

Levenhuk Lite Software

- EN Quick Start Guide
- CZ Stručný průvodce spuštěním
- DE Schnellstart-Anleitung
- ES Guía de inicio rápido
- HU Rövidített telepítési és alkalmazási útmutató
- PL Skrócona instrukcja obsługi
- RU Краткое руководство

levenhuk 

LevenhukLite Quick Start Guide

LevenhukLite software allows you to view, save and edit images and video clips that you take with your Levenhuk cameras through a microscope or a telescope. Functions and operations described are valid for Windows-compatible application. For Mac and Linux versions, the set of available functions can change. Levenhuk reserves the right to modify or discontinue any product without prior notice.

Running the application

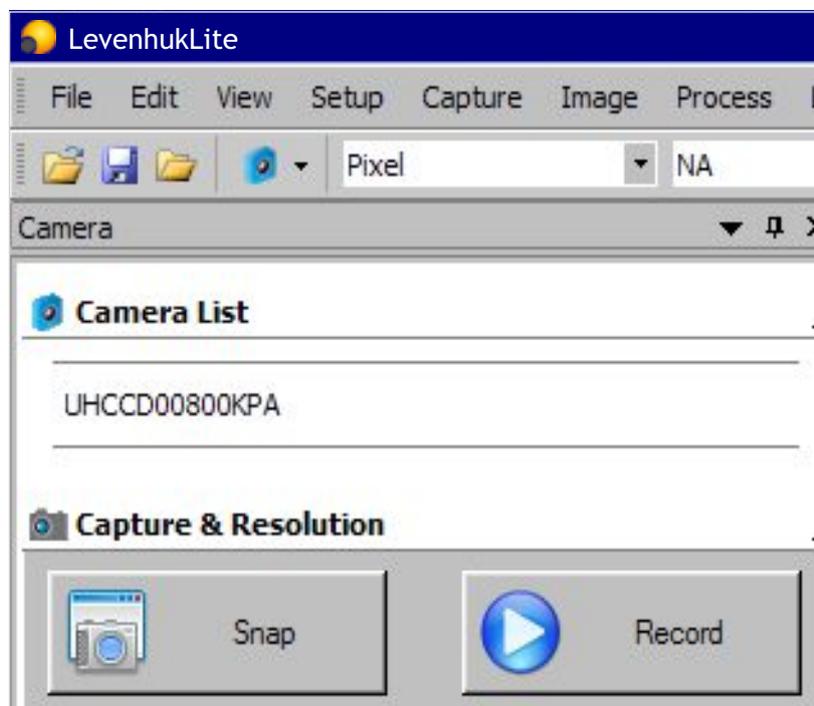
1. To run LevenhukLite you can either double-click the "🍌" shortcut on your desktop,

OR

Open the **Start** menu in the bottom-left corner of the screen. Navigate to "Applications" -> "Levenhuk" and click LevenhukLite shortcut to run the application.

If you wish to change the language of the application, you can press the Shift-P shortcut to access the **Preferences**, then choose the **Misc** tab and under **Languages** choose the desired language. This action requires restart.

2. If the camera drivers have been installed correctly, the name of the camera will appear in the camera list.



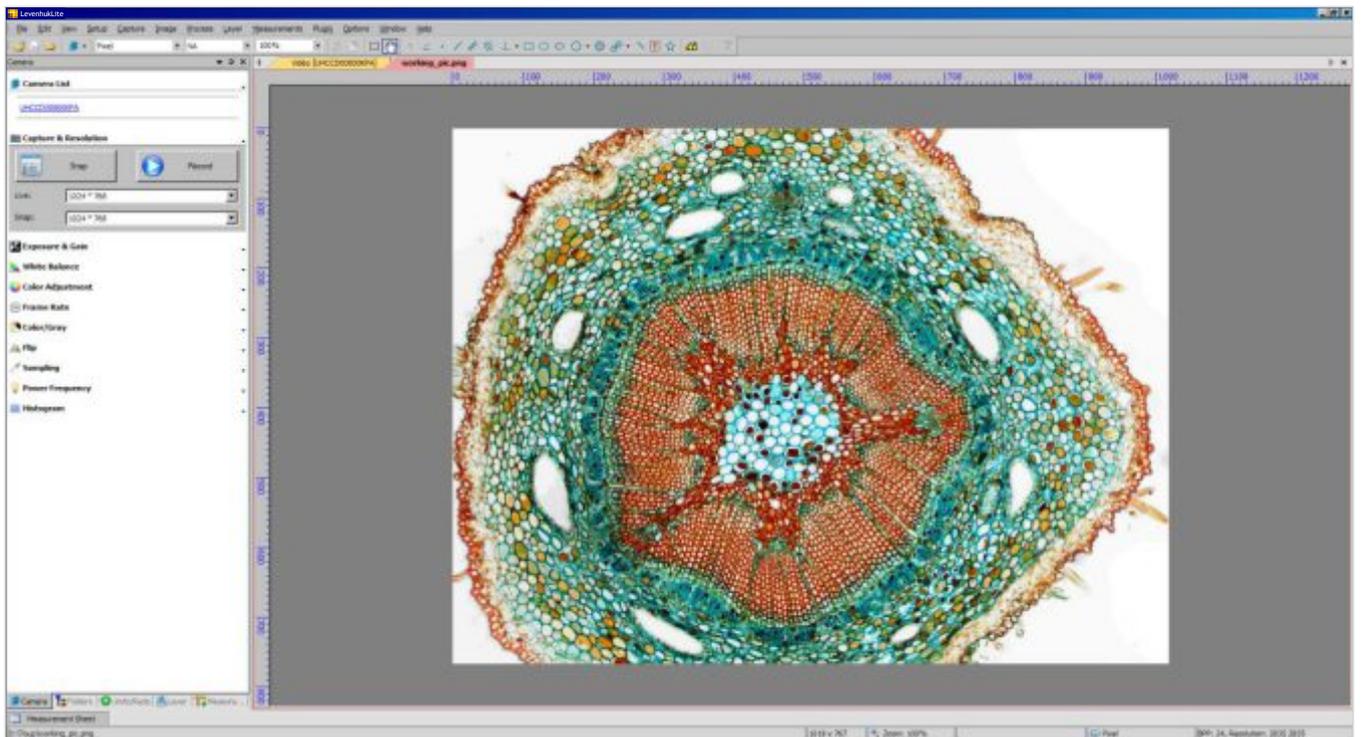
3. If the camera does not appear in the list, make sure it is properly plugged in via a USB cable and/or the camera drivers are installed correctly.

If you need to reinstall the drivers, run the setup wizard on the installation CD and choose **Install Camera Driver**.

LevenhukLite main window interface

Interface elements:

- **Menu bar**
Contains all the action commands for the application.
- **Toolbox panel**
Grants access to quick setup and editing tools.
- **Workspace**
Contains all the opened images, ready for editing.
- **Toolbox tabs**
Allow you to switch between different sets of tools for viewing and editing.
- **Toolbar**
Contains buttons for the most commonly used actions.

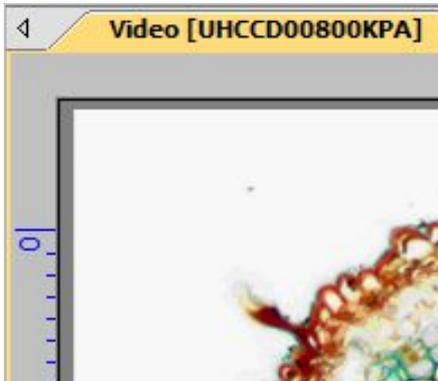


Toolbox tabs:

| Name | Description |
|--------------|---|
| Camera | Camera options and editing tools. |
| Folders | File manager. Allows you to quickly locate and open the desired image or video. |
| Undo/Redo | A list of actions throughout the session. Allows you to browse and undo/redo certain actions. |
| Layer | A list of active layers of the image. |
| Measurements | Allows you to see and measure the parameters of the opened file. |

Capturing camera views

Viewing



Clicking on the camera name will allow you to see the live camera view on your PC monitor. A **Video** tab will appear in the workspace.

You can edit the resulting image with **Exposure & Gain**, **White Balance**, **Color Adjustment** and other tools on the **Camera** tab of the toolbox.

Capturing an image

Click the **Frame** button. The current view will be captured and the resulting image shown in a new workspace tab. Every time you click the **Frame** button, a new image is taken and shown in a new tab.

Capturing a video

Click the **Video** button. Choose the file format, a name for your video and the output folder. Upon confirming these selections the live feed from the camera will be saved as a video until you choose to stop it.

Editing the image

Saving

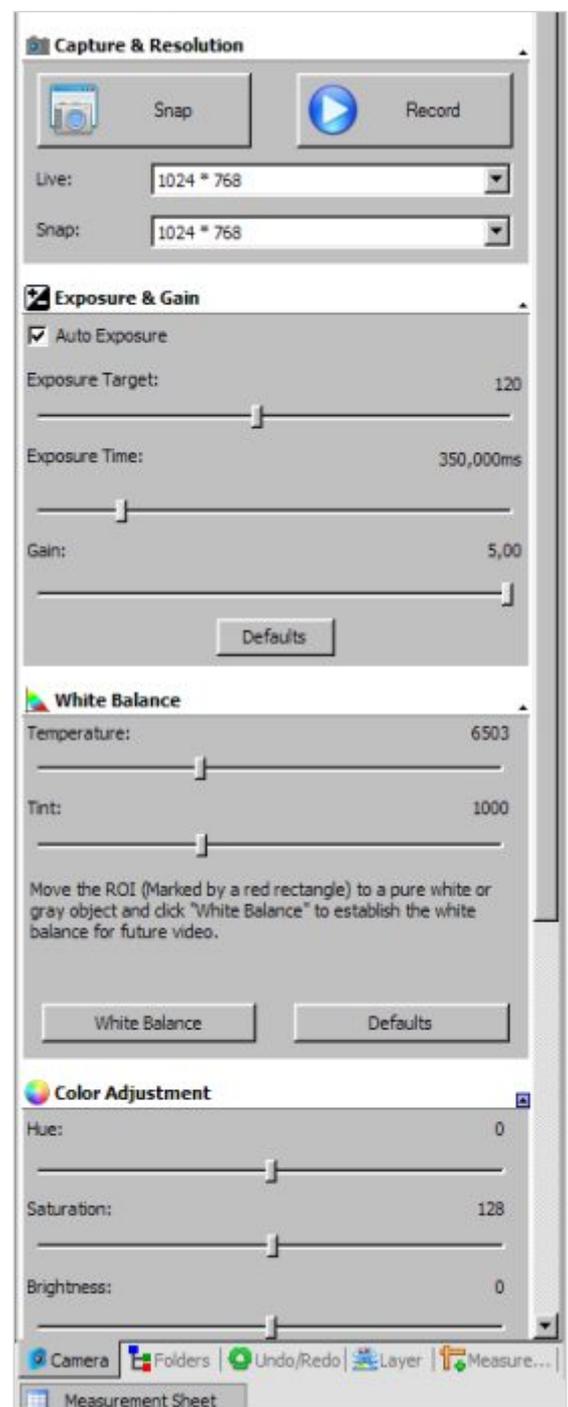
You can save one or several images on your hard drive by choosing the required option in the **File** menu. Choose between **Save**, **Save as...** or **Batch Save**.

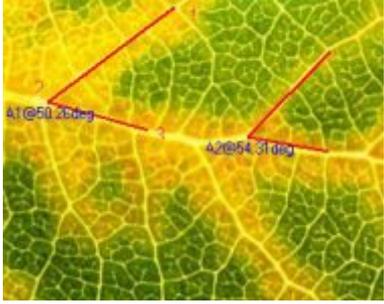
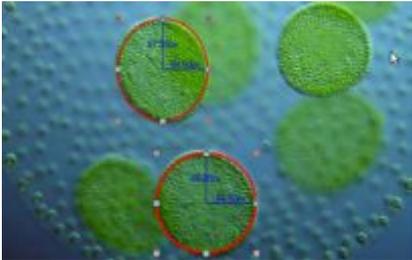
The following file formats are supported:

- Windows Bitmap (*.bmp,*.dib,*.rle)
- JPEG (*.jpg,*.jpeg,*.jpe,*.jif,*.jfif)
- Portable Network Graphics (*.png)
- Tag Image File Format (*.tif,*.tiff)
- CompuServe GIF (*.gif)
- PCX (*.pcx)
- Targa (*.tga)
- JBIG (*.jbg)
- LevenhukLite File Type (*.tft)

Measurements

LevenhukLite has a wide array of measurement options for your images. By using one of the tools in the **Measurements** tab of the toolbox (which are also accessible through a **Measurements** section of the menu bar) you can measure specific parameters of the image. The shapes placed on the image are actually located on a separate layer and the saved image is not affected. All the **Measurements** tools are listed below.



| Tool | Description |
|-----------------------------|--|
| Angle | Measures the angle between two lines.  |
| Point | Places a Label Pn point and gives you its x and y coordinates. |
| Line > Arbitrary Line | Draws a line between two points on a given layer. |
| Line > Horizontal Line | Draws a horizontal line between two points on a given layer. |
| Line > Vertical Line | Draws a vertical line between two points on a given layer. |
| Parallel | Draws two parallel lines and numbers them. |
| Vertical > Four points | Draws two vertical lines and numbers them. |
| Vertical > Three points | Draws two lines, perpendicular to each other. |
| Rectangle | Draws a rectangle from two points along a diagonal and shows its dimensions. |
| RoundRect | Draws a rounded rectangle and shows its height and width. |
| Ellipse | Draws an ellipse.  |
| Circle > Center+Radius | Draws a circle on a given layer, using the Center+Radius method. |
| Circle > Two Points | Draws a circle on a given layer, using the Two Points method. |
| Circle > Three Points | Draws a circle on a given layer, using the Three Points method. |
| Annulus | Draws a ring (two circles with a common center) and shows its inner and outer radius. |
| Two Circles > Center+Radius | Draws two circles (Center+Radius method) and a line connecting their centers. Shows the distance between these points. |
| Two Circles > Three Points | Draws two circles (Three Points method) and a line connecting their centers. Shows the distance between these points. |
| Arc | Draws an arc along three points and shows its length. |
| Text | Places a textbox on the image. Upon entering the text, right-click to confirm the entry. |
| Polygon | Using your mouse, place as many points as you need. Right-click to create a polygon. |

Note that all the dimensions are shown in pixels by default. To choose a different unit (mm, nm, etc.) you have to enter the current image resolution. You can use a ruler tool for additional measurement precision. Enter the resolution in **Image > Resolution...** menu (e.g. 100,000 pixels/m).

The measurements of all the shapes on the image may be seen in **View > Measurement Sheet** menu.

| Measurement Sheet | | | | | | | | | |
|-------------------|------|------------------|--------|----------|--------|--------|------------------|------------------|----------|
| Index | Name | Center | Radius | Area | Length | Angle | Start | End | Distance |
| 1 | P1 | (95,00, 113,00) | | | | | | | |
| 2 | P2 | (158,00, 177,00) | | | | | | | |
| 3 | R1 | (471,00, 174,00) | | 19856,00 | 564,00 | | (539,00, 247,00) | (403,00, 101,00) | |
| 4 | R2 | (271,50, 395,00) | | 17500,00 | 550,00 | | (359,00, 445,00) | (184,00, 345,00) | |
| 5 | Ar1 | (846,00, 178,57) | 98,87 | | 411,83 | 238,65 | (921,00, 243,00) | (862,00, 81,00) | |
| 6 | Tp1 | | | | | 14,41 | | | 116,12 |
| 7 | C1 | (898,00, 658,00) | 60,37 | 11451,11 | 379,34 | | | | |

Adjustments

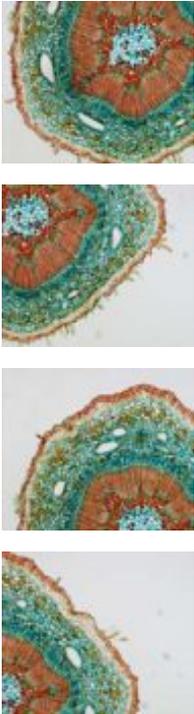
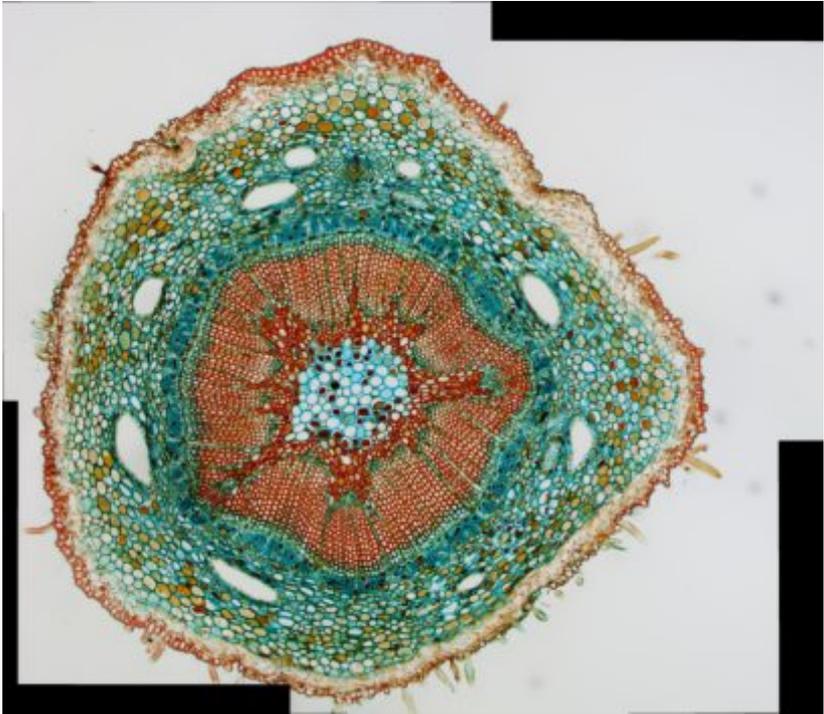
Choose **Image > Adjust...**

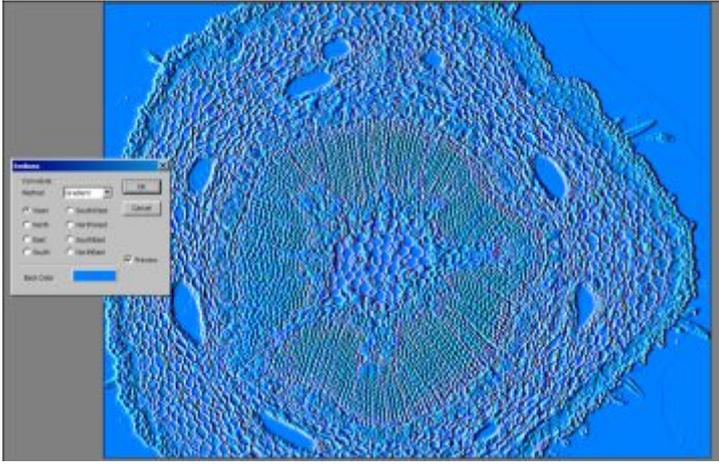
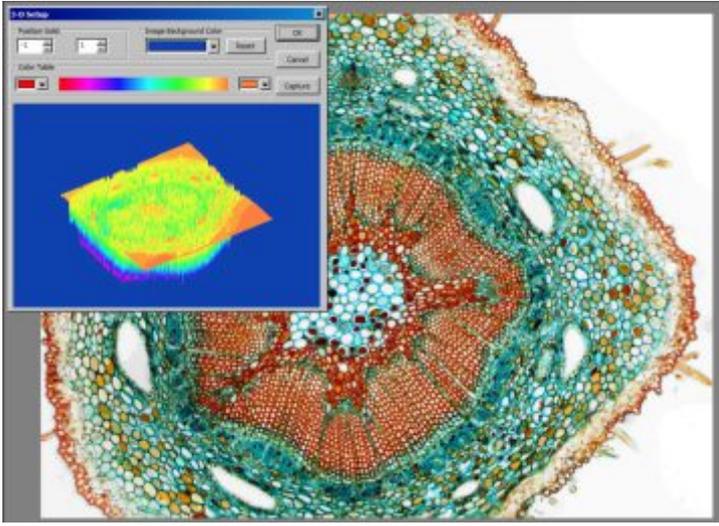
All the image adjustment actions are listed below.

| Tool | Description |
|------------------------|---|
| Curve... | Allows you to adjust the histogram of the image. But instead of working with three variables (i.e. highlights, shadows and midtones), you can edit any point on the curve in 0-255 range without affecting the other points. |
| Auto Level | Automatically decides the optimal values for highlights and shadows. Chooses the brightest and the darkest spots, considers them white and black, respectively, and changes the histogram accordingly. |
| Auto Contrast | Automatically changes the contrast values of the image. Especially effective when the image has a uniform hue. |
| Histogram Equalization | Histogram shows the RGB values of the initial image and reassigns the values, equalizing them in the resulting image. |
| Brightness/Contrast... | Allows you to make quick adjustments to the brightness and contrast of the whole image. |
| Color... | Changes the color values of the whole image. |
| HMS... | Allows you to adjust the values of HL (highlights), M (midtones) and S (shadows) within -100...100 range. You can only edit these values in 24-bit True Color images. |
| Gamma... | Allows you to adjust the midtone values of the image. The higher the Gamma value, the darker the image. |
| Filter Color... | Allows you to filter one of the colors from the image bitmap. By choosing Red , Green or Blue , the respective information will be filtered out and the resulting image will change accordingly (i.e. when filtering the Red value, only Green and Blue values will be shown, etc.). |
| Extract Color... | Allows you to extract one of the colors from the image bitmap. |
| Invert | Inverts the colors of the image, while constraining the proportions. |

Processing

Process menu contains a number of image processing tools. The LevenhukLite tools are similar to any other graphics editing software. Below is a full list of actions in this menu.

| Tool | Description |
|--|--|
| Stitch | Opens the <i>Stitch</i> dialog that allows you to stitch several images into one. |
|  |  |
| Filter... | Opens the <i>Filter</i> dialog that allows you to apply one of many LevenhukLite filters to an image. Before trying it out, we recommend you to read up on convolution and morphological filters on various forums. You can also create custom filters, which can be accessed from the <i>Filter</i> tab. |
| Range... | Allows you to adjust the intensity levels of the image, thus increasing its contrast and display sensitivity in low light conditions. |
| Segmentation... | Allows you to partition the image into multiple segments (superpixels), based on pixels similar in color, intensity or texture. Afterwards, you can either delete the superpixels from the image or remove the rest of the image. This is very effective when you want to remove the noise from the image, while keeping the main details. |
| Binary... | Allows you to simplify the image bitmap. If the grey level of a given pixel exceeds a certain threshold, it is turned white. If it doesn't, the pixel is turned black. |

| | |
|--------------------|--|
| Emboss... | Applies a filter that embosses the image.  |
| Pseudo Color... | Colors a grayscale image, making it easier to understand. |
| Surface Plot... | Creates a 3D representation of the given image.  |
| Line Profile... | Displays a 2D-graph of pixel intensity along a certain line within the image. |
| Diffuse... | Applies a filter that softens the image, making it less sharp. |
| Granulate... | Applies a filter that grains the image, making it less sharp. |
| Mosaic... | Creates a new image out of several opened images. |
| Fusion... | Similar to creating a video, this process allows you to merge several images with different focus into one sharp image. |
| Color Composite... | Creates false-color composite images from grayscale images. |

Plug-ins

Additional tools may be used during editing. To gain access to these tools, install them in the **Plugin** menu.

Settings

To customize the application, you can use the **Options** menu. Press **F1** or click the **Help** menu to read the manual.