

User Guide

# MagniLink Vision Accessories

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# CONTENTS

- 1. INTRODUCTION TO MAGNILINK VISION ACCESSORIES ..... 4
- 2. SAFETY INFORMATION ..... 5
- 3. DVI SWITCH\* ..... 7
- 4. PC/MAC SOFTWARE\* ..... 9
  - 4.1 EUC software, (End User Configuration)..... 11
- 5. MAGNILINK VISION SPLIT ..... 12
  - 5.1 Unpacking ..... 14
  - 5.2 Installation ..... 15
  - 5.3 Instructions ..... 16
    - 5.3.1 Control box - ML Vision Split..... 16
    - 5.3.2 Control box - ML Vision Split Student ..... 17
    - 5.3.3 Description of features..... 19
  - 5.4 Troubleshooting..... 22
  - 5.5 Technical specification..... 24

LVI Low Vision International AB was founded in 1978 and is one of the world's leading manufacturers of magnifying TV and computer systems for visually impaired people. New products are developed in close cooperation with users and vision rehabilitation professionals. LVI is certified to Quality System ISO 9001 and Environmental System ISO 14001.

The information in this manual has been carefully checked and is believed to be accurate. However, LVI assumes no responsibility for any inaccuracies which may be contained in this manual. In under no circumstances will LVI be liable for direct, indirect, special, exemplary, incidental, or consequential damages resulting from any defect or omission in this manual.

In the interest of continued product development, LVI reserves the right to make improvements to this manual, and the products it describes, at any time, without notice or obligation.

# 1. Introduction to MagniLink Vision Accessories

This guide contains instructions for the accessories available for MagniLink Vision. These accessories are:

1. DVI switch (see page 7).
2. PC/MAC software (see page 9).
3. EUC software (see page 11).
4. MagniLink Vision Split (see page 12)

## 2. Safety Information

MagniLink Vision is only intended for use as a reading aid in home, school or office environments.

- Before connecting, check the system and the mains cord to ensure that nothing is damaged. The enclosed power supply is only intended for use with the MagniLink Vision.
- Never operate the MagniLink Vision if the unit has been exposed to water or other liquids.
- Damaged mains cord or plugs may result in electrical shock or a fire hazard. Do not allow anything to rest or roll over the mains cord.
- Moving the system from a cold to a warm place may cause condensation (water droplets) on its internal surfaces or on the lens. To avoid condensation, install the system in the room where it is to be used at least 30 minutes before use. Do not expose the system to sudden or extreme changes in temperature.
- If the screen needs to be cleaned, use a lightly moistened (not wet) cloth.
- USB memory sticks and other small parts can be a choking hazard for small children.
- Do not rely 100 per cent on the results of an OCR conversion; the OCR engine can misinterpret the text. This is particularly important to bear in mind when processing sensitive information such as a medical prescription.
- Do not use sharp objects on the touch screen as this may damage the screen.
- If you are unable to restore normal operation by following the operating instructions, do not attempt any further adjustments. Unplug the set and contact your dealer or service technician. Only use replacement parts specified by LVI.

If you are unsure, contact your dealer or service technician.



Plastic bags in the packing material can be dangerous. To avoid danger or suffocation keep bags away from babies and children..

To prevent fire or shock hazard, do not expose the equipment to moisture. To reduce the risk of electric shock, do not remove the cover

No user serviceable parts inside. Please refer service to qualified service personnel.

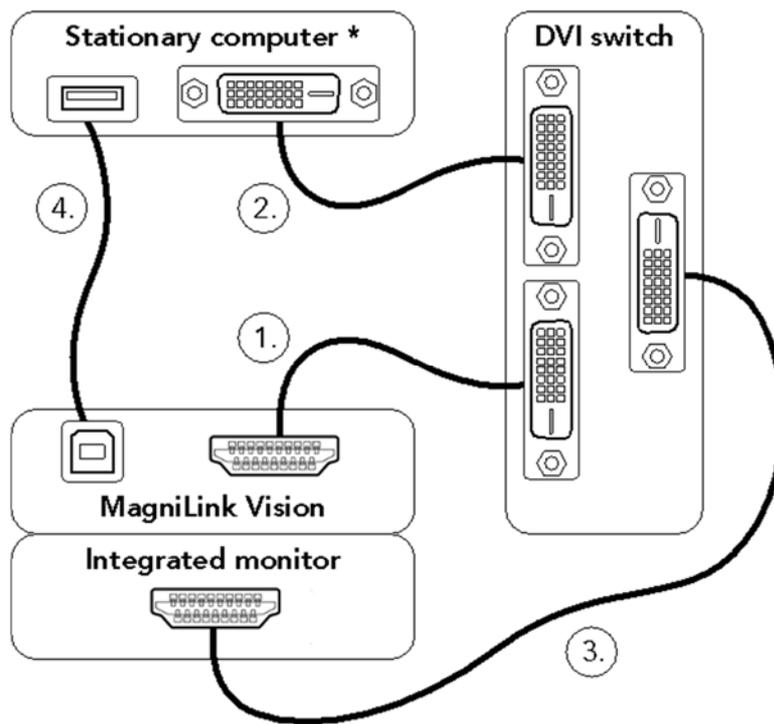
### 3. DVI switch\*

Order nr: MLV-A100

\*Recommended for use with 5 pushbutton panel.

With this device, a PC or MAC can be connected to MagniLink Vision. The image from the computer will be shown on the MagniLink Vision. To switch between the computer and camera image simply press the autofocus lock button (on the 5-push panel) for three seconds, or press the button (and LED indicator) on the DVI switch.

**Important!** Before connecting any cables to the DVI switch, turn off the computer and MagniLink Vision. When using the 18.5" screen, make sure that the resolution from the graphics card is set to 1366x768 pixels. For the 23" LVI screen the resolution should be 1920x1080 pixels.



1. Connect included cable from the MagniLink Vision HDMI output (located under the plastic cover on the back of the system) to the socket marked "ML VISION" in green on the DVI switch.
2. Connect included cable from the computer to the socket marked "COMPUTER" in red on the DVI switch. \*\*
3. Connect included cable from the integrated monitor to the socket marked "MONITOR" on the DVI switch.
4. Connect included cable from the MagniLink Vision USB port (located under the plastic cover on the back of the system) to the computer.

Start the computer and MagniLink Vision. A red light from the DVI switch indicates that the computer image is shown, and a green light indicates that the camera image from MagniLink Vision is shown.

\* A portable computer with an integrated 16:9 monitor can be used. The screen must then be cloned or extended to the external monitor depending on the needs.  
**Important!** If the laptop screen format is 16:10 or 4:3 there could be distortions in the picture of the integrated screen or in the monitor of MagniLink Vision.

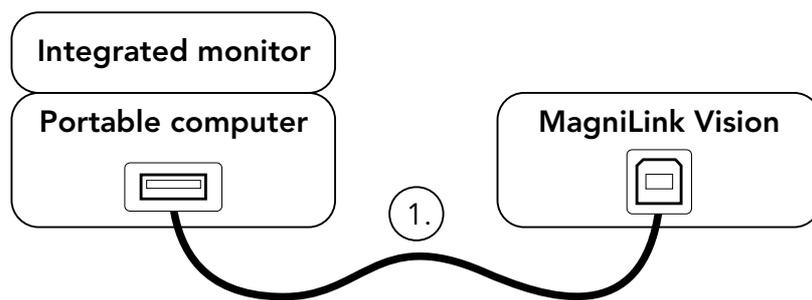
\*\* If the computer only has a VGA output, a VGA to DVI-D converter is needed.  
If the computer only has an HDMI output, an HDMI to DVI-D cable is needed.  
(In some cases it could be easier to upgrade the integrated graphics card of the stationary PC, or use a USB graphics card on a portable PC.)

## 4. PC/MAC software\*

Order nr: MLV-A101

\* Recommended for use with 5 pushbutton panel.

This software allows you to control the various functions via the system control panel or the computer keyboard. The software also allows you to use the split screen function in order to view both the computer screen and the camera image at the same time. This is useful when e.g., saving pictures or video from the camera.



1. Connect included cable from the MagniLink Vision USB port (located under the plastic cover on the back of the system) to the computer.
2. Install included MagniLink S software v6.10 or later (PC) / v1.2 or later (MAC) on the computer. For installation instructions, refer to the separate manual for the MagniLink S software.
3. Start the MagniLink Vision and the MagniLink S software.

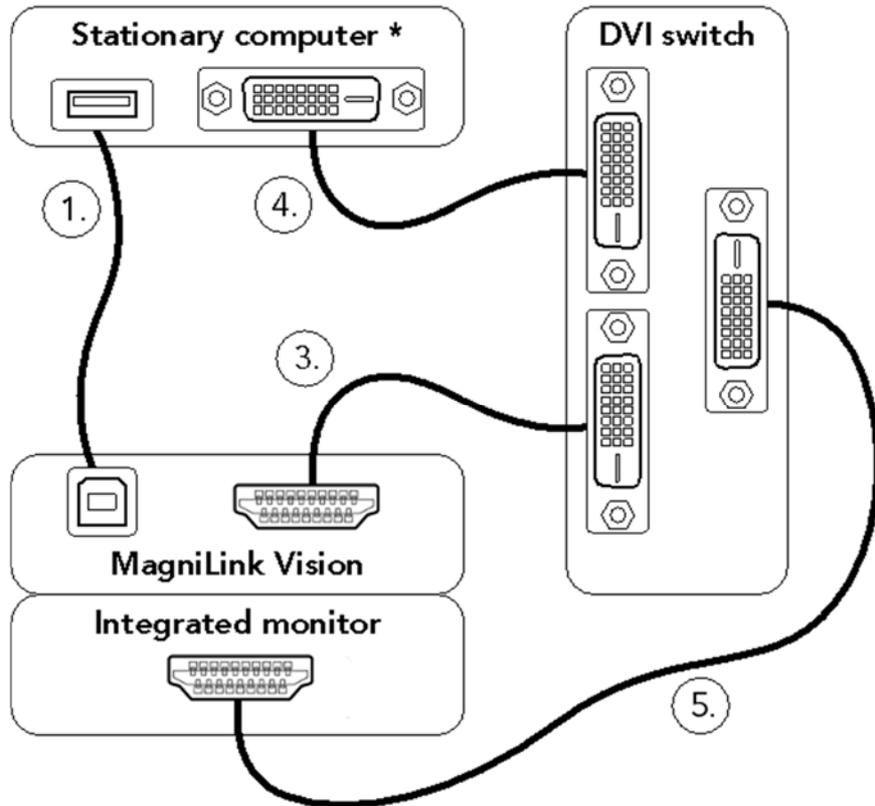
With this software MagniLink Vision acts like a MagniLink Student, which makes it possible to use iZoom, ZoomText, Dolphin (PC), iMax (MAC) and other softwares in various split modes. For more information, refer to the separate manual for the MagniLink S software.

### Combining DVI switch and PC/MAC Software

The most complete setup is achieved when combining the DVI switch with the PC/MAC software. This setup has all the advantages of the separate accessories. Use the DVI switch to change the image between MagniLink Vision and the computer, and the PC/Mac software for a split screen.

**Important!** Before connecting any cables to the switch, turn off the computer and MagniLink Vision. When using the 18.5" LVI screen, make

sure that the resolution from the graphics card is set to 1366x768 pixels. For the 23" LVI screen the resolution should be 1920x1080 pixels.



1. Connect included cable from the MagniLink Vision USB port (located under the plastic cover on the back of the system) to the computer.
2. Install included MagniLink S software v6.04 or later (PC) / v1.1 or later (MAC) on the computer. For installation instructions, refer to the separate manual for the MagniLink S software.
3. Connect included cable from the MagniLink Vision HDMI output (located under the plastic cover on the back of the system) to the socket marked "ML VISION" in green on the DVI switch.
4. Connect included cable from the computer to the socket marked "COMPUTER" in red on the DVI switch. \*\*

Connect included cable from the integrated monitor to the socket marked "MONITOR" on the DVI switch.

5. Start the computer and MagniLink Vision. A red light on the DVI switch indicates that the computer image is shown and a green light indicates that the camera image from MagniLink Vision is shown.

- \* A portable computer with an integrated 16:9 monitor can be used. The screen must then be cloned or extended to the external monitor depending on the needs.  
**Important!** If the laptop screen format is 16:10 or 4:3 there could be distortions in the picture of the integrated screen or in the monitor of MagniLink Vision.
- \*\* If the computer only has a VGA output, a VGA to DVI-D converter is needed.  
If the computer only has an HDMI output, an HDMI to DVI-D cable is needed.  
(In some cases it could be easier to upgrade the integrated graphics card of the stationary PC, or use a USB graphics card on a portable PC.)

## 4.1 EUC software, (End User Configuration)

Order nr: MLV-A102

A configuration program is available which can individually modify the settings as per the user's requirements. The settings are: magnification (max + min), guiding line (colour + thickness), lighting settings and high contrast mode (colours + number of colours).

For more information, refer to the separate manual 7941619.

## 5. MagniLink Vision Split

MagniLink Vision Split is a video magnifier, which makes it possible to switch and split the image displayed on the screen between the output from a reading camera, a distance camera and a computer. MagniLink Vision Split is available in several different models.

Choose a model via the following steps:

- **Reading camera**  
Choose between High Resolution (HR) and High Definition (HD).
- **Monitor size**  
Choose between an 18.5" or 23" TFT screen, both available in either integrated or free-standing versions. It is also possible to use a monitor of your own.  
If the system comes with a screen, you will also need to acquire a monitor arm or base which complies with the standard VESA 100x100 mm.
- **Reading table**  
Choose whether or not the system includes a reading table.
- **Distance camera** (if you want a two camera system)  
Choose between a system with a distance camera (ML Vision Split Student) or without a distance camera (ML Vision Split). There are two different cameras to choose from, Standard Definition (SD) and High Definition (HD).
- **Mounting of the distance camera**  
You can select the type of mount to be used with the distance camera. Choose between a table-top stand and a wall/ceiling bracket.



The systems comply with all the requirements for CE marking of medical devices, in accordance with Directive 93/42/EEC.

## 5.1 Unpacking

If the system is supplied with a distance camera, it comes in two separate boxes; otherwise there is only one box.

First check that the boxes have no external damage. In the event of damage, please contact the transport company to report the damage.

Open the boxes, take out the unit and remove the packaging parts. For further information regarding installation, please see the next chapter.

If a one camera system (ML Vision Split) has been ordered, the contents of the box are as follows:

- Reading camera unit
- Split box
- Control box
- Two user guides
- Table-top holder for the control box
- Monitor (if ordered with the system)

When a two camera system (ML Vision Split Student) has been ordered, the contents of the boxes are as follows:

Box 1:

- Reading camera unit
- User Guide
- Monitor (if ordered with the system)

Box 2:

- Distance camera unit
- Split box
- Control box
- Table-top holder for the control box
- User guide

## Packaging

The packaging consists of the following materials:

Box (corrugated cardboard)

Polythene bag (LDPE4)

Inserts (LDPE4)

LVI recommends that you save the packaging in case you need to return the system or move it.

## Packing up

Should you need to return or move the system, it should be placed in the original packaging.

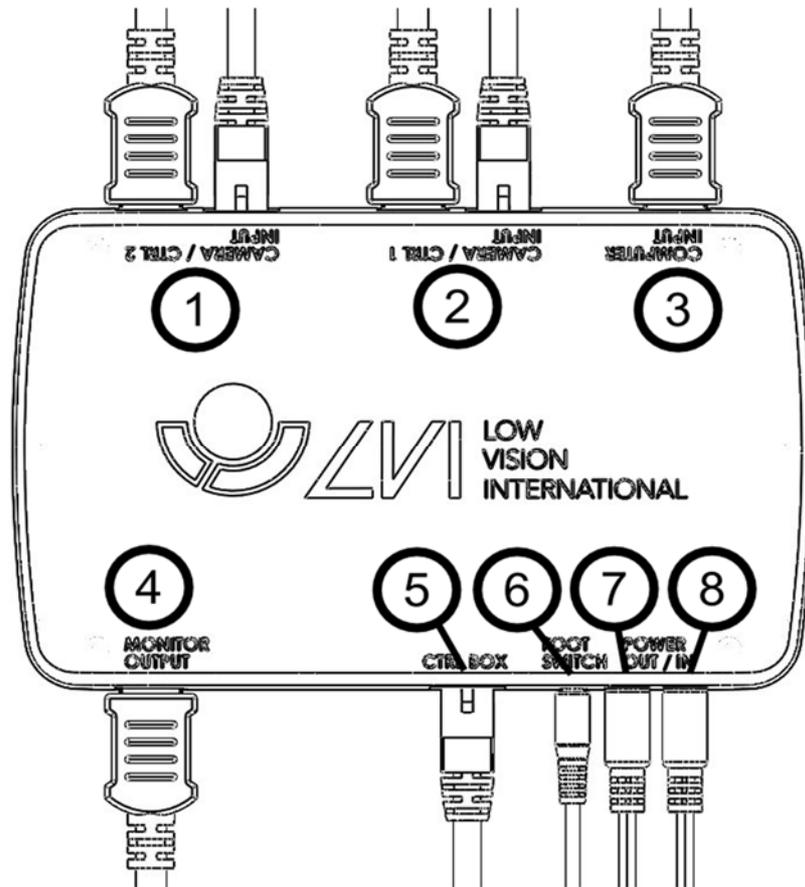
## 5.2 Installation

To install the system, follow the steps below.

- If the system is supplied with a distance camera, its column must be fastened securely onto the table-top stand (or the wall/ceiling bracket) with a screw.
- If the reading camera is supplied without a reading table, it must be fastened securely onto the table-top stand with a screw.



- Fasten the holder for the control box to the table-top.

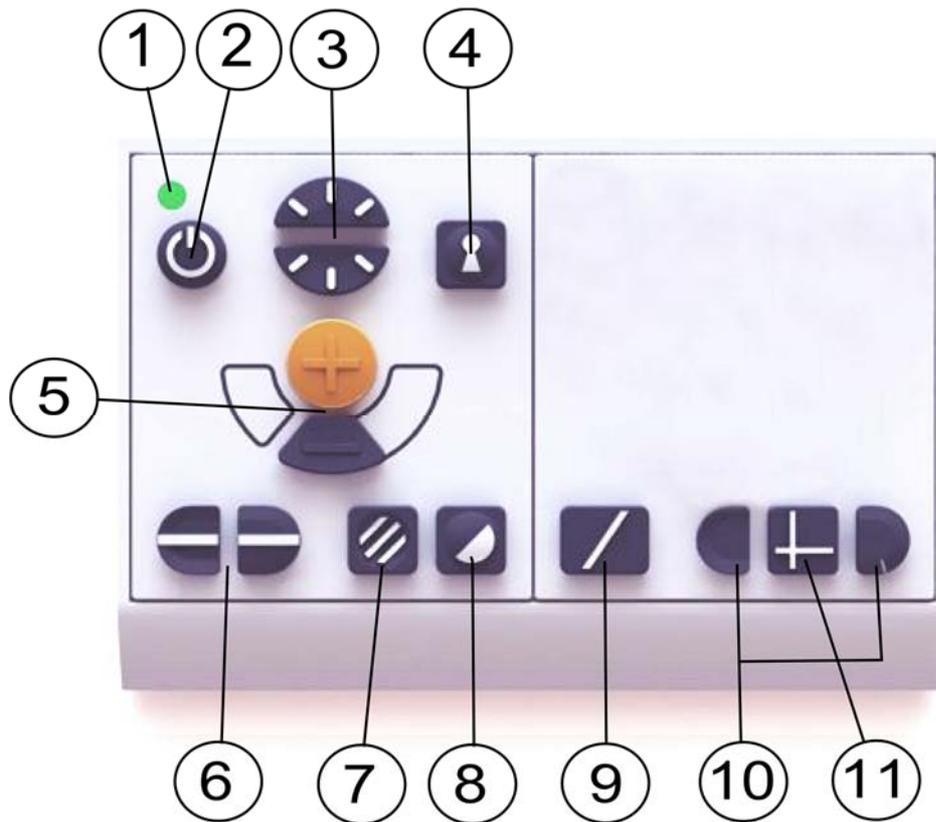


- Connect one or two cameras to sockets (1) and (2). You may choose any combination of reading cameras and distance cameras.
- It is possible to connect a computer to the split box (3).
- Connect the monitor to port (4).
- Connect the control box to port (5).
- A foot pedal can be connected to port (6).
- Connect the power out (7) to the monitor's power in (only for an 18.5" or 23" LVI monitor).
- Connect the power cable from the reading camera to the power in (8).

### 5.3 Instructions

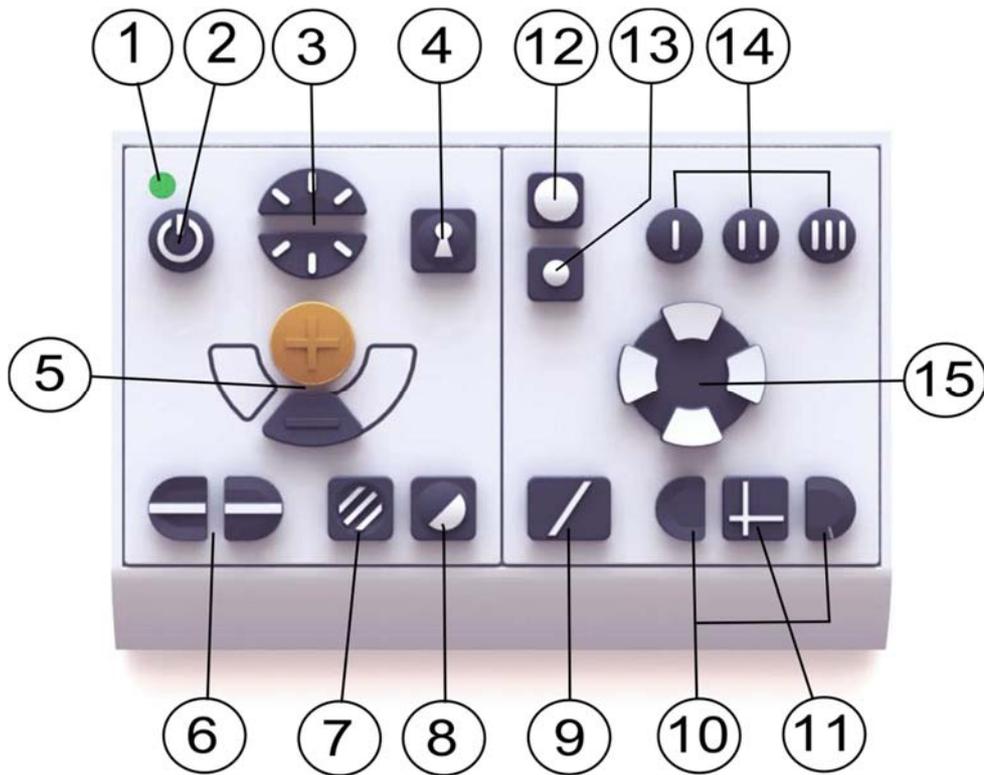
The MagniLink Split system's functions are managed using the control box. There are two versions of the control box, one for ML Vision Split Student and a simpler version with fewer buttons for ML Vision Split.

#### 5.3.1 Control box - ML Vision Split



1. LED
2. Power on/off
3. Lighting configuration
4. Autofocus on/off
5. Magnification control
6. Reference line/bar
7. Picture mode/grey scale
8. High contrast modes
9. Full screen/split screen
10. Split screen adjustment
11. Horizontal/vertical split screen

### 5.3.2 Control box - ML Vision Split Student



- 1 LED
- 2 Power on/off
- 3 Lighting configuration
- 4 Autofocus on/off
- 5 Magnification control
- 6 Reference line/bar
- 7 Picture mode/grey scale
- 8 High contrast modes
- 9 Full screen/split screen
- 10 Split screen adjustment
- 11 Horizontal/vertical split screen
- 12 Image splitting sources
- 13 Camera selection
- 14 Programmed magnification (and direction for distance cameras)
- 15 Adjustment of pan and tilt

### 5.3.3 Description of features

The active camera image is highlighted with an orange frame. A basic tip for operating cameras, when more than one camera is connected, is that the camera whose image is on-screen is automatically the one which can be operated using the control box's camera section. (Selecting which camera to operate is only necessary when two cameras are used simultaneously).

#### 1. LED

A green light indicates that the system is on. A flashing green light means that the system is starting up. A slowly flashing yellow light indicates standby. A red light indicates that something is wrong in the system (see the chapter "Troubleshooting").

#### 2. Power on/off

Press to start or shut down the system.

#### 3. Lighting configuration

By pressing these buttons it is possible to adjust the brightness. Press up to increase and down to decrease the brightness. When the picture mode button (7) is pressed, the lamp's intensity is adjusted instead. In this way, the best conditions for reading in different situations can be achieved.

#### 4. Autofocus on/off

Press the button once to lock the focus. This can be used when you want to write by hand. In this way, autofocus is not affected by the pen or your hand. Press the button a second time to reactivate autofocus. Autofocus is active whenever the system starts.

#### 5. Magnification control

These two buttons are used to set the magnification. Reduce the magnification by pressing the lower key (minus) and increase the magnification by pressing the upper key (plus).

#### 6. Reference line/bar

Adjust the position of the reference line. Press the right-hand button to move the horizontal line down. Hold the button in to change the reference line to vertical and move it to the left. The reference line then becomes a horizontal bar which diminishes the viewing area.

a. To make the bar vertical, press the button again. The left-hand, sunken section of the controls has the opposite effect.

(Using the EUC software, you can adjust the colour and thickness of the reference line and choose to hide or show the bar or reference line. Please contact your local retailer for more information.)

## 7. Picture mode

Press the button to toggle the picture mode between natural colours and grey scale.

### Lighting adjustment

Hold the button down to temporarily enable adjustment of the lighting via the lighting configuration (3). This can be used to help users who are sensitive to light, or when reading on blank paper. The system automatically switches between ROPC (Reading Optimized Picture Control) and DPC (Dynamic Picture Control) when the lighting reaches a certain level. When the lighting configuration (3) is used to adjust the lighting, it is not possible to switch between colour and grey scale.

### Lights off/on

The lights can be switched on and off by holding the button down for three seconds. The system switches automatically between ROPC (Reading Optimized Picture Control) and DPC (Dynamic Picture Control).

(The light settings can be locked and grey scale removed using the EUC software. Please contact your local retailer for more information.)

## 8. High contrast modes with artificial colours

Press the key to toggle between the various colour combinations. The following colours are in the default configuration:

### Background/Text

White/Black

Black/White

Yellow/Black

Black/Yellow

Green/Black

Black/Green

### Background/Text

Red/Black

Black/Red

Yellow/Blue

Blue/Yellow

White/Blue

Blue/White

(The colour setting in high contrast mode can be adjusted using the EUC software.)

ware. Please contact your local retailer if you have any questions.)

### **9. Full screen/split screen**

Using this button, you can quickly change between the current split screen mode and full screen. The image displayed in full screen mode depends on the mode that the image splitting sources (12) are set to. If the desired mode is not active, press this button.

### **10. Split screen adjustment**

Adjust the positions and sizes of the split screen sections. Select horizontal or vertical split screen with button 11.

### **11. Horizontal/vertical split screen**

Switch between horizontal and vertical split screen by briefly pressing this button.

### **12. Image splitting sources**

If three image sources are connected, this button switches between the four different split screen modes. If two or fewer image sources are connected then this button has no effect.

1. Reading camera/computer
2. Distance camera/computer
3. Reading camera/distance camera
4. Reading camera/distance camera/computer

### **13. Camera selection**

This button is used to select which camera you wish to operate. The active camera image is highlighted with an orange frame. This button has no effect if only one camera is connected.

### **14. Programmed magnification (and direction for distance cameras)**

The three buttons marked (I), (II) and (III) are used to quickly select pre-programmed settings for a given space and/or camera magnification.

The distance camera can be programmed with the desired magnification to quickly point to three different locations in the room. The reading camera can be programmed with the desired magnifications and selection of artificial colours.

Point the distance camera at the desired location in the room and a

adjust the magnification. Hold down one of the buttons marked (I), (II) or (III) for three seconds to save the position. The orange frame briefly turns thicker to indicate that the position has been saved. The programmed modes can now be selected by briefly pressing one of the three buttons.

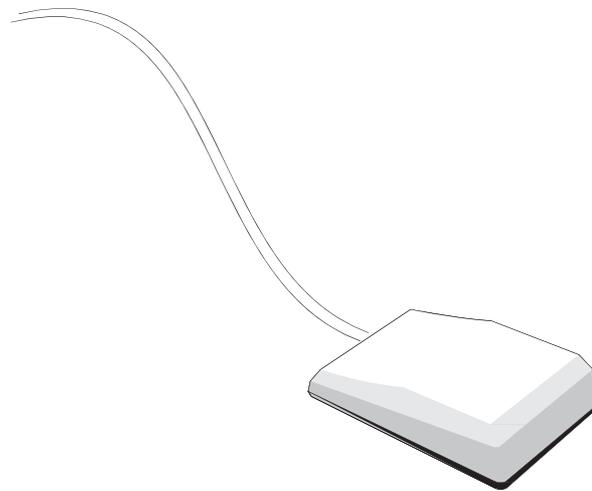
## 15. Operating the distance camera

These buttons are used to adjust the distance camera horizontally and vertically. The camera can be adjusted both horizontally and vertically at the same time. The speed is automatically adjusted and is dependent on the level of magnification.

(The limits and speeds of the pan and tilt can be adjusted using the EUC software. Please contact your local retailer if you have any questions.)

## Foot pedal

Using the foot pedal, you can quickly change between the current split screen mode and full screen without having to touch the control box. The foot pedal has the same function as button 9.



## 5.4 Troubleshooting

- If the indicator lights on the control box (in/out indication) do not light up at all when pressing the button, check that the power cable is correctly connected and that there is a current coming from the wall socket.
- If no picture signal is being received from the computer, check that th

e computer is on and that its video cable is correctly connected at both ends. It is important that the video resolution is set correctly (see below) and that the refresh rate of the selected video mode is set to 60 Hz.

- If no picture signal is received from either the computer or the reading camera, check that the monitor is on and that its cables are correctly connected.
- If a weak picture is received from the reading camera, check that the light is on.

In the event of any problems with the unit, try resetting the system by pulling out the power cable. Wait at least 30 seconds before plugging the power cable back in and restarting the system.

Contact a service technician if the above measures do not help or if other errors have occurred. Never remove any panels in order to attempt to repair the system yourself.

### **If the split screen does not work with the computer**

MagniLink Split is compatible with refresh rates of up to 60 Hz and most screen resolutions of up to 1920x1080 pixels from a connected computer.

On occasions, you may notice that, when changing video mode on the computer or when first starting up following a change of video mode, only the computer image is shown on the screen (non-shareable window) when you attempt to start up the system. This can be due to the computer being in hibernation mode, or the screen being in energy saving mode, which means you need to move the mouse in order to get the screen to function in split screen mode again.

If this does not work, try changing to a different video mode on the computer.

## 5.5 Technical specification

### MagniLink Split with an 18.5" TFT widescreen

Reading camera:

Magnification: 2.5 – 50x (HR) or 1.7-60x (HD)

Resolution display: 1366 x 768

### MagniLink Split with an 23" TFT widescreen

Reading camera:

Magnification: 3.0 – 50x (HR) or 2.0-60x (HD)

Resolution display: 1920 x 1080

General properties:

Weight base unit

with reading table: 8 Kg

17.6 lbs

Weight screen 18.5" / 23" 3.8 / 5.5 Kg

8.4 / 12.1 lbs

Refresh rate: 60 Hz

Luminance: 300 cd/m<sup>2</sup>

Contrast: 1000:1

Focusing distance: 0-60 mm

0-2.4" (at max. magnification)

Working space: 110 mm – 195 mm

4.3 – 7.7"

Lamp type: 4 LED (HR), or 8 LED (HD)

Mains Voltage: 100-240 V, 50-60 Hz

Power consumption: 75 W (with distance camera and monitor)

Power consumption, standby: 0.8 W

Size of reading table: 420 x 300 mm (W x D)

16.5 x 11.8" (W x D)

Dimensions of packaging 1: 620 x 590 x 610 mm (W x D x H)

24.4 x 23.2 x 24" (W x D x H)

Dimensions of packaging 2: 320 x 870 x 320 (W x D x H)

12.6 x 34.3 x 12.6" (W x D x H)

Temperature limit:

Transportation and storage:

-20°C - +60°C

-4°F - +140°F

Operation: +5°C - +35°C

+41°F - +95°F

Relative air humidity:

<80%



**Disposal of old Electrical & Electronic Equipment (Applicable throughout the European Union and other European countries with separate collection programs).**

This symbol, found on your product or on its packaging, indicates that this product should not be treated as household waste when you wish to dispose of it. Instead, it should be handed over to an applicable collection point for the recycling of electrical and electronic equipment.

By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate disposal of this product. The recycling of materials will help to conserve natural resources. For more detailed information about the recycling of this product, please contact your local city office, household waste disposal service or the retail store where you purchased this product.

# DECLARATION OF CONFORMITY

according to the Medical Devices Directive, 93/42/EEC with amendments from directive 2007/47/EC

Type of equipment: *Reading Aid*  
Brand name or trade mark: *MagniLink*  
Type designation: *MLV-A100, MLV-A109, MLV-A111*  
Product class: *Class 1.*  
Manufacturer: *LVI Low Vision International AB*  
Address: *Verkstadsgatan 5  
S-352 46 Växjö  
Sweden*  
Web: <http://www.lvi.se>  
Phone: *+46 470 - 72 77 00*  
Fax: *+46 470 - 72 77 25*

As the manufacturer, we declare under our sole responsibility that:

- the product follows the provisions of the Council Directive 93/42/EEC with amendments from directive 2007/47/EC.
- we will keep the technical documentation described in section 3 of Annex VII available to the national authorities for a period ending at least five years after the last product has been manufactured.
- the device meets the Essential Requirements of Annex 1 which applies to it, taken into account the intended purpose of the device.
- to follow the requirements regarding products placed on the market as described in section 4 of Annex VII.

Manufacturer

Manufacturer's authorized representative

Date

Signature

Position

2011-09-13



Managing Director

Clarification

Erik Bondemark