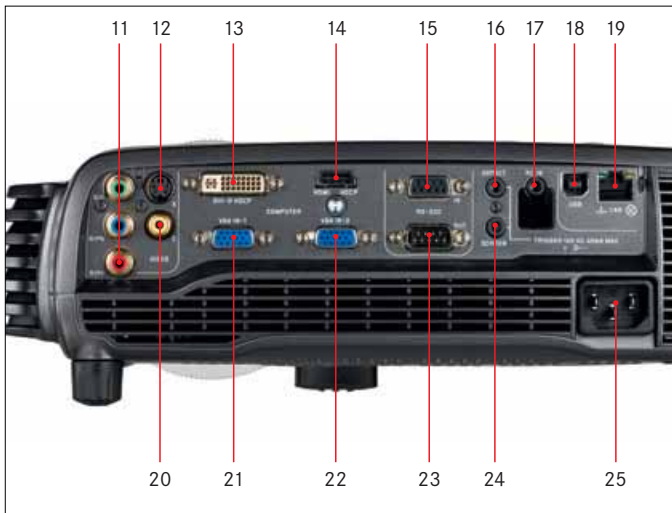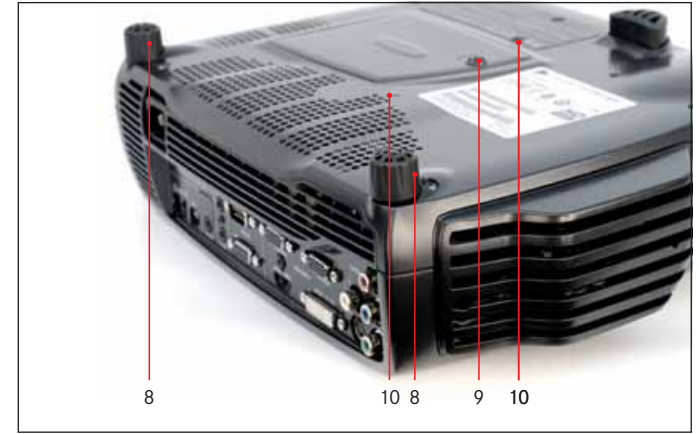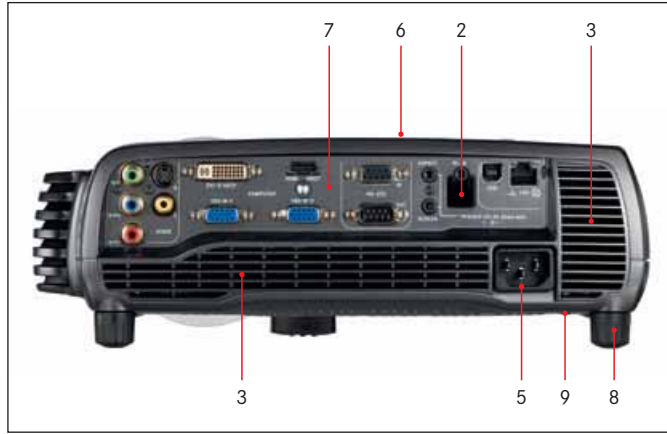# LEICA PRADOVIT-D 1200

Instructions

Overview
1 Lens
2 IR sensor
3 Ventilation
4 Release for front foot
5 Power connector
6 Keypad
7 Connector panel
8 Feet, height adjustable
9 Kensington lock (anti-theft locking mechanism)
10 Thread for ceiling mounting

Connector panel
11 YPbPr: Used for high quality video reproduction.
12 S-VIDEO: Used for improved quality video.
13 DVI-D−: Digital interface for a computer screen with high image quality.
14 HDMI: Digital interface for a computer and video screen with high image quality.
15 RS 232 control IN: Controls and monitors a range of projector functions that are used with fixed installation.
16 12VDC Trigger-Aspect: Allows you to control the aspect ratio of connected electric screens.
17 RC: Connection for a wired remote control.
18 USB - interface: Allows the projector to be controlled using a computer mouse.
19 LAN: Provides access to control and monitoring via a Local Area Network.
20 C-VIDEO: Used for standard video quality.
21 VGA IN-1 − Analog RGB: This is the standard analog graphic computer interface with restricted image quality.
22 VGA IN-2 − Analog RGB: This is the standard analog graphic computer interface with restricted image quality.
23 RS 232 control OUT: Allows multiple projects to be connected for control and monitoring of a range of projector functions used with fixed installation.
24 12VDC Trigger-Screen: Allows electric screens to be connected and controlled. Activated when the projector is switched on.
25 Mains power connector: Use only three-pole/grounded power cords.

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Table of Contents

Introduction

This digital projector has been designed using the very latest technologies in illumination, image processing, optics, electronics, thermal and industrial design, and is intended for both traditional as well as innovative imaging applications across a variety of markets It includes the following features:

- DLP® technology
- Resolution 1920 x 1200
- Single chip DMD™ with DarkChip™ technology by Texas Instruments®
- BrilliantColor™ technology
- 10-bit color resolution for perfect gray scale reproduction
- High contrast for vibrant colors and deep blacks
- Extremely bright projection for large screens
- Integrated real time clock with timer function
- Exceptional image quality thanks to high-end signal processing
- Pixelworks DNX™ technology for video deinterlacing and signal processing
- Eco mode for reduced power consumption and quieter operation
- Variable brightness for coordination of multiple projectors
- Stylish and compact magnesium design suitable for almost any application – whether fixed installation or mobile use.
- Graphic inputs for practically any video and data source
- HDMI ver. 1.3 compatible
- LAN, RS232 and USB ports for control and monitoring

The specification and functionality of the product may change without prior notice.

Safety & Warnings

This user guide contains important information about safety precautions and how to set up and use the projector. Please read the manual carefully before you operate the projector.

Safety

This unit complies with relevant safety regulations for data processing equipment for use in a commercial environment. Before using the projector for the first time, please read the safety instructions thoroughly.

Warning

Use only the cables supplied with the projector or genuine replacement cables. The use of other cables can lead to malfunctions or permanent damage to the unit.

Always use 3 pole/grounded power cord to ensure proper grounding of the unit. Never use 2 pole power cords, as this is dangerous and could lead to electrical shock.

Never open the unit. The projector contains no user serviceable parts. Repair work may only be carried out by Leica Customer Service.

Make sure that no objects enter into the vents and openings of the set.

Do not spill any liquids on the projector or into the vents or openings of the unit.

Always remove the lens cap before switching on the projector. If the lens cap is not removed, it may melt due to the strong light projected through the lens. Melting the lens cap may permanently damage the surface of the projection lens.

Do not look into the projection lens when the projector is switched on. The strong light may permanently damage sight. Do not look into the laser beam when using the remote control. Laser light may permanently damage sight.

Do not point laser beam on people.

Only place the projector on a stable surface, or mount it securely using an approved ceiling mount.

Do not drop the projector.

Always operate the projector horizontally, within the range of the adjustable rear feet.

Operating the unit in other positions may reduce lamp life significantly, and may lead to overheating, resulting in malfunctioning.

Make sure that sufficient air can always flow through the projector. Never block any of the air vents. Never cover the unit in any way while running. Allow for sufficient distance to walls and ceilings to avoid overheating. The minimum safety distance on all sides of the unit is 50 cm/20" in any direction.

Caution!

- Hot air is expelled from the vents. Do not place objects that are sensitive to heat closer than 50 cm/20" to the air outlet vents.
- The projector is designed for indoor use only. Never operate the unit outdoors.
- The projector housing gets very hot during operation. Even after shutting down the fan (after around 60s), the housing is still hot in some places. We recommend that the project is not moved while the fan is running to protect the lamp.
- Do not operate the projector outside its temperature and humidity specifications, as this may result in overheating and malfunctioning.
- Only connect the projector to signal sources and voltages as described in the technical specification. Connecting to unspecified signal sources or voltages may lead to malfunction and permanent damage of the unit. Allow the unit to cool down for 60 minutes before lamp change.

Information and warning about potential health Issues related to mercury vapor.

This projector uses a very powerful UHP™ lamp for illumination to produce an extremely bright image.

This technology is similar to other high-pressure discharge lamps that are extensively used in cars, streetlights and other lighting appliances today. These lamps, like fluorescent tubes, contain small amounts of mercury. The amount of mercury present in a lamp is far below the limits of danger set by the authorities. It is very important that lamps containing mercury are handled properly to minimize potential health hazards.

The UHP™ lamp, like any other high brightness projector lamp, is under high pressure when operating. While the lamp and the projector are carefully designed to minimize the probability of lamp rupture, the lamp may break during operation and small amounts of mercury vapor may be emitted from the projector. The probability of rupture increases when the lamp reaches its maximum service life. It is therefore highly recommended that the lamp is replaced when the specified maximum service life is reached.

As a general precaution, secure good ventilation in the room when operating the projector. If the lamp should break, clear the room and ensure good ventilation. Children and pregnant women in particular should leave the room.

When replacing a worn lamp, dispose of the used lamp carefully by proper recycling.

Mercury is a naturally occurring, stable metallic element that may pose a safety risk to people under certain conditions. According to the Public Health Statement for Mercury published by the Agency for Toxic Substances and Disease Registry ("ATSDR", part of the United States Public Health Service), the brain, central nervous system and kidneys are sensitive to the effects of mercury, and permanent damage can occur at sufficiently high levels of exposure. Acute exposure to high concentrations of mercury vapor can cause conditions such as lung and airway irritation, tightness in the chest, a burning sensation in the lungs, coughing, nausea, vomiting and diarrhea. Children and unborn children have a particularly sensitive reaction to the damaging effects of mercury on the nervous system. Seek medical attention if any of the above symptoms are experienced or if other unusual conditions are experienced following lamp rupture.

WEEE Information

This product conforms to all requirements of the EU Directive on waste electrical and electronic equipment (WEEE). This product shall be recycled properly. It can be disassembled to facilitate proper recycling of its individual parts. This product is using projection lamps that shall be recycled properly. Consult your dealer or relevant public authority regarding drop-off points for collection of WEEE.

Warning

This product contains chemicals, including lead, known to cause birth defects or other reproductive harm. Recycle properly, do not dispose of in ordinary waste!

Warning For Remote Controls

Laser radiation class II product; wavelength 670 nm; maximum output 1 mW.

The remote controls comply with the applicable requirements of 21 CFR 1040.10 and 1040.11.

The remote controls comply with the applicable requirements of EN 60 825-1: 1994 + A11

Warning Symbols on the Projector

Read User Guide
Caution! Read the user guide for further information!

Dangerous Voltage
Danger! High voltage inside the unit.

Hot
Warning! Hot surfaces on the exterior of the unit!

Wait
Warning! Allow the unit to cool down.

Mercury
Warning! Lamp contains mercury! Recycle properly, do not dispose of in ordinary waste!

UV
Warning! UV radiation inside the product!

Recycle
Warning! Recycle properly, do not dispose of in ordinary waste!

No Telephone
Warning! Do not connect to telephone lines!

Supplied Material

Projector
Lens cap
Cable cover
Projector case

2 remote controls with batteries
(only 1 remote in Japan)
Projector user guide (this document)

Information sheet with warnings
2 data carriers (CD/DVD)
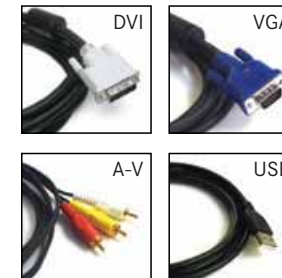
Cable set, comprising
• VGA cable
• DVI-D cable
• A/V cable
• USB cable
• S-Video cable
• Remote control/audio cable

Power cord
(country dependent)

Before setup and use
Check that all items on the above list are present and read this guide before setting up.

Keypad

Some keys have multiple functions.

POWER ⏻
Switches the projector on or to standby mode. Hold down (approx. 1 sec) to switch on. Hold down (approx. 1 sec) twice to switch off.

AUTO ↻
Automatic projector adjustment for correct reproduction. This includes position, width, height, contrast, brightness and general stability when using the VGA analog inputs.

MENU ▱
Activates the menu system. You can use the four arrow keys to navigate and "OK" to select.
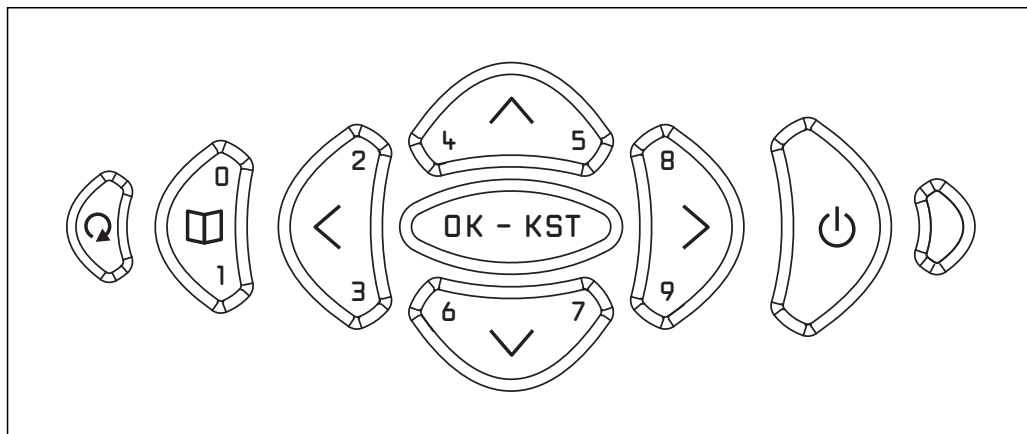
ARROW KEYS ∧ ∨ ⟩ ⟨
You can use the arrow keys to navigate the menu system or select the source if you are not in the menu.

OK
Confirms a menu option when the menu system is activated.

KST
Calls up the keystone/trapezoid correction function.

0–9
These keys are used for PIN code entry.

Indicator Lights

Status Indicator
The light next to the on/off button indicates the operating status in blue, yellow and red colors.

Flashing Blue Light
Lamp is heating up after switching on the projector.

Permanent Blue Light
The projector is switched on and in normal operation.

Flashing Yellow Light
Please wait. The yellow light flashes briefly when the power cord is connected and for a short period after switching to standby mode, while the lamp is cooling down (approx. 60 sec.). The projector may not be switched on again until the indicator has turned to permanent yellow.

Permanent Yellow Light
The unit is in standby mode; no source(s) connected, or the source(s) connected are inactive or switched off, thereby activating the power save function. The power save function can be activated and deactivated in the Settings menu.
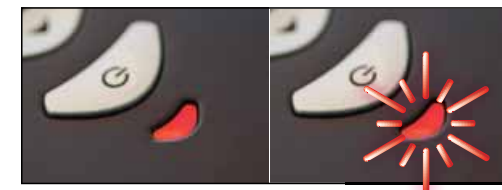
Flashing Red Light
Projector is overheated. Switch off immediately! Check if air vents are covered or if the ambient temperature is outside the specified range. The projector cannot be restarted unless the power cord is disconnected and reconnected. If there is still a flashing red light on the projector, it must be sent to Leica Customer Service for repairs.

Permanent Red Light
Lamp life has expired. Replace the projection lamp immediately. Failing to replace the lamp may lead to the lamp breaking.

No Light
The projector is not connected to the power supply.

Remote Control with Laser Pointer

The remote control allows flexible access to the projector settings, either through direct keys, or through the menu system. The remote control can be backlit for use in dark environments. The backlighting is activated using the upper right key on the remote control. It also has a data jack that allows a wired connection to the projector. If the remote control is connected to the project using the 3.5 mm jack cable supplied, the IR functionality and the internal batteries are deactivated.

The remote control can also be used to control presentations, imitating the mouse functions (left, right keys and arrow keys).

Supplementary information:

The remote control can be operated either in 'broadcast mode', or 'individual mode'. When several projectors are in use in an installation, individual control may be convenient. Individual control is available either by wired remote control, using the data jack, or by using an individual number code. For individual control, first set the individual remote control (RC) ID code using the Settings menu in the projector menu system. Then, to select a specific projector to control, first press the '*' key on the lower keypad, then enter the code as set in the target projector. A code can be in the range '0'..'255'. '0' is reserved for broadcast. To select another target, repeat the process by pressing '*' and a new code. To exit individual control, press '*''*' twice or press '*' and '0'.

POWER
Switches the projector on or to standby mode. Hold down (approx. 1 sec) to switch on. Hold down (approx. 1 sec) twice to switch off.

AUTO
Automatic projector adjustment for correct reproduction. This includes position, width, height, contrast, brightness and general stability when using the VGA analog inputs.

INFO
Displays the source and projector status on the display.

BACKLIGHT
Switches the backlighting on or off. The backlighting is switched off automatically after ten seconds.

BRIGHT
Adjusts the image brightness.

CONTRAST
Adjusts the image contrast.

COLOR
Adjusts the color saturation of the image.

C-VIDEO
Selects the video input as the active signal source.

S-VIDEO
Selects the super video input as the active signal source.

YPbPr
Selects the signal component input.

DVI
Selects the DVI-D input.

HDMI
Selects the HDMI input.

VGA
Selects the VGA input.

BLACK
Toggles the projected image on and off. The lamp is not shut off.

STILL

Toggle function, switching the projected image on and off.

TIME

Displays the date and time. Set the date and time in the SETTINGS menu.

KEYSTONE

Press KEYSTONE to activate the electronic trapezoid correction, adjust with the arrow keys.

ASPECT

Cycles through the aspect ratios available with the current source.

MENU

Opens and closes the menu system.

ARROW KEYS

Use the arrow keys to navigate in the menu system and make other settings.

OK

Press OK to confirm the selected option in a menu.

LASER

Activates the built-in laser pointer. CAUTION!
Do not point the laser beam at people. Do not look into the laser beam.

GAMMA

Press GM+ or GM- to select different gamma settings.

STORE

Press STORE, then one digit 0-9, to store the user settings in the memory.

RECALL

Press RECALL, then one digit 0–9, to recall the user settings from the memory.

0–9

The numbers are used for various numeric functions such as PIN code entry and the user memory.

* Used for (RC) ID control. See the explanation above.

The LEICA PRADOVIT D-1200 is supplied with a second, smaller remote control that is only equipped with the most common functions. This allows very quick, easy and clear operation in everyday projection situations.

Connecting the projector

Disconnect the projector from the power supply before turning on the unit. Now connect your image source (e.g. DVD player or computer) to the corresponding connector on the projector. Reconnect to the power supply and switch the unit on again.

Image Settings

B A

C

D

Position the projector on a level surface, preferably pointing straight at the projection screen. Place it at a suitable distance within the range of the zoom lens.

A Set the image to the correct size using the zoom dial on the lens. Reposition the projector if the desired image size is not achievable.

B Focus the image using the focusing dial on the lens.
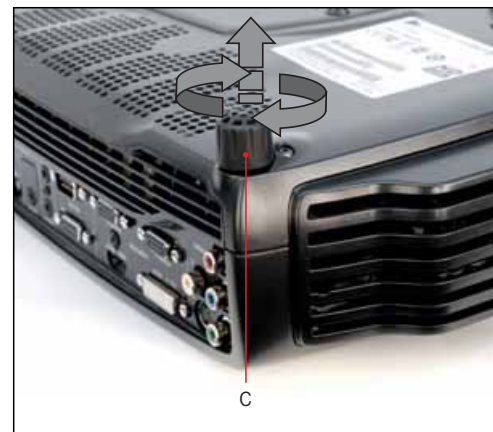
C Align the image by adjusting the rear feet.

D You can also extend the front foot by pressing the release button next to the lens.

If the front foot is extended, you can compensate for the 'keystone' effect by pressing the 'KST' key on the keypad and adjust with the arrow keys.

Ceiling Mount

Operation
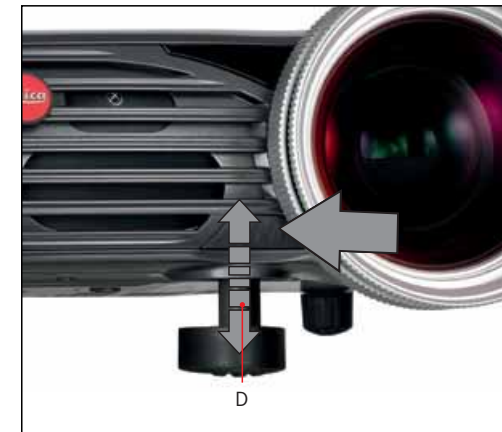
The projector can be ceiling mounted using a UL tested/approved ceiling mount, with a minimum load bearing capacity of 12 kg/26 lbs.

For ceiling mounting use M4 screws that penetrate a maximum of 5 mm (0.19 in) into the projector body.

For proper ventilation the minimum distance from the ceiling/rear wall should be: 30/50cm (12/20").
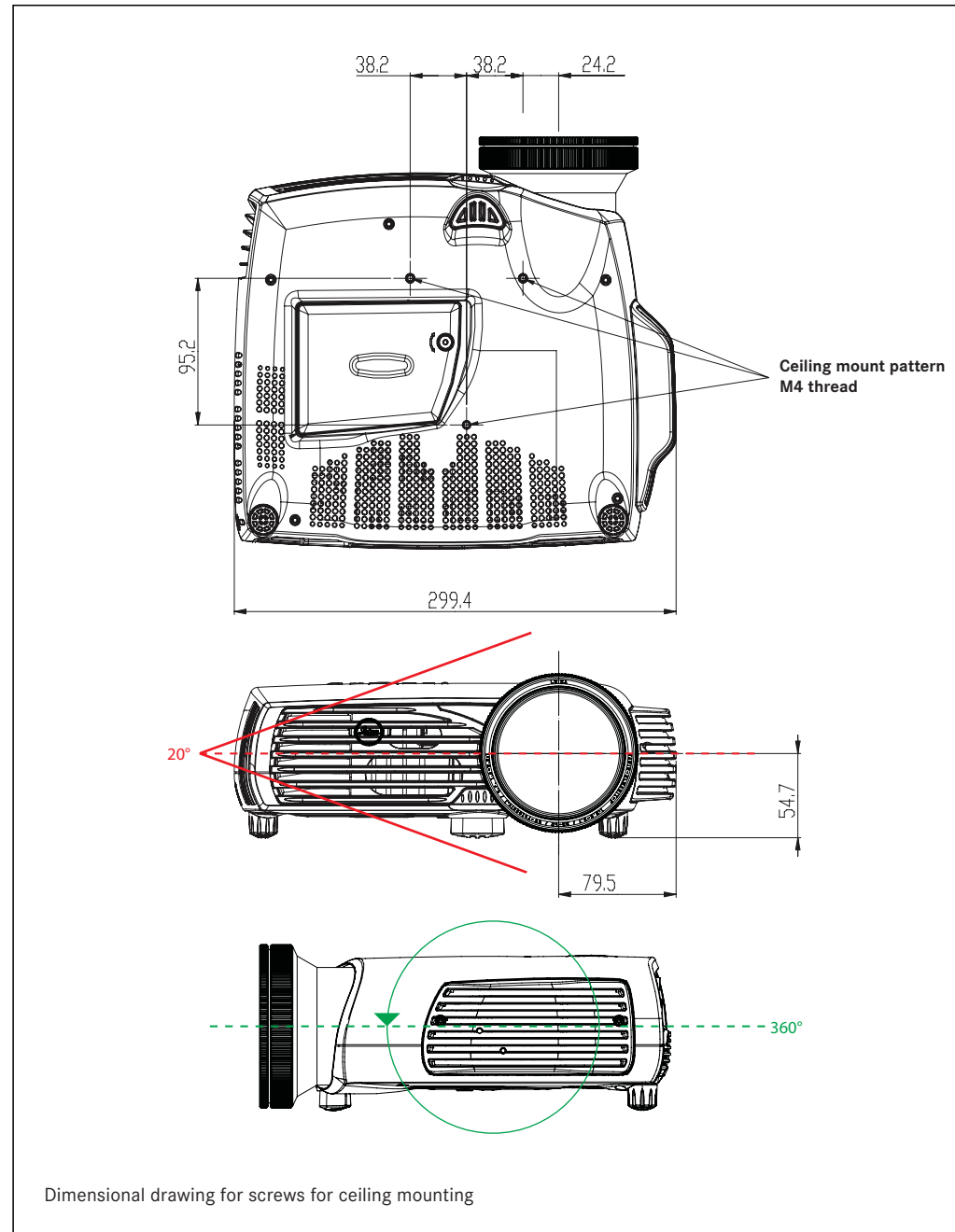
There are certain restrictions in the adjustment angles. Do not operate the unit at angles greater than ± 20°, as this will greatly reduce the lamp service life.

38.2   38.2   24.2

95.2

Ceiling mount pattern M4 thread

299.4

20°

54.7

79.5

360°

Dimensional drawing for screws for ceiling mounting

Using the Projector

After setting up, switch on all equipment. The projector can be controlled by the keypad, by the remote control or using the RS232 or LAN interfaces. To switch the projector on, hold down the POWER button on the keypad or the remote control. The status indicator will turn from yellow to blue when the unit is switched on.

Enter the PIN code if activated.

When only one source is connected, the projector will auto-detect that source. If several sources are connected, the projector will search for the next active source according to the following list, provided that **SOURCE SCAN** is activated in the **INSTALLATION** menu (see description of menu system):

• VGA 1

• VGA 2

• DVI-D

• HDMI

• C-Video

• S-Video

• YPbPr (Component Video)

Toggle between the sources by pressing the ⟨ and ⟩ keys on the keypad or remote control. Only sources that are active will be displayed.

If no source is active, a searching message will appear on the screen. If no source is active for a long time, the projector will go to standby mode if the **AUTO SHUTDOWN** (DPMS – Display Power Management Signaling) option is set to **ON** in the **SETTINGS** menu.

The status indicator will turn from blue to flashing yellow, then yellow. The projector will be switched back on if at least one source is (re)activated. The power off function can be disabled in the menu. See **AUTO SHUTDOWN** in the **SETTINGS** menu for details.

To switch the projector off, hold down the POWER button on the keypad or the remote control twice (to confirm that you really want to switch off the unit). The status indicator will turn from blue to flashing yellow, then yellow when completely switched off. You may not switch the unit back on while the status indicator is flashing yellow. Please wait until the indicator is permanently yellow.

RS 232 and LAN Control

It is possible to control and monitor the projector from a greater distance away using the serial RS232 interface or the LAN connection.

LAN control is available either through an embedded web page for the most frequently used commands or using the same command set as for RS232 for full access to all system controls.

A detailed description of configuration, use and the command set can be found on the Leica homepage. You may consider using the LAN interface as a means of theft detection. When the projector is removed, the LAN will be disconnected; this may be detected over the local area network and could be used to trigger an alarm.
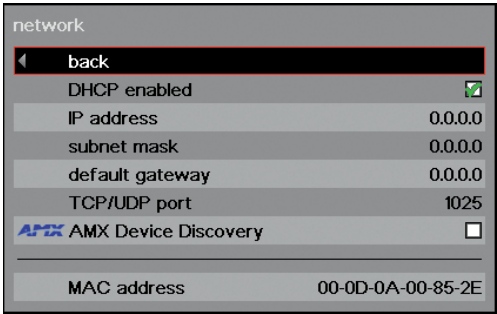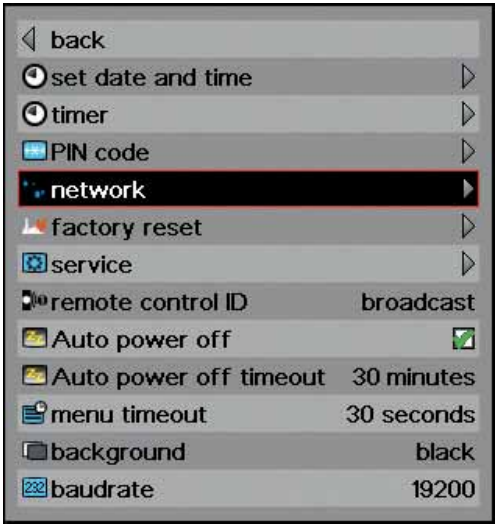
Timer

The projector features a real time clock that enables timing control. This means that the projector can be programmed to switch on and off at certain pre-set times during a weekly cycle. Ten programs are available to allow flexible planning. With each program, you can define the switch on or switch off time for a single day (Monday to Sunday), all working days (Monday through Friday), or the weekend (Saturday and Sunday). One, several or all programs can be active at the same time as desired. In this way, a flexible scheme can be established. Use the 24 hour time format. For more information on setting the programs, see the **SETTINGS > TIMER** submenu in the menu system.

The following example illustrates a case where the projector switches on at 08:00 in the morning (8 am) and switches off at 20:00 (8 pm) on weekdays (Monday through Friday). At weekends (Saturdays and Sundays), it turns on at 10:00 (10 am) and off at 18:00 (6 pm). VGA is used as the source. For this, four programs are needed, 2 for on and two for off.

timer	
◀ **back**	
program number	1
weekday(s)	monday - friday
execute time	08:00
action	power on
start-up source	VGA 1
status	enabled

timer	
◀ **back**	
program number	2
weekday(s)	monday - friday
execute time	20:00
action	power off
start-up source	
status	enabled

timer	
◀ **back**	
program number	3
weekday(s)	saturday - sunday
execute time	10:00
action	power on
start-up source	VGA 1
status	enabled

timer	
◀ **back**	
program number	4
weekday(s)	saturday - sunday
execute time	18:00
action	power off
start-up source	
status	enabled

set date and time	
◀ **back**	
date	17.09.2008
time	20:24:24
day of week	wednesday

Image Calibration and Correction

Some applications require very precise color reproduction of the images. In addition, depending on the application, different color standards are applied. When preparing for correct color reproduction, both the source and the projector must be considered.

The projector offers several ways to calibrate colors, as well as correction of the input signal.

The source may need correction because it is usually not calibrated from the factory, which leads to higher or lower signal levels than nominal. In addition, R (red), G (green) and B (blue) may be slightly different (not balanced), adding a tint to the image. Correcting the input signal means individually adjusting the gain (contrast) and the offset (brightness) of R, G and B. This setting is made in addition to the normal brightness and contrast settings.

The projector may also need calibration regardless of the source signal, because there may be slight differences in optical coatings, as well as the spectral distribution of individual lamps, which can even change over time. Calibrating the projector can be done in different ways, either by changing the color temperature, by defining the x and y color coordinates or by R, G and B adjustment.

For further details on correct calibration, see the **PICTURE** menu in the menu system.

Menu System

OVERVIEW

The menu system provides access to a multitude of image and system controls. The menu system is divided into a main menu and several submenus. The submenus may vary depending on the actual source selected. Some functions are not available with some sources.

Press **MENU** and navigate using the arrow keys on the keypad or remote control.

The default menu language is English. Set the language of your choice in the **LANGUAGE** menu.

MAIN MENU

PICTURE
Basic and advanced picture controls.

INSTALLATION
System controls and information.

SETTINGS
Settings that affect how the projector behaves or interacts with third party units, such as networks and control systems

PROFILES
Predefined and user defined settings.

LANGUAGE
Selects the menu language.

STATUS
System information.

Navigating the Menu System

The menu system is navigated using the keypad on the projector or by remote control.

▢ MENU
Opens the menu, or returns to the previous level, and exits the menu when at top level.

OK
Selects the desired function, toggles checkboxes, or opens submenus. Pressing OK on a directly adjustable function such as brightness minimizes the menu system, and opens a mini adjustment dialog box. Pressing OK again returns to the full menu system.

ARROWS KEYS ∧ / ∨
Navigates up or down.

ARROW KEYS ＞ / ＜
Moves between top level menus. Changes, or toggles adjustable values. Opens or exits submenus.

PICTURE MENU

The **PICTURE** menu contains basic and advanced settings and parameters for detailed picture enhancement functions. All adjustments are local, i.e. specific to each single source being displayed, and are stored in memory as such. All picture settings are automatically stored relative to the source, and recalled upon reconnection.
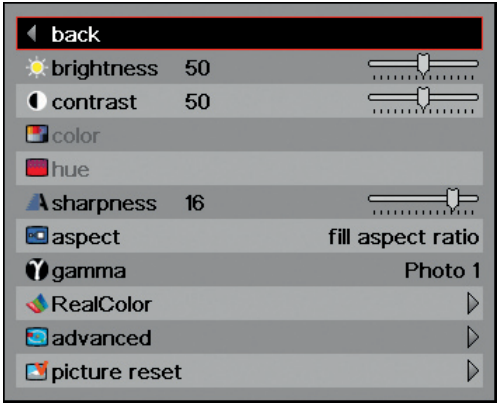
BRIGHTNESS

Adjusts the image brightness. The higher the setting, the brighter the image. A lower setting reduces the brightness of the image.

CONTRAST

Controls the contrast of the image. A higher setting will yield a 'harder' image with larger difference between shades, while a low setting will produce a 'softer' image with less difference between shades.

COLOR SATURATION

Adjusts the color saturation. A higher setting will produce stronger coloring, while a lower setting will yield paler colors.

NTSC HUE

Adjusts the NTSC color tint. Applicable to the NTSC video standard only. A higher setting will yield a more reddish color scheme, while a lower setting will turn colors more greenish.

SHARPNESS

Controls the image sharpness. A higher setting results in a harder image with higher contrast, which appears sharper. In video applications, this may produce more noise in the projected image. A lower setting will soften the image, looking more smeared out, and reducing the overall noise.

ASPECT RATIO

Selects image format. An image may be displayed in various aspect ratios. This function is used when displaying source formats that differ from the projector's native display format. The options include FILL ASPECT RATIO (fill image, default – follows the image format at the input).
FILL ALL (stretches or compresses the image format to fill the projector's resolution), 16:10 (adjusts the input image format to fill a 16:10 window),
LETTERBOX 16:10 (adjusts the input to a centered field in 16:10 format), and
LETTERBOX SUBTITLE 16:10 (adjusts the image format of the input signal to fill a 16:10 window and moves it up to create space for subtitles).

GAMMA

The source image is adapted to characteristics typical to certain applications. This enables an optimized display of images, depending on whether the source material is a photo, a movie, computer etc.

COLOR SETTINGS

Opens the color management submenu, see the COLOR SETTINGS submenu for more information.

ADVANCED

Opens the advanced settings submenu.

RESET IMAGE

Resets all source specific settings to the defaults, such as brightness, contrast and format settings. Picture reset does not affect global settings such as installation specific values.

Submenu for COLOR SETTINGS

This submenu can be used to adjust and set the color scheme.

BRILLIANTCOLOR™

Activates and deactivates BrilliantColor™.

MODE

Selects different reproduction modes: NOT CORRECTED, TEMPERATURE, COORDINATES, HSG or PRESET.

AUTOMATIC COLOR SPACE ADJUSTMENT

Automatic adjustment of intensity values for red, green and blue to obtain correct colors relative to the white point.

DESIRED VALUES

If the color coordinates mode is active, the desired color coordinates for the output color can be set here.
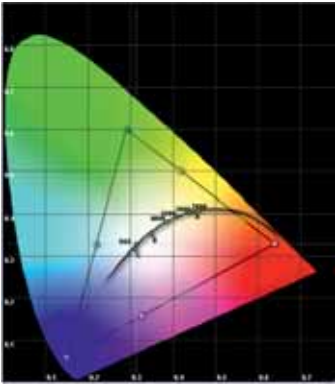
TEMPERATURE

Sets the projected image color temperature to a value between 3200 and 9300 degrees Kelvin when **TEMPER-ATURE** is set as the mode.

WHITE POINT COORDINATE X

Sets the projected image white point x-coordinate when color coordinate mode is selected.
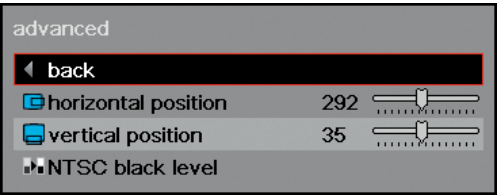
WHITE POINT COORDINATE Y

Sets the projected image white point y-coordinate when color coordinate mode is selected.

RESET TO D65

Sets the projected image white point to 6500 K/D65 (x = 0.312, y = 0.329).

ADVANCED SUBMENU

The **ADVANCED** submenu contains less frequently used, and more specific image settings.

HORIZONTAL POSITION

Shifts the image sideways.

VERTICAL POSITION

Shifts the image up and down.

NTSC BLACK LEVEL

Sets the black level for NTSC video signals.

INSTALLATION Menu

The **INSTALLATION** menu provides easy access to global system settings, including ceiling mount and rear projection settings, analog source synchronization settings, and keystone correction. These settings will affect all sources connected, and are system specific, rather than source specific.
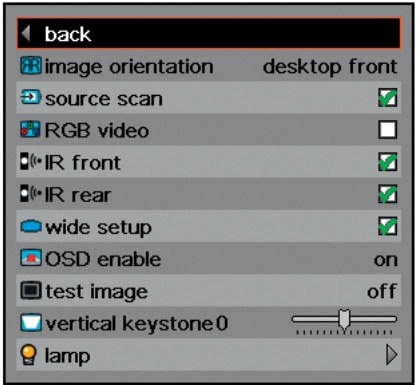

IMAGE ORIENTATION

Sets the image orientation based on the installation position of the projector. The available modes are **TABLE FRONT PROJECTION**, **TABLE REAR PROJECTION**, **CEILING FRONT PROJECTION** and **CEILING REAR PROJECTION**. The image will be rotated and/or flipped accordingly.

SCAN SOURCE

When this option is enabled, the projector automatically searches for available sources and displays the image from the first one available with a valid input signal. Source scan is enabled by default.

RGB VIDEO

The component video input can be configured to receive RGB and composite sync (using the composite video input as a fourth connector).

IR FRONT/REAR

Activates or deactivates the front and rear IR receivers. Disable one or both IR receivers if the projector is being used with a control system, if the response is faulty (due to stray light in the environments), or the remote control is not needed. Both IR receivers are activated by default.

OSD (ON SCREEN DISPLAY) ENABLED

Activates or deactivates the on-screen display. The possible settings are **ON**, **OFF** or **WARNING MESSAGES ONLY**. The latter will display system warnings, such as overheating, lamp life expiry, other critical information. OFF disables all warnings and messages. The menu display is not affected. The **OSD** is activated by default.

TEST IMAGE

Displays a test image frame that is easy to use when setting up and determining screen size, and position. The available options are 4:3, 16:9, 16:10, 1,85:1, 2,35:1, 5:4 and a combination of these.

VERTICAL KEYSTONE

Vertical keystone correction electronically compensates for the trapezoidal distortion created when the projector is tilted, and is no longer perpendicular to the wall or screen surface.
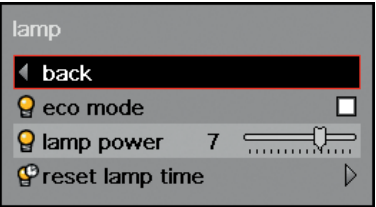
Attention:

This function can impair the image quality.

LAMP

Opens the **LAMP** submenu.

LAMP Submenu

ECO MODE

Switches eco mode (low power consumption and long life) on or off.

When on, lamp power may not be adjusted.

If the function is off, the lamp power output can be adjusted between 80% (eco mode) and 100 %.

LAMP POWER

Adjusts the lamp power when not in eco mode.

RESET LAMP TIME
Caution!

Only use this function when replacing the lamp with a new one of the same type!

SETTINGS

The Settings submenu contains settings that are system specific, and source independent, such as networking, as well as connection of external devices, display power management, PIN code and security settings, amongst other things.

SET DATE AND TIME

Sets the system date and time for the projector to utilize timer and programming options.

The date and time are easiest set with the remote control. Select either date or time, press "OK" on the remote control, and the first digit will be highlighted. Change the value with the up/down arrow keys, and move between values with the left/right arrow keys. Press OK when done. The day of week is automatically set when a date is set.

TIMER

The projector can be programmed to power up or down at any time desired, using the timer option. Refer to the examples on page 11. Configure the **PROGRAM NUMBER** (1-10), **DAY(S)**, **EXECUTE TIME**, **ACTION** (power on/off) and **START UP SOURCE** (the input selected by default when switched on) and activate or deactivate the program under **STATUS**.

Select the value to be edited, and change the value with the left/right arrow keys.

For the **EXECUTE TIME**, press **OK** and change the value up/down using the arrow keys. Move between values with the left/right arrow keys.
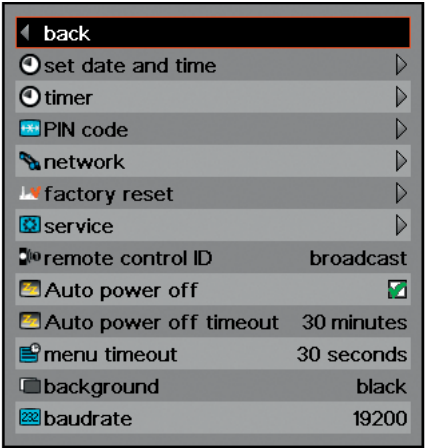
PIN CODE

The projector can be secured and locked with a 4-digit PIN (Personal Identification Number) code, similarly to mobile phones and other electronic equipment. To enable PIN code protection, a valid, four-digit code must be entered. Press "OK" to select the code, enter new PIN code via the numeric pad on the keypad or remote control. Please note that entered numbers are masked. To disable PIN code, or change it, follow the same procedure as above. When PIN code is enabled, the user is prompted to enter the code when powering up the projector.

If an incorrect PIN code is entered, you may try again two times. If you fail three times in a row, a PUK (unlock) code is needed. The PUK code is supplied with the product. If you also fail three times with the PUK code, the projector locks up permanently, and can only be unlocked by a special unlock code from Leica Customer Service.

To obtain this code, you must contact Leica Customer Service and have the projector ready to use.

NETWORK

The projector has a built-in network connection for device management. The **NETWORK** menu allows you to activate DHCP to automatically obtain an IP address when you establish a connection. If DHCP is deactivated or no DHCP server is available, a static IP address, a subnet mask, a default gateway and a TCP/UDP port can also be set.

If the projector is integrated into an AMX system, activating **AMX DEVICE DISCOVERY** enables the AMX controller to detect the projector and automatically add it to the network.

Highlight the setting to be changed, press "OK", and change the values with the up/down arrow keys. Move between values with the left/right arrow keys.

FACTORY RESET

Factory reset erases all memorized source and system settings, and sets all back to default values.

SERVICE

Service opens the service menu. This is available to authorized service personnel only. Entering the service menu without proper knowledge may permanently damage the projector.

REMOTE CONTROL ID

The projector can be set up with a unique ID (identification), which means that it will only respond to the remote control that transmits the same ID. Up to 99 devices can be set up simultaneously for operation using a single remote control without any mutual interference. By default, the projector is set up to respond to any remote control, i.e. no remote control ID is set. To change, and set a unique ID, select, and change the value with the left/right arrow keys.

To set the remote control to a specific ID, press the asterisk key ("*"), and enter a number that corresponds with the projector you wish to control using the numeric keypad. When pressing the asterisk key towards a projector, it will respond with its unique ID, and prompt the user to enter a matching one.

AUTO SHUTDOWN

When **AUTO SHUTDOWN** is activated, the projector will automatically switch to standby mode after a specified time if there is no valid source present at its inputs. When a valid source is reconnected, the projector will start up again.

AUTO SHUTDOWN TIME

AUTO SHUTDOWN TIME can be set to any value between 1 and 180 minutes. The default is 30 minutes.

Menu DISPLAY TIME

Sets the amount of time before the menu is automatically hidden if not used. The default is 30 seconds.

BACKGROUND

Allows you to select the background color displayed if no valid source is connected. The options are **BLACK**, **GRAY** and **WHITE**.

BAUDRATE

Sets the baud rate at which the projector communicates using RS232. The options are 4800, 9600, and 19200 bps. See separate documentation for details on RS232 and LAN communication. This document is available for download on the Leica homepage.

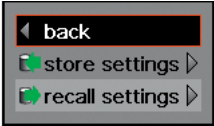## PROFILES Submenu

The **PROFILES** submenu contains predefined and user saved projector setup profiles, allowing a specific setting or desired projection mode can be retrieved quickly.

STORE SETTINGS

User-defined settings can be saved using program slots 0–9.

RECALL SETTINGS

Restores the settings saved by the user.

LANGUAGE

Selects the menu language.

STATUS submenu

The **STATUS** submenu can be called up through the menu system, or directly using the INFO key on the remote control. It gives direct, and easy to understand information on system and connected source status.

◀ back	
i source information	▷
software version	001-0215-01.05
lamp remaining	2991 hrs
lamp time	9 hrs
total operating	9 hrs
lamp power	10
DHCP enabled	on
IP address	0.0.0.0

Troubleshooting

No Image

No connection:
Check if all connections are properly made.

Source off:
Check if the equipment is powered on.

Lamp dead:
The lamp may need replacement. Check the service life of the lamp in the **STATUS** submenu.

Source hibernated:
Start up the source to display and activate an image.

Notebook external screen:
Different notebook computers use different combinations of keystrokes to enable the external graphics port.

Source scan off:
Check the **SCAN SOURCE** option in the **INSTALLATION** submenu. If this is set to **OFF**, the projector will not search for the next active source, but will remain with the current source selected.

Lens cap:
Check that the lens cap is off!

Dark Image

Low brightness or contrast settings:
Use the remote control or the menu system, **PICTURE** submenu for **CONTRAST** and **BRIGHTNESS** adjustment.

Old, worn lamp:
The lamp may need replacement. Check the service life of the lamp in the **STATUS** submenu.

Flickering Image

Bad lamp:
Replace the lamp. Check the service life of the lamp in the **STATUS** submenu.

Unsharp Image
Lens not focused:
Focus the lens properly. It is possible that trapezoidal distortion correction for vertical keystone may have been unintentionally activated in the **INSTALLATION** submenu. Parts of the image are compressed, affecting the display of graphics, fine lines, text and other images of high resolution.

Source resolution is different from projectors native resolution:
The projector automatically rescales the input format to the native/internal resolution. If required, select a different display option in the **IMAGE/DISPLAY** submenu.

Maintenance

The projector may from time to time need cleaning. Never open the unit, as this will void any warranties. Repair and maintenance work may only be carried out by Leica Customer Service.
The projector is using lamps that have a limited life time. Replacing the lamp is explained in detail in the "Replacing the lamp" section .
Only the exterior of the unit may be cleaned. Use a damp cloth. Make sure that no liquids get inside the projector. Clean all vents (C) regularly with a vacuum cleaner to ensure an adequate air flow.
The front lens (A) is sensitive to scratches. Use lens cleaning tissue, available at all photographic stores when cleaning the projection lens. Use lens cap when not in use.

Preventive maintenance
The projector contains moving parts (such as cooling fans) that have limited life expectancies. After 3,000 hours of operation, or if the unit is to be used for critical applications, it should undergo preventive maintenance by Leica Customer Service. This will help ensure long term stable operation.

Maintenance Information

This unit contains no user serviceable parts. If it fails to function as expected, please first check that all connections are properly made, and that the power cord is properly connected. Check that the projector and the video and computer sources are all switched on. Try to change cables and cords, in case there is a bad or intermittent connection. Check if the circuit breaker or fuse of your mains is intact. If the unit does not function properly, contact Leica Customer Service. You should prepare a description of the symptoms of the faults you experience. Please also state the product number and serial number as printed on the label on the bottom of the projector.

Replacing the Lamp

The INDICATOR on the keypad will turn red when the lamp life expires. We recommend having the lamp replaced by Leica Customer Service.
If you replace the lamp yourself, use only genuine Leica replacement lamps, which are available from Leica Customer Service.

Always disconnect the power cord and wait until the projector has cooled down (at least 60 minutes) before opening the lamp cover.

WARNING
Never touch the protective glass when replacing the lamp housing. If you have accidentally touched the protective glass, you should carefully wipe it clean with a clean cloth before replacing it.

WARNING
Be extremely careful when removing the lamp module. In the unlikely event that the lamp ruptures, small glass fragments may come loose. The lamp module is designed to catch these fragments. However, care should be taken when removing the lamp module.

A Release the screw on the cover.
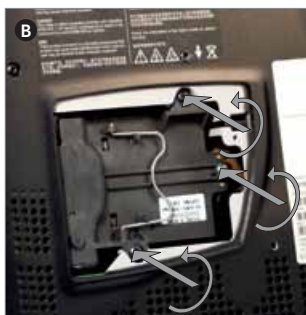Remove the cover.

B/C Unscrew the three fastening screws, release the clip and remove the lamp.

D Insert a new lamp. Make sure that it is straight.

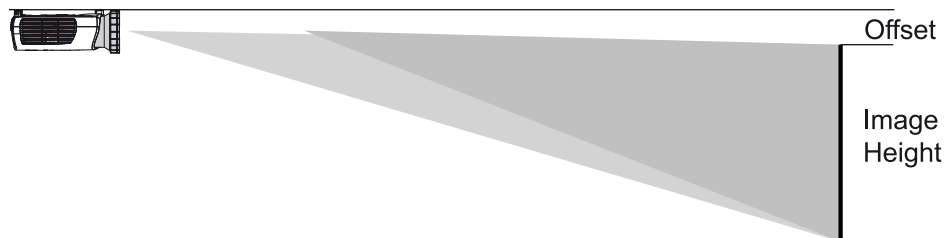**E** Tighten the three fastening screws and replace the clip.

F Replace the cover and carefully tighten the screw on the cover.

Reset the lamp usage period indicator (see "Resetting the lamp usage period", p. 15).

Technical Data

11 **G/Y**
PHONO/RCA
FEMALE
STEM GREEN: G/Y
SHIELD: GND

B/Pb
PHONO/RCA FEMALE
STEM BLUE: B/Pb
SHIELD: GND

R/Pr
PHONO/RCA FEMALE
STEM RED: R/Pr
SHIELD: GND

12 **S-Video**
4 PIN MINI DIN FEMALE
1 GND
2 GND
3 Luma
4 Chroma

13 **DVI-D**
DVI-I
  1 TMDS Data 2−
  2 TMDS Data 2+
  3 TMDS Data 2/4 Shield
  4 Not used
  5 Not used
  6 DDC Clock
  7 DDC Data
  8 Analog Vertical Sync
  9 TMDS Data 1−
10 TMDS Data 1+
11 TMDS Data 1/3 Shield
12 Not used
13 Not used
14 +5 V Power

C1 Analog Red
C2 Analog Blue
C3 Analog Green
C4 Analog Horiz. Sync
C5 Analog GND Return

14 **HDMI**
HDMI
  1 TMDS Data 2+
  2 TMDS Data 2 Shield
  3 TMDS Data 2−
  4 TMDS Data 1+
  5 TMDS Data 1 Shield
  6 TMDS Data 1−
  7 TMDS Data 0+
  8 TMDS Data 0 Shield
  9 TMDS Data 0−
10 TMDS Clock +
11 TMDS Clock Shield
12 TMDS Clock −
13 CEC
14 Not Used
15 DDC Clock
16 DDC Data
17 Ground
18 +5 V Power
19 Hot Plug Connect
20 Shell

15 **RS-232**
9 PIN DSUB FEMALE
1 NC
2 RXD
3 TXD
4 NC
5 GND
6 NC
7 NC
8 NC

16 **ASPECT**
3,5 mm stereo
mini jack
TIP: 12 V DC
RING: SIGNAL
STEM: GND

17 **RC IN**
3,5 mm stereo
mini jack
TIP: 5 V DC
RING: SIGNAL
STEM: GND

18 **USB**
DIGITAL USB
1 VCC
2 −Data
3 +Data
4 GND

19 **LAN**
RJ 45
1TX+
2TX-
3RX+
4GND
5GND
6RX−
7GND
8GND

20 **C-Video**
PHONO/RCA FEMALE
STEM YELLOW:
Composite
SHIELD: GND

21/22 **VGA IN−1/2**
15 HIGH DENSITY
DSUB FEMALE
  1 Analog R in
  2 Analog G in
  3 Analog B in
  4 AGND
  5 AGND
  6 Analog R GND in
  7 Analog G GND in
  8 Analog B GND in
  9 Reserved
10 Sync GND in
11 AGND
12 DDC/SDA
13 H Sync in
14 V Sync in
15 DDC/SCL

23 **RS-232**
9 PIN DSUB FEMALE
1 NC
2 RXD
3 XD
4 NC
5 GND
6 NC
7 NC
8 NC

24 **SCREEN**
3,5 mm stereo
mini jack
TIP: 12 V DC
RING: SIGNAL
STEM: GND

Offset

Image Height

Projection distance / offset table

Image size (16:10)			Projection distance		Offset
Width (m)	**Height** (m)	**Diagonal** (m)	**Wide Angle** (m)	**Tele** (m)	(m)
0.5	0.31	0.59	0.8	1	0.15
0.8	0.5	0.94	1.28	1.6	0.17
1	0.63	1.18	1.6	2	0.18
1.2	0.75	1.42	1.92	2.4	0.20
1.5	0.94	1.77	2.4	3	0.23
2	1.25	2.36	3.2	4	0.28
2.5	1.56	2.95	4	5	0.31
3	1.88	3.54	4.8	6	0.40
3.5	2.19	4.13	5.6	7	0.43
4	2.5	4.72	6.4	8	0.50
4.5	2.81	5.31	7.2	9	0.59
5	3.13	5.9	8	10	0.66
6	3.75	7.08	9.6	12	0.79
7	4.38	8.25	11.2	14	0.92
7.5	4.69	8.84	12	15	0.98
8	5	9.43	12.8	–	1.05
9	5.63	10.61	14.4	–	1.18
9.5	5.94	11.2	15.2	–	1.25

Declarations

FCC

FCC regulations provide that changes or modifications not expressly approved by the party responsible manufacturer could void your authority to operate the equipment.
This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates and uses electromagnetic radiation. This can be emitted and, if the device is not installed and operated in line with the instructions, cause interference that will impair radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user must try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.

Connect the device to another circuit than that of the receiver.

Changes or modifications made to this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CANADA

This Class B digital apparatus complies with Canadian ICES-003. / Cet appareil numérique de la classe B est conforme à la norme NMB- 003 du Canada.

CANADA

Cet appareil numérique de classe B est conforme à la norme NMB-003 du Canada.

601-0117-00
2008-04

my point of view

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