WOLFVISION®

INSTRUCTIONS
BEDIENUNGSANLEITUNG
VZ-9plus³

ENGLISH / DEUTSCH

Check out our Internet Homepage for additional information
www.wolfvision.com/support
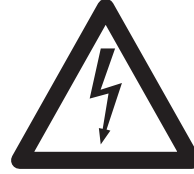
Precautions

WARNING!
Risk of electric shock
Dangerous voltage inside

Please observe the following:

Use this Visualizer only with the correct voltage as shown on the type label !

Do not expose the Visualizer to heat or moisture !

Protect the Visualizer from excessive shocks !

Make sure that sufficient air circulation for cooling the Visualizer is possible (ventilation slots on the lamp housing)!

If there is any abnormality (abnormal noise, smell, smoke etc.) disconnect the Visualizer from mains immediately and contact your Visualizer dealer!

Do not use a damaged power supply / power cord. This may cause short circuits or electrical shocks!

To prevent danger, do not modify the Visualizer or operate without the cover panel firmly in place!

Do not expose the Visualizer to water, metallic objects or any flammable material.

Avoid installing the Visualizer in locations exposed to strong magnetic fields or electrical currents.

Avoid installing the Visualizer in environments where there is radiation. This could cause monitor image distortion or damage to the CCD camera.

Do not pull the plug from the power socket with wet hands!

If the Visualizer is not used for a long time, disconnect it from mains!

The external power supply has to be approved by CSA or UL in accordance to CSA 22.2-60950 or UL 1950. The outputs have to be LPS (limited power source) rated!

Precautions for laser pointer and laser center marker:

Laser light - Do not stare into beam!
Do not modify the laser! Do not view the laser beam with optical instruments!

Information for laser pointer
FDA accession number: 9912688-00
This device complies with 21 CFR 1040.10 and 1040.11

Technical data:
λ = 635 - 680nm
P < 1mW
Θ ≦ 2mrad

This label will be found on the underneath of the remote control.

The laser beam exits the remote control through the smaller (left) opening on the front.
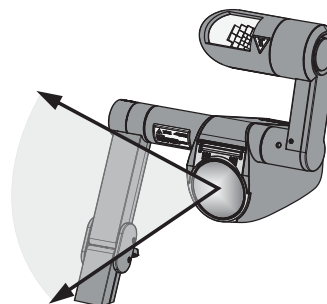
Information for synchronized laser markers

Technical data:
λ = 635nm
P < 1mW
cw/cp = 2 - 28ms

This label will be found on the camera arm.

The laser beam of the centre marker exits the unit through the camera lens.

Approval

Marks on the unit:	

FCC information:

This device complies with part 15 of the FCC rules. Operation is subject to the following two 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.

Information to user:

The user manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This product is built according to Directive EMC and to Directive electrical equipment.
Inspections, tests and evaluation are according to UL 60950. CSA 22.22-60950
Inspections, tests and evaluation are according to the CB-Scheme
Inspections, tests and evaluation are according to the PCT-Scheme

Worldwide Patents

EU 1 483 529	RU 2265284	FR 03 02886
RU 2279602	US 7,035,011	JP 3 096 342
US 7,104,512	TW I 226969	and others
TW I 247964	DE 202 03 785.1	
KR 0576806	AT-U 7841	

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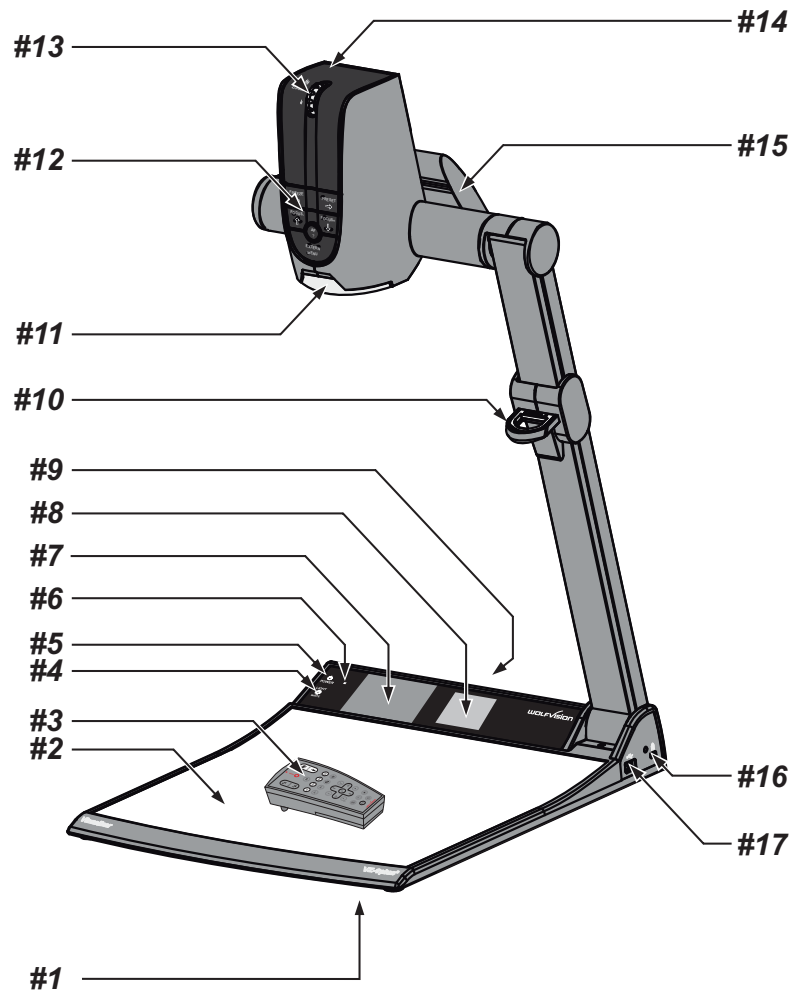Information in this document may change without notice.

Disclaimer: WolfVision shall not be liable for technical or editorial errors or omissions.

The units are "MADE IN EU/AUSTRIA"

Printed in Austria, May 2013

Components of the Visualizer

#1 **Turn Table** / Alternative Antitheft security *(found underneath the unit as shown on page 19)*
#2 **Working surface** *(see page 7)*
#3 **IR-remote control** *(see pages 4, 5 and 18)*
#4 **LIGHT** key *(see page 6)*
#5 **POWER** key *(see page 6)*
#6 **IR-receiver** base
#7 **Preview monitor** *(see page 7)*
#8 **Light field for slides** *(see page 7)*
#9 **Connectors** *(on the back as shown on next page)*
#10 **Pull ring** to lift the arm up/down *(see page 7)*
#11 **Close up lens** for camera *(see page 8)*
#12 **Camera keys** *(see page 6)*
#13 **Zoom wheel** *(see page 6)*
#14 **IR-receiver** camera head
#15 **Light source** *(see page 18)*
#16 Slot for **Kensington lock®** *(see page 19)*
#17 **USB port to Client** (to peripheral devices, for external storage units) *(see pages 11 and 17)*

Connectors *(#9)*
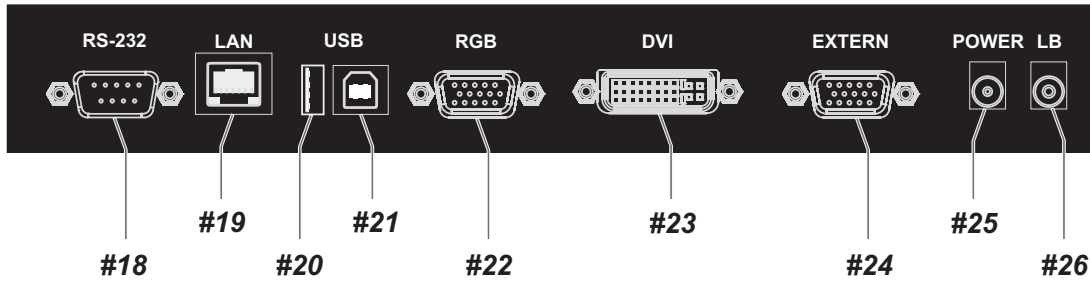
#18   **RS-232** serial control input RS232 *(see page 15)*
#19   **LAN port** 10/100 TBase *(see page 13)*
#20   **USB port to Client** (to peripheral devices, for external storage units) *(see pages 11 and 17)*
#21   **USB-port to Host** (to computer) *(see page 13)*
#22   **RGB** output (15pin) *(see pages 14 and 15)*
#23   **DVI-I** output *(see page 14)*
#24   **External Input** for Computer RGB-signals (15pin) *(see page 15)*
#25   **Power connection** 12V
#26   **DC-output** for lightbox *(see page 17)*

Infrared Remote Control *(#3)*
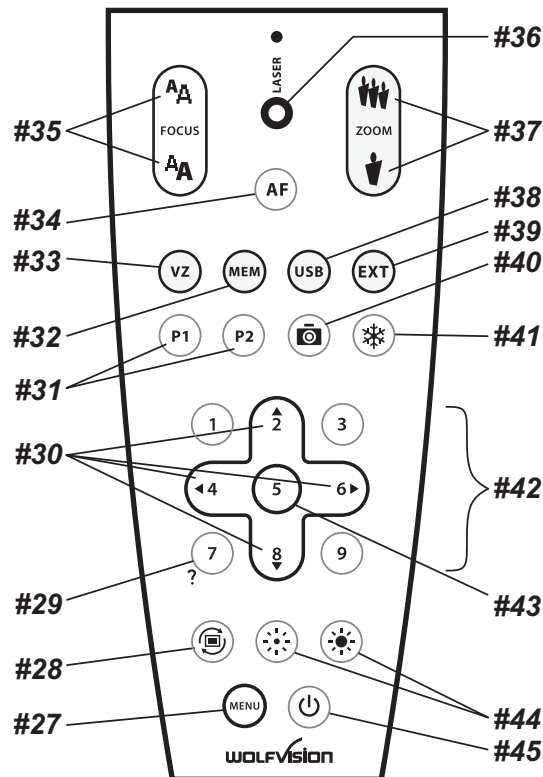
Keys on the IR-Remote Control

#27   MENU key
Pressing MENU key activates the on-screen menu *(see page 16)*.

#28   IMAGE TURN mode key
For picking up vertical (portrait) pages with higher resolution *(see page 12)*.

#29   HELP/RESET key for on-screen menu (double function of MEMORY key No. 7)
While you are in the on-screen menu you can activate the on-screen help by pressing the HELP key. Pressing this key for 2 seconds resets the selected menu item *(see page 16)*.

#30   MENU NAVIGATION keys (double function of MEMORY keys No. 2, 4, 6 and 8)
For navigating through the on-screen menu *(see page 16)*.

#31   PRESET keys (programmable settings)
For storing a preset, press one of the PRESET keys for more than 2 seconds. For recalling a preset, press the PRESET key quickly *(see page 9)*.

#32   MEM key
For displaying all pictures of the internal memory as 3x3 split image *(see page 11)*.

#33   VZ key
For displaying live image of the camera *(see page 11)*.

#34   AUTO FOCUS (AF) key
Pressing this key activates the Auto Focus *(see page 9)*.

#35   Manual FOCUS keys
For focusing the picture *(see page 9)*.

#36   LASER POINTER key
Important: Do not stare directly into the laser beam. This is hazardous for your eyes!

#37   ZOOM keys
Using the ZOOM keys also switches auto iris on again.

#38   USB key
For displaying all pictures of the USB memory as 3x3 split image and to start the View mode *(see page 11)*.

#39   EXT key
Shows the signal of the external input, use the VZ key to display the live image again *(see page 15)*.

#40   SNAPSHOT key
Pressing this key activates the SNAPSHOT function *(see page 11)*.

#41   FREEZE key
Freezes the current image *(see page 10)*.

#42   MEMORY keys 1 - 9
For saving and recalling pictures of the internal memory *(see page 11)*.

#43   ENTER key (double function of MEMORY key No. 5)
Same function as the right Navigation key (MEMORY key No. 6) *(see page 16)*.

#44   Manual IRIS keys (brightness adjustment)
When the IRIS keys are pressed, the Visualizer switches off the auto iris function. The next time the ZOOM keys are used the auto iris is switched on again *(see page 9)*.
For specialists: The behaviour of the iris can be changed in the on-screen menu.
The overall iris level can be changed in the on-screen menu (see page 16).

#45   POWER key
Pressing this key switches the unit on and off.
When switching on the unit, the Visualizer runs the power-on preset.

Different IR Codes

If you want to work with more than one Visualizer in the same room, the units should be set to different infrared codes, in order to control them all individually *(see page 21)*.
The IR code of the unit has to match the code of the remote control.

Keys on the Visualizer

One of the great features of WolfVision's Portable Visualizers is that only the most necessary keys are on the unit itself. Therefore anyone can use it without instructions.
For more experienced users there are some additional functions on the remote control of the Visualizer. Nearly all functions on the remote control can also be controlled through the keys on the camera head:

Base

The POWER and the LIGHT keys are capacitive keys, just touch it to switch (keep key area clear).

#4 LIGHT key
Switches the top light on and off.
It toggles between top light, light field for slides and light off.
In case a external (optional) WolfVision light box is connected, the LIGHT key toggles between top light, external WolfVision light box, light field for slides and light off.
The LIGHT key also works as ONE PUSH WHITE BALANCE key if pressed for 2 seconds *(see page 10)*.
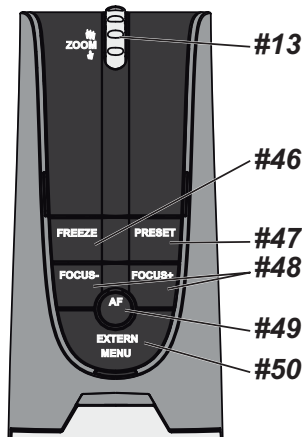*Please note, when activating the slide light field, the Visualizer zooms to slide picture size.*

#5 POWER key
Switches the unit on and off. When switching the unit on the Visualizer automatically runs power-on preset.

Camera Head

Standard mode

Menu mode

#13 ZOOM WHEEL
Turn the wheel down to zoom in (TELE), and up to zoom out (WIDE). The more you turn the ZOOM WHEEL, the faster the zooming works. Using the ZOOM keys (wheel) also switches auto iris on again.

#46 FREEZE key / *menu: select key - left*
Freezes the current image. The FREEZE light indicates if the FREEZE-mode is activated.
When on-screen menu is activated, it works as select key (see page 16).

#47 PRESET key / *menu: select key - right*
For storing the preset, press the PRESET key for more than 2 seconds. For recalling the preset, press the PRESET key quickly *(see page 9)*.
When on-screen menu is activated, it works as select key (see page 16).

#48 Manual FOCUS keys / *menu: navigation key - up and down*
When the Manual FOCUS keys are pressed the Visualizer switches off the autofocus function.
Using the AF-key switches the autofocus function on again *(see page 9)*.
When the on-screen menu is activated, it functions as navigation keys (see page 16).

#49 AUTO FOCUS (AF) key / *menu: help key*
Switches the auto focus on and off. The AF light indicates if the AF is switched on *(see page 9)*.
When on-screen menu is activated, it functions as Help key. Pressing this key for 2 seconds resets the selected menu item (see page 16).
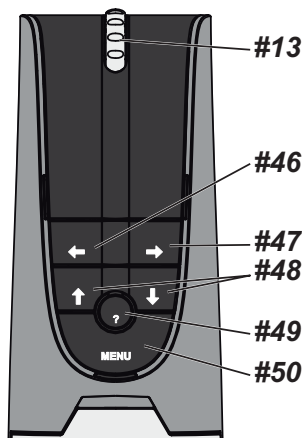
#50 EXTERN key / *menu key*
Switches between Visualizer image and external input *(for more details - see page 15)*.
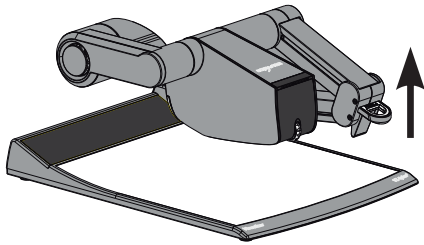The EXTERN light indicates that a signal from the external input is shown.
Pressing this key for 2 second activates the on-screen menu (see page 16).

Setting Up the Visualizer

1. Connect the power pack to the power-input *(#25)*.
2. Connect your display device (projector, monitor, video conferencing unit etc.) to the appropriate output of the Visualizer *(#19, #21, #22 or #23)*.

> **IMPORTANT:**
> For choosing the right output please read the detailed description on page 14!

3. Using the pull pad *(#10)* only to lift the arm upwards. Camera head and light automatically move into the working position. The VZ-9plus³ is switched on automatically. (Alternative the Visualizer can be switched on by touching the POWER key.)

> **IMPORTANT:**
> To fold the Visualizer, use pull pad only *(#10)*!

Power-on preset:
The power-on preset is automatically activated when switching on the unit.
The settings are: zoom size: approx. 20 x 15 cm (DIN A5), autofocus: on, auto iris: on.
As soon as the Power Indication LED stays green illuminated, you can start working with the Visualizer.
The behavior of the unit once the power has been supplied or after the POWER key has been pressed can be changed in the unit's on-screen menu *(see page 16)*.

Working Surface

The working surface of the Visualizer *(#2)* has a special crystalline white color, which is especially designed for perfect reproduction of transparencies.
In the following cases, an optional lightbox is recommended:
  - If the transparency is very dark
  - If the transparency is very wavy and causes reflections
  - If the room light causes reflections on a transparency
The optional whiteboard foil can be used for direct annotation with special whiteboard markers. WolfVision offers spare whiteboard foils.
More information at **www.wolfvision.com** /Products/Accessories

Positioning on the working surface

Monitor
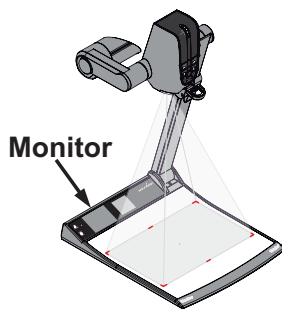
The synchronized laser markers makes positioning of objects very easy by marking the corners of the picked-up image on the working surface. The laser center marker zooms synchronous to the camera zoom and shows the 16:9 pick-up size of the camera.

Additionally the built-in LCD monitor eliminates the need for an extra control monitor. This monitor can show different signals, like stored-images or life-image (selectable in the on-screen menu - *see page 16*). The on-screen menu is also visible on this LCD monitor.
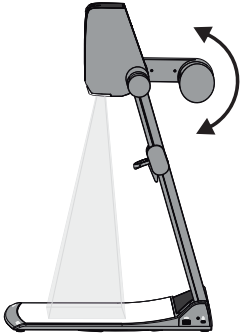
Picking-up Slides
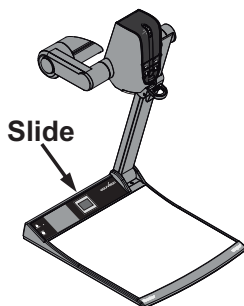
Slide

Place the slide onto the built-in light field, turn the camera head until the slide is in the middle of the recorded image and switch on the back light by touching twice the LIGHT key *(#4)*. The camera zooms the slide automatically in. The camera automatically focuses on the slide.
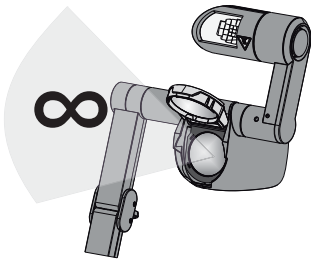
Shooting Area on the Working Surface

Eliminating reflections
In order to eliminate reflections (on high gloss photographs etc.) just turn the light upwards or downwards slightly (default position is horizontal).
It is also possible to move the document and rotate the camera head to the center of the desired pick-up area to eliminate reflections.
The curvature of the working plate is special designed to eliminate reflections.

Please note that reflections can also be caused by general room lighting conditions.

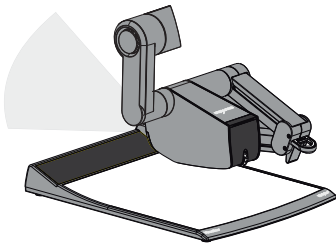## Shooting Area Outside of the Working Surface

Close-up adaptor lens
For shooting an object outside of the working surface, the close up lens *(#11)* has to be tipped up. It is impossible to remove the lens completely from the unit and therefore it can not get lost.
When using the Visualizer to again record on the working surface, put the close up lens back to its original position.
The camera can be tilted by 290° (110° to the speaker and 180° to the audience).

Turning the light / flexible viewing angle
In order to enable recordings with illumination outside of the working surface, the light of the Visualizer can be turned vertically.
To record at a lower viewing angle than the normal working position, just fold the arm of the Visualizer as much as required, turn the camera head and the light to pick up the desired object.
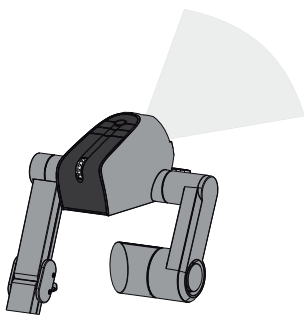
Image Flip
By turning the camera head to record in front of the Visualizer, the image will automatically be turned 180 degrees ("image flip"). This feature is very useful for recording the face of the presenter or objects hanging on the wall behind the unit.
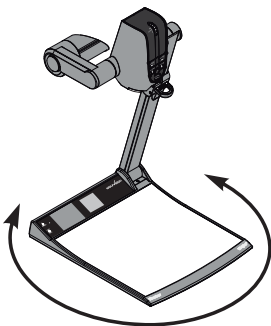
Turntable
The turntable of the Visualizer allows for horizontal pan shots when using the Visualizer as a camera to record outside of the working surface. It is also very useful when two people, sitting on the same table, alternately work with the unit.
When the unit is delivered, the turntable is unlocked
(see page 19 to lock the turn table).

Focusing / Autofocus

Please note that objects with very low contrast (like blank sheet of paper) are difficult to focus. If the autofocus does not work just move the object slightly.

For special applications the autofocus can also be switched off using the on/off switch *(#34 or #49).* The autofocus is also switched off when the manual FOCUS keys *(#35 or #48)* are used.

Digital Zoom

Please note that the Visualizer has an **optical 16x zoom.** The digital 4x zoom increases the overall zoom range to a **64x zoom**. The smallest pickup size on the working surface without digital zoom is 25 x 19mm (1" x 0.8"). When you zoom in further the digital zoom is automatically activated and the smallest pickup size is **6 x 4mm (0.23" x 0.16")**. However please be aware that when the digital zoom is used, the resolution of the picture is not as good as before. The default setting displays a message on-screen when you are in the digital zoom mode.
Still pictures in the memory can also be digitally zoomed.
You can change the behavior of the Visualizer in the digital zoom mode in the on-screen menu (see page 16).

Auto Iris / Manual Iris

WolfVision Visualizers are equipped with an auto iris. This means that the brightness of the camera image adjusts automatically. Using the IRIS keys *(#44)* the auto iris function is switched off. In this mode the Iris can be adjusted manually.
When using the ZOOM keys *(#37)* or ZOOM wheel *(#13)* the auto iris function is switched on again.
The standard auto iris level can be set brighter or darker in the unit's on-screen menu. When picking up areas with bright spot, Back Light Compensation can be switched on in the unit's on-screen menu - see page 16 and on-screen help.

Preset Function

The Visualizer offers the possibility to store the current settings as a Preset and recall them by just pressing the respective PRESET key *(#31)* on the remote control.
Preset 1 can be controlled with the PRESET key on the camera head *(#47)*.

For storing a preset: adjust any function as required and then press any one of the PRESET keys for 2 seconds or more. An on-screen message will inform you when the Preset is stored.

As mentioned above, when presets are stored all current settings such as zoom, focus, iris etc. are also stored. Contrary to this, a user also has the opportunity to assign specific functions such as "TEXT", "LIGHT", "NEGATIVE", "NEGATIVE/BLUE", "BLACK/WHITE", "FREEZE" etc. to a PRESET key in the on-screen menu of the Visualizer *(see page 16).*

Text Mode

For improving the readability of text, sketches or x-rays, the text mode can be activated by pressing the assigned PRESET key *(TEXT)*.
This mode enhances the contrast of the picture. Please note that the colors are now **darker than usual**. To switch off the text enhancement mode, press the assigned PRESET key *(TEXT)* again. When the text enhancement mode is in use, the message "TEXT" is permanetly displayed on the built-in LCD monitor.
This should remind the user to switch off the text mode when it is no longer required. It should also prevent users trying to correct dark colors by opening the iris, resulting in a poorly adjusted picture.

White Balance Adjustment

Correct white balance adjustment is important for an exact color reproduction!
Each time the lighting condition changes, the Visualizer's camera must readjust its white balance, in order to optimize the color reproduction. The lighting condition (color temperature) changes, for example, if changing between the Visualizer's light and an external lightbox (bottom light) or if the room light is turning on or off.

The standard setting of the Visualizer is "**Auto Tracking**" white balance. This means that the white balance is continuously adjusted automatically.

For an exact white balance, at least 10% of the recorded image should be white.
For a precise fixed white balance adjustment use the "One Push" white balance. This can be done by pressing the LIGHT key *(#4)* (or assigned PRESET key) for 2 seconds. When the white balance is stored an on-screen message appears. Setting a "One Push" white balance switches off the "Auto Tracking" mode (when the unit is switched off and on again the "Auto Tracking" mode will be reactivated).

Normally there is no need for a manual white balance adjustment. However, if the colors on the screen still appear to be wrong, the white balance can be adjusted manually (one-push):

Hints to perform a One-Push white balance:
Top light:
   Zoom in on a white object (i.e. a sheet of paper) until there is only white on the screen and press the LIGHT key for 2 seconds.

Lightbox with transparencies:
   Turn off the light of the Visualizer with the assigned PRESET key and switch on the lightbox. Remove everything from the light box, zoom to the smallest picture size until there is only white on the screen and press the LIGHT key for 2 seconds.

Lightbox with x-rays:
   Turn off the light of the Visualizer and switch on the lightbox. Place an x-ray on the light box, zoom out until the whole x-ray is picked up and press the LIGHT key for 2 seconds.

Please note: False colors can also be due to wrong color settings of your projector or monitor. It is recommended to adjust the white balance of the Visualizer at first and if the results are still not satisfactory, the monitor or projector should be checked.

*For specialists: The Visualizer can be switched between "**Auto Tracking**", "**One Push**" and "**Manual**" white balance mode in the on-screen menu (see page 16). If you work with negative transparencies and a light box, use a blank (black in the image) part of the negative film for white balance adjustment! The "one Push" white balance will be separately adjusted and stored for top light, slide box and external light box.*

Freeze / Live to Freeze Comparison (two display devices)

The current image can be captured by pressing the FREEZE key *(#41 or #46)*. The FREEZE LED is illuminated green when the freeze function is activated.
The DVI- and RGB outputs of the Visualizer can be set to output different signals. This can be used for a "Live Picture to Freeze Picture Comparison" on two monitors or screens with just one Visualizer.
While one monitor or screen displays a "freeze" image that can be used for comparison, another monitor or screen can be used for presenting the live image from the Visualizer.
The settings of the FREEZE function can be changed in the on-screen menu (see page 16).

Internal Image Memory

You can store 9 images in the internal memory and recall them by just pressing the respective numerical key on the remote control quickly.
Storing an image: Press the desired MEMORY key *(#42)* for at least 2 seconds
Recalling an image: Press the respective MEMORY key *(#42)* quickly

The internal memory can be erased or filled automatically in the on-screen menu of the view mode (MEM key #32). Still pictures in the memory can also be digitally zoomed with the zoom keys/wheel.
The functional settings of memory erasing can be changed in the on-screen menu (manually or automatically on every power-on).
The built-in memory can be extended by an external USB storage device like an USB stick. Please note, the USB storage device can be connected to the the USB port on the connector panel #20 or on the side of the unit #17, but not on both at the same time.

Snapshot

Built-in Memory (external storage device not connected)
By pressing the SNAPSHOT key *(#40)* the current image is stored in the next free memory. When all 9 memory locations are full, a message appears on the screen "Memory FULL!", "Hold SNAPSHOT to erase oldest". By keeping the SNAPSHOT key pressed for 2 seconds, the memory Overwrite Mode will be activated. The stored pictures can be overwritten by pressing the SNAPSHOT key quickly. The Memory **Overwrite Mode** can be deactivated by keeping the SNAPSHOT key pressed for 2 seconds or by switching off the unit.

External storage device connected
By pressing the SNAPSHOT key *(#40)* the current image is be stored on the USB device and a message appears on the screen. The stored images are in JPG format and can be edited / viewed on a computer.
All pictures are stored with date and time stamp.
The properties of the USB functions can be changed in the on-screen menu (Advanced Settings - USB Stick Settings), like default picture folder (document directory) and the file names ("WV" and consecutively numbered).

View Mode

Split image of 9 picture memory

To start the VIEW mode press the MEM key *(#32)* for the internal memory or the USB key *(#38)* for the USB storage. A split image with 3x3 stored pictures will be displayed. Additionally a status line with picture information is shown on top of the screen. Pressing the VZ key *(#33)* returns to the camera live image temporarily. The presentation will stay at the last shown picture, to continue use the MEM or USB key.
To select one of the currently displayed pictures move the colored frame with the NAVIGATION keys and confirm it with the ENTER key. Use MEMORY keys 4/6 to show the previous/next picture. Use the ENTER key to return to the 3x3 view.

To scroll to the previous or next 3x3 image split screen, use the MEMORY keys 1/3.

Use the MENU key for storage organization like changing currently used folder (temporarily, for permanent change enter the on-screen menu Advanced Settings / USB Stick Settings - *see page 16*), creating or deleting folders, moving pictures from one folder to another, deleting pictures, formatting the connected USB storage device and to start the Slideshow (automatic Presentation, USB-stick only) mode.

When the Slideshow is started, all pictures from the selected folder are shown with a pre-defined changing interval (5s to 100s). The Slideshow can be aborted by using the MENU key.

Still pictures of the memory can also be digitally zoomed with the zoom keys/wheel. The current shown area can be moved with the outer MEMORY keys. The MEMORY key 5 (ENTER key) returns to 100% zoom ratio.
Pictures from the internal memory are shown with a red frame and pictures from the USB storage device with a blue frame.
Please note, the available functions are limited when no USB storage device is connected.
Please note, formatting the USB storage device will delete all data.
Supported file systems are FAT16 and FAT32. Supported picture file format is JPG format.

Image Turn Mode (for higher resolution)

Working surface:

Output picture:

Normal mode:
Only 50% of the pixels are used to pick up the document

Image turn mode:
90% of the pixels are used to pick up the document
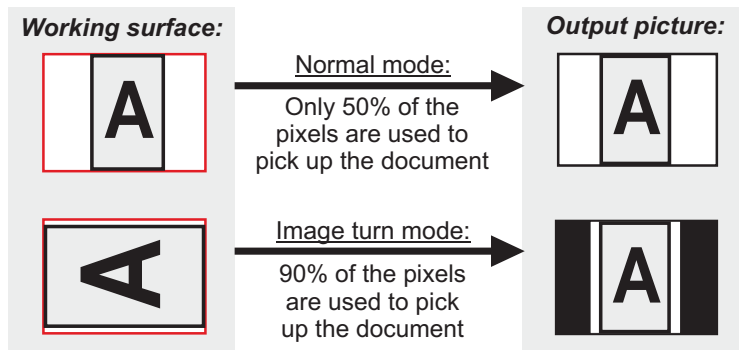
Picking up a complete vertical (portrait) document or A4 page has always been a critical issue for a Visualizer because the image was always picked up in a horizontal (landscape) format. The camera could only use 50% of its pixels to pick up a vertical (portrait) page. WolfVision's "**Image turn**" mode solves this problem.

Just place your document (or other vertical object) on the working surface horizontally and zoom in on it completely, so that approx. 90% of the pixels of the built-in camera are used to pick up the document, then press the IMAGE TURN key *(#28)*. The Visualizer turns the picture electronically 90º and outputs it correctly with a **much higher resolution** than in normal mode. The left and right margins will be black.

Built-in Digital Scaler (for Extern-in and USB-Stick)

The Visualizer has a built-in digital image scaler which can process the signal from the external input and output it in the same mode as the Visualizer image (For example: If the Visualizer is set to output an SXGA image to the projector and the computer outputs an XGA signal, the scaler of the Visualizer converts the XGA image of the computer to SXGA. As a result the projector does not readjust the input mode when switching between the Visualizer and computer image).

In addition images on a connected USB-stick are automatically scaled to the current output mode of the Visualizer.
The output resolution of the Visualizer can be changed in the on-screen menu (see page 16).

Integrated Seamless Switch

The Visualizer has an integrated Seamless Switch.
This allows for a seamless transition (fade-over/dissolve effect) when switching between the Visualizer image, the image from the external input, the internal image memory of the Visualizer and images on an USB-stick. This feature makes switching from one media to the other appear very smooth and professional.
The behavior of the Visualizer can be changed in the on-screen menu (see page 16).

Picture in Picture (PiP)

The Picture in Picture Mode offers the possibility to show two different pictures at the same time on one screen. Just press the assigned PRESET key *(PiP Mode)* to activate the Picture in Picture mode. The current picture (i.e. external signal, image memory) will be shown in the lower left corner and the live image will be shown in the upper right corner. The size of the live image is much bigger.

The content of the live image can be changed i.e. by recalling a stored image memory.

Following comparisons are possible: Extern-In, image memory, live image. The content from the small image is frozen, except when the signal from the Extern-In is shown.

USB Device Port (to the computer)

The USB device port can be used for direct connections between the Visualizer and a computer. This way, a Visualizer can be controlled and can be used as a scanner for 3-dimensional objects. Images in JPG, TIF or BMP format can be taken in a fraction of a second - much faster than with a desktop scanner.

WolfVision's USB Software (Connectivity Software) works under Windows 2000, XP, Vista and 7 (32 and 64-bit) as well as Apple Macintosh. It is fully TWAIN/WIA compatible. This is important when using Visualizers in connection with graphic programs such as Photoshop, or for connecting them to Interactive Whiteboards (Smart Boards).

The fast USB 2.0 port can also output live motion. WolfVision's Connectivity Software can store AVI files and includes a video capture driver. You can view and save the live image from the Visualizer on your computer in almost every modern video editing software.

Please download the latest version of the WolfVision Connectivity Software from:
www.wolfvision.com/support.

Pictures which are stored with the WolfVision Connectivity Software includes EXIF data, if file format JPG or TIFF is used. Included data are:

Manufacturer = WolfVision
Visualizer model (inclusive serial number) = i.e. VZ-9plus-3 (00103701)
Firmware version = i.e. V1.22b
Date and time of create = i.e. 2012-03-15 11:06:29 (yyyy-mm-dd hh:mm:ss)

Please note, the computer can be connected on the USB-plug on the connector panel #20 or on the side #17, but not on both at the same time.

Ethernet / LAN Port   10BASE-T/100Base-TX

The LAN port *(#19)* makes the Visualizer a part of the internal computer network and it can be used for communication over the Internet, if it is assigned an official (WAN) IP address.

Administrators of a larger number of Visualizers can use the LAN port to control, support and update all of their units from their local desktop PC.

The list of applications for the Visualizers LAN port is constantly increasing. It can be used for controlling, capturing still images, viewing live video streams, firmware updates, adjustments, menu settings and maintenance purposes.

The following protocols are supported: TCP/IP, IGMP, UDP and ARP.
Supported (tested) internet browsers are: Internet Explorer, Netscape Navigator and Mozilla/Firefox.
By default, DHCP is activated to receive all network settings automatically.
Possible image transfer resolution up to SXGA- (1280x960).

In order to prevent unauthorized users from logging into the Visualizer over the network, it is possible to set administrator and user passwords. The transmission of the passwords over LAN is encrypted with Md5.

The Visualizer offers streaming of live images in UDP Multicast/Unicast and TCP Singlecast mode.
Technical Background: UDP Multicast works like a broadcast - many clients are watching the same video stream. In Multicast mode the bandwidth is always the same, no matter how many computers are connected. However as many routers do not support Multicast, UDP Unicast can be used instead for point-to-point connection (one client is possible).
In TCP Singlecast mode each computer opens a separate connection to the Visualizer, which requires a lot of bandwidth if many clients are connected (max. 64 clients are possible).

Please check the separate description of "Built-In WebServer" on our internet homepage at:
www.wolfvision.com/support *(or on the supplied CD-Rom).*

For full functionality JAVA version 1.6.0 or higher is necessary.
For full functionality following ports are necessary: 50915, 50913, 8800 and 8801 (by default).

DVI/RGB Output   Choosing the Correct Output Mode

The DVI and RGB outputs *(#22 and #23)* can output signals in following formats:

- VGA   (4:3 - 640x480 pixels) at 60Hz
- SVGA   (4:3 - 800x600 pixels) at 60Hz
- XGA   (4:3 - 1024x768 pixels) at 60Hz
- **SXGA-**   **(4:3 - 1280x960 pixels) at 60Hz**   **- native resolution**
- SXGA   (5:4 - 1280x1024 pixels) at 60Hz
- SXGA+   (4:3 - 1400x1050 pixels) at 60Hz
- UXGA   (4:3 - 1600x1200 pixels) at 60Hz
- **WXGA***   **(16:10 Widescreen - 1280x800 pixels) at 60Hz**   **- native resolution**
- WXGA   (16:9 Widescreen - 1360x768 pixels) at 60Hz
- WXGA+   (16:10 Widescreen - 1440x900 pixels) at 60Hz
- WSXGA+ (16:10 Widescreen - 1680x1050 pixels) at 60Hz
- **720p**   **(16:9 Widescreen HD - 1280x720 pixels) at 50Hz or 60Hz**   **- native resolution**
- 1080p   (16:9 Widescreen HD - 1920x1080 pixels) at 30Hz, 50Hz or 60Hz
- WUXGA (16:10 Widescreen - 1920x1200 pixels) at 60Hz

The "**Auto resolution**" function is activated by default. In this mode the Visualizer continuously checks which devices are connected to the RGB *(#22)* and DVI output *(#23)* and automatically sets the optimal output mode for each connected device separately. Please note that the Visualizer can <u>not</u> check the possible resolution, if the connected units or the cables* are not "Plug and Play" compatible. If the Visualizer can not detect the resolution of the connected device, the output is set to the default of SXGA-/60Hz.
(*Cables with plug and play compatibility must have a 15-pin plug on both ends with all pins connected).

If you can not use the "Auto resolution" function, you can select the output mode manually in the on-screen menu of the Visualizer *(see page 16)*.

In order to achieve the best picture quality you must set the outputs of the Visualizer to match the <u>native</u> resolution of your display unit (e.g. LCD or DLP projector or monitor).
<u>Important</u>: What matters is the <u>native</u> resolution of the projector or monitor, <u>not</u> the maximum resolution that it can display (in compressed mode). The <u>native</u> resolution is the actual number of pixels of the built-in LCD display or DLP chip of a projector or monitor. Most LCD or DLP projectors can also display higher resolutions than their native resolution, but only in compressed mode and with inferior picture quality.
Do NOT set the output of the Visualizer to a higher standard than the <u>native</u> resolution of your display unit!
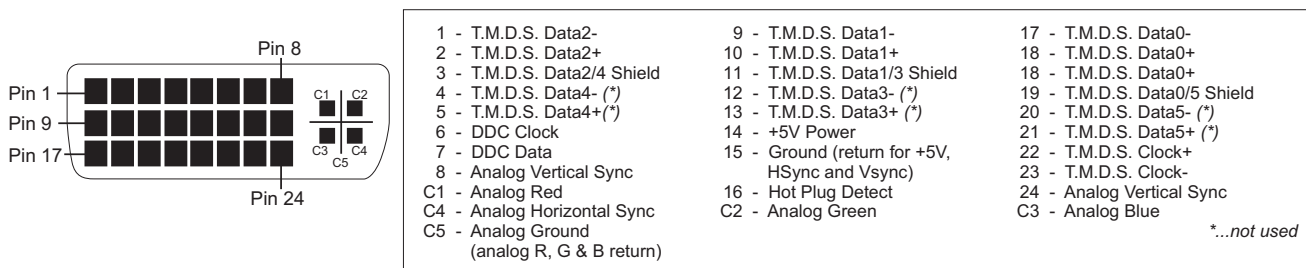
Do not set a higher refresh rate than your monitor or projector can display, otherwise the monitor or projector can be damaged!
Follow the instructions in the user manual of the connected units.

Please note, if 4:3 and 16:9 or 16:10 resolutions are used simultaneously, the 4:3 display shows black bars on top and bottom. This is necessary to ensure that all displays show the same image content.
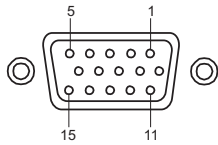
DVI-I Port

The DVI Port *(#23)* supplies the digital and analog signal - DVI-I.

Pin 8

Pin 1
Pin 9
Pin 17

Pin 24

C1   C2
C3   C4
C5

1 - T.M.D.S. Data2-	9 - T.M.D.S. Data1-	17 - T.M.D.S. Data0-
2 - T.M.D.S. Data2+	10 - T.M.D.S. Data1+	18 - T.M.D.S. Data0+
3 - T.M.D.S. Data2/4 Shield	11 - T.M.D.S. Data1/3 Shield	18 - T.M.D.S. Data0+
4 - T.M.D.S. Data4- *(*)*	12 - T.M.D.S. Data3- *(*)*	19 - T.M.D.S. Data0/5 Shield
5 - T.M.D.S. Data4+*(*)*	13 - T.M.D.S. Data3+ *(*)*	20 - T.M.D.S. Data5- *(*)*
6 - DDC Clock	14 - +5V Power	21 - T.M.D.S. Data5+ *(*)*
7 - DDC Data	15 - Ground (return for +5V,	22 - T.M.D.S. Clock+
8 - Analog Vertical Sync	HSync and Vsync)	23 - T.M.D.S. Clock-
C1 - Analog Red	16 - Hot Plug Detect	24 - Analog Vertical Sync
C4 - Analog Horizontal Sync	C2 - Analog Green	C3 - Analog Blue
C5 - Analog Ground		**...not used*
(analog R, G & B return)		

RGB Port

The EXTERN input *(#24)* has the same pin assignment as the RGB output *(#22)*.

15-pin D-Sub HD
connector female
(front side, unit)

1 - Analog Red video	6 - Red return	11 - N/C Not connected
2 - Analog Green video	7 - Green return	12 - SDA I²C data
3 - Analog Blue video	8 - Blue return	13 - HSync Horizontal sync
4 - N/C Not connected	9 - SENSE +5 V DC from Visualizer	14 - VSync Vertical sync
5 - GND Ground	10 - GND Ground (VSync, DDC)	15 - SCL I²C clock

The output level on VGA and Preview output can be adjusted to match exactly 700mV. This can be helpful to balance different image brightness i.e. when using external input.
For exact adjustment, please use external measurement equipment.
Range: 85% to 100% *(on-screen extra menu - see page 16)*

External Input - EXTERN

A computer can be connected to the **External RGB input** *(#24)* of the Visualizer. By pressing the **EXTERN** key *(#39 or #50)* the Visualizer displays the signal from the external input to the audience. To switch back to the live image of the Visualizer use the EXTERN key *(#50)* on the camera head or the VZ key *(#33)* on the remote control.
The Visualizer can be used for a "Live Picture to External Picture Comparison" on two monitors or beamers. While one monitor or beamer displays the signal of the external source and the other displays the live image of the Visualizer.
The settings of the Visualizer can be changed in the on-screen menu (see page 16).

The Visualizer has a built-in A/D-converter in order to digitize the analog RGB signal from the computer and output it on the RGB and DVI outputs in the selected signal format.

Preferred resolution is: SXGA- (1280x960) @60Hz

Supported resolutions from VGA (640x480@60Hz) to WXGA+ (1440x900@60Hz) with several resolutions and refresh rates in this range.

Following data are provided:
Plug & Play Monitor VESA DDC
Monitor name: "WolfVision"
Video Input Definition: Analog at 0.7Vpp and separated synchronization signals
Vertical range limits: 48Hz - 86Hz
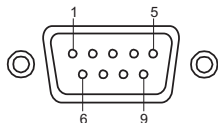Horizontal range limits: 30kHz - 121kHz
Maximum pixel clock: 170MHz
Gamma: 2.2
Preferred resolution: SXGA- (1280x960) @60Hz

RS-232, Serial Control Input

The serial port *(#18)* can be used to control the Visualizer through an external device, such as a room control system that is used to integrate conference rooms.

9-pin D-Sub connector
on unit male
(front side)

Pins: 2: RX, 3: TX, 5: GND
Baud Rate: 9200, 19200, 38400, 57600 or 115200 (selectable)
               databits: 8, stopbit: 1, parity: no

The baud rate can be changed in the on-screen extra menu by keeping pressed the menu key until it appears *(see page 16)*.

The complete serial protocol can be found on our internet website under: **www.wolfvision.com/support**

The following chapter is for experienced users only:
ON-SCREEN MENU / ON-SCREEN HELP

For regular use of the WolfVision Visualizer, it is <u>not</u> necessary to go into the Visualizer's menu and change settings. Inexperienced users should <u>not</u> make any adjustments here.

To enter the on-screen menu press the MENU key *(#27 or #50; when using the key on the camera head, keep it pressed until the menu appears)*. Settings of the Visualizer's basic functions and the built-in camera can be made here using the navigation keys on the camera head *(#46, #47 and #48)* or the 4 SELECT keys on the remote control *(=the numerical keys with arrows #42)*.

If more information on a function in the on-screen menu is required*,* set the cursor in the respective line and press the HELP / ? key *(#29 or #49).* A detailed description of this function appears on the screen.
If you want to **reset** the selected item to the default setting, press the HELP key for 2 seconds*.*

By pressing the MENU key for 2 seconds (camera head: 4 seconds) the Extra Menu appears.
In the Extra Menu, settings like baud rate can be changed.

The functions of the on-screen menu are not described in detail in this user manual as the help menu is an integrated part of the Visualizer's software (firmware). The information you see on your screen always belongs to the current Visualizer firmware.

Changing the Color Settings

If the picture on your screen appear to be too light or too dark or the color saturation is not correct, you can change the Color Mode in the on-screen menu (Color Settings). Pre-settings are PRESENTATION (higher color saturation), NATURAL (sRGB) and VIDEO CONF (for video conferencing systems).
Alternative Gamma and Saturation can be changed manually.

Switching to Negative, Negative/Blue and Black/White

The output image of the Visualizers can be switched from positive to negative in the on-screen menu. In addition, the background of a negative image can be switched to blue for better readability of text. You can also switch between color or black and white in the on-screen menu.

<u>TIP</u>: If you often switch to negative, negative/blue or black/white images you can assign this function to one of the Preset keys in the on-screen menu.

Auto Power-off

In the "Power Control" settings of the on-screen menu you can select that the Visualizer will be automatically switched off after a certain amount of time.

Preset Settings

In the "Preset Settings" the Preset keys can be assigned specific functions such as "NEGATIVE/BLUE", BLACK/WHITE", "LIGHT", "PiP", "TEXT", etc.

RESET OF ON-SCREEN MENU SETTINGS

All settings in the on-screen menu can be set back to the factory defaults. "Recall Default Settings" is one item in the on-screen menu *(alternatively, the menu can be reset by keep pressed both FOCUS keys an the camera head (#47) simultaneously with the MEMORY 4 key on the remote control (#30))*.
If you only want to reset the item that is currently selected to the default setting, press the HELP key *(#29 or #49)* for 2 seconds!

Device information und Firmware version

Open „Device Info" in the sub menu „Advanced Settings" to view details of the unit.

Saving Visualizer Settings onto a USB-Stick

The Visualizer offers the opportunity to save menu settings and preset settings onto a USB stick (USB storage device) as an XML file.
Change the settings to the desired values and store it on the USB stick (in the on-screen menu, Advanced Settings / USB Stick Settings).
When you connect the USB stick with the prepared XML-file, an on-screen message will pop-up.
As soon as the USB-stick is removed, the previous settings are restored.
The settings of the Visualizer can be changed in the on-screen menu (see page 16).

External WolfVision Lightboxes (optional)

Connect the power cord of the WolfVision lightbox to the lightbox connector *(#26)* on the back of the Visualizer. The LIGHT key *(#4)* of the Visualizer can now be used to switch between the light of the Visualizer and the light of the WolfVision lightbox.
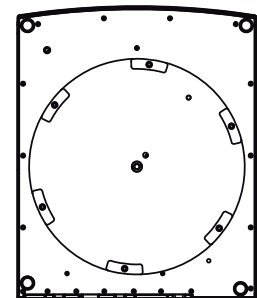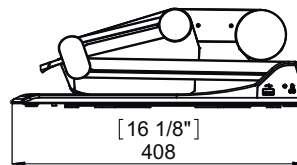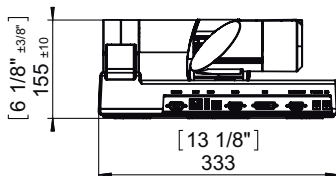Touching the LIGHT key twice to activate the light box.

When using a lightbox with a separate power supply be sure that the light of the Visualizer is switched off to prevent reflections.

## Dimensions
working position:
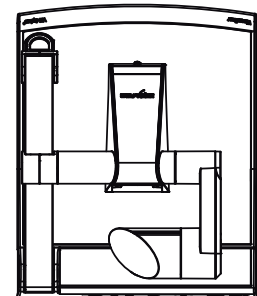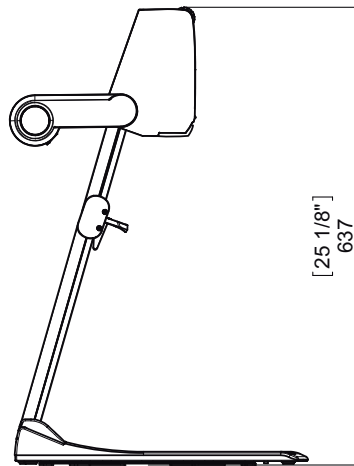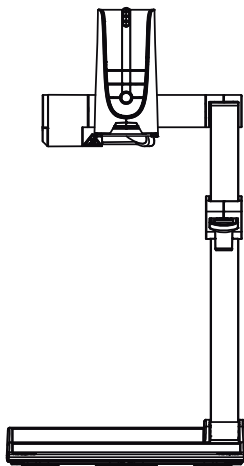
closed:

Technical Specifications are Subject to Change!

17

MAINTENANCE

Changing the Lamp of the Visualizer

1. Remove the power cord of the Visualizer
2. Remove the lamp cover by turning then pulling the case
   CAUTION HOT - **ALLOW THE UNIT TO COOL DOWN!**
   (>60°C / 140°F)!
3. Lift the security ring
4. Change the lamp
   Place the new lamp very carefully into the socket
5. Mount the lamp cover in reverse order (pt. 3-1).
   Check position of lightning arm (click-stop device).

Lamp type: Halogen lamp 12V/50W at 5000 h average burning life.
inclusive heat shield and security ring.
WolfVision part no.: 102440
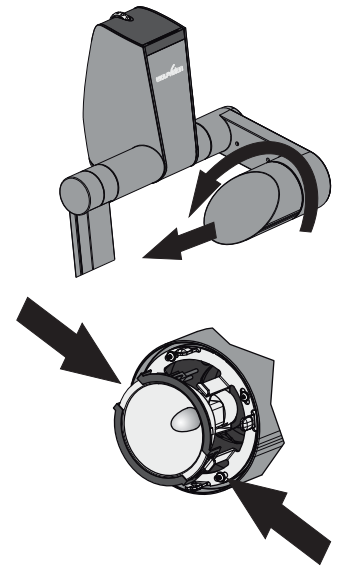
Cleaning

Cabinet: Clean the cabinet by gently wiping it with a soft, lint free cloth.
Lenses: Clean the lenses by gently wiping with a soft, lint free cloth (do not use a paper tissue!). Clean by breathing on the lens to create moisture then wipe with a lint free cloth (If need be, use a special optical cleaner only!).

WARNING:
Never use strong cleaning agents such as acetone or benzene!
These substances can damage the surface and the anti-reflex coating!


Infrared Remote Control

Please note that an infrared remote control can only be used up to a certain distance from the unit. Objects situated between the Visualizer and the infrared remote control, and weak batteries, interfere with reception.

If the Visualizer can only be controlled from a close distance, or if it cannot be controlled at all with the infrared remote control, you may have to change the batteries.
Open the cover on the back of the remote control and replace the two 1.5 V AA batteries with new ones.
Check the polarity of the batteries!
Recycle the batteries!
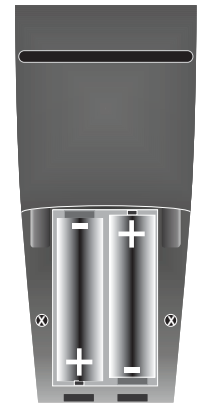
back (open)

Firmware Upgrades

The software (firmware) of your Visualizer (including the on-screen HELP) can easily be upgraded to the latest version. The firmware update can be done via USB, Ethernet (LAN) or RS232.
Firmware update files can be downloaded for free at **www.wolfvision.com/support**. Updates via USB or Ethernet/LAN can be made with the WolfVision Connectivity Software, updates via RS232 can be made with WolfVision's Firmware Update Utility. Both tools can also be found under the same link as the firmware files.

Thermostat

If the unit gets too hot (improper ventilation, or air extraction or too high ambient temperature) a built in thermal sensor will switch off the light of the Visualizer.
Verify that proper ventilation and air extraction is available and allow the unit to cool!
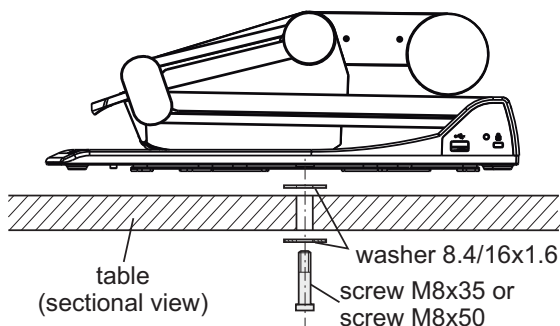The rotation speed of the blower is temperature controlled.

Anti-theft device 1: T-bar lock

The Visualizer can be fixed with a security cable T-bar lock (Kensington® Lock), so that it **can not be stolen**. Follow the instructions from the cable lock manual.

slot for lock
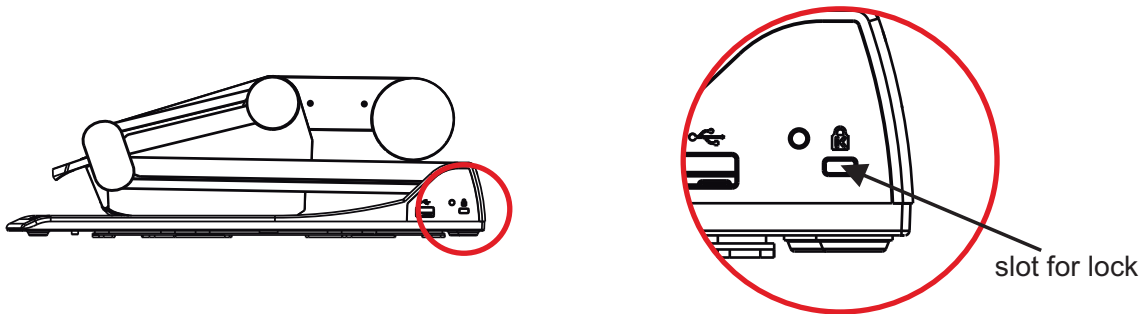
Anti-theft device 2: table lock bolt

washer 8.4/16x1.6

table
(sectional view)

screw M8x35 or
screw M8x50

The Visualizer can also be fixed onto a table with the supplied table lock bolt in order to minimize the risk of theft.
Please note that the usable depth of thread is 8mm, do not screw in more than this.
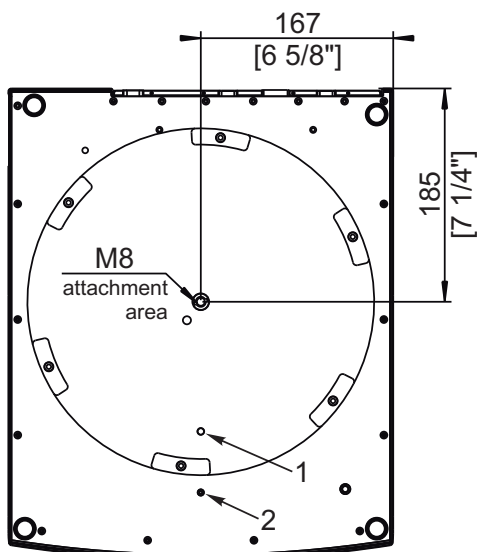Supplied accessories:

1x Screw M8x35	(101686)
1x Screw M8x50	(101687)
2x Washer 8.4/16x1.6	(100527)
1x Assembly instructions VZ-9plus³	(103259)

Turntable

167
[6 5/8"]

185
[7 1/4"]

M8
attachment
area

1

2

Lock Turntable
Remove the screw from the hole position 2 and insert it into the specific hole position 1 (the turntable might have to be turned until the thread is visible).
Use an Allen screw driver (size 2,5mm).

Technical Data

Camera / Technology (Signal format)	1-CCD 1/3" Progressive Scan Camera
Pictures per second (as picked up by the camera)	30 frames
Effective Pixel	1280 x 960 (=1,228,800)
Total pixels of CCD	1,315,648
Pixels processed per second (=effective pixels x frames per second)	36,864,000
Color reproduction (sRGB color precision)	very good colors
Native signal output	SXGA- (1280x960) / WXGA* (1280x800) / HD 720p (1280x720)
Output signals (native and scaled)	WUXGA / 1050p HD / 720p HD / WSXGA+ / WXGA+ / WXGA / WXGA* / UXGA / SXGA+ / SXGA / SXGA- / XGA / SVGA / VGA (switchable), LAN, USB 2.0
Resolution (measured)	820 lines
Resolution in Image Turn mode (measured)	1050 lines
Image Turn mode (for increased resolution when picking up complete portrait pages)	yes / 90°, 180° and 270°
Vertical image-frequency (depending on resolution)	Progressive Scan: 30Hz, 50Hz and 60Hz (switchable)
Iris / Shutter / Gain	automatic / manual / flickerless (Shutter)
White balance adjustment	automatic and manual
Autofocus / Manual Focus	yes (continuously working high speed) / yes
Text enhancement function (for colored text)	yes
Live to Freeze comparison	yes
On-screen menu and on-screen help	yes
Upgradeable firmware	yes, via USB, serial (RS232) or Ethernet/LAN
Lens / Zoom	64x zoom (16x optical + 4x digital), zoom wheel with multiple speed
Max. object height on working surface	230mm (9.6") in tele position, 370mm (15") in wide position
Max. pick-up area on working surface	300mm x 400mm (11.81" x 15.75")
Max. pick-up area on working surface in Image Turn mode	400mm x 300mm (15.75" x 11.81")
Min. pick-up area on working surface	25mm x 19mm (0.98" x 0.75") / with digital zoom: 6mm x 4mm (0.23" x 0.16")
Max. pick-up area outside of working surface	unlimited
Depth of focus on small object (42 x 33 mm)	10mm (0.4")
Depth of focus on large object (360 x 270 mm)	260mm (10.2")
Reflection free area on working surface	whole working surface
Recordings outside of the working surface	yes (to the back and to the front of the unit)
Image flip	yes (for recordings to the front of the unit)
Disturbing stray light / blinding of audience or speaker	none
Light source	halogen spot light with diffuser, 270 degrees - vertical rotation, average lamp lifetime 5,000 hours (50W, 12V)
Software for image capture and controlling	included (for 32- and 64-bit Windows and Macintosh, Twain/WIA compatible with Video Capture Driver)
User programmable presets	3
Special working surface for transparencies	yes
Bottom light (12V output)	optional external light boxes LB-9 and LB-38 (output switchable)
Slide pick-up	with built-in slide light field
External computer input / Input switch	yes (15-pin D-Sub plug), can also be output through DVI
Image memory (built-in memory)	9 pictures, 1 image freeze
"VIEW" function (displays pictures of current memory as split image)	yes
Alternative Image display	negative image / negative-blue image / black and white image
RGB (=data RGB) output	15-pin D-Sub-plug
DVI output / HDMI output	DVI-I (analog and digital) / when using a DVI-HDMI cable
USB port / standard	USB 2.0, host and client
RS232 port and serial protocol with position setting and status report	yes, 9-pin Sub-D plug
Ethernet (LAN) port	yes, IP-addressable, 10/100 Mbps
Preview monitor (LCD)	yes, 70mm x 45mm (2.7" x 1.8") VGA resolution
Synchronized laser markes	yes, synchronized to camera zoom (laser class 2M)
Dimensions in operation (L x W x H)	408mm x 333mm x 637mm (16.1" x 13.1" x 25.1")
Dimensions folded (L x W x H)	408mm x 333mm x 155mm (16.1" x 13.1" x 6.1")
Weight	6.5kg (14.3lbs)
Infrared remote control	yes (with laserpointer, laser class 2)
Anti-theft device	yes, T-Lock (Kensington Lock®) and table lock bolt
Voltage input / Power consumption (external power pack)	multi range 100 - 240 VAC at 80W (LPS), weight: 0.3kg (0.6lbs)
Operating Temperature / Relative Humidity	0°C - 40°C (32°F - 104°F) / 40 - 60%rel (no-condensation)
Warranty	5 years
Made in	Austria (European Union)

Please note: Due to technical improvements all specifications are subject to change!