to previous menu).
19	EFFECTS	not yet implemented
20	PIP ADJUST	allows to select a PiP window and change its configuration on screen
21	RC operating indication	lights up when a button on the remote control is pressed. (This is a visual indicator to check the operation of the remote control)
22	IR receiver	IR receiver

Table 6-2



ordernumber RCU: R763794K

6.3 Switching on

How to switch on.

1. Press the power switch to switch on the projector.
 - When '0' is pushed in, the projector is switched off.
 - When '1' is pushed in, the projector is switched on

The projector starts in standby mode, LED3 is red.

Starting image projection.

1. Press **Standby** key once on the local keypad or on the remote control.

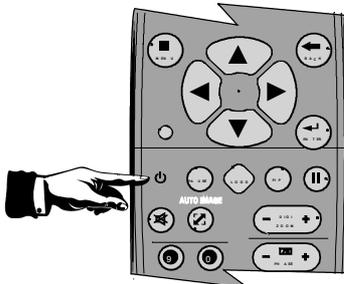


Image 6-3



It may take about 60 seconds before image projection, i.e. no projection until the completion of several operations (software initialization,...).



If the Security mode is enabled, a textbox will be displayed for PIN code entry, see *Security* setting in the *Installation* menu

6.4 Setting up the RCU address

What has to be done ?

To allow the communication between the RCU and the projector the RCU has to be programmed with the same address as the projector.

This address must be in the range 0–9.

To know the address of the projector, one can visualize it in projection mode (on screen) as well as in standby mode (shown with the LED's on top cover of the projector).



For more info on addresses see the appendix



At this stage the image projected may happen to be upside down or mirrored, this can be set in the *Installation* menu under *Projector orientation* (see further setting up the projector's orientation).

Displaying the Projector Address in Standby mode

1. Press the **Address** key (recessed key on the RCU) with a pencil.

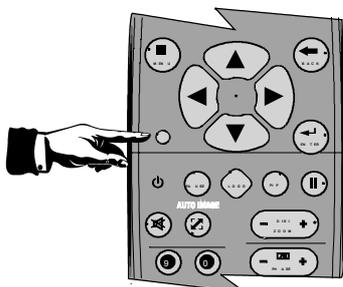


Image 6-4

All the LED's (3) on the top cover of the projector go out.

Then LED1 starts blinking green the number of hundreds. After that LED2 starts blinking the number of tens. Finally LED3 starts blinking green the number of units. If this is done, the original status of the LED's is restored.

Displaying the Projector Address in projection mode)

1. Press the **Address** key (recessed key on the RCU) with a pencil.

The projector's address will be displayed on the screen in a Textbox

Programming the RCU

1. Push the address key If the address is not entered within 5 seconds, the RCU returns to its default address (zero address) and controls then all projectors in the room.
2. Enter the same address with the digit buttons **within 5 seconds** after pushing the address key.

The projector can now be controlled with the RCU.



For example : if the projector address is 3, then press "3" on the RCU to set the RCU's address to match the projector's address.



Common address/Projector address : Beside the projector address, the projector disposes also of a Common address which can be set to “0” or “1” (by default “0”).

In other words, an RCU set to address “0” will always control a projector regardless of its projector address (since it uses the common address).

6.5 Setting up the projector address (only if necessary)

What can be done ?

The projector is shipped with projector address set to "0"

In some cases the projector address must be changed, for example if an unique RCU is used to control 2 or more projectors (independently).

In the OSD menu *Projector Address*, the following addresses can be programmed :

- Projector address: address defined by the user, may be from 0 to 255
0-9 is used for RCU communication, 0-255 being used for RS232 serial communication.
- Common address : address may be 0 or 1



For more info on addresses see the appendix

How to change the projector's address ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Installation*
3. Press ↓ to Pull down the *Installation* menu
4. Use ↑ or ↓ to select *Projector address*



Image 6-5

5. Press **ENTER**

A dialog box appears on the screen



Image 6-6

6. Enter the new projector address with the digit keys on the RCU, the local keypad or the cursor keys.

How to change the common address ?

1. Proceed in the same way as for the projector address

6.6 Setting up the orientation

What must be done ?

Depending on the mechanical orientation of the projector, the projector's internal settings have to be adapted.

The projector is shipped (default) with a table/front orientation.

How to set the orientation ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Installation* item
3. Press ↓ to Pull down the *Installation* menu
4. Use ↑ or ↓ to select *Orientation*
5. Press → to pull down the menu
6. Use ↓ or ↑ to select the desired orientation



Image 6-7

7. Press **ENTER**

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

6.7 Adjusting the lens

What must be done ?

Depending on the projection distance and the lens used, the image may not be at the desired size, position and/or may be out of focus.

The projector will always allow you to shift your image vertically as well as horizontally (when available) to position it on the screen. In addition, motorized lenses will also allow you to Zoom and focus the image.

All these lens parameters can be adjusted using the RCU, the local keypad or in the Installation menu of the projector's OSD.

- Zoom (only for motorized lenses)
- Focus (only for motorized lenses)
- Vertical Shift



The lens can also be adjusted via the dedicated keys on the remote.

How to Zoom/focus or shift via the RCU (or keypad)

1. Press **LENS ZOOM** or **LENS FOCUS** or **LENS SHIFT** on the RCU



Image 6-8

2. Use the arrow keys to adjust

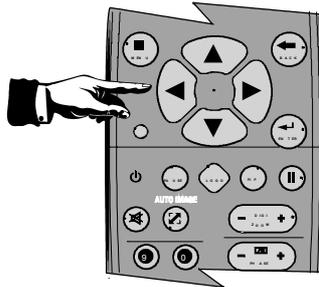


Image 6-9

How to Zoom/focus or shift in the OSD ?

1. Press **MENU** to activate the Tool bar
2. Press **→** to select the *Installation*
3. Press **↓** to Pull down the *Installation* menu
4. Use **↑** or **↓** to select *Lens Adjustments...*



Image 6-10

5. Press **ENTER**

A text box appears on the screen, follow the instructions.

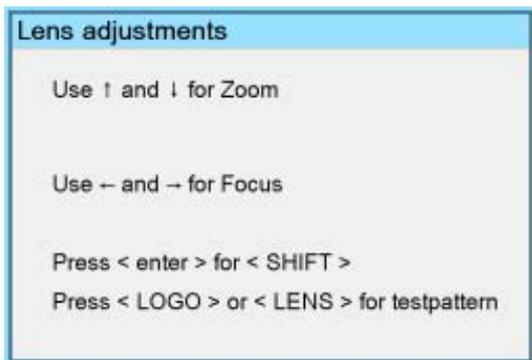


Image 6-11

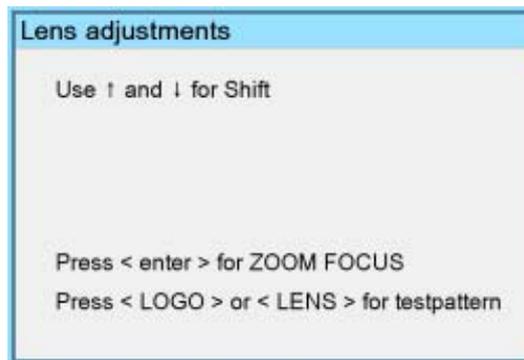


Image 6-12



The use of a sheet of paper held in front of the screen can be useful to determine the focus plane (position for best focus)



Vertical shift range : -25%(down) to 140%(up)
 Except for the QCLD (0.85:1) : -25%(down) to 30%(up)

6.8 Setup the baudrate for serial communication

What can be done ?

The RS232 IN port of the projector allows you to communicate with any other equipment disposing of an RS232 port (generally a PC used to upgrade the projector's firmware) using the RS232 protocol. The baudrate must be set to the same value on both the projector and the other equipment.

How to change the baudrate?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Installation* item
3. Press ↓ to Pull down the *Installation* menu
4. Use ↑ or ↓ to select *RS232 baudrate*



Image 6-13

5. Press → to pull down the menu
6. Use ↓ or ↑ to select the desired baudrate

6. Setup

7. Press **ENTER**



Always select the highest rate (115200) unless otherwise specified.

6.9 Setting the server ON/OFF state

Starting up

The Server (desktop) will always be displayed at projector startup, it can however still be shut down and re-started via the *General* menu.

During the standby state of the projector the Server can be chosen to be active or inactive, this is done by defining the state of the Server during a "Projector standby state".



It is recommended to leave the server ON even when the projector is in standby to allow the use of the full network capabilities.

Manual start up: How to start up/shut down/reset the Server ?

1. Press **MENU** to activate the Tool bar
2. Press → to select *General*
3. Press ↓ to Pull down the General menu
4. Use ↑ or ↓ to select *iCon Server*
5. Press → to open the menu
6. Use ↑ or ↓ to select *ON/OFF/Reset*

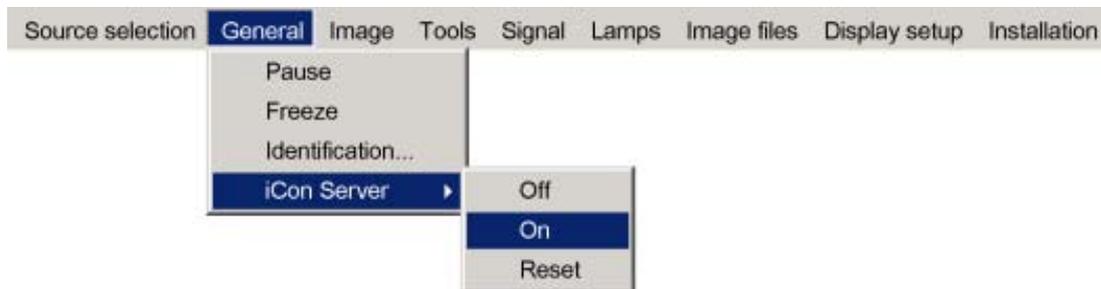


Image 6-14

7. Press **ENTER**



When resetting the Server the menu items in the Server menu are greyed out during a short period.

Projector standby state: How to set the projector standby state ?

1. Press **MENU** to activate the Tool bar
2. Press → to select *Installation*
3. Press ↓ to Pull down the menu
4. Use ↑ or ↓ to select *iCon Server settings*



Image 6-15

5. Press **ENTER**

6. A dialog box is displayed

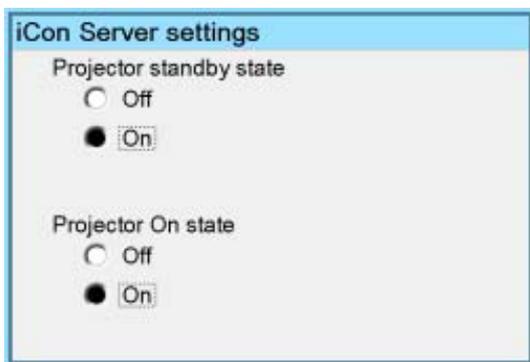


Image 6-16

7. Select *ON* or *OFF* for the "Projector standby state" setting

6.10 Preferences

Overview

- Language setting
- Pre-programming RCU quick access keys
- Automatic startup
- Background

6.10.1 Language setting

List of languages

The list of selectable languages depends on the software version of the projector.

How to change the Language ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Installation* item
3. Press ↓ to Pull down the *Installation* menu
4. Use ↑ or ↓ to select *Language*
5. Press → to pull down the menu
6. Use ↓ or ↑ to select the desired language

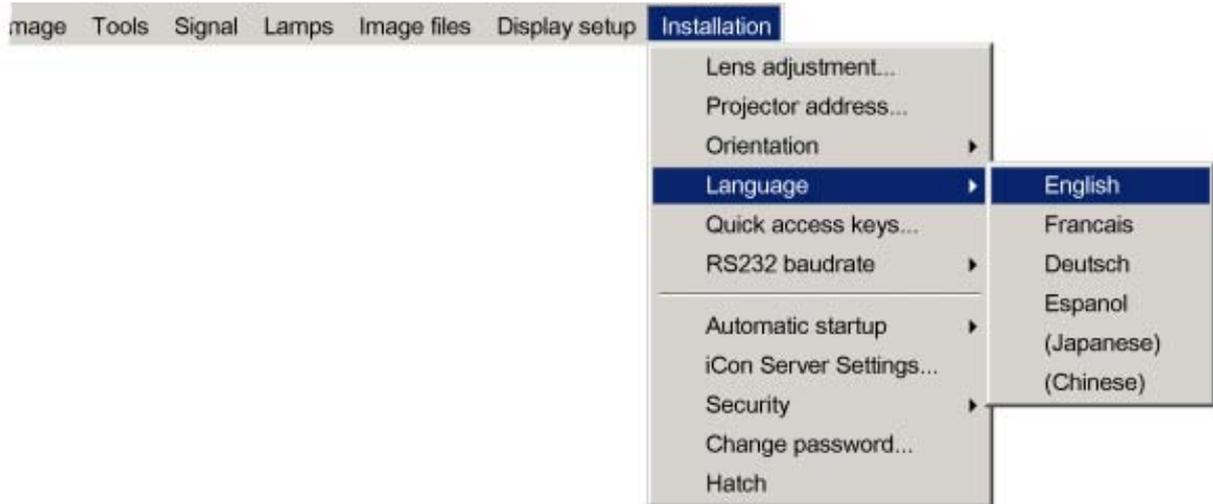


Image 6-17

7. Press **ENTER**

The language is adapted and a bullet shows the active selection.

6.10.2 Pre-programming RCU quick access keys

What can be done ?

The 3 function keys on top of the RCU can be associated with a particular item in one of the menus.

Each function which is not password protected or does not have a key on the RCU can be associated to a function key.

How to get an overview of the quick access keys ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Installation*
3. Press ↓ to Pull down the *Installation* menu
4. Use ↑ or ↓ to select *Quick access keys*

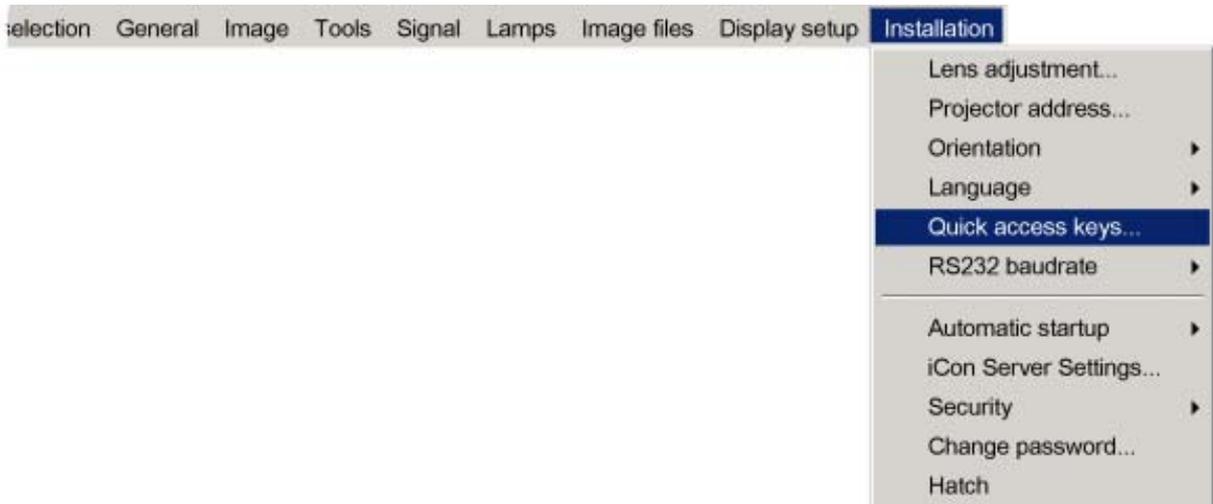


Image 6-18

5. Press **ENTER**

A text box appears on the screen.

How to program the quick access keys ?

1. Scroll through the menus to the desired menu item
2. Push the desired function key for 3 seconds

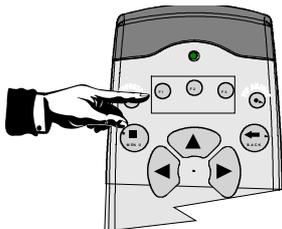


Image 6-19

The menu item is stored in the quick access key



Factory pre-programmed functions

-F1 :

-F2 :

-F3 :

6.10.3 Automatic startup

What can be done ?

The automatic startup allows to bypass the standby state i.e. start up without going in standby state after switching on the projector.

This means that the automatic startup allows immediate restart of the projector after a power failure (breakdown), i.e. without passing through the standby state, by recovering the previous settings (previous source,...).

This function can be disabled if undesired or inadequate for safety reasons, etc.



CAUTION: If the Automatic startup function is enabled one must be aware of the fact that it involves safety precautions

Make sure that the projector (or the operators!) will not be affected by altered environmental conditions when restarting at power resume.



Unless it is required, it is advised to leave this setting OFF.

In case of a power breakdown, this may introduce unwanted conditions at power resume : projector starting up with high lamp temperature conditions, bad PC status, ...

How to enable/disable the Automatic startup?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Installation* item
3. Press ↓ to Pull down the *Installation* menu
4. Use ↑ or ↓ to select *Automatic startup*
5. Press → to pull down the menu
6. Use ↓ or ↑ to enable/disable the automatic startup

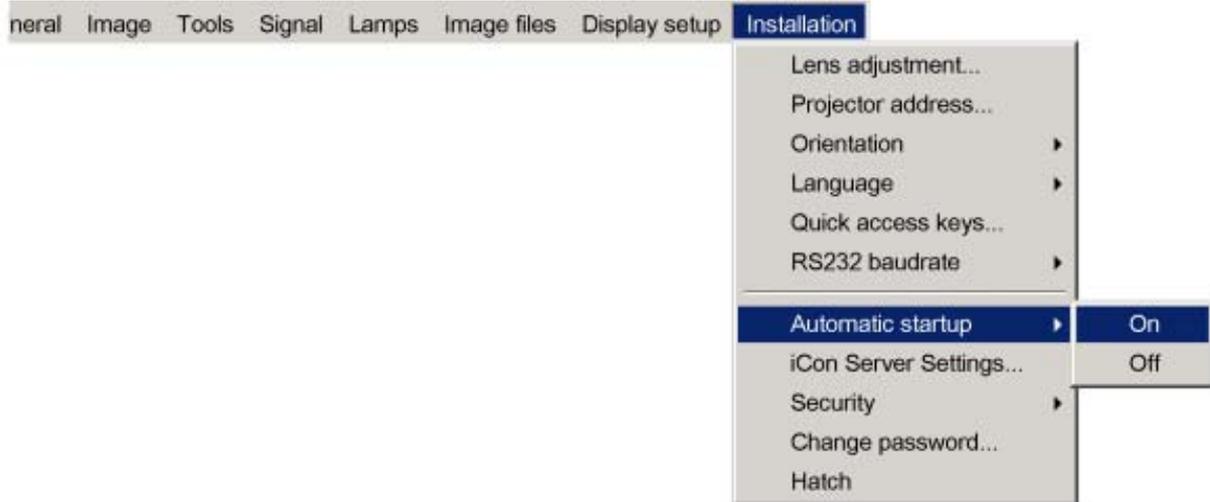


Image 6-20

7. Press **ENTER**

6.10.4 Background

Background setting

The background of the projected image can be chosen to be :

- iCon server: the desktop is always displayed in the background : video content is displayed on top of the desktop image (desktop integration).
- Black : a black image is displayed in the background

How to setup the background ?

1. Press **MENU** to activate the Tool bar
2. Press **→** to select the *Signal* item
3. Press **↓** to Pull down the menu
4. Use **↑** or **↓** to select *Background startup*
5. Press **→** to pull down the menu
6. Use **↓** or **↑** to select *Black* or *iCon Server*

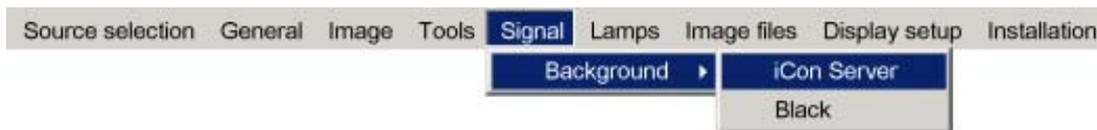


Image 6-21

7. Press **ENTER**

6.11 Installing the software



An Administrator password has been installed for security reasons (worm and virus protection):

Password : Barco (case sensitive !)

Necessary parts

- installation CD (delivered)
- PC

How to install the client software ?

1. Install the client software from the CD (Setup file)

How to install the server software ?

1. The server software is by default installed on the projector.
if necessary, reinstall it from the CD.



The CD containing the server software and the client tools are delivered with the projector. They can always be downloaded from the secured PartnerZone Web site : <https://secure.barco.com/presentation/>

6.12 Configuring the client software



The same universal client interface is used for different network centric projectors (iQ, iD, iCon). The layout of the interface (position of the controls,...) is adapted after detection of the projector type. Some screenshots may not fully coincide with the reality.

How to start up the client software ?

1. Start up the previously installed client program

The interface shows 3 tabs (upper tab control) : Control, Diagnosis and Configuration

The active sub interface is the control sub screen

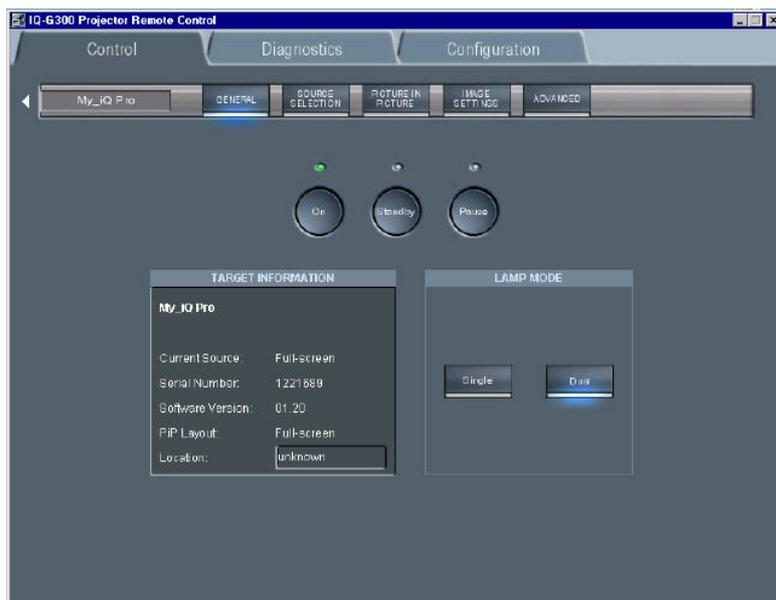


Image 6-22
Control interface

2. Click on the upper menubar to select the desired sub interface



IP

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

How to add a projector to the projector list

1. Click on the white arrow



Image 6-23

A menu is dropped down



Image 6-24
projector list: contains a projector and a projector group sub list

2. click on the + sign of the projector list

A dialog box is displayed

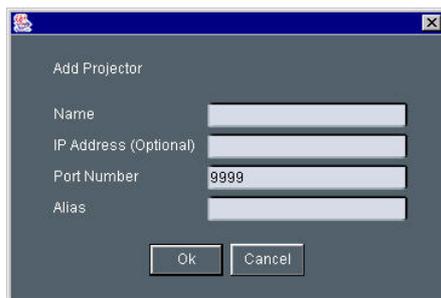


Image 6-25

3. Fill in the Name, the IP address (optional) and the Port number of TCP/IP connection
Note: default port number = 9999
4. Fill in the alias
Tip: "Alias" is a custom name whereas "Name" is the name by which the projector is identified on the (corporate) network
5. Click OK to confirm or Cancel

The projector is now added to the list of projectors



Depending on the installed network (use of DHCP server or not), the IP address may be needed to be entered or not.



For a point to point installation the projector's IP address must be entered manually.
Check the operating system on the for the IP address, or contact your IT administrator.

How to add a projector group to the projector group list ?

1. Click on the white arrow
A menu is displayed, image 6-24
2. Click on the + sign of the projector group list
A dialog box is displayed



Image 6-26

3. Fill in the group name
4. Click OK to confirm or Cancel
The group is now added to the list of groups

How to add projectors to a group ?

1. Click on the projector to be added in the projector list
2. Drag the projector down to the projector group.
The projector is added to the group.



Adding a projector to a group can also be done by using the "Copy + Paste" method on the right mouse button menu.

How to connect to a projector or group of projectors ?

1. Double click on the projector or group of projectors
A green dot appears, indicating that the projector is present on the network and working properly



Image 6-27
connected and active projector

- A connected and active projector

The name of the projector or group is now displayed in the upper part of the screen and indicates that the communication has been set



Image 6-28
A connected and active projector



When connected to a group of projectors, some controls may be disabled.

In general, controls will only be selected if this is the status of all projectors in the group.

Sliders will be set to a particular value only if this is the same on all projectors in the group, otherwise they will be positioned centrally with a dash in the value box. When the slider is moved the box will show the new value and this value will be sent to all projectors in the group.

Labels such as Current Source in the general page will only be shown if the string value is the same on all projectors, otherwise a dash will be shown

The Target information block

The target information block displays the main characteristics of the connected projector or group of projectors.

This gives also an indication whether the communication setting has been successful or not.



Image 6-29

6.13 Configuring the Server software

Internal network connection

The internal connection (firmware connection) between the projector controller and the single board computer uses fixed IP addresses.

The IP address of the SBC can be found in control panel

- SBC: IP address = 192.168.42.51, subnet mask = 255.255.255.248



Projector Controller's IP address = 192.168.42.50

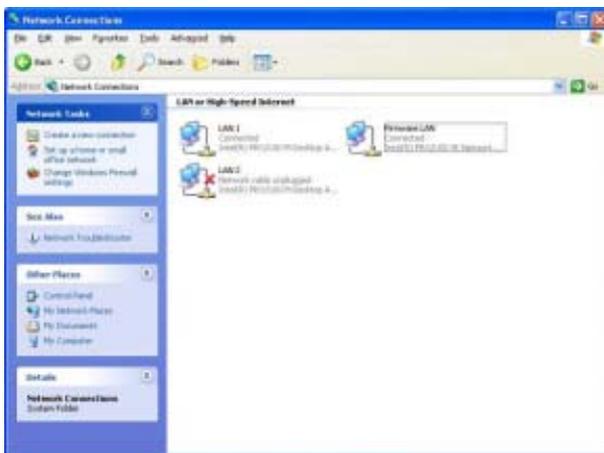


Image 6-30

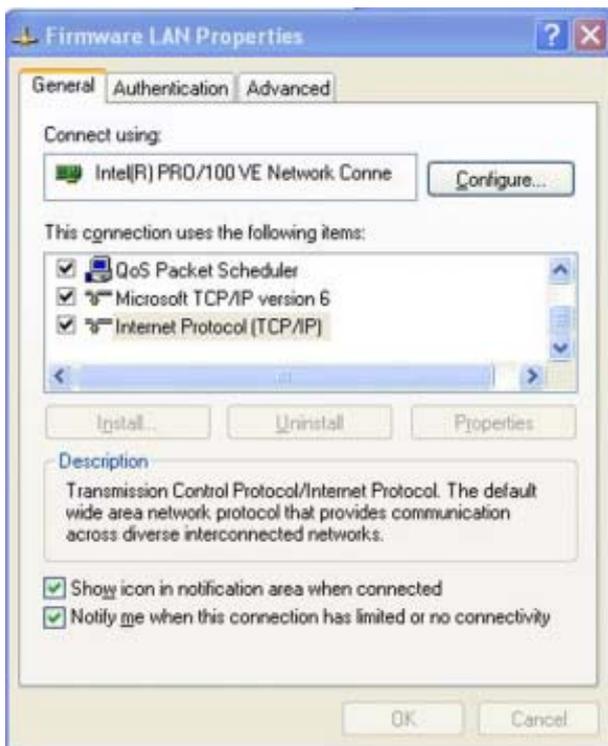


Image 6-31

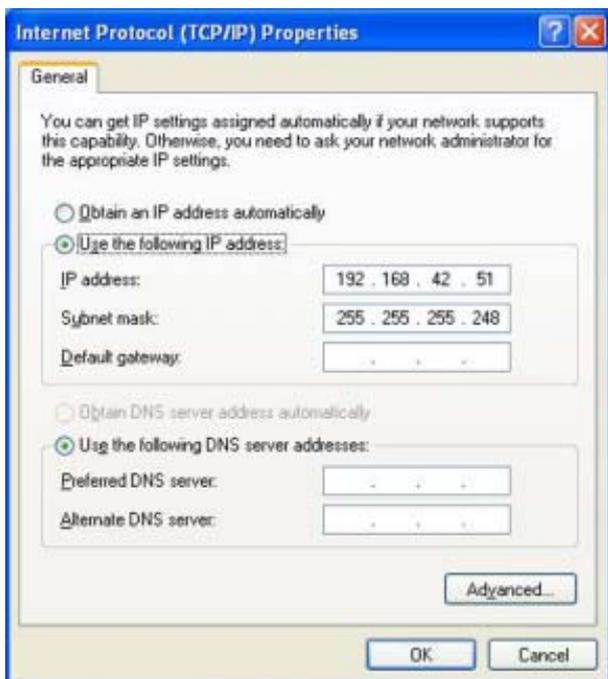


Image 6-32



CAUTION: Leave these IP addresses unchanged !

The server menu

The server menu can be opened by right clicking from the server tray icon



Image 6-33

Start Meetings control

The meeting control is started and positioned on the desktop, through out the meeting it will allow to :

- Accept requests interactively : a request for a desktop sharing from a client PC must be accepted on the iCon server, a dialog box is displayed on the iCon asking to accept or decline the desktop sharing request
- Deny all requests : all request are denied
- Accept all requests automatically : desktop sharing is always accepted at the iCon (server) without prompting for confirmation
- Notify end of meeting at : allows to set a reminder at expected end time of the meeting



Image 6-34

How to configure the Server settings ?

1. Go to the server icon in the lower task bar of the desktop and click the right mouse button.
A menu is displayed
2. Select *Settings*
A dialog box is displayed allowing to select different tabs
 - Networking
 - Dropzone, see Dropzone chapter
 - Exchange

Networking settings

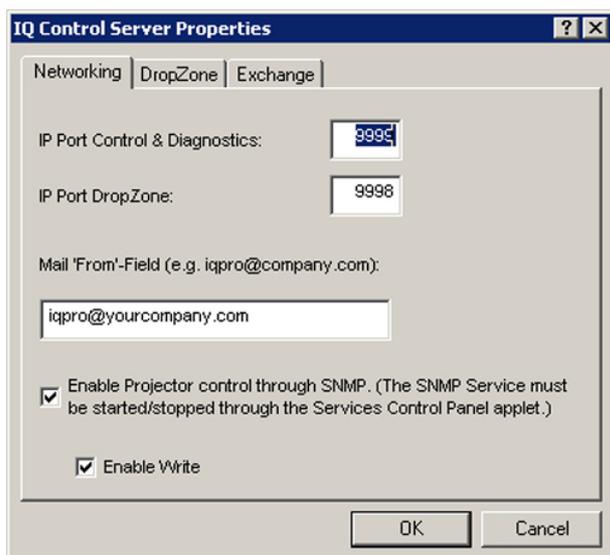


Image 6-35

- Port settings: it is advised to leave these settings in their default value.
- Mail to field : see mail configuration in the client software
- SNMP enable: allows to enable the SNMP control of the projector.
The *Enable write* option allows to enable the client to overwrite projector settings via SNMP.
Unchecking this option means that projector settings will only be read.

Exchange settings

This tab allows to fill in the exchange parameters to allow scheduling of projector tasks.

These parameters should be configured by your local IT administrator



Image 6-36

Miscellaneous settings

This tab allows following settings :

6. Setup

- Enable password protection : when using a password, one must enter it when starting up the client interface
- Automatically open sole document ... : when using a USB stick, the document is automatically opened (only when one document present).



When using a password, the control via the previous V1.1 client version will not be possible therefore disable password protection. Note that using a previous client version in combination with V1.2 server is indicated with following text box :



Image 6-37
client-server soft incompatibility



Image 6-38



To check the server version open the about menu from the tray



Image 6-39

6.14 DropZone settings

What can be done ?

The Server settings on the Projector allow to configure the DropZone in several ways:

- Disallow new meeting participants: New meeting participants will not be able to request desktop sharing or desktop control.
- Disallow Launch file: Launching a file with the DropZone will be impossible when activating this setting, hereby preventing undesired content to be projected during a meeting.
- Enable/disable desktop sharing at startup or logon.

How to setup the DropZone ?

1. Go to the server icon in the lower task bar of the server desktop and Click the right mouse button.

A menu is displayed



Image 6-40

2. Select *Settings*
3. Select the *DropZone* tab

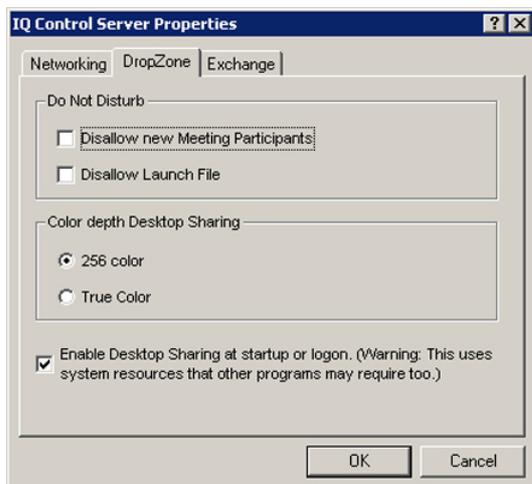


Image 6-41

4. Check the desired settings



Choosing *True color* as color depth setting will slow down the communication.



It is advised to leave the other Server properties as they are. If necessary Contact your IT administrator.

6.15 Start up

Start up

To start using the DropZone one must define the server (projector/display) to connect to. Several situations are possible.

1. The projector/display to connect to has not yet been declared in the DropZone interface, in that case the projector/display has to be added to the DropZone list using the **Add** function.
2. The projector/display to connect to has already been declared in the DropZone, one must then just selected it from the list. In case the projector/display name is not known, there is a possibility to select the projector by its location (only if the location has been specified).

How to open the installation menu ?

1. Click on the arrow to pull down the installation menu.

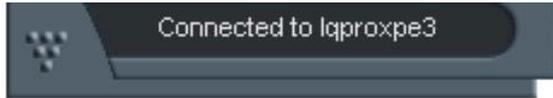


Image 6-42

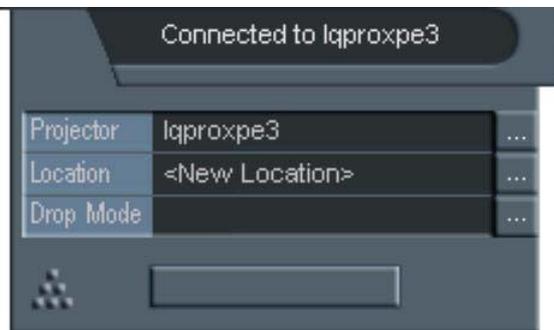


Image 6-43
installation menu

How to add a projector to the list ?

1. Click on the three suspension points to open the projector selection dialog box.

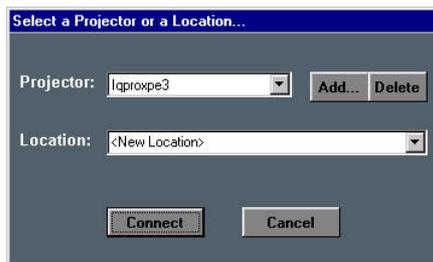


Image 6-44

2. Click on the **Add** button.
A dialogbox is displayed.



Image 6-45

3. Enter the projector name or browse the network.
4. Click on **OK**.
5. Enter the Location (optional).
6. Click on **Connect**.

Following message is displayed : “Connected to <projectorname>...”

How to select an existing projector by its name ?

1. Click on the three suspension points to open the projector selection dialog box, image 6-44
2. Open the listbox and select the projector.

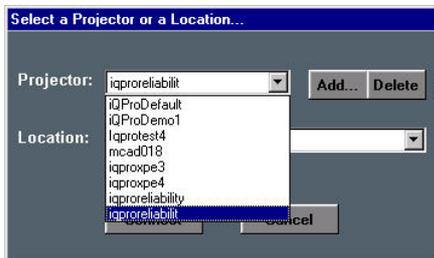


Image 6-46

the location will also be filled (if it has been entered previously).

3. Click on **Connect**.

Following message is displayed : “Connected to <projectorname>...”

How to select an existing projector by its location ?

Can be useful when the projector name is not known.

1. Click on the three suspension points to open the projector selection dialog box, image 6-44
2. Open the listbox and select the location.

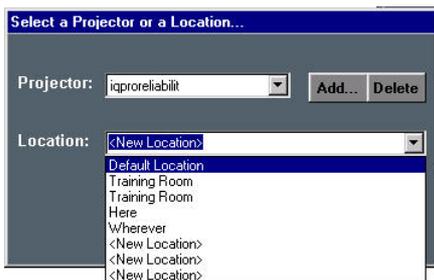


Image 6-47

The projector name is filled in.

3. Click on **Connect**.

Following message is displayed : “Connected to <projectorname>...”



This is only possible if the location has been filled, the default value for location being “<New Location>”



If the projector is not found following message will be displayed : “Host not found”

If the projector is found but unable to respond (projector disconnected from the network, server software not running, ...) following message will be displayed : “ Host found , but server inactive”

7. ADVANCED

7.1 The OSD Menu

Structure

The projector has a build in tool bar menu which allows easy access to different parameters for projector setup.

The menu is activated by pressing **MENU**, it contains 2 levels depending on the type of user:

- Level 1: Standard user
- Level 2: Advanced user
Level 2 is password protected, the advanced parameters are only visible when the correct password has been entered (factory password = "0000")



When the advanced parameters are not visible they are replaced by "More ..."

Menu items which are not applicable are greyed out.

Menu Layout

A grey line gives the transition between standard and advanced parameters.

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

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



The menus inserted in this manual are of the advanced type: all the items are visible The menus seen by a standard user on the screen will hence not correspond with the menus in the manual i.e. the advanced items will not be visible, they will be replaced with "More..."

Greyed out menus or items are not available in this software version

How to pull down a menu ?

1. Use ↓ to pull down a menu

How to pull down a submenu ?

1. Use → to pull down a submenu

How to exit the submenu ?

1. Press **BACK** to exit a submenu



Press MENU to exit the menu



When the menu has been exited for more than 1 minute, the advanced user password has to be re entered.

7.2 Using the Dialog boxes

How to use the dialog boxes ?

Some parameters are modified by means of a dialog box, where selections can be made and/or values can be entered.

The values can be entered in several ways:

Entering numeric values using the numeric keys on the remote control

1. Press **ENTER** to activate the input field.

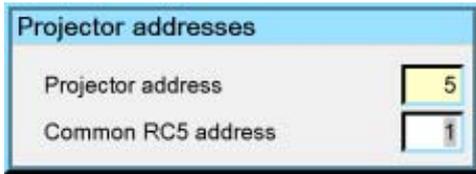


Image 7-1

2. Key in the desired value.

Entering numeric values using the arrow keys on the remote control

1. Press **ENTER** to activate the input field.
2. Press ← or → to select the digit to be changed.

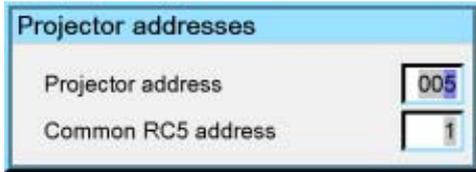


Image 7-2

3. Press ↓ or ↑ to increase or decrease the value.

Entering numeric values using the arrow keys on the local keypad

1. Press **ENTER** to activate the input field.
2. Press ← or → to select the digit to be changed.
3. Press ↓ or ↑ to increase or decrease the value.



To confirm the changes always press **ENTER**.

Use ↓ or ↑ to browse between the different fields.



In some cases an alphanumeric value (file name, ...) has to be entered. Use ↑ or ↓ to scroll through the character values once the input field is activated.

Following characters can be browsed in this particular order:

Decimal scroll list: 0123456789

Signed decimal scroll list: 0123456789-

ASCII scroll list: ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789+*/&@#.;:abcdefghijklmnopqrstuvwxyz

7.3 Source selection

Overview

- Source selection
- Composite video
- S-Video
- RGB-YUV
- PC
- DVI

7.3.1 Source selection

Selecting a source

The Source selection menu allows to select one of the different inputs. Another method to select an input source is via the remote control using the numeric keys or by using the local keypad.

Selecting a source from the menu bar (OSD) will always display that source in a **full screen** mode.



When selecting a source with a different resolution (and/or aspect ratio) than the projector's resolution (and/or aspect ratio), the source can be shown in its native resolution or can be re-scaled to the projector's resolution, the latter case brings of course some lost of quality.



The resolution of the projector is 1920x1080 with an aspect ratio of 16:9



Selecting a source via the local keypad : the Source button on the local keypad allows to access the *Source selection* menu, continue with the arrow buttons and the ENTER button to select a source via the local Keypad

7.3.2 Composite video

When

Select composite video when you are in presence of a PAL or NTSC video signal.

A composite video signal is often available on a yellow cinch connector of a Camera, VCR or DVD player.

How to select the composite video input ?

1. Press **MENU** to activate the Tool bar
2. Press ↓ to Pull down the Source Selection menu
3. Use ↑ or ↓ to select *L2 Video*



Image 7-3

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

A bullet indicates the selected composite video source which now appears on the screen.

Adjustments on a Composite video signal

The projectors allows different adjustments on a composite video signal. Depending on the type of signal (NTSC /PAL) the terminology may differ :

- Contrast
- Brightness
- Color : adjusts the level of color saturation in a PAL signal
- Tint : adjusts the level of color saturation in an NTSC signal
- AGC: Automatic Gain Control

7.3.3 S-Video

When

Select the S-Video input when in presence of a video signal also called S-VHS signal.

An S-Video signal is available on the Mini-Din connector of a camera, VCR or DVD player.

Adjustments on a S-Video signal

The projectors allows different adjustment on a video signal. Depending on the type of signal (NTSC /PAL) the terms differ :

- Color : adjusts the level of color saturation in a PAL signal
- Tint : adjusts the level of color saturation in an NTSC signal

How to select the S-Video input ?

1. Press **MENU** to activate the Tool bar
2. Press ↓ to Pull down the Source Selection menu
3. Use ↑ or ↓ to select *L2 S-Video*



Image 7-4

4. Press **ENTER** to confirm your choice
A bullet indicates the selected composite video source which now appears on the screen.

7.3.4 RGB-YUV

When

Select RGB-YUV when in presence of a data signal of the type RGB+ sync connected to the RGB input (5 BNC's) or a component signal of the type (R-Y)/Y/(B-Y). The submenu of RGB-YUV allows to select whether it is an RGB signal or a component signal YUV. These signals are often available on a VGA D15 connector of a PC or another image generator.



An RGB data signal can have its sync signal added in different ways, refer to the Installation section for more information on the RGB+sync signals accepted by the RGB input.

How to select the RGB input ?

1. Press **MENU** to activate the Tool bar
2. Press ↓ to Pull down the Source Selection menu
3. Use ↑ or ↓ to select *L2 RGB-YUV*
4. Use → to open the menu
5. Use ↑ or ↓ to select *RGB* or *YUV*



Image 7-5

6. Press **ENTER** to confirm your choice
A bullet indicates the selected source which now appears on the screen.

Adjustments on an RGB signal

The projector allows different adjustments on an RGB signal :

- Contrast
- Brightness
- Phase
- Input balance
- AutoImage : or manual edit of the image file settings

7.3.5 PC

When

Select PC when you are in presence of a data signal of the RGB + sync form connected to the D15 input connector of the projector.



An RGB data signal can have its sync signal added in different ways, refer to the Installation section for more information on the RGB+sync signals accepted by the PC input.

How to select the PC input ?

1. Press **MENU** to activate the Tool bar
2. Press ↓ to Pull down the Source Selection menu
3. Use ↑ or ↓ to select *L3 PC*



Image 7-6

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

A bullet indicates the selected composite video source which now appears on the screen.

7.3.6 DVI

When

The projector is equipped with 2 DVI inputs, one located on the layer 1 and the other on layer 3.

Select DVI when in presence of digital data signal connected to a DVI input of the projector. These signals are often available on a PC or other image generator.

How to select the DVI input on layer 1 ?

1. Press **MENU** to activate the Tool bar
2. Press ↓ to Pull down the Source Selection menu
3. Use ↑ or ↓ to select *L1 DVI*



Image 7-7

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

A bullet indicates the selected composite video source which now appears on the screen.

How to select the DVI input on layer 3?

1. Press **MENU** to activate the Tool bar
2. Press ↓ to Pull down the Source Selection menu
3. Use ↑ or ↓ to select *L3 DVI*



Image 7-8

4. Press **ENTER** to confirm your choice
A bullet indicates the selected composite video source which now appears on the screen.

Adjustments on a DVI signal

The digital nature of this signal eliminates the need of a large number of adjustments

7.4 General

Overview

- Pause
- Freeze
- Identification

7.4.1 Pause

Pause

The Pause function allows to stop the image display, the projector remaining with full power for immediate restart. The image display is interrupted and the projected background is black.

How to pause the image display?

1. Press **MENU** to activate the Tool bar
2. Press → to select *General*
3. Press ↓ to Pull down the General menu
4. Use ↑ or ↓ to select *Pause*

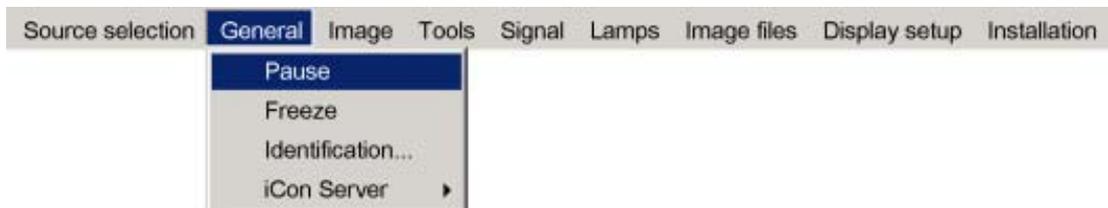


Image 7-9

5. Press **ENTER**



The projection can also be interrupted using the PAUSE key on the RCU. To restart the image projection press PAUSE

7.4.2 Freeze

Freezing the image

With the Freeze function, the image can be frozen. To restart the image, reuse the Freeze function or press the **FREEZE** button on the remote.

How to freeze the image ?

1. Press **MENU** to activate the Tool bar
2. Press → to select *General*
3. Press ↓ to Pull down the General menu
4. Use ↑ or ↓ to select *Freeze*

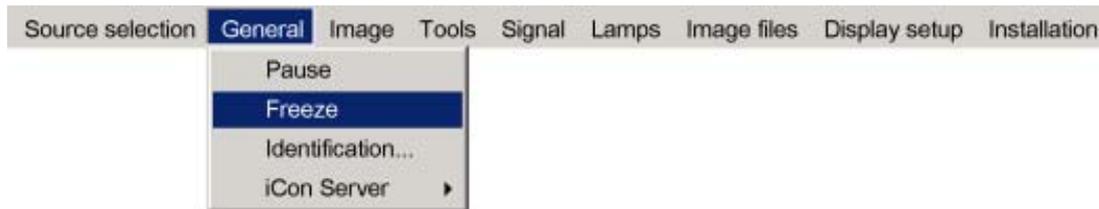


Image 7-10

5. Press **ENTER** to activate the Freeze function



The image can also be frozen using the **FREEZE** key on the RCU

7.4.3 Identification

The projector's identification screen

The identification screen displays the projector's main characteristics

How to display the identification screen ?

1. Press **MENU** to activate the Tool bar
2. Press → to select *General*
3. Press ↓ to Pull down the General menu
4. Use ↑ or ↓ to select *Identification*

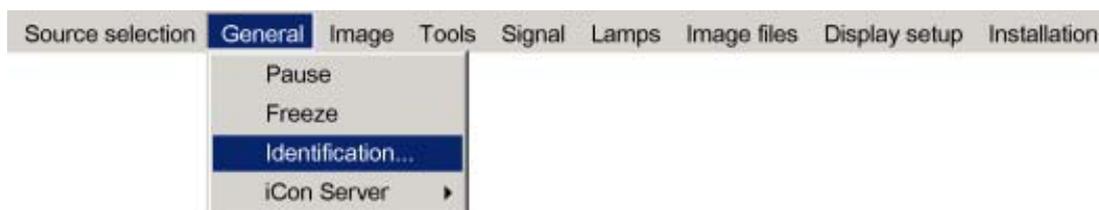


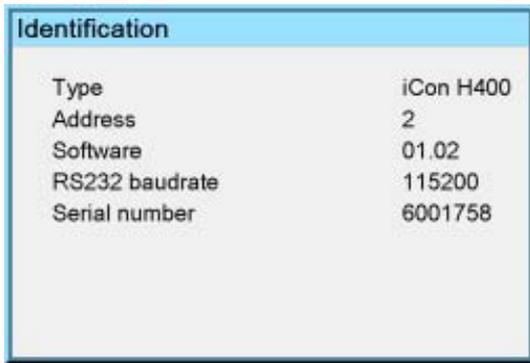
Image 7-11

5. Press **ENTER**

7. Advanced

On the screen appears a text box.

In this case the projector is an iCon H400



Identification	
Type	iCon H400
Address	2
Software	01.02
RS232 baudrate	115200
Serial number	6001758

Image 7-12

6. Press **MENU** or **BACK** to exit or to go back to the previous menu

7.5 Image

Overview

- Image settings
- Aspect ratio
- Color temperature
- Film mode detection (video only)
- Input balance
- Automatic gain control (AGC)
- Manual gain control

What can be done ?

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

All the image settings like contrast can be done in the *Image/Settings* menu.

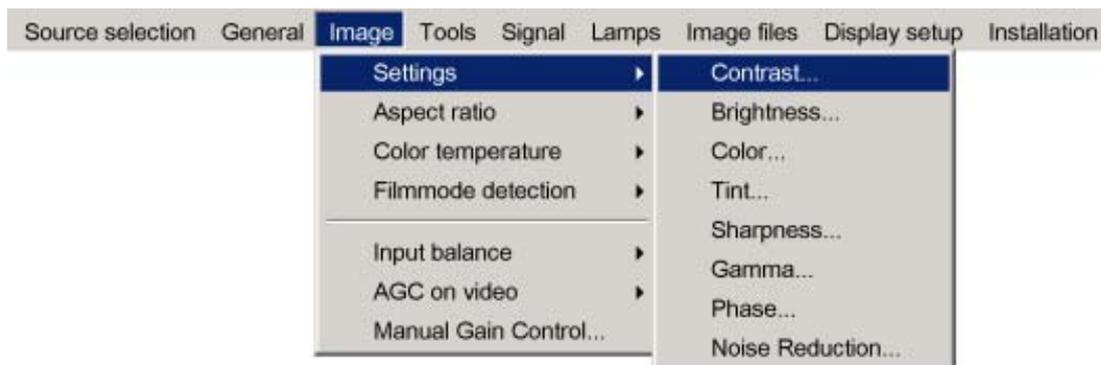


Image 7-13

7.5.1 Image settings

7.5.1.1 Setting the Contrast

Contrast adjustments

Adjust the contrast to "brighten" the white parts of the image.



It is recommended to adjust the brightness before adjusting the contrast.

How to change the Contrast

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image* item
3. Press ↓ to Pull down the *Image* menu
4. Use ↑ or ↓ to select *settings*
5. Press → to pull down the menu
6. Use ↑ or ↓ to select *Contrast*
7. Press **ENTER**

On the screen appears now a slider box

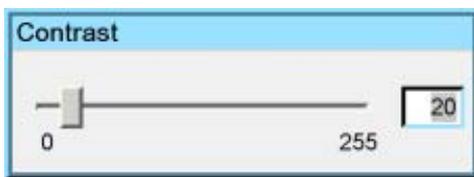


Image 7-14

8. Use ← or → , the numeric keys on the remote, or the keypad to change the contrast

7.5.1.2 Setting the Brightness

Brightness adjustment

Adjusting the brightness will affect the dark areas of the image. Increase the brightness to “lighten” up the parts that are too dark.

How to change the Brightness

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image* item
3. Press ↓ to Pull down the *Image* menu
4. Use ↑ or ↓ to select *settings*
5. Press → to pull down the menu
6. Use ↑ or ↓ to select *Brightness*
7. Press **ENTER**

On the screen appears now a slider box

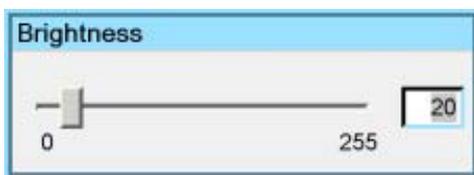


Image 7-15

8. Use ← or → , the numeric keys on the remote, or the keypad to change the brightness

7.5.1.3 Color

Color adjustment

Adjust the Color to obtain more or less saturated colors.

How to change the Color

1. Press **MENU** to activate the Tool bar

7. Advanced

2. Press → to select the *Image* item
3. Press ↓ to Pull down the *Image* menu
4. Use ↑ or ↓ to select *settings*
5. Press → to pull down the menu
6. Use ↑ or ↓ to select *Color*
7. Press **ENTER**

On the screen appears now a slider box

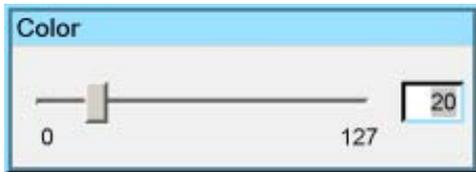


Image 7-16

8. Use ← or → , the numeric keys on the remote, or the keypad to change the color

7.5.1.4 Tint (NTSC video signals only)

Tint adjustment

Tint adjustment is only applicable for NTSC video signals. The tint adjustment allows the reddish and greenish tones to be corrected.

How to change the Tint

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image* item
3. Press ↓ to Pull down the *Image* menu
4. Use ↑ or ↓ to select *settings*
5. Press → to pull down the menu
6. Use ↑ or ↓ to select *Tint*
7. Press **ENTER**

On the screen appears now a slider box



Image 7-17

8. Use ← or → , the numeric keys on the remote, or the keypad to change the Tint

7.5.1.5 Sharpness

How to adjust the Sharpness

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image* item
3. Press ↓ to Pull down the *Image* menu
4. Use ↑ or ↓ to select *settings*
5. Press → to pull down the menu
6. Use ↑ or ↓ to select *Sharpness*
7. Press **ENTER**

On the screen appears now a slider box



Image 7-18

8. Use ← or →, the numeric keys on the remote, or the keypad to change the Sharpness

7.5.1.6 Gamma

Gamma adjustment

The gamma parameter determines the way your encoded (luminance) signal is transformed into brightness at the output of the projector. A correct gamma setting will allow the use of a maximum of gradations (brightness levels) in the projected image.

How to adjust the Gamma

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image* item
3. Press ↓ to Pull down the *Image* menu
4. Use ↑ or ↓ to select *settings*
5. Press → to pull down the menu
6. Use ↑ or ↓ to select *Gamma*
7. Press **ENTER**

On the screen appears now a slider box



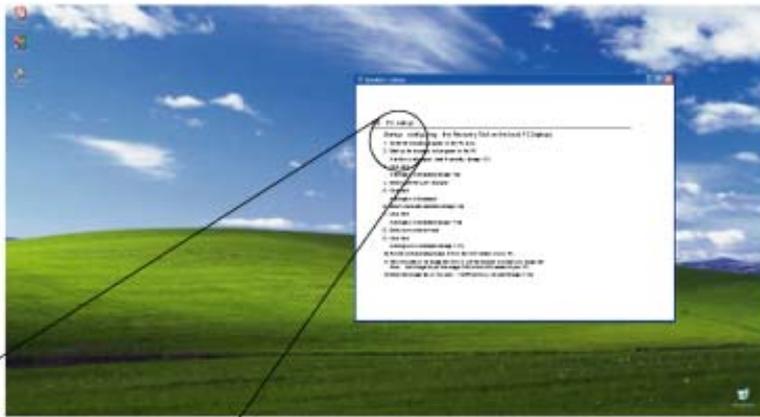
Image 7-19

8. Use ← or →, the numeric keys on the remote, or the keypad to change the Gamma

7.5.1.7 Phase (RGB signals only)

Phase adjustment

A bad phase adjustment will result in bad transitions and sometimes noise. (for example text will not be clear).



PC setup

Startup configuring

1. install the recovery
2. Start up the recov



PC setup

Startup configuring

1. install the recovery
2. Start up the recov

Image 7-20

How to adjust the Phase

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image* item
3. Press ↓ to Pull down the *Image* menu
4. Use ↑ or ↓ to select *settings*
5. Press → to pull down the menu
6. Use ↑ or ↓ to select *Phase*
7. Press **ENTER**

On the screen appears now a slider box



Image 7-21

8. Use ← or → , the numeric keys on the remote, or the keypad to change the Phase

7.5.1.8 Noise Reduction (only for video signals)

How to remove noise in the image

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image* item
3. Press ↓ to Pull down the *Image* menu
4. Use ↑ or ↓ to select *settings*
5. Press → to pull down the menu
6. Use ↑ or ↓ to select *Noise Reduction*
7. Press **ENTER**

On the screen appears now a slider box

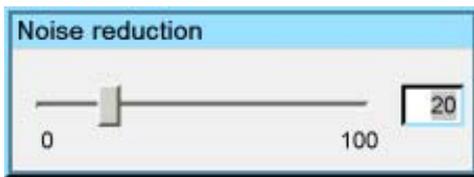


Image 7-22

8. Use ← or →, the numeric keys on the remote, or the keypad to change the Noise Reduction

7.5.2 Aspect ratio

Aspect ratios

The standard aspect ratio used in broadcast television is the 4:3 ratio. However, most of the DVD sources use nowadays the wide screen 16:9 or even the Cinemascope™ 2.35:1 aspect ratio.

Some DVD sources may even use the anamorphic 16:9 or anamorphic 2.35:1 to take advantage of the higher vertical resolution offered by the 4:3 ratio. The "anamorphic" term means that the original wide screen image is squeezed in order to fit the 4:3 aspect ratio.

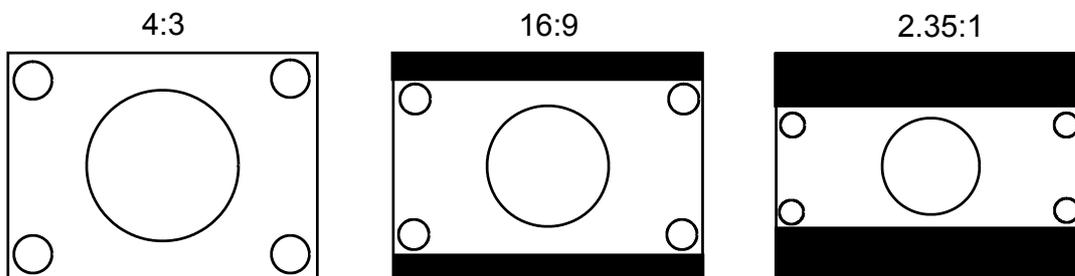


Image 7-23

Common non- anamorphic aspect ratios in DVD sources

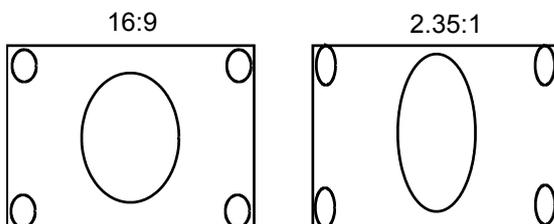


Image 7-24

Anamorphic aspect ratios in DVD sources

What can be done ?

The aspect ratio setting forces the projector to project an image using a defined aspect ratio :

- 4:3
- 16:9
- 5:4
- Auto



The settings do not refer to the aspect ratio of the source !

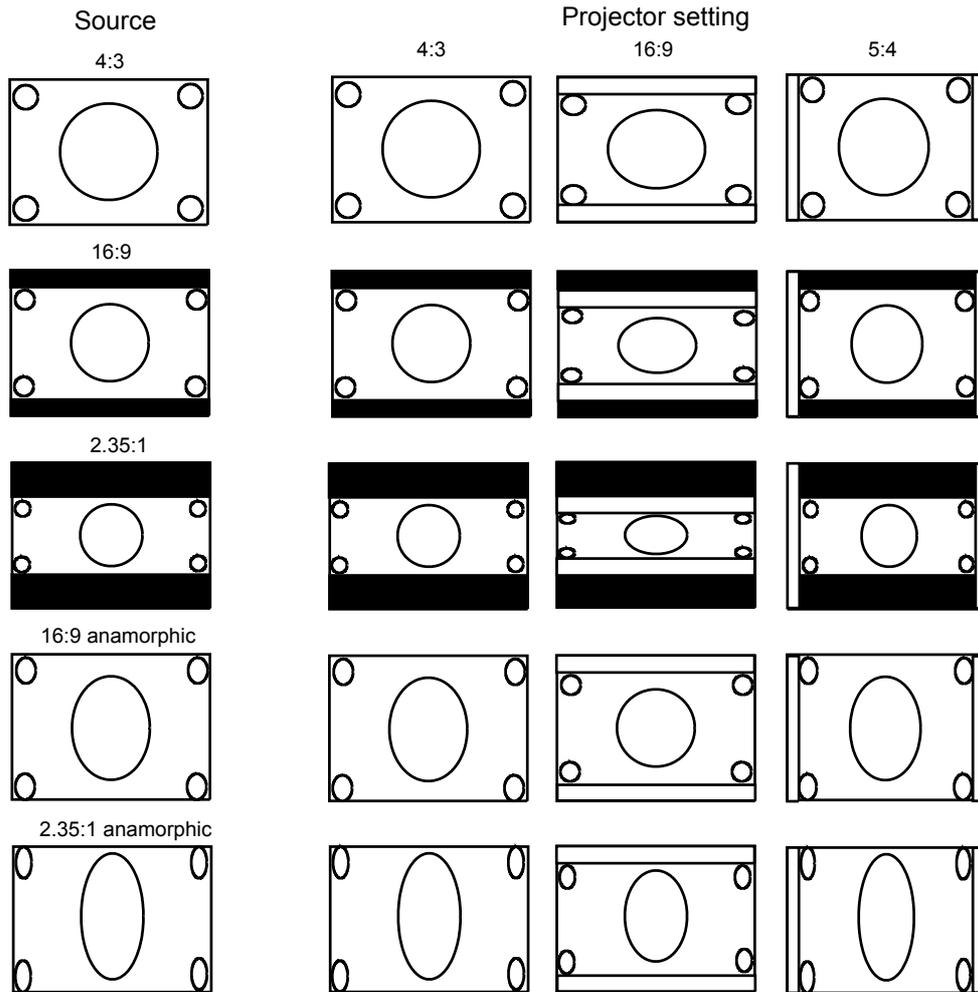


Image 7-25
Possible aspect ratio settings and their effect on different sources

We can conclude that the thumb rule for DVD projection is to always leave the projector in 4:3 format except when dealing with anamorphic sources where the 16:9 setting allows the best reproduction.

The Auto function calculates an aspect ratio based on the information stored in the image files.



Selecting Auto in case of a Video source may shrink the image horizontally



The aspect ratio setting affects only the active source window, the desktop being locked on the native aspect ratio.

How to change the Aspect ratio ?

1. Press **MENU** to activate the Tool bar
2. Press **→** to select *Image*
3. Press **↓** to Pull down the *Image* menu

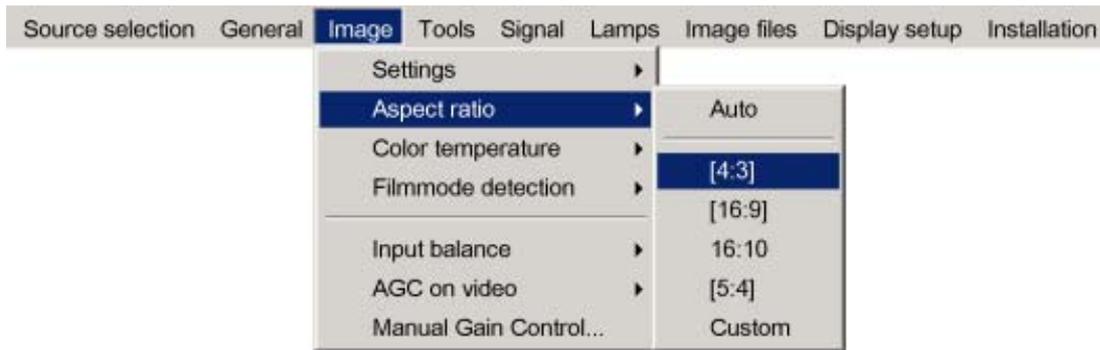


Image 7-26

4. Use ↑ or ↓ to select *Aspect ratio*
5. Use → open the *Aspect ratio* menu
6. Use ↑ or ↓ to select the desired ratio
7. Press **ENTER** to confirm



The aspect ratio settings are greyed out in case the *Show native resolution* or the *Full screen representation* setting is enabled.

How to set a custom Aspect ratio ?

1. Press **MENU** to activate the Tool bar
2. Press → to select *Image*
3. Press ↓ to Pull down the *Image* menu

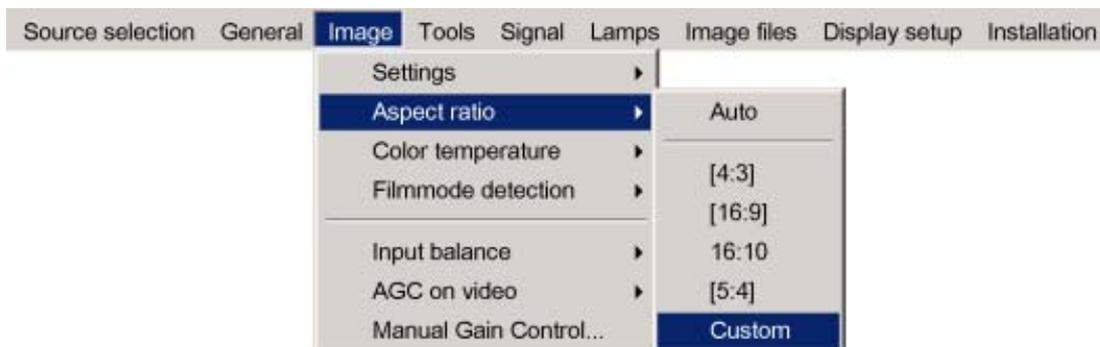


Image 7-27

4. Use ↑ or ↓ to select *Aspect ratio*
5. Use → open the *Aspect ratio* menu
6. Use ↑ or ↓ to select *Custom*
7. Press **ENTER** to confirm

A dialog box is displayed



Image 7-28

8. Enter the values for width and height of the image
The image aspect ratio is updated.

7.5.3 Color temperature

What can be done ?

The color temperature can be selected according to the type of source:

There are 4 different preset color temperatures:

- Projector white
- computer : 9300 K
- Video : 6500 K
- Film : 5400 K
- Broadcast : 3200 K

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

How to select a preset color temperature ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image* item
3. Press ↓ to Pull down the *Image* menu
4. Use ↑ or ↓ to select *Color temperature*
5. Press → to pull down the menu
6. Use ↓ or ↑ to select the desired preset color temperature
7. Press **ENTER**

The color temperature of the image is adapted and a bullet shows the active setting.

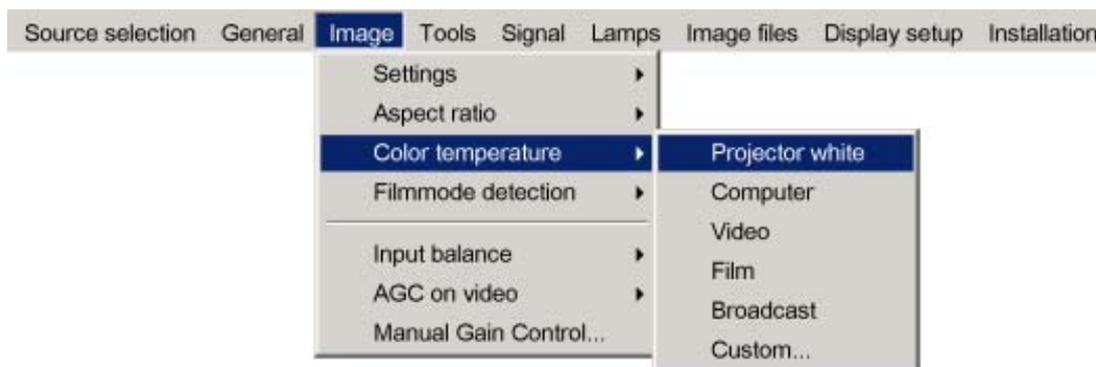


Image 7-29

How to set a custom color temperature ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image* item
3. Press ↓ to Pull down the *Image* menu
4. Use ↑ or ↓ to select *Color temperature*
5. Press → to pull down the menu
6. Use ↓ or ↑ to select *custom*
7. Press **ENTER**

A slider box for the red custom setting is displayed as well as a wizard text box in the lower part of the screen.

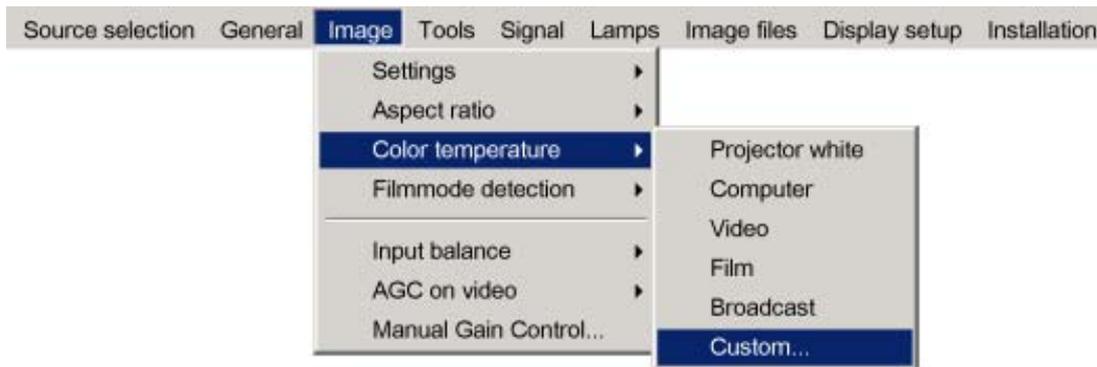


Image 7-30

Follow the instructions on the wizard text box.

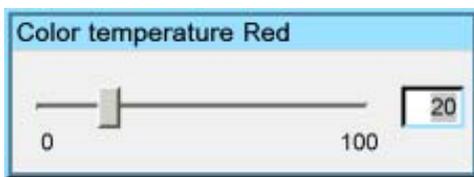


Image 7-31



Image 7-32

7.5.4 Film mode detection (video only)

What can be done ?

Some sources like common DVD material are derived from cinema 24 Hz sources (2/2 or 3/2 pull down method).

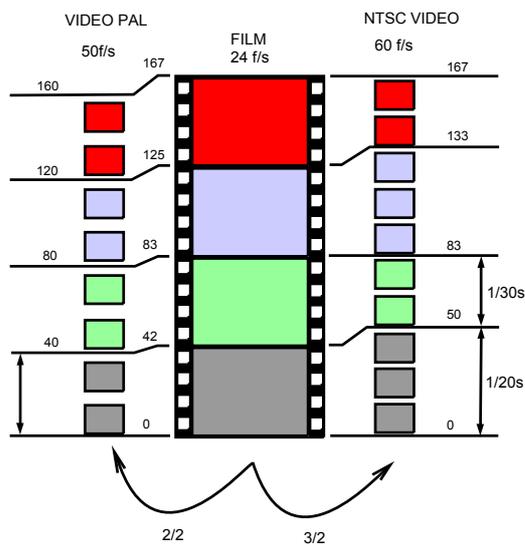


Image 7-33
film to video conversion: 2/2 and 2/3 pull down method

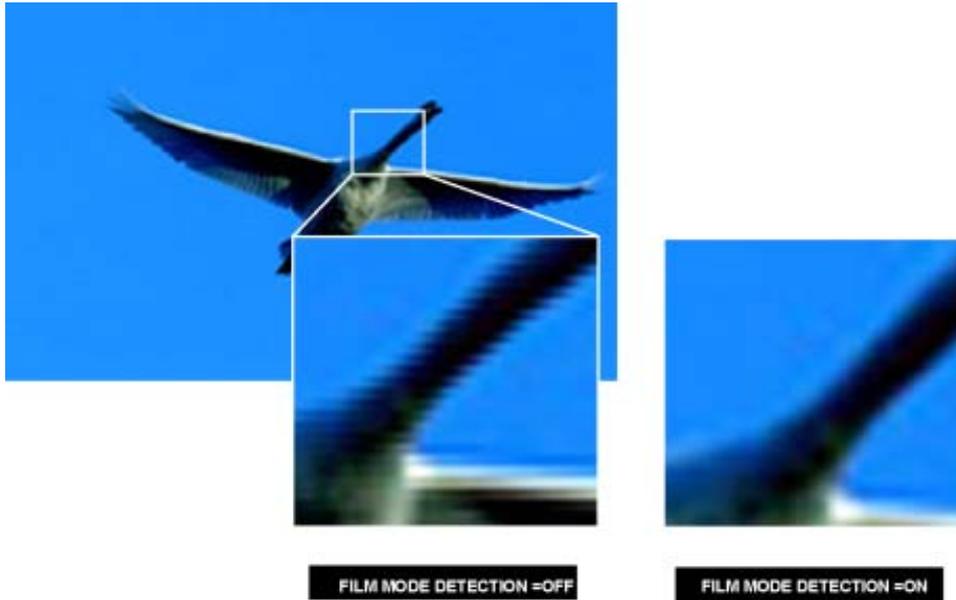


Image 7-34

The film mode detection insures that these converted signals are shown without artefacts, especially motion artefacts due to bad de-interlacing.



This function may cause undesired effects on standard sources, therefore it can be disabled (OFF) at any time

Enabling/disabling the film mode detection

1. Press **MENU** to activate the Tool bar
2. Press **→** to select the *Image* item
3. Press **↓** to Pull down the *Image* menu
4. Use **↑** or **↓** to select *Film mode detection*
5. Press **→** to pull down the menu
6. Use **↓** or **↑** to enable or disable the Film mode detection

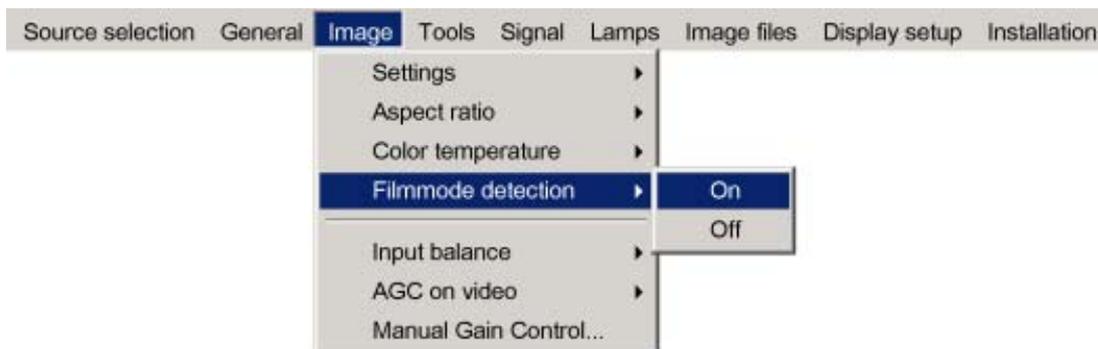


Image 7-35

7. Press **ENTER**

A white bullet shows the active setting

7.5.5 Input balance

Introduction: Unbalanced color signals

When transporting signals, there is always a risk of deterioration of the information contained in the signals.

The alterations of the three color signals will happen independently i.e. the colors will end to be unbalanced,

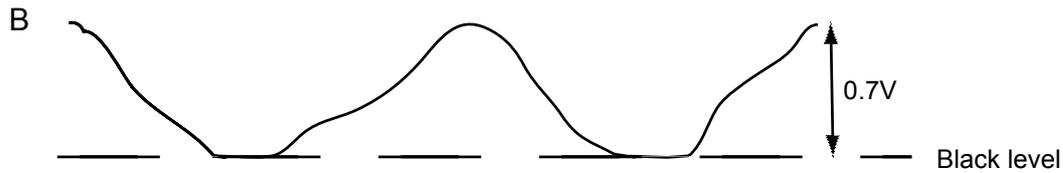


Image 7-36

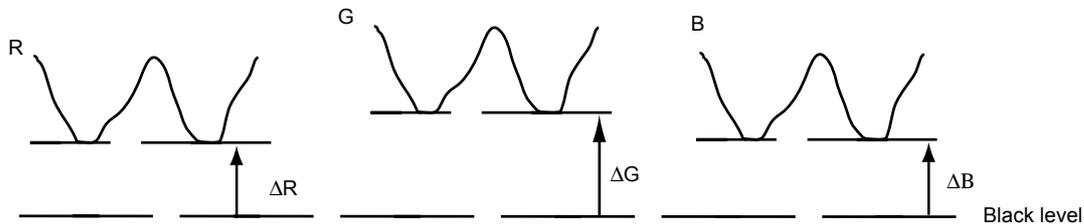


Image 7-37

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

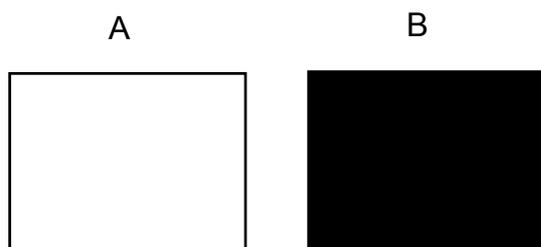


Image 7-38

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.

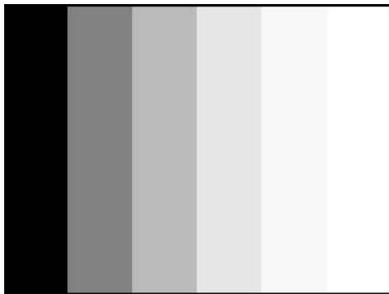


Image 7-39



It is not necessary to adjust the black balance. Its value is automatically set to an optimal value (512).

Performing White input balance

1. Select a black pattern (or gray scale as alternative)
2. Press **MENU** to activate the Tool bar
3. Press → to select the *Image* item
4. Press ↓ to Pull down the *Image* menu
5. Use ↑ or ↓ to select *Input balance*
6. Press → to pull down the menu
7. Use ↓ or ↑ to select *White balance*

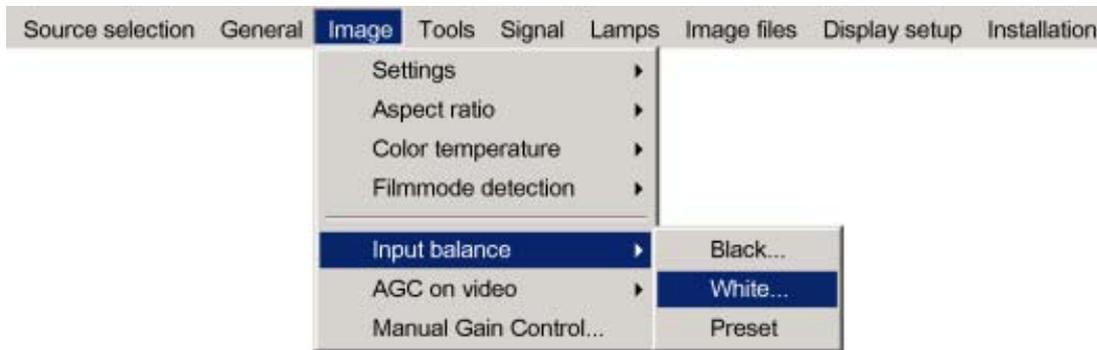


Image 7-40

8. Adjust the red white level (gain) on a minimal value

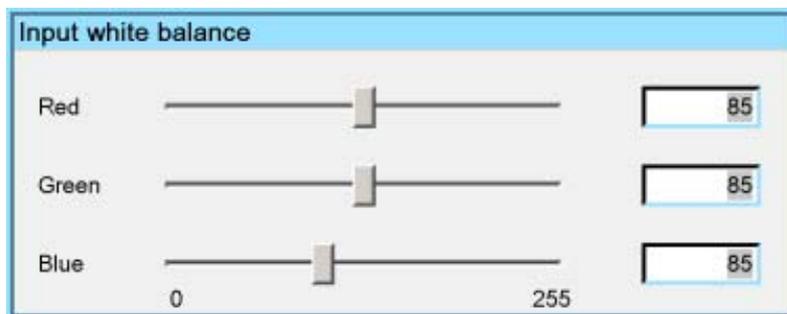


Image 7-41

9. 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.*

10. Adjust the Green white level (gain) until bright spots appear on the white part of the image
 11. Adjust the Blue white level (gain) until bright spots appear on the white part of the image
 12. 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.



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



Selecting *Preset* restores the factory input balance setting



The input balance settings are stored in the image file, each source has its own input balance.

7.5.6 Automatic gain control (AGC)



AGC is only for Video signals

Enabling/disabling the AGC

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image* item
3. Press ↓ to Pull down the *Image* menu
4. Use ↑ or ↓ to select *AGC on Video*
5. Press → to pull down the menu
6. Use ↓ or ↑ to enable or disable the AGC
7. Press **ENTER**

A white bullet shows the active setting

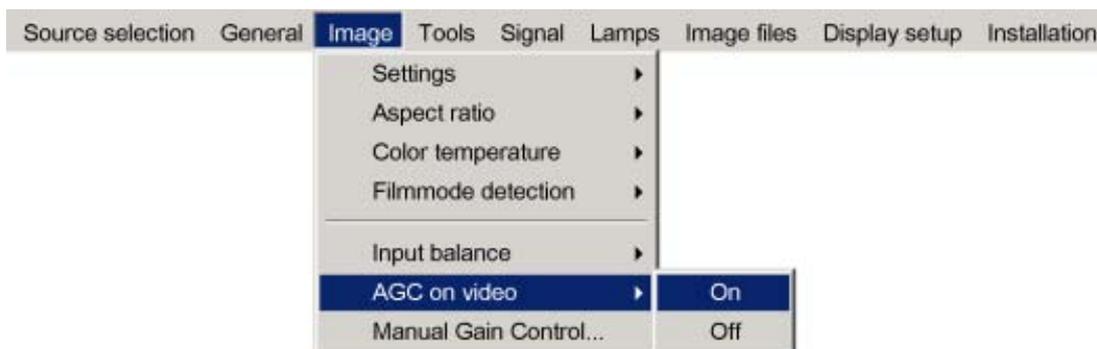


Image 7-42



The AGC can be disturbing in case of Macrovision encoded signals, therefore the AGC can be disabled (OFF) at any time

7.5.7 Manual gain control

What can be done ?

Beside the 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. Press **MENU** to activate the Tool bar
2. Press → to select the *Image* item
3. Press ↓ to Pull down the *Image* menu
4. Use ↑ or ↓ to select *Manual Gain Control*

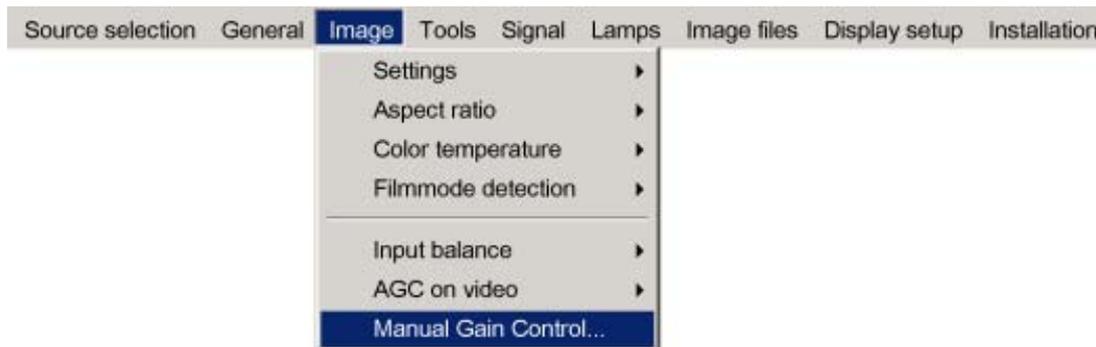


Image 7-43

5. Press **ENTER**

A scroll bar is displayed

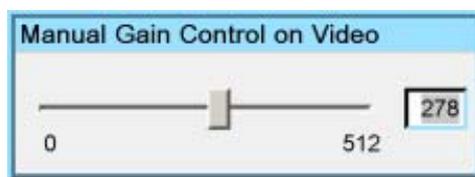


Image 7-44

6. Use ← or →, the numeric keys on the remote, or the keypad to change the gain so as to obtain homogeneous white parts in the image.

7.6 Lamp management

Overview

- Runtimes
- Lamp mode
- History
- Reset lamp Runtime
- Clear lamp error
- Lamp runtime warning

7.6.1 Runtimes

How to display the runtimes ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Lamp* item
3. Press ↓ to Pull down the *Lamp* menu
4. Use ↑ or ↓ to select *Runtimes*



Image 7-45

5. Press **ENTER**

A text box is displayed

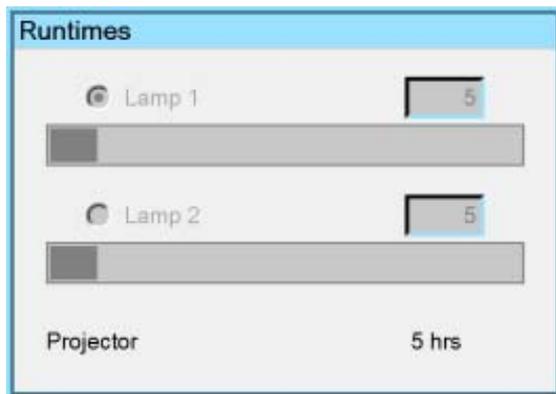


Image 7-46

7.6.2 Lamp 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



In case of a lamp failure a lamp error is logged and showed on the screen.

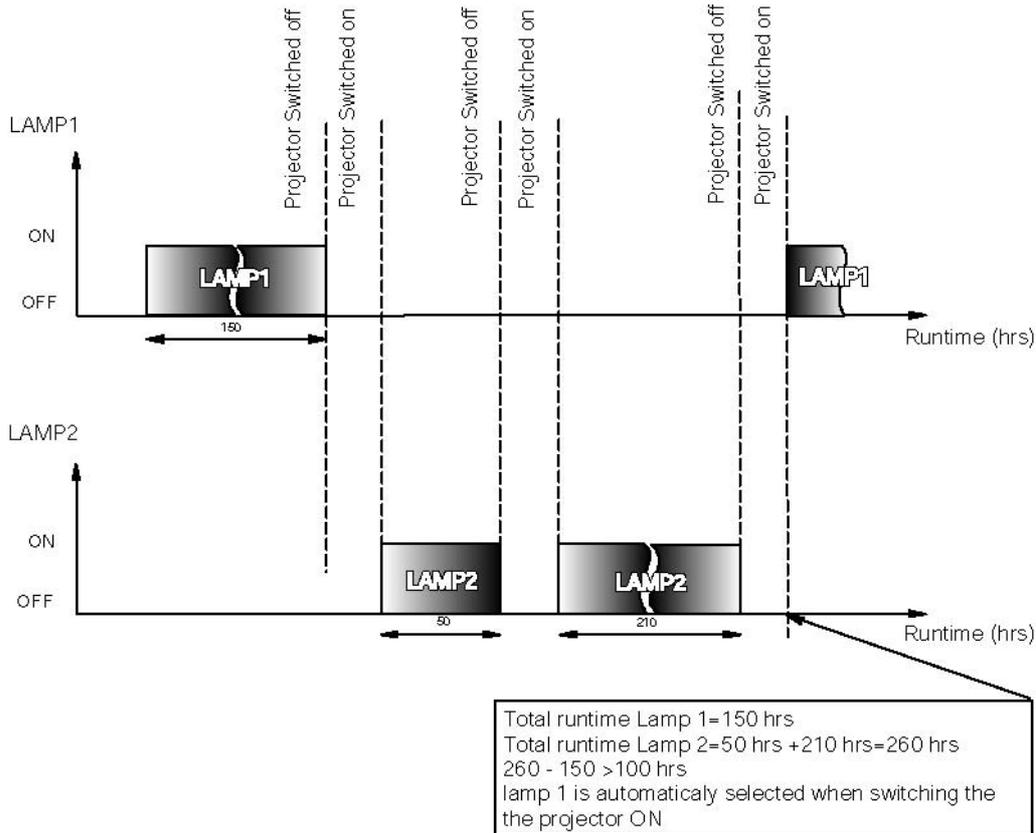


Image 7-47
Single mode operation: switching principle

Dual mode

Both lamps are working at the same time.

When one lamp fails, the projector continues the projection using the remaining lamp. Again the lamp error is logged and shown on the screen.

How to select the lamp mode ?

1. Press **MENU** to activate the Tool bar
2. Press **→** to select the *Lamp* item
3. Press **↓** to Pull down the *Lamp* menu
4. Use **↑** or **↓** to select *Mode*
5. Press **→** to pull down the menu
6. Use **↑** or **↓** to select the desired mode



Image 7-48

7. Press **ENTER**

A bullet shows the active mode.



When switching from the dual mode to the single mode the lamp with the longest runtime is switched off.
 If the runtimes are equal (if the projector has always been operated in dual mode) then lamp 1 is switched out.



When switching to single mode, returning to the dual mode will not be possible in the first 60 seconds, *Dual* in the menu is greyed out and the LED is flickering, showing that hot restrike (restart) of the lamp is impossible during that time laps (60 sec).

7.6.3 History

How to view the history ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Lamp* item
3. Press ↓ to Pull down the *Lamp* menu
4. Use ↑ or ↓ to select *History*



Image 7-49

5. Press **ENTER**

A text box is displayed

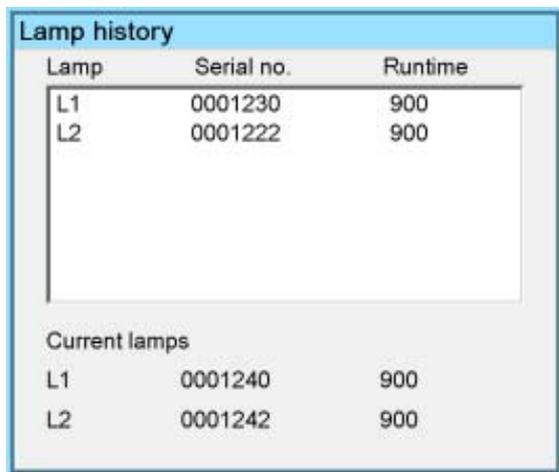


Image 7-50

7.6.4 Reset lamp Runtime

When to reset the lamp runtime ?

Reset the lamp runtime whenever you replace a lamp



WARNING: Lamp runtime reset as well as the lamp replacement can only be done by a Barco authorized technician.

How to reset the lamp runtime ?

1. Press **MENU** to activate the Tool bar
2. Press **→** to select the *Lamp* item
3. Press **↓** to Pull down the *Lamp* menu
4. Use **↑** or **↓** to select *Reset runtime*
5. Press **→** to pull down the menu
6. Use **↑** or **↓** to select the lamp to be reset



Image 7-51

7. Press **ENTER**

A dialog box is displayed



Image 7-52

8. Use **←** or **→**, the numeric keys on the remote, or the keypad to enter the serial number of the new lamp (serial number 000000 will not be accepted).

7.6.5 Clear lamp error

Lamp error

When a failure of one of the lamps has occurred, a lamp logo is displayed in the left corner of the screen. This logo will thus always inform the user on a previous lamp error.



Image 7-53

Once the error has been solved or/and the lamp has been replaced one can remove (clear) the lamp error.

If the error has been cleared without solving the lamp problem the logo will be shown at next lamp startup (projector startup for example)



A lamp failing to startup will be noticed by a low light output of the projector since the projector goes in single lamp mode.



In case of a lamp error contact the local Barco authorized technician

How to clear the lamp error ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Lamp* item
3. Press ↓ to Pull down the *Lamp* menu
4. Use ↑ or ↓ to select *Clear lamp error*



Image 7-54

5. Press **ENTER**

The lamp error logo is removed from the screen

7.6.6 Lamp runtime warning

What can be done ?

When the lamp has reached a 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. The runtime warning is displayed by default at 30 hours before end of lamp lifetime.

How to set the lamp runtime warning?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Lamp* item
3. Press ↓ to Pull down the *Lamp* menu
4. Use ↑ or ↓ to select *Runtime warning*



Image 7-55

5. Press **ENTER**

7. Advanced

A dialog box is displayed

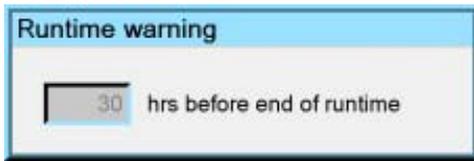


Image 7-56

6. Use ← or →, the numeric keys on the remote, or the keypad to change the runtime warning setting.



WARNING: Lamp runtime reset as well as the lamp replacement can only be done by a Barco authorized technician.

7.7 Image files

Overview

- Introduction to Image files
- Load file
- Forced file load
- Auto Image
- Edit file
- Save as (create a custom file)
- Rename file
- Copy
- Delete

7.7.1 Introduction to Image files

Image files

An image file contains the main characteristics of a source (number of active lines,...). The projector's memory contains a list of files corresponding to the most common sources : standard files.

When a new source corresponds to one of these files, a custom file is created. The file is not automatically saved as a custom file. The Save as... function allows to create and save a custom file.

The active file can always be edited in order to fit exactly the source specifications.



Autolmage creates automatically the best suited image file (custom file) for a new source. Autolmage is used when :

- a new source is detected: Autolmage creates a new custom file which can always be edited if necessary.
 - the Autolmage is launched via the button on the RCU, the projector's OSD or from the desktop's OSD
-

File notation

The notation of the image file happens as follows :

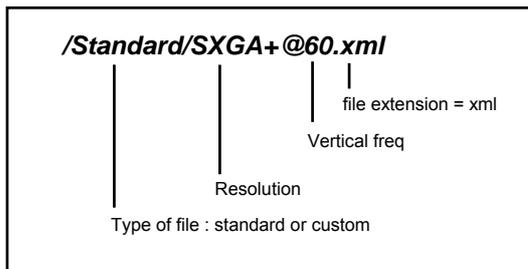


Image 7-57

7.7.2 Load file

When to load a file ?

In some cases the user wants a particular file to be used for the display of a particular source. In this case the user should load the desired file from the image files menu. The load file option will allow the user to choose between several files corresponding more or less to the active source specifications.



In normal operation the file selection (load) will be done automatically by AutoImage.

How to load a file ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image files* item
3. Press ↓ to Pull down the *Image files* menu
4. Use ↑ or ↓ to select *Load*



Image 7-58

5. Press **ENTER**
A dialog box is displayed



Image 7-59

6. Use ↑ or ↓ to select the desired file
Tip: For more information (specifications) on the image files see the Appendix section
7. Press **ENTER**
The file is loaded and the image is adapted.



The list of files which may be loaded will be of the data type if the active window is a data window, or they will be of the video type if the active window is a video window.

What to do if the image is not perfect ?

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

7.7.3 Forced file load

Forced file load

In some cases the user wants only one particular file to be loaded for a particular input (source) i.e. to prevent the (automatic) load of an inadequate file.

One can link a file to every possible input of each layer.

If a file is already selected (forced) to that particular input it will be indicated in the menu.

How to force a file to be loaded ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image files* item
3. Press ↓ to Pull down the *Image files* menu
4. Use ↑ or ↓ to select *Forced file load*
5. Press → to open the menu
6. Use ↑ or ↓ to select the desired layer (for example Layer 1)
7. Use ↑ or ↓ to select the desired input (for example Data on BNC)

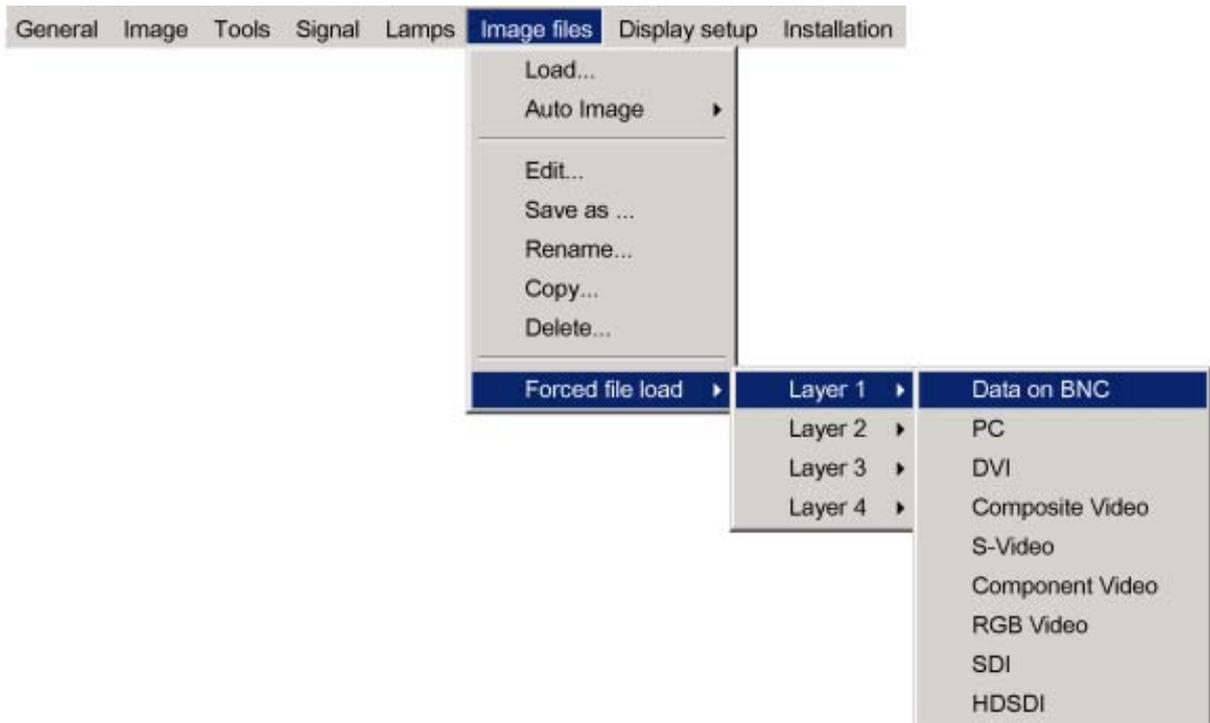


Image 7-60

Note: Inputs that are not hardware compatible with this layer are greyed out.

Note: if a file is already forced for that input it will be shown on the right.

8. Press **ENTER**
The *Load* dialog box is displayed
9. Use ↑ or ↓ to select the desired file (for example */Standard/SXGA+@60.xml*)
10. Press **ENTER**
The file is selected and will be loaded in the future.



To delete the forced file, go to the desired input and press ENTER.

7.7.4 Auto Image

What can be done ?

AutoImage creates the best suited image file for the connected source.

It calculates/measures several source parameters :

- Total pixels per line
- Start pixel
- Phase
- Contrast/Brightness levels



Auto Image works only for data images.

The measure of the total number of pixels per line can be done through 2 methods

- Limited scan: a windowing system is used to allow fast tracking.
The operation takes about 20 seconds (depending on file)
- Full scan: tracking is done over the full range.
The operation takes about 1.5 minutes (depending on file)

How to launch Auto Image?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image files* item
3. Press ↓ to Pull down the *Image files* menu
4. Use ↑ or ↓ to select *Auto Image*
5. Press → to open the menu
6. Use ↑ or ↓ to select the desired file scan method

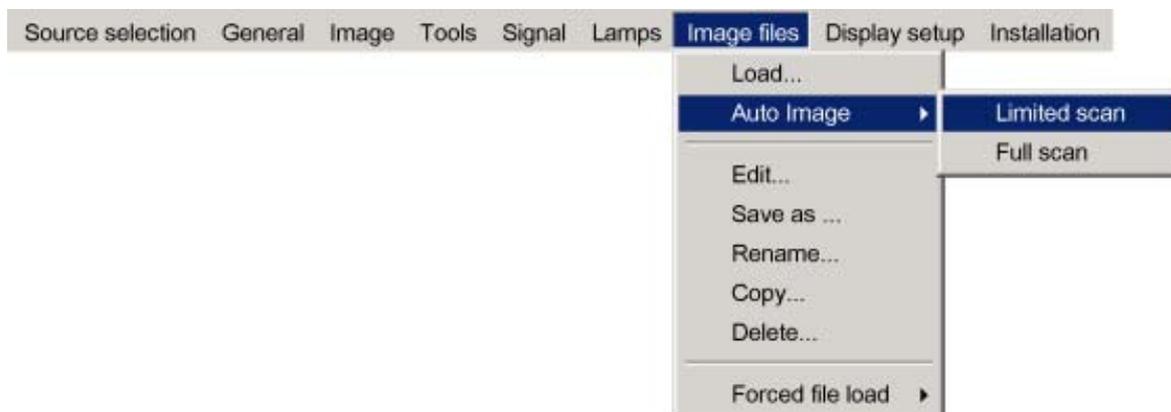


Image 7-61

7. Press **ENTER**



AutoImage acts on the active window. The image in the window may move and change in aspect during the AutoImage process.



Auto Image can also be launched via the RCU with the dedicated AutoImage key.

7.7.5 Edit file

What can be done with the Edit file menu ?

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.



only the active file can be edited

How to edit a file ?

1. Press **MENU** to activate the Tool bar
2. Press **→** to select the *Image files* item
3. Press **↓** to Pull down the *Image files* menu
4. Use **↑** or **↓** to select *Edit*



Image 7-62

5. Press **ENTER**
A dialog box containing the active file is displayed

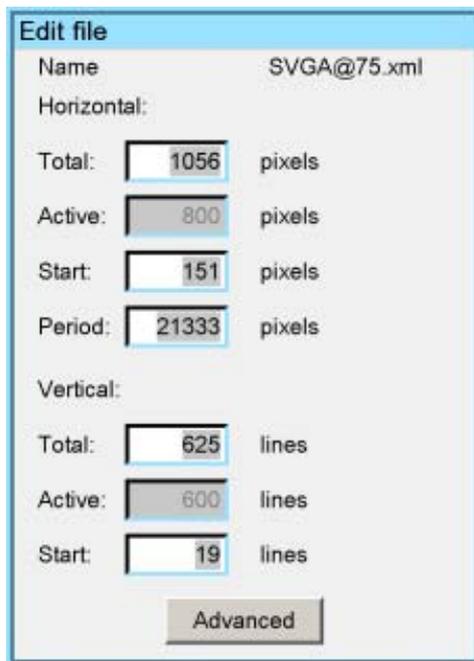


Image 7-63

6. Use **←** or **→**, the numeric keys on the remote, or the keypad to edit and change the values, confirm with **ENTER**
Note: *greyed out fields can not be updated (total pixels)*

Which items can be adjusted ?

The following items can be adjusted :

- Active horizontal pixels
- Horizontal start in pixels
- Horizontal period in ns
- Active vertical lines
- Vertical start in lines

Advanced video settings

The **advanced** button enables the advanced settings for a video source.

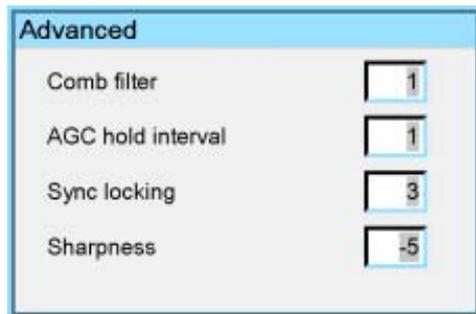


Image 7-64

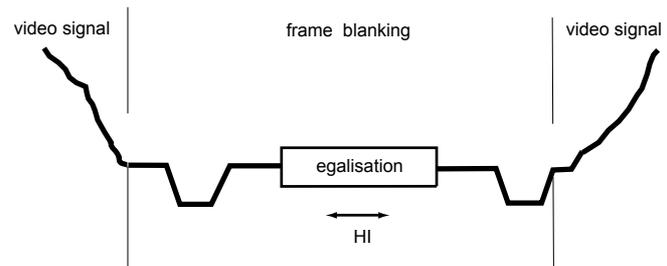


Image 7-65
HI AGC Hold interval

The **Comb filter** is by default enabled.

The **AGC hold interval** is the time interval in which the AGC is inhibited (AGC hold = no update in video amplitude measurement), the advanced parameter allows to choose a short or long hold interval.

A long AGC hold interval eliminates Macrovision® disturbances since the AGC is hold during a long interval, thus reducing the probability to encounter a Macrovision® pulse.

The **sync locking setting** is recommended for poor video signals (ex: poor TV signals).

Sharpness adjustment can be chosen to be coarse or fine.



It is recommended to use the default values.

Advanced Data settings

The **advanced** button enables the advanced settings for a data source.

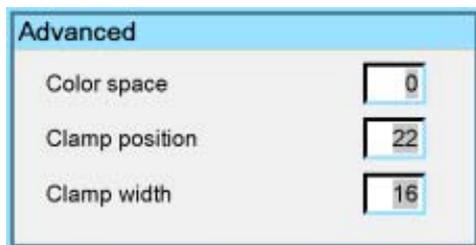


Image 7-66

- color space : allows to select between 5 different color spaces
 - RGB
 - ITU_BT_709
 - SMPTE_240M
 - ITU_BT_601
 - EBU
- Clamp position : allows to set the clamp pulse position in the clamping circuit
- Clamp width : allows to set the width of clamp pulse in the clamping circuit

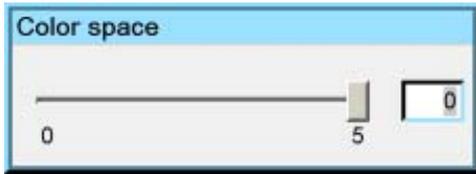


Image 7-67



It is recommended to use the default values.

7.7.6 Save as (create a custom file)

Creating a custom file

When the loaded file is a standard file there is a possibility of saving it as a custom file (= creating a custom file), this is done with the save as function. The saved file will always be a custom file (saved in the custom directory)



For sources that are often used, a custom file should be created. This custom file will then be loaded automatically and will prevent the AutoImage from being launched.

How to save a file ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image files* item
3. Press ↓ to Pull down the *Image files* menu
4. Use ↑ or ↓ to select *Save as...*



Image 7-68

5. Press **ENTER**
A dialog box is displayed
Use ← or →, ↓ or ↑ the numeric keys on the remote, or the keypad to edit and change the file name, confirm with ENTER.

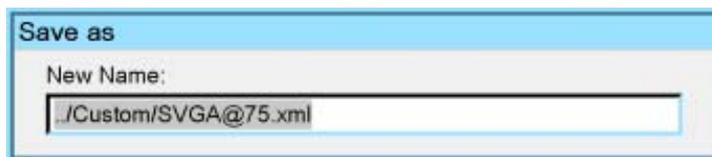


Image 7-69

7.7.7 Rename file

How to rename a file ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image files* item

3. Press ↓ to Pull down the *Image files* menu
4. Use ↑ or ↓ to select *Rename*



Image 7-70

5. Press **ENTER**
A dialog box is displayed
Use ← or →, ↓ or ↑ the numeric keys on the remote, or the keypad to edit and change the values, confirm with ENTER.



Image 7-71

7.7.8 Copy

Copy a file

The copy function allows to copy a file (standard or custom) to a custom file (to the custom directory).

How to copy a file ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image files* item
3. Press ↓ to Pull down the *Image files* menu
4. Use ↑ or ↓ to select *copy*

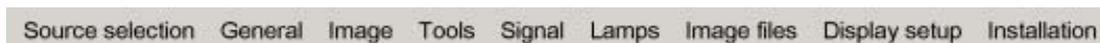


Image 7-72

5. Press **ENTER**
A dialog box is displayed

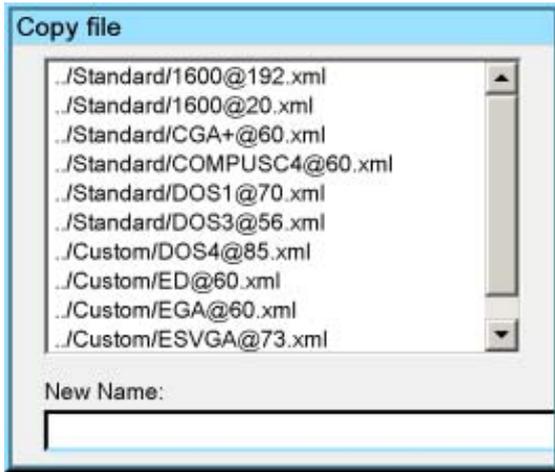


Image 7-73

6. Use ↑ or ↓ to select the file to be copied
7. Press **ENTER**
The file name is copied in the edit field
8. Use the keys on the remote to change the name of the destination file

7.7.9 Delete

How to delete a file ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Image files* item
3. Press ↓ to Pull down the *Image files* menu
4. Use ↑ or ↓ to select *delete*



Image 7-74

5. Press **ENTER**
A dialog box is displayed

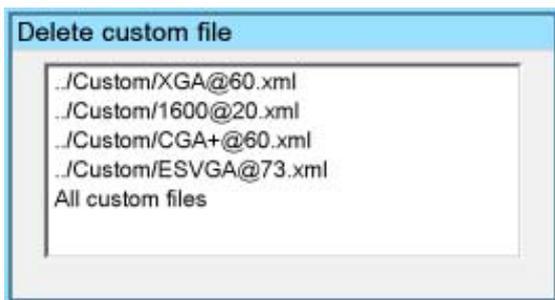


Image 7-75

6. Use ↑ or ↓ to select the desired file

7. Press **ENTER**

The selected file is deleted and is removed from the list

7.8 Display setup

Overview

- Dynacolor™
- Brilliant Color™ mode
- Full screen synchronous representation
- Text box
- Menu bar position
- Status bar position
- Sliderbox position

7.8.1 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.

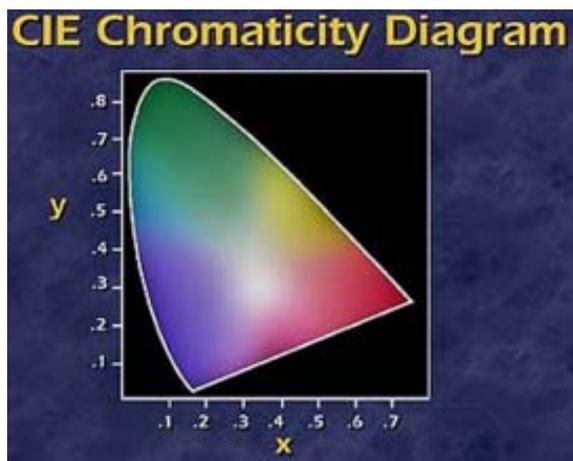


Image 7-76
The CIE chromaticity diagram

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.

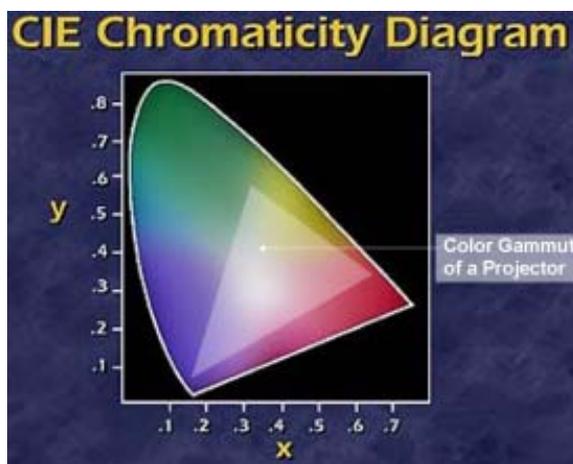


Image 7-77
The projector color gamut is defined by the triangle formed by the x, y coordinates of Red Green and Blue

7. Advanced

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

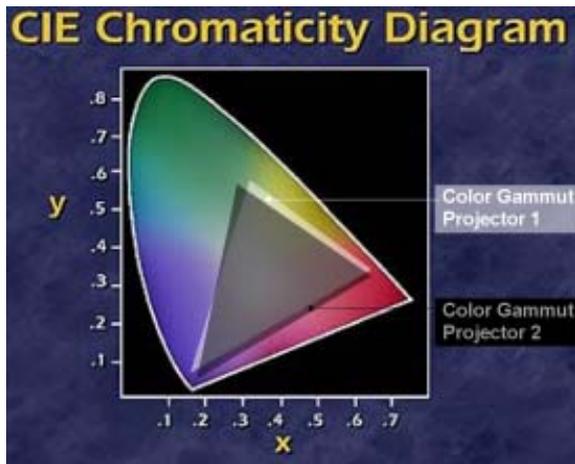


Image 7-78
The color gamut of each projector will differ

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

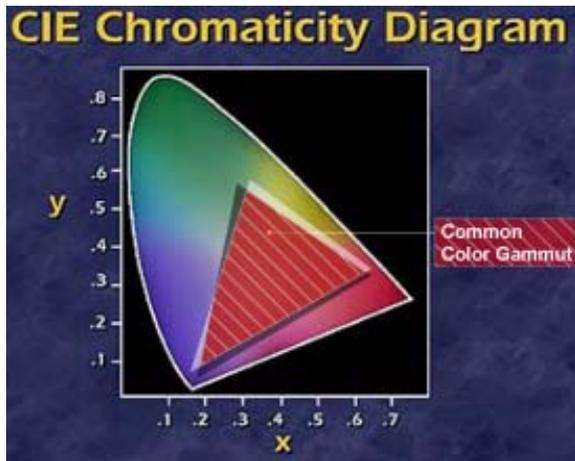


Image 7-79
Common Color Gamut

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.

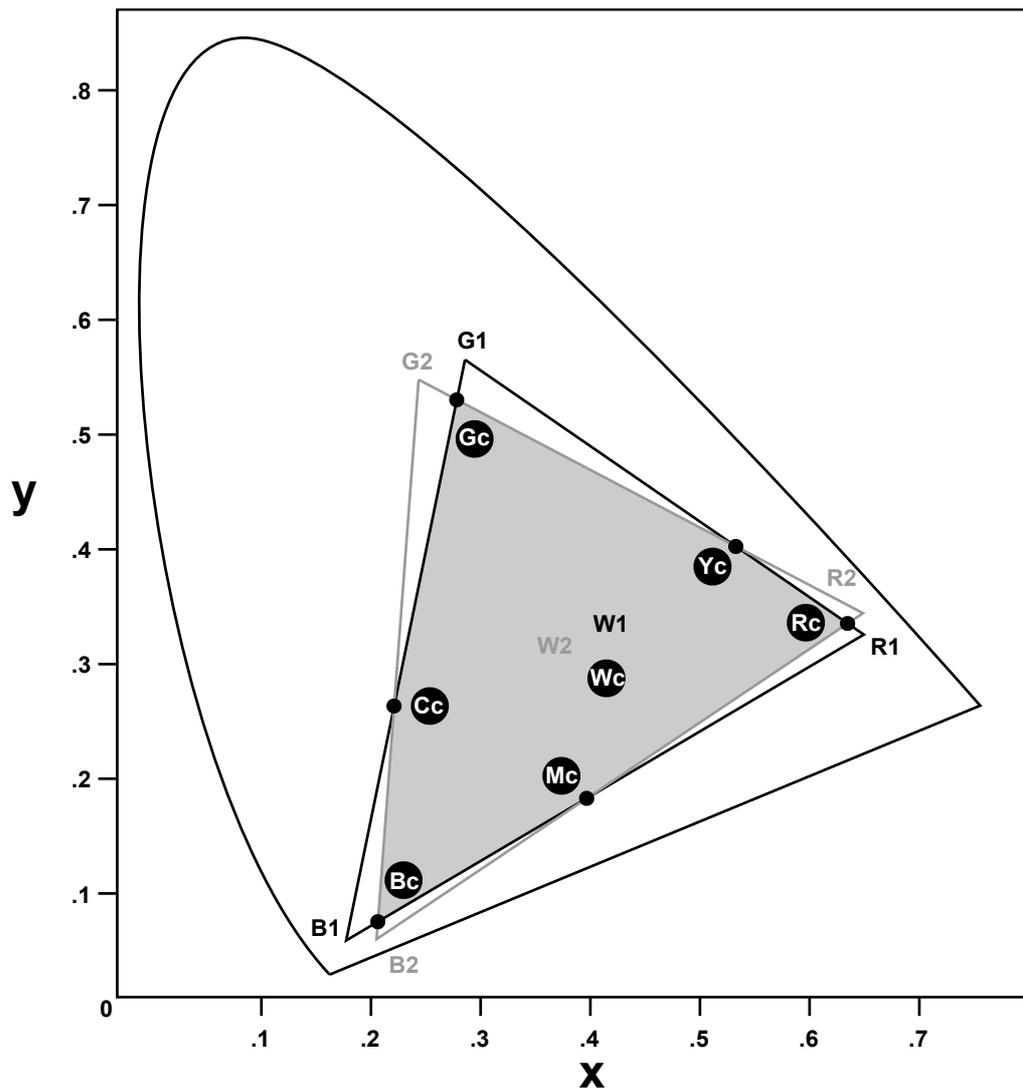


Image 7-80
The Common Color Gamut

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 g(Light Output) of the 6 Common Color Gamut perimeter points.
- the x, y coordinates and g(Light 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 *Display setup* in the menu bar.
3. Push the ↓ key to pull down the *Display setup* menu.
4. Push the cursor key ↑ or ↓ to highlight *Dynacolor* and press **ENTER** to select.

7. Advanced

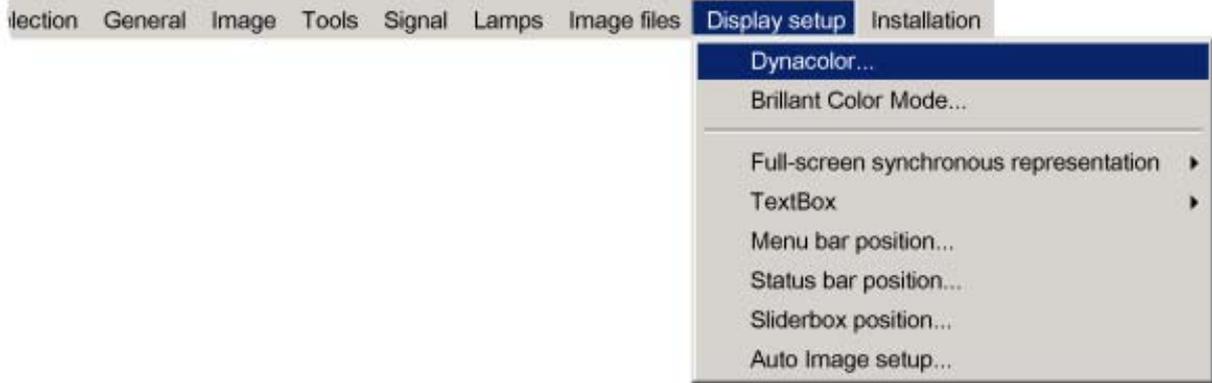


Image 7-81

The Dynacolor dialog box will be displayed.

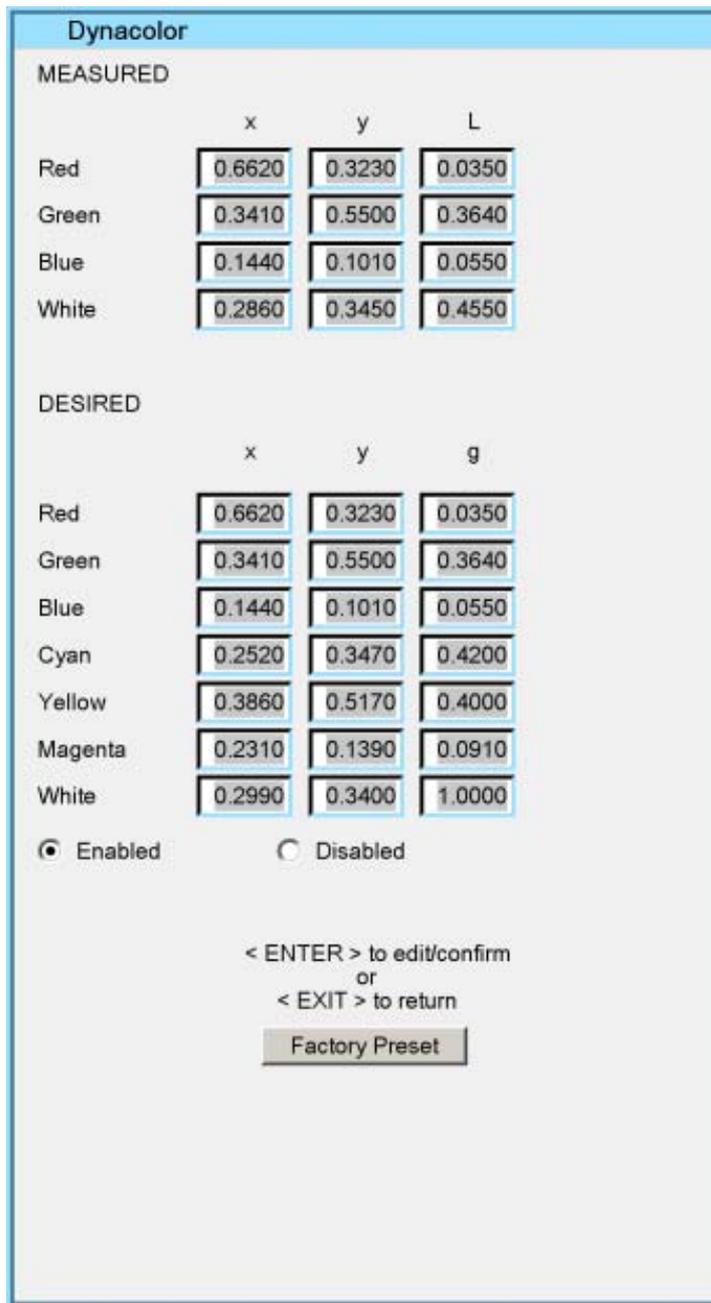


Image 7-82

5. Push the cursor key ← or → select enable/disable and then **ENTER**.

Dynacolor™ g (Light Output) Value

The value g in the Dynacolor™ interface represents a relative light output.

g=1 is the maximum available light output.



Assume we have a projector. L=1 in the Dynacolor™ interface will correspond with a 'maximum full white light' output of x Lumens.

The Dynacolor™ Interface

Following parameters are available in the Dynacolor™ 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
Red L	Red Light output
Green L	Green Light output
Blue L	Blue Light output
White L	White Light Output
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 g	Red Light Gain
Green g	Green Light Gain
Blue g	Blue Light Gain
Cyan g	Cyan Light Gain
Yellow g	Yellow Light Gain
Magenta g	Magenta Light Gain
White g	White Light Gain
Status	Enables or disables Dynacolor™
Factory Preset	Sets the measured parameters back to the factory preset for the current set

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.

Dynacolor

MEASURED

	x	y	L
Red	0.6620	0.3230	0.0350
Green	0.3410	0.5500	0.3640
Blue	0.1440	0.1010	0.0550
White	0.2860	0.3450	0.4550

DESIRED

	x	y	g
Red	0.6620	0.3230	0.0350
Green	0.3410	0.5500	0.3640
Blue	0.1440	0.1010	0.0550
Cyan	0.2520	0.3470	0.4200
Yellow	0.3860	0.5170	0.4000
Magenta	0.2310	0.1390	0.0910
White	0.2990	0.3400	1.0000

Enabled Disabled

< ENTER > to edit/confirm
 or
 < EXIT > to return

Factory Preset

Image 7-83

3. Assume the second projector has the following measured values.

Dynacolor

MEASURED

	x	y	L
Red	0.6580	0.3050	0.0420
Green	0.3270	0.5460	0.3370
Blue	0.1390	0.1000	0.0450
White	0.2900	0.3530	0.4230

DESIRED

	x	y	g
Red	0.6580	0.3300	0.0420
Green	0.3270	0.5460	0.3360
Blue	0.1390	0.1000	0.0460
Cyan	0.2460	0.3560	0.3810
Yellow	0.3810	0.5050	0.3770
Magenta	0.2510	0.1480	0.0860
White	0.3040	0.3510	1.0000

Enabled Disabled

< ENTER > to edit/confirm
or
< EXIT > to return

Factory Preset

Image 7-84

7. Advanced

4. We start by setting both projectors to the common red coordinate.

Tip: Draw a quick sketch of both gamuts as a graphical help.

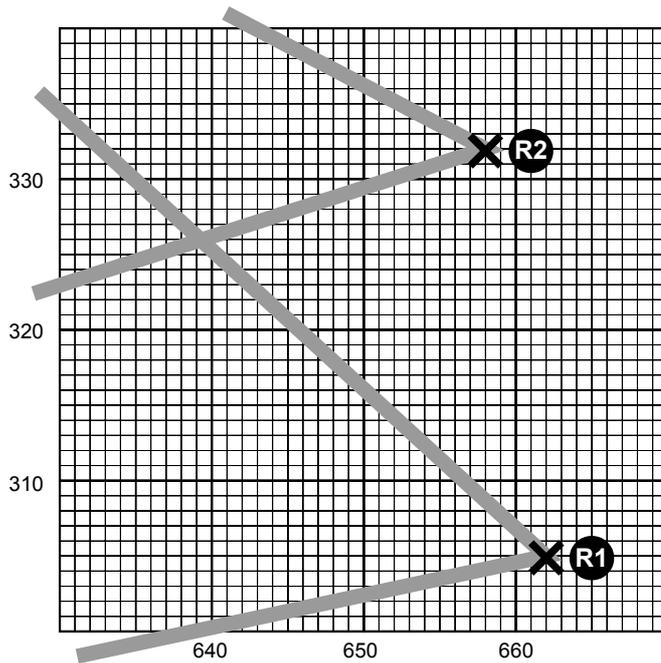


Image 7-85
Red coordinates for both projectors

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 $y=318$.

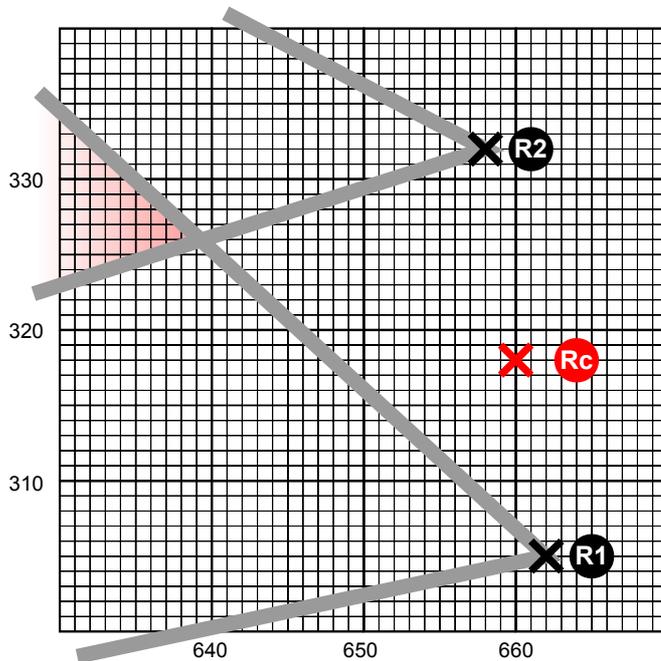


Image 7-86
Coordinate is not present within the gamut of the adjusted projector

Select a coordinate that is present in the common gamut e.g. with the desired values for red set to $x=633$ and $y=328$.

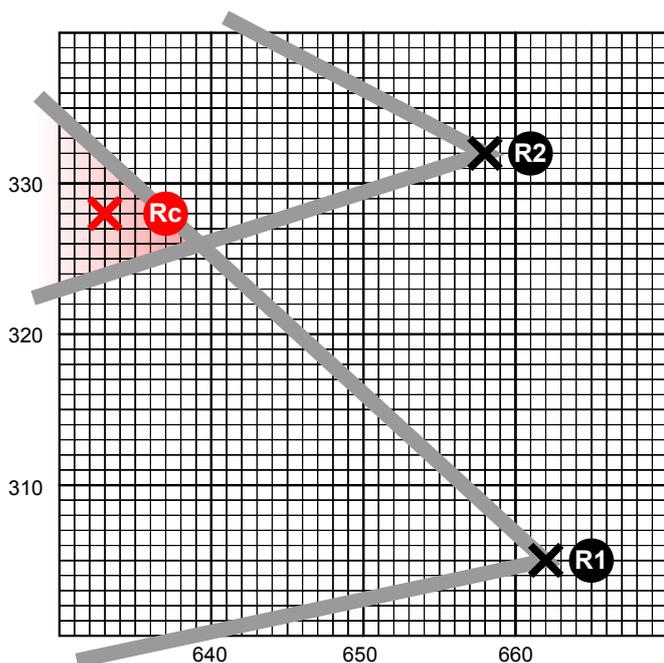


Image 7-87

Select a coordinate that is present in the common gamut

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

Both projectors will now operate within the same color gamut.



Another way to determine the new coordinates is to use the DynacolorTool (software tool running on a laptop or PC), contact Barco for more information.

7.8.2 Brilliant Color™ mode

What can be done ?

Brilliant Color™ (Texas Instruments™ technology) allows to use secondary colors in the process of the image (cyan, magenta, and yellow), resulting in an increase of the color gamut and the overall brightness.

How to activate the Brilliant color mode ?

1. Press the **MENU** key to activate the Menu bar.
2. Push the cursor key ← or → to highlight *Display setup* in the menu bar.
3. Push the ↓ key to pull down the *Display setup* menu.
4. Push the cursor key ↑ or ↓ to highlight *Brilliant Color mode* and press **ENTER** to select.



Image 7-88

A slider box is displayed.

- Put the slider box on '0' (Brilliant color disabled) or on '1' (Brilliant color enabled)

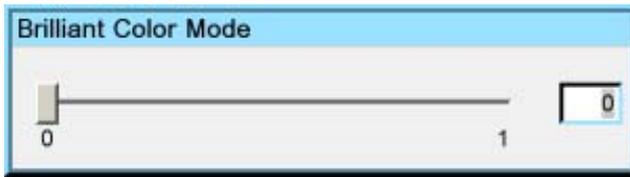


Image 7-89

7.8.3 Full screen synchronous representation

What can be done ?

In the full screen mode, the projector will always try to lock on the input source. Some monitors (connected on the DVI output of the projector) may fail to synchronize on this type of signal (number of total lines may vary in such a signal).

The *Full-screen synchronous representation* function in the *Display setup* menu allows to disable this mode.



Note that disabling the synchronous mode may introduce some image artefacts in the displayed DVI output signal (on the monitor)

How to enable/disable the full-screen synchronous representation ?

- Press **MENU** to activate the Tool bar
- Press → to select the *Display setup* item
- Press ↓ to Pull down the *Display setup* menu
- Use ↑ or ↓ to select *Full-screen synchronous representation*
- Press → to open the menu
- Use ↑ or ↓ to select ON(enable)/OFF(disable)
- Press **ENTER**

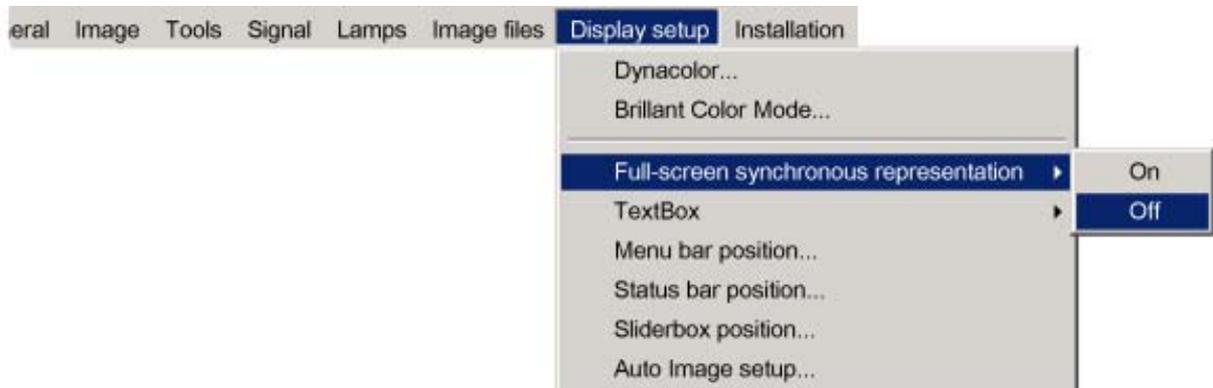


Image 7-90

7.8.4 Text box

What can be done ?

The Text box function allows to display or not the different text boxes used for instance for picture settings (contrast,...), it also affects the source information windows (displayed in the right lower corner of the screen).

How to enable/disable the Text box ?

- Press **MENU** to activate the Tool bar
- Press → to select the *Display setup* item
- Press ↓ to Pull down the *Display setup* menu
- Use ↑ or ↓ to select *Text box*
- Press → to pull down the menu
- Use ↓ or ↑ to enable/disable the text box

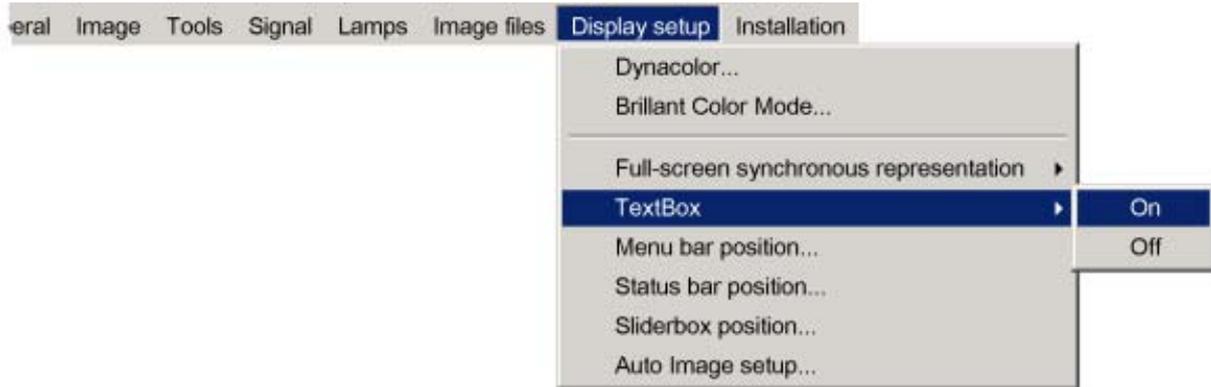


Image 7-91

7. Press **ENTER**

7.8.5 Menu bar position

What can be done ?

The menu tool bar can be centered vertically , the range being from top of the screen to the middle of the screen. This can be useful in applications where the top image content is not displayed.

How to center the menu ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Display setup* item
3. Press ↓ to Pull down the *Display setup* menu
4. Use ↑ or ↓ to select *Menu bar position menu*
5. Press **ENTER**

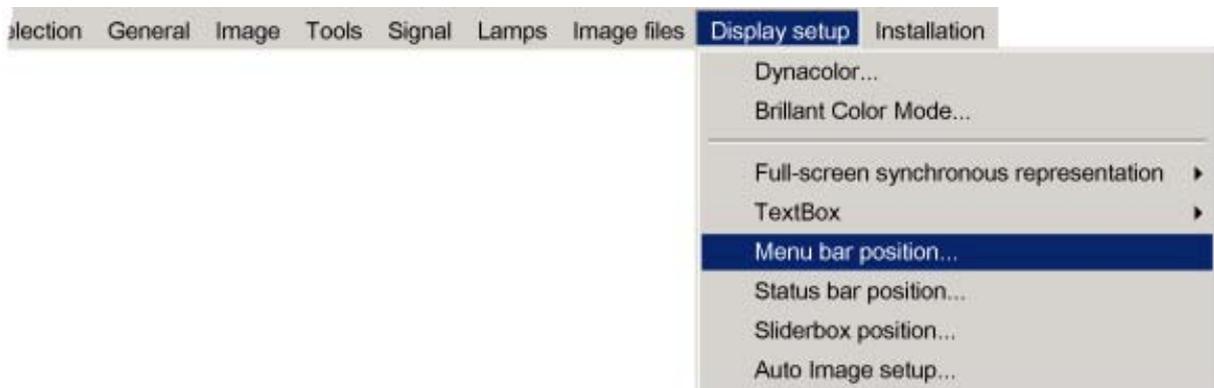


Image 7-92

6. Use ↑ or ↓ to position the Menu bar

7.8.6 Status bar position

What can be done ?

The status bar (wizard menu) can be centered vertically , the range being from bottom of the screen to the middle of the screen. This can be useful in applications where the bottom image content is not displayed.

How to center the menu ?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Display setup* item
3. Press ↓ to Pull down the *Display setup* menu
4. Use ↑ or ↓ to select *Status bar position*

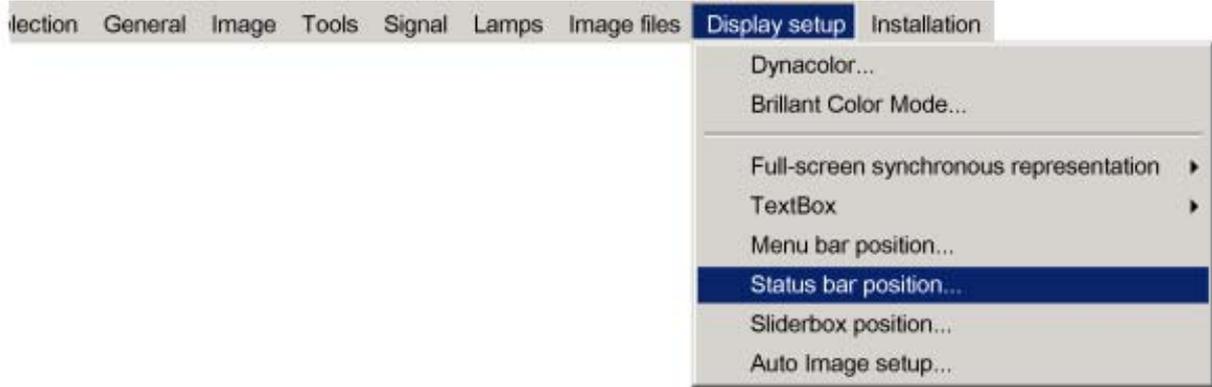


Image 7-93

5. Press **ENTER**
6. Use ↑ or ↓ to position the status bar

7.8.7 Sliderbox position

What can be done ?

The slider box can be displayed anywhere on the screen, the position can be set in this menu.

How to reposition the slider box?

1. Press **MENU** to activate the Tool bar
2. Press → to select the *Display setup* item
3. Press ↓ to Pull down the *Display setup* menu
4. Use ↑ or ↓ to select *Slider box position*



Image 7-94

5. Press **ENTER**
A slider box is displayed. Use the 4 arrow keys to drag the box to the desired position.



There is a coarse and a fine adjustment of the position, use ENTER (when slider box is displayed) to switch between the two.

8. NETWORK CENTRIC OPERATIONS

Overview

- Introduction
- Control
- Configuration
- Remote desktop sharing (virtual meeting)
- The Web client

8.1 Introduction

Overview

- Network architecture
- Network functionality
- iCon server specifications

8.1.1 Network architecture

**SBC**Single Board Computer,

**GUI**Graphic User Interface

Topology

The network centric projector (iCon and iQPro) uses an integrated PC (SBC) and can be connected to a LAN.

The projector performs the role of Server while each PC is declared as a Client within the system.

Each client PC has to be configured (projector IP address, ...), see "Configuring the client software"

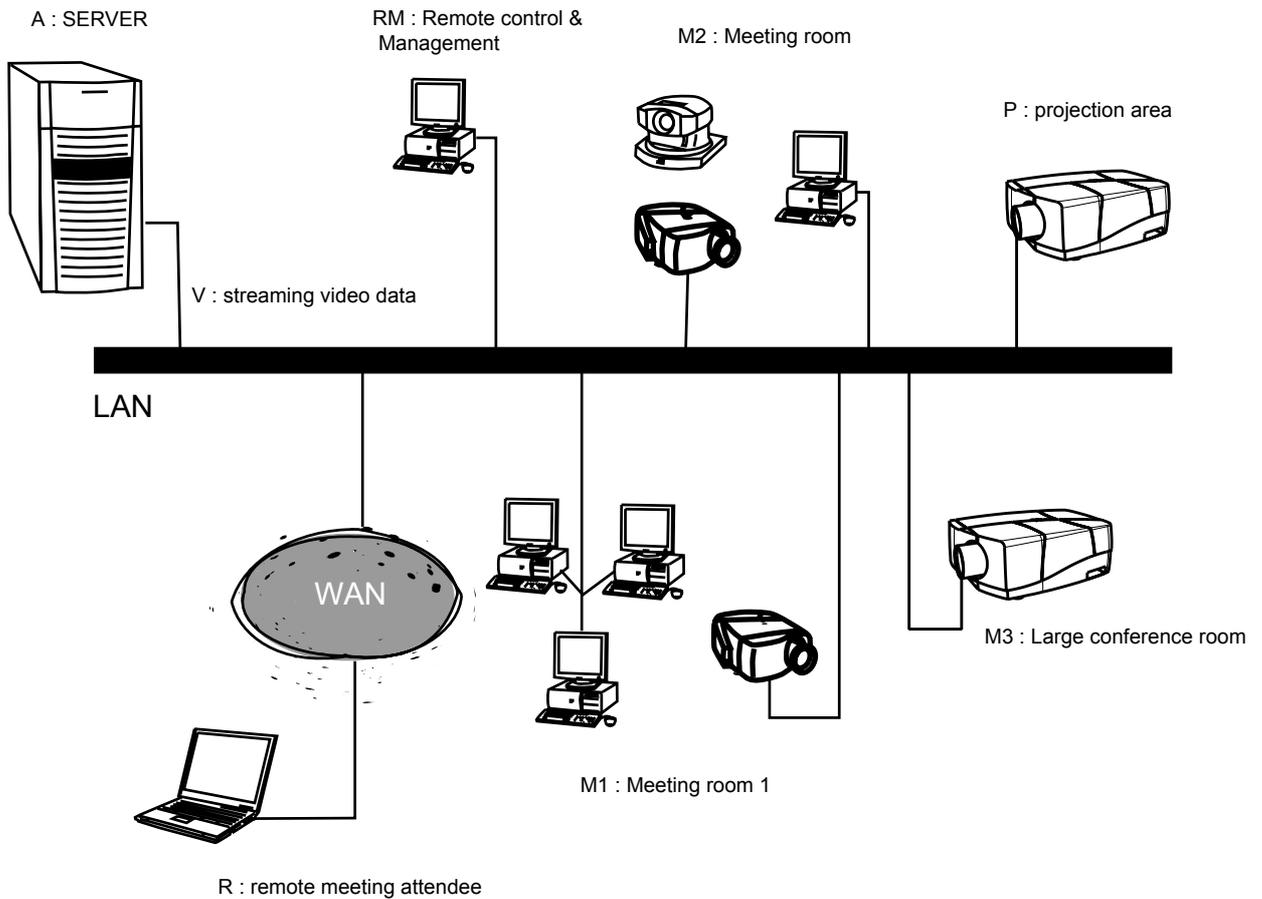


Image 8-1
Typical iQ Pro network architecture

- A server
- RM Remote Control and Management
- M1 Meeting room 1
- M2 Meeting room 2
- M3 Large screen conference room
- P Projection area
- R Remote meeting attendee
- V Streaming Video data



Wireless LAN (point-to-point) is also possible (using the PCMCIA connection on the projector) and complements the functionality of direct cabling.

8.1.2 Network functionality

What can be done ?

The network functionality allows the projector to perform several network functions thanks to network features which are required in most corporate environments:

- **Control & Management** : wireless/wired (remote) control and monitoring of the projector(s) thanks to a user-friendly GUI (the Client software).
- **Diagnostics** : diagnostics through a user-friendly GUI and automatic E-mail sending.
- Easy file (MS PowerPoint,...) manipulation and projection using the **DropZone** interface.
- **Remote control** of the projector by allowing the desktop to be shared over the network (the **DropZone** interface).
- **Streaming media** : The projector's onboard computer is streaming video data ready, i.e. allowing the decoding of video streaming data coming from a server via the LAN.



The network centric projector may be configured in the same way as a standard PC to support :

- **SNMP service** : provides diagnostics, basic control via SNMP messaging
- **Microsoft Exchange services**: for scheduling of projector tasks.
- **Web client** : offers an alternative to the Client software through a user-friendly internet based interface (includes almost the same features as the Client software)

See the Appendix “General guidelines on Network configuration” for general guidelines on how to enable these services.

8.1.3 iCon server specifications

Specifications

- 1.6 GHz Pentium M processor
- 1GB RAM
- 40 GB Hard Disk storage
- Microsoft XP Operating System
- Barco Server Software for network communication between Server and clients

8.2 Control

Overview

- Description
- How to use the control manager?
- General
- The source selection screen
- The PiP screen
- Image settings
- Advanced control

8.2.1 Description

What can be done ?

The projector allows a software client (client PC) to communicate locally with the server and hereby control the projector's settings, in this case one has a **point to point** communication, image 8-2. The client PC or laptop communicating with the projector may be locally installed or may be remote, communication may then happen over a LAN, image 8-3

The projector performs the role of Server while the PC acts as a Client within the system.

The control and management client software includes the possibility to create groups of projectors and that way control a whole fleet of projectors.

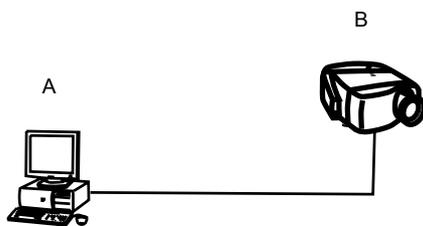


Image 8-2
point to point iQ Pro network communication

- A facility manager's desk
- B projector area

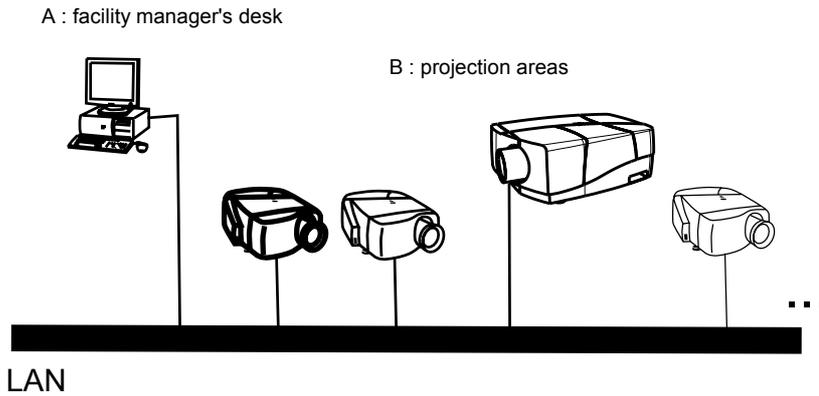


Image 8-3
control & management of network centric projector(s)

- A facility manager's desk
- B projector area

What can be controlled ?

Almost every menu item can be controlled through the control manager

- standby on/off
- lamp mode
- source selection
- switching effects
- background setting
- all PiP settings (layout, window)
- Image settings
- lens adjustments

The control manager

The control interface in the client software is divided into 5 subscreens, image 8-4:

- General
- source selection
- PiP
- image settings
- advanced



Image 8-4
The control interface: the general sub screen is active (see tool bar)

8.2.2 How to use the control manager?

How to use the control manager?

1. Choose the sub screen by clicking on the desired item on the tool bar in the upper part of the control interface
The active sub screen is indicated with a blue spot

8.2.3 General

What can be done ?

Basic controlling, monitoring and general parameter setting of the projector can be done in this screen, image 8-4.

- 3 buttons *ON*, *STANDBY* and *PAUSE*
- The *target information* part gives the main characteristics of the projector
- 2 buttons allow to switch between dual and the single lamp mode

How to change the general settings?

1. Click on the lamp mode button to select the desired mode
A blue spot indicates the active mode
2. Click on one of the three buttons to start up, pause or put in standby the projector
A green led indicates the status of the projector.

8.2.4 The source selection screen

What can be done ?

- A source selection dialog box allows to visualize all the sources or only the detected sources.
- 3 buttons to activate, freeze, pause and logo
- selection of 12 different switching effects
- selection of 3 different backgrounds: logo, Blue, Black

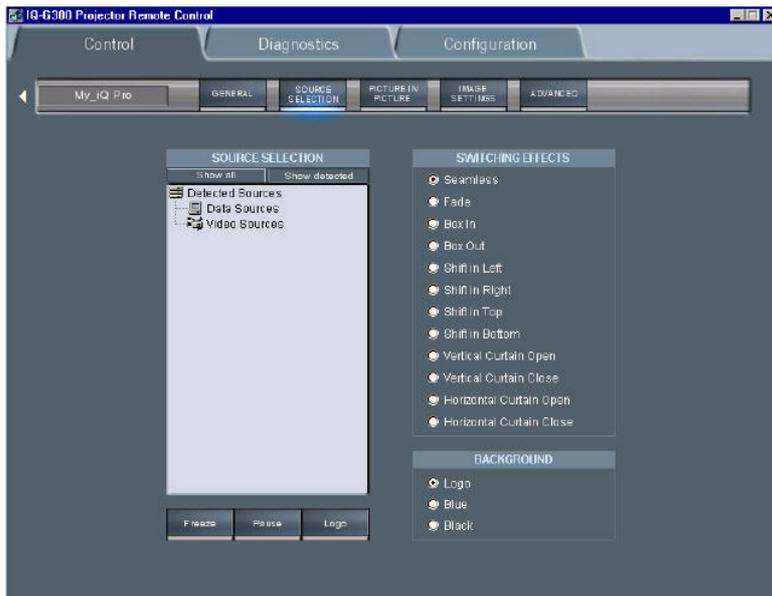


Image 8-5
The source selection screen

How to select a source ?

1. Click on *show all* or *show detected*

Depending on the option (show all/detected) selected, a list is displayed.

In case *show all* is selected, a list of all possible sources is displayed, signal presence is indicated with an orange dot.

When *show detected* is selected, all the detected sources are displayed with an orange dot.

2. Double click on the desired source

The selected source is now projected



In group mode there are only grey or green nodes, no orange (detected).

On start up, a green node will be shown when all projectors are playing the same source type.

Grey will be shown when some of the projectors are not showing the same source type.

If we double click on a grey node, it should go green as long as at least one of the projectors in the group can show the source.

8.2.5 The PiP screen



Following screenshots are taken for an iQPro projector. The layouts may be slightly different for an iCon (layout automatically adapted after projector type detection by the client).

What can be done ?

The PiP tool allows to manage the PiP of the projector in a more user friendly way:

- a check box list allows to choose between 10 PiP layout (5 preset layouts and 5 personal layouts)
- several buttons allow operations on windows (add, remove) as well as on the PiP layouts (save, ...)
- a graphical screen allows easy altering of the PiP layout : re sizing, positioning of the different windows.

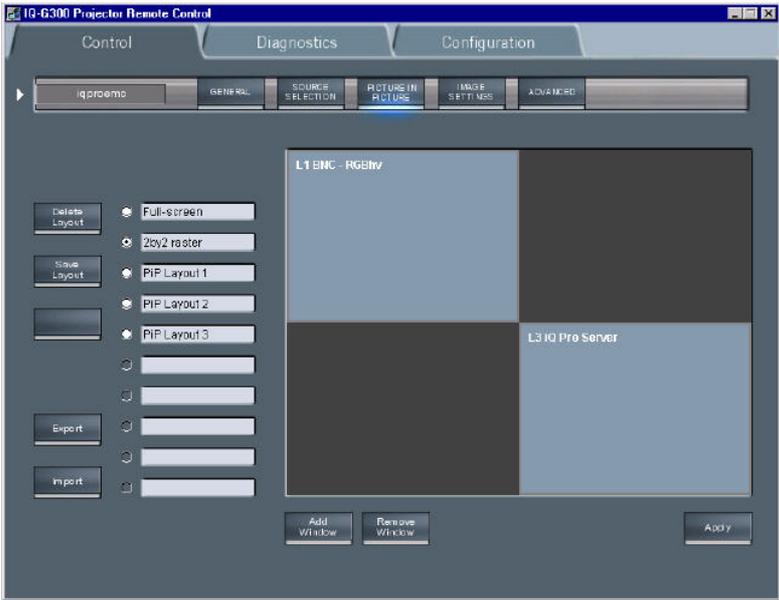


Image 8-6
PiP screen

How to perform operations on a PiP layout

As an example, let us choose a personal (non preset) layout, add a window, reposition the windows, and save the layout under a different name.

- 1. Click on one of the check boxes to choose a layout

Choose a personal layout



Image 8-7

8. Network centric operations

The PIP screen (as well as the projected layout) is updated

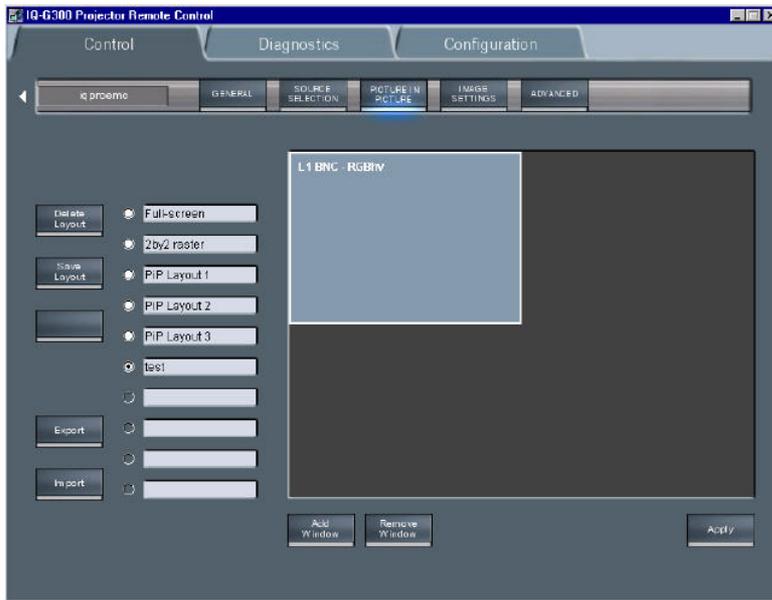


Image 8-8

This layout contains one window being an RGBHV Data source

2. Click on the *Add window* button

Note: if the layout already contains 4 window, it will be impossible to add a new one. In that case a window is displayed, image 8-9



Image 8-9

A dialog box is displayed showing the possible sources to be added.

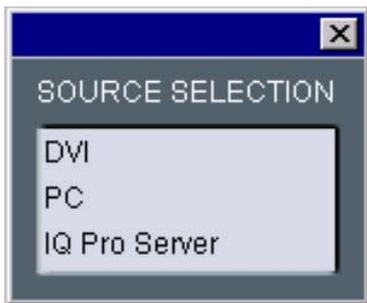


Image 8-10
Add window dialog box

3. Select the source to be linked to the new window.

The window is added to the layout.

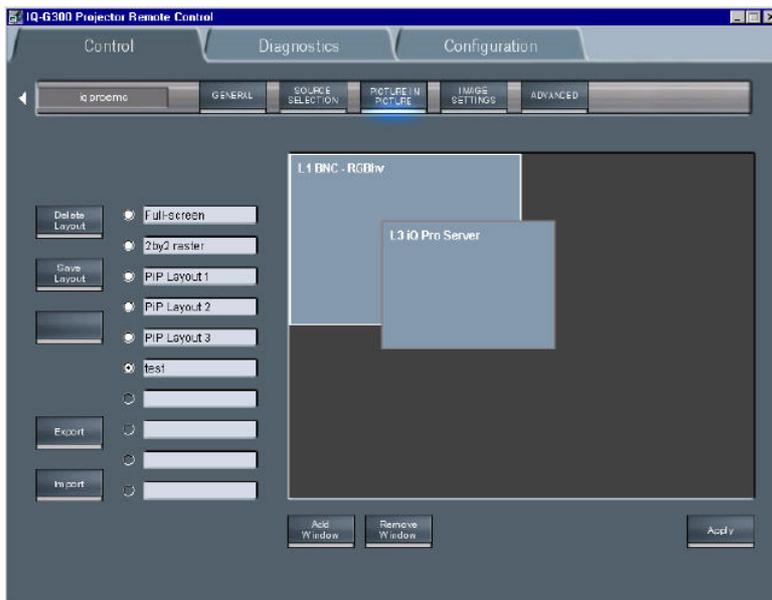


Image 8-11

4. When entering the PiP screen the cursor is replaced by a hand, Click on the window to be repositioned.
The window is surrounded by a white frame.
5. Drag the window to the desired position.
6. Place the cursor on one of the corners of the window to be re sized.
A double arrow is displayed.
7. Drag to re size.
Note: *the window is re sized by keeping the same aspect ratio.*

Importing/exporting a layout

Every PiP layout can be exported and saved as backup on the network or on the hard disk of the Client PC. It can then be imported at any time.

How to import/export a layout ?

1. Click on the *Export* button.
A dialog box is displayed.

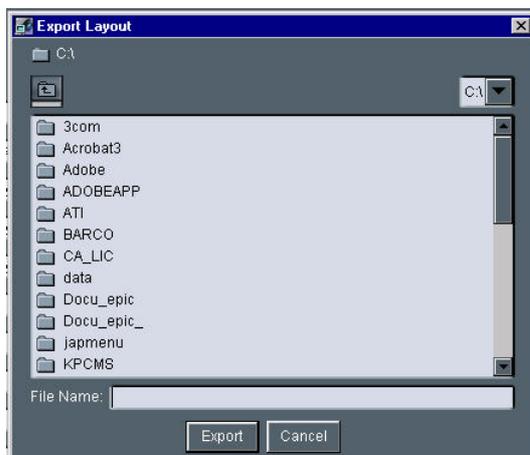


Image 8-12

2. Browse to the desired location and fill in the filename.

How to import a layout ?

1. Click on the import button.

A dialog box is displayed.

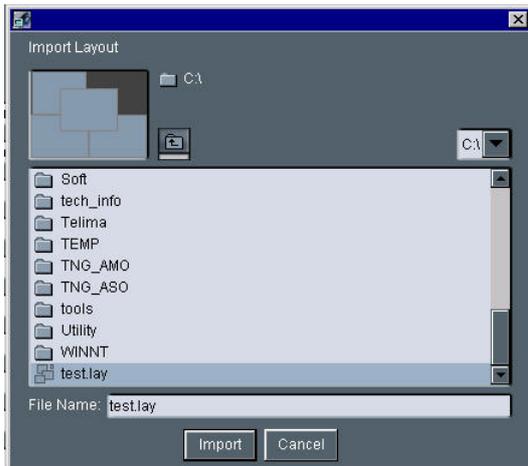


Image 8-13

2. Select the layout to be imported.



For more information on Picture in Picture see the PiP chapter.

8.2.6 Image settings

What can be done ?

- General settings
- Color temperature
- Geometry

General image settings

1. Click on *Image settings* menu in the tool bar to drop down the submenu



Image 8-14

2. Click on *General*

3. Slide the cursors to set the corresponding value

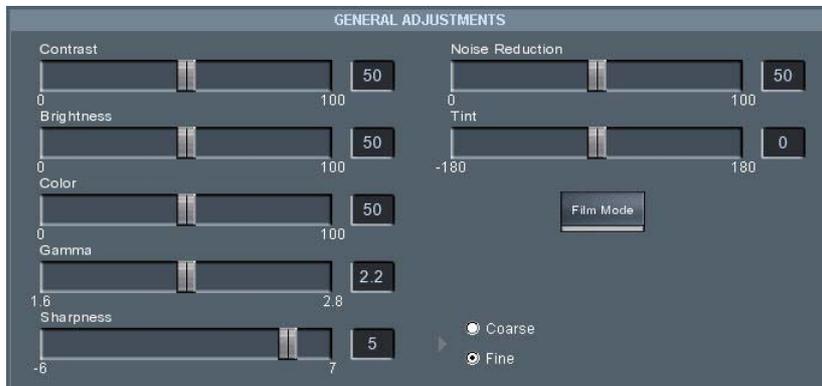


Image 8-15



Use the checkbox to define a coarse or a fine setting.



Click on the *Filmmode* button to enable or disable the filmmode.

Color temperature preset settings

1. Click on *Image settings* menu in the tool bar to drop down the submenu.
2. Click on *color temp*, image 8-14
3. Click on the desired preset color temperature.



Image 8-16

Custom color temperature setting

1. Click on the *Custom* button.
A dialog box is displayed.

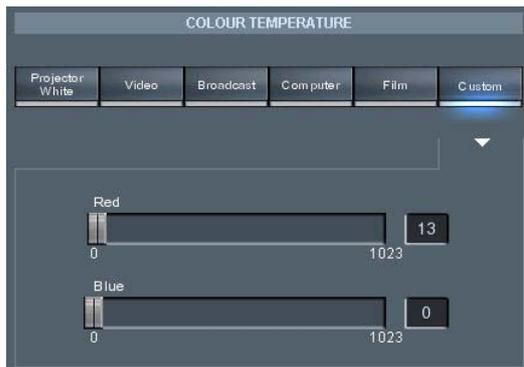


Image 8-17

2. Use the sliders to set the red and the blue color temperature.

Geometry settings

1. Click on *Image settings* menu in the tool bar to drop down the submenu.



Image 8-18

2. Click on *Geometry*.

8. Network centric operations

a dialog box is displayed.



Image 8-19

3. Use the buttons to zoom or pan.
Tip: Use the buttons to choose small, medium or large adjustment steps.
Each click changes the setting.
4. Click on the desired aspect ratio and resolution handling mode.

8.2.7 Advanced control

Overview

- Lens adjustments
- Options

8.2.7.1 Lens adjustments

How to adjust the lens ?

1. Click on the *Advanced* menu in the tool bar to drop down the submenu
2. Click on *lens adjustments*



Image 8-20
the Advanced control submenu

3. Use the buttons to shift/zoom/focus the lens



Image 8-21

Tip: Use the buttons to choose small, medium or large adjustment steps. Each click changes the setting.

8.2.7.2 Options

How to start up the options menu ?

1. Click on the *Advanced* menu in the tool bar to drop down the submenu.
2. Click on *Options* .

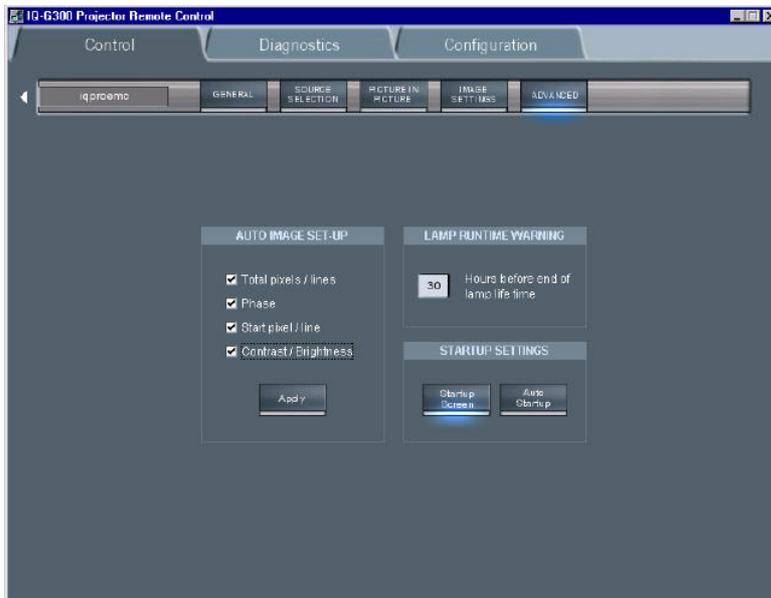


Image 8-22
The advanced Options screen

How to set up and perform AutoImage ?

1. Check the boxes corresponding to the desired setting of AutoImage.



Image 8-23

2. Click on Apply to perform AutoImage.

Lamp runtime warnings startup settings

1. Fill in the lamp runtime warning time.



Image 8-24

2. Click on startup screen to enable the startup screen.
3. Click on Auto Startup to enable automatic startup.



A blue spot indicates that the function is enabled.

8.3 Configuration

8.3.1 E-mail messaging

What can be done ?

E-mail messaging allows the projector to generate automatically E-mail and send them to three configurable recipients.

The mail can be sent on a regular basis i.e. daily, weekly or monthly or can be triggered by warnings.

Basically two different configurations must be done:

- content
- timing

Content configuration

The content configuration allows to define the content of the E-mail

- general content
- advanced content

Timing configuration

E-mail sending can be set to be time dependent or status dependent

- daily : E-mail is sent every day, the time can be set
- weekly: the day can be set with a calendar
- on warning : a E-mail is sent whenever a warning is generated by the projector

8.3.2 E-mail configuration

How to configure the E-mail ?

1. Click on *Configuration* in the toolbar
2. Click on *Mail Config* to open the mail configuration screen

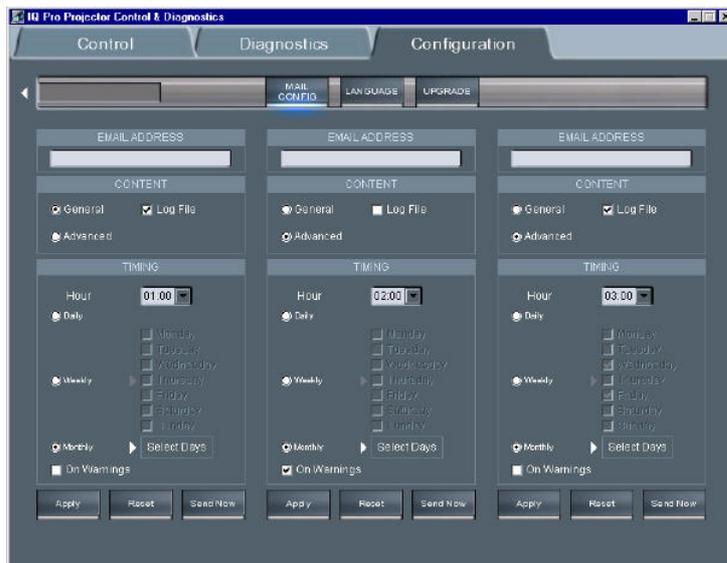


Image 8-25
mail configuration screen

3. set the content by clicking the desired content

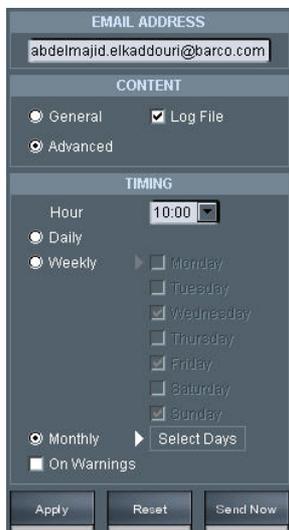


Image 8-26

4. set the timing by clicking the desired time interval

Note: if the timing is chosen to be monthly, a calendar is displayed, click the days on which the E-mail should be sent

Mail “from” configuration

The “from” field of the received mails i.e. the name of the sender (in this case the iQ Pro server) can be configured in the server software.

Therefore the E-mail address has to be filled in the *Networking* tab of the *iQ Control Server properties* dialogbox

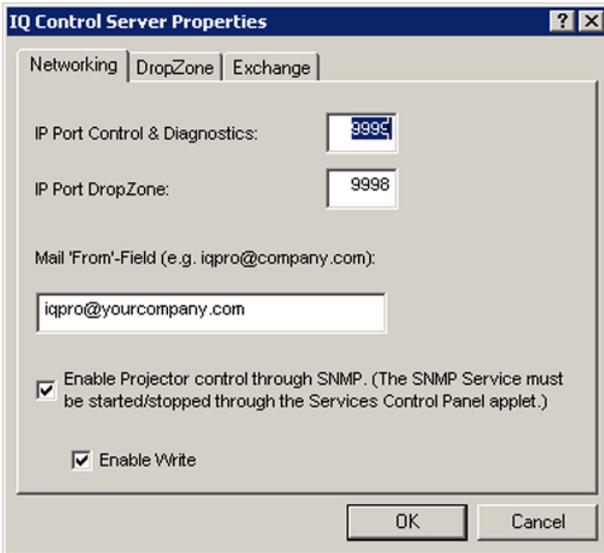


Image 8-27

8.3.3 Projector Firmware Upgrade

What can be done ?

The client software allows to do an upgrade of the projector's firmware.

The upgrade is done with a binary file (extension = ".bin") which is sent to the projector using the LAN connection.

Single projector as well as multiple projector (group) upgrade is possible

How to upgrade the firmware ?

1. Click on *Configuration* in the toolbar
2. Click on *Upgrade* to open the firmware upgrade screen

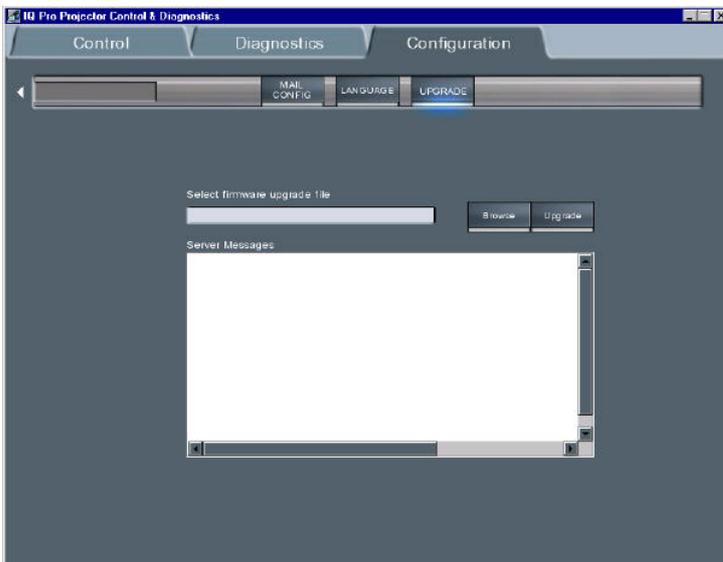


Image 8-28
upgrade interface

3. Use the **Browse** key to select the desired **bin** file.
4. Press the **Upgrade** button on the browser to select the file to start the operation

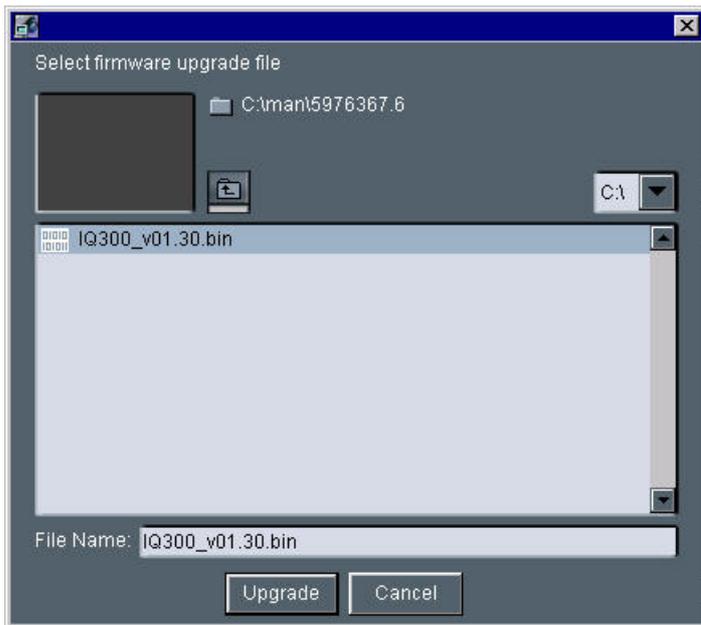


Image 8-29

5. Press the **Upgrade** button on the upgrade screen to start the operation
The information screen will show the progress of the operation.



If the download doesn't succeed please contact Barco

8.4 Remote desktop sharing (virtual meeting)

What can be done ?

The remote desktop sharing in the DropZone allows to visualize the projected image i.e. the desktop of the projector PC on a local PC.

Besides **Desktop sharing** one can take the **Control** (mouse and keyboard control) over a presentation (using Netmeeting™). The control over the presentation can be taken or passed at any time.

The configuration consisting of several remote or local meeting participants sharing the same information content is called a **virtual meeting**.

In this **virtual meeting** each meeting participant can participate to the meeting either in a passive way, by following the meeting on his local desktop (remote desktop sharing), or in an active way by controlling the server's desktop (mouse and keyboard).

Control over the desktop can be requested, forwarded or released.

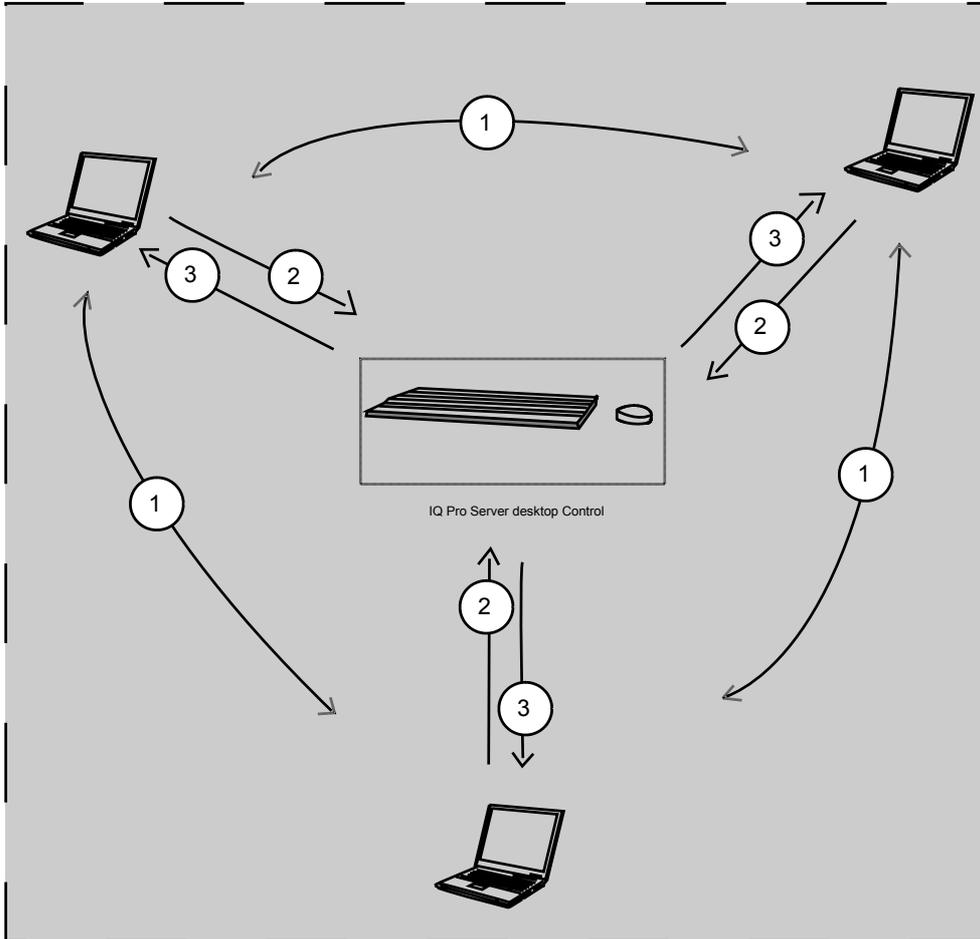


Image 8-30
Virtual Meeting

- 1 forward control
- 2 release control
- 3 request control

How to perform remote desktop sharing ?



- 1. Click on the middle button



The middle button indicates the activation of the remote

The desktop is displayed on the local PC monitor.

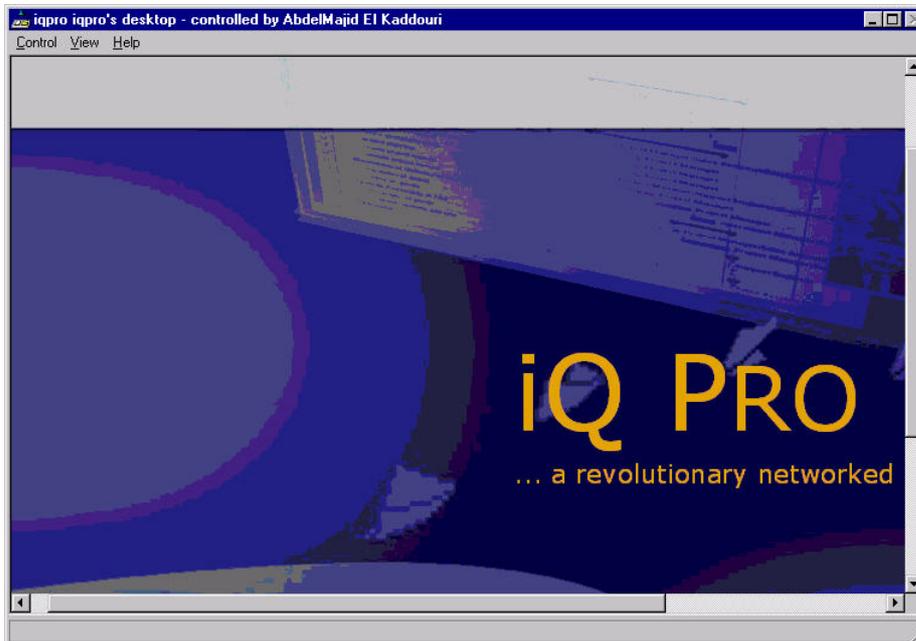


Image 8-31
remote desktop sharing in case of a PowerPoint™ presentation

How to take (mouse and keyboard)Control over the desktop ?

1. Click on the *Control* menu

The *Control* menu is displayed



Image 8-32

2. Select the *Request Control* item

The desktop can now be remote controlled.



The control over the desktop is now done by the local PC. However, the user can at any time decide to release or forward the control to someone else.

How to release control over the desktop ?

1. Click on the *Control* menu

The *Control* menu is displayed

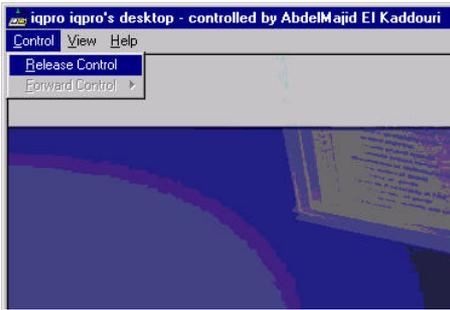


Image 8-33

2. Select the *Release Control* item

The desktop remote control can now be requested by someone else.

How to forward control over the desktop ?

1. Click on the *Control* menu

The *Control* menu is displayed



Image 8-34

2. Select the *Forward Control* item

A pop up menu shows the meeting participants i.e. the users which are connected to the server and which participate to the **Remote sharing** of the desktop.

3. Select the meeting participant

The control is transferred and the user which has the control is now indicated in the title bar.

8.5 The Web client

Web based functionality

The aim of the web services is to allow each network client within the LAN environment to browse via its internet browser to the web client.

This may be seen as an alternative to the client software since the main control & diagnostic tools are also present. Its advantage resides in the fact that no software has to be installed on the local PC, the internet takes while the html page generation is done locally on the server.

How to access the web client via the internet browser ?

To access the web client, the http link has to be filled in on the client's internet browser.

This http link contains the name of the projector/display i.e. the name under which it is identified within the LAN.

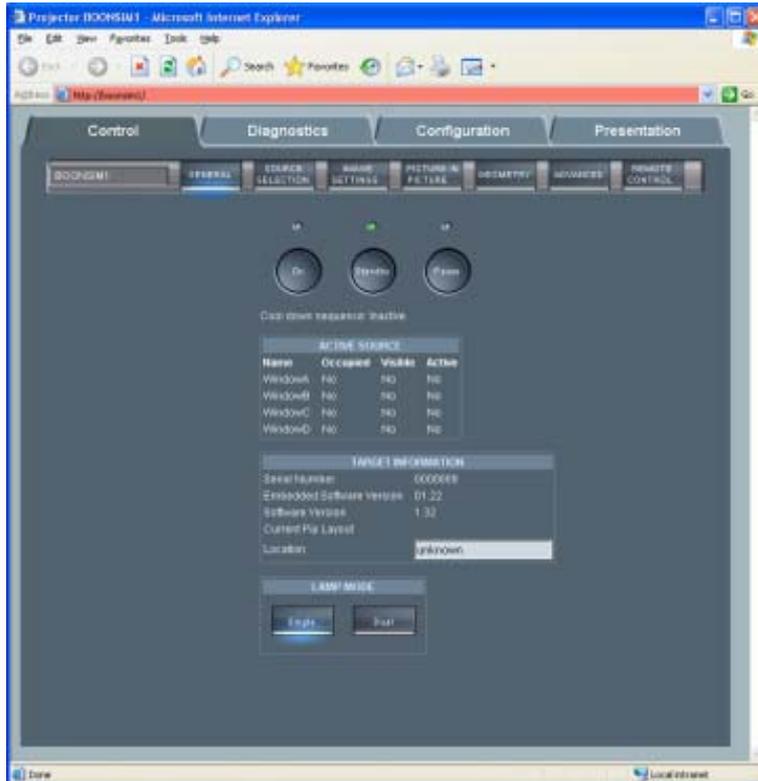


Image 8-35
Web interface

What can be done ?

The possibilities are mainly the same as on the client software.

The web interface allows a user friendly way to manage the projector/display, its use being straightforward and similar to the client interface (ref).

Requirements for the use of the Web client



Some components have to be installed or enabled on your local (client) operating system to allow access to the Web client.

See the Appendix “ General guidelines on network configuration” for general guidelines on how to enable these services. .



The minimal server software version should be V1.10 to allow the use of the Web client.

9. GENERAL GUIDELINES ON NETWORK CONFIGURATION

Overview

- General Network
- The Internet and Web services



The installation of the iQ Pro in a Local Area Network must be done in the same way as the installation of a standard PC in that particular network meaning that the same rules and accepted practice should be respected.

The assistance of qualified IT personnel is advised.

9.1 General Network



An Administrator password has been installed for security reasons (worm and virus protection):

Password : Barco (case sensitive !)

Microsoft NT Domain

To enable access to your network resources, the iQ Pro must be a member of your NT Domain.

This can be configured in the Control Panel, under "System", in the "Computer Name" tab, under the button "Network ID". You'll need some help from the Network Administrator, since you need special rights to do this.

TCP/IP

The iQ Pro uses TCP/IP networking, so it needs the IP address, network mask, broadcast address, gateway, dns, wins, etc. to be configured. This can be done in the Control Panel, under "Network Connections". This can however be configured automatically, if your network uses DHCP.

9.2 The Internet and Web services

Internet access

If you want to access the Internet from the iQ Pro, and the projector is located behind a firewall, you will also need to configure the proxy to use. This can be done in the Control Panel, under "Internet Options", in the tab "Connections", under the button "LAN Settings".

iQ Pro Web services

To use the iQ Pro web client, you might need to change the "LAN Settings" on your local computer

If the client thinks the projector is on the Internet, and tries to connect to it through the proxy, you can turn on the "Bypass proxy server for local addresses" feature, or add the projector to the Exceptions list under the "Advanced" button.

The "Internet Information Services(IIS) " component has to be installed on the operating system.

SNMP

To enable management via the IQProSNMP Agent, you must enable the SNMP system service, and configure the communities accordingly.

This can be done in the Control Panel, under Administrative Tools, in the Services, under the entry "Management and Monitoring tools". You may also need to enable SNMP in the iQ Pro Control Server in the system tray, see image below.



Image 9-1
system tray

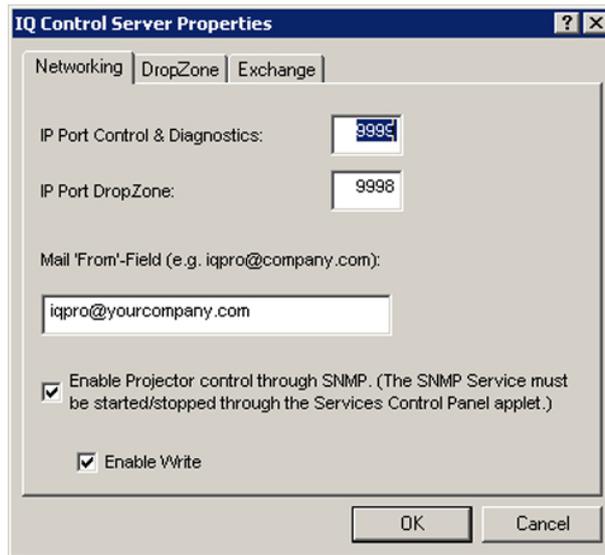


Image 9-2
server settings dialog box



For more info, see "SNMP services", page 135

Microsoft Exchange and Outlook

To enable control via the Microsoft Exchange integration, you need to install, enable and configure the IQProEXCH module.

To enable control from Microsoft Outlook, you need to install, enable and configure the IQProEXCH module, and install an Outlook Form on the Exchange Server in your network.



For more info, see "Exchange", page 127

10. EXCHANGE

Introduction

Some parameters values are installation dependent, and are shown here as an example.

You may need assistance from you network administrator, IT Manager or MIS helpdesk to obtain the settings or to configure the projector for you, since this is a task description targeted to 'Administrators' and needs knowledge and/or permissions normally held by those persons.

It is advised that you first try to follow the procedure to obtain a working setup, before changing the settings for conforming to your local security requirements.

Use of this software requires a working Microsoft Exchange server installed somewhere in your corporate network.

10.1 Exchange Installation

10.1.1 Installation procedure

Creating a user account and mailbox

1. Create a user account in your NT Domain (on the projector).
The service will use this account to log on to the domain, and as credentials to authenticate to Microsoft Exchange to read the entries in the Calendar folder of the Mailbox.
Username: iqpro
Domain: BARCO
Password: pwiqpro
2. Create a Mailbox for the projector's account on the Microsoft Exchange Server (on your LAN).
The NT Domain user created in step 1 should have read access to this Mailbox.
Server: "BARCOEXCHSRV"
Mailbox: "Projector, IQPRO"
User: BARCO\iqpro

Installing and configuring Microsoft Outlook (on the projector)

1. Install Microsoft Outlook on the Projector.
Note: *To be able to access Microsoft Exchange, you need a Client Access License.*
Once you have one of those, you also have a license to Microsoft Outlook.
Refer to the following URL for more information: http://www.microsoft.com/resources/sam/licensing/cal_guide/exchange.asp
Tip: *Outlook can be installed from the Microsoft Exchange Server CDROM or from a Microsoft Office Suite Installation CDROM.*
Since the IQ Pro has no CDROM drive, you may need to use a CDROM drive shared from a PC in the network.
Alternatively, you could use a USB CDROM drive.
2. Make sure the projector is part of the domain
Tip: *This can be done in Control Panel->System->Computer Name->Change*
3. Log in on the projector as the user
User: iqpro
Domain: BARCO
Password: pwiqpro
Tip: *If the user cannot log on, the Local Administrator should add the right "Log on locally" for the user.*
This must be configured in Start->Control Panel->Administrative Tools->Local Security Policy
4. Configure Outlook
Profile Name: "MS Exchange Settings"
This is what the wizard proposes by default, and what is used in this document.
Default Mail Client: yes
Note: *Make sure that MS Outlook is the default Mail Client for this account.*
You can do this afterwards from this configuration page: Start->Control Panel->Internet Options->Programs->Email For more information, refer to :
<http://www.microsoft.com/mspress/troubleshooting/outlook/LS/101801.asp>

Enabling the account

1. Log on to the projector as an Administrator for the next steps.

For security reasons, you will probably not want to make the projector account part of one of the administrator groups.

2. Enable the account to be used by the "iQ Pro Exchange Integration" service
3. In the Tree of the "Local Security Settings" application, navigate to Security Settings->Local Policies->User Right Assignment.
4. In the List, edit the "Log on as a service", and add the account, in the example "BARCO\iqpro".

Installing and configuring the iQProEXCH service

Step 1,2,3 refers to the manual installation. One can use the SETUP.EXE program instead.

1. Copy the file IQProEXCH.EXE to (eg.) C:\Program Files\BARCO\iQ Pro Server
2. Open a command line, and go to the that directory
3. Type the following command IQProEXCH /Service
4. To configure, right click the "iQ Pro Server" tray icon, and go to the tab "Exchange"
Enter the credentials



Image 10-1
system tray



Image 10-2
server exchange tab

5. To enable the "iQProEXCH" service go to Control Panel->Administrative Tools->Services->iQPro Exchange go to the TAB "General Startup" and Type: Automatic
Make the service use the correct account TAB Log On
Select "Local System Account"
Check "Allow service to interact with desktop"
6. Start the service, or reboot the projector.



You should now be able to schedule commands from a Microsoft Exchange client such as Outlook running on any computer on the local network, provided you have the necessary permissions on the Calendar in the projector mailbox.

10.1.2 Troubleshooting



The file C:\Program Files\BARCO\iQ Pro Server\IQProEXCH.log and the "Event Log" may contain helpful information to diagnose what's going wrong

What can go wrong and what to do ?

1. The log file contains "**Logon failure: unknown user name or bad password**"
Check Username, Password and Domain in Control Server/Exchange
2. The log file contains "**Logon failure: the user has not been granted the requested logon type at this computer.**"
The user account must be given the "**Log on as a service**" permission. This is done in Start/Control

Panel/Administrative Tools/ Local Security Settings/Security Settings/Local Policies/User Right Assignment. In the list, add the user to the entry "**Log on as a service**"

3. The log file contains "**Could not log on with Profile 'MS Exchange Settings'**" Make sure the profile exists. To check this, log in to the projector as the user (BARCO\iqpro), as the profile should be owned by the projector account, and Outlook-profiles are per-account. Start/Control Panel/Mail
4. The user cannot log on to the projector. The Administrator should add the right "**Log on locally**" for the user. This must be configured in the Start/Control Panel/Administrative Tools/Local Security Policy
In the list, add the user to the entry "**Log on as a service**"
5. When trying to start the service, the projector beeps, and the service stays in the 'starting' state
This happens when the service tries to display an error in a popup, but cannot access the desktop. Control Panel/Administrative Tools/Services/iQPro Exchange
Check "**Allow service to interact with desktop**"
You may need to end the process '**IQProEXCH**' from the task manager.
6. The commands are not executed at the right time
Check the time of the computer and the timezone Start/Control Panel/Date and Time/Timezone
7. An Outlook dialog box is displayed stating that there is no default mail client.
Make sure that MS Outlook is the default Mail Client for this account. You can do this from this configuration page: Start/Control Panel/Internet Options/Programs/Email
You may need to do this as administrator, since the service is started as 'Local System' account.
Tip: For more information, refer to <http://www.microsoft.com/mspress/troubleshooting/outlook/LS/101801.asp>

10.2 Exchange Integration

Introduction

The projector must be configured to connect to a mailbox on a Microsoft Exchange server in the network, which is dedicated to the projector, and to which of course the projector has rights to connect to.

The commands should be put in the SUBJECT of an appointment in the Exchange Calendar of the projector. The Start Time and End Time of the appointments are used for timing info. The other fields (location, categories, body, ...) are not used by the software, and thus can be used to store extra information for the USERS of the projector mailbox.

10.2.1 Command

How are the commands build up ?

- Command **filename/filepath**

The parameter **filename** is a filename relative to the "Receive" directory of the iQ Pro Control Server, which, in a default installation, would typically be the local folder "C:\Documents and Settings\All Users\Received" The parameter **filepath** is an absolute path to a file.

The commands should be put in the SUBJECT of an appointment in the Exchange Calendar of the projector. This is a mailbox on a Microsoft Exchange server in the network, which is dedicated to the projector, and to which of course the projector has rights to connect to.



The command and the filename are separated by a space.

Overview of the commands

- ON
- STANDBY
- PAUSE
- PAUSE ON
- PAUSE OFF
- LOGO
- LOGO ON
- LOGO OFF
- SWITCH SOURCE
- SWITCH LAYOUT
- LAUNCH ATTACHMENT
- STORE ATTACHMENT
- STORE **filename**
- STORE FILE **filepath**
- LAUNCH **filename**
- LAUNCH FILE **filepath**
- DELETE **filename**
- DELETE FILE **filepath**

ON, STANDBY

The projector is put in the specified state at the beginning of this event. Beware that if the SBC (Single Board Computer) is to be powered-down during STANDBY, that further events will not be processed, since the integration runs on that SBC.

PAUSE, LOGO

The projector is put in the specified state at the beginning of this event, and the state is undone at the end of this event. o A parameter ON or OFF can be specified to choose between the actions. This action will then be executed at the beginning. So "PAUSE from 12:00 to 13:00" is equivalent to "PAUSE ON at 12:00" + "PAUSE OFF at 13:00"

SWITCH SOURCE, SWITCH LAYOUT

The projector switches source or layout at the beginning of this event.

LAUNCH ATTACHMENT

The attachment is saved at the beginning of this event. Then the associated application is started. o At the end of the event, the application is killed. This can not be guaranteed if the application was already running on the projector. For example, if a web page is being displayed, and a second one is launched, the application is not started, but the original browser displays the page. In this case the second event can not control the browser. This is a limitation of the Windows platform.

STORE ATTACHMENT

The attachment is saved at the beginning of this event. The name of the attachment is used and the file is placed in the Receive folder.

STORE filename

The attachment is saved at the beginning of this event. The name filename is used and the file is placed in the Receive folder. For example "STORE MYFILE.PPS" will save the attached file to "C:\Documents and Settings\All Users\Received\MYFILE.PPS"

STORE FILE filepath

The attachment is saved at the beginning of this event. The path filepath is used as absolute filename. For example, the command "STORE FILE C:\My Videos\MYFILE.AVI" will store the attachment as C:\My Videos\MYFILE.AVI. This of course if permissions are correct and the directory C:\My Videos exists

DELETE filename

The file with name filename is deleted from the receive folder. For example "DELETE MYFILE.PPS" will delete "C:\Documents and Settings\All Users\Received\MYFILE.PPS"

DELETE FILE filepath

The file with absolute name filepath is deleted. For example, the command "DELETE FILE C:\My Videos\MYFILE.AVI" will store the attachment as C:\My Videos\MYFILE.AVI.

Drop down list

Besides the above commands some predefined commands can be selected from a drop down list in the iQPro tab.



Image 10-3

10.2.2 Example

Schedule projector tasks in Microsoft Outlook 2000

following tasks are scheduled:

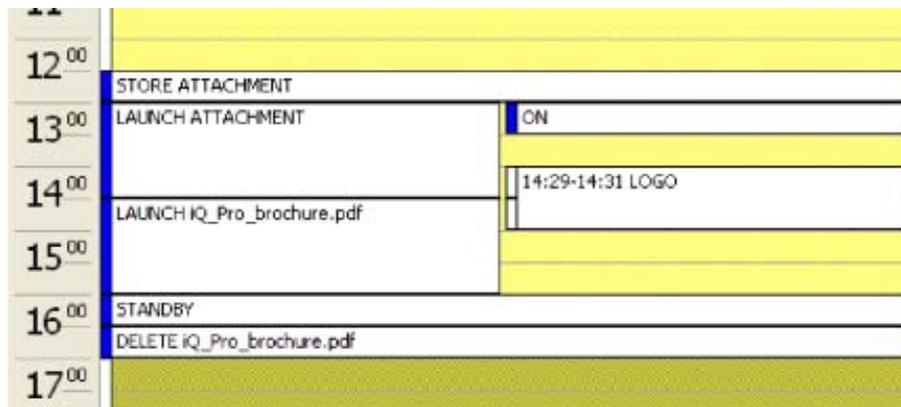


Image 10-4

1. store attachment at 12:30 (The attached file is iQ_Pro_brochure.pdf)
2. turn the projector on at 13:00 and launch a different attached file
3. show the logo from 14:29 to 14:31 to hide the killing of the application and the starting of the PDF Viewer
4. at 14:30, launch the PDF file that was stored in step 1
5. kill the application and put the projector in standby at 16:00
6. delete the PDF file that was stored in step 1

10.2.3 Microsoft Outlook Integration

Adding Outlook forms

To make things easier for users, you can install an Outlook Form that adds a tab called "iQ Pro" to the appointment. The form contains the most-used commands in easy-to-use drop-down lists. It looks as follows:

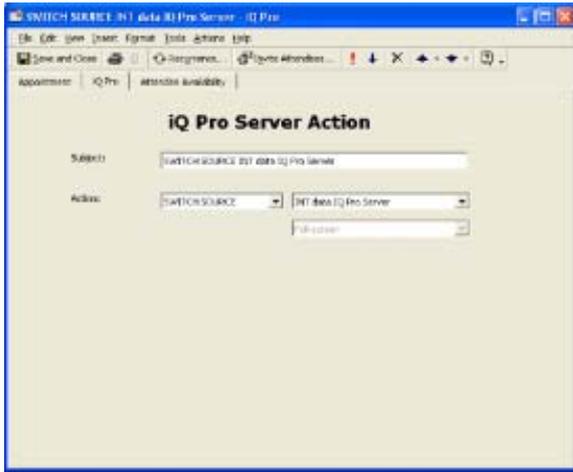


Image 10-5

The form contains the functionality that a normal user should be able to use without consulting the documentation.

The attachments, date and time fields must be edited in the "Appointment" tab.

Choosing items from the drop-down boxes fills in the subject.

By default, the layouts "Full-screen" and "2by2 raster" are defined in the form.

If you add layouts on the projector(s) or change the defaults, the user must type the name of the layout in the subject.

The form can be modified to make things easier for users, one can also add the defined layouts to the drop-down list. This must be done from Outlook, in the menu "Tools->Forms->Design This Form"

Organizational Forms



The administrator should install Organizational Forms on the Exchange Server in the "Organizational Forms" library.

Default form

Now the form still needs to be set as a default for creating new items. When returning to the "Forms" tab in the "Calendar Properties" you should now see the "iQ Pro" template installed. Now go to the "General" tab and select the template as default for posting to the folder.



Image 10-6

If the form was installed as an "Organizational Form", you need to select the "Forms..." entry, which will display the "Choose Form" dialog,

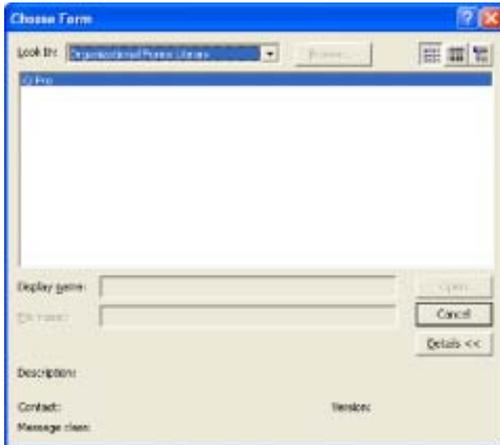


Image 10-7

10.2.4 Folder form

Folder form

Alternatively, the form can be installed for the Calendar folder only, by following the procedure described below

How to configure a folder form

1. In Outlook, right-click on the "Calendar" icon in the "Outlook Shortcuts" tab in the "Outlook Bar" to open the "Properties" page, while logged-on as the projector (Or display the "Folder List", and right-click the "Calendar" folder to open the "Properties" page).
2. In the "Calendar Properties" dialog, go to the "Forms" tab, and click the "Manage..." button.



Image 10-8

3. On the "Forms Manager" dialog, click the "Install..." button and select the file "iQ Pro.fdm".



Image 10-9

4. When returning to the "Forms" tab in the "Calendar Properties" you should now see the "iQ Pro" template installed. Now go to the "General" tab and select the template as default for posting to the folder.

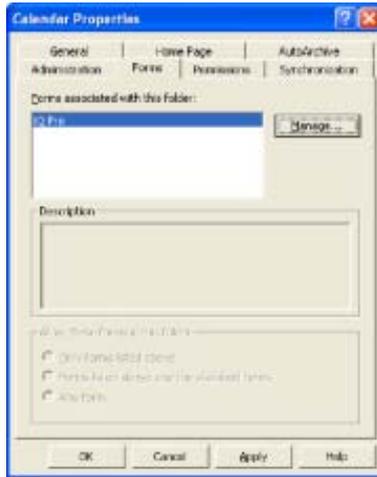


Image 10-10

10.2.5 Limitations and known “problems”

Overlapping tasks

When launching 2 attachments with overlapping times it is possible for the application to exit at the end of the first period. For example, let's say we try to display PRES1.PPT from 12:00 to 13:30, and PRES2.PPT from 13:00 to 14:30, it is possible for BOTH presentations to exit at 13:30. This is because Windows uses the same process to display both files, and activates them via DDE.

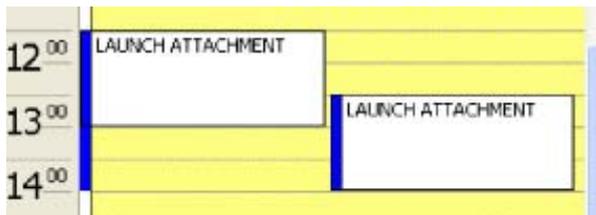


Image 10-11



This is a limitation in the Microsoft Windows ShellExecuteEx API



Avoid overlapping schedules in this case, or change the associations in: My Computer->Tools->Folder Options->File Types->(extension)

Try to disable DDE (under Edit with the default action, eg 'open', selected) and/or disable 'Browse in same window' or using a different viewer/player for the file type.

11. SNMP SERVICES

Introduction

Some parameters values are installation dependent, and are shown here as an example.

You may need assistance from you network administrator, IT Manager or MIS helpdesk to obtain the settings or to configure the projector for you, since this is a task description targeted to 'Administrators' and needs knowledge and/or permissions normally held by those persons.

It is advised that you first try to follow the procedure to obtain a working setup, before changing the settings for conforming to your local security requirements.

11.1 SNMP installation

Introduction



The Control Server version should be at least version 1.10.

To check the version, open the about box from the server tray:

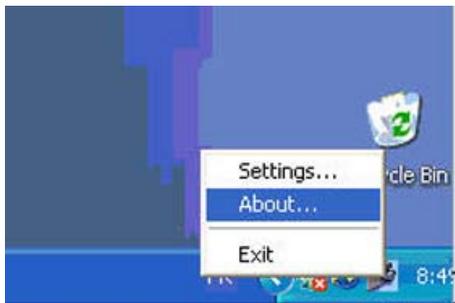


Image 11-1



Image 11-2



Image 11-3



Image 11-4



Software updates can be obtained from the BARCO support website: ftp://ftp.barco.com/pub/iq_pro_software/ or from secured website PartnerZone

How to install SNMP (only if necessary)

1. The Microsoft SNMP service must be installed
You may need to install this service from the Windows XP CDROM.
2. Install the SNMP Agent Extension dll **regsvr32 IQProSNMP.dll**
The agent should now be registered as "iqpro" under
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\SNMP\Parameters\ExtensionAgents

How to configure SNMP (only if necessary)

1. Go to the Control panel, under the Administrative Tools, in the Services, in the "SNMP" entry.
2. In the "General" tab, you can enable the service, and make it start automatically.

11. SNMP services

3. In the "Security" tab, the default Community is called 'public' and is read-only.
You may want to give read-write permission to 'public' (not recommended) or create a 'private' community with read-write permissions.
4. In the Control Server, enable the SNMP support, and optionally, enable read-write support.
5. The SNMP service should be restarted, to take the changed settings into account.



To uninstall the snmp agent: `regsvr32 /u IQProSNMP.dll`

11.2 SNMP integration

Commands

Following commands are provided stored in the MIB :

Command	Type
PROJECTORTYPE	READ
SERIALNUMBER	READ
LAMPPRODUCTNUMBER	READ
LAMPSERIALNUMBER	READ
SERVERTYPE	READ
SERVERVERSION	READ
EMBEDEDSOFTWAREVERSION	READ
PROJECTORLANGUAGE	READ
PROJECTORNAME	READ
LOCATION	READ
ORIENTATION	READ
RESOLUTION	READ
DESKTOPRESOLUTION	READ
PROJECTORSTATE-cooldown	READ
PROJECTORSTATE-textbox	READ
PROJECTORSTATE-projector	READ/WRITE
PAUSE	READ/WRITE
FREEZE	READ/WRITE
PROJECTORRUNTIME	READ
LAMPWARNINGSTATUS	READ
LAMPALERTSTATUS	READ
LAMPMODE	READ/WRITE
LAMPRUNTIME	READ
LAMPSTATUS	READ
LAMPWARNINGTIME	READ/WRITE
I2CDIAGNOSTICS	READ

Command	Type
POWERSUPPLYERROR	READ
LAMPERROR	READ
PCSTATEPROJECTORON	READ/WRITE
PCSTATEPROJECTORSTANDBY	READ/WRITE
PCSTATE	READ/WRITE

12. MAINTENANCE

12.1 Cleaning the lens



To minimize the possibility of damage to optical coatings, or scratches to lens surfaces, we have developed recommendations for clean. **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.

13. IMAGE FILES

13.1 Image files

Table overview

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

Name ¹	Resolution ²	Fvert Hz ³	FHor kHz ⁴	Fpix MHz ⁵	Ptot ⁶	Pact ⁷	Ltot ⁸	Lact ⁹
1600@48V	1600x600i	48,040	62,500	135,000	2160	1600	651	600
1600@60V	1600x900	60	56	119	2128	1600	932	900
1600@192	1600x600	96	63	135	2160	1600	651	600
1920x1440@60	1920x1440	60	90	234	2600	1920	1500	1440
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

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

13. Image files

Name ¹	Resolution ²	Fvert Hz ³	FHor kHz ⁴	Fpix MHz ⁵	Ptot ⁶	Pact ⁷	Ltot ⁸	Lact ⁹
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
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

Name ¹	Resolution ²	Fvert Hz ³	FHor kHz ⁴	Fpix MHz ⁵	Ptot ⁶	Pact ⁷	Ltot ⁸	Lact ⁹
PC98_3	1120x750	60,000	50,000	78,569	1571	1120	833	750
QXGA@56	2048x1536	56	89	247	2784	2048	1586	1536
QXGA@60	2048x1536	60	95	267	2800	2048	1589	1536
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
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@119	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
SUNNEWS@67	1280x1024	67,189	71,691	117,000	1632	1280	1067	1024
SUNNEWS@76	1280x1024	76,107	81,130	135,000	1664	1280	1066	1024
SUNXGA@60	1024x768	59,984	48,287	64,125	1328	1024	805	768
SUNXGA@70	1024x768	70,041	56,596	74,250	1312	1024	808	768
SUNXGA@77	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

13. Image files

Name ¹	Resolution ²	Fvert Hz ³	FHor kHz ⁴	Fpix MHz ⁵	Ptot ⁶	Pact ⁷	Ltot ⁸	Lact ⁹
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
SXGA+1_60	1400x1050	60	63,980	107,997	1688	1400	1066	1050
SXGA+2_60	1400x1050	60	65	123	1880	1400	1087	1050
SXGA2@60	1280x960	60	59,999	107,998	1800	1280	1000	960
SXGA2@85	1280x960	85	85,940	148,505	1728	1280	1011	960
SXGA@50	1280x1024	50	52,351	88,368	1688	1280	1047	1024
SXGA@60v	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@70	1600x1200	70	87,497	188,993	2160	1600	1250	1200
UXGA@75	1600x1200	75	93,747	202,494	2160	1600	1250	1200
UXGA@85	1600x1200	85	106,247	229,494	2160	1600	1250	1200
UXGA_L	1600x1200	60	72,801	119,977	1648	1600	1216	1200
UXGAP1@59	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@73	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

Name ¹	Resolution ²	Fvert Hz ³	FHor kHz ⁴	Fpix MHz ⁵	Ptot ⁶	Pact ⁷	Ltot ⁸	Lact ⁹
VIDEO625	1024x278i	25,000	15,625	31,984	1310	1024	313	278
WSXGA@60	1600x1024	60	64	137	2144	1600	1060	1024
WSXGA+@60	1680x1050	60	79	178	2272	1680	1304	1050
WUXGA@60	1920x1200	60	75	194	2592	1920	1245	1200
WUXGA_2@60	1920x1200	60	89	234	2624	1920	1490	1200
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_2@76	1024x768	76	61,080	86,000	1408	1024	806	768
XGA@85	1024x768	85,000	68,680	94,500	1376	1024	808	768
XGA@87	1024x768	43	36	45	1264	1024	817	768
XGA_EOS	1024x768	63,000	50,000	67,200	1344	1024	796	768
XGA@75_GS	1024x768	74,534	59,701	79,284	1328	1024	801	768

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