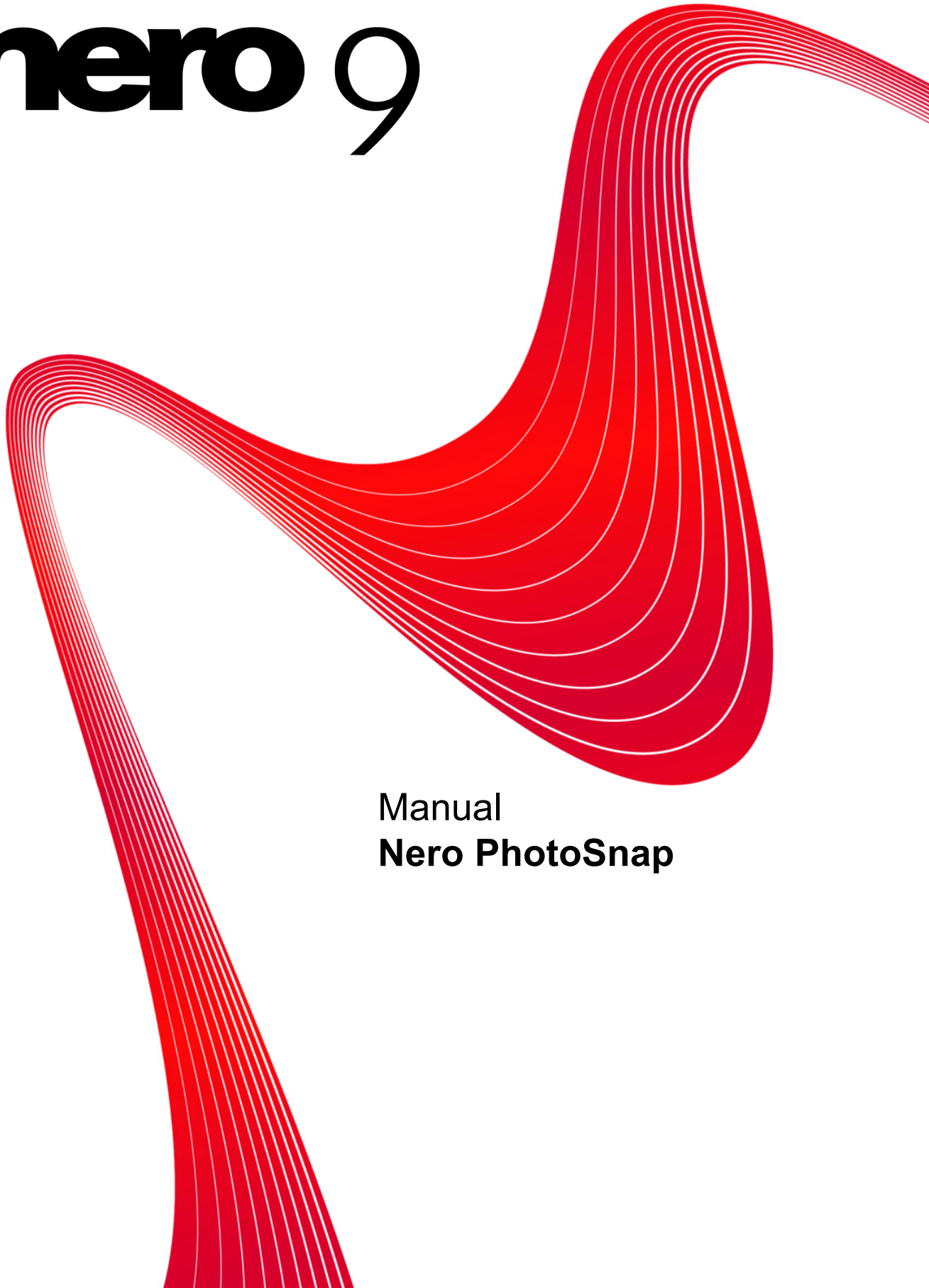
nero 9



Manual

Nero PhotoSnap

Table of contents

1 Start Successfully

1.1 About the manual

This manual is intended for all users who want to learn how to use Nero PhotoSnap. It is process-based and explains how to achieve a specific objective on a step-by-step basis.

To make best use of this documentation, please note the following conventions:

	Indicates warnings, preconditions or instructions that have to be precisely followed.
	Indicates additional information or advice.
1. Start …	The number at the beginning of a line indicates a prompt for action. Carry out these actions in the order specified.
	Indicates an intermediate result.
	Indicates a result.
OK	Indicates text passages or buttons that appear in the program interface. They are shown in boldface.
(see…)	Indicates references to other chapters. They are executed as links and are shown in red and underlined.
[…]	Indicates keyboard shortcuts for entering commands.

1.2 About Nero PhotoSnap

Nero PhotoSnap lets you edit your digital photographs. You can choose from a large selection of tools to improve the picture quality or to create special picture effects.
Nero PhotoSnap is supplemented by the Nero PhotoSnap Viewer viewing software. Your digital photos and photo files can be viewed with Nero PhotoSnap Viewer.

With the integrated database of Nero Scout and using the **Select an Image File to be Opened** window, you can search for files using various criteria and then directly edit them in Nero PhotoSnap.

With Nero CoverDesigner, you can create covers and labels for discs (CDs, DVDs, etc.). Nero CoverDesigner is a part of Nero 9 Premium and is automatically installed with it. You will find further information in the Nero CoverDesigner manual.

See also:

About Nero PhotoSnap Viewer→ 38

1.3 Basic Steps

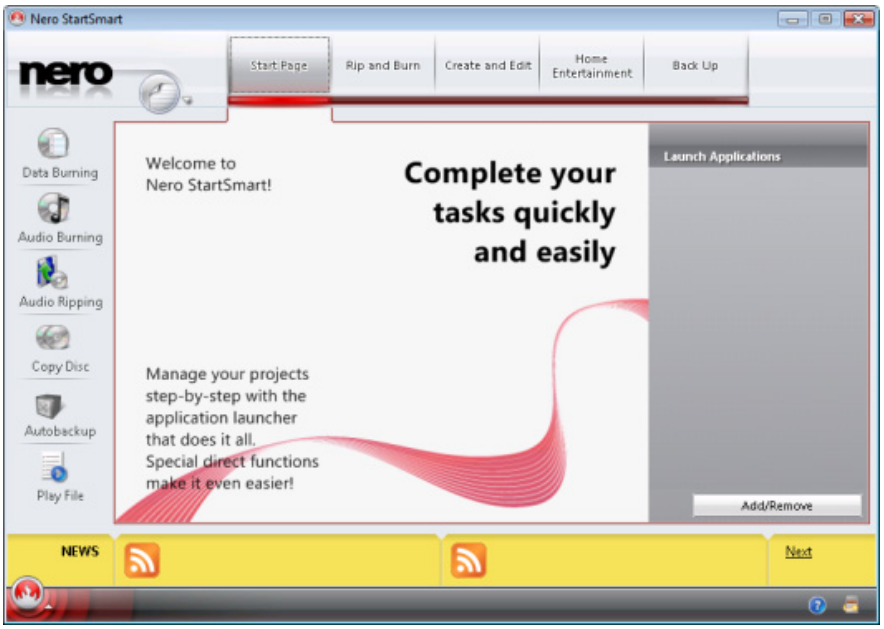
Nero PhotoSnap lets you modify a picture and apply effects to it. Several tools and picture effects are available to you in the right work area for this purpose.
The following basic steps are necessary in order to post-process a picture:

- Load the picture in Nero PhotoSnap.
- Choose the effect for the picture.
- Undertake any required fine settings for the effect.
- Save picture under a new name.

2 Launching the program

To start Nero PhotoSnap via Nero StartSmart, proceed as follows:

1. Click the **StartSmart** icon.
   → The Nero StartSmart window opens.
2. Click the  button.
   → The list of Nero applications appears.

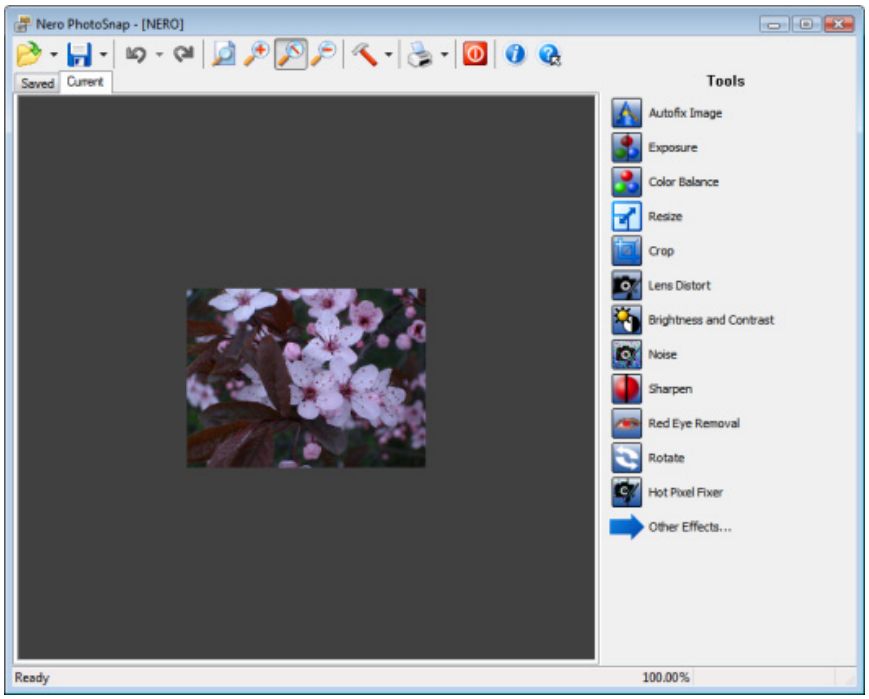


Nero StartSmart window

3. Select the Nero PhotoSnap entry in the selection list.
4. The Nero PhotoSnap window opens.
   → You have launched Nero PhotoSnap via Nero StartSmart.

3 User Interface

The program interface of Nero PhotoSnap is where you begin to edit photos and pictures. In one task bar Nero PhotoSnap offers file, display and configuration options, and in the **Toolbox** area it offers filters and effects for picture editing. The opened picture is displayed in the editing area.



Program interface with opened picture

In the icon barthe following buttons are available:

	Opens the **Select a picture** window, where you can select a picture to open. In the drop-down menu you can select one of the most recently opened picture files.
	Saves the picture. In the drop-down menu you can save the picture under a different name and set the options for compression if needed.
	Undoes the last editing step.
	Restores the undone editing step.
	Fits the picture to the editing area.
	Increases the view of the picture.
	Displays the picture in its original size (100% zoom).
	Decreases the view of the picture.

	Opens the **Options** window where you can configure the program. In the drop-down menu, file information can be displayed.
	Prints the picture. You can configure the printer settings in the drop-down menu.
	Closes Nero PhotoSnap.
	Opens the **About Nero PhotoSnap** window to display information such as the version number.
	Opens the window **Help Information** which displays the Online Help. Help can only be opened if it has been installed separately.

The following setting options are available in the editing area:

Tab **Saved**	Displays the original picture as it is saved.
Tab **Current**	Displays the current editing state of the picture (not saved).
Tab **Preview**	Shows how the picture would look with the current filter. This tab is available only if a filter is selected.
Tab **Split Preview**	Shows the current picture in the left pane and in the right pane how the picture would look if the current filter were applied. This tab is available only if a filter is selected.
Button 	Synchronizes the view of the left and right pictures, i.e. if the left picture is enlarged, the right picture is also enlarged and vice versa. If the button is deactivated, the views are not synchronized. This button is available when the **Split Preview** tab is displayed.

In the Toolbox area, effects are available that you can apply to pictures.

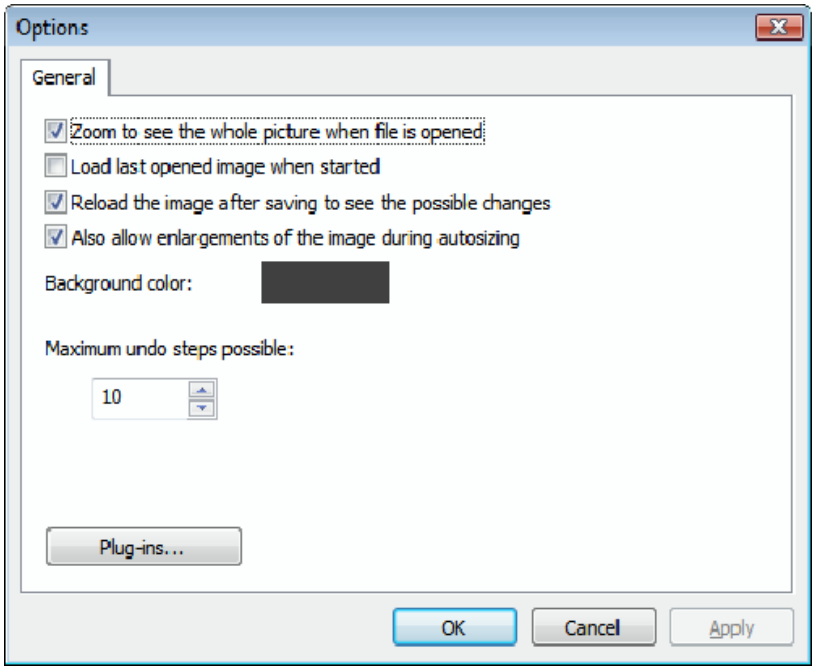
Other effects	Shows additional effects.
Back to main effects	Shows the main effects.

See also:

Program options→ 10

4 Program options

Nero PhotoSnap lets you define the presets for displaying pictures. You define the presets in the **Options** window, which you open with the button.



Options Window

The following setting options are available:

Check Box **Zoom to see the whole picture when file is opened**	Fits the picture to the editing area. If the check box is cleared, the picture is displayed in its original size (100%) in the editing area.
Check Box **Load last opened picture when started**	Loads the most recently opened picture when Nero PhotoSnap is launched.
Check Box **Reload the picture after saving to see the possible changes**	Reloads after saving the picture and displays it in the **Saved** and **Current** tabs. If the check box is selected, the **Saved** tab displays the original picture before editing (from the Nero PhotoSnap clipboard) and the **Current** tab displays the edited and saved picture. If you are not satisfied with the changes, you can click the button to reset the changes and edit again from the original picture.

Check Box **Also allow picture enlargement during autosizing**	Enlarges the picture if required to fit into the editing area. If the check box is cleared, the maximum picture enlargement is the original size.
Button **Background Color**	Defines the background color of the editing area.
Input field **Maximum undo steps**	Defines how many steps can be undone.
Button **Plug-ins**	Opens the **Configure Plug-in Manager** window where you can register plug-ins (currently, no additional plug-ins are available).

See also:

User Interface→ 8

5 Image effects

5.1 General Effect Area

When you select an effect, a corresponding effect area is usually shown. Some effects possess special settings possibilities and areas.

Generally, the following options are available:

Drop-down menu **Preferences**	Creates a name for the selected settings.
Button **Save**	Saves the preset.
Button **Delete**	Deletes the selected preset.
Button **Apply**	Applies the effect.
Button **Cancel**	Cancels the action and shows the **Toolbox** area.
Check Box **Preview**	Shows the **Filter Preview** preview window. Here you see the saved picture above and the edited picture below.

See also:

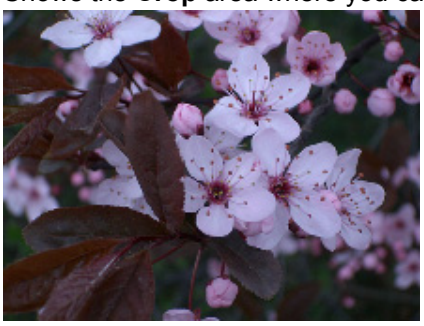
Main effects→ 13
Further Graphic Effects→ 22

5.2 Main effects

When a picture is open, you can switch between main effects and other effects in the **Toolbox** area with the **Other Effects** and **Return to Main Effects** buttons. The main effects are particularly useful for correcting imperfections in the digital picture caused by, for example, a faulty shot or a faulty scan. The other effects are used for artistic editing and creative picture manipulation.

The following main effects are available, demonstrated by the contrast between the original graphic (left) and the effect used (right):

	Automatically corrects the light and color values of a picture. 
	Shows the **Color/Exposure** area where you can correct the exposure automatically or manually. 
	Displays the **Color/Color Balance** area in which individual color values can be incremented or reduced. Example: in the sample picture, the amount of red is reduced. 
	Shows the **Resolution** area where you can change the pixel size, resolution and/or print size of the picture.

	Shows the **Crop** area where you can extract (crop) part of the area. 
	Shows the **Lens distortion** area where you can offset pin cushion or barrel lens distortion. 
	Fades in the **Brightness and Contrast** area. 
	Shows the **Noise** area, where you can reduce or increment picture noise.
	Displays the **Sharpness** area 

	Shows the **Red eye removal** area, where you can correct red eyes.
	Shows the **Rotate** area, where you rotate the picture. 
	Shows the **Hot pixel fixer** area, where you can remove so-called hot pixels.

See also:

- General Effect Area→ 12
- Further Graphic Effects→ 22
- Red Eye Removal→ 35

5.2.1 Settings in the Lighting Region

You can correct the exposure with Nero PhotoSnap. For this purpose there is a histogram and gradation correction curve available in the **Color/Exposure** area.

The following tabs are available:

Histogram Correction	This defines the brightness range of the histogram using two lines. On the left are the light pixels, on the right the dark pixels. The histogram is recorded in the background.
Gravitation curves	Defines the distribution of the brightness values using a curve. On the X axis are the hue values of the original from light to dark, on the Y axis the tone values after the correction from light to dark. A straight curve with a 45° angle means that the original values remain unchanged. The histogram is recorded in the background.

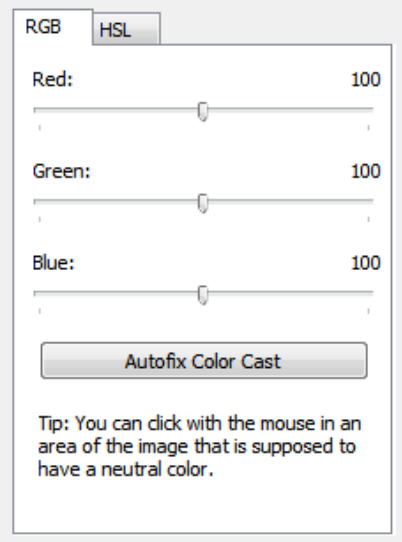
The histogram graphically shows the brightness distribution of the picture pixels. On the X axis are the hue values from 0 (light) to 255 (dark), on the Y axis the number of pixels.

See also:

- Main effects→ 13
- Correcting the Lighting with the aid of the Histogram→ 31
- Lighting with Gradation Curve→ 33

5.2.2 Color Balance

You can correct the color of the picture with Nero PhotoSnap and, for example, remove a color cast. Correction options in RGB and HSL modes are available for that purpose in the Color/Color balance area.
You can perform the color balance with the **RGB** tab in RGB mode: colors are defined with combinations of the three primary colors **red**, **green** and **blue**. The color balance can be performed on the **HSL** tab in HSL mode: colors are defined by a combination of hue factors, saturation and lightness.



Color Balance, Tabs, RGB Area

The following input options are available on the **RGB** tab:

Slider **Red / Green / Blue**	Regulates the amount of color. Slide the regulator to the right to increase the amount of color (up to 100%). Slide the regulator to the left to decrease the amount of color (to 0%).
Button **Auto-remove color cast**	Automatically balances an existing color cast.

The following input options are available on the **HSL** tab:

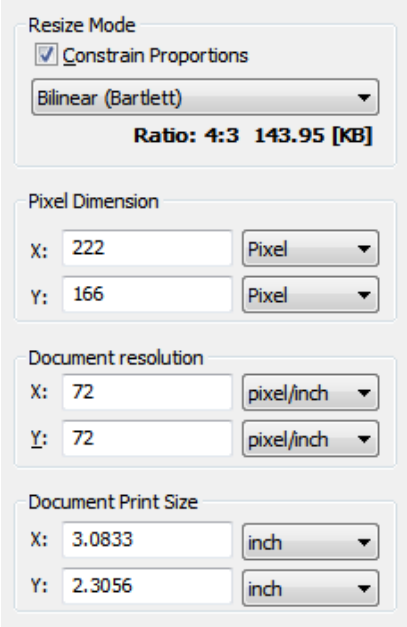
Slider **Hue**	Regulates the primary colors. Slide the regulator to the right or left to change the primary color hue of each pixel.
Slider **Saturation**	Regulates the saturation of the colors. Slide the regulator to the right to increase the saturation or to the left to decrease.
Slider **Brightness**	Regulates the saturation of the colors. Slide the regulator to the right to increase the saturation or to the left to decrease.

See also:

Main effects→ 13
Balancing the Color of a Picture→ 34

5.2.3 Resolution Settings Area

The resolution, size and font size of a picture can be changed in the resolution area.



Resolution Area

The following areas are available in the **Resolution** area:

Area **Resize Mode**	Selects a method for changing the size of the picture.
Check Box **Constrain proportions**	Retains the proportions of the picture.
Area **Document resolution**	Defines the resolution of the picture in pixels per cm or inch.
Area **Document Print Size**	Defines the print size of the picture in cm or inches.
Area **Document Print Size**	Defines the print size of the picture in cm or inches.

The following selection items are available in the **Size-Change Mode** selection list:

No picture resampling	Changes the pixel size of the picture; the picture is not re-calculated if there is a major change.
Nearest Neighbor	This method is the fastest and easiest and is especially suited to illustrations with few colors. Contrasts and edges are retained. Not well suited for photography.

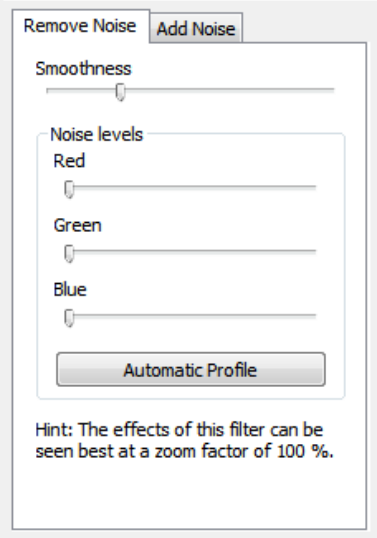
Bilinear	Re-calculates the picture if there is size change by taking into account the upper and lower pixels for the recalculation. This method is fast and especially suitable for drawings and illustrations.
Bilinear (Bartlett)	If there is a size change, the picture is re-calculated by taking into account the surrounding pixels in different parts. Though more exact for picture size reductions than the simple bilinear method, it is slower. This method produces the best results for drawings and illustrations.
Bicubic	If there is a size change, the picture is recalculated by taking into account all adjacent pixels during the recalculation. This method is particularly suited for realistic photos. The edges and lines are retained relatively well. However, the method may produce artefacts on sharp edges and is therefore not well suited for drawings.
Lanczos	If there is a size change, this recalculates the picture by taking into account the surrounding pixels in a defined ratio to the recalculation. This method is qualitatively the best and thus requires the most time to calculate. It is especially well suited for detailed half-tone photos. However the method may produce artefacts on sharp edges and is therefore not well suited for drawings.

See also:

Main effects→ 13

5.2.4 Noise Settings Area

In the **Noise** area it is possible to increment or decrease the picture noise. Noise occurs in digital photos if the ISO sensitivity is high when taking photos. Disturbance signals, unwanted pixels or artefacts may appear.



Noise Area

The following settings are available on the **Noise** tab:

Slider **Smoothness**	Defines the degree of general noise reduction.
Area **Noise levels**	Defines the degree of noise reduction of the primary colors **red**, **green** and **blue**.
Button **Auto profile**	Automatically reduces noise. The regulators are set to an optimal value.

The following slider is available on the **+Noise** tab:

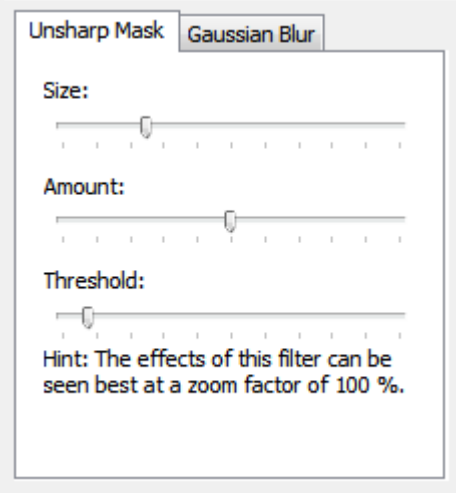
Noise levels	Defines the degree of general noise reduction.

See also:

Main effects→ 13

5.2.5 Sharpening Settings Area

In the **Sharpen** area the picture can be sharpened or softened. The sharp effect is achieved by the **Mask Softening** filter that wipes out unsharpness or softening effects with the **Gaussian** filter. The impression of sharpness in pictures is the result of as high as possible tone value change, meaning from the contrast between two surfaces. The more edgy and contrasting these surfaces are, the sharper the transition seems to be.



Sharpen Area

The following settings are available on the **Mask Softening** tab:

Size	Defines how many pixels should be included in the sharpening calculation.
Amount	Defines the degree of contrast removal.

Threshold	Defines from which edge contrast sharpening should occur.

The following slider is available on the **Gaussian Blurring** tab:

Size	Defines how many pixels of an area should be included in the un-sharpening calculation.

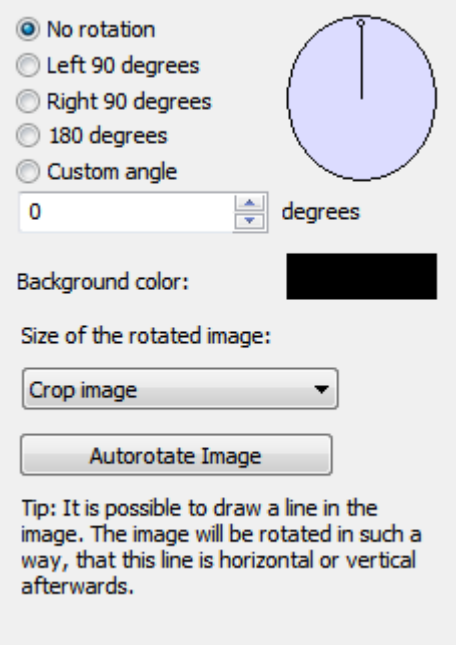
There is no general regulator mixing for sharpening that applies to all picture. The optimal regulator mixing must be determined by trial and error.

See also:

Main effects→ 13

5.2.6 Rotate Settings Area

In the **Rotate** area you can rotate the picture or the picture content.



Rotate Area

The following configuration options are available in the **Rotate** area:

Option button **No rotation**	The picture is not rotated.
Option buttons **Left/Right 90 degrees**	Rotates the picture 90 degrees to the left or right.

Option button **180 degrees**	Rotates the picture 180 degrees.
Option button **Custom angle**	Rotates the picture by any number of degrees. Enter the degrees in the input field or rotate the slider of the circle.
Color space **Background Color**	Defines a background color for unfilled areas that occur when rotating.
Button **Autorotate picture**	Rotates the picture automatically by looking for edges; the picture is rotated so that most edges are horizontal or vertical.

The following items are available in the **Size of the rotated picture** drop-down menu:

No cropping	Does not crop the picture and fits the picture in an outer frame with horizontal and vertical edges. The newly created area is filled with the selected background color.
Crop picture	Crops the picture in such a manner that no background areas can be seen. Here the largest possible cropping is used, although under certain circumstances picture content can be lost.
Crop but keep picture size	Crops the picture like **Crop picture** but increases the size of the crop so that the dimensions of the rotated picture are the same as the original.

See also:

Main effects→ 13
Save Picture→ 35

5.3 Further Graphic Effects

When a picture is open, you can switch between main effects and other effects in the **Toolbox** area with the **Other Effects** and **Return to Main Effects** buttons. The other effects are used for artistic editing and creative picture manipulation.

The following further effects are available, clarified by the comparison between the original graphic at the left and the effects used on the right.

	Shows the **Median** area where you can use a water color effect. 
	Shows the **Color/Inverting** area, where you can invert the colors of a picture and create a negative of the picture. 
	Changes the gray scale conversion. This means that a colored picture is recalculated into gray scales. 

	Reduce the picture to its edges, i.e. to the transitions between color areas. 
	Applies the vignetting filter. This means that the picture is elliptically shadowed toward the corners. 
	Mirrors the picture horizontally.
	Mirrors the picture vertically.
	Applies the relief effect. This means that edges of areas within a picture are highlighted as shaded and other colors are suppressed. 

	Shows the **Aging** area where you can apply an aging effect. 
	Shows the **Canvas** area, where you can apply the canvas effect. 
	Shows the **Glow** area, where you can add a glow emanating from a bright surface area. 
	Shows the **JPEG artefact removal** area, where you can improve pixelated JPEG pictures.
	Displays the **Duotone** area, in which a desired color scale can be set by means of two particular contrasting color shades. 

	Shows the **Kaleidoscope** area, where you can use a kaleidoscope effect. 
	Shows the **Posterization** area, where you can use the oil painting effect. 
	Shows the **Solarization** area, where you can apply the solarization effect. 
	Shows the **Water** area, where you can apply water effects. 

See also:

- Main effects→ 13
- General Effect Area→ 12

5.3.1 Settings in the Aging Area

A picture can be artificially aged in the **Aging** area.

The following sliders are available in the **Aging** area:

Intensity	Defines the degree of aging. As a picture ages, it becomes increasingly sepia toned.
Desaturation	Defines how faded the colors should be.
Noise	Adds noise to the picture, i.e. randomly distributed artefact pixels.
Scratches	Adds sepia scratches to the picture.
Lines	Adds vertical lines to the picture.

See also:

Further Graphic Effects→ 22

5.3.2 Median Settings Area

In the media area the picture can be alienated with the help of median effects. This effect replaces an individual pixel with another pixel that possesses the median value of a neighboring pixel within a certain environment.

For instance, with a high median value you can alienate a photo to such an extent that it looks like a painting.

The following slider is available:

Filter intensity	Determines the amount of the median intensity.

See also:

Further Graphic Effects→ 22

5.3.3 Canvas Settings Area

In the **Canvas** area, you can imitate a surface structure of a picture with the aid of texture.

The following setting options are available:

Drop-down menu **Texture**	Selects a predefined surface structure.
Slider **Intensity**	Determines how visible a surface structure should be seen.

See also:

Further Graphic Effects→ 22

5.3.4 Duotone Settings Area

In the **Duotone** area two contrasting color shades can be selected with which the picture is to be colored.

The following buttons are available:

Dark color	Opens the **Color** window in which you can select the one predefined dark color or can mix the corresponding color.
Light color	Opens the **Color** window in which you can select the one predefined light color or can mix the corresponding color.

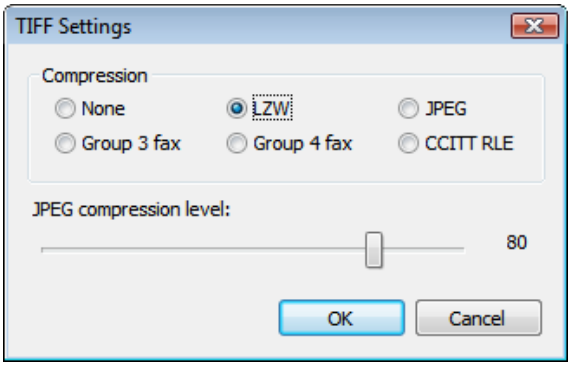
See also:

Further Graphic Effects→ 22

6 Image formats

6.1 Compression Settings for the TIFF Format.

Nero PhotoSnap has several compression processes available in the TIFF picture format. You can set the desired process and the degree of compression in the **Save As** > **settings** window.



The following settings options are available in the **Compression** area:

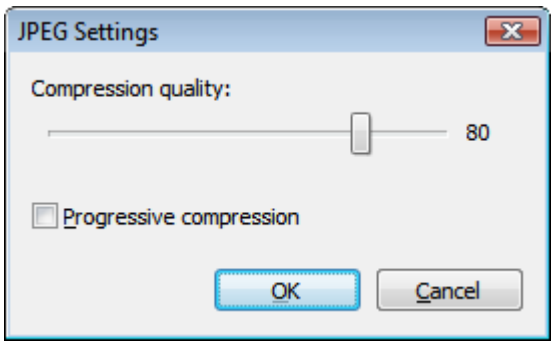
Option button **None**	Uses no additional compression method.
Option button **LZW**	Performs non-lossy fast compression using the Lempel, Ziv and Welch method. The file size can be reduced by up to 50%. The loading time in editing programs can, however, be longer. This method is particularly well suited for gray scale and color pictures.
Option button **JPEG**	Carries out a lossy JPEG compression. Using the **JPEG compression strength** slide regulator you can define the degree of compression.
Option button **Group 3 fax**	Performs a non-lossy compression by encoding isochromatic pixels and saving the information separately. This method is used by all fax devices and is well suited for black & white pictures.
Option button **Group 4 fax**	Performs a non-lossy compression by encoding isochromatic pixels and saving the information separately. The method is well suited for black & white pictures.
Option button **CCITT RLE**	Carries out a non-lossy compression using run-length encoding. Isochromatic pixels are encoded using counters. This method is particularly suitable for black & white pictures or pictures with large areas of the same color.

See also:

Compression Settings for the JPEG Format→ 29
Compression Settings for the PNG Format→ 29

6.2 Compression Settings for the JPEG Format

Nero PhotoSnap possesses several compression processes for saving in the JPEG picture format.



JPEG settings window

The following setting options are available in the **JPEG settings** window for JPEG/JPG pictures:

Slider **Compression quality**	Regulates the compression strength.
Check Box **Progressive compression**	Compresses the picture progressively. When a progressively compressed JPEG picture is accessed on the Internet, it becomes visible in layers. The user first sees an unsharp picture which then becomes increasingly sharp.

See also:

Compression Settings for the TIFF Format.→ 28
Compression Settings for the PNG Format→ 29

6.3 Compression Settings for the PNG Format

When saving in the PNG picture format in Nero PhotoSnap, the color depth can be reduced to save memory. The degree of compression can be set in the **Save As** > **Settings** window.

The following check box is available:

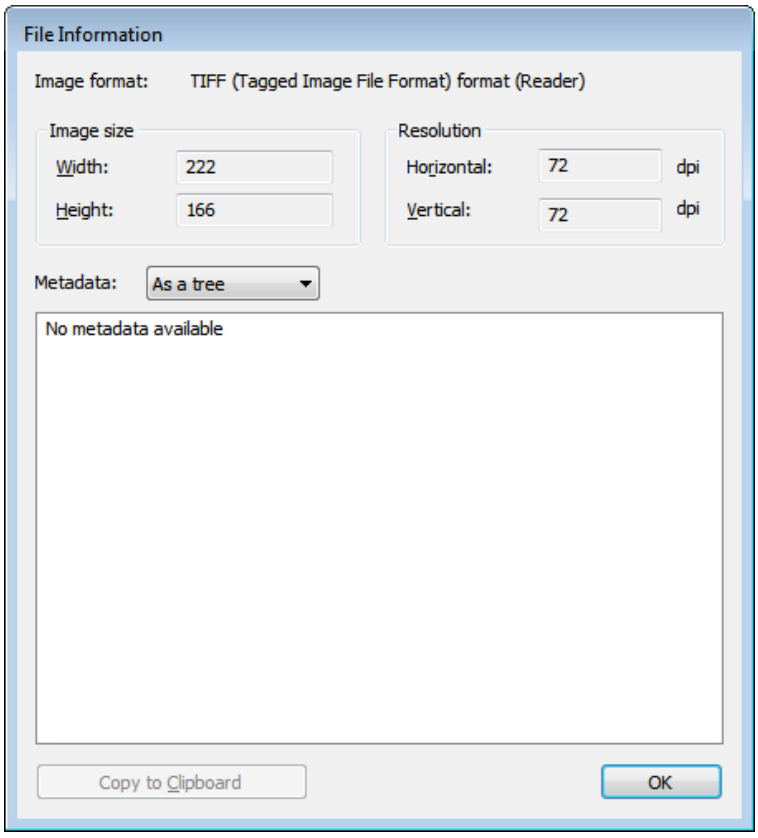
Convert current picture to 256 colors (dithered)	Reduces the color depth to 256 colors and thereby reduces the file size.

See also:

Compression Settings for the JPEG Format→ 29
Compression Settings for the TIFF Format.→ 28

7 Overview of Data Information and Metadata

The **File Information** window provides you with information about the picture. If the photo was taken with a digital camera, metadata is usually present, e.g. camera-specific EXIF information such as aperture and shutter time. You can open the **File Information** window from Nero PhotoSnap or from Nero PhotoSnap Viewer.



File Information Window

The following information and setting options are available in the **File Information** window:

Picture format	Displays the format of the picture.
Picture size	Displays the size of the picture in **height** and **width**.
Resolution	Displays the resolution of the picture in dpi, **horizontally** and **vertically**.
Drop-down menu **Metadata**	Defines the way the metadata is displayed. It can be displayed as a **Tree** or a **List**.
Button **Copy to clipboard**	Copies the metadata to the clipboard.

8 Edit Picture

Nero PhotoSnap allows pictures to be assigned pre-defined filters and effects. Picture effects are available to you in the **Toolbox** area picture effects.

To edit a picture, proceed as follows:

1. Click the picture effect button you want in the **Toolbox** area.
   → The corresponding area is displayed. The **Preview** and **Split Preview** tabs are displayed.

   The effects **Convert to gray scale** to **Embossing** are applied immediately to the picture. The button lets you undo the effect you have applied.

2. To view both the current picture and the picture with the effect, click the **Split Preview** tab.
   → The **Split Preview** tab is displayed. The button is displayed over the editing area.
3. Enlarge or decrease the size of the picture to be able to better view the effect.
4. To close the **Preview** window, clear the **Show preview** check box.
5. Define the desired settings in the section.
   → The picture changes in accordance with the settings.
6. To save your settings for the effect:
   1. Click in the **Presets** drop-down menu.
   2. Enter a name.
   3. Click the **Save** button.
      → The settings are saved under the selected name. The next time you use the effect, the saved settings are available to you in the **Presets** drop-down menu.

   You can overwrite an existing preset with new settings by clicking the **Save** button when the corresponding entry is selected in the **Presets** drop-down menu.

7. Click the **Apply** button.
   → The effect is applied to the picture. The **Preview** and **Split Preview** tabs are hidden.

8.1 Autofix exposure

8.1.1 Correcting the Lighting with the aid of the Histogram

With Nero PhotoSnap you can correct the exposure of the picture by adjusting the brightness range of the histogram.

The histogram graphically shows the brightness distribution of the picture pixels. On the X axis are the hue values from 0 (light) to 255 (dark), on the Y axis the number of pixels.

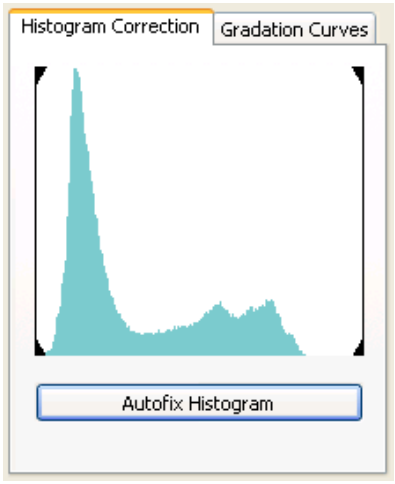
A well-exposed picture has a histogram with different elevations spread from left to right. In contrast, a picture which is underexposed or overexposed has no elevations or only very flat elevations in the left and/or right areas. To correct such a picture, you can move the lines accordingly until they achieve the elevations or you can have it done automatically. The hue values then cover the entire brightness range, and the exposure is corrected.

The following requirement has to be fulfilled:

- The **Exposure** area is displayed.

Proceed as follows to adjust the lighting of a picture:

1. Click the **Histogram correction** tab.
   → The **Histogram Correction** tab is displayed.



Exposure area, Histogram correction tab -- this picture is underexposed

2. To automatically adjust the brightness range, click the **Adjust Automatically** button.
   → The two lines that define the brightness range are shifted.
3. If you want to adjust the brightness range manually:
   1. Move the left line.
      → The beginning of the brightness range is defined.
   2. Move the right line.
      → The end of the brightness range is defined.
4. Click the **Apply** button.
   → You have adjusted the exposure. The histogram of the picture being edited now stretches across the entire brightness range.

See also:

Settings in the Lighting Region→ 15
Lighting with Gradation Curve→ 33

8.1.2 Lighting with Gradation Curve

With Nero PhotoSnap it is possible to correct the lighting of the picture in that the gradation curve is corrected.

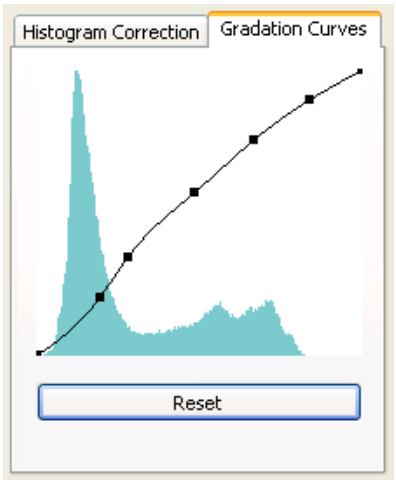
The gradation curve defines the distribution of the brightness values. On the X axis are the hue values of the original from light to dark, on the X axis the tone values after the correction from light to dark. A straight curve with a 45° angle means that the original values remain unchanged.

The following requirement has to be fulfilled:

- The **Exposure** area is displayed.

To correct the lighting with the aid of the gradation curve, proceed as follows:

1. Click the **Gradation curves** tab.
   → The **Gradation curves** tab is displayed.
2. If you wish to prevent a deformation in certain lightness areas, set the control points by clicking on the curve.
   → A control point is set.



Exposure area, Gradation Curves tab -- drawn gradation curves with control points

3. Pull the curve upward or downward to lighten or darken the hue values of this area.
4. Click the **Apply** button.
   → You have adjusted the exposure. The histogram of the edited picture then shows a changed profile.

See also:

Settings in the Lighting Region→ 15
Correcting the Lighting with the aid of the Histogram→ 31

8.2 Balancing the Color of a Picture

You can perform a color balance or correct a color cast with Nero PhotoSnap. You can perform the color balance manually, semi-automatically, or automatically.

The following requirement has to be fulfilled:

- The **Color/Color balance** area is displayed.

To correct the color of a picture with Nero PhotoSnap, proceed as follows:

1. To perform a manual color balance:
   1. Click the **RGB** tab or the **HSL** tab.
      → The **RGB** tab or the **HSL** tab is displayed.
   2. Slide the regulator as required.
      → The picture shows the changes.

   You can perform the color balance with the **RGB** tab in RGB mode: colors are defined with combinations of the three primary colors red, green and blue. The color balance can be performed on the **HSL** tab in HSL mode: colors are defined by a combination of hue, saturation and lightness factors.

2. To perform a semi-automatic color balance:
   1. Click the **RGB** tab.
      → The **RGB** tab is displayed.
   2. Move the cursor over the picture.
      → The cursor appears as a pipette.
   3. Click in an area of the picture with a neutral color, e.g. gray.
      → The regulators are moved accordingly and the picture shows the changes.

3. To perform an automatic color balance:
   1. Click the **RGB** tab.
      → The **RGB** tab is displayed.
   2. Click the **Remove Color Cast** button.
      → Nero PhotoSnap analyzes the color distribution. The regulators are moved accordingly and the picture shows the changes.

4. Click the **Apply** button.
   ➔ You have performed a color balance.

See also:

Color Balance→ 16

8.3 Red Eye Removal

Nero PhotoSnap lets you remove red eyes. Red eye in photos usually occurs when a person or animal is photographed with a flash in dark surroundings. The flash or light is reflected by the retina and appears red in photos. The effect is even greater if the pupil is opened wide.

The red-eye effect describes a side effect in photography with a flash. It is visible by the wide opened pupils due to the bright flash passing unhindered through the retina with its strong blood flow, which then reflects the flash in red.

The following requirement has to be fulfilled:

- The **Red eye removal** area is displayed.

To remove red eye from the picture, proceed as follows:

1. Click the picture, hold down the mouse button, and draw a circle or ellipse around the pupil.
   → The area is marked and the red pupil is colored dark.
2. Click the **Next** button.
   → The marked area is defined.
3. Repeat the two previous steps for each pupil from which you want to remove red eye.
4. Move the **Intensity** of red eye reduction regulator.
5. The black color of the pupils will be increased or reduced, depending on the initial state.

   The regulator changes all areas marked in the picture.
6. Click the **Apply** button.
   → You have removed red eyes from the picture.

See also:

Main effects→ 13

8.4 Save Picture

Nero PhotoSnap lets you rotate a picture. You can rotate manually, semi-automatically or automatically..

The following requirement has to be fulfilled:

- The **Rotate** area is displayed.

To rotate a picture, proceed as follows:

1. To rotate manually:
   1. Select one of the option fields or rotate the angle circle.
      → The picture is rotated by the selected angle.
2. To rotate the picture semi-automatically:

1. Click the picture and draw a line.
   → The picture is rotated so that the drawn line is horizontally or vertically positioned.

3. To rotate the picture automatically:
   1. Click the **Autorotate** button.
      → Nero PhotoSnap automatically rotates the picture so that the majority of edges in the picture are horizontally or vertically positioned.

4. Select an item in the **Size of the rotated picture** drop-down menu to define the size of the rotated picture.
   1. If you selected the **No cropping** entry and unfilled areas were created by rotation, click the **Background color** input field and select a background color.
      → The newly created picture areas are filled with the selected background color.

5. Click the **Apply** button.
   ➔ You have rotated the picture.

See also:

Rotate Settings Area→ 20

8.5 Save Picture

If you have applied effects, you can save the picture. You can overwrite the current picture or save the changed picture under a different name. For pictures in the JPG or TIFF format you have additional settings available for compression.

The following requirement has to be fulfilled:

- You have processed a picture or used a filter.

To save a picture, proceed as follows:

1. To save the picture and/or overwrite, click the  button.
   → The picture is saved.

2. To save the picture at a different location, in a different picture format and/or under a different name:
   1. Click the small triangle next to the  button.
   2. Select the **Save as** entry.
      → The **Save As** window appears.
   3. Select where you want to save the picture, select a picture format from the **File type** drop-down menu, and enter a name.
   4. If you want to define compression settings for JPG, JP2, TIFF or PNG, click **Settings**.
      → The corresponding window opens.
   5. Define the settings you want and click the **OK** button.
   6. Click the **Save** button.
      → The picture is saved.

3. To save the current picture using the JPG, JP2, TIFF or PNG compression settings:
   1. Click the small triangle next to the  button.
   2. Select the **Settings** entry.
      → The corresponding window opens.
   3. Select the settings you want.

   ➔ You have saved the picture.

9 Nero PhotoSnap Viewer

9.1 About Nero PhotoSnap Viewer

With Nero PhotoSnap Viewer you are in possession of an easy to use and intuitive picture viewing software with which you can very easily view all you digital photos.

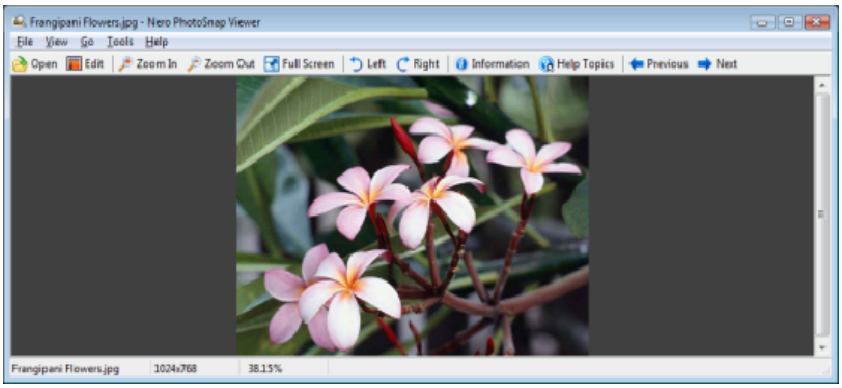
Nero PhotoSnap Viewer supports the same picture formats as Nero PhotoSnap.

See also:

- Program Interface→ 38
- Configuration→ 40
- Full Screen→ 39
- About Nero PhotoSnap→ 5

9.2 Program Interface

The program interface of Nero PhotoSnap Viewer is where you begin to view pictures. It consists of a menu bar, a toolbar and the viewing area.



Nero PhotoSnap Viewer program interface

The following items are available in the menu bar:

File	Options for **opening** and **printing** a picture. You can also configure the printer and the program and register plug-ins (no plug-ins currently available).
View	Options for viewing the picture.
Start	Options for browsing pictures.
Tool-box	Options for rotating the picture. You can also have information about the picture displayed and open Nero PhotoSnap.
Help	Offers options for displaying Online Help and the **About** Nero PhotoSnap Viewer window, where you can see the version number among other things.

The following buttons are available in the toolbar:

Open	Opens the **Select an Image File to be Opened** window in which you can choose a picture.
Edit	Opens Nero PhotoSnap. Nero PhotoSnap lets you edit your pictures.
Zoom In	Increases the view of the picture.
Zoom Out	Decreases the view of the picture.
Full Screen	Full screen display of the picture.
Left/Right	Rotates the picture 90° to the left or right.
Information	Opens the **File Information** window, from which you can obtain information such as the size of the graphic or the color depth of the picture.
Help Topics	Opens the Online Help (if you installed it).
Previous Picture	Displays the previous picture in the folder.
Next Picture	Displays the next picture in the folder.

See also:

- About Nero PhotoSnap Viewer→ 38
- Full Screen→ 39
- Configuration→ 40

9.3 Full Screen

Clicking the **Full Screen View** button lets you view the picture full screen. The picture either fills the entire screen or appears in its original size (100%) with a background. You can display the next picture by pressing the space bar.
You can open the context menu by clicking the right mouse button. The context menu contains the same entries as the toolbar on the desktop.

The following entry is also available:

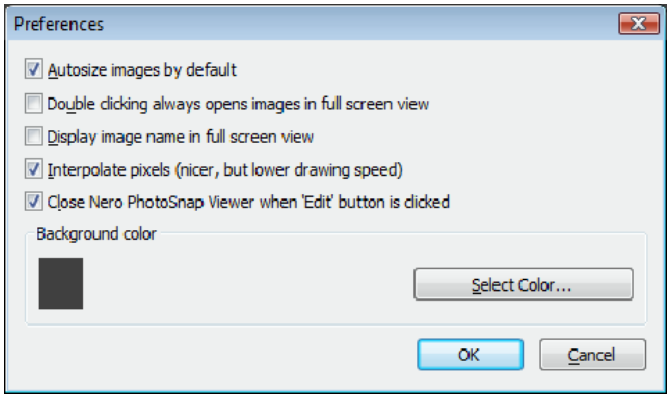
Toggle full screen view	Exits full screen view and displays the picture again in the viewing area.

See also:

- Program Interface→ 38
- Configuration→ 40
- About Nero PhotoSnap Viewer→ 38

9.4 Configuration

Nero PhotoSnap Viewer lets you define the presets for displaying pictures. The presets are defined in the **Settings** window, accessible via **File** > **Presets**.



Settings window (Nero PhotoSnap Viewer)

The following setting options are available:

Check Box **Autosize pictures by default**	Fits the picture to the size of the viewing area or screen. Increases or decreases the view of the picture if required. If the check box is cleared, the pictures are displayed in their original sizes (100%). If the viewing area is too small to show the entire picture, the scroll bars are displayed.
Check Box **Double clicking always opens pictures in full screen view**	Opens pictures when double clicked in full screen view. If the check box is cleared, the picture opens in the viewing area.
Check Box **Display picture name in full screen view**	Displays the picture name in full screen view.
Check Box **Resample pixels**	Displays the picture smoothly when enlarged. The picture is recalculated (interpolated) using a special calculation method that may take a while, depending on the picture size. If the check box is cleared, the picture will appear pixelated when enlarged.
Check Box **Close Nero PhotoSnap Viewer when 'Edit' is clicked**	Closes Nero PhotoSnap Viewer if you click **Edit**.
Button **Select color**	Defines the color of the viewing area and background.

See also:

Full Screen→ 39
Program Interface→ 38

10 Technical Information

10.1 System requirements

Nero PhotoSnap is installed along with the Nero Suite. Its system requirements are the same. You can find more detailed information on the system requirements under www.nero.com.

10.2 Key Combinations

The following key combinations for entering commands are available in Nero PhotoSnap and Nero PhotoSnap Viewer:

[Ctrl+O]	Opens the file browser so that a picture can be selected for importing.
[Ctrl+P]	Prints the opened picture.
[Ctrl+S]	Saves the processed picture.
Ctrl + Z	Undoes the last action.
[ALT + F4]	Ends the application.
Number pad *	Zooms the whole picture in.
Number pad /	Zooms to 100%.
Number pad +	Zooms in.
Number pad -	Zooms out.

In addition, the following key combinations are available in Nero PhotoSnap Viewer:

[Enter]	Changes between full-screen and normal view.
[Space]	Jumps to the next frame.
[L]	Rotates the picture to the left or right.
[R]	Rotates the picture to the right.
Right/left arrow keys	Navigates through several pictures.

You can also use the mouse wheel to navigate through the pictures.

10.3 Formats supported

10.3.1 Image formats

- Bitmap (BMP)
- Device Independent Bitmaps (DIB)
- Graphics Interchange Format (GIF)
- JPEG File Interchange Format (JFIF)
- Joint Photografic Expert Group (JPEG, JPG, JPE)
- Picture Exchange (PCX)
- Portable Network Graphics (PNG)
- Portable Pixel Map (PPM)
- Targa Image File (TGA)
- Tagged Image File Format (TIFF, TIF)
- Windows Media File (WMF)
- Dr. Halo Image (CUT) - read only
- Direct Draw Surface (DDS) - read only
- Amiga Paint Image (IFF, LBM) - read only
- JPEG2000 (JP2, J2C, J2K, JPC, JPF) - read only
- Koala Paint C64 (KOA) - read only
- Photo CD (PCD) - read only
- Portable BitMap (PBM) - read only
- Portable Bitmap Utility Formats (PGM, PNM) - read only
- Portable Pixel Map (PPM) - read only
- Photoshop Document (PSD) - read only
- SUN Raster Format (RAS) - read only
- Wireless Bitmap Image (WBMP, WBM) - read only
- X BitMap (XBM) - read only
- PixMap (XPM) - read only
- X-Quiktime (QTI,QTF, QTIF) - read only

11 Glossary

DPI

The Dots per Inch give the number of pixels per inch (1 inch = 2.54 cm) and thus the resolution which an output device, such as a printer, can provide.

EXIF

EXIF stands for Exchangeable Image File Format and is a standard of JEITA (Japan Electronic and Information Technology Industries Association) for metadata in picture files. Information such as camera type, aperture, exposure time, distance to object and the date when the photo was taken can be stored in the metadata. The graphic formats JPEG and TIFF are supported. The metadata is written in the header, thus in front of the actual picture information.

Hot pixel

A hot pixel is a point in a picture, which in digital photography appears in strong additional color in the background and occurs mostly when the image sensor of the digital camera gets too hot while photographing or when the period of exposure to light is too long. It occurs due to inaccuracies in chip manufacturing. Hot pixels can be removed from the photo by means of special filters.

HSL

The HSL mode (Hue; Saturation; Lightness) determines a color by means of the hue, the saturation and the lightness.

Interpolation

The interpolation is a process in which pixel values known from analysis are shot on to unknown values. This procedure serves for the seeming enhancement of the resolution of graphics, videos and photos.

ISO number

The ISO (International Organization for Standardization) number is a standard for defining light sensitivity in the field of analog photography. The graininess increases with increasing ISO number, leading to the picture becoming coarser. The greater the ISO value, the quicker the film absorbs the light. Thus the lighting times become shorter. The sensitivity of CCD chips is constant, but a higher ISO number can be simulated in that the sensitivity can be increased by an increase in the signal strength. An unwanted result of picture signal strengthening is an increase in picture noise.

JPEG

The Joint Photographic Experts Group-Format denotes a file standard for compression of pictures with resulting losses. Pictures compressed with JPEG carry the file extensions *.jpg or *.jpeg.

Lens Aperture

A lens aperture is an arrangement on the camera which regulates the amount of light falling onto the lens. It determines, on the one hand, the light intensity on the data carrier and, on the other hand, the color sharpness of the photo.

LZW Algorithm

The Lempel-Ziv-Welch algorithm uses a standard of loss-free data compression that was developed by Abraham Lempel, Jacob Ziv and Terry Welch.

Metadata

Metadata is particular additional information for data with the purpose of describing it better and for making it easier to find. Metadata contains information on the artist, album, track, running time, bit rate, resolution, and so on. As a result, it is possible to categorize files according to their type (audio, video or picture).

Picture Noise

The picture noise is an optical coarse graining which is disturbingly noticeable in a photo. As all semiconductors, a CCD sensor chip possesses a certain basic electronic noise that is triggered by signal superposition and interference frequencies.

PNG

A Portable Network Graphic designates a loss-free compression format for graphic files. It is the successor to the GIF (Graphic Interchange Format) and serves mainly for the standardized exchange of graphics on the Internet.

RGB

Red, Green, and Blue designate the combination of primary colors for a new color combination. In RGB mode, all the different colors are characterized by their red, green and blue components. The color produced is the result of adding the three color components to white.

Run-length process

The run-length process designates an algorithm for loss-free graphic compression. In this process same-colored pixels are coded with the aid of counters. The method is mainly suitable for black-white pictures or pictures with large same-colored areas.

TIFF

The Tagged Image File Format designates the container of a graphic format in which picture files can be saved. It is often used in the pre-print step as an exchange format.

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