The professional WolfVision Visualizer technology:

How it works:

A light projector (1) inside the unit projects a light field (7) the same size as the pick-up area of the built-in camera via the base mirror (5) and the top mirror (6) onto the working surface. The image is recorded by the camera (2) using the same path.

The lenses of the light projector (1) and the camera (2) are synchronized. Thus the size of the light field on the working surface changes when the user changes the zoom range of the camera.

This patented WolfVision scanning and illuminating system offers a number of unique advantages as described in this brochure.

Easy positioning (with synchronized light field)

A light field, the size of the pick-up area of the built-in camera is projected onto the working surface. The illuminated part of the working surface is always identical to the pick-up area of the camera. When zooming in and out, the size of this lightfield changes accordingly.

This allows very easy positioning of objects. There is no need to look at a monitor. Just place the object in the illuminated portion of the working surface!
Excellent picture quality

**VZ-17** VZ-37 - The "Video" Visualizers

PAL or NTSC video is the "classic" technology which has always been used for Visualizers or document cameras.

"Video" based Visualizers sell at a lower price than the new "Progressive Scan" Visualizers and have the advantage that they can show motion in even better quality. This is because they pick up 50 (=PAL) or 60 (=NTSC) half-images (=fields) per second in interfaced mode.

WolfVision's 3-CCD Visualizer VZ-37 offers the maximum picture quality which can be achieved with the "video" technology. A resolution of 800 horizontal- and 420 (PAL) or 370 (NTSC) vertical lines, absolutely lifelike colors, a true RGBS output and even a component output (YUV). This is true broadcast quality.

The Visualizer VZ-17 provides great picture quality - unmatched in the 1-CCD "video" category. 470 horizontal- and 400 (PAL) or 350 (NTSC) vertical lines and perfect color saturation.

**VZ-27** VZ-57 - The "Progressive Scan" Visualizers

Modern data projectors provide the ability to display higher resolution images using its "data" input instead of its "video" input. This is where "Progressive scan" cameras come in. They output a "data" signal with more resolution than PAL/NTSC "video" could provide. Especially the vertical resolution is no longer limited by the PAL/NTSC standard at 350-420 lines.

WolfVision's Progressive Scan Visualizers can output the image in either SVGA, XGA or SXGA mode on RGBHV and DVI outputs.

The image is output with 75Hz, which is important for flicker free viewing, even with CRT monitors or projectors. The image can also be switched to 60Hz for special applications.

"Motion" used to be the weakness of Progressive Scan cameras. Until recently they could only pick up 7.5 (or less) pictures per second. This resulted in a disturbing strobe effect on the screen, whenever something was moved in the picture or when adjusting zoom or iris.

As it is very important for a professional presentation that motion can be shown in good quality and without any image disturbance. WolfVision uses newly developed Progressive Scan CCDs which can pick up 25 (VZ-57) and 20 (VZ-27) pictures per second. As a result motion looks almost as good as with PAL/NTSC "video" cameras. But the resolution is much higher!

In addition to its Progressive Scan outputs the VZ-57 and VZ-27 also output converted PAL and NTSC video signals.

The VZ-57 is the new "high end" unit on the market. It has a built-in 3-CCD camera with 800 horizontal- and 575 vertical lines resolution and 100% lifelike colors.

"Image turn" mode for higher resolution (*VZ-27* and *VZ-57*)

Picking up a complete vertical (portrait) letter or A4 page has always been a critical issue for a video camera based system, because the image is always picked up in a horizontal (landscape) format. Progressive Scan cameras handle this task much better, because of the improved resolution.

But the ultimate tool to pick up a full page is WolfVision's new "Image turn" mode. A user can place a letter on the working surface horizontally and zoom in on it completely, so that about 90% of the pixels of the built-in camera are used to pick up the letter. The picture is then turned electronically 90° and output the right way up with 40% higher resolution than in normal mode. The left and right margins are black.

Nine Picture memory / USB output / Input switch (*VZ-27* and *VZ-57*)

With the Visualizers VZ-57 and VZ-27 a user can store 9 images and recall them by just pressing one of the numerical keys on the infrared remote control.

By pressing the "All" key a split image with all 9 pictures of the memory can be displayed.

The USB output of the VZ-57 and VZ-27 can be used to transfer Visualizer images onto a computer. No additional computer hardware (like a grabber card) is required. In this way the Visualizers can be used as a 3-D scanner for your computer.

A Computer can also be connected to the RGBHV (VGA) input of the Visualizer. With the Ext/Int switch a user can switch between the Visualizer and computer image to be displayed to the audience.
**High end components**

It's a common misunderstanding that the number of pixels of the CCD chip says everything about the resolution of a Visualizer (or any camera). Because if a cheap lens or bad electronics would be used, the resolution visible on the projection screen would be much lower than the built-in CCD could provide.

Only a combination of high quality components as used in all professional WolfVision's Visualizers can produce a high-resolution picture on your screen.

Especially WolfVision's professional telezoom camera lenses are of superior quality and allow the CCD to really “see” the pixels it is supposed to pick-up.

Check out the exceptional edge focus of these lenses!

**Depth of focus (depth of field)**

WolfVision uses professional telezoom lenses (without close-up adapter lenses) for the professional Visualizer series. Together with the perfect lighting, this results in a superior depth of focus - even with big enlargements.

The greatest depth of focus for objects on the working surface is:

- 250mm (9.8") in wide position
  - pickup area: 360 x 270mm (14.2" x 10.6")

- 70mm (2.8") in tele position (without macro)
  - pickup area: 42 x 32mm (1.6" x 1.3")

Due to the great depth of focus, an autofocus function is not necessary, as it is usually not necessary to adjust the focus.

**Shadow free illumination**

As the camera and the light projector are situated side by side within the unit and follow the same path, shadows are almost completely eliminated.

During a presentation it is very often necessary to write something on a document on the working surface or to point to a certain detail with a finger or a pencil.

The professional WolfVision Visualizers are perfectly suited for this, as there is practically no shadow covering up important details.

**Illumination of hollow objects / No light adjustments**

Due to the special light system of WolfVision's professional Visualizers, every part of the recorded picture is always perfectly illuminated.

Hollow objects or complex 3-D objects are always completely illuminated - even on the inside.

As a result there is never a need for adjustment of the light.
With WolfVision’s professional Visualizers, recording outside the working surface can be done very quickly and easily by just tilting the top mirror. Recording is possible at any distance from the unit. In this way, a WolfVision Visualizer works just like a camera on a tripod.

Even the zoom range outside of the working surface is the same as with most professional video cameras. This feature is very important for picking up objects which are too large to be placed on the working surface or which need to be shown from the side.

As the light of WolfVision's professional Visualizers is projected precisely onto the working surface and the light source is not visible, there is absolutely no stray light from the Visualizer. This is very important for video projection. A WolfVision Visualizer can even be placed directly beside or in front of the screen without disturbing the projection. Furthermore neither the audience nor the speaker will be blinded by the Visualizer's light.

WolfVision’s camera electronics produce a very strong and stable picture, which is very important when a Visualizer is used as a document camera for videoconferencing systems. The even lighting, smooth autoiris and perfect focus are very important features, enabling video conferencing systems to digitize and transfer the picture from a WolfVision Visualizer much faster than pictures from other document cameras. Furthermore there is no blinding stray light from a WolfVision Visualizer, which could disturb the autoiris of the room camera.

Of course these features are equally important for live image presentations with a video/data projector and for other Visualizer applications.
Motorized arm and top mirror (for scrolling)

By the push of one button, the motorized arm of the Professional Visualizers can be moved up and down automatically.

The top mirror is also motorized. This allows for scrolling text in a document or showing an object in detail by just pressing the up/down keys on the infrared remote control from anywhere in the room.

12 x optical zoom / macro position / 24 x zoom (with digital zoom)

The motorized arm of the professional Visualizers offers the possibility of increasing the zoom range from an optical 8.5 times zoom to an optical 12 times zoom.

In the fully extended position of the arm, the largest pick-up area is 360 x 270mm (14.4" x 10.8") and the smallest pick-up area is 42 x 33mm (1.6" x 1.3").

When the macro function is activated the length of the arm is automatically reduced, which allows for picking up objects as small as 30 x 22mm (1.2" x 0.9").

In other words: Objects as small as a coin or as large as an open book can be picked up in full size on the working surface.

The Visualizers VZ-57 and VZ-27 have an additional 2x digital zoom extension in the macro mode. When the digital zoom is activated the smallest picture is 15 x 11mm (0.6" x 0.5"). This increases the whole zoom range to a 24x zoom.

Very large built-in bottom light / special surface for transparencies

Normal transparencies:

As on WolfVision's previous Visualizer models the working surface has a special crystalline white color. This is perfect for true color reproduction of transparencies with the Visualizer's top light.

Slides, x-rays and darker transparencies:

For these objects the new professional Visualizer models are equipped with a very large built-in bottom-light. The size is: 380 x 280 mm (15" x 11") - this is the whole working surface. Furthermore, in certain situations the bottom light can be the better solution for transparencies (reflecting room light or very dark or wavy transparencies).

Laser center marker (VZ-57, VZ-37 and VZ-17)

One of the main advantages of WolfVision's professional Visualizers has always been the synchronized lightfield which marks the pickup area of the built-in camera.

However this function is not available when the bottom light or the macro function of the new Visualizers are used.

As a substitute, the VZ-57, VZ-37 and VZ-17 are equipped with a laser pointer which marks the center of the pick-up area. By means of a special technique this laser pointer dot is NOT visible on the picture the audience sees.
Text enhancement (in color)

WolfVision's text enhancement function can be found on all four professional Visualizer models.

By pressing the "TEXT" button, the contrast of the picture is improved dramatically, resulting in much better readability of text, sketches and x-rays.

This contrast enhancement is utilized without losing the color of the picture.

Intelligent control panel / Infrared remote control

Intelligent control panel
With the Visualizer's intelligent control panel it is extremely easy to control the unit - even for non experienced users. Every key is equipped with a light and only the functions which are available in the current operation mode are illuminated.

Infrared remote control
The most frequently used functions of the unit can also be controlled with its infrared remote control. After use it can be stored in a drawer above the working surface.

Other features:

Professional serial input (RS232) for external control
(including position setting and status report)

User programmable presets
(for zoom, focus, iris, light, vertical scrolling position, camera settings etc.)

Image on / off switch
(for all outputs, except Preview output for control monitor)

Constant sync signal on all outputs
(no image distortion when switching the image on and off)

Intelligent automatic lamp changer
(built-in spare lamp is automatically activated if the first lamp fails. An on-screen warning message indicates if a bulb is faulty)

Halogen light
(with constant light spectrum, for true color reproduction)

Lamp lifetime enhancement circuit and temperature management

Remote service and software updates can be made through RS232 (through modem / internet in preparation)

Flicker-free scanning of monitors with a different image frequency possible
(VZ-37 and VZ-57)

Positive/Negative switch
(VZ-27, VZ-37 and VZ-57)

Black/White switch
(VZ-27 and VZ-57)

On-screen menu for basic settings of the unit
(plus professional camera settings on VZ-37 and VZ-57)

On-screen help

Dimensions:
### Technical data:

<table>
<thead>
<tr>
<th></th>
<th>VZ-57</th>
<th>VZ-37</th>
<th>VZ-27</th>
<th>VZ-17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Camera</strong></td>
<td>1/3&quot; 3-CCD Progressive Scan</td>
<td>1/3&quot; 3-CCD Video</td>
<td>1/3&quot; 1-CCD Progressive Scan</td>
<td>1/2&quot; 1-CCD Video</td>
</tr>
<tr>
<td><strong>Output signals</strong></td>
<td>SXGA, XGA, SVGA, PAL, NTSC, DVI, USB</td>
<td>PAL or NTSC</td>
<td>SXGA, XGA, SVGA, PAL, NTSC, DVI, USB</td>
<td>PAL or NTSC</td>
</tr>
<tr>
<td><strong>Pictures per second</strong></td>
<td>(as picked up by the camera)</td>
<td>25</td>
<td>PAL: 50 half-pictures / NTSC: 60 half-pictures</td>
<td>PAL: 50 half-pictures / NTSC: 60 half-pictures</td>
</tr>
<tr>
<td><strong>Horizontal resolution</strong></td>
<td>800 lines</td>
<td>800 lines</td>
<td>640 lines</td>
<td>470 lines</td>
</tr>
<tr>
<td><strong>Vertical resolution</strong></td>
<td>575 lines (800 lines in Image Turn Mode)</td>
<td>420 lines (PAL)</td>
<td>490 lines (640 lines in Image Turn Mode)</td>
<td>400 lines (PAL)</td>
</tr>
<tr>
<td><strong>Effective Pixel (pixels which are actually used for the image information)</strong></td>
<td>1,300,000</td>
<td>3 x 752 x 582 (PAL)</td>
<td>752 x 582 (PAL)</td>
<td>768 x 494 (NTSC)</td>
</tr>
<tr>
<td><strong>Color reproduction</strong></td>
<td>100% lifetime colors</td>
<td>very good colors</td>
<td>very good colors</td>
<td>very good colors</td>
</tr>
<tr>
<td><strong>Vertical image-frequency</strong></td>
<td>Prog.Scan: 75 Hz and 60 Hz</td>
<td>Prog.Scan: 75 Hz and 60 Hz</td>
<td>Prog.Scan: 75 Hz and 60 Hz</td>
<td>Prog.Scan: 75 Hz and 60 Hz</td>
</tr>
<tr>
<td><strong>Horizontal image-frequency</strong></td>
<td>15.7 kHz</td>
<td>15.7 kHz</td>
<td>15.7 kHz</td>
<td>15.7 kHz</td>
</tr>
<tr>
<td><strong>Max object height on working surface</strong></td>
<td>250mm (9.7&quot;)</td>
<td>250mm (9.7&quot;)</td>
<td>250mm (9.7&quot;)</td>
<td>250mm (9.7&quot;)</td>
</tr>
<tr>
<td><strong>Depth of focus</strong></td>
<td>70mm (2.75&quot;) on small object (42 x 33 mm) / 25mm (9.7&quot;) on large object (360 x 270 mm)</td>
<td>70mm (2.75&quot;) on small object (42 x 33 mm) / 25mm (9.7&quot;) on large object (360 x 270 mm)</td>
<td>70mm (2.75&quot;) on small object (42 x 33 mm) / 25mm (9.7&quot;) on large object (360 x 270 mm)</td>
<td>70mm (2.75&quot;) on small object (42 x 33 mm) / 25mm (9.7&quot;) on large object (360 x 270 mm)</td>
</tr>
<tr>
<td><strong>Shadow free illumination</strong></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Illumination of hollow objects</strong></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Disturbing stray light</strong></td>
<td>none at all</td>
<td>none at all</td>
<td>none at all</td>
<td>none at all</td>
</tr>
<tr>
<td><strong>Blinding of audience or speaker</strong></td>
<td>yes</td>
<td>yes (in color)</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Infrared remote control</strong></td>
<td>yes</td>
<td>yes (in color)</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Light source</strong></td>
<td>standard halogen lamp (12V/100W), 3200 Kelvin (constant light spectrum)</td>
<td>standard halogen lamp (12V/100W), 3200 Kelvin (constant light spectrum)</td>
<td>standard halogen lamp (12V/100W), 3200 Kelvin (constant light spectrum)</td>
<td>standard halogen lamp (12V/100W), 3200 Kelvin (constant light spectrum)</td>
</tr>
<tr>
<td><strong>Automatic lamp changer</strong></td>
<td>yes</td>
<td>yes (with built-in spare lamp)</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Reflecitve free area</strong></td>
<td>whole working surface</td>
<td>whole working surface</td>
<td>whole working surface</td>
<td>whole working surface</td>
</tr>
<tr>
<td><strong>Motorized top mirror</strong></td>
<td>yes</td>
<td>yes (for scrolling text with remote control)</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Motorized arm</strong></td>
<td>yes</td>
<td>yes (for up/down position and macro zoom function)</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>User programmable presets</strong></td>
<td>3 (plus 8 fixed presets through RS232)</td>
<td>3 (plus 8 fixed presets through RS232)</td>
<td>3 (plus 8 fixed presets through RS232)</td>
<td>3 (plus 8 fixed presets through RS232)</td>
</tr>
<tr>
<td><strong>Special working surface for transparencies</strong></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Bottom light</strong></td>
<td>yes, built-in, size: 380 x 280 (15&quot; x 11&quot;) - whole working surface, light source: 4 x CCFL</td>
<td>yes, built-in, size: 380 x 280 (15&quot; x 11&quot;) - whole working surface, light source: 4 x CCFL</td>
<td>yes, built-in, size: 380 x 280 (15&quot; x 11&quot;) - whole working surface, light source: 4 x CCFL</td>
<td>yes, built-in, size: 380 x 280 (15&quot; x 11&quot;) - whole working surface, light source: 4 x CCFL</td>
</tr>
<tr>
<td><strong>Image memory</strong></td>
<td>5 pictures (with constant sync signal)</td>
<td>9 pictures</td>
<td>9 pictures</td>
<td>9 pictures</td>
</tr>
<tr>
<td><strong>Image memory switch</strong></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Image change mode</strong></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Positive/negative switch in menu</strong></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Black/white switch in menu</strong></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Outputs</strong></td>
<td>RGBHV (2x 15-pin VGA and BNC plugs), DVI, S-Video (converted Prog.Scan, 4-pin plug), Composite Video (converted Prog.Scan, BNC-plug)</td>
<td>RGB(S) (true RGB, BNC plugs, Component Video (YUV - BNC plugs), S-Video (4-pin and BNC plugs), 2x Composite Video (BNC plugs))</td>
<td>RGBHV (2x 15-pin VGA and BNC plugs), DVI, S-Video (converted Prog.Scan, 4-pin plug), Composite Video (converted Prog.Scan, BNC-plug)</td>
<td>RGB(S) (converted Y/C, BNC plugs), S-Video (4-pin and BNC plugs), 2x Composite Video (BNC plugs)</td>
</tr>
<tr>
<td><strong>Inputs</strong></td>
<td>RGBHV (15-pin VGA plug) for PCs, Serial control input (RS232)</td>
<td>Genlock (Sync in), Serial control input (RS232)</td>
<td>RGBHV (15-pin VGA plug) for PCs, Serial control input (RS232)</td>
<td>Genlock (Sync in), Serial control input (RS232)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>17 kg (36 lbs)</td>
<td>17 kg (36 lbs)</td>
<td>17 kg (36 lbs)</td>
<td>17 kg (36 lbs)</td>
</tr>
<tr>
<td><strong>Made in</strong></td>
<td>Austria (European Community)</td>
<td>Austria (European Community)</td>
<td>Austria (European Community)</td>
<td>Austria (European Community)</td>
</tr>
</tbody>
</table>

Specifications and availability subject to change!

Your WolfVision dealer: