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Colorific Color Matching Software

One of the problems with today's computers and printers is that the colors you see on your monitor often don't match the colors you see on the printed output. Now there's a solution. It's called Colorific.

Colorific software gives you accurate, predictable color matching between your screen and printer by calibrating the colors on your monitor. Colorific constructs a precise description of how your monitor displays color, taking into account variable viewing conditions, monitor control settings and video card adjustments.

Colorific is designed for those who create or retouch their work on screen or who download color images from commercial services or CD-ROMs. It can be used with most color printers, and doesn't require a scanner or hardware calibration devices.

Colorific also works hand-in-hand with Acrobat 3.0 from Adobe and Cosmo™ Color from Silicon Graphics, Inc. to provide your display with True Internet Color™.

System Requirements

386 or better

Windows 3.1, 3.11 or Windows 95

2 MB free space on hard disk

4 MB RAM.

Printing the Read Me File and User's Manual

Before installing Colorific, take a minute to print a copy of the Read Me file found on the installation disk. (Use a word processing application to open and print the file README.TXT.) The Read Me file contains last-minute information about your particular version of Colorific, which is not included in this manual or in the on-screen Help.

You can also print this user's manual from any word processing application. The pages are set up with standard margins and fonts to easily print on 8½ by 11-inch paper.

Installing Colorific

Insert the Colorific installation disk or CD into the appropriate drive and follow the instructions for your operating system:

Windows 95: Click on the Windows 95 **Start** button, then choose Run. Type `a:\setup` and press **Enter** (if applicable, substitute the appropriate driver letter for `a:`).

Windows 3.1/3.11: Choose Run from Program Manager's File menu. Then type `a:\setup` (or `b:\setup`) and press **Enter** (if applicable, substitute the appropriate driver letter for `a:`).

Before Running Colorific

Important: Don't use Colorific if you have already installed another third-party monitor calibration system. Using both systems will miscalibrate the monitor. If you're not sure whether your application's color management system will cause miscalibration, it can't hurt to go ahead and install Colorific. Then, open Colorific's on-screen Help and Search for the name of your application for special instructions. You can easily disable Colorific if it does not work well with your application.

To obtain the best color matching results, do the following *before* you run Colorific:

- o Let your monitor warm up for at least 30 minutes to stabilize the colors.
- o Make sure the glass faceplate on your monitor is clean and free of dust.
- o If your monitor has a degauss button, press it.
- o If your monitor has manual R, G, B color controls or a color temperature control, adjust them to your liking. Rerun Colorific if you ever change these controls.
- o If your monitor has a color temperature control, you'll get the best results if you adjust it to 5000K or 6500K. Rerun Colorific if you ever change this control.

On-screen Help

Colorific's on-screen Help offers troubleshooting tips and detailed calibration instructions. When running Colorific, press the F1 key or choose Help (in the upper-right corner of your screen) to view the Help screen that relates to what you're doing. After calibrating, use the Help table of contents or Search command to find information about using Colorific with specific applications.

Running Colorific

You should calibrate with Colorific before doing critical color work and whenever you change the color settings of your monitor. To run Colorific:

Windows 95: Click on the Colorific Control Panel icon in the taskbar or the Colorific program group. Then click on the **Recalibrate** button.

Windows 3.1/3.11: Double-click on the Colorific icon in the Colorific program group.

Colorific then leads you through a series of choices about what you see on your screen. On-screen instructions make running Colorific a simple task. However, if you'd like to know more about a particular step, press the F1 key or choose Help (in the upper-right corner of your screen) to access the Help screen that relates to what you're doing. Or, read the step-by-step instructions below.

1. Monitor/Printer Setup

Windows 95: Choose your monitor model. (If it isn't listed, contact the monitor manufacturer to obtain the appropriate version of Colorific.)

Windows 3.1/3.11: Choose your monitor model, printer profile and preferred monitor color balance. (If your monitor isn't listed, contact the monitor manufacturer to obtain the appropriate version of Colorific.) If you can't find the correct printer profile, contact Sonnetech or Kodak (800-23-KODAK or 716-726-7260) to see if one is available for your printer. In the interim, select a profile for a similar printer from the same manufacturer, if available. Or, select **Generic CMYK**. Use the **Other Printer...** choice only if you have a printer profile on disk that you'd like to install.

If you intend to use a printer other than the one on your system, for instance one at a service bureau, see the topic "Print to Disk" in on-screen Help.

If you prefer the white displayed on the screen to approximate the color of paper, choose **Warm (Paper White)** in the Monitor Color Balance list box. If you prefer the bluish tint of a typical monitor, or if your monitor hardware settings specify a preferred white point or color tint, choose **Current White Point**. If your video card doesn't support this option within Colorific, **Current White Point** is your only choice.

2. Brightness Adjustment

Adjust the brightness control on your monitor so that both black and white boxes are crisp and don't stray into gray. (There is no wrong adjustment.) Once set, don't change the setting.

3. Monitor Gamma Measurement

Pick the square that appears to blend into the background. Feel free to pick a spot halfway between two squares if you feel that would be more precise. For best results, try to blur your vision by squinting or removing your glasses, if you wear them, to sense an overall tone and *not notice the colored stripes*. The 12 squares are organized in increasing brightness along an "S" shaped path.

You will perform variants of this task twice for each color--red, green and blue. Colorific uses the information from these screens to determine the monitor's gamma for each primary color.

Gamma is a measure of the relationship between the brightness of the color you see on your screen and the signal the system is sending to the monitor.

4. Black Point Measurement

Pick the place where you feel there is just a hint of color. You must choose a specific spot, for, unlike the gamma screen, there is no in-between. The 12 spots are organized in increasing brightness along an "S" shaped path.

You will perform this task once for each color--red, green, and blue.

Colorific uses the information from these screens to determine the monitor's black point cut-off value for each primary color.

5. Colorific Color Reference Cards

Depending on your version of Colorific, you now have to either: (1) choose between Colorific Color Reference Cards for different types of lighting, or (2) select a type of lighting from the menu displayed by the Colorific program. Using your chosen light source, make your work area as bright as possible. It doesn't matter if you normally work under different lighting conditions; the measurement will still be accurate. Remove the Color Reference Card from its white cardboard backing and apply it to the monitor in the space indicated on the screen. (If it doesn't stick, clean the back of the clear vinyl Color Reference Card with alcohol and the glass of your monitor with an appropriate glass cleaner.)

Turn the contrast control all the way down, then up slowly. Find a setting where the brightness of both card and screen seem about the same. (Remember, you're matching *brightness*, not color.) Squint, if that helps, and look at both edges of the card simultaneously. If the card is too dark, bring additional lights of the proper type closer to the monitor for this step.

Leave the Colorific Color Reference Card on your monitor for the next step.

6. White Point Measurement

Choose the square where the color on the screen best matches the color of the Colorific Color Reference Card. (Remember, now you're matching *color*, not brightness.) Choose a specific square; there is no in-between option available. Don't worry if your choice isn't an exact match. If the pointer is hard to see behind the card, use the arrow along the side as a guide.

7. Creating Your Profile

Colorific is now creating a color correction profile for your monitor and printer. Remove the card from the screen and adjust the contrast control to a comfortable level. Do *not* change the brightness control.

The calibration process may take a while, but the gauge will track its progress. Once the bar reaches 100 percent, you will see a final screen from which you can restart Windows. (If the final screen doesn't appear, Colorific was unable to create the profile due to insufficient memory. Read the "Troubleshooting" section in on-screen Help to correct the problem.)

8. Final Screen

Windows 95: You must restart Windows for the color correction profile to take effect. (If you

decide not to restart now, your corrections will go into effect the next time you start Windows.)

Windows 3.1/3.11: For the color correction profile to take effect, turn Colorific on with the ON/OFF switch and then click on **Restart Windows**. Don't be alarmed if Windows reboots twice--this is necessary to ensure proper adjustment of your monitor's color temperature when using the Warm (Paper White) option.

Colorific Control Panel

In most cases, Colorific color correction is automatically enabled as soon as you complete calibration and reboot Windows. For advanced users, or just for the curious, the following sections provide more information on how Colorific works within each operating system:

Windows 95 only

Colorific creates a custom profile for your monitor for use with the ICM (Image Color Matching) module built into Windows 95. This profile automatically replaces Windows' default profile and is used at print-time whenever ICM is enabled. (If you don't see an ICM option in your color printer's driver, contact your printer vendor to obtain the latest Windows 95-compatible printer driver, or load the appropriate driver from Microsoft's Windows 95 installation disks.) For more information about ICM, see on-screen Help or request document #7004 from Sonnetech's fax-on-demand system.

Colorific v95 can also work with the Kodak Precision CMS, if it is installed on your system. See the section "Kodak Color Management System" later in this manual.

The Colorific Control Panel displays information that Colorific gathered about your monitor, which can be used to customize settings within your applications. Click on the Colorific icon (a monitor with a blue, red, and green design) in the Windows 95 taskbar to display the Control Panel. Then click on the **More Info...** button to view gamma, white point, and chromaticity data. Users of Photoshop and other high-end graphics programs can use this information to configure the Monitor Setup sections of their applications. See Colorific's on-screen Help for details.

On some systems, the Colorific for Windows 95 Control Panel can optimize the look of your monitor for video, desktop publishing, or other tasks by adjusting the white point and gamma of your display. If these options are not available on your system, try changing to 16-bit or higher color mode. If they are still not available, contact your video card maker for updated Windows 95 drivers. See the on-screen Help topic called "How to Contact Your Video Card Maker" for more information.

Windows 3.1/3.11 only

Colorific creates a Kodak Precision™ monitor-to-printer transform, which is used automatically every time you print, regardless of what program you're using. Simply choose **Yes** at the Colorific print-time prompt, and Colorific will adjust your printer's output to ensure great color matching.

If you close or shrink all the windows on-screen, you'll see the Colorific/Kodak icon in the lower right-hand corner of the screen. If the icon is in color, Colorific is on, but if it's gray, Colorific is off. Double-click on the icon and the Colorific Control Panel will appear, allowing you to turn Colorific monitor and printer correction on and off.

On the left side of the Control Panel are the Monitor and Printer checkboxes. These checkboxes are inactive unless Colorific is On. When you check the Monitor box, color balance is adjusted to the Warm (Paper White) setting. If the Monitor checkbox is gray, this feature is incompatible with your system's video card and is therefore not available. When the Monitor box is unchecked or gray, Colorific doesn't adjust your display, but monitor-to-printer color correction still works fine. Check the Printer box to signal the printer to match the colors on the monitor. (Normally,

this box is always checked.)

Kodak Color Management System (all Windows versions)

All Windows versions of Colorific create a Kodak Precision™ format monitor profile that can be used by any program that incorporates Kodak's Precision™ Color Management System, such as PhotoStyler, Picture Publisher, or PageMaker 6.0. Go to the Kodak CMS module within your application and select the Colorific monitor profile.

To avoid double-correction of color output from applications that have their own color management systems, do the following:

Windows 95: Contact your graphics application vendor for instructions on avoiding double-correction by both Windows 95 (ICM) and your application. Some applications are designed to work together with ICM, but in other cases you need to disable either ICM or the application's color-matching to avoid double-correction.

Windows 3.1/3.11: Choose "No" at the Colorific print-time prompt, or disable the application's print-time color correction. For detailed instructions on using Colorific with specific applications, see Colorific Help or call Sonnetech's fax-on-demand system at (415) 957-9941.

Printer Profiles

Colorific works best if you have the correct profile for your particular printer installed. For Windows 95, the profile is usually installed automatically as part of the printer driver. Colorific for Windows 3.1/3.11 uses Kodak printer profiles, a selection of which are included on the Colorific installation disk. Others can be purchased from Sonnetech or from Kodak. Call Kodak at (800) 23-KODAK or (716) 726-7260 for pricing and ordering information.

Windows 95 users should contact their printer manufacturer to obtain the latest driver and ask if the driver fully supports the ICM module, including all three types of color matching offered by Windows 95: saturation (best for charts and diagrams), contrast/photographic (best for photographs or complex images), and colorimetric (best for matching particular colors, for example in logos). The Microsoft drivers included with Windows 95 all support ICM, but they only offer contrast/photographic matching.

Troubleshooting

Troubleshooting help is available in the on-screen Help available when running Colorific. Before troubleshooting, we strongly recommend that you read the Read Me file located on the installation disk.

To uninstall the software from your computer, see the section "Uninstalling Colorific" in this manual or in the Read Me file. (Do *not* attempt to uninstall Colorific from Windows 3.1/3.11 by simply deleting the Colorific directory!)

Uninstalling Colorific

Windows 95: Use the right mouse button to click on the Colorific icon (a monitor displaying a blue, red and green design) in the Windows 95 taskbar. Choose **E**xit from the menu that appears. Then, from the Start menu, choose **S**ettings/**C**ontrol Panel. Double-click on **A**dd/**R**emove **P**rograms. Choose **C**olorific for **W**indows **9**5 from the list, then click on the **A**dd/**R**emove button.

To undo the changes Colorific made to Windows 95's color-matching module, use Windows Explorer to open the System/Color subdirectory of your Windows 95 directory, and delete any files with **C**olorific in the filename. You must reboot Windows for the change to take effect.

Windows 3.1/3.11: Follow the steps for installing Colorific, but choose the **U**ninstall button when it appears. To uninstall manually, follow the instructions in the README.TXT file on the Colorific installation disk or in the Colorific directory.

WARNING! Do *not* attempt to uninstall Colorific by simply deleting the Colorific directory. If you do, you will be unable to reboot Windows!

Technical Support

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Fax-on-demand and voice support: (415) 957-9941
Voice only: (415) 957-0152
Fax: (415) 957-9942
E-mail: colorific@aol.com

Updated information can be obtained from Sonnetech's 24-hour fax-on-demand system. Call (415) 957-9941 from a fax machine phone to request a catalog of documents.

When calling for technical support, please have the following information available: brand and model of the monitor and printer, the version of Colorific you have installed, and a precise description of the problem.

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A Little Bit About Color

One of the most important things about color is that color perception is subjective-- everyone sees color somewhat differently. Even moods can influence your perception of color. In addition, light in your surroundings will affect how you see colors, particularly in a printed image. Fluorescent light has a green tint and incandescent light has a pink tinge. If the ambient light has any tint, the printed material will reflect that bias.

Colorific is designed to help you keep the effects of the light in your work area to a minimum during color calibration. To view your printed output in the most neutral light, look at it in the light from a light box like those graphics professionals use.

In the process through which printed materials are produced with a computer system, there are basically two kinds of color: additive (colored light transmitted from the monitor) and subtractive (light reflected from printed material). Both have the same effect on the human eye, which identifies a color by the wavelength of light that it perceives. Mixing primary colors alters the wavelength of the color transmitted (additive) or reflected (subtractive).

Monitors, by exciting phosphors on their screens, produce red, green, and blue (RGB) light that, in various combinations, can represent millions of colors. If all three colors are combined in the right mix, you will see white light. In the absence of any color, the eye perceives black.

The inks in printed material produce color by absorbing (subtracting) portions of the spectrum from the white light that strikes them. This subtractive process uses cyan, magenta, and yellow (CMY) primary color pigments in combination to produce the colors you specify. You would think an equal combination of these inks should print black, but impurities in all inks cause the result to look more like a muddy brown. Printers typically add some black ink to produce a true black. (This, then is known as CMYK color.)

What all of this means is that color perception is not only personally subjective, but also subject to a number of outside influences, and that color matching during the reproduction process is difficult. Colorific gives you a simple means to deliver improved color matching between your monitor and your printer.

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