# Picture Instruments

COLOR CONE

Manual

Color Cone

Manual
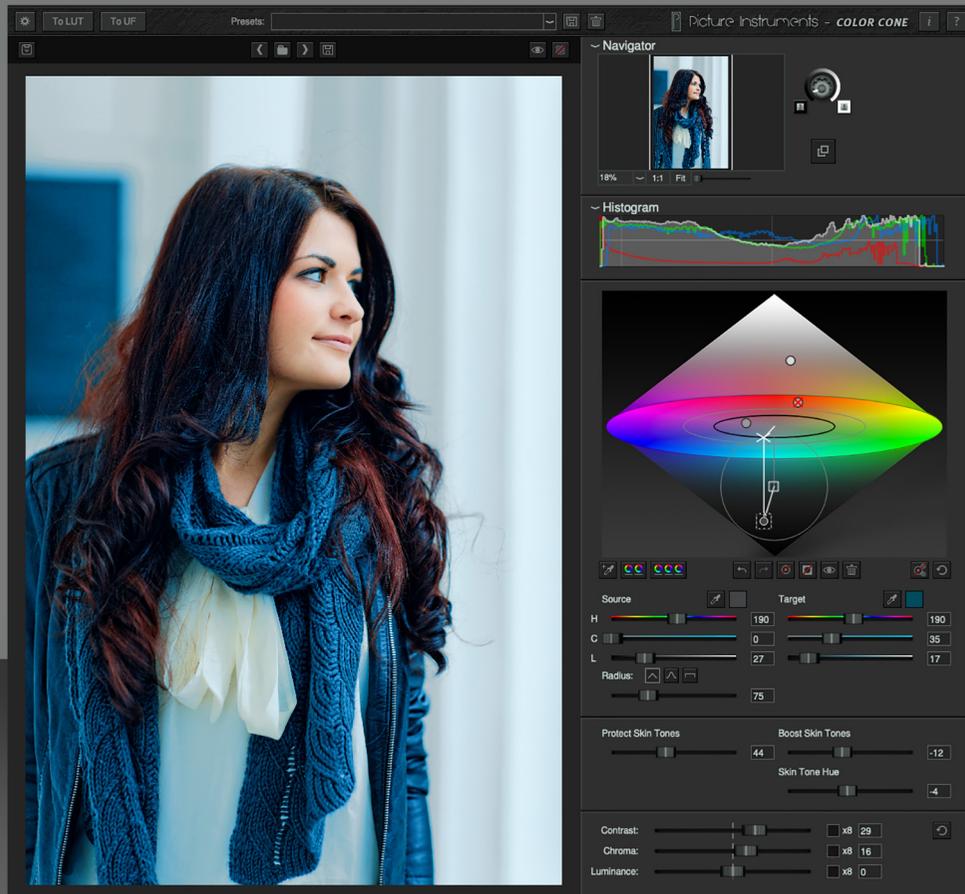
Color Cone is a software that lets you achieve color corrections very precisely. Additionally Color Cone is perfect for creating looks. Using the custom developed Color Warp Technology, selected color areas can be transformed and adjusted. The depiction of source– and target color in the Color Cone itself allows you to work very intuitively.

Adobe After Effects- / Premiere- / FCPX- Plugin

After a successful installation the plugin can be found under effects and may be applied to a clip just like any other effect. After the instancing process all of the plugins parameters are listed in the effect controls. To operate the software in a more familiar way we recommend using our own GUI in the plugin. Although, for keyframe animation it may become necessary to fall back on the parameters in the list view.

Apply Plugin in Photoshop

After successful installation, the plugin can be found in the menu under Filter -> Picture Instruments. The plugin can be used as a smart filter so that the effect settings can be changed later.

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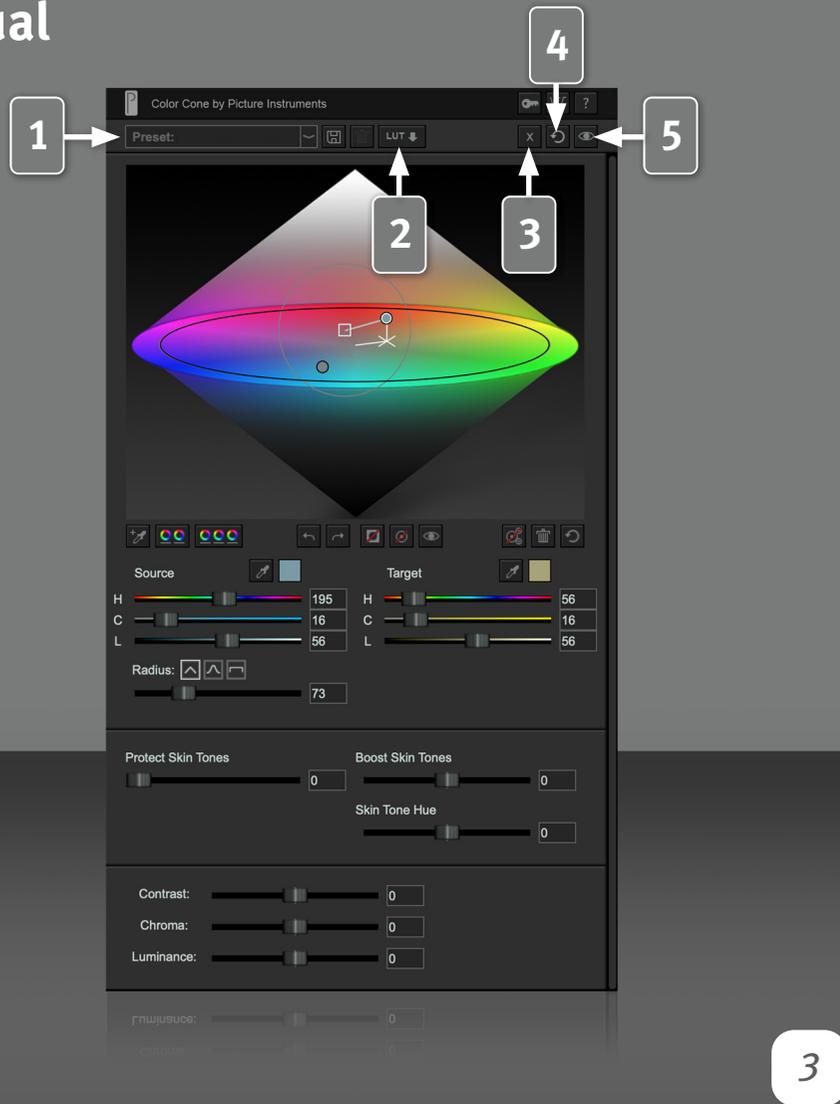
This page describes functions that are only available in the plugin. Presets and LUT export are also available in the standalone version. Since they are elsewhere in the UI, they are described separately further down in the manual.

Cross Host Presets

1 A preset can be saved by typing a name into the field and then clicking on the disk symbol. Saved presets can be called up across hosts via the drop-down menu. A saved preset can be deleted immediately after loading via the trash can button.

Mac: /Users/Username/Picture Instruments/Plugin Presets/Color Cone
Windows: %appdata%/Picture Instruments/Plugin Presets/Color Cone

LUT Export

2 Created looks can be saved as a Look Up Table using the LUT button. Under Windows there is a dropdown menu for the LUT formats in the save dialog. Under Mac the file extension can be changed manually from .cube to .3dl or vice versa.

Closing Color Cone

If you want to apply the created look, you can simply close the plugin window.

3 If the settings or changes should not be applied to the image, the plugin can be closed via the X-button in the plugins toolbar.

Reset

4 The circular arrow resets all settings. If you only want to reset individual settings you can do this by right-clicking on the respective control.

Before and After Comparison

5 By clicking on the eye button all effects will be disabled.

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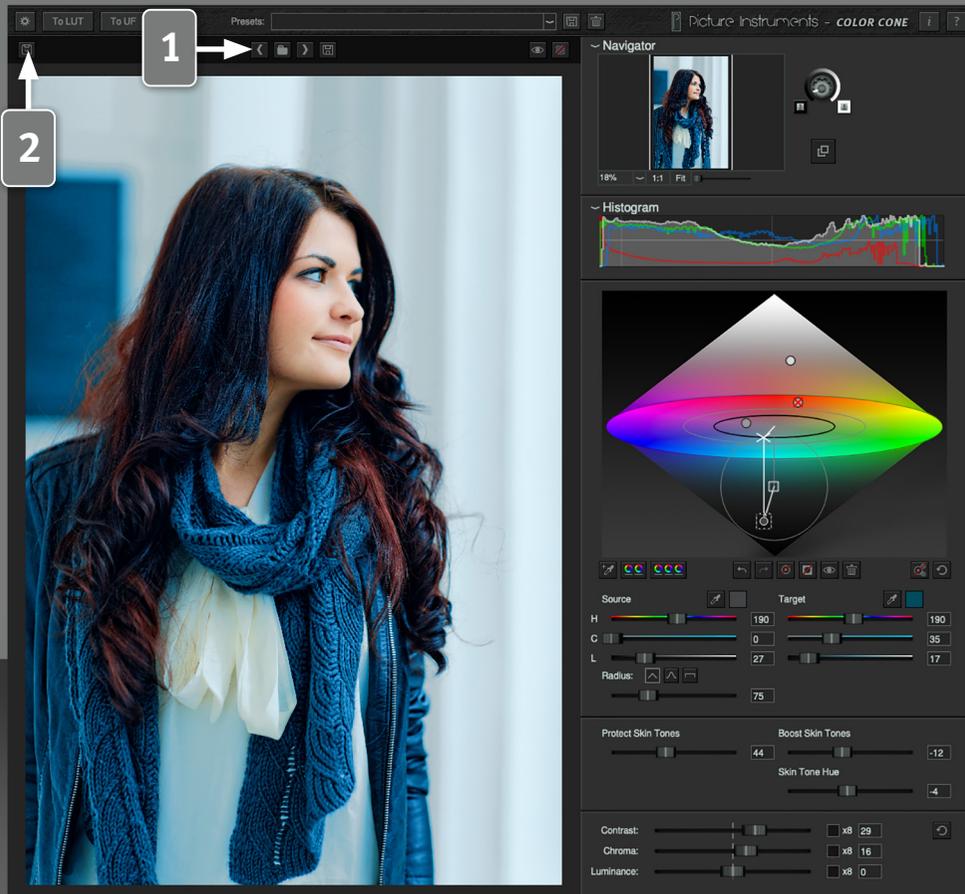
! Features only available in the standalone version have a dark border around the numbering in the text.

Load, Navigate and Save Images

1 Using the folder icon, you can load images from your hard drive. When an image is loaded you can use the adjacent arrow buttons to skip to the previous or next image in the same folder. You can save finished images using the floppy disk button. A save dialog will open automatically in which you can use to select the format you wish to save your image in.

Insert Image from Clipboard

2 Use this button or the shortcut "ctrl + v" (MAC: "cmd + v") to insert an image (e.g. a screenshot) from the clipboard of your operating system.

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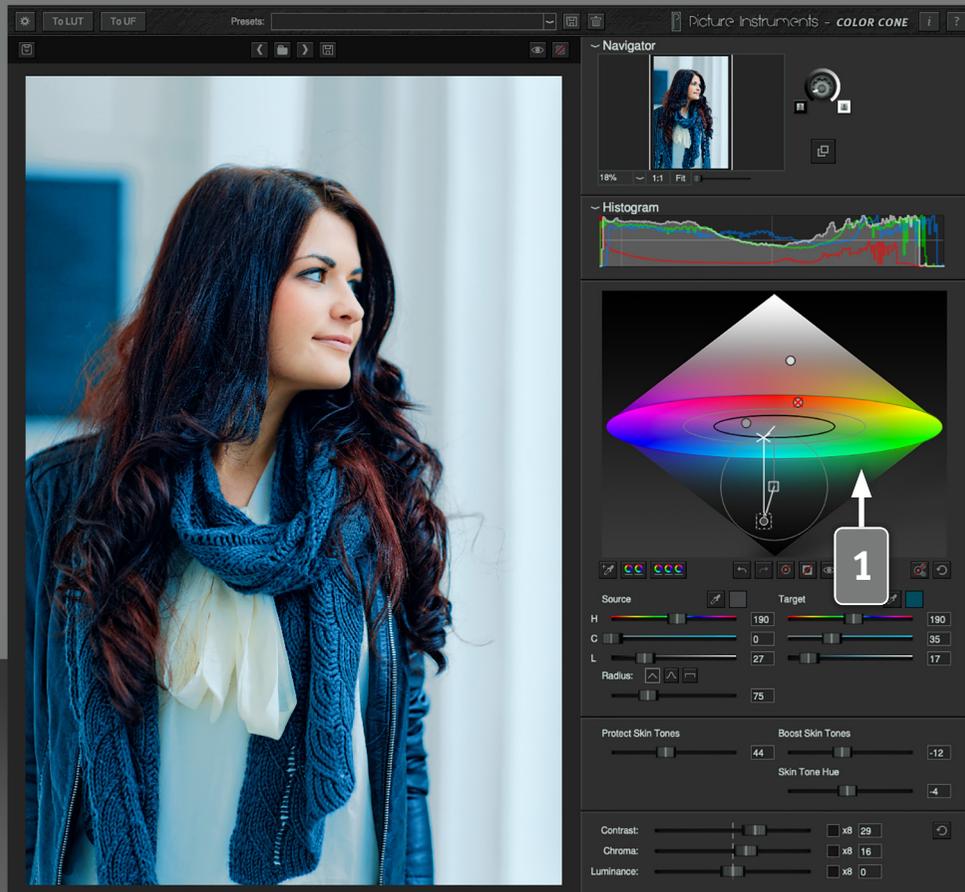
Color Cone

1 The Color Cone is the heart of the software bearing the same name. It is based on the HCL-color model and is a bicone in the strict sense of the word. In contrast to the HSV-model the HCL-model only contains chroma levels in the highlights and shadows which are actually possible. The chroma in 100% white and black is always zero. This holds several advantages when applied.

Inside the cone itself all executed color adjustments are being displayed as individual point. Every point can transform a selected color range (color + radius) into another.
As long as a point it active all corresponding elements are displayed.

The round point contains the source color and is located at the position of the target color. The position of the source color is represented by a square. If the round point has a magenta colored edge its mask is currently being displayed. If it contains a cross, it is deactivated. In the standalone version source color as well as target color can also be interactively controlled in the cone. If the source- and target color are located on top of each other the target color has priority when moving the points. Simply moving the mouse changes the luminance. Simultaneously holding down the command key will cause hue and chroma changing at the same time while the luminance remains unaltered. Hold down the shift key to work in finer increments.

The black circle in the middle of the Color Cone displays the maximum chroma of the set luminance in the target area and the gray circle displays the same in the source area.
The source and target positions are connected by a mid-grey line. The dark gray lines connect neutral gray in the center of the cone with the source value and the white lines connect with the target value. The selected hue –/

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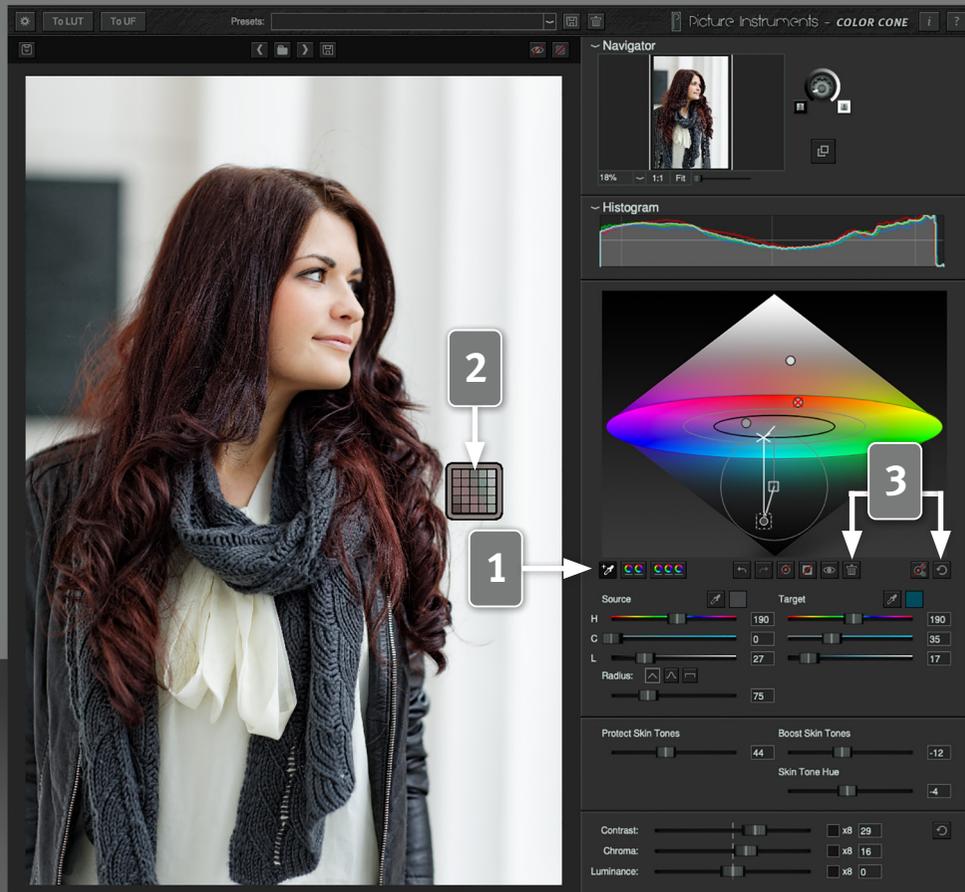
chroma– value is represented by a cross on the center plate of the cone and the length of the vertical line originating from the cross displays how much brighter or darker than 50% gray the selected point is.

Create/Delete Point

1 After activating the eyedropper tool you can create a new point by clicking into the image once.

If the eyedropper tool is active the original image will be displayed. The edited image will be temporarily inactive. This prevents the selection of colors that don't exist in the original image. Since all points in the cone are applied to the image simultaneously (and not successively – as layer-based software usually does) the selection of a color that does not exist in the original image would be very ineffective depending on the radius.

2 The selection always comprises of the average of all colors in a 5x5 pixel wide viewer that you can see right underneath the cursor. The actual average color is displayed within the frame that surrounds the magnification of those color-determining pixels. The monitor image determines the measuring. At a strong zoom setting it is possible to select individual pixels. You can use the exact 5x5 pixels underneath the cursor to determine the average color in the 1:1 view.

3 The trash can icon will delete the active point in the cone.
The "reset"-button will delete all points in the cone.

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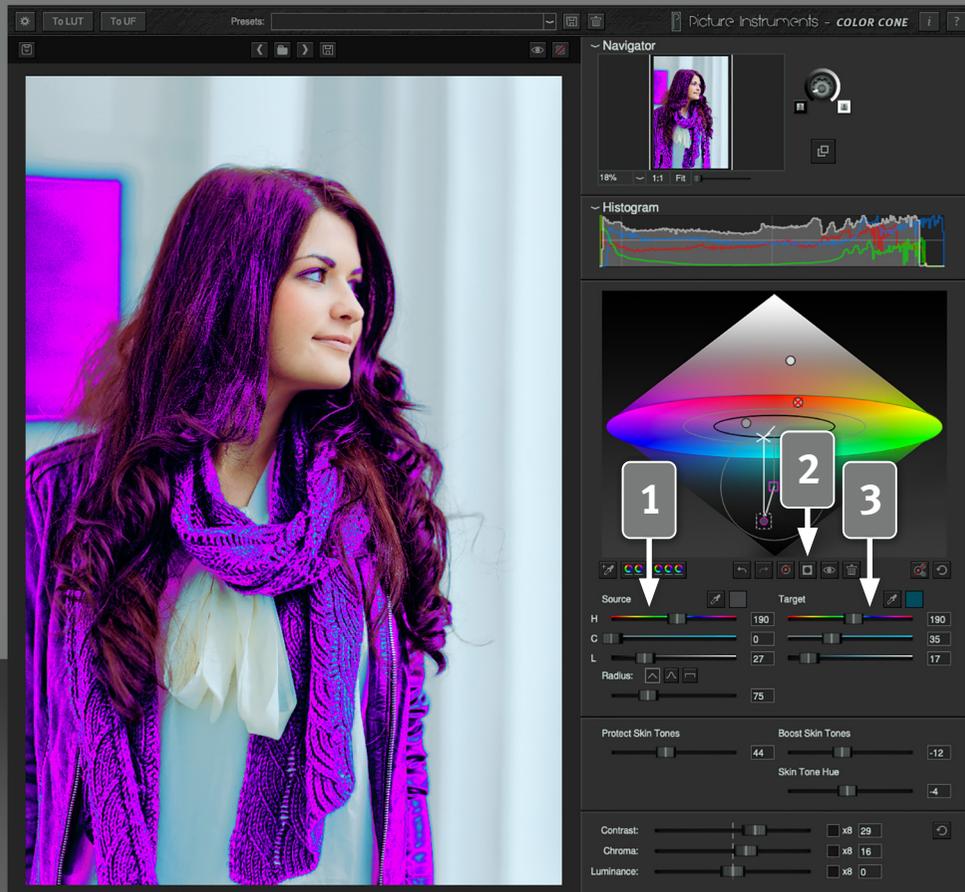
Source Color

1 If you have created a new point, source- and target-color will - at first - be at the same position. In the "source"-section you can define the source color range very precisely. The source color range comprises of the source color and all colors included in the radius. Thus the size of the color range can be defined by moving the radius-control. You can use the three buttons with the curves to define how hard or soft the edge of the color range should be.

In addition to interactively selecting and adjusting the source color in the cone (interactivity in the cone is only in the standalone version), you can also use the HCL-control, the corresponding numeric fields, the eyedropper tool and the color selector.

2 To color highlight the selected source area you can activate the mask button. This helps in determining which colors will be affected.

Several masks connected to several points can be active at the same time. You can see which mask and which point are currently active by finding the magenta colored edge around the point in question on the cone.

Target Color

3 The source colors of a point can be converted into a target area via the HCL-controls, the numeric fields, the eyedropper tool or the color selector. Which control element you chose to use is of no consequence to the result. If you selected the eyedropper tool and wish to select the color from the target image rather than the source image you can reset the view with the "v"-key in the standalone version.

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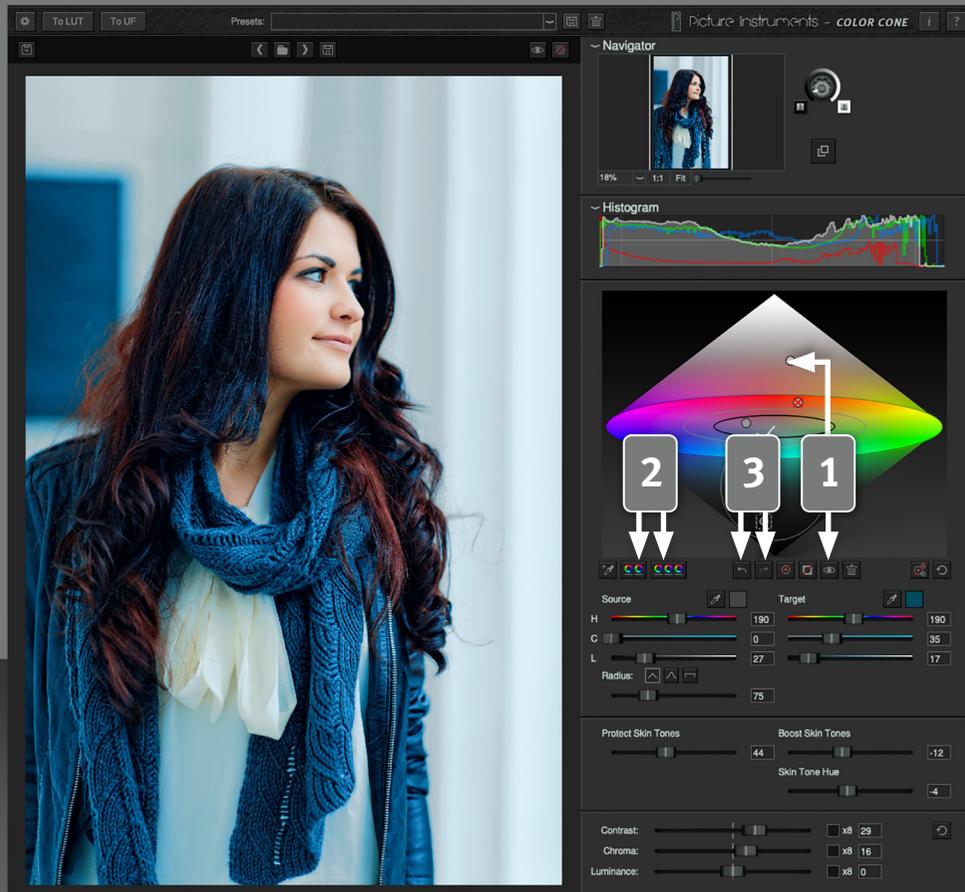
1 The button with the eye icon lets you deactivate and activate each point in the cone individually. Deactivated points in the cone are marked with a cross.

3-Way Preset and Split Toning

2 The 3-way-color-correction for videos as well as the split toning when editing images (2-way-color-correction) are very popular methods for color correction. Color cone provides one preset for each of the two methods which can be selected via a dedicated button. The selected preset creates points in the corresponding brightness ranges within the cone. The desired effect is achieved by changing a certain points target color for the selected brightness range. In addition to the 3-way-color-corrections' and the split tonings' usual functionality the range of influence can be adjusted individually relating to the image material by simultaneously moving the brightness controls (hold cmd key on your Mac or ctrl on your Windows computer). See our video tutorial on the 3-way-color-correction for more information.

Undo/Redo

3 With the Undo/Redo buttons, all changes can be undone successively and also be restored if necessary.

! If in the standalone version any changes are made after one or several undos, a new chain of steps will be saved hereafter and no previously recovered steps can be recalled.

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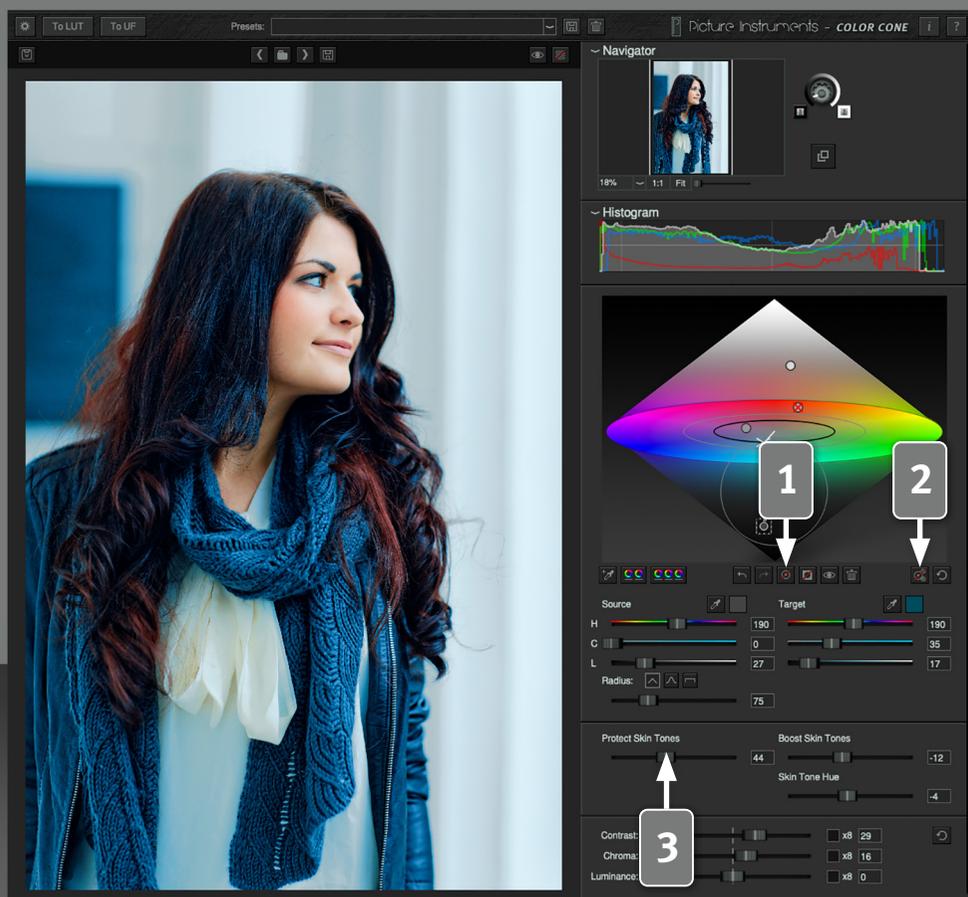
Auto Radius

1 Since it is possible that points overlap in Color Cone which could mean that the effects of those points either mix or cancel each other out, we have added a useful Auto-Radius feature. If the Auto Radius button is activated for a selected point, the radius of this point will automatically grow until the border of the area of influence touches the adjacent point. In this case the value for the radius is not being calculated and set just once. If the Auto Radius feature is activated, the points radius is constantly being adjusted - both when the point is being moved and also when another point is about to invade its area of influence.

Auto Radius ALL

2 By clicking on the Auto Radius All feature, all existing points are set to Auto Radius and will always be inflated until they touch their next neighbor.

Skin Tones
Skin tones have an important role in color grading. In many cases, a tint which appears good on the overall image can appear very unnatural in combination with the human skin. Therefore, we have dedicated a section to the skin tones to protect them from the tint of the color cone and to adjust them separately if necessary.

Protect Skin Tones

3 This control protects the skin tones from the influence of the color cone. Up to slider values of 50% the pure skin tones are protected. Depending on lightening the skin can show highlights, which sometimes can belong (if you determine the exact value) to the neutral tones. With settings over 50% selected ranges of brightness in the neutral tones are protected from the color cone too.

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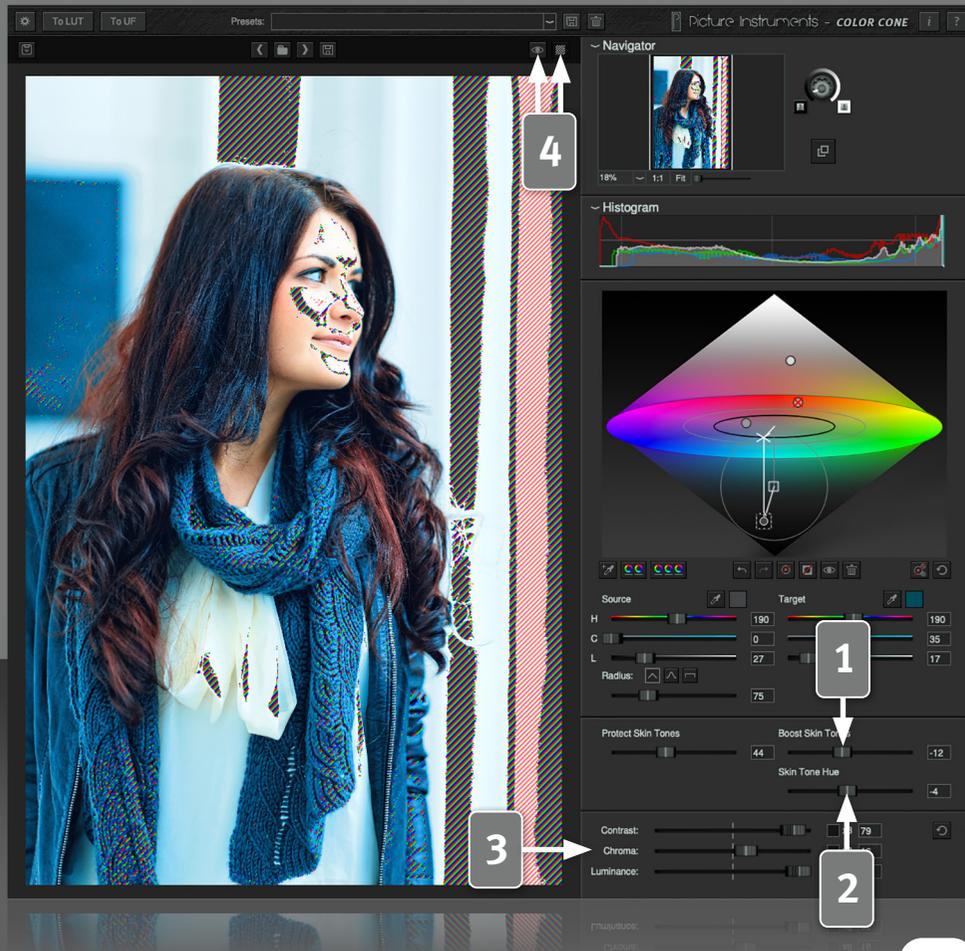
Since the transitions between skin tone and non-skin tone in the color space are often quite close to one another, artefacts can quickly occur with highly compressed image material, depending on the setting.

The skin tone controls make working with masks superfluous in many cases. The better the quality of the source material, the better the result.

Skin Tone Boost

1 The Boost control saturates or desaturates the skin tones independently of the color cone.

Skin Tone Hue

2 The Skin Tone Hue control adjusts the skin color more to yellow or more to red.

Contrast – Chroma – Luminance

3 In this section you can apply changes to the Contrast, Chroma and Luminance to the entire image globally. If you feel that the effect of a certain control is not great enough you can use the "x8" checkbox to enhance the effect eightfold.

Original/Result - Burning and Drowning out Checks

4 The control button with the eye lets you compare the result with the original image. A left click will switch back to the resulting image upon releasing the mouse button. A right click will leave the original image on display until the target image is activated again. You can also toggle by using the shortcut "v".

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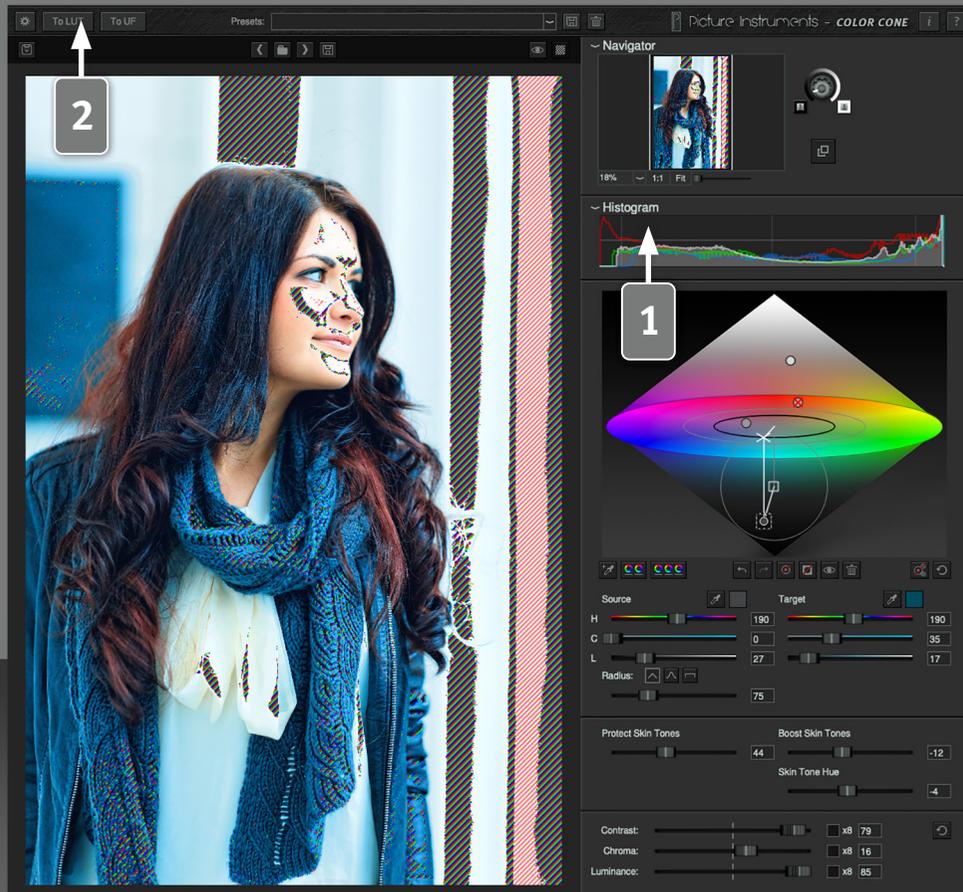
The hatching-button will use a hatching pattern along the edges of the displayable colors to highlight colors. A red hatching will highlight fully black (0,0,0) or fully white (255, 255, 255) areas and a red/green/blue hatching highlights areas where at least one color channel (red, green, blue) reaches its limits (0 or 255).

Histogram

1 The histogram uses a curve to indicate how often a certain brightness level is occurring in the image. Low values (0) can be found to the left and high values (255) to the right. The white curve indicates the global brightness, the red, green and blue curves indicate the brightness of the respective color channel.

LUT Export

2 Use the "To LUT" button to export all of the color changes you did in the software as a 3D LUT in the .3dl or .cube format. Most video editing software as well as the most recent versions of Photoshop support the use of LUTs by now.

If you manage your LUTs using our software Unlimited Filters you can simply use the button "To UF" to export all color changes to the root folder of Unlimited Filters. The newly created look will then be available in Unlimited Filters (if Unlimited Filters is installed).

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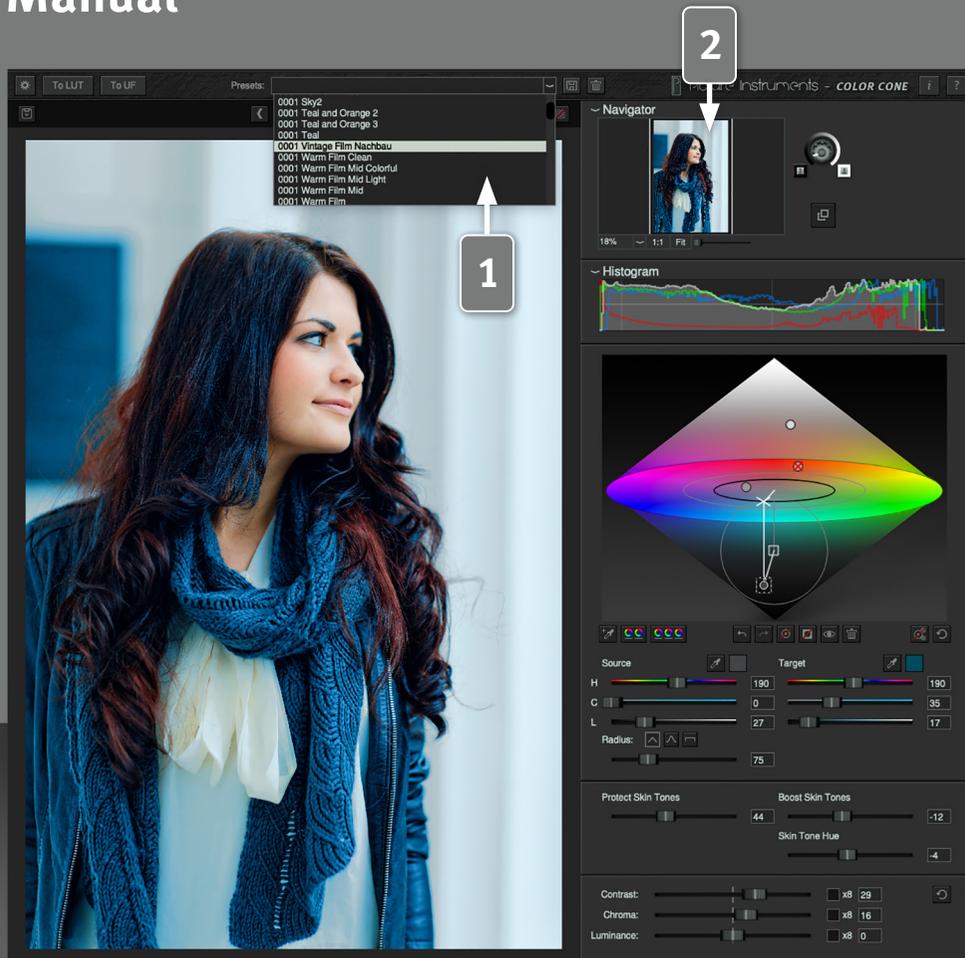
Presets

1 If one of the looks you created turned out particularly well you can save it as a preset. Simply type a name for the new preset into the text field and click on the floppy disk icon to save the preset. The saved preset will immediately be available via the drop down menu. You can delete the loaded preset using the "trashcan" button.

Every preset will be saved to the following folder and can be deleted or copied there or transferred to another computer.

In the plugins you can save your settings as effect presets in the host.

Mac:

Macintosh HD/User/USERNAME/Library/Application Support/Picture Instruments/Color Cone/presets

Windows:

C:\User\USERNAME\AppData\Roaming\Picture Instruments\Color Cone\presets

Navigator

2 The navigator contains all viewing settings for the main window. The settings have no influence on the resulting image. Although navigation is done with the mouse, at times it can be useful to fit the image with the "fit" button below the small viewer or select the original resolution with the "1:1" button. Both features are also available via shortcuts. More information on the shortcuts is available via the "help"-button.

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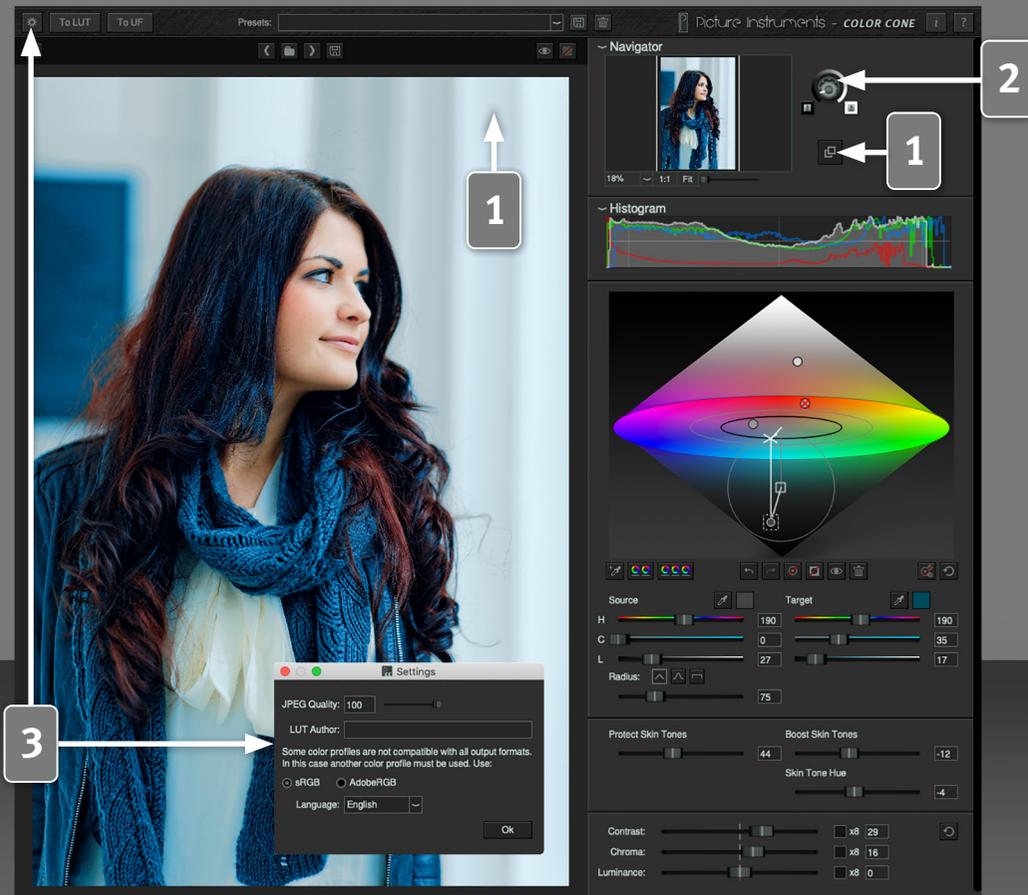
External Window

1 Load an image from the hard drive or from the clipboard here. You can select colors in this image by using the eyedropper tool here as well. This is especially useful if you want to select the target color to achieve the look of a specific image.

Background Brightness

2 This control lets you adjust the brightness of the background in the viewing area. Depending on the brightness of the image you want to edit this, because it can be very useful to achieve a greater contrast between background and image.

Settings

3 **JPEG Quality:** Determines the amount of compression when a JPEG is saved. A high value indicates less compression and a good image quality. A low value compresses the JPEG a lot which results in a poor image quality.

LUT Author: This name will be written into the LUT when it is saved.

sRGB / Adobe RGB: Some color profiles may contain data which may not be permitted in all output formats' specifications. In this case the application converts the image, depending on the selected preference, into either Adobe RGB or sRGB and saves the corresponding profile into the output image.

Language: Defines the language of the user interface.

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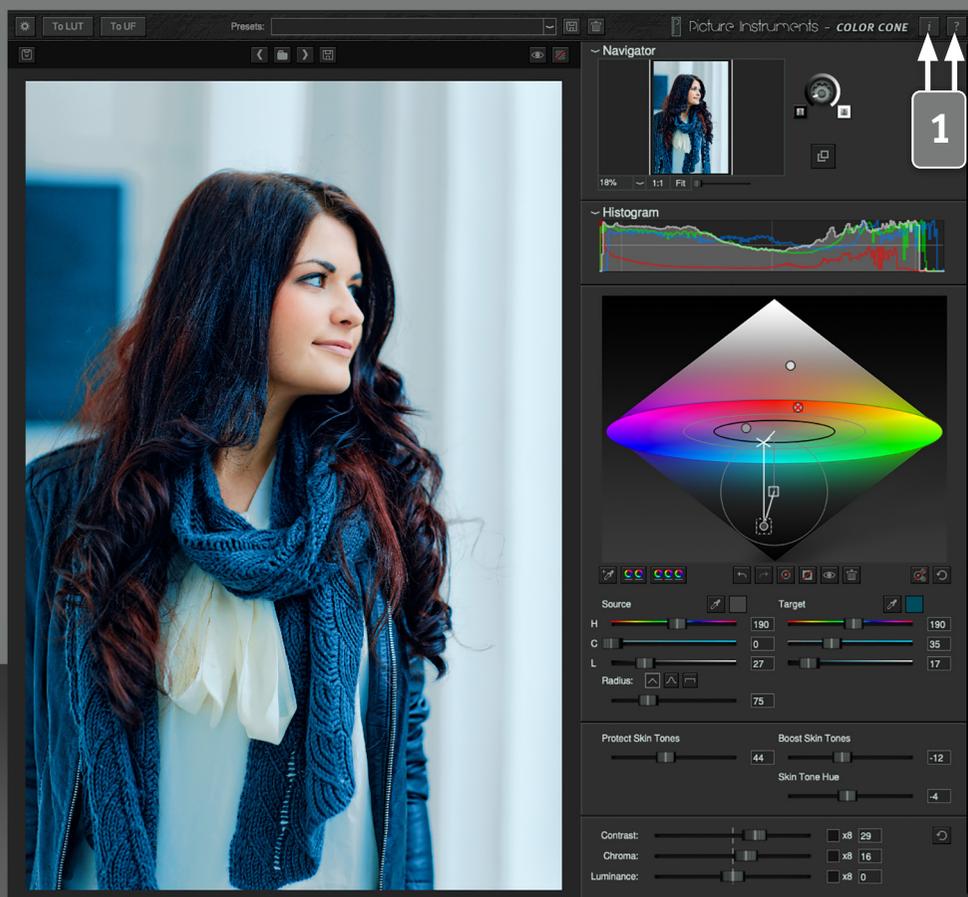
Color Profiles

Color Cone is able to load color profiles and display images correctly according to the loaded monitor profile. When saving the images, the color profile of the loaded image will be saved along with the target image. Some color profiles may contain data which may not comply with the specifications of all output formats. In this case the application will convert the image into either Adobe RGB or sRGB and will save the respective profile into the target image.

Supporting Color Profiles in the Plugin

In Adobe After Effects and Final Cut Pro X Color Cone displays the image converted into the working color space (if choosen) according to the color profile which is included. Unfortunately Adobe Premiere does not support color profiles.

Information and Help

1 In the info window you can find more information on the version of Color Cone and the license you use.

The help window contains a link to our Color Cone tutorial videos as well as information on all shortcuts you can use to make your workflow more efficient.

More information and video-tutorials at:

www.picture-instruments.com

Picture
Instruments

LUT Mixer

Picture
Instruments

Image 2 Lut

Picture
Instruments

Color Cone

Look Converter

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