

PRODUCING OUTPUT FROM PHOTODISC

Using PhotoDisc Images for On-screen Presentations and Multimedia

PhotoDisc images can easily be used as a part of your on-screen presentations and multimedia projects. Each of the images comes ready to use for any on-screen purpose in 72 dpi TIFF format. PhotoDisc images make great backgrounds for presentations or may be added to illustrate a specific point. Simply import the image into any presentation or multimedia program that supports the TIFF format. If your presentation or multimedia program does not support TIFF format you may convert your PhotoDisc images to PICT (for Macintosh users) or BITMAP (for PC users) in many popular image manipulation software applications.

Calibrating your monitor

For on-screen presentations or multimedia uses, the computer screen is your final output. For the PhotoDisc images to look their best, it is important to calibrate your monitor to accurately represent color on the screen. In some cases, calibration may be done by a utility or special piece of hardware provided by the monitor manufacturer. Some applications also provide their own calibration software. Consult the documentation from your monitor or software application on how to best calibrate color images for on-screen purposes. If neither your monitor or software program provides calibration, you should at least adjust the contrast and brightness of the monitor to display the images according to your preferences.

Printing PhotoDisc Images to Desktop Printers and Film Recorders

PhotoDisc images can be used to create a variety of publications, graphics, or presentations which may be printed to color or black & white desktop printers or film recorders. After printing the original, additional copies can be created using a black & white copier, color copier, or slide duplication mechanism.

To use PhotoDisc images when printing to a desktop printer or film recorder:

1. Locate the desired image(s) in the full color printed catalog.
2. Copy the desired image(s) from the CD-ROM disc to your hard disk.
3. Open or import the image(s) in your desktop publishing, graphics, or presentation program.
4. Make sure you have the necessary printer driver selected for the particular device.
5. Print a sample page to ensure that the results are correct.
6. Print out the page(s) or slide(s) to the device by following the instructions provided by the with your page layout program.

On-screen images versus printed results

You may notice a difference between the way PhotoDisc images look on your monitor and the way they appear after printing to a desktop color printer. There will be differences in appearance of colors and the overall lightness or darkness of the image. This is due to the different ways a monitor displays a photograph and the way a desktop printer creates its output.

While we conducted tests printing to a Canon Color Laser Copier, Kodak, QMS, Tektronix and other color desktop printers, here are a few tips we have found:

- The CMYK TIFF and CMYK EPS formats tend to produce better overall results. You may want to convert your images from RGB to this format before printing to a desktop color printer. Even though many programs automatically convert RGB to CMYK during printing, making the conversion yourself will allow you to see a better on-screen representation of your printed output.
- Red hues tend to print over-saturated on some devices. If you are using a photo with a lot of bright red,

you may want to use an image editing program to reduce the overall saturation of the red hues.

The best thing to do is to print out a test page to the printer to determine the types of variances you can expect. Once these variances are determined, you can compensate before you print the complete job to the desktop color printer.

Producing Color Separations from PhotoDisc Images

All the images of PhotoDisc come ready to use as your final images for four-color separations. Each image has been optimized for a minimum 5 x 7 inch picture using a 150 line screen. Larger files are available for many PhotoDisc Volumes. Please call PhotoDisc Customer Service at 1-800-528-3472.

By following the guidelines below, you can determine how to get the best results producing four-color separations with PhotoDisc images. As always with four-color process printing, it is best to discuss all of the details of your publication with a representative at your commercial printer before you create the final film output.

Determining image resolution

To produce a high-quality separation of a color image you need to ensure there is enough data to create the proper halftone dots. There are three factors that determine the quality of printed images:

- Image resolution, measured in pixels per inch (ppi). This represents the density of data stored within the image file. All else being equal, higher resolutions create larger image files. Larger files can produce better results but require more time by the computer and imagesetter to process.
- Printer resolution, measured in dots per inch (dpi). This is the amount of detail that the printer or imagesetter will produce such as 1270 or 2450 dpi. The higher the dpi, the better the ability the printer has to create accurate halftone dots.
- Screen frequency (or screen ruling), measured in lines per inch (lpi). This determines the visual quality of the final printed picture. As you increase the lpi, the picture will show more detail and appear sharper. Other factors contribute to what screen frequency should be used such as the type of press and paper stock the picture is printed on.

We recommend the image resolution should be twice the screen frequency of the color separations. For example, if you want to print the image at 150 lpi, the image resolution should be 300 ppi. Remember the following guideline:

$\text{recommended ppi} = \text{desired lpi} \times 2$

Each PhotoDisc image was created at 300 ppi with a minimum size of approximately 5 by 7 inches. Note that resizing an image directly can change the effective image resolution. When increasing or decreasing the resolution of a PhotoDisc image be sure to constrain file size. Doing so will ensure that your resolution adjustment will result in the largest possible image dimensions for the new resolution.

Making images smaller: If you want to use the PhotoDisc images smaller than the standard 5 x 7 inch size, you can reduce the file size without sacrificing any quality. By reducing the file size, you can save hard disk space as well as cut down the processing time of your computer and the imagesetter.

Making images larger: PhotoDisc images have been optimized for a final print size of 5 x 7 inches using a screen frequency of 150 lpi. You can, however, print the images at a larger size. For the best quality, remember the general guideline of keeping the image resolution (ppi) equal to twice the screen frequency (lpi). Here are some of the possible ways to use PhotoDisc images at sizes larger than 5 x 7:

- Use a lower screen frequency. If you only require a 130 lpi screen frequency, you enlarge the image to 5.75 x 8 inches at 260 pixels per inch and still maintain the 2 to 1 ratio of ppi to lpi. Lower screen frequencies will allow you to enlarge the images even further.

- Resample the image to a higher resolution. Many image editing programs will allow you to resample an image to a higher resolution. Resampling will enable you to maintain the 2 to 1 ratio of ppi to lpi. Software programs are able to add data to your image by interpolating the colors of adjacent pixels in the image. This can cause the image to appear somewhat out of focus or blurry. To compensate for this, you may want to apply a sharpening filter to the image to eliminate some of the blurriness. We recommend that you experiment with this technique to determine if the results will be satisfactory for your needs.
- Use a lower ppi to lpi ratio, such as 1.5 to 1. The recommendation of the image resolution (ppi) equaling twice the screen frequency (lpi) is to ensure the highest quality. You can go below this ratio with relatively little noticeable difference in quality. By using the ratio of 1.5 to 1, you can enlarge the images to 6.7 x 9.3 inches. You should never go below a 1 to 1 ratio of ppi to lpi. Be sure to experiment with different ratios to determine which works best your requirements.

Ensuring the best results

There are many factors which affect the quality of four-color printed publication. Here are some suggestions to help ensure the best results possible. As always, we recommend that you work closely with the representative from your commercial printer.

Calibrate your system: Your system and environment can determine the quality of your results. Here are some general guidelines we recommend:

- Calibrate your monitor daily. Use the method prescribed by your monitor manufacturer or see the section earlier in this manual on calibrating monitors.
- Calibrate your desktop color printer as prescribed by the manufacturer. Without proper calibration these results will not be of much use.
- Calibrate your imagesetter daily. This is the most critical part because this is the device that creates the film output that the commercial printer will use to create printing plates.

Proof your results: Four-color printing is a very expensive process and mistakes can be very costly. One of the best ways to avoid mistakes is to proof your work through the various stages of the production cycle. Here are 2 important types of proofs you should make as you create your publication:

1. Print to a color desktop printer to check the overall publication for errors and to obtain general color information. While your actual commercially printed piece will vary substantially from that of a desktop color printer, you can use desktop output to obtain general information about the color images.
2. After creating the color separations, have a Chromalin, MatchPrint or other proof created which uses the actual film separations. This is the most reliable proof you can use and we recommend that you use this type of proof for every four-color printing job you create. The representative from your commercial printer will be able to explain any differences you might expect from this proof and your actual printed piece.

Select the right service bureau:

If you plan to work with a service bureau to create your color separations, here are some questions to ask in order to determine a good service bureau:

- Ask to see samples of some four-color images they have separated.
- Do they have an imagesetter dedicated to film output?
- How often do they calibrate their imagesetter?
- Do they have a technician available to assist you if any problems arise?

You should also check to see how the service bureau wants you to deliver your files. You may be asked to deliver your files in one of two ways:

- In the file format of the program that created it. If you are using a desktop publishing program such as Aldus PageMaker or QuarkXPress, the service bureau may simply want you to give them a copy of your PageMaker or QuarkXPress file. Remember that these programs maintain links to high-resolution image files. This means that you will need to provide a copy of every image file you are using along with the desktop publishing file. Check the documentation of your page layout program for further details regarding file linking.
- As a PostScript file. Some service bureaus prefer that you provide a PostScript version of your file that has all of the separation information included in it. If this is the case, make sure your PhotoDisc images are properly linked to your page layout program before you create the PostScript file. Also, double check all of the separation settings to ensure the correct results.

If you have any further questions regarding outputting PhotoDisc images, please call:

PhotoDisc Technical Support

1 (206) 441-9355 ext. 130