Visit our web site at www.mun.ca/printingservices for other reference guides, settings files for common desktop publishing applications and the very latest news from Printing Services.
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**INTRODUCTION TO OUR QUICK REFERENCE**

Every production method has unique characteristics, and designers often make minor design adjustments to take advantage of unique capabilities of a particular process to produce an even more pleasing, desirable, and saleable document.

This section is intended as a quick reference tool for the graphic designer and prepress operator as they begin the process of designing and preparing documents for print to the Xerox iGen4.

While the following provides recommendations and overall best design practices that could be applied to most digital production printing systems, some information applies only to the iGen4. **Text that pertains specifically to the iGen4 is highlighted in blue.**
**Setup... Before You Begin**

Before you start your design, follow the recommendations below regarding prepress topics such as calibrating your monitor and determining the paper stock to use. These tips will help you design a document with the print results you want.

**Color consistency**

To achieve greater predictability and consistency in the appearance of the printed output:

- Apply the Adobe color settings as shown in the figures below. The settings in Figure 1-1 apply to all of your Adobe applications. The picture represents Adobe Creative Suite 5; other versions may appear slightly different. Figure 1-2 applies to Macromedia Freehand. The settings shown are for Freehand MX; other versions may appear slightly different. Figure 1-3 applies to QuarkXPress for RGB and CMYK. The settings show QuarkXPress 6.5; other versions may appear slightly different.
- Since color management is always enabled, select the most common source space for both RGB and CMYK.

![Figure 1-1. Recommended color settings for Adobe applications](image)
If a standard CMYK space such as SWOP is the intended destination color space, you can display an on-screen preview of how your document’s colors will look when printed from your desktop application.

- Be sure to calibrate and characterize your monitor monthly for best results.

A list of supported media can be obtained from Printing Services or from our web site.
• Printable sheets range in size from 7.0 in. x 7.0 in. (177.8 mm by 177.8 mm) to 14.33 in. x 20.5 in. (364 mm x 520.7 mm) and the acceptable weight range is 16 lb. bond to 130 lb. cover (60 gsm bond to 350 gsm).

**Paper guidelines**

• Specify brighter papers to produce images with higher contrast.
• True white papers print with the most natural looking skin tones.
• Smooth or coated papers produce sharp images and increase the appearance of glossiness.
• The best image quality is achieved with premium non-recycled papers.
• Design folds so that they run in the same direction as the paper grain.
• Use minimal ink coverage at the fold as cracking may occur with heavy ink coverage.

**Image size and bleeds**

• Do not design jobs to be printed to the edge of the sheet. Maintain a minimum 0.125 in. (3 mm) blank border around the edge of the paper.
• For bleeds use the traditional 0.125 in. (3 mm) and trim to the desired finish size.

**Color gamut advantages**

The Xerox iGen4 can produce many colors that are outside the gamut of traditional SWOP offset systems such as vivid blues, deep and bright purples and brilliant magenta.

**Gray balance**

Gray balance is dependant upon selections made at the printer. If you are creating gray colors with RGB or CMYK combinations, consult Printing Services for the appropriate values needed to achieve good neutrals.
**CREATE... BEGIN YOUR DESIGN**

Use the following tips to make the best design selections for both text and graphics when printing to the iGen4.

**Text**

- Include all fonts in the file.
- **Supported font types** include PostScript Type 0, 1, 3, Open Type, True Type 42, Multiple Master, Kanji and more.
- Select fonts from the Font menu and not from the Style menu (bold, italic, etc.).
- Preserve text as a font; do not rasterize text in the application.
- **Create solid black** with 100% K only for the most dense black.
- **For solid text**, the type size should be a minimum of 2 point. **For reverse type**, the type size should be 3 point or higher.
- **For tinted text**, the type size should be a minimum of 4 point. **For reverse type**, the type size should be 6 point or higher.
- **When using Kanji fonts** in both positive and reverse/negative text, select a font size of 8 point or larger for best results.
- **With smaller text**, sans serif fonts are recommended.
- **Text containing at least one ink** of 100% C or M or K presents the best appearance with solid, rich colors.
- RGB solid text, such as 100% red, may reproduce as a tint. Define solid color text in CMYK if possible.

**Graphics**

- Save graphics in EPS format for placement into page layout applications.
- Embed all fonts into graphic EPS vector art files.
- **Colors for fine rules** or small graphics, such as bullets and icons, print best when at least one color separation (except yellow) is set to a solid or near solid color (e.g., 90-100%).

**Spot colors (PANTONE®)**

- Select PANTONE® colors by choosing them from the PANTONE spot color library. They should be designated as spot colors and not as CMYK recipes.
- Do not change the name of PANTONE® colors (for example, Pantone 106C to Sunshine Yellow or to Pantone 106C copy).
- **When PANTONE® colors** are desired, refer to a printed press sample provided by Printing Services.
• We can supply CMYK values for PANTONE® colors if you need to match colors in images.

**Best black**

• The Xerox iGen4 produces the most dense black with 100% K (black) only. Additional amounts of C or M or Y or CMY at 100% K will generally lighten blacks.
• When printing black on uncoated substrates, add a small amount of C, M or Y to improve uniformity and minimize paper texture. It will, however, produce a black slightly less dense than just 100% K only.
• Gray text, graphics, and gradients will be best produced if they are created with K only in a CMYK working space. Transparencies Files containing transparencies are flattened when printed to PostScript.
• In the page layout or design application, set the transparency raster/vector control to the highest setting to prevent objects from being rasterized.
• Use an overprint preview or flattener preview to determine how the objects will look when flattened.

**Tint uniformity**

• Digital printing systems may show slight variations in color within large areas of mid-density tints. Color variation may also be emphasized with coated paper due to the smoothness of the paper.
• Add a texture or noise to large area mid-density tints to improve color uniformity and appearance, if needed.
• Design with smaller areas when using tints and/or design with colors that are less than 40% or greater than 70% in value.

**Gradients**

• Use PostScript Level 3 format.
• Use a color change of 100% of at least one color separation for gradients 7.5 inches (19.5 cm) in length and a change of 50% for gradients 3.25 inches in length.
• Sometimes adding noise or a gaussian blur can improve a gradient in Photoshop.
• Saturated colors generally produce the smoothest blends, however, avoid creating gradients that blend from a very dark color to white.
• For gradients blending to white, set the same color to a 0% tint . Do not use white.
Images

- All images should be at their final resolution size of 300 dpi and placed in the page layout at 100%.
- Images can be in RGB, CMYK or grayscale color spaces.
- Embed the correct ICC source color space profile with each image saved.
- Save images in EPS or TIFF format. Use an EPS format to preserve colors that may otherwise be converted by an application such as Microsoft PowerPoint or Quark.
- Do not use JPEG or LZW compression.
- If sampling is required (although discouraged), bicubic should be used.

Total ink and dot gain

- The Xerox iGen4 is designed to expect a total ink limit of 325% and the traditional commercial print amount of dot gain.
- No special considerations are necessary.

Variable data

Designs specifically created for variable printing require special considerations. Please consult with Printing Services before you begin your design.
PRINT... PREPARING YOUR OUTPUT

Use the following tips when preparing for output to the iGen4.

Trapping

- For best results, trapping should be applied at the printer and not in the application.
- Avoid instances where trapping to gradients is required (the change in color may not reproduce well).

Preflight checklist...are you ready?

- Ensure that all graphics and images are in their final size, 100% at 300 dpi.
- Rotate, scale and edit images and graphics prior to placing them in page layout applications.
- Deliver all source files to Printing Services: fonts, graphics, images and layout documents (even for PostScript or PDF files when possible).
- Image file formats should be EPS or TIFF (not JPEG or TIFF with LZW compression).
- All spot colors should be designated as spot colors and not as CMYK recipes.
- Spell check your document.
- Remove all locally stylized fonts and mixed font types.
- Remove any trapping (allow the printer to do this).
- All bleeds should be set to 0.125 inches.
- Prepare a mock-up to give Printing Services as a finished example whenever possible.

Collect for output packaging

Use the Collect for Output or Package feature in the page layout application to gather all fonts, graphics and images used in the job. This will ensure all elements are delivered to Printing Services.

File formats for printing

The Xerox iGen4 accepts a variety of file formats for printing including PostScript 1, 2, 3, PDF/Acrobat, Xerox VIPP and more.
Print settings

If you send PostScript or PDF files to Printing Services (as opposed to supplying the original source files), use the following print settings in your page layout application:

- Use either the iGen4 PPD or Acrobat Distiller PPD for the Printer Description setting.
- Print a composite file (not separations).
- Be sure the paper size in the Page Setup is the same as in the Print dialog box.
- Set bleeds to 0.125 inches, if applicable.
- Do not apply color management when printing.
- Send all data (both graphics and images) in binary format, when possible.
- Images should be full resolution. Do not use sampling.
- Always download all fonts.
- Always use PostScript Level 3.
- Set the Transparency setting to the highest setting.

PDF files

- Create all PDF files using Acrobat Distiller.
- Do not use Export/Save As features in the applications, PDF Writer/Maker, or the Mac OS X Save As PDF feature.
- Create PostScript from the source application using either the Xerox iGen4 PPD (available from the Printing Services web page) or the Distiller PPD. Be sure to include all fonts.
- Download the iGen4 Job Options settings file for Distiller from our web page for best results.
- Avoid compression where possible and use the Smooth Shading feature in Acrobat Distiller.

Imposition

- Basic imposition can be performed by the RIP of the iGen4. We can work with you on the proper set-up for multi-up jobs.
- If you plan to use binding, leave ample room for the gutter.
- Do not put bleeds on inside edges of pages to be imposed, facing pages in a book for example.

Finishing

- How the final design is finished is up to you. Virtually any finishing option that would be available for a commercial print job is a possibility.
ACROBAT DISTILLER JOB OPTIONS

Use the following settings in Acrobat Distiller when preparing files intended for output on the iGen4.

iGen4-Optimized Settings

The Distiller settings below are optimized for the color management and resolution requirements of the iGen4. All fonts are embedded. These images were taken from Acrobat Distiller 8; other versions may differ.

General settings.
Images should be downsampled to 300 (color & grayscale) or 1200 dpi (mono) and uncompressed.

Low image resolution should not abort the PDF creation, but should warn the user.
All fonts used in the document should be embedded. No fonts should be in the “always” and “never” embed lists.

Acrobat should not change the colors in the original file when producing a PDF.
These settings improve object fidelity, as well as preserving spot colors.

Conformance to a specific PDF standard is unnecessary for PDFs for iGen output.