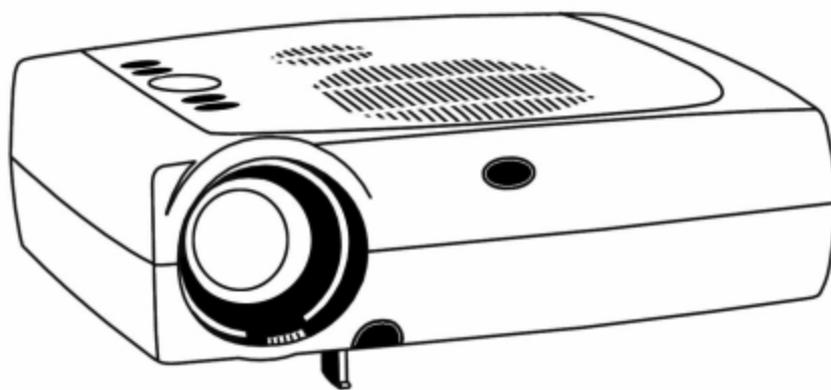


Liesegang ddv 1111



Bediener-Handbuch - User Manual - Mode d'emploi
Guía del operador
Istruzioni per l'uso - Gebruiksaanwijzing

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Before use

The following notes are intended to be a help for handling the product in accordance with its designated purpose.



Warnung:

A person could be killed or injured if the wrong operation is done by ignoring this indication.



Do not install this unit in an unstable place.

Avoid placing it in an unstable place such as a weak base, an inclined floor, etc. This may cause the projector to drop or fall over, resulting in injury.



Do not remodel this unit.

Do not remodel this unit. It may cause a fire, an electric shock, etc.



Never use the projector in a humid environment.

Never use the projector in a humid environment, e.g. bathroom or close to cookers or humidifiers. This could cause a fire, an electric shock, etc.



Only connect to the specified mains voltage.

The projector must only be operated with the alternating current specified on the identification plate. Please immediately check whether the supplied mains connection cable coincides with wall outlets at the installation location.



**Do not forget
the protective conductors.**

Only use extension leads or cables with a minimum cross-section of 1.5 mm² and protective conductors.



Do not apply any shock.

If you drop this unit or if the casing is broken, turn off the power switch, disconnect the power plug and contact your dealer. If you use it as it is, it may cause a fire, an electric shock, etc.



If any abnormality occurs.

If there is abnormal smell or smoke, if you use this unit as it is, this could cause a fire or an electric shock, etc. Immediately turn off the power switch and pull out the power plug. Contact your dealer to repair the unit. Do not repair it yourself, as it is very dangerous.

Do not use this unit as it is after trouble has occurred. Immediately turn off the power switch and pull out the power plug, then contact your dealer to have it repaired.

If water, etc., enters the unit, turn it off, pull out the power plug and contact your dealer to have it repaired.



Be careful with the power cord.

Do not scratch, damage or modify the power cord. Do not bend it forcibly. Also do not put a heavy object on it, do not heat it and do not pull it. If you do, the power cord may be damaged and it may cause fire, electric shock, etc.

If the power cord is damaged (exposed or disconnected wire, etc.), replace it. It may otherwise cause a fire, an electric shock, etc.

Make sure that no dirt adheres to the power plug and insert it until it stops. If dirt adheres or the connection is incomplete it may cause a fire, an electric shock, etc.



**Do not look directly into the lens
when the lamp is switched on.**

Do not look directly into the lens when the lamp is switched on. Since a powerful lamp is used, it could damage your vision, etc.



**Do not put a container, etc,
with liquid on this unit.**

Do not put a vase, flower pot, cosmetic container, medicine or water on this unit. If liquid spills and enters the unit, it may cause fire, electric shock, etc.



**Never leave the projector
switched on unsupervised.**

Never leave the projector switched on unsupervised or let children play with it as unusual conditions may occur which can cause a fire, an electric shock, etc.



Caution !

Non-observance can lead to injury or damage.



Caution when carrying the unit.

When the unit is to be moved, be sure to disconnect the power plug and check that all external connection cords are removed before moving it. If not, the cord may be damaged and it may cause a fire, an electric shock, etc.



Do not place this unit where it gets hot.

Be careful if you place the unit outdoors, in a place exposed to direct sunlight or near a heating device, the casing and parts could be affected.



Cleaning the projector.

Handle the projector as you would do any other device with glass components. Avoid impact or dropping. Before cleaning the device disconnect the mains plug.

The worktop is covered with a scratch-resistant glass plate. If necessary, the glass can be cleaned with a soft cloth and a conventional glass cleaner.

The casing can be cleaned with a soft, slightly moistened cloth and mild detergent. Avoid the ingress of moisture into the inside of the equipment. Never use solvents or abrasive cleaners. Do not leave cleaners inside the projector.



Handle the power cord carefully.

Do not bring the power cord near a heating device. The cord's shield may melt and it may cause a fire, an electric shock, etc.

Do not insert / disconnect the power plug with wet hands. It may cause an electric shock.

Do not pull the power cord when the power plug is to be disconnected. The power cord may be damaged and it may cause a fire, an electric shock, etc. Be sure to seize the power plug.



**Do not step on this unit.
Do not put a heavy object on it.**

Do not step on this unit or put a heavy object on it. Pay attention when children are present. If you do, the unit may fall over or may be broken causing an injury.



**Never block
the ventilation slots.**

Never block the openings for the ventilation or place objects in the projector. Heat may accumulate inside the projector and it may catch fire.



Set the caster stoppers.

When this unit is installed on a table with casters, set the caster stoppers. If the table moves, it may fall over, causing an injury.



**If you do not use
the unit for a long time.**

If you do not use the unit for an extended period of time, be sure to pull out the power plug from the power outlet.



Replacing the lamp.

Switch off the projector and disconnect the mains plug before replacing the lamp. Let the device cool down, as the lamp and other components in the projector casing have heated up during operation, which can cause injury when touched.



**Do not place this unit
in a moist or dusty place.**

Do not place this unit in a moist or dusty place. It may cause a fire, an electric shock, etc. Do not place this unit where it would be exposed to soot or steam, near a cooking stove or humidifier, etc. It may cause a fire, an electric shock, etc.



Volume.

Use a volume level that does not bother persons in the neighborhood. Especially, since the sound is likely to carry well at nighttime even at a low volume, be careful to choose a suitable level.



**Clean the projector inside
at least once a year!**

Ask your dealer to clean the unit inside once a year. If the unit is left with too much dust inside it may cause fire.



Use of batteries.

Do not use batteries not specified for this unit. Do not use new batteries mixed with old ones. This may cause a fire, injury due to burst of battery, liquid leakage.

When inserting batteries in this unit, pay attention to the direction of the + and - polarities and insert the batteries correctly. If the polarities are confused, it may cause injury or damage near the unit due to burst batteries, liquid leakage, etc.

1. Scope of delivery, accessories

The packing contains the following parts:

- 1 projector
- 1 travel bag
- 1 infrared remote control with batteries
- 1 connecting cable for IBM compatible PC
- 1 mouse cable for serial Microsoft mouse
- 1 PS/2 mouse adapter
- 1 video / audio cable
- 1 S-VHS cable
- 1 Scart adapter
- 1 mains cable with Schuko plug
- 1 user manual

The following accessories are available:

Hard case, monitor splitterbox, connecting set for Macintosh (computer cable, ADB and USB mouse adapter), separate USB mouse adapter, connecting cables for workstations.

Important note

The projector features its own electronic multi-range power supply with automatic switching. It must only be operated with 100 V - 240 V AC with a frequency of 50 Hz to 60 Hz. The unit must only be connected to a properly installed network with protective conductor. Please check immediately whether the supplied mains cable is compatible with the mains sockets on-site. Please contact your supplier if a different power supply cable is required for use abroad.

1.1 Disposal of packing material

The transport packing consists of materials which may be disposed of as paper and cardboard.

Remark: the transport packing offers perfect protection for the product and should be kept for further transport etc.

2. Quick Setting Up

2.1 Setting up and connecting the projector

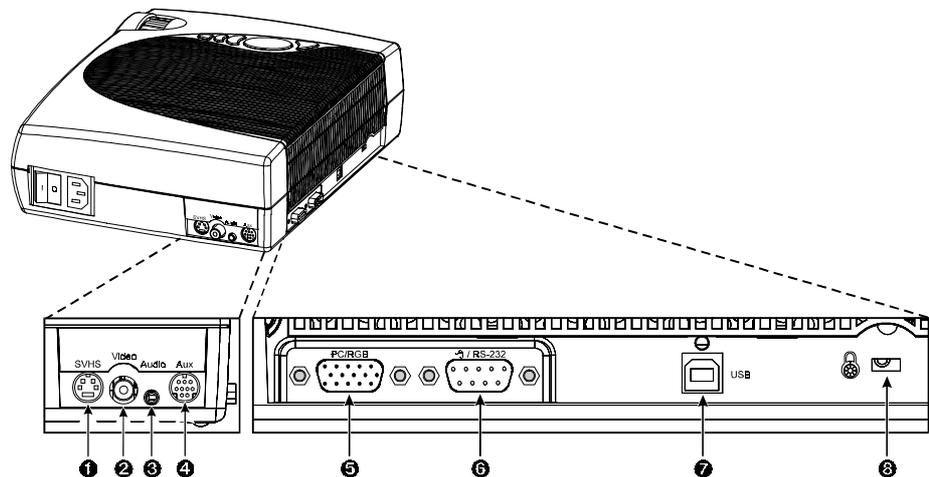
These instructions are intended to get you going fast.

Attention: To avoid damage to the equipment, all power to projector and input sources must be turned off during cable hook up.

1. Place the projector on a rigid, non-slip surface.
2. Connect the power cord.
3. Connect the audio and computer/video input cables to the projector input terminals.
4. For mouse emulation, connect the mouse and, in case of PS/2 and USB, the appropriate adapter. (*Apple Macintosh computers require an additional adapter or connecting cable.*)
5. Power up the projector then the computer and the video sources.
6. Move the projector nearer or further away from the screen to obtain the best image size or adjust the image size with the Zoom buttons of the remote control.

2.2 Projector Terminal Connections

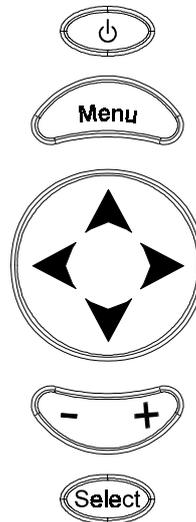
Take a moment to look over the input terminals on the back of the projector. Terminal connectors are SVHS, Video in, Audio in, Aux in (not yet in use), PC/RGB in, RS232C, USB, Kensington Security.



| | |
|-------------------|--------------------------------------------|
| 1 - SVHS | S-VHS video input |
| 2 - Video in | Composite video input |
| 3 - Audio in | Audio input (stereo converted to mono) |
| 4 - Aux in | Not yet used |
| 5 - PC / RGB in | RGB video input from computer |
| 6 - RS-232C | Mouse emulation/external projector control |
| 7 - USB | USB mouse emulation output |
| 8 - Interface for | Kensington Security Lock |

2.3 Control Panel Keypad

The control panel keypad is located on the top of the projector. It has the following buttons:



| | |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standby  | Switch between standby mode and projection mode |
| Menu | Display/remove menus |
| Joystick  | Move cursor (up/down, left/right) |
| +/- | Increase/decrease menu value Increase/decrease volume outside menu mode |
| Select | Initiate drop windows, check box on/off, display info sub menus Toggles input source outside menu mode between PC/RGB, Video, S-VHS and AUX input |

2.4 Mouse Connection

The projector has internal mouse emulation capability. Connect computer and projector with the mouse cable (supplied with projector). Then the computer mouse functions can be controlled via the projector's remote control.

1. Power down computer and projector.
2. Remove mouse cable connection from your computer mouse port.
3. Connect the plug of mouse cable to the RS232C port on the projector.
(Not necessary for USB mouse emulation!)

Serial RS232 mouse: Connect 9-pin D-Sub plug on mouse cable to the serial port on the computer.

PS/2 Mouse: Connect 9-pin D-Sub plug on mouse cable to PS/2 adapter and connect the 6-pin Mini-DIN adapter plug to the PS/2 port on the computer.

MAC ADB: Connect 9-pin D-Sub plug on mouse cable to the Mac ADB adapter and connect the 4-pin Mini-DIN plug on ADB adapter to the ADB port on the computer. (*The Mac ADB adapter is an accessory item that must be ordered separately.*)

USB Mouse: Connect 4-pin USB mouse cable to the computer USB hub port. On first time startup of the computer will ask for device driver installation and configuration. (The USB mouse cable is an accessory item that must be ordered separately.)

4. First power on the projector, then power on the computer.

Note

For serial mouse connections to a laptop computer, refer to the manufacturer's operating instructions. The internal pointing device or serial port configurations may need to be changed.

Mouse emulation only works, when all cable connections are established and the proper startup sequence is followed.

The recommended mouse driver for mouse emulation is the Standard Microsoft Mouse, Serial or PS/2.

2.5 Cable Connections

1. Turn off all power to the projector and input sources during cable hook up.

Caution: To prevent **damage to equipment**, all power to projector and input sources must be **turned off** during cable hook up.

2. Connect cables being careful not to bend any pins in the cable plug or input terminal.
3. Start up projector then start up input sources.

2.6 Image Size

Adjust the size of the projected image by using the zoom ring on the upper side of the projection lens. The projected image size values, as they relate to the distance-to-screen value, are shown for focal lengths of $f=28$ mm and $f=36.2$ mm. Details on page 28.

3. Starting Up The Projector

3.1 First Steps

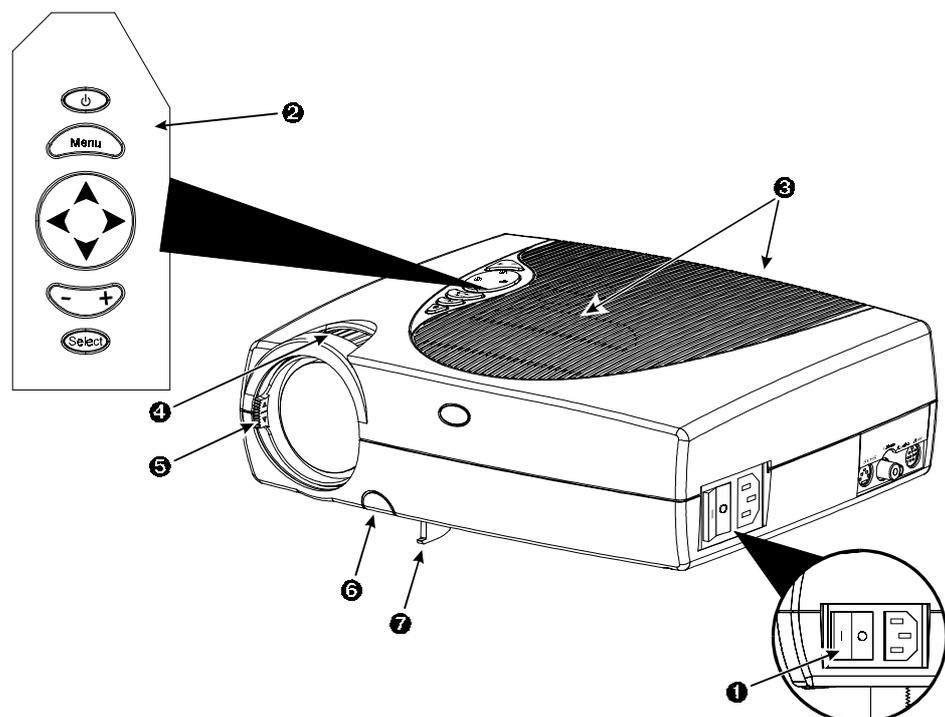
Read the important safeguards before operating the projector. After all cable connections have been completed, the projector can be powered up. During operation, keep the exhaust and intake air vents clear of obstructions to allow proper cooling.

Note: Allow a projector that has been stored in a cold place to warm up to room temperature before applying power.

1. Press the Main Power switch (1) to ON. The \cup button (2) will illuminate red to indicate there is power. (\cup = ON, \circ = OFF).
2. Press the standby button \cup to illuminate the lamp. The red LED indicator will turn green as an image appears and grows brighter on the screen.
3. Check all ventilation slots (3) and clear away all obstructions.
4. Adjust the Focus (5) and Zoom (4) buttons for best image quality. Press the foot release button (6) to release the height adjustment foot (7).
5. Power up your computer and video source(s).

Note

In most cases, the projector will automatically adjust to the graphic mode of your computer by selecting a pre-programmed setting. See page 31.



3.2 Standby Mode

When the projector is not being used, place it into standby mode.

1. Press the Standby button (⏻).
2. The lamp will switch off and the Standby button (⏻) will illuminate red.

Note: The fan motor will continue to run for a few minutes until the projector cools down and then the fan will turn off.

3. Press again the Standby button (⏻) to illuminate the lamp and project an image on the screen.

3.3 Projector Power Down

1. Press the Standby button (⏻) to place the projector in standby mode. The Standby button is illuminated red.
2. Wait until the cooling fan motor cycles off.
3. Press the **Main Power switch** to OFF.
4. Turn off the power to your input devices.
5. To transport the projector, disconnect all power and connection cables.

Note: Switching the main power off before the fan has cycled off will decrease the life of the projection lamp.

4. Using System Menus

4.1 Main Menu

Press the Menu button on the touch panel keypad or the remote control to display the Main Menu:

- The menu name is on the top line.
- An arrowhead at the right of a menu line indicates that this item is a sub-menu that can be selected.
- A text field at the right of a line indicates that this is a value that you can change in a drop down window.
- Press Select to display the Info window.

4.2 Sub-Menus

Select: Press the Disc Pad/Joystick up or down to highlight (select) the desired sub-menu. Then press the Disc Pad/Joystick to the right or the Select button to display the sub-menu.

Change a text field value (e.g. VESA 1024x768 60 Hz): Press the Disc Pad/Joystick up or down to highlight (select) the menu line. Then press the Disc Pad/Joystick to the right or the Select button to display a drop down window of all the possible values. Use the Disc Pad/Joystick to select a value and press Select to initiate the selection.

Change a slider bar value: Press the Disc Pad/Joystick up or down to highlight (select) the value. Press the +/- button on the remote control or the projector's panel to increase or decrease the value.

Change a number field: Press the Disc Pad/Joystick up or down to highlight (select) the value. Then press the +/- button on the remote control or on the projector's panel to increase or decrease the value.

Change a check box field: A check box field at the right of a sub-menu line indicates that you can toggle that value On/Off by pressing the Select button.

Exit a sub-menu: Press Disc Pad/Joystick to the left.

Return to the projected image: Press menu button.

4.3 Menu Adjustments / Settings

The following charts lists all the menu items that can be adjusted along with the default settings.

| Main Menu | Description / Action | Default setting |
|------------------------------|---------------------------------------------------------|----------------------------------|
| Picture | Display picture submenu | |
| Tools | Display tools submenu | |
| Source (drop down window) | Select input source (PC/RGB / SVHS / VIDEO / AUX) | According to search procedure |
| User Interface | Display user interface submenu | |
| Advanced Setup | Display advanced setup submenu | |
| Info | Display information window (press Select) | |

In active PC / RGB mode:

| Picture (PC/RGB) Submenu Items | Description / Action | Default setting |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Brightness | Adjust the brightness |  |
| Contrast | Adjust the contrast |  |
| Optimize | Set best brightness for image | |
| Hor. Position | Adjust horizontal position of image |  |
| Ver. Position | Adjust vertical position of image |  |
| Tracking | Adjust number of pixels per line | |
| Sync | Adjust phase synchronization |  |
| Mode (drop down window) | Select data mode to adjust within this menu (Predefined modes / User Mode 1...3) | <Automatic> |
| Resolution (drop down window) | Select pixel resolution (640x350 / 640x400 / 720x400 / 640x480 / 800x600 / 832x624 / 1024x768 / 1152x864 / 1152x870 / 1152x900 / 1280x960 / 1280x1024) | |

In active Video mode:

| Picture (video) Submenu Items | Description / Action | Default setting |
|----------------------------------|--------------------------|-------------------------------------------------------------------------------------|
| Brightness | Adjust the brightness |  |
| Contrast | Adjust contrast |  |
| Colour | Adjust colour saturation |  |
| Tint | Adjust hue for NTSC |  |

| Tools Submenu Items | Description / Action | Default Setting |
|-----------------------------|--------------------------------------------|-------------------------------------------------------------------------------------|
| Volume | Adjust volume |  |
| Audio | Audio mute | on |
| Freeze | Freeze frame | off |
| Magnify | Magnify mode | off |
| Factor | Adjust magnification factor |  |
| Speaker | Speaker | on |
| Timer (drop down window) | Select timer mode (off/small/large) | off |
| Minutes | Adjust time countdown (1 to 90 minutes) | 10 minutes |

| User Interface Submenu Items | Description / Action | Default Setting |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------|
| Language (drop down window) | Select user interface language (English / Deutsch / Français / Español / Italiano / Nederlands / Svenska) | Deutsch |
| Blank Screen Colour (drop down window) | Select colour of blank screen (black / red / green / blue / yellow / cyan / magenta / white) | Black |
| Graphics | Activate on-screen status bar indicators and icons | on |
| Reset window position | Reset all menu window positions to default | |
| Help (drop down window) | Select Help window mode (immediate / 1,3 or 5 seconds / off) | 3 seconds |

In active PC/RGB mode:

| Advanced Setup Submenu Items | Description / Action | Default Setting |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Projection (drop down window) | Select projection orientation (standard / rear) | standard |
| Colour Manager | Display Colour Manager submenu | |
| Remote control | Remote control receiver on/off | on |
| Sync mode (drop down window) | Select Sync mode for PC/RGB (separate TTL / composite TTL / separate ana. / composite ana. / sync on green) | separate TTL |
| SOG level | Adjust level for sync on green synchronization |  |
| Reset data modes | Set all predefined data modes to factory default settings. User modes remain unchanged. | |
| Reset lamp display | Resets the lamp hours displayed on the Info window | |
| Test | Display test submenu | |

In active video mode:

| Advanced Setup Submenu Items | Description / Action | Default Setting |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------|
| Projection (drop down window) | Select projection orientation (standard / rear) | standard |
| Colour Manager | Display Colour Manager submenu | |
| Remote control | Remote control receiver on/off | on |
| Video standard (drop down window) | Select video standard (PAL B,G,H,I / NTSC M / SECAM / NTSC 44 / PAL M / PAL N / PAL 60 / NTSC COMB / automatic) | automatic |
| Reset lamp display | Resets the lamp hours displayed on the info window | |
| Test | Display test submenu | |

| Colour Manager Submenu Items | Description / Action | Default Setting |
|------------------------------|-------------------------------------|---------------------------------------------------------------------------------------|
| Brightness red | Adjust brightness for red portion |  |
| Contrast red | Adjust contrast for red portion |  |
| Brightness green | Adjust brightness for green portion |  |
| Contrast green | Adjust contrast for green portion |  |
| Brightness blue | Adjust brightness for blue portion |  |
| Contrast blue | Adjust contrast for blue portion |  |
| Default | Set settings to default values | |

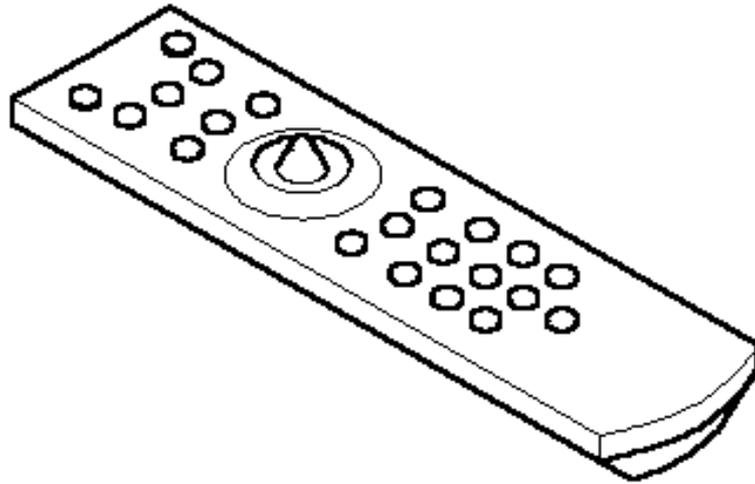
| Test Submenu Items | Description | Default Setting |
|---------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------|
| Parameter display | Parameter display window | off |
| Colour test picture | Display colour test picture | |
| Frame test picture | Display frame test picture. It shows the dimensions of the available picture, so that the projection may be adjusted. | |

| Info (display only) (Video / PC) | Description | |
|----------------------------------|------------------------------------------------------------------|--|
| Hardware | Current hardware level | |
| Firmware | Current firmware level | |
| VESA xxxxxxxxxx | Current data or video mode | |
| Lamp (bar indicator) | Lamp life hours (Green: lamp good / red: lamp needs replacement) | |
| OK! | Closes the Info display by pressing the Select button | |

5. Infrared Remote Control

5.1 How to use the Infrared Remote Control

Aim the remote control toward the projection screen or at the sensor. Press desired remote button to send a signal to the projector.



| Button | Description |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|  (*) | Switch the projector between standby mode and operation mode |
|  (*) | Toggle on/off the audio sound |
| BRIGHT | Decrease or increase brightness of displayed image |
| PC | Switch displayed image to PC/RGB input |
| VIDEO | Switch displayed image to video input. In video mode toggles between Video / SVHS / AUX. |
| VOLUME | Decrease or increase speaker volume. |
| JOYSTICK (*)  | Move the cursor on the projected image. Navigate menus. |
|  | In mouse emulation mode: right mouse button. Not in mouse emulation mode: menu window positioning. Joystick centers image. |
| SELECT (*)  | In mouse emulation mode: left mouse button. Not in mouse emulation mode: Enter button for confirmation of a selection. |

| Button | Description |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MENU (*) | Display system menus |
| OPTIMIZE | Optimizes the level setting so that light areas of the image are projected with optimal intensity. |
| REVEAL | Press Reveal to cover the image on the screen with a gray mask. Use the Joystick to reveal the image. |
| POINTER | Place a pointing device on the screen. Use Joystick to move pointer. |
| FREEZE | Stores (freezes) the projected image. Press again to return the projection of the current image |
| TIMER | Display timer (window in lower part of screen or full screen). Repeated operation of key toggles between. |
| BLACK | Replace projected image with preselected background blank colour. Press again to return image. |
| MAGNIFY | Magnification mode on/off. Press +/- buttons to increase/decrease the magnification factor. Move Joystick to displace the magnified area within the image. In video mode (NTSC only!), press Magnify to toggle between scaled and unscaled representation. |
| MOUSE | Activates the mouse emulation. The mouse pointer can be moved using Joystick. Pressing the button again switches off the mouse emulation. |

Note

The buttons marked with an asterisk (*) also appear on the projector's keypad.

5.2 Meaning of Icons

An icon will display to indicate a presentation tool is active.



Pointer mode: Activate with **Pointer** key on IR remote control
In the Pointer mode you can move a pointer over and around the picture area. By pressing the **Pointer** key on the remote control a second time it will be turned off.



Freeze mode: Activate with **Freeze** key on IR remote control
In the Freeze mode the picture will be frozen. Pressing the **Freeze** key on the remote control a second time or the **Magnify** key, the freeze mode will be turned off.



Magnify mode: Activate with **Magnify** key on IR remote control
In the magnify mode the image can be magnified (zoomed). With the – and + keys you can decrease or increase the magnifying factor. You can select the magnified area by using the **Joystick**. Pressing the **Magnify** key on the remote control a second time, the magnify mode will be turned off.



Reveal mode: Activate with **Reveal** key on IR remote control
In the reveal mode the picture will be covered by a grey sheet. You now can reveal the covered image by using **Joystick**. Pressing the **Reveal** key on the remote control a second time, the reveal mode will be turned off



Muting mode: Activate with **Mute** key on IR-Remote control
In the muting mode the sound output of the projectors internal speakers and the external output will be muted. Pressing the **Mute** key on the remote control a second time, the muting mode will be turned off.



Mouse emulation (Only in data mode available!)
Activate with **Mouse** key on IR-Remote control
If you've connected the projector with the mouse cable and the right adapters to your PC and turned on the projector before booting the PC it will emulate a mouse over the IR remote control transmitter. By pressing the **Mouse** key on the IR remote control the mouse emulation will be activated. You can move around the mouse pointer with the **Joystick**. The mouse keys will be emulated by the two buttons **left** and **right** beside the **Joystick**. The mouse emulation can be turned off by pressing the **Mouse** key a second time.



Question mark: A question mark in a box will appear if the projector can't recognize the mode of the data input source.

Even if you select a standard VESA mode on your system this can happen, because some device drivers of the graphic cards in the PC using timing parameters which differ from the parameters given out from the VESA organization.

As a result of this, the projector may detect a wrong predefined data mode or switches to a User mode, so you may see only a part of the whole picture.

To correct this situation you must select manually a data Mode in the Picture menu which should match the mode you've selected on the PC. If there is no matching mode you must select a User mode.

In a User mode you can manually select the Resolution which is normally not choosable.

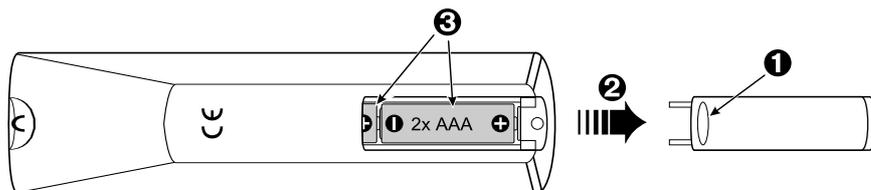
It may be necessary to correct the Horizontal and Vertical Position and the Tracking and Sync values in the Picture menu. These values will be stored so the mode can be recognized the next time.

If you've accidentally misadjusted the values of a standard predefined data mode, you can reset them by selecting Reset Data Modes in the Advanced Setup menu. The settings of a User mode won't be affected by this action.

5.3 Battery Replacement

The remote control uses two AAA batteries. The battery cover is located on the back of the remote control.

1. Press the locking button (1) to release door.
2. Move the door (2) to remove it and set it to the side.
3. Remove old batteries.
4. Install new batteries (3). Make sure the polarity (+/-) on each battery matches the decal.
5. Replace battery compartment door.

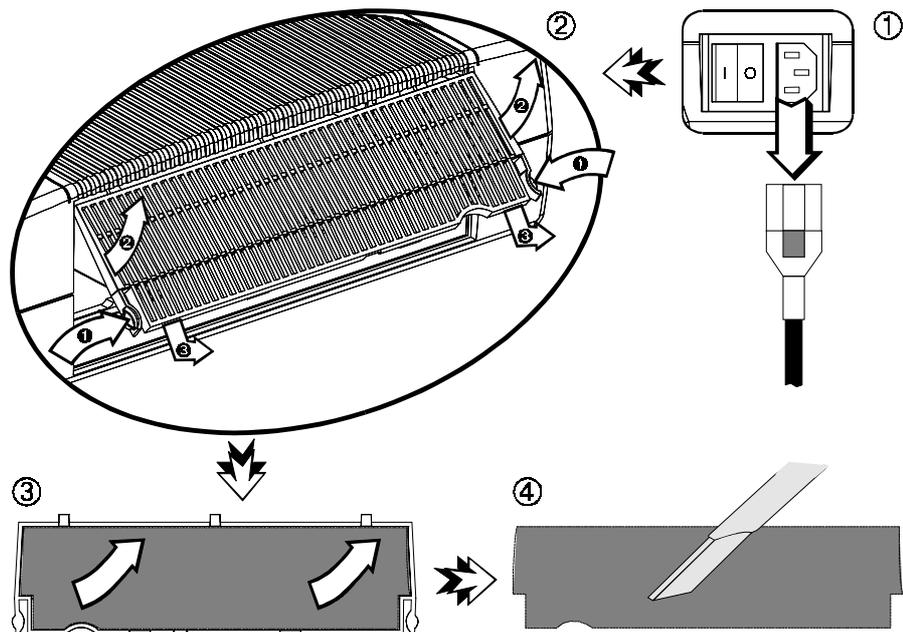


6. Replacing the Air Filter

For best performance, replace the air filter each time the projection lamp is changed.

Note: Periodically check air filter for excess dust or dirt. Replace or clean as needed.

1. Switch off the unit (1) and unplug the power cord of the projector.
2. Remove the back panel (2).
 - Press the left and the right tabs of the back panel with your finger tips to the middle of the back panel.
 - Pull the lower end of the back panel towards yourself.
 - Pull out the back panel with air filter.
4. Separate the air filter from the back panel (3).
5. Vacuum (4) the air filter to remove the dust and dirt.
6. Insert the air filter in the back panel.
7. Insert the back panel the reverse way until both tabs of the back panel snap in.



7. Replacing Projection Lamp

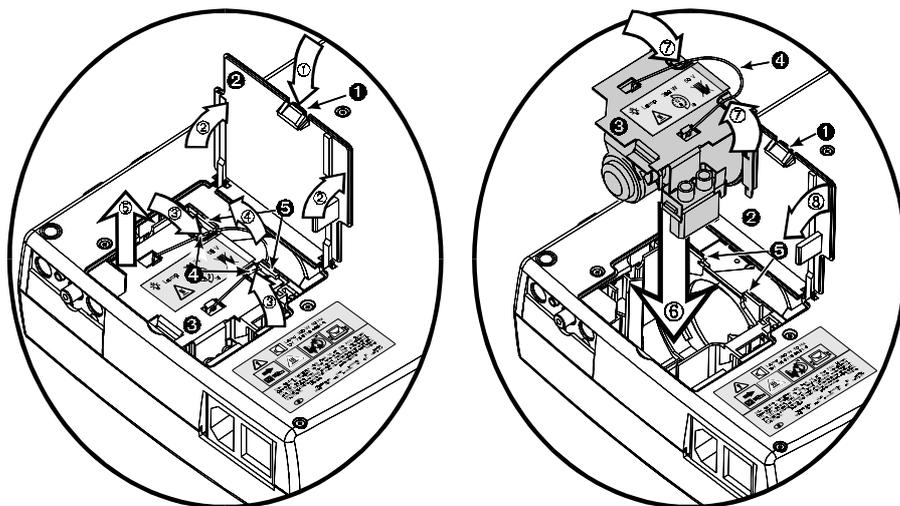
The NTP lamp of the projector has a limited lifetime of approximately 2,000 hours. If the projected image appears dark or a red lamp life indicator bar displays during projector startup, you should change the lamp and air filter.

Important Note: *This lamp contains mercury.* Consult your local hazardous waste regulations and dispose of this lamp in a proper manner.

Caution: Always switch off the unit and unplug the projector when changing the lamp. There are high voltage parts inside the projector that may cause electric shock.

Caution: Allow the projector to cool down for 30 minutes. Lamp and adjacent metal parts become extremely hot and can cause burns to your fingers.

1. Press the Standby button on the projector's panel or the remote control. Wait for the fan to cycle off. Turn the **main power switch to OFF** and unplug the power cord.
2. Set the projector on a sturdy surface with the front of the projector facing you.
3. Press the **lock tab** (1) of the **lamp door** (2) with your finger. Pull outward on the **lamp door** (2) to hinge it to the upside position and access the **lamp cartridge** (3).
4. Press both sides of the metal shackle securing the **lamp cartridge** (3).
5. Grasp **metal shackle** (4) and carefully pull the **lamp cartridge** (3) out of the projector.
6. Carefully insert the new **lamp cartridge** (3) and secure with **metal shackle** (4) behind the **secure tabs** (5). Close the **lamp door** (2) tightly until the **lock tab** (1) slides into the locked position.
7. Go to the **Advanced Setup** menu and **reset** the lamp life display to zero.



7.1 Lamp Life Indicator

The elapsed operating time of the lamp is displayed on the Info sub-menu. From the Main menu, select **INFO** to display the lamp life. As long as the lamp indicator bar is green, the lamp is good. When the bar changes to red, the lamp should be changed.

After changing the projection lamp, the lamp life indicator must be reset to zero. To reset the lamp life indicator:

1. Press the **Menu button** to display the main menu.
2. Select the **Advanced Setup sub-menu** using the Disc Pad or Joystick.
3. Select **Reset lamp display** and press the Select button.
4. The following message will display: „Really reset lamp life display ? OK! / Cancel“
5. Using the Disc Pad or Joystick, select **OK!** and press **Select** to acknowledge the change.
6. Press Menu to exit the menu system.

Note: To view the used/remaining lamp life: (1) Go to the Main Menu. (2) Select INFO. (3) Press Select button.

8. Cleaning the Projector

For best performance, keep your projector free of excess dust and surface dirt. Use a soft cloth to remove dust from the projector housing. Use a mild cleaner to remove surface dirt and smudges from the projection lens.

Caution: Always unplug the projector when cleaning. Take care that no liquids get inside the projector. There are high voltage parts inside the projector that may cause electric shock.

9. Troubleshooting Problems and Solutions

| Problem | Probable Cause | Possible Solution |
|------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Image is disturbed or unstable. | Wrong Sync setting Wrong Tracking value | Set to factory default setting.* Change Sync setting in the Picture menu for optimum performance. For vertical interference stripes, change the Tracking in the Picture menu for optimum performance. |
| No computer image projected. Message „Looking for signal...“ displays. | Loose cable. No power to computer. Wrong synchronization mode. | Check and secure cable connections. Turn on computer. Adjust synchronization mode of the projector to that of the computer via Advanced Setup menu. |
| No video image projected. | Loose cable. No signal from video source. | Check and secure cable connections. Check video picture on TV. |
| Mouse does not work. | Loose cable. Wrong connection. Wrong power up sequence. | Check and secure cable connections. For PS/2, USB and ADB (Apple) mouse a special adapter is necessary. Only use adapters from the original manufacturer. The mouse emulation operates correctly only if the correct power up sequence has been used. |
| Image off-center. | Image position. | Center image with the Disc Pad or the remote control. |
| Cannot get entire image on the screen. | Wrong Tracking value. Compatibility problem. | If vertical interference stripes occur, change the Tracking value in the Picture menu for optimum performance. Refer to the documentation for your graphic card. Change the Resolution setting in the Picture menu to the resolution of the video mode output from the computer graphic card. |
| Washed out image. | Wrong Contrast setting. Wrong Brightness setting. | Change Contrast setting in the Picture menu. The bar should be in the middle position. Lower Brightness setting in the Picture menu. Choosing brightness and pressing Select can perform an automatic adjustment. |

| | | |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Humming noise. Slowly passing horizontal bars. | Signal sources are connected to different power sources. VCR connected to aerial system and to projector. Bad signal. | Locate the source of disturbance. Disconnect the sources one after another from the projector. Connect all sources to a common power source. Remove antenna connection from VCR. If the disturbance disappears, use a by- pass filter (isolating transformer) to connect the antenna to the VCR. Try different input source. |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

* The factory default settings of the projector can be restored by pressing Select and Menu simultaneously on the projector's control panel while switching on the main power switch of the projector and pressing the Standby button afterwards.

The projector will start immediately and the message "**Standard-Parameter wiederhergestellt**" (Parameter factory settings restored) displayed in the starting screen will indicate the default settings are reset.

10. Service Hotline

In case of technical problems please feel free to call Liesegang at +49 211 39 01 444.

For information about Liesegang products and if you have problems with operation of Liesegang products please do not hesitate to call Liesegang at +49 211 39 01 245.

Fax Hotline +49 211 39 01 226

11. Product Manufacturer

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D-40221 Düsseldorf

Phone +49 211 3901-1
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Projection Table

Below information refers to the standard f=28-36.2 mm lens.

| Distance to screen m | Maximum (f=28 mm) | | Minimum (f=36.2 mm) | |
|-------------------------|-------------------|-------------------|---------------------|-------------------|
| | Image width m | Image height m | Image width m | Image height m |
| 1.50 | 0.92 | 0.69 | 0.70 | 0.53 |
| 2.50 | 1.54 | 1.15 | 1.19 | 0.89 |
| 3.00 | 1.85 | 1.39 | 1.43 | 1.07 |
| 5.00 | 3.09 | 2.32 | 2.39 | 1.79 |
| 7.00 | 4.34 | 3.25 | 3.35 | 2.51 |
| 10.00 | 6.20 | 4.65 | 4.79 | 3.59 |

Resetting The Projector To Factory Default Settings

The factory default settings of the projector can be restored by pressing **Select** and **Menu** simultaneously on the control panel when switching on the main power switch of the projector and pressing the **Standby** button afterwards.

The projector will start immediately and the message “**Parameter factory settings restored**” displayed in the starting screen will indicate the default settings are reset.

If you've had selected another menu language than German, which is the default language, you'll have to select your menu language again.

Table of predefined Resolutions for User-Mode 1...3:

| Predefined Resolutions |
|------------------------|
| 640 x 350 |
| 720 x 350 |
| 640 x 400 |
| 720 x 400 |
| 640 x 480 |
| 800 x 600 |
| 832 x 624 |
| 1024 x 768 |
| 1152 x 864 |
| 1152 x 870 |
| 1152 x 900 |
| 1280 x 960 |
| 1280 x 1024 |

Glossary of Terms

Hz, KHz, MHz (Hertz, Kilohertz, Megahertz)

Hertz is a unit of measurement used to express the frequency, in cycles per second, of an electrical signal or event. (Megahertz = 1 million cycles per second)

Lumens

A measure of light output on a screen or other surface. One lumen is the light of one candle power on each square foot of a surface of a sphere at a radius of one foot from the light source.

Metal halide lamp

A modified mercury arc lamp that is extremely bright. It is filled with a gas with elements known as halogens. The properties of this fill gas allows the lamp to burn longer and brighter than ordinary lamps.

NTSC (National Television Systems Committee)

Standard for television signals and other video equipment signals. The standard uses interlaced scans and 525 horizontal lines per frame, at a rate of 30 frames per second.

PAL (Phase Alternate Line)

The format for colour television signals used in Germany, England and many other countries. PAL is an interlaced format with 25 frames per second and 625 lines per screen.

Pixel (word coined from Picture Element)

This is one image dot, a definite position on a display that consists of a single dot or a group of three dots (red, green, blue).

Resolution

The number of pixels available in a display device for creating images. Expressed as a number of columns by number of rows (e.g. SVGA resolution, 800 x600).

S-VHS (S-Video, Super VHS)

A video signal which separates the luminance (Y) and chrominance (C) signals. Also known as Y/C video.

SECAM (Séquentiel Couleur a Mémoire)

A colour television standard developed in France and also used in certain other countries.

XGA

A standard PC computer analogue interface: resolution of 1024 x 768.

Technical Details

| | | |
|---------------|--------------------------|--------------------|
| Power supply: | 100-240 V ~ , 50-60 Hz | |
| Connections: | RGB data input : | 15 pin DSub |
| | RS232C/ | |
| | Serial mouse connection: | 9 pin DSub |
| | USB mouse: | USB |
| | Video: | Koax (Cinch) |
| | SVHS: | S-Video |
| | Audio In: | 1xMiniklinke |
| | Aux: | 1x 9 pin mini plug |

Only use the factory supplied cables!

| | |
|------------------------|----------------------------------------------------------------|
| Operating temperature: | max. 40°C ambient temperature |
| Storage temperature: | -20°C to +60°C |
| Dimensions and weight: | approx. 257 mm x 83 mm x 216 mm (W x H x D), approx. 2.9 kg |
| IR remote control: | Power supply with two batteries type IEC LR03 (size AAA) |

Projector characteristics:

- DMD with high contrast ratio of typically 1:400.
- Resolution of 1024 x 768 pixels.
- 200 W NTP lamp with a lamp life of typically 2,000 hours.
- Approx. 1,200 ANSI lumens image brightness.
- Infinite magnification up to 8 times. Image section may be changed.
- Parameters can be freely adjusted by the user, for connecting the projector to computers which deviate from the pre-programmed standards.
- Automatic setting of tracking and synchronization.
- Automatic adaptation of brightness and contrast with OPTIMIZE.
- Current settings are saved and also remain saved after switching off.
- Menu-guided parameter setting with help text in several languages.
- Freeze function for momentarily saving the displayed image.
- Digital multi-standard video decoder. Connection for two video sources (one with S-VHS input). Supported video standards:

| | |
|-------|-------------------|
| PAL | 625 lines, 50 Hz, |
| SECAM | 625 lines, 50 Hz |
| NTSC | 525 lines, 60 Hz |
- Video picture without interferences and artefacts due to integrated De-Interlacer with interpolation over successive images (Triple-V De-Interlacer).
- Infrared remote control can be switched off via the options menu when interference occurs due to other infrared devices.
- Interface for Kensington Lock™.

Supported Data Modes and Resolutions

Table of the predefined Data modes:

| Data Mode Name | Resolution Hor. x Vert. | Horizontal Frequency kHz | Vertical Frequency Hz | Pixel-Clock MHz |
|-----------------------|------------------------------------|-----------------------------------------|--------------------------------------|----------------------------|
| VGA 640x350 | 640 x 350 | 30,000 | 70,000 | 25 |
| VESA 640x350 85Hz | 640 x 350 | 37,861 | 85,081 | 32 |
| VGA Text 720x350 | 720 x 350 | 31,469 | 70,087 | 28 |
| VGA 640x400 | 640 x 400 | 25,560 | 60,000 | 25 |
| VESA 640x400 85Hz | 640 x 400 | 37,861 | 85,081 | 32 |
| VGA Text 720x400 | 720 x 400 | 31,469 | 70,087 | 28 |
| VGA 640x480 | 640 x 480 | 31,469 | 59,941 | 25 |
| VESA 640x480 72Hz | 640 x 480 | 37,861 | 72,810 | 32 |
| VESA 640x480 75Hz | 640 x 480 | 37,500 | 75,000 | 32 |
| VESA 640x480 85Hz | 640 x 480 | 43,269 | 85,008 | 36 |
| VESA 800x600 56Hz | 800 x 600 | 35,156 | 56,250 | 36 |
| VESA 800x600 60Hz | 800 x 600 | 37,879 | 60,317 | 40 |
| VESA 800x600 72Hz | 800 x 600 | 48,077 | 72,188 | 50 |
| VESA 800x600 75Hz | 800 x 600 | 46,875 | 75,000 | 50 |
| VESA 800x600 85Hz | 800 x 600 | 53,674 | 85,062 | 56 |
| VESA 1024x768 43Hz | 1024 x 768 | 35,522 | 86,957 | 45 |
| VESA 1024x768 60Hz | 1024 x 768 | 48,363 | 60,004 | 65 |
| VESA 1024x768 70Hz | 1024 x 768 | 56,476 | 70,069 | 75 |
| VESA 1024x768 75Hz | 1024 x 768 | 60,023 | 75,029 | 79 |
| VESA 1024x768 85Hz | 1024 x 768 | 68,677 | 84,996 | 95 |
| VESA 1152x864 75Hz | 1152 x 864 | 67,500 | 75,000 | 108 |
| VESA 1280x960 60Hz | 1280 x 960 | 60,000 | 60,000 | 108 |
| VESA 1280x1024 60Hz | 1280 x 1024 | 63,981 | 60,020 | 108 |
| VESA 1280x1024 75Hz | 1280 x 1024 | 79,975 | 75,024 | 136 |
| Mac 640x480 | 640 x 480 | 35,000 | 66,667 | 30 |
| Mac LC 640x480 | 640 x 480 | 34,975 | 66,619 | 31 |
| Quadra 832x624 | 832 x 624 | 49,107 | 75,087 | 57 |
| Mac 1024x768 | 1024 x 768 | 60,241 | 74,927 | 80 |
| Mac 1152x870 | 1152 x 870 | 68,681 | 75,062 | 100 |
| Mac 1280x960 | 1280 x 960 | 85,938 | 85,003 | 139 |
| Sun 1152x900 66Hz | 1152 x 900 | 61,846 | 66,004 | 95 |
| Sun 1152x900 76Hz | 1152 x 900 | 71,713 | 76,047 | 105 |

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CE

This equipment complies with the requirements of the EU guidelines 89/336/EWG for electromagnetic compatibility and therefore bears the CE sign. The equipment satisfies the following standards:

| | |
|--------------|-----------------------------------------------|
| EN 55022 | Interference voltage and perturbing radiation |
| EN 50082-1 | Immunity to interference |
| EN 61000-4-2 | Electrostatic discharge |
| EN 61000-4-3 | HF irradiation |
| EN 61000-4-4 | Burst test |

Warning!

This is a class A apparatus. This apparatus can cause radio interference in residential quarters; in such circumstances the user may be asked to take appropriate steps and be responsible for these.

Note

The European standards EN 55022 and EN 50082 differentiate between equipment of class B (for use in living areas) and equipment of class A. Residential quarters are defined as those areas where a radio or television receiver is operated within a radius of 10 m. Equipment of class A may produce a higher level of interference voltage but must itself also be less sensitive to interference caused by other devices than equipment of class B. This equipment fulfills the requirements of class A. If radio or television receivers are used in the immediate vicinity of this equipment then usually interference is not to be expected as long as these receivers are connected to a properly installed aerial system.