



INTELLIHANCE™

User Guide
Version 3.0 for Macintosh and Windows

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Introducing Intellihance

Welcome to Extensis™ Intellihance® for Adobe Photoshop® and other applications which support Photoshop Plug-ins. You've purchased the easiest and most powerful way to get your images looking their best.

Intellihance 3.0 automatically does all the “hard stuff” in your image editing application so you don't have to. Things like color correction, sharpening, and contrast adjustment are handled quickly and correctly by Intellihance, with a minimum amount of your input needed.

System and Software Requirements

Macintosh:

- System 7.5 or later
- Adobe Photoshop version 3.0.4 or later
- FPU required
- Thousands of colors recommended

Windows:

- Windows 95/Windows NT 4.0 or later
- Adobe Photoshop version 3.0.5 or later
- Thousands of colors recommended

Installation for Macintosh

For best results, turn off any unneeded extensions (by holding down your Shift key while restarting your Macintosh) and all anti-virus software. Be sure to keep any needed CD-ROM extensions installed. Restart your computer.

The Intellihance CD-ROM contains other Extensis products ready to be installed. These products are full working versions of Extensis products that you can run in demo mode. Purchasing a serial number from Extensis at (800) 796-9798 will allow these programs to be used without any time restrictions.

To Install Intellihance for Macintosh:

- 1. Insert the Extensis CD-ROM into your CD-ROM drive.**
- 2. Go to the appropriate Extensis Installer folder.**
- 3. Go to the Intellihance folder.**
- 4. Double-click the Intellihance installer icon.**

The Intellihance instruction screen appears.

5. Click the Continue button.

The Welcome to Intellihance dialog box appears. Release notes are displayed in this window. It is important that you read these release notes, since they contain information not included in the manual. Before continuing the installation, save or print these release notes for later reference.

6. Click the Continue button.

The Install Intellihance dialog box appears.

7. Click the Install button.

The Disk Selection dialog box appears. The dialog box requests that you select the disk on which you want the Extensis product installed.

8. Select a Disk.

Once a disk has been selected, you will need to locate the application in which you want to install the Extensis product.

9. Select an Application.

Find the copy of the application (Photoshop or other plug-in-using software) you wish to install Intellihance into.

10. Click the Select Button.

Once installation is complete, the successful installation dialog appears.

Intellihance will be installed in the plug-ins folder of the application you selected.

Installation for Windows

The Intellihance CD-ROM contains other Extensis products ready to be installed. These products are full working versions of Extensis products that you can run in demo mode. Purchasing a serial number from Extensis at (800) 796-9798 will allow these programs to be used without any time restrictions.

To Install Intellihance for Windows:

- 1. Insert the Extensis CD-ROM into your CD-ROM drive.**
- 2. Navigate to the Intellihance directory and launch the setup.exe icon.**

3. Click the Next button.

The screen for placing Intellihance support files will appear.

4. Click the Next button.

The Install Intellihance dialog box appears.

5. Select the graphics application in which you want Intellihance installed.

6. Click the Next button.

For applications other than Photoshop you will need to browse and select the appropriate plug-in folder.

7. Click yes to view the Read Me.

Release notes are displayed in this window. It is important that you read these release notes, since they contain information not included in the manual. Before continuing the installation, save or print these release notes for later reference.

Removing Intellihance

Macintosh: To remove Intellihance, drag the Intellihance folder out of the Photoshop Plug-Ins folder. The next time Photoshop or your Photoshop plug-in compatible software is launched, Intellihance will not load.

Windows: Run the Add/Remove applications control panel and select Intellihance.

Intellihance Quickstart

Intellihance is accessed from the Filter menu in Photoshop and most other programs. Selecting Intellihance from the Filter menu will display the Intellihance dialog box.

A QuickStart PDF file that covers how Intellihance works can be found on the CD-ROM.

Registration & Personalization

It is important to register your copy of Intellihance so we can provide you with service. Registered users of Intellihance are eligible for free technical support, information regarding new versions, products, discounts and special offers on new products.

Intellihance includes electronic registration so registering has never been easier! The first time you run Photoshop after installing Intellihance, the Intellihance Personalize dialog box appears. To personalize Intellihance, type your name, company and Intellihance registration number. Your product registration number is located on the back of your Intellihance manual. If you choose not to personalize your copy, Intellihance will run in a 30-trials (five images per application session) demonstration mode.

Once you have personalized Intellihance, a dialog box appears, asking if you would like to register. To register Intellihance, click the register Intellihance button and an electronic registration screen appears. After you've complete the registration screen, a market research screen and a System Configuration screen will follow. The market research screen asks basic questions that enable us to better understand your needs. The System Configuration screen provides a "snapshot" of your system configuration that enables Extensis to support you more effectively. Sending the Market research and System Configuration information is optional.

If you have a modem, you can register toll-free. If you do not have a modem, you can print the registration sheet and register either by faxing it to (503) 274-0530 or mail it in the postage-paid envelope provided. If you don't have access to a modem or printer, you can still register, by filling out the registration sheet located in the back of this manual.

Technical Support

For questions regarding Intellihance, please refer to this manual first, which describes the features and basic operations. If you have a question or problem that is not addressed in the manual, technical support is available by calling (503) 274-7030, Monday through Friday, between the hours of 8:00 a.m. to 5:00 p.m. Pacific time.

When calling technical support, please be at your computer and have the following information available: your Intellihance registration number, your computer configuration and your question or a description of the difficulty you're experiencing—what specifically occurs and when. Take note of any displayed error numbers or messages and any other information you think may be relevant.

You may also receive technical support and trouble shooting tips at our website at www.extensis.com, or by e-mailing support@extensis.com.

Suggestions

We'd love to hear your comments about Intellihance, plus ideas for new plug-ins or improvements on existing plug-ins. A suggestion sheet is included at the end of this manual. Please send your comments and suggestions to Extensis via e-mail (info@extensis.com) FAX (503) 274-0530, or by phone (503) 274-7030.

Using the Manual

This manual covers Intellihance for Macintosh and Intellihance for Windows. Where necessary, keyboard commands and menus that differ on the two systems are indicated by (Macintosh Command) and [Windows Command]. You may be using a different host program than Adobe Photoshop; this manual refers to Adobe Photoshop as the host application. Please refer to your software users manual for your host application for any plug-in specific issues.

The Screen shots of the Intellihance dialog box and affected images will appear the same regardless of the system you are using.

The Intellihance Environment

When you work with Intellihance, you're working within a specially designed environment designed to make your images look as good as possible. This environment is contained within the host application (typically Photoshop).

The First Time You Use Intellihance

To Run Intellihance:

1. **In Photoshop, open a photo that could use a little bit of adjustment.**
2. **Choose Intellihance 3.0 from the Extensis submenu of the Filter menu.**

The Intellihance dialog box will appear.

3. **Click the Enhance Image button.**

The dialog box will disappear, and the image will look better instantly.

If this seems too easy, it's probably because that's really all there is to basic Intellihance operations. Intellihance does the work for you.

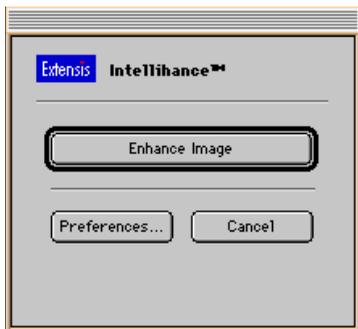
The Quick Enhance Dialog Box

The Quick Enhance dialog box contains only three buttons, to make using Intellihance as easy as possible.

Enhance Image applies the current preference settings to the selected area of the current document.

Preferences... brings up the Preferences dialog box, where you can make adjustments to the way Intellihance affects images.

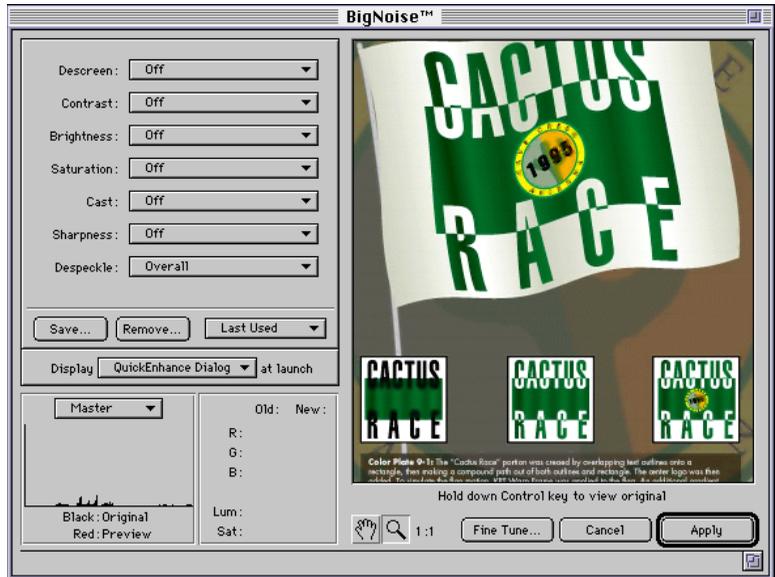
Cancel exits the dialog box without making any changes.



Preferences

Clicking the Preferences button in the main Intellihance dialog box displays the preferences dialog box, where you can customize the way Intellihance enhances images. This screen contains a preview of the image with the current settings applied to it.

Preferences control the automatic image processing. These should be adjusted the way you want your images in general.



Intellihance improves the way your images appear in print or on the screen by automatically adjusting the contrast, brightness, saturation, sharpness, and despeckle of your output images. Intellihance measures the amount of these effects in your original image, compares the measurements with the preferences table, and then automatically processes the image to match the preferences.

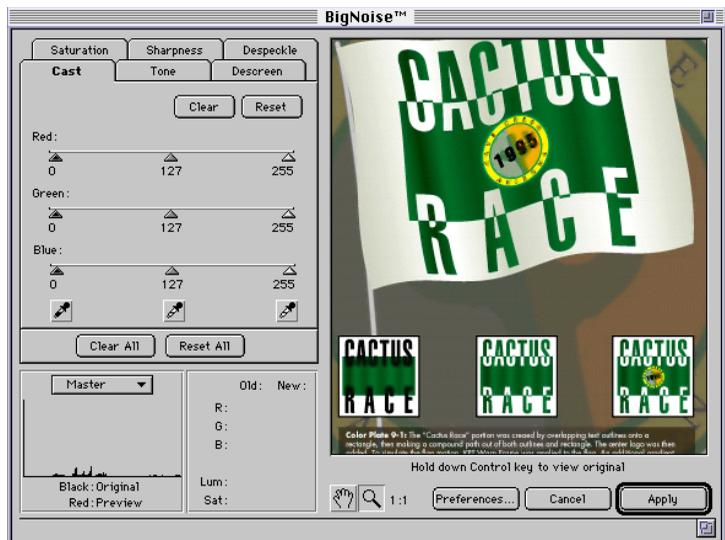
The Intellihance default preferences are based on the way most people like to view images in print or on the screen. The best way for you to decide if you like the default settings is to try them. Process three or four images with Intellihance and look at the results. If you like what you see, the default settings are fine for you.

The following table lists the Intellihance default settings. If you want to change the default preferences, go on to the Using Presets section.

Intellihance Filter	Default setting
Descreen	Off
Contrast	Normal
Brightness	Balanced Tone
Saturation	Medium
Cast	Remove Cast
Sharpness	Medium Sharpness
Despeckle	Off

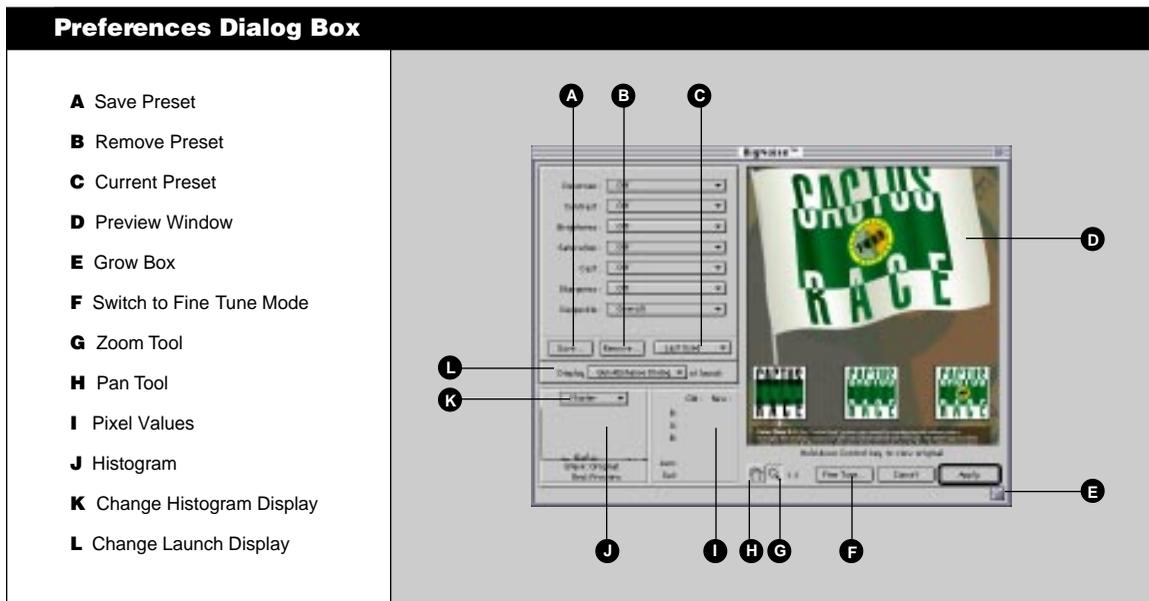
Fine Tune

The Fine Tune screen (accessed by clicking the Fine Tune button in the Preferences screen) allows you to make individual adjustments to several different areas of your image using different controls.



Preferences Dialog Box

The Preferences dialog box contains pop-up menus for adjusting settings, and more general controls. This section discusses those general controls in the Preferences dialog box, such as presets, the preview's zoom/pan controls, and the Histogram display.



Changing the Launch Display

If you find yourself going to the Preferences or Fine Tune dialog box each time you open up Intellihance, you can set up Intellihance to automatically start up in one of those dialog boxes instead of the standard “Quick Enhance” dialog box.

To Make Intellihance Display Preferences on Launch

- 1. Choose Intellihance from the Filter menu.**
The Intellihance dialog box appears.
- 2. Click the Preferences button.**
The Preference screen with preview appears.
- 3. Change the Display ... at launch pop-up menu to “Preferences.”**

The next time you launch Intellihance, the Preferences dialog box will be displayed.

Tip

For those that like Intellihance to do most of the work and then either approve what Intellihance has done or Fine Tune it a little, use the Display Fine Tune at Launch setting.

To Display the Fine Tune Screen on Launch

- 1. Choose Intellihance from the Filter menu.**

The Intellihance dialog box appears.

- 2. Click the Preferences button.**

The Preference screen with preview appears.

- 3. Change the Display ... at launch pop-up menu to “Fine Tune.”**

The next time you launch Intellihance, the Fine Tune dialog box will be displayed.

To Display the Quick Enhance Dialog Box on Launch

- 1. Choose Intellihance from the Filter menu.**

The Intellihance dialog box appears.

- 2. Click the Preferences button.**

The Preference screen with preview appears.

- 3. Change the Display ... at launch pop-up menu to “QuickEnhance Dialog.”**

The next time you launch Intellihance, the QuickEnhance dialog box will be displayed.

Working with the Histogram

The Intellihance Histogram shows a graphical representation of the current “levels” (pixel values) of an image compared to the original levels of that image. The histogram can display the entire image information at once, by individual channel, or by saturation.

The bars show the original image histogram, while the red bars show the changed (current) image information.

You can change between the different histogram displays by using the histogram pop-up menu.

To Change the Histogram Display

- 1. Choose Intellihance from the Filter menu.**

The Intellihance dialog box appears.

- 2. Click the Preferences button.**

The Preference screen with preview appears.

- 3. In the lower left of the dialog box, change the pop-up menu above the histogram to a different option.**

The default display is always Master. You can choose from the image's different channels, or the saturation of the image.

Reading Pixel Values

To the right of the Histogram display is a chart which shows the current pixel values and their original values side by side. This chart is invaluable for determining if any changes are being made to certain pixels.

Tip

For more accurate results, you may want to zoom in first before placing the cursor for more accurate results.

To check the Values of a Pixel

- 1. Choose Intellihance from the Filter menu.**

The Intellihance dialog box appears.

- 2. Click the Preferences button.**

The Preference screen with preview appears.

- 3. In the Preview, place the cursor over the pixel in the preview whose value you wish to check.**

Navigating in the Preview Window

The Preferences (and Fine Tune) Preview window is totally expandable, collapsible, and zoomable. The window can be stretched out to fill your monitor, or reduced to the default size. You can zoom in on a portion of the image, and while zoomed in you can pan around the image to other areas.

To Make the Preview Window Larger

- 1. Choose Intellihance from the Filter menu.**

The Intellihance dialog box appears.

- 2. Click the Preferences button.**

The Preference screen with preview appears.

- 3. Drag the grow box in the lower right down and to the right.**

As you drag, you'll see a dotted line indicating the new size of the dialog box.

- 4. Release the mouse button.**

The Preview area will be enlarged.

You can make the preview window smaller (to the default window size) by dragging the grow box up and to the left.

To Zoom in on a Specific Area of an Image

- 1. Choose Intellihance from the Filter menu.**

The Intellihance dialog box appears.

- 2. Click the Preferences button.**

The Preference screen with preview appears.

- 3. Select the Zoom tool (magnifying glass) along the bottom edge of the window (to the left of the Fine Tune button).**

The cursor will change into the Zoom tool when it passes over the preview area.

- 4. Click on the area you wish to zoom in.**

or

- Drag around the area you wish to zoom in.**

Dragging is usually the most accurate way to get a specific area of the image to fill the preview area.

To Zoom Out of an Image

- 1. Select the Zoom tool.**

- 2. Press the Option/Alt key.**

Pressing Option/Alt changes the Zoom In tool to the Zoom Out tool.

- 3. Click with the Zoom Out tool.**

The image will be reduced in size.

To Pan Around an Image

- 1. Select the Hand tool.**

The cursor changes into the Hand when it passes over the preview area.

- 2. Drag the image around.**

The image will move around within the preview area.

Note: you cannot pan if the entire image is visible within the preview area.

Tip

You can also zoom in and out using (Command) [Control] + to zoom in, and (Command) [Control]- to zoom out.

Tip

Double-click on the Zoom tool to revert the image back to 100% (1 pixel of the image = 1 pixel onscreen) size.

Adjusting Preference Settings

There are several preference settings that can be defined in the Preferences screen within Intellihance. These adjustments are achieved by choosing an option from a number of choices in a pop-up menu. There are seven different pop-up menus, each with several different settings. This section of the user guide explains each of the settings.

The general idea of the preference settings is that they should be changed to affect the majority of images, not modified for each individual image (that's what Fine Tune is for). These settings bias the auto processing engine depending on the settings you choose.

To Change a Preference Setting

- 1. Choose Intellihance from the Filter menu.**

The Intellihance dialog box appears.

- 2. Click the Preferences button.**

The Preference screen with preview appears.

- 3. Choose an item from one of the pop-up menus.**

The preview will change to indicate the new setting.

Each of the settings can be turned Off by selecting “Off” for that particular setting. When a setting is set to Off, it does not affect the image at all. If all settings are Off, the image is not changed.

Descreen

Images that have already been printed using a halftone screening process require special attention when re-used by scanning them. The dots that make up the printed image are often partially or wholly visible, creating an undesirable pattern and possibly a moire when viewed on screen or printed again. The Descreen option blurs the dots slightly, blending the individual colors used in printing.

The Descreen settings

Auto Descreen: This option will automatically detect a screen in an image and will remove it.

The Newspaper, Magazine and Fine Art settings are manual descreen settings that tell Intellihance the approximate screen frequency.

Newspaper: Use this option when the scanned-in image is of low quality and low linescreen, such as the 85 lines used in newspaper publishing.

Tip

When scanning images to descreen, scan newspapers at 300 dpi, Magazines and Fine Art images at 600 dpi.

Tip

For greater accuracy when descreening, images should be viewed at 100% and should not be resized prior to being enhanced by Intellihance.

Magazine: Use this option when the scanned-in image is of medium quality, taken from a magazine, newsletter or publication with a linescreen of 133-150 lines per inch.

Fine Art: If the linescreen of the printed art was 175 or higher or ink jet printer based, use this setting.

Do *not* use the Descreen function on scanned-in original art, photos, or Photo CD images. Doing so will substantially blur the image.

Contrast

The Contrast Settings are used to increase the contrast of images. Even the lowest setting will modify the contrast slightly. Keep in mind that these settings are target settings, and a low setting may appear to do much more on a low contrast image than on a high contrast image. The contrast, even on the lowest setting, will never decrease.

The Contrast Settings

Soft: This setting results in pictures with lower contrast.

Normal: This setting results in a normal increase of contrast. Darker shadows, brighter highlights and enhanced midtones result from this setting.

Snappy: Snappy contrast differentiates the light and dark areas. Lines can appear between similarly bright areas, and shadows and highlights appear solid, without much detail (solid blacks and whites).

Hard: Hard contrast is just this side of posterization. The detail that remains is only between areas of very distinguishable brightness levels.

Flatten Shadows: This setting makes the dark areas lose their detail.

Flatten Highlights: Flatten Highlights removes excess noise from bright to very bright areas. This setting is only recommended when printing on darker than bright white stock, such as a newspaper.

Brightness

The Brightness setting biases the automatic adjustment of the midtone of the image.

The Brightness Settings

Deeper Shadows: This setting emphasizes shadows, resulting in a darker image overall.

Shadow Emphasis: This setting darkens an overall range of areas to give the entire image a darker feel.

Balanced Tone: This setting attempts to balance the dark and light areas of the image.

Midtone Emphasis: This setting increases the amount of midtone areas by darkening some mid-to-bright areas and brightening some mid-to-dark areas.

Highlight Emphasis: This setting biases the brightness toward the highlight range.

Saturation

Saturation is the amount of color within the image. The settings will increase or decrease the saturation based on the current setting.

The Saturation Settings

Low: This setting will produce pictures with a minimum amount of color.

Medium Low: A little less color than typical.

Medium: The typical amount of saturation that should be found in a typical image.

Medium High: A little more saturation than typically found in an image.

High: Intense saturation.

Tip

As with the other Intellihance settings, don't pick a "high" setting just because your images tend to be low on saturation. Pick the target amount of saturation you'd like images to be in general.

Cast

The Cast setting is used to remove unwanted color casts from the image. Often times, over or underexposed film will result in images that have a yellow, red, or green cast to them. This is also potentially a problem when a scanner is improperly calibrated or when a picture was taken under fluorescent lights.

Color Casting is usually only noticeable when you compare the color-cast image with the same image that has had the cast removed. It is usually a good idea to keep this setting on Remove Cast for the majority of images.

The Cast Settings

Purify Gray Balance: This setting looks for areas of the image that are close to gray, and automatically balances them. This setting only purifies slight casts and leaves the rest of the image as before.

Remove Cast: The Remove Cast setting looks for any distinguishable color cast in the highlight, midtone, and shadows of an image and removes that cast. This setting can remove casts of different colors simultaneously if they occur.

Aggressive Cast Removal: This setting should be used when the cast is visually apparent of itself (no side-by-side comparison needed). If you can see a certain hue throughout the image, use this setting.

Sharpness

The sharpness setting selectively sharpens any images that require it. It will not reduce the amount of sharpness in an image that is too sharp, however. Once again, Intellihance “sees” the image and recognizes the areas in terms of sharpness, affecting the least sharp areas the most, and the most sharp areas the least.

The Sharpness Settings

Soft: This setting will only sharpen images with a noticeable blur.

Medium: The Medium setting sharpens both soft and blurry images.

Hard: The Hard setting sharpens most images except for very sharp images.

Extra Hard: This setting creates even sharper edges than Hard.

Despeckle

The Despeckle filter removes noise, such as photograin or scanner-induced noise, while preserving detail. Intellihance detects the edges in an image (the areas where significant color changes occur) and gently smooths all of the selection except those edges.

Tip

On large images, the Preview screen may exaggerate the Despeckle effects.

If you want to reduce image noise, this filter has three options that will process only noisy pixels without changing highlights or other details.

The **Overall** option is useful for situations where the image may contain speckles or photograin noise in the image. The **Dark Tones Only** option is for images where you're satisfied with your light tones and only need to adjust dark tones. The **Light Tones Only** option is for images you might enlarge such that the photograin in the highlights becomes evident. These last two options allow you to limit the filtering to the darker or lighter areas of the image. If you don't want any correction, you can turn this filter **Off**.

Using Presets

All the changes you can make within Intellihance's General Preferences can be saved at any time as a preset. These presets are stored within Intellihance and can be recalled by going into the Preferences screen and selecting a preset from the pop-up menu.

Intellihance ships with a number of presets for a variety of purposes. These presets are available when Intellihance is used for the first time.

To Select a Preset

- 1. Choose Intellihance from the Filter menu.**

The Intellihance dialog box appears.

- 2. Click the Preferences button.**

The Preference screen with preview appears.

- 3. Select a preset from the pop-up menu.**

The pop-up menu always reads "Last Used" or "Default" until something is chosen.

The pop-up menus and preview will change to show the new preset values.

- 4. Click the Apply button.**

The changes are applied to the selected portion of the image.

Creating Presets

You can create as many presets as you like for use within Intellihance.

To Create a New Preset

- 1. Choose Intellihance from the Filter menu.**

The Quick Enhance dialog box appears.

- 2. Click the Preferences button.**

The Preference dialog with preview appears.

- 3. Change the pop-up menus to the settings you wish to use for the preset.**

- 4. Click the Save button.**

A dialog box appears which allows you to name your preset appears.

- 5. Type in a name for the preset and press Return.**

Name the preset for what it does instead of how it affects the current image. For instance, it would be better to name a preset “Deep Shadow Remover” than “Joe’s Shadow Clipper.”

The preset can now be used with any other image.

Removing a Preset

If you want to remove a preset from your list of presets, you can do so in just a few simple steps.

To Remove a Preset

- 1. Choose Intellihance from the Filter menu.**

The Intellihance dialog box appears.

- 2. Click the Preferences button.**

The Preference screen with preview appears.

Tip

Macintosh Only: If you throw out your preference file for Intellihance, all of the presets will be deleted.

3. Select the preset you wish to remove.

The current settings will change to reflect the preset you've chosen.

4. Click the Remove button.

The "Are you sure you want to delete the current Preset?" dialog box will appear.

5. Click the OK button.

The preset is removed from the list of presets.

Fine Tuning

In addition to being able to set the seven preferences to preset values in the Preferences dialog box that affect how Intellihance automatically adjusts images, the Fine Tune screen lets you make manual refinements to individual images.

You can switch between the six fine tuning controls: Cast, Tone, Descreen, Saturation, Sharpness, and Despeckle, by clicking on their tabs.

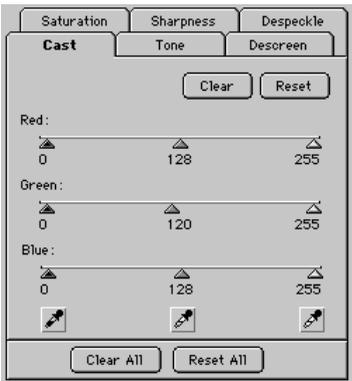
Tip
The order in which you apply the filter affects the output. We recommend the following order: Tone, Saturation, Sharpness, Despeckle, Cast, Descreen.

Clear the settings in all of the controls (even the ones not shown) by clicking the Clear All button. If you would apply Intellihance after clicking the Clear All button, your image would not be affected.

Reset the settings in all the controls by clicking the Reset All button. The reset command sets the controls to their automatic setting according to the pop-ups chosen in the Preferences screen.

In addition, each of the control panels have their own individual Clear and Reset buttons which you can use to clear or reset the current panels.

Cast



You can fine tune cast removal by adjusting the amount of red, green, and blue (RGB images); cyan, magenta, and yellow (CMYK); and a and b channels (Lab color) that are contained within shadows, midtones, and highlights by manipulating the sliders in the Cast tab of the Fine tune screen.

The Cast option is not available for grayscale images.

The Eyedroppers provide the most effective method for removing cast from an image. The idea behind the eyedroppers is they sample a color from an image and neutralize it throughout the image. Use the dark eyedropper to sample from a shadowed area (don't aim for black, just a dark area). Use the gray eyedropper to sample a midtone. Use the white eyedropper to sample a highlight color (avoid white). When using the Eyedroppers, you'll see the sliders move automatically. You can then adjust the sliders individually to fine tune the results of the eyedroppers.

Cast Slider Operation-RGB

Red: Dragging sliders to the left increases the Red. Dragging to the right increases the Cyan, removing the Red.

Green: Dragging sliders to the left increases the Green. Dragging to the right increases the Magenta, removing the Green.

Blue: Dragging sliders to the left increases the Blue. Dragging to the right increases the Yellow, removing the Blue.

Cast Slider Operation-CMYK

Cyan: Dragging sliders to the right increases the Cyan. Dragging to the left increases the Red, removing the Cyan.

Magenta: Dragging sliders to the right increases the Magenta. Dragging to the left increases the Green, removing the Magenta.

Yellow: Dragging sliders to the right increases the Yellow. Dragging to the left increases the Blue, removing the Yellow.

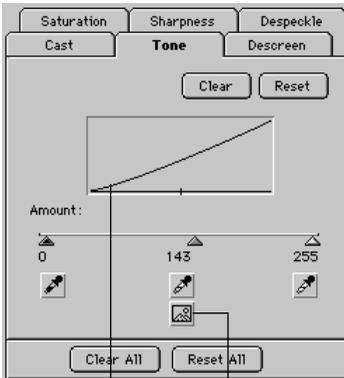
Cast Slider Operation-Lab

a: Dragging the slider to the left increases the red, removing the green. Dragging the slider to the right increases the green, removing the red.

b: Dragging the slider to the left increases the yellow, removing the blue. Dragging the slider to the right increases the blue, removing the yellow.

Tip

Drag with any of the Eyedroppers and you can watch the cast sliders move around automatically. This can give you a good feel of what color(s) the image is leaning towards.



Curve Display

Intelligent Light Display

Tone

Tone is the Fine Tune equivalent of Brightness and Contrast mixed together. The tone panel lets you adjust the output tone of the shadows, midtones, and highlights of an image.

The dark slider lets you determine the black point of an image; dragging it to the right makes more of the image black, and darkens the image overall.

The Gray slider changes the midtone (50% mark) of the image. Dragging the slider to the left lightens the image, while dragging to the right darkens the image.

The white slider determines the white point of an image. Dragging this slider to the left increases the white area of an image, and lightens the rest of the image.

Tip

By using the Light Meter tool, you can tell Intellihance exactly which portions of the image are important, and which should be ignored.

As in the Cast panel, you can use the dark, gray, and white eyedroppers to set the black point, midpoint, and white point of the image by clicking with those eyedroppers within the image.

Most users increase the contrast when an image doesn't look right. However, always remember that an increase in contrast is a loss of detail; in many cases the Sharpen setting should be changed instead of the Contrast setting.

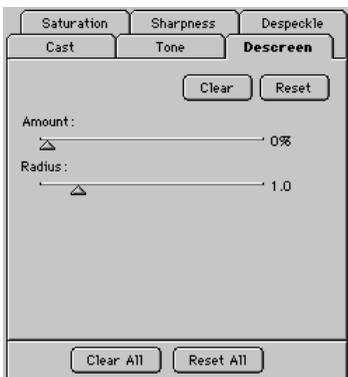
The Intelligent Light Meter allows you to identify the picture's foreground elements, and setup Intellihance to use that area as a measurement area, much like a photometer helps photographers set their exposure properly.

Descreen

Descreen helps remove traces of the dots used when printing that show up in scanned images. It accomplishes this by blending a blurred image with the original image. This helps to fill in any gaps and to cover up noticeable colored dots while still maintaining detail.

Amount: This slider controls the amount of the descreening. The further the slider is dragged to the right, the more descreened it will be. This should usually be kept at 100% (to the right).

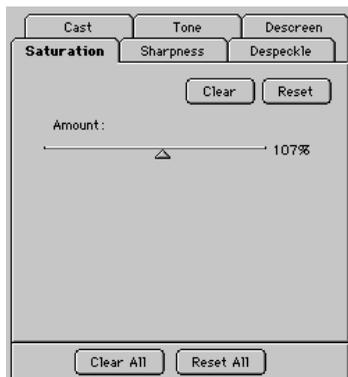
Radius: This slider controls how far the descreen function looks to see if a contrasting color is present and needs to be descreened. The higher the value (to the right), the greater the area that is checked. The value is measured in pixels. This setting is the most critical of all the settings in Descreen; adjust it until you have an acceptable removal of visible halftone dots without too much blurring.



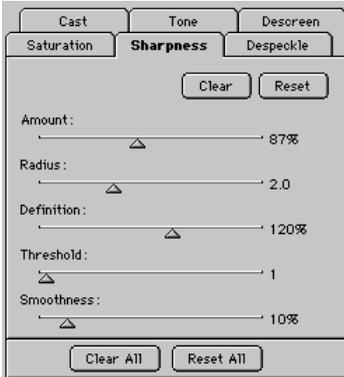
Saturation

Saturation controls the amount of color within the selected area of the image. The further the slider is dragged to the right, the more color (intensity) is added to the image. Dragging the slider to the left will result in an unsaturated image that is basically a grayscale image.

This setting will not work on grayscale images.



Sharpness



Sharpness controls the sharpness of the image.

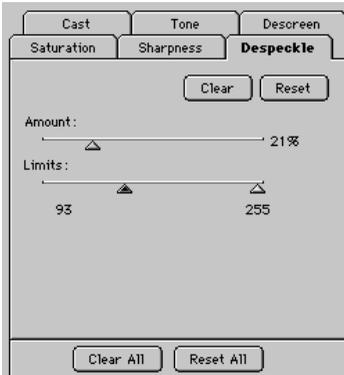
The Amount slider controls the general sharpening amount of the image.

The Definition slider controls the sharpening more in the shadows and midtones than the highlights. This makes the image appear sharper overall because our eyes are more sensitive to highlights; when the shadows are sharpened more, we perceive an equal amount of sharpness throughout the image.

The Threshold sliders determine how different adjoining pixels need to be to be sharpened. Differences above this threshold will be sharpened, and differences below this threshold will be smoothed.

Smoothness blurs areas of the image that fall under the threshold. The Smoothness slider controls the blend or mix between the original image and the smoothed image. At 100%, the blurred image is placed at all the pixels that fall below the threshold. This has the effect of removing noise and speckles from relatively smooth areas.

Despeckle



The Despeckle control removes unwanted tiny pixels from larger solid areas.

The Amount is how much blur is mixed with the original image.

The Threshold helps Intellihance determine the difference between an edge and actual noise.

The Limits slider controls what pixel values (dark pixels or light pixels) are affected.

Image Tips

Getting a great image is easier than ever before with Intellihance. There are other things you can do to make your images look even better, and to help you determine the changes that are needed within your images.

Tip

It is best to scan images previously halftoned at the scanner integral frequency, i.e. 300-600 dpi.

Scanning Tips

You can use your scanner interface to control your scanner's brightness, color cast, white point, and scan resolution.

Most scanner interfaces have various controls to set brightness, contrast, gamma, highlight, and shadow points. These controls, if used improperly, can add noise or flatten the highlights and shadows of the image. That's why it's best to turn off your scanner's automatic features.

To evaluate your scanner's capabilities:

1. **Open an image from Adobe Photoshop.**
2. **Choose Adjust ⇔ Levels from the Image menu.**

The Levels dialog box displays showing the distribution of pixel values in your image.

Checking Your Scanner's White Point

You can improve scans by properly setting your scanner's white point, that is, the reflective value the scanner sees as white or 0%. If your picture is overly bright and the scanner's white point is low, you may be flattening your highlight data. This is especially noticeable when scanning a calibration strip or an image with a broad tonal range.

Refer to the documentation provided in your scanner's manual to set the white point. Sometimes the brightness control can be used to set the white point of the scanner. If you can't seem to adjust the white point properly, you may have a scanner that doesn't allow you to set the white point; these scanners typically perform the manipulation in software.

Tip

Turning off your scanner's automatic features will capture all the available data in the image. If this makes the image dark, Intellihance will automatically compensate.

Determining Whether to Use the Despeckle Filter

You can view speckles or noise to determine whether to use the Intellihance Despeckle filter. Noise can be previewed directly by turning up or increasing the contrast in the tones to an extreme. If the speckles are severe, set the Despeckle filter menu to Dark Tones Only from the Intellihance Preference screen. This will suppress shadow noise. If you are processing a batch of images with severe photo grain noise, set the Despeckle filter menu to Overall.

Determining the Scan Resolution

The capability of your output device determines the correct resolution for a scan. As a general rule, to produce a high-quality halftone image, the image resolution (measured in pixels-per-inch or ppi) should be 1.5-2 times the lines-per-inch (lpi) value of the halftone screen used to print the image. For example, to print a high-quality image using a 133-lpi screen, you would need an image resolution between 200 and 266 ppi (133 x 1.5 to 2.0). In some cases, however, depending on the image and the output device, ratios of as low as 1.25 produce excellent results.

Tip

Use this formula to calculate the pixels per inch:
 $ppi = lpi \times 1.5 \times \text{scale factor}$

The size of the final image compared to the original image is also a consideration in setting scan resolution. If the final output size is not known, then overscan by a larger factor. For more information about determining the final output size, refer to your scanner's manual. If you see excessive noise in your scans, your scanner may be taking short cuts. Even though you want a scan at 225 ppi, many scanners will scan the picture at 300 ppi and remove pixels electronically. In the case of high resolution scans, it is common for a scanner to scan at 600 ppi and add pixels to get 1200 ppi. This may result in speckle artifacts or blurring. If you see excessive scanner noise, try scanning at 300 or 600 dpi and then scale the image in Adobe Photoshop. Remember the scale factor affects the scan ppi.

For more information about determining the scan resolution, refer to *Scanning, Importing, and Exporting Images* in the Adobe Photoshop manual.

Enhancement Tips

After you have processed an image with Intellihance, there are three ways to further enhance the image.

1. **Run Intellihance on the image again.**

2. Use the Fine Tune adjustments.

3. Use other Adobe Photoshop filters and tools.

Refer to the Adobe Photoshop manual for more information about image enhancement.

Running Intellihance on the Image Again

When Intellihance processes an image, it compares the input to the settings in the Preferences screen and decides which filters to run to make the output conform to those settings. Sometimes you can run Intellihance again to gradually bring the image closer and closer to your preferences.

You can also run Intellihance again to bring out the effects of a specific filter. For example, maybe the sharpness of the image is good, but you want more brightness. If you set the Sharpness filter to Off and run Intellihance again, the Brightness filter continues to improve the brightness of the image.

Try running Intellihance with the Despeckle filter set to Dark Tones Only, and all other filters turned Off. This will clean up shadow speckles caused by excessive scanner noise.

Monitor Calibration Tips

If you want to use your monitor to evaluate halftones and color images on the screen (commonly referred to as “soft proofing”), you must calibrate your monitor. To reliably soft proof an image can save time and money in proofs and printing jobs.

Calibration is the process of adjusting your monitor with the color conversion parameters to compensate for various factors that affect both the on-screen image and its conversion to printed output. These factors include room lighting conditions, the type of viewing light source, and the quality and settings of your monitor and display card.

For a comprehensive instructions about how to calibrate your monitor, refer to Calibrating Your System in the Adobe Photoshop User Guide.

Printing Tips

After you've processed your image so that you're satisfied with it, the next step is to prepare the image for your output device. You need to set the lpi of your output image and then of your output device.

Setting the LPI of Your Output image

Selecting the lpi of your printer or imagesetter has a dramatic effect on the quality of your printed image. The human eye needs to see at least 64 gray levels for good tonal evaluation. This is why you should consider your output printing requirements before you begin setting the ppi of your scanner. If you plan to photocopy, laser print, or quick print, don't use line screens over 100 lpi.

Note: In most cases, you can use the setting for your printer's default screen ruling located in your graphics application.

If not, calculate the best lpi for your printer based on the resolution of the printer (dpi), the line screen frequency (lpi), and the number of shades in your halftone.

Setting the LPI for Your Laser Printer

Use the following table for setting the lpi of your laser printer.

Printer DPI	LPI	# shades	Optimal for
300	53	32	
600	72	65	600 dpi laser proofing
600	85	50	newsprint proofing
800	100	64	
800	85	88	newsprint proofing
1000	133	56	high resolution
1000	120	69	better tone
1000	100	100	
1200	150	64	high resolution
1200	133	81	better tone
1200	100	120	

For example, if you have a 600 dpi laser printer, you should use 72 lpi. This provides 64 shades of gray. A setting of 85 lpi could also be used in proofing newsprint, which provides about 50 shades of gray.

Tip

of shades = (dpi/lpi)²

$\text{lpi}^a \text{ dpi} / \div \# \text{ of shades}$

Tip

Imagesetters typically have a dpi of 2400 or greater. At this resolution level, it is the press that will determine the lpi. A sheet-fed, offset press can reproduce screens as fine as 200 lpi or higher. Since many factors determine the maximum lpi of the press, you should consult your print vendor for this information.

Troubleshooting

▶ **My images don't look good after I run Intellihance.**

Because Intellihance automatically adjusts images using the default settings, it is likely that Intellihance's Preferences have been modified. The Preferences affect not just individual images, but how Intellihance skews its results. A good way to find out which preference is causing the problem is to turn off each Preference pop-up one at a time, until the problem goes away.

▶ **The Extensis submenu isn't showing up in my Filter menu.**

Check that your application is looking to the correct plug-ins folder when it loads. If you have multiple version of the host application, it is possible that the program is looking in the "wrong" plug-ins folder.

▶ **Will Intellihance process every image correctly?**

Intellihance processes most images in an optimum way. Users have experienced a 1-7% fallout, although it is interesting to note that often it is hard to improve the fallout images beyond that of images processed by Intellihance, even when starting from scratch.

If image quality degrades after running Intellihance with its default preferences, try turning Contrast and/or Brightness preference settings Off and running Intellihance again.

▶ **What Scanners does Intellihance work with?**

Intellihance works with all scanners—you can optimize images from any source.

▶ **Will Intellihance work with my color management system?**

Intellihance works well with color management systems both inside and outside of Adobe Photoshop.

▶ **Does Intellihance require that my scanner be calibrated?**

Because Intellihance operates on color balance principles, it works with both calibrated and uncalibrated scanners.

▶ **Can I run Intellihance multiple times?**

Yes, running Intellihance again will bring the image even closer to your preferences.

▶ **Must I calibrate my monitor when using Intellihance?**

If you plan to use the monitor display to evaluate the quality of the image before you print, it is very helpful—although not required—to calibrate your monitor. If you are evaluating grayscale images on the monitor, then calibrate your monitor using the monitor preferences in Adobe Photoshop. If you are evaluating color images on your monitor, you should use a color calibration system.

▶ **My image looks good on the monitor, but not in print.**

You may need to calibrate your output device or monitor, or both.

▶ **My image lacks contrast.**

Try reducing the Limits and Dot Gain from Adobe Photoshop. Also, try increasing the Contrast filter setting or decreasing the Brightness setting in the Intellihance Preferences screen.

Intellihance 3.0 Product Team

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Special thanks to: Todd Schomer, Sarah Gomm, Colin Gray, Jeff Knee, Cori Taratoot, Ray Marshall, Brenda Moore and all our beta testers.

Glossary

bitmapped An image formed by a rectangular grid of pixels. The computer assigns a value to each pixel, from one bit of information (black or white), to as much as 24 bits per pixel for full color images.

calibration Setting equipment to a standard measure to produce reliable results from input to output. See also monitor calibration.

CMYK (Cyan, Magenta, Yellow, Black) The subtractive primaries, or process colors, used in color printing. Black (K) is usually added to enhance contrast and to print a true black.

color correction The process of adjusting an image to compensate for scanner deficiencies or for the characteristics of the output device, or the original film.

contrast The relationship between the lightest and darkest areas of an image.

dpi (dots per inch) A common measurement for describing the resolution of input and output devices. See also ppi.

gamma Measures the contrast that affects the midlevel grays (midtone) of an image. Adjusting the gamma lets you change the brightness values of the middle range of gray tones without dramatically altering the shadows and highlights.

grayscale The depiction of gray tones between black and white.

halftone screen A pattern of dots of different sizes used to simulate a continuous tone photograph, either in color or black and white.

Lab The Lab color model is based on the original color model proposed by the Commission Internationale d'Éclairage (CIE) in 1931 as an international standard for color measurement.

lpi (lines per inch) A measure of the frequency of a halftone screen (usually ranging from 55-200). Originally, halftones were made by placing an etched glass plate over an image and exposing it to produce dots. Lpi refers to the frequency of the horizontal and vertical lines.

monitor calibration The process of correcting the color rendition settings of a monitor to match the colors of printed output.

multitone Used to integrate one or more colors into a grayscale image for a design effect.

pixel (picture element) The smallest distinct unit of a bitmapped image.

pixelization If the image resolution is too low, the PostScript language may use the color value of a single pixel to create several halftone dots when printing. This results in pixelization, or blocky-looking output.

posterization A flattening of highly saturated colors.

ppi (pixels per inch) A measure of the amount of scanned information. The finer the optics of the scanner, the higher the scan resolution.

RGB (Red, Green, Blue) The additive primary colors used for computer monitor displays.

saturation The strength or purity of color. Saturation represents the amount of gray in proportion to the hue and is measured as a percentage from 0% (gray) to 100% (fully saturated).

screen frequency The number of lines or dots per inch on a halftone screen. Same as lpi.

white point The reflective value that a scanner sees as white or 0%.

Registration

If you haven't already registered, please complete the following registration information, tear along the perforation and fax to (503) 274-0530 or drop it in the mail in the postage-paid envelope provided. Your product registration number is located on the back of your manual.

Name

Organization

Street Address

City State Country Zip/Postal Code

Daytime Phone Daytime Fax

e-mail (optional)

Platform (check all that apply)

Macintosh Windows Other _____

Applications Used (check all that apply)

QuarkXPress PageMaker Photoshop Illustrator FreeHand

Suggestion

We'd like to know what you think we could do to make Intellihance better. So if you have an idea for a new product feature, a modification to an existing one, or anything else you can think of that will help us make Intellihance better—we'd like to hear from you.

To help make Intellihance better, please...

1. Print your name, address, and phone number below and sign your name.
2. Describe your idea or comment.
3. Tear this page out and mail or fax this sheet to Extensis.

I understand that no compensation will be awarded for my suggestion.

My suggestion is . . .

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.....
.....
.....
.....
.....

Name

Street Address

City State Country Zip/Postal Code

Daytime Phone Daytime Fax

Thanks for your suggestions! Hopefully you'll see your ideas in future versions of this or other Extensis products.