

# User Manual

## MagniLink ChromeViewer

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## 1 About LVI

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. New products are developed in close cooperation with users and professional personnel of vision rehabilitation. LVI is a Quality System Certified ISO 9001 and Environmental System Certified ISO 14001 company.

The information in this manual has been carefully checked and is believed to be accurate. However, LVI assumes no responsibility for any inaccuracies that may be contained in this manual. In no event 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 in this manual and the products it describes at any time, without notice or obligation.

## 2 Introducing MagniLink ChromeViewer

MagniLink ChromeViewer is a programme used on a Chromebook to display images from a MagniLink camera system. The programme can control the camera properties, such as magnification level, artificial colours and brightness.

### 2.1 Minimum system requirements

- Chrome OS version 59
- Two integrated USB 2.0 ports.
- Intel Celeron, 2 GB RAM

### 2.2 Recommended system requirements

- One integrated USB 3.0 type A-port
- Intel i5 processor
- 4 GB RAM

LVI recommends using an Intel-based Chromebook together with a MagniLink camera, as we have experienced compatibility issues with some ARM-based Chromebooks.

A USB 3.0 Y-cable may be required in order to deliver enough power to the camera system. A USB Y-cable allows the use of two USB ports in order to run the MagniLink camera system.

LVI has tested the software on several Intel-based Chromebooks without any issues, however there is no guarantee that the system will function on all computers that comply with the specifications. LVI recommends testing the software with the Chromebook which the system will be used with, in order to ensure compatibility. Better performing computers facilitate better camera performance.

**Please note that an internet connection is required for licensing, as well as for use of OCR in ChromeViewer.**

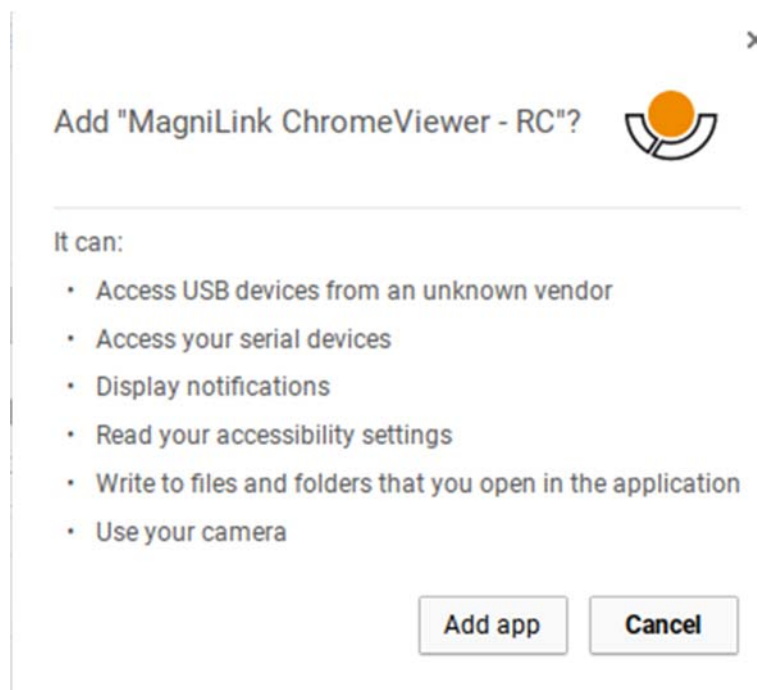
### 3 Installation of software

MagniLink ChromeViewer is available for download via the Chrome Web Store. If you cannot find the application with the search function on the Chrome Web Store, there is a direct link on our website that takes you to the installation page.

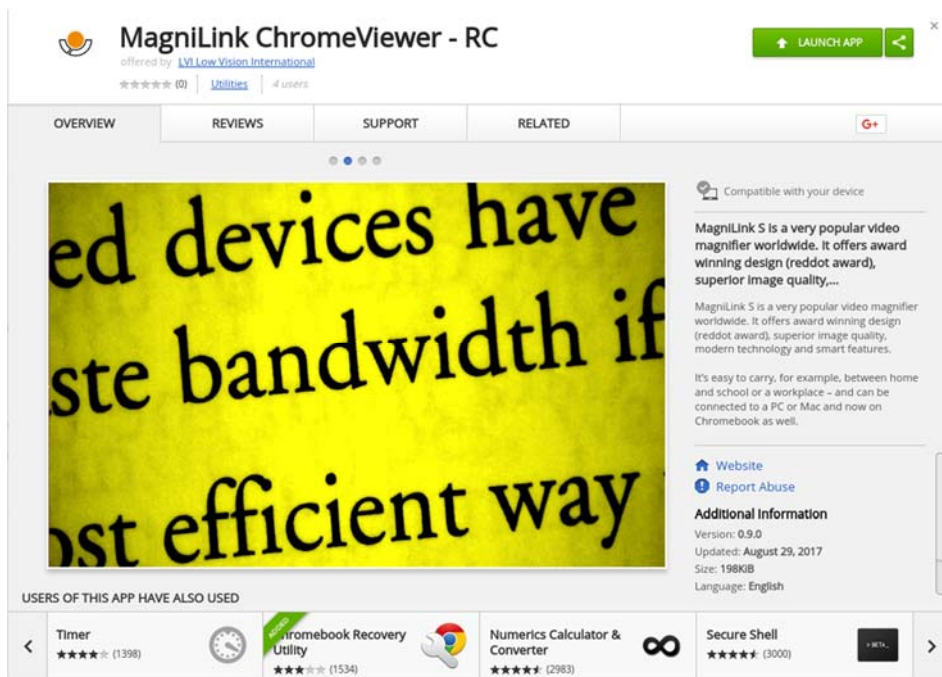
The link opens a new page with the Chrome Web Store and the MagniLink ChromeViewer is selected automatically.



Click **ADD** to start the installation.



You will then see an information box explaining what the application is able to do; click **Add app** to go on.



When the installation is finished, you can start the application by clicking **START APP** or search for the application via App Launcher.

Via App Launcher you can also permanently add MagniLink ChromeViewer to the start area.



## 4 Licensing

You must obtain a license in order to gain access to OCR with MagniLink ChromeViewer. An OCR license can only be purchased via ChromeViewer and is linked to the Google account that was used to make the purchase. This means that you will not be restricted to one computer and will be able to use whichever Chromebook you please with your Google account and still use OCR in ChromeViewer.

To purchase an OCR licence in ChromeViewer, click on the letter **V** on startup. A dialogue box will then be displayed with the exact price and a Purchase button. Click on "Purchase" and follow the steps. When you are finished you can return to ChromeViewer.

After obtaining a licence, you must allow MagniLink ChromeViewer to access your Google Drive. This is done by clicking on **V** once again and following the instructions. When you are finished you can return to ChromeViewer and begin the OCR process.

Note that OCR with ChromeViewer has the following limitations:

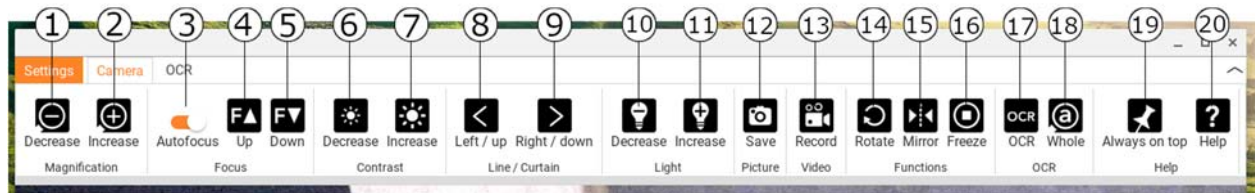
- An internet connection is required for licensing, as well as for use of OCR in MagniLink ChromeViewer.
- Lists, tables, columns, footnotes and final comments will probably not be identified.

## 5 Using the software

### 5.1 Functions via menus

The application consists of a window with tabs and groups of buttons. There is a tab for application settings and another tab for handling the camera. Depending on whether you have obtained a licence, there is also a tab for handling OCR-processed text.

#### 5.1.1 Camera tab



1. **Reduce magnification**
2. **Increase magnification**
3. **Lock autofocus**  
Locks the autofocus mode. This feature is useful for those who would prefer to write by hand. The autofocus is not affected, regardless of whether you use a pen or your hand. Press the button a second time to reactivate autofocus.
4. **Focus up**  
Reduce focus distance. When this function is used, autofocus is turned off.
5. **Focus down**  
Increase focus distance. When this function is used, autofocus is turned off
6. **Reduce brightness/contrast**
7. **Increase brightness/contrast**
8. **Reference line/bar left/up**  
Adjust the position of the reference line. Press the button to move the reference line to the left. Hold the button in to change the reference line to horizontal and to move it upwards. The reference line then becomes a vertical bar, which diminishes the viewing area. To make the bar horizontal, press the button again.
9. **Reference line/bar right/down**  
Same as the previous command although in the opposite direction.

10. **Reduce lamp brightness**
11. **Increase lamp brightness**
12. **Take snapshot**

The "Save file as" dialogue box opens. A file name (with the day's date and time) and a folder (Downloads) are automatically suggested. Just press "Enter" to save the picture. If you wish to save the picture somewhere else, you can change this manually.
13. **Start/stop video recording**

Press to open the "Save file as" dialogue box. A file name (with the day's date and time) and a folder (Downloads) are automatically suggested. Press Enter to save with the suggested name. If you wish to save the video in a different folder, or with another name, it is possible to change this in the dialogue box. Stop the recording by pressing the button again.
14. **Rotate the camera image**

Rotates the camera image clockwise.
15. **Mirror the camera image**

Press again to reverse the mirror image.
16. **Freeze the camera image**

Press again to release the freeze.
17. **OCR process**

Run an OCR process on the entire camera window.
18. **Whole image**

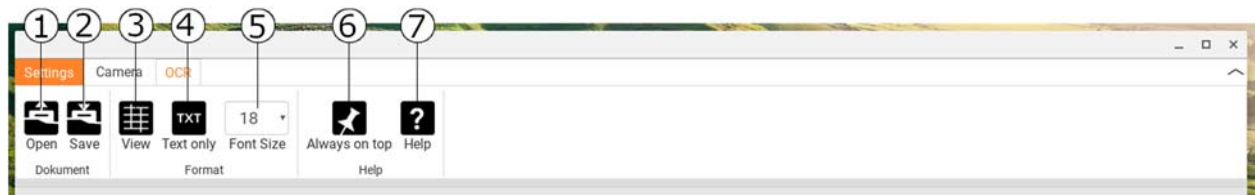
When this is active, the whole camera image is shown. Otherwise edit in the image, depending on how large the camera window is.
19. **Always on top**

Activates/deactivates "always on top" If "Always on top" is activated, the camera image will be placed over other open applications. This means that another programme can be in focus and that you can, for example, use Word while viewing the camera image.
20. **Help**

Opens the user guide in the standard application for showing PDF files.

## 5.1.2 OCR tab

The following tab is only displayed if the user has obtained an OCR licence and if one MagniLink camera system has been connected within the last two weeks.



1. **Open document (with OCR processing)**  
A dialogue box opens. From the dialogue box, select the file you wish to open. It is possible to open PDF files and image files, .bmp, .jpg, .png, .gif and .tiff, as well as saved OCR processes.
2. **Save documents**  
A dialogue box opens. A file name (today's date and time) is suggested automatically.
3. **View**  
Switch between list view and grid view.
4. **Only text**  
Switch between displaying only text and text + picture.
5. **Font size**
6. **Always on top**  
Activates/deactivates "always on top"
7. **Help**  
Opens the user guide in the standard application for showing PDF files.

## 5.2 Functions via the keyboard

The MagniLink camera is shown as a Chrome App and most functions can be managed via the keyboard. Various menus allow the short cut commands to be changed. Below are the standard settings for the short cut commands.

- |   |  |
|---|--|
| 1 | <b>Natural colours</b>   |
| 2 | <b>Positive image with heightened contrast</b><br>Artificial colours; White/Black, Yellow/Black, Green/Black, Red/Black, Yellow/Blue, White/Blue. Press 2 repeatedly to switch between the various colours. (Shift + 2 to cycle backwards) |

3	<b>Negative image with heightened contrast</b> Artificial colours; White/Black, Black/Yellow, Black/Green, Black/Red, Blue/Yellow, Blue/White Press 3 repeatedly to switch between the various colours. (Shift + 3 to cycle backwards)
Ctrl + P	<b>Take a snapshot</b> Press Ctrl + P to open the "Save file" dialogue box. A file name (with the day's date and time) and a folder (Downloads) are automatically suggested. Just press Enter to save the picture. If you wish to save the picture somewhere else, or with another name, it is possible to change this manually.
Ctrl + M	<b>Start/stop video recording</b> Press Ctrl + M to start recording. Stop recording by pressing Ctrl + M. When recording stops, the dialogue box "Save file" opens. A file name (with the day's date and time) and a folder (Downloads) are automatically suggested. Press Enter to save with the suggested name. If you wish to save the video in a different folder, or with another name, it is possible to change this in the dialogue box.
8	<b>Preset split screen mode</b> Press 8 repeatedly to switch between the preset split screen modes for the primary screen. The window can also be controlled via the mouse, or with Chrome OS standard commands.
9	<b>Information and settings window</b> Under this window, different settings for the application can be applied.
0	<b>Scan for LVI camera</b> Press 0 to scan for a MagniLink camera system. This can be useful if several LVI cameras are connected to the computer. In this case, a dialogue box opens from which the active camera for the application may be selected. If the camera does not start for whatever reason, it may also help to scan for a MagniLink camera system.
Up arrow	<b>Increase magnification</b>
Down arrow	<b>Reduce magnification</b>
Left arrow	<b>Reduce brightness/contrast</b>
Right arrow	<b>Increase light intensity</b>
Ctrl + Left arrow	<b>Reference line left/up</b>

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Ctrl + Right arrow	<b>Reference line right/down</b>
Ctrl + R	<b>Rotate the camera image clockwise</b> Every time this key combination is pressed, the camera image will rotate 90° clockwise (90°, 180°, 270° and 0°).
Ctrl + Shift + R	<b>Rotate the camera image anticlockwise</b> Every time this key combination is pressed, the camera image will rotate 90° anticlockwise (270°, 180°, 90° and 0°).
Ctrl + I	<b>Reflect camera image</b> Reflects the camera image. This is a handy function if, for example, you want to use the camera as a magnified cosmetic mirror.
Ctrl + F	<b>Freeze camera image</b> By pressing this key combination, the camera image freezes; to release the image, press the same key combination again. To save a frozen image, press Ctrl + P.
Ctrl + A	<b>Deactivate/activate "always on top"</b> Short cut command activates the "Always on top" function for the application window. If "Always on top" is activated, the camera image will be placed over other open applications. This means that another program can be in focus and that you may, for example, use Google Docs whilst viewing the camera image.
Ctrl + 6	<b>Reduce lamp brightness</b>
Ctrl + 7	<b>Increase lamp brightness</b>
?	<b>Open user guide</b>
Ctrl + J	<b>Autofocus on/off</b>
Shift + Up arrow	<b>Increase focusing distance</b>
Shift + Down arrow	<b>Reduce focusing distance</b>
Ctrl + Plus	<b>Increase menu size</b>
Ctrl + Minus	<b>Reduce menu size</b>
Ctrl + L	<b>Whole image</b> Switches between whole image and cropped image.

The following commands require a Google account with an OCR licence and that a MagniLink camera system has been connected within the last two weeks.

4	<b>Start OCR</b> It is also possible to use the mouse to run OCR processing.
V	<b>Switches between the camera tab and OCR tab</b>
Ctrl + S	<b>Save all OCR-processed data</b>
Ctrl + O	<b>Open saved OCR-processed data</b>
G	<b>Switch between list view and grid view</b>
T	<b>Switch between displaying only text and text + picture</b>

### 5.2.1 Use the built-in screen reading software.

The built-in screen reader software ChromeVox is used for reading OCR-processed text. You can activate or deactivate ChromeVox whenever you want using the short cut command **Ctrl + Alt + Z**.

ChromeVox supports reading in the following languages, without the need of installing an add-on via the Chrome Web Store:

- German
- Spanish
- French
- Italian
- Dutch
- English
- Brazilian Portuguese
- Indian English
- Indonesian
- Hindi
- Korean
- Android (If the Chromebook you are using supports Android apps)

If you are using a Chromebook which supports Android apps, you have access to even more voices. Choose Android in the list when you change voice for ChromeVox and then change the voice via Android settings. You will find the Android settings via **Settings > Google Play Store >**

**Manage Android Settings.** Go to **Accessibility > Text-to-speech** and settings for **Google's Text-to-Speech engine** and other languages. Normally, the language is set to the system language and therefore does not need to be changed.

Languages available under Android include:

- Danish
- Finnish
- Norwegian
- Swedish

If your Chromebook does not support Android apps and your language is not available, you can buy voices from third parties via Chrome Web Store.

### 5.2.1.1 Navigate

With ChromeVox running, you can go through all of your OCR-processed documents with e.g. "Tab". You can also navigate line by line, word by word or by letters. The table below contains some common short commands.

Search + G	Skip to next picture
Search + H	Skip to next header
Search + Down arrow	Skip to next text line
Search + Up arrow	Skip to previous text line
Search + Shift + Ctrl + Right arrow	Skip to next word
Search + Shift + Ctrl + Left arrow	Skip to previous word
Search + Shift + Right arrow	Skip to next letter
Search + Shift + Left arrow	Skip to previous letter
Ctrl	Stop reading

You can also start the reading by clicking on the text you wish to have read aloud.



### 5.2.1.2 Change language

1. Hold down **Search** and click twice on the letter **O**.
2. Under “Voices” you can select a language from the list.
3. Hold down **Ctrl + W** or **Alt + Tab** when you have selected a new voice from the list.

### 5.2.1.3 Change speed

Click on **Search + .** and navigate to the second tab **Speech**.

- To slow down the reading, select **Reduce Reading Speed**.
- To speed up the reading, select **Increase Reading Speed**.

## 5.3 Mouse control

In camera mode, the mouse is used to mark a specific area for OCR processing. An area is marked by clicking and holding down on the left mouse button and dragging over an area. After an area has been selected, release the left mouse button in order to begin OCR processing.

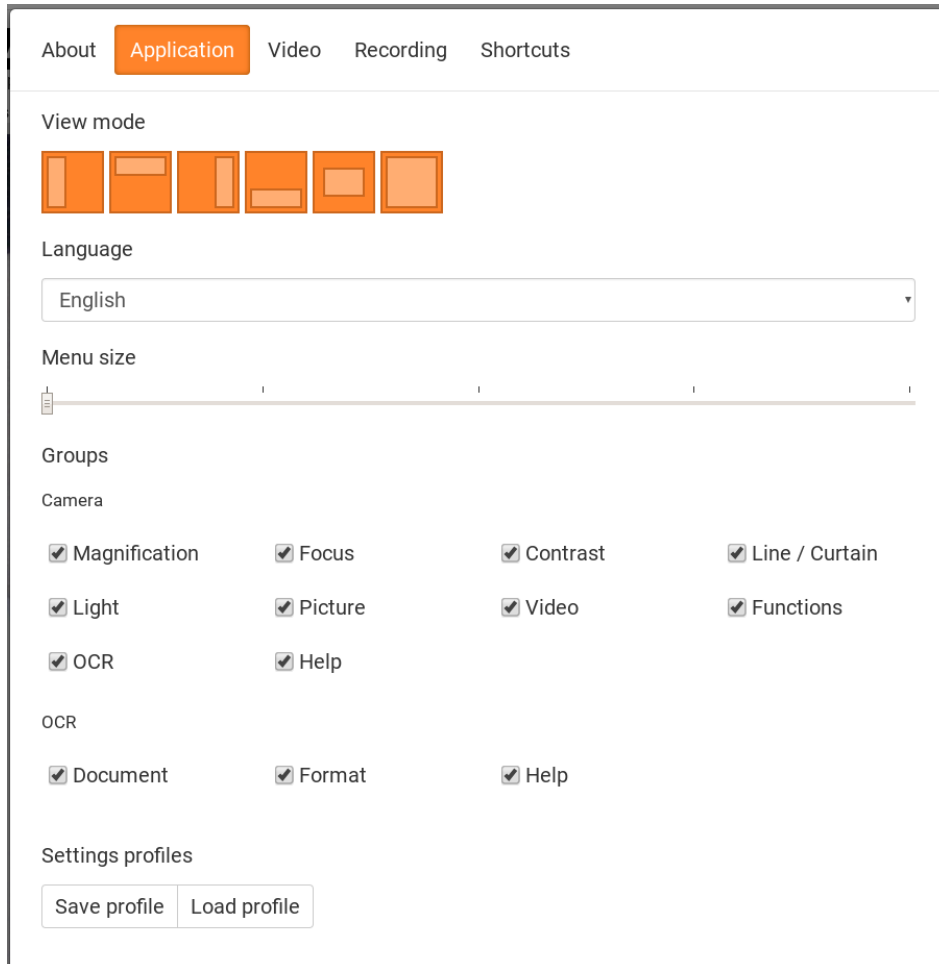
It is also possible to drag and drop pictures over the application in order to run them through OCR processing.

Please note that the above requires a Google account with an OCR licence and a MagniLink camera system which has been connected within the last two weeks, as well as an internet connection.

## 5.4 Information and settings window

The Information and settings window consists of a number of different tabs that contain application information and alternative settings.

### 5.4.1 Applications Settings



#### Split screen mode

Select which of the split screen modes to use by pressing 8.

#### Language

Change the language of the software. The software is set to use the same language as the computer's default. If this language is not available, English is automatically selected as default.

Available languages:

- Danish
- English
- Finnish
- French

- Dutch
- Norwegian
- Spanish
- Swedish
- German

### Menu size

The size of the menus and buttons can be changed here.

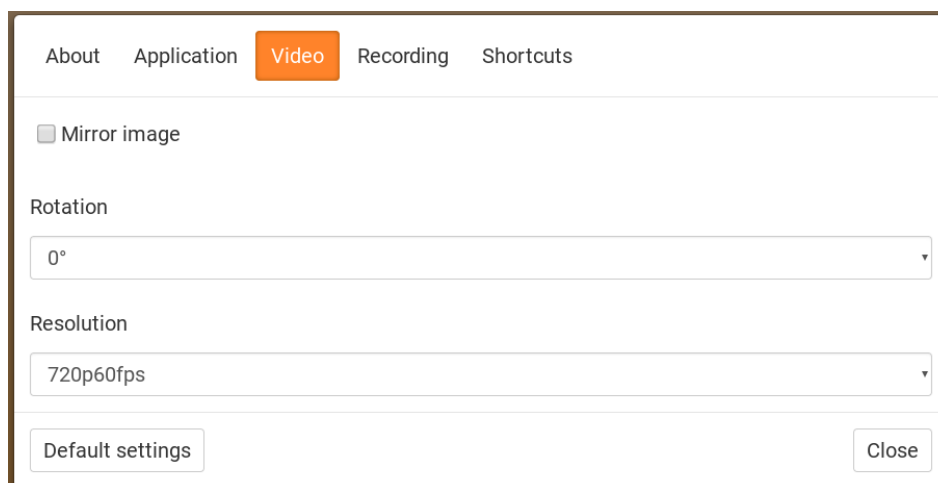
### Groups

It is possible to choose which groups of buttons appear in the menus.

### Profile

Import or export settings Use the Export Settings button to easily save the current settings configuration to the hard disc or to Google Drive, for example. Use the Import Settings button to import your exported settings.

## 5.4.2 Video Settings



### Mirror image

When this function is active the camera image is mirrored.

### Rotate image

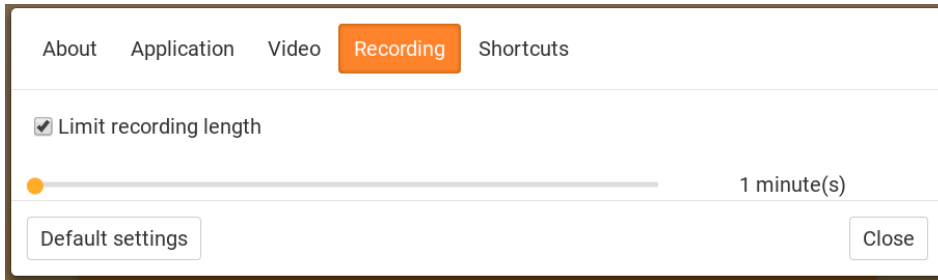
The angle of rotation of the camera image can be set here. MagniLink ChromeViewer supports rotation of the camera image to the following angles: 0°, 90°, 180° and 270°.

### Resolution

Select from the camera's various resolution options. The best picture quality is achieved by selecting the highest resolution. A lower resolution

may be needed if the application is used on a computer with low performance.

### 5.4.3 Recording Settings



#### Limit recording length

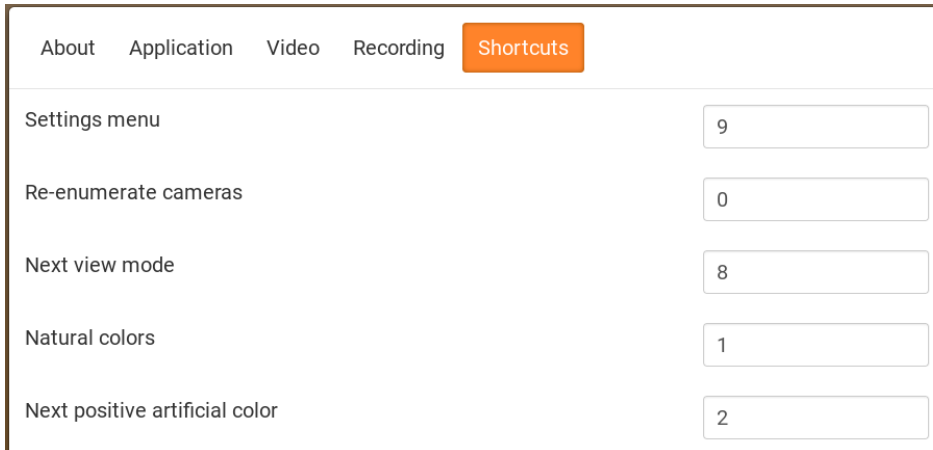
Activate this function if you wish to limit the length of recording.

#### Length in minutes

If you chose to limit the recording length, you can set the limit in minutes here, from 1 to 60 minutes.

MagniLink Chromeviewer can record video sequences from the MagniLink camera in WebM (.webm ) format. The video recording is started with the keyboard (Ctrl + M) and a red indicator is displayed at the bottom right of the video window while video is being recorded.

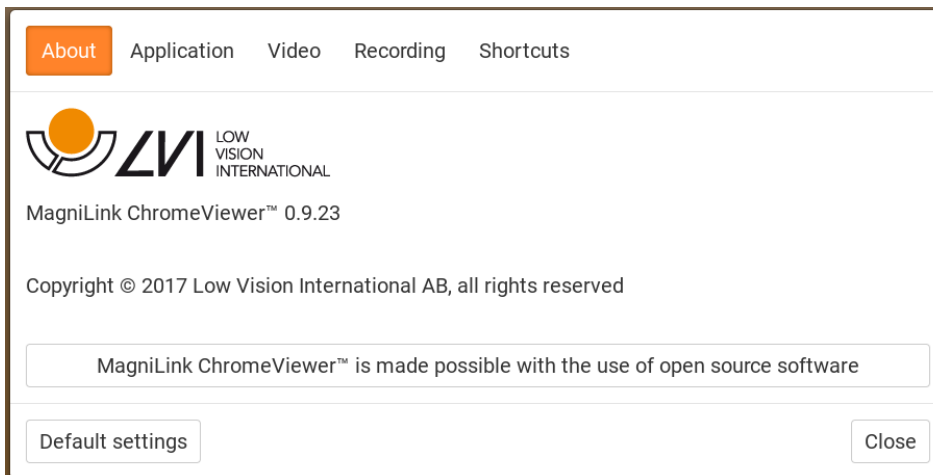
## 5.4.4 Settings for short cut commands




Setting	Value
Settings menu	9
Re-enumerate cameras	0
Next view mode	8
Natural colors	1
Next positive artificial color	2

Here the short cut commands used for the application can be changed. To change a short cut command, tab to the command that is to be changed and then press Space or Enter and then enter the new keyboard combination. If a combination already being used for another command is entered, the other command will be erased. A new keyboard combination will need to be entered in order to change the command.

## 5.4.5 About the application



About Application Video Recording Shortcuts

  
MagniLink ChromeViewer™ 0.9.23

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MagniLink ChromeViewer™ is made possible with the use of open source software

Default settings Close

Information regarding the software version and copyright can be found under this tab.

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