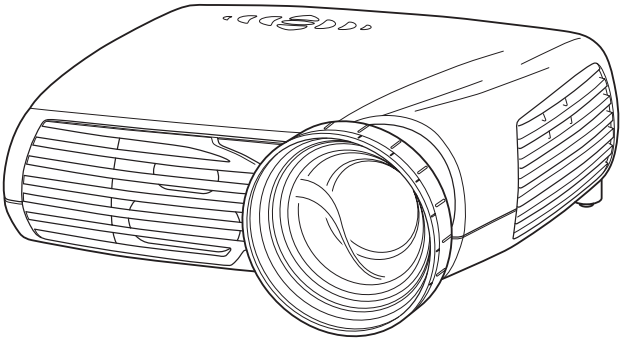
MGP D5



User Guide

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October 2004

www.barco.com

TABLE OF CONTENTS

INTRODUCTION

This digital projector is designed with the latest state-of-the-art technologies in illumination, imaging, optics, electronics, thermal and industrial design in order to serve traditional as well as novel imaging applications across a variety of markets, offering features such as:

- 1400x1050 pixel SXGA+ DLP™ technology
- Single chip DMD™ with DarkChip2™ technology by Texas Instruments®
- HIGH CONTRAST for vibrant colors and deep blacks
- HIGH RESOLUTION for unprecedented detail
- HIGH BRIGHTNESS for larger screens
- DEEP BLACKS for maximum detail
- REDUCED IMAGE NOISE through high end signal processing
- FAROUDJA DCDi™ Video processing and de-interlacing
- ECO MODE for reduced power consumption and lower audible noise
- VARIABLE LAMP POWER for alignment of multi-screen configurations
- LONG LIFE LAMP (up to 4000 hours) in low power ECO mode
- STYLISH AND COMPACT DESIGN to fit most applications, installed or movable
- SIX VIDEO and GRAPHICS INPUTS for virtually any video and data source
- LAN, RS232 and USB ports for control and monitoring

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

SAFETY & WARNINGS

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

SAFETY

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

WARNING

Use only the cables and cords supplied with the projector or original replacement cables. Using other cables or cords may lead to malfunction and permanent damage of the unit.

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

Never open the unit. The projector contains no user serviceable parts. Refer all repairs to qualified personnel only.

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 lens cap before switching on the projector. If the lens cap is not removed, it may melt due to the high energy light emitted 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 activated on 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.

Always allow ample airflow 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. Minimum safety distance to any side of the unit is 50 cm/20" in any direction.

CAUTION! Hot air is exhausted from the side vent. Do not place objects that are sensitive to heat nearer than 50 cm/20" to the exhaust vent.

The projector is designed for indoor use only. Never operate the unit outdoors.

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 is using an extremely bright UHP™ lamp for illumination to attain the desired high brightness image.

This technology is similar to other high-pressure discharge lamps that are extensively used in cars, street lights and other lighting appliances today. These lamps, like fluorescent lighting, 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 treated 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 while operating and small amounts of mercury vapor may be emitted from the projector. The probability of rupture increases when the lamp reaches its nominal life. It is therefore highly recommended that the lamp is replaced when the rated lifetime is reached.

As a general precaution, secure good ventilation in the room when operating the projector. If lamp rupture occurs, evacuate the room and secure 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 fetuses are particularly sensitive to the harmful effects of metallic mercury to the nervous system.

Seek medical attention if any of the above symptoms are experienced or if other unusual conditions are experienced following lamp rupture.

REMOTE CONTROL WARNING

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

Remote control complies with applicable requirements of 21 CFR 1040.10 and 1040.11.

Remote control complies with applicable requirements of EN 60 825-1: 1994 + A11

LASER RADIATION WARNING

CAUTION: Laser radiation. Do not stare into the beam.

Laser diode: Wavelength 570 mm, max. output 1 mW.

Class II laser product.

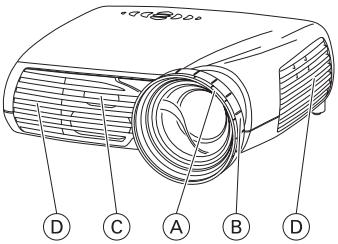
OVERVIEW

A Focus ring

B Zoom ring

C IR sensor

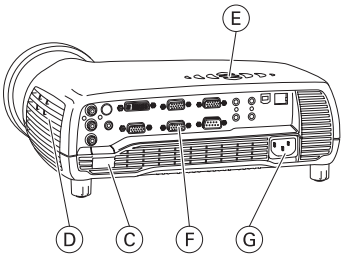
D Ventilation



E Keypad

F Connector panel

G Power connector



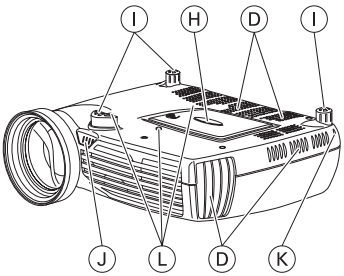
H Lamp house

I Adjustable foot

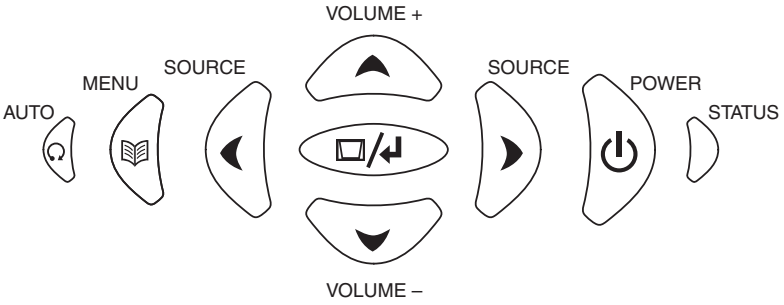
J Foot release

K Security lock

L Ceiling mount



KEYPAD



POWER

Switches the projector between on and standby modes. Press firmly (1 sec) to switch on. Press firmly (1 sec) twice to switch off.

AUTO

Adjusting the projector to display a correct image, including position, width, height, contrast, brightness and overall stability.

MENU

Activates the menu system. Use the four arrow keys to navigate and ↵ to activate.

▭ / ↵

Select menu option when menu system is activated. Activates the keystone correction when the menu system is not in use. Use the four arrow keys to adjust horizontally and vertically.

SOURCE

Use the two arrow keys to select source when keystone correction and menu system is not activated.

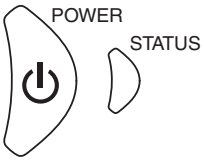
VOLUME

Use the two arrow keys to adjust the sound volume.

STATUS

This is an indicator light, not a key. Do not push. It indicates the current projector status. See STATUS chapter for detail.

STATUS



PERMANENT GREEN LIGHT

The projector is turned on and in normal operation.

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 (DPMS). You may enable or disable the power save function in the SET UP sub menu, DPMS on or off.

FLASHING YELLOW LIGHT

Please wait. The yellow light will flash a period after power cord is connected (10-15 sec.), and a period after going to standby mode while lamp is cooling down (approximately 45 sec.). The projector may not be turned on again until the light has turned to permanent yellow.

PERMANENT RED LIGHT

Lamp life has expired. Please change projection lamp immediately. Failing to change lamp may lead to lamp explosion.

FLASHING RED LIGHT

Projector is overheated. Turn off immediately! Check if air inlets are covered or if ambient temperature is outside specifications. The projector can not be restarted unless the power cord is disconnected and reconnected again. If the projector continues to flash red, you will need to return the unit for service.

REMOTE CONTROL

The remote control allows flexible access to the projector settings, either through direct keys, or through the menu system. The remote control can be used to emulate the computer mouse through the USB interface.

POWER
Switches the projector between on and standby modes.

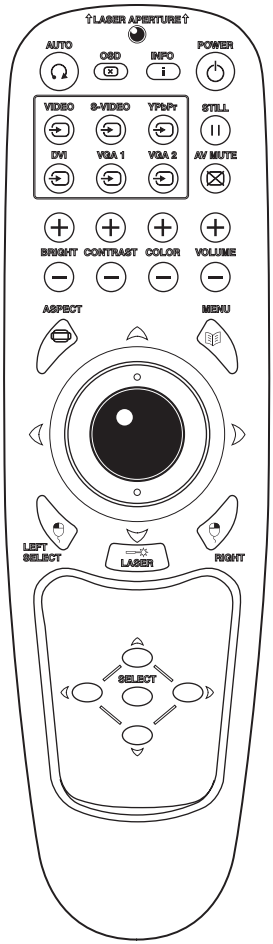
AUTO
Adjusting the projector to display a correct image, including position, width, height, contrast, brightness and overall stability.

OSD
Toggle On Screen Display (OSD) feedback of and off. When on, all user commands are echoed on screen. When off, user commands will not be echoed on screen.

INFO
Displays source and projector status on screen.

VIDEO
Selects the composite video input as signal source

S-VIDEO
Selects the super video input as signal source



YPbPr
Selects component video input

DVI
Selects the DVI input

VGA 1
Selects the VGA 1 input

VGA 2
Selects the VGA 2 input

STILL
Toggles between live and still (frozen) image

AV MUTE
Toggles between live and no (muted) image

BRIGHT
Adjusts image brightness from dark to bright

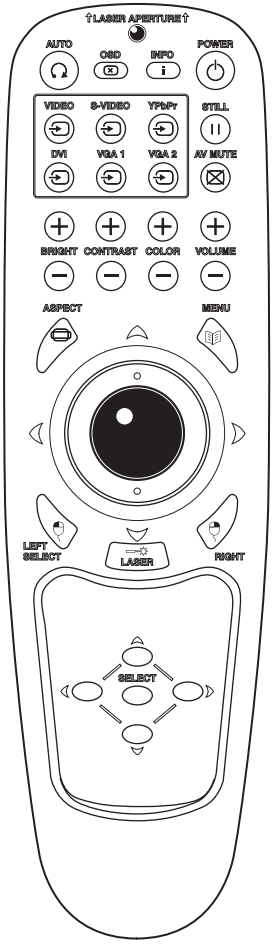
CONTRAST
Adjusts the image contrast from soft to hard

COLOR
Adjusts the color of the image from pale to saturated

VOLUME
Adjusts the sound volume

ASPECT
Cycles through the aspect ratios available with the current source

MENU
Toggles the menu system on and off



TRACKBALL
When USB cable is connected between PC and projector, the trackball is used to move the mouse pointer when not in the menu. Use the trackball to navigate between options when in the menu.

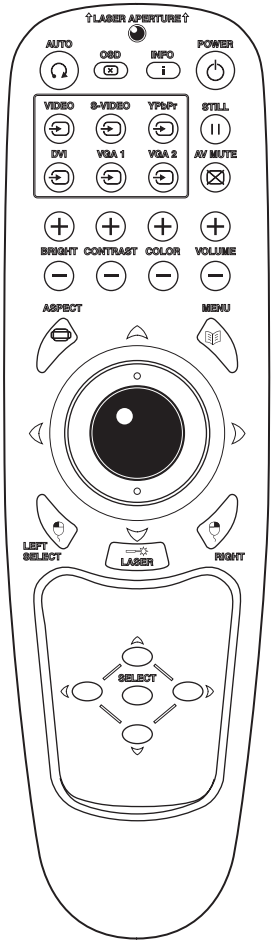
LEFT/SELECT
Use as mouse LEFT key when not in the menu. Use as SELECT key when in the menu

RIGHT
Use as mouse RIGHT key

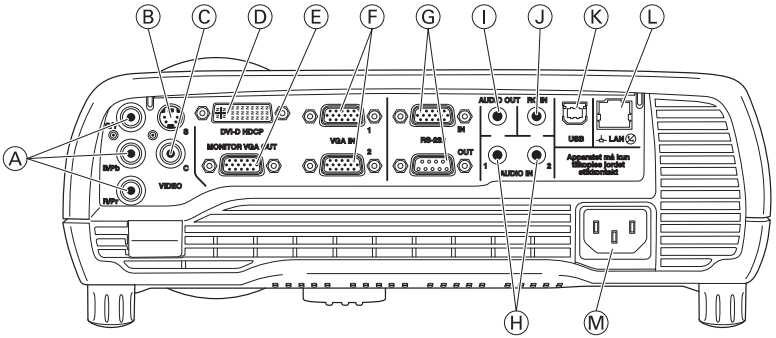
LASER
Activates the built-in laser pointer.
CAUTION! Do not point laser beam at people. Do not stare into laser beam.

ARROW KEYS
Use the four arrow keys as alternatives to the trackball for menu navigation

SELECT
Select option in menu. Same function as LEFT/SELECT above.



CONNECTOR PANEL



A **YPbPr:** Used for high quality video reproduction.

B **S-VIDEO:** Used for improved quality video.

C **C-VIDEO:** Used for standard video quality.

D **DVI-D - Digital RGB:** For a low noise computer and video image.

E **Monitor VGA out:** Allows for connection to local VGA monitor or daisy-chaining of several projectors using VGA. Works with VGA inputs only.

F **VGA - Analog RGB 1-2:** The standard analog computer graphics interface.

G **RS 232 control in-out:** Allows for wired remote control and monitoring of many projector functions used in installation environments. The secondary output connector allows for daisy-chaining, enabling both individual and global control and monitoring of multiple projectors.

H **Audio in 1-2:** Allows for connection of up to two audio sources simultaneously.

I **Audio out:** Connection to external audio system.

J **RC:** Allows connection of external IR receiver or wired remote control.

K **USB - interface:** Allows for computer mouse control.

L **LAN:** Provides access to control and monitoring over a Local Area Network.

M **Mains power connector:** Use only three-prong, grounded power cord.

SET UP VIDEO

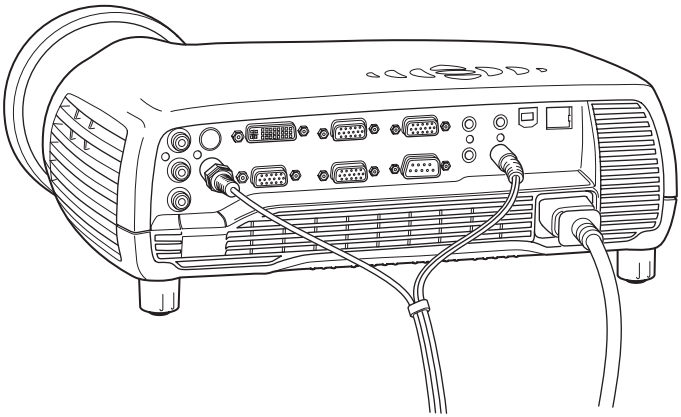
Before setting-up, switch off all equipment.

Three video sources may be connected, using the YPbPr (component), S-VIDEO (super video) and VIDEO (composite video) inputs.

Component video will display more detailed images. Composite video yields images with less detail.

In addition, the DVI-D input can be used with video sources (DVD player fitted with an HDCP™ compliant DVI or HDMI connector) for a pure digital connection.

Connect the power cord.



SETUP COMPUTER

Before setting-up, switch off all equipment.

The projector may be connected to up to three computer sources simultaneously, using the VGA and DVI inputs.

The VGA interface is analog and may cause some noise in the projected image, depending on the signal quality from the VGA graphics card in the computer.

The DVI (Digital Visual Interface) interface is all-digital and will yield a projected image with very low noise.

Connect the USB cable to allow for remote mouse control.

Connect the power cord.

Connect the RS232 interface to allow for individual or global control of multiple units in a daisy chain configuration.

Connect the LAN connector for individual control and monitoring of multiple projectors over LAN.

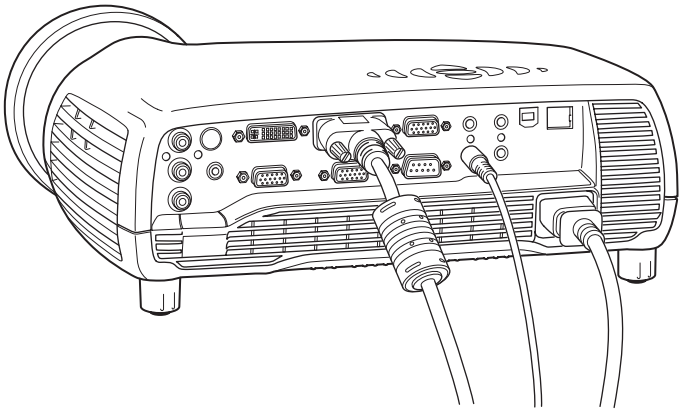
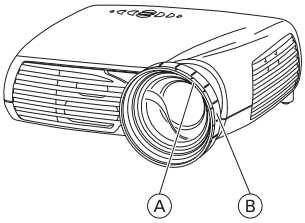
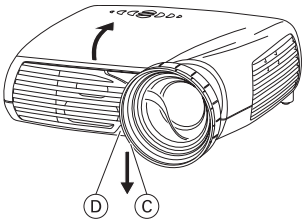


IMAGE ADJUSTMENTS

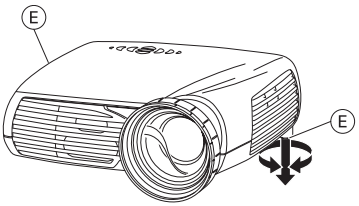
Turn the FOCUS (A) and ZOOM (B) rings on the projection lens to get a correctly sized and focused image. If the desired image size is not achieved by zooming, relocate the unit nearer or farther away from the projection screen and refocus.



To adjust the projected image to the desired height on the screen, eject the front foot (C) by pressing the release button (D), and adjust the angle to the right position. When the image is shifted up, the so-called 'keystone' effect appears as an optical distortion of the image. You may compensate this effect by the KEYSTONE correction control on the keypad or remote control.



To get an image level with the screen, turn the rear feet (E) to the right position.

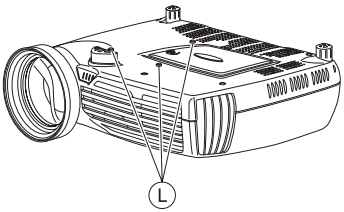


CEILING MOUNT (option)

CEILING MOUNT KIT

Please refer to the "MSP-BAR034" installation instructions included in the ceiling mount kit package.

The projector is provided with 3 threaded inserts (L) to attach the UPA interface bracket of the ceiling mount kit.

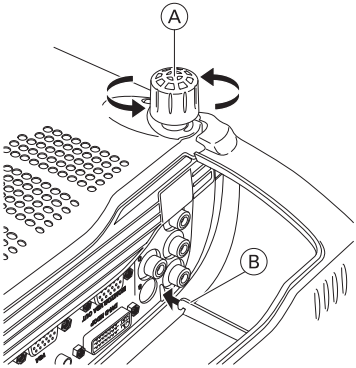


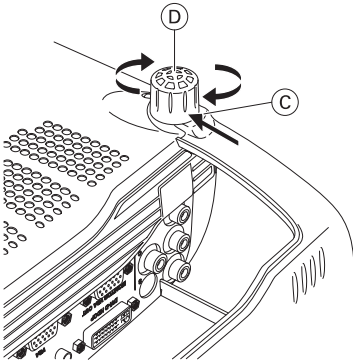
CEILING MOUNT COVER

The auxiliary cable cover can be mounted on the projector to conceal the interface cables and power cord when the unit is ceiling mounted.

Connect all cables and fix them in place before the cable cover is attached to the projector.

1. Loosen the rear adjustable feet by unscrewing them.
2. Align the vertical hooks on the cover with the guides on the rear of the projector.
3. Snap cover in place, with the lower guides clamping the rear feet.
4. Tighten rear feet to fix cable cover in place.


A
B


D
C

USING THE PROJECTOR

After setting-up, switch on all equipment.

To switch the projector on, firmly press the POWER button on the keypad or the remote control. The STATUS indicator will turn from yellow to green when the unit is switched on.

If the STATUS indicator is flashing yellow, please wait until it turns permanent yellow.

When only one source is connected, the projector will auto-detect that source. If more sources are connected, the projector will search for the next active source according to the following list, provided that SOURCE SCAN is set to ON in the SET UP sub menu (see description of menu system):

- VGA 1
- VGA 2
- DVI-D
- Component
- S-Video
- Composite Video

Select between the sources by pressing the SOURCE buttons on the keypad or the remote control. Only sources that are active will be displayed.

If no source is active, searching messages will appear on the screen.

If no source is active for a long time, the projector will go in standby mode if DPMS (power save) is set to ON in the SET UP sub menu. The STATUS indicator will turn from green to flashing yellow, then yellow. The projector will be switched back on if at least one source is (re)activated. The power-down function can be disabled in the menu. See DPMS in the SET UP sub menu.

To switch the projector off, firmly press 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 green to flashing yellow, then yellow when switched off.

You may not switch the unit on while the STATUS indicator is flashing yellow. Please wait until the indicator is permanent yellow.

MENU SYSTEM

The menu system gives access to a multitude of image and system controls. The menu system is structured through a top menu and several sub menus. The sub menus may vary depending on the actual source selected. Also, some functions are not available when the DICOM display curve is selected.

When accessing the menu system, you will enter at the position you left last time you were using the menu system.

Press the MENU key and navigate using the arrow keys on the keypad or the trackball or the arrow keys on the remote control

TOP MENU

picture
Basic picture controls

dynamic
Allows additional control over the projected image.

advanced
Advanced picture controls

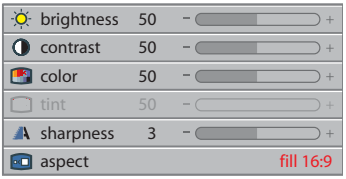
set up
General projector controls

utilities
System controls and information

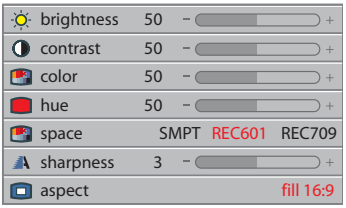
control
RS232 and LAN configurations

PICTURE SUB MENU

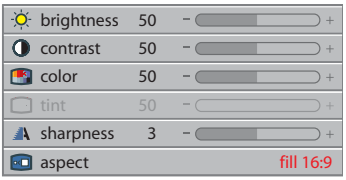
S-VIDEO/COMPOSITE VIDEO



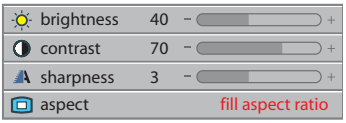
YPbPr (progressive)



YPbPr (interlaced)

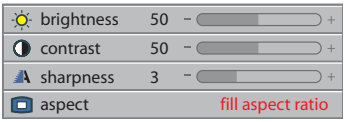


VGA



} Not available in DICOM mode

DVI



} Not available in DICOM mode

brightness

Adjusts the image brightness. A higher setting will increase the brightness, a lower setting will decrease 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

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

tint

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

hue

Controls the color hue

sharpness

Controls the image sharpness. A higher setting will yield a harder image, with less filtering. 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

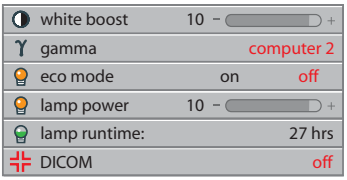
Selects image format. An image may be displayed in various aspect ratios. This function is used when displaying source formats that differ from the projectors native display format.

space

Defines the color standard used for component video so that the image is displayed with the proper characteristics.

DYNAMIC SUB MENU

FOR ALL INPUTS



} Not available in DICOM mode

white boost

Increases the white level of the image for enhanced contrast

gamma

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

eco mode

Reducing lamp power for maximum lamp life and reduced power consumption

lamp power

Allows for continuously adjustable lamp power for easier calibration of multiple-screen set-ups.

lamp runtime

The total time the lamp has been operating since the projector was produced or the lamp was replaced, if the lamp counter was reset after replacement.

DICOM

Allows to select a DICOM display function, which optimizes the projector to the DICOM standard.

You can select from 4 DICOM display functions:

- Clearbase:

  DICOM clearbase color temperature

- Clearbase boost:

  DICOM clearbase color temperature with increased white level

- Full white:

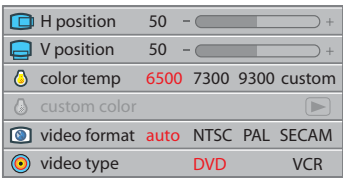
  DICOM native projector white color temperature

- Full white boost:

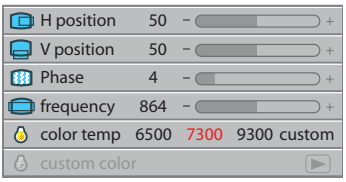
  DICOM native projector white color temperature with increased white level

ADVANCED SUB MENU

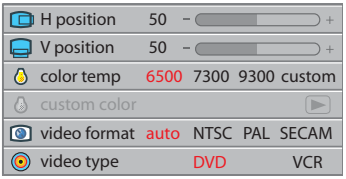
S-VIDEO/COMPOSITE VIDEO



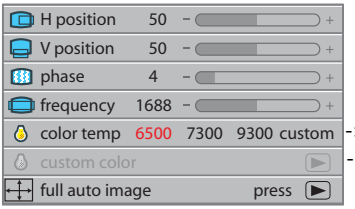
YPbPr (progressive)



YPbPr (interlaced)



VGA



-> Always “custom” in DICOM mode
-> Not available in DICOM mode

DVI

-> Always “custom” in DICOM mode
-> Not available in DICOM mode

h position

Shifts the image sideways.

v position

Shifts the image up and down.

phase

Adjust for stable image. A jittery image may appear with certain VGA sources. You may also press the AUTO button on the keypad or remote control to optimize.

frequency

Adjust image width. An incorrect setting may produce vertical, unstable bands in the image, and parts of the image may not be displayed on screen. Push the AUTO button to find a correct setting, or manually adjust the frequency until the vertical bands disappear.

color temp

Changes the color temperature. A video signal demands a different color temperature than a computer image. A higher setting yields a colder (bluer) image, while a lower setting produces a warmer (more yellow) image.

custom color

Defines custom color temperature. Lets you define your own customized color temperature for your specific application.

video format

Select between manual or auto detection of TV standard.

video type

Select between video types; DVD and VCR. The DVD setting is normally used and will yield well defined video images.

custom brightness

Allows for individual user control of red, green and blue brightness.

custom contrast

Allows for individual user control of red, green and blue contrast.

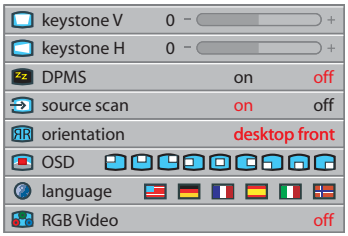
full auto image

Adjusts h and v position, phase and frequency automatically.

Important: you must perform the full auto image function on a good test pattern. Otherwise, the image may not be correctly adjusted. Therefore, to perform the full auto image function correctly, run the **calibration** wizard in the **TheaterWatch** software application.

SET UP SUB MENU

FOR ALL



keystone V

Adjust vertical keystone correction. Compensates for the geometrical distortion of the projected image resulting from tilting the projector to shoot higher up on the wall.

keystone H

Adjust horizontal keystone correction. Compensates for the geometrical distortion of the projected image resulting from shooting the image at an angle sideways on the screen.

DPMS

Activate/deactivate DPMS (Display Power Management Signalling). When DPMS is on, the projector will switch off following the powering off or disconnection of the signal source.

The projector will switch back on when the signal source is reactivated.

source scan

Switches source scan on and off. With source scan on, the projector will search for another source if the current source is disconnected or switched off. With source scan off, the projector will remain at the selected source input even if the source is switched off or disconnected.

orientation

Select between desktop front, desktop rear, ceiling front and ceiling rear mode. The image will be flipped and reversed accordingly.

OSD

Select where to have the On Screen Display

language

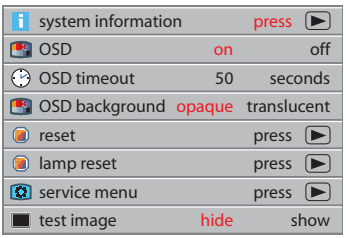
Select between languages

RGB video

Selects RGB video on the component video input (YPbPr). Requires composite sync connected to the composite video input.

UTILITIES SUB MENU

FOR ALL



SYSTEM INFORMATION

system information			
source:	s-video	brightness:	50
format:	576p PAL	contrast:	47
mode:	69	color:	40
software:	0034-01.06	sharpness:	3
lamp remaining:	1999:44	gamma:	film 1
black level:	0	color temp:	6500K
White boost:	0		
MAC:	00-00-00-00-00-00		
IP address:	0.0.0.0		
subnet:	0.0.0.0		
gateway:	0.0.0.0		
TCP port:	0		
UDP port:	0		

information

Displays information about the source and projector status

OSD

Turn the On Screen Display on (display) or off (hide) during source scan.

OSD timeout

Defines how long OSD is displayed after last key action before it disappears from the screen.

OSD background

Select background mode, whether transparent or opaque.

reset

Resets the projector to its basic settings. All parameters available in the various menus are reset to their factory values.

lamp reset

Reset lamp after lamp change. Do not reset lamp counter unless the lamp has been replaced with an original new lamp.

service menu

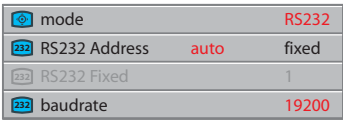
For service personnel only. A special service code is needed to access internal calibration controls and status information. Not accessible to the user.

test image

Applies a fixed test image for set-up purposes

CONTROL SUB MENU

FOR ALL



Mode

Selects between RS232, RIMI (internal) and LAN control modes. The projector can be controlled by only one of the modes at a time.

RS232 address

For use when daisy-chaining several units. Select auto or fixed address. Only one address scheme is allowed per daisy-chain. The auto address is allocated following the relative position in the daisy-chain. The fixed address is an absolute address. Only unique fixed addresses are allowed.

RS232 fixed

Select a unique fixed address in the range available.

baudrate

Selects between baudrates 4800, 9600 and 19200. A lower baudrate may be required in installations with long cable runs.

MOUSE CONTROL

You may control the computer mouse functions using the remote control.

In order to enable this function, connect a USB cable between the computer and the projector. Ensure that the PC has an operating system that supports USB (Windows™ 98 2nd edition or newer).

As long as the menu system on the projector is not activated, the tracker ball on the remote control will now emulate the mouse movements. When the menu system is activated, the tracker ball is used for menu navigation. (See menu system chapter).

Point the remote control directly at the IR receiver in the front or in the rear. Move the mouse pointer by rolling the tracker ball in the direction required. The LEFT key emulates the left mouse key, while the RIGHT key emulates the right mouse key.

The pointer movement may not be as smooth as you are used to with you ordinary mouse, due to the reduced bandwidth of the infrared remote control connection.

RS 232 AND LAN CONTROL

RS 232

You may control and monitor the projector remotely through the serial RS232 control interface.

The RS232 protocol is a binary protocol where each command is a series of 32 bytes in one packet. The protocol allows for both SET and GET operations. To utilize GET operations the host needs a routine for receiving and interpreting incoming packets. SET-operations are used to force the projector into different modes, like setting brightness and contrast, switching between sources, etc.

A separate document “RS-232 and LAN communication protocol and command set” is available that describes the communications parameters and operational codes in detail.

LAN

The projector can be controlled and monitored using through the LAN connector as an alternative to RS232.

LAN control is based on the same command set as RS232.

NOTE! THE PROJECTOR IS CONFIGURED WITH A DEFAULT IP ADDRESS. SEE THE SYSTEM INFORMATION AVAILABLE THROUGH THE MENU SYSTEM OR REMOTE CONTROL FOR THE ACTUAL IP-ADDRESS.

Detailed descriptions of configuration, use and command set is described in a separate document “RS-232 and LAN communication protocol and command set”.

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.

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 LAMP TIME in the UTILITIES sub menu.

Source hibernated: Engage the source to display and active image.

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

Source scan off: Check SOURCE SCAN in the SET UP sub menu. If setting is OFF, the projector will not search for the next active source, but will remain with the current source selected.

DARK IMAGE

Old, worn lamp: The lamp may need replacement. Check the LAMP TIME in the UTILITIES sub menu.

Low BRIGHTNESS and CONTRAST settings: Press AUTO or use the menu system, PICTURE sub menu for CONTRAST and BRIGHTNESS adjustment.

FLICKERING IMAGE

Bad lamp: Replace the lamp. Check the LAMP TIME in the UTILITIES sub menu.

UNSHARP IMAGE

Keystone correction may have been activated inadvertently: compressing parts of the image that affect the display of fine-line graphics, text and other images of high resolution.

Source resolution is different from projectors native resolution: The projector will automatically scale and resize the input format to its native resolution. Use a different scaling factor in the PICTURE sub menu, ASPECT. You may also adjust the SHARPNESS.

MAINTENANCE

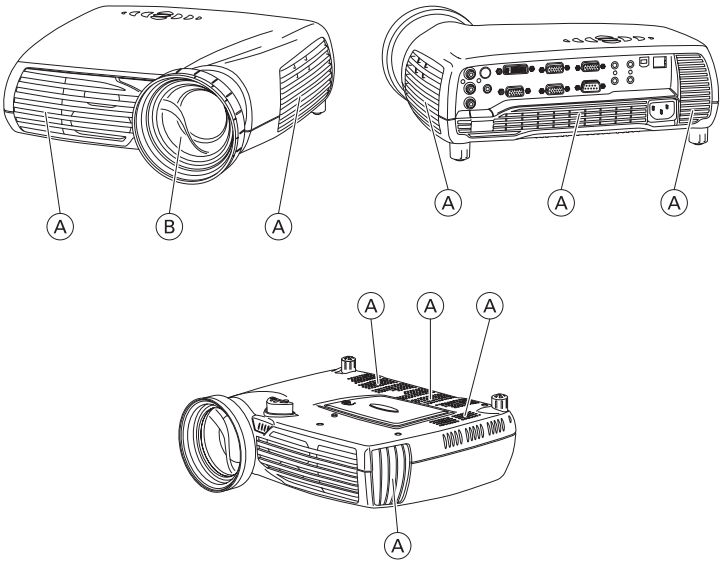
The projector may from time to time need cleaning. Never open the unit, as this will void any warranties. Refer service and repair to qualified personnel only.

The projector is using a lamp that has a limited life time. Please refer to the LAMP CHANGE section below for further details.

Only the exterior of the unit may be cleaned. Use a damp cloth. Make sure no liquids enter the inside of the projector

Vacuum clean all the air vents (A) regularly to maintain sufficient air flow.

The projection lens (B) 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.

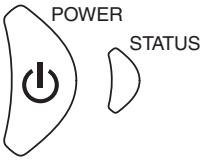


HEAVY DUTY AND CONTINOUS USE

The projector contains moving parts (such as cooling fans) that have limited life-expectancies. When the projector has been used for 7 500 hours, and when the unit is applied to mission-critical use, it is recommended that the projector is given preventive maintenance by a qualified service person. This will help ensure long term stable operation.

LAMP CHANGE

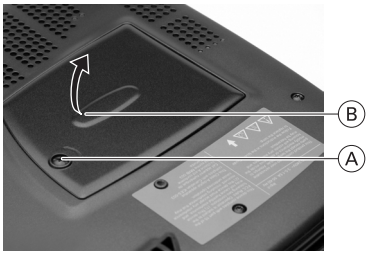
The STATUS lamp on the keypad will turn red when the lamp life expires. In addition, a message will appear on the screen: "LAMP LIFE TIME HAS EXPIRED! Please change lamp!"



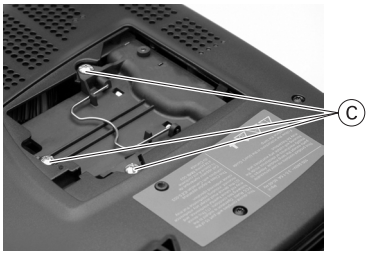
Change the lamp when lifetime expires.
Always replace lamp with the same type and rating.

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

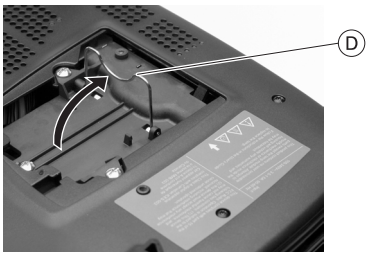
Release the screw (A).
Remove the lamp cover (B).



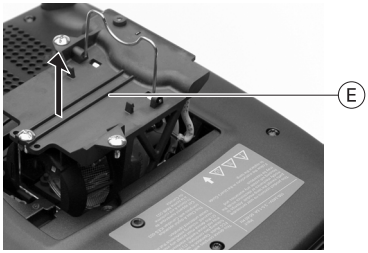
Release the screws on the lamp house (C).



Pull the handle (D).

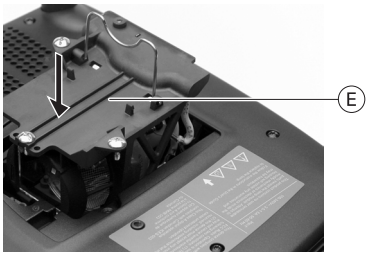


Remove the lamp house (E).

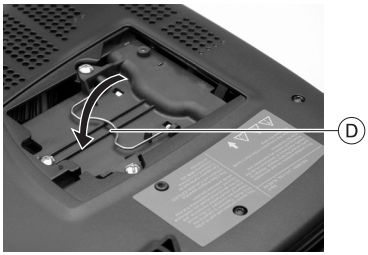


Replace with a new lamp in reverse order.

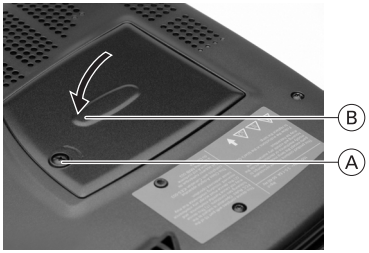
Replace the lamp house (E) and tighten the screws (C).



Fold the handle (D) in place.



Replace the lamp cover (B) and tighten the screw (A).



In the “utilities” sub menu, reset the lamp timer.

system information		press
OSD	on	off
OSD timeout	50	seconds
OSD background	opaque	translucent
reset		press
lamp reset		press
service menu		press
test image	hide	show

WARNING
Be careful not to touch the protective glass when replacing the lamp house, this may cause the protective glass to overheat and break while in use.

SERVICE INFORMATION

This product contains no user serviceable parts.

If the product fails to function as expected, please first check that all connections are properly made, and that the power cord is properly connected.

Please check that the projector as well as the video and computer sources are all switched on.

Cables and cords may break over time. 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.

In the event of product failure, please contact your reseller. You should prepare a description of the symptoms of failure you experience.

Please also state product number and serial number as printed on the label on the bottom of the projector.

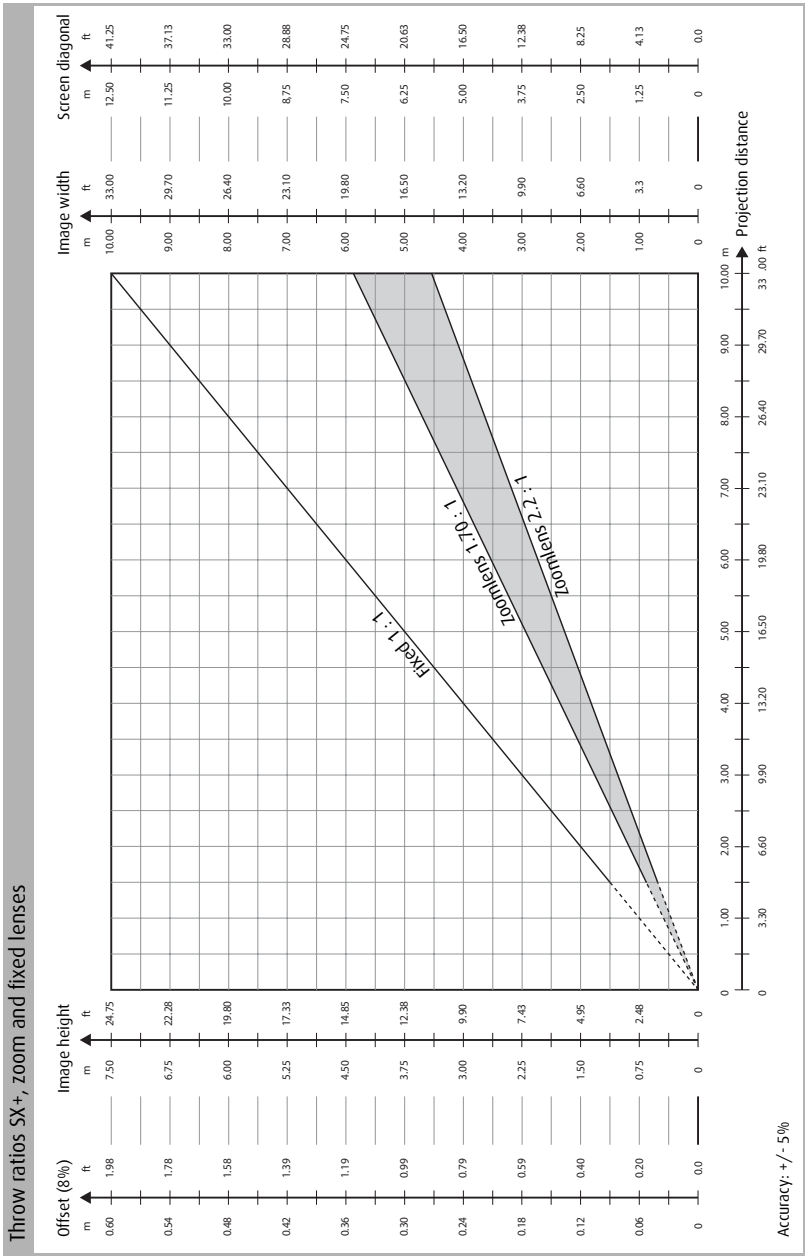
TECHNICAL DATA

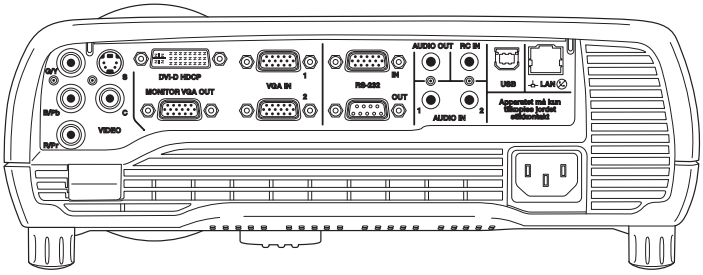
Resolution	1400 x 1050 (native) SXGA+
Display technology	Single chip DLP™ technology by Texas Instruments
Display device	LVDS DMD™ with DarkChip2™ technology
Computer Compatibility	UXGA, SXGA+, SXGA, XGA, SVGA, VGA PC, MAC, SGI and other workstations RGBHV, RGBS, RGsB
Video Compatibility	HDTV (1080i, 720p, 576i/p, 480i/p) NTSC, NTSC 4.43, PAL, PAL-M, PAL-N, SECAM. Faroudja™ de-interlacing with automatic film mode detection (3 : 2 and 2 : 2 pull-down)
Aspect Ratio	4 : 3 (native), 16 : 9 / 5 : 4 (compatible)
Bandwidth	Up to 205 MHz on analog RGB Up to 160 MHz on DVI Up to 75 MHz on component input
Brightness	2500 ANSI lumen (typ), 2200 ANSI lumen (min) @ 250W lamp power*) 2000 ANSI lumen (typ), 1750 ANSI lumen (min) @ ECO-mode 200W lamp power*) *) Initial brightness.
Contrast	2000 : 1 B/W (typ), 1500 : 1 B/W (min)
Zoom lens	f = 33 - 42 F = 2.75 - 3.1 Zoom factor = x 1.25 throw ratio = 1.70 - 2.2 : 1 (distance : width) throw distance = 1.5 m - 10 m / 5 - 33 ft. image width = 0.7 m - 5.7 m / 2.3 - 18.8 ft. offset = 108%
Lamp	250W UHP™ dimmable to 200W

Lamp Life	2000 hrs (typ) to 50% brightness @ 250W 4000 hrs (typ) to 50% brightness @ 200W
Noise level	28 dB (typ), 32 dB (max) @ 20°C/68°F, sea level
Dimensions	244 x 278 x 88 mm / 9.6" x 10.9" x 3.5", excluding lens
Weight	3.4 kg/7.5 lbs
Inputs	2 VGA 15 pin female HD-DSUB analog RGBHV 1 DVI-D female digital RGB 1 Component video female 3 x RCA/phono 1 S-video female 4 pin mini-DIN 1 C-video female RCA/phono 2 Audio 3.5 mm female stereo jack 1 RS 232 9 pin female DSUB (control, firmware update) 1 USB-B female (control, firmware update) 1 LAN RJ-45 female (control, firmware update) 1 Remote Control 3.5 mm female stereo jack
Outputs	1 VGA Monitor 15 pin female HD-DSUB analog RGBHV 1 Audio 3.5 mm female stereo jack 1 RS 232 9 pin male DSUB
Power	90-260 VAC, 50-60 Hz, 350W
Conformance	CE, FCC A, CSA(C,US)
Temperature operating	0-40°C / 32-104°F, 0-1500 m / 0-4950 ft 0-35°C / 32-95°F, 1500-3000 m / 4950-9900 ft
Temperature storage	-20 - 60°C / -4 - 140°F
Humidity operating	20-90% RH, non-condensing

Humidity storage	10-95% RH, non-condensing

Specifications subject to change without prior notice. All values may vary up to +/- 20%.


Throw ratios SX+, zoom and fixed lenses
Offset (8%)
Image height
Image width
Screen diagonal
Projection distance
Fixed 1 : 1
ZoomLens 1.70 : 1
ZoomLens 2.2 : 1
Accuracy: +/- 5%



G/Y	S-Video
PHONO/RCA FEMALE STEM GREEN: G/Y SHIELD: GND	4 PIN MINI DIN FEMALE 1 GND 2 GND 3 Luma 4 Chroma
B/Pb	**Composite Video**
PHONO/RCA FEMALE STEM BLUE: B/Pb SHIELD: GND	PHONO/RCA FEMALE STEM YELLOW: Composite SHIELD: GND
R/Pr	
PHONO/RCA FEMALE STEM RED: R/Pr SHIELD: GND	

Computer DVI	Computer VGA 1
DVI-D	15 HIGH DENSITY DSUB FEMALE
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 NC 9 TMDS Data 1- 10 TMDS Data 1+ 11 TMDS Data 1/3 Shield 12 Not used 13 Not used 14 +5V Power	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
Monitor VGA	**Computer VGA 2**
15 HIGH DENSITY DSUB FEMALE	15 HIGH DENSITY DSUB FEMALE
1 Analog R in 2 Analog G in 3 Analog B in 4 NC 5 AGND 6 Analog R GND in 7 Analog G GND in 8 Analog B GND in 9 Reserved 10 Sync GND in 11 NC 12 NC 13 H Sync in 14 V Sync in 15 NC	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

RS-232 in	RS-232 out
9 PIN DSUB FEMALE 1 NC 2 RXD 3 TXD 4 NC 5 GND 6 NC 7 NC 8 NC	9 PIN DSUB MALE 1 NC 2 TXD 3 RXD 4 NC 5 GND 6 NC 7 NC 8 NC
Audio out	**RC in**
Black 3.5 mm mini jack TIP: R STIM: L RING: GND	3.5 mm stereo mini jack TIP: 5V DC RING: SIGNAL STEM: GND
Audio in 1	**Audio in 1**
Black 3.5 mm mini jack TIP: R STIM: L RING: GND	Black 3.5 mm mini jack TIP: R STIM: L RING: GND
USB	**LAN**
DIGITAL USB 1 VCC 2 -Data 3 +Data 4 GND	1 TX+ 2 TX- 3 RX+ 4 GND 5 GND 6 RX- 7 GND 8 GND

DECLARATIONS

FCC

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

EN 55022 WARNING

This is a Class A product. In a domestic environment it may cause radio interference, in which case the user may be required to take adequate measures. The typical use is in a conference room, meeting room or auditorium.

CANADA

This Class A digital apparatus complies with Canadian ICES-003.

CCet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.