FAQs
Frequently Asked Questions

Click on the question to receive the answer.

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1.1 I don't understand Font Embedding. What does this mean and why is it so important?

Embedding a font is the act of including fonts in a document in order to be able to render a particular typeface in a computer that does not have the same font installed. Using embedded fonts guarantees that the reader of the PDF will see and reproduce the original font, regardless of whether or not they have the font installed on their system.

Lightning Source® does not keep a font library, therefore, we are dependant upon the publisher's PDF files to have the embedded font information to ensure proper printing representation of the book cover or interior. (**BACK to Question List**)

1.2 What happens if I do not embed?

If your font is not embedded, it will fail to process through the printer's RIP and will not print. If a font is not embedded in a PDF file, the risk of substituting a font with a serif or san serif typeface that is similar. With the font metrics included in the PDF, the fonts are stretched or condensed to ensure no reflow. However, it is important to understand that the fonts are lookalike only, and particularly with unconventional or script faces, they may not lookalike at all. (**BACK to Question List**)

1.3 How do I know that my fonts are properly embedded?

LSI addresses this at our website. **CLICK HERE** to view the provided document. (**BACK to Question List**)

1.4 What is PDF Library?

PDF Library is a popular internal 'engine' that many applications use to create PDF files. This feature often allows you to save PDF/X-1a:2001 files. This process is accepted, as long as all Custom/Spot Colors are converted to CMYK. Use of Custom/Spot Colors causes issues with the printing process. The subsequent PDF will preview correctly, but will not print correctly.

- To convert Custom Colors to CMYK, in **InDesign,** Go to 'Window' in the Menu bar, go down to 'Swatches' and a floating pallet will appear.
  Double click on the color name and a dialogue box will appear
  In the dialogue box, next to 'Color Type:' choose 'Process', next to 'Color Mode:' choose 'CMYK'.
  Go to 'File' in the Menu Bar and drop down to 'Save'.
- To convert Custom Colors to CMYK, in **QuarkXpress**, Go to 'Window' in the Menu bar, go down to Colors and a floating pallet will appear.
  Click and highlight the name of the Custom Color.
  Click and hold on the icon in the top right corner of the Color pallet window and a Drop Down menu will appear.
  Go down to 'Edit New Color...' and a new window will appear.
  In the dialogue box, next to 'Model:' choose 'CMYK', Uncheck the box next to 'Spot Color'.
  Click 'OK' to close the 'Edit Color' window.
  Go to 'File' in the Menu Bar and drop down to 'Save'.

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1.5 What is PDF/X-1a:2001?

PDF/X-1a:2001 is designed to provide a reliable and stable PDF for printing purposes. It requires that the color of all objects be expressed in CMYK or spot colors, prepared for the intended printing conditions. Elements in RGB or Lab color spaces or tagged with ICC profiles are prohibited. It also requires that all fonts used in the job be embedded in the supplied PDF file.

PDF/X-1a:2001 settings do not address Custom/Spot colors.
Lightning Source® accepts CMYK color mode cover files.
Use of Spot Colors (custom colors) causes issues with the printing process.
The subsequent PDF will preview correctly, but will not print correctly.

- To convert Custom Colors to CMYK, in **InDesign,** Go to 'Window' in the Menu bar, go down to 'Swatches' and a floating pallet will appear.
  Double click on the color name and a dialogue box will appear
  In the dialogue box, next to 'Color Type:' choose 'Process', next to 'Color Mode:' choose 'CMYK'.
  Go to 'File' in the Menu Bar and drop down to 'Save'.
- To convert Custom Colors to CMYK, in **QuarkXpress**, Go to 'Window' in the Menu bar, go down to Colors and a floating pallet will appear.
  Click and highlight the name of the Custom Color.
  Click and hold on the icon in the top right corner of the Color pallet window and a Drop Down menu will appear.
  Go down to 'Edit New Color...' and a new window will appear.
  In the dialogue box, next to 'Model:' choose 'CMYK', Uncheck the box next to 'Spot Color'.
  Click 'OK' to close the 'Edit Color' window.
  Go to 'File' in the Menu Bar and drop down to 'Save'.

This file format is the most compliant file type for LSI's printing purposes. It addresses most issues that prohibit your file from printing. This profile was established specifically for the printing industry.

LSI requires all cover and interior PDF files for Color Interior Books be PDF/X-1a:2001 compliant.

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2.1 Can you please explain the Cover Template?

LSI addresses this at our website. **Click** on the appropriate bind type listed below to view the provided document.

- **Perfect bound book (paperback) with Black & White Interior**
- **Case bound book (Hardback) with Black & White Interior**
- **Dust Jacket**

(**BACK to Question List**)

2.2 Does LSI provide an example of an Interior Template?

LSI addresses this at our website. **Click** on the appropriate bind type listed below to view the provided document.

- **Black & White Interior template example**

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3.1 How do I calculate my final page count?

Final page count takes into consideration all pages that comprise the interior of a book. This includes 'front matter' and 'back matter'. Front and back matter are the non-numbered (or pages defined by Roman numerals or other defining methods) pages such as Table of Contents, Acknowledgements, Copyright pages, Appendicies, etc. Many books contain non-numbered picture pages. Often, these pages do not receive a page number but should be considered when deriving a page count for your book. Your page count will need to be divisible by two. See the following question and answer for further explanation

Why is the correct page count important to your book? The width of the cover spine is directly dependant upon the number of pages in the interior. The front and back matter can encompass numerous pages. If front and back matter are not considered in the page count, the cover file will have an incorrect spine width and may cause you project to be delayed.

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3.2 Why does my interior page count need to be divisible by two? Why does LSI sometimes add blank pages at the end of my book?

LSI proprietary imposition workflow requires that all books be divisible by two. The last page (the one divisible by two) must be completely blank. Your file does not have to include this blank page at the end, LSI will add the necessary pages to make your book divisible by two. LSI defines a blank page as totally absent of any content. This includes headers, footers and page numbers. The last page must be totally blank.

LSI prints a barcode on the last page. If your interior file is divisible by two, but has any content on the last page, LSI will automatically add the necessary pages to allow a barcode to be printed on the last page. The barcode is necessary to guarantee that the interior pages match the cover. During the binding process, a barcode reader will scan the last page of the book and a barcode on the cover to verify that the two elements match before binding the two parts together.

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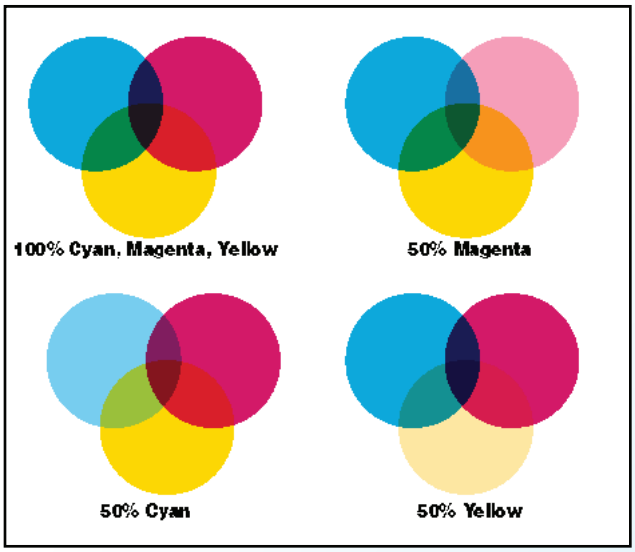
4.1 What is CMYK and how does working in RGB mode cause color issues?

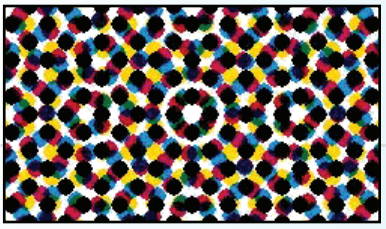
Printers use four colors pigments in the printing process:
Cyan Magenta Yellow Black

When these four pigments (collectively known as CMYK) are combined, they can produce millions of different colors. To the right is an illustration of how changing the percentage (screen) of one ink can dramatically effect the color. Note that only Cyan, Magenta and Yellow are used at right. Black, the fourth process ink, is used to darken the colors created by the other three process colors.



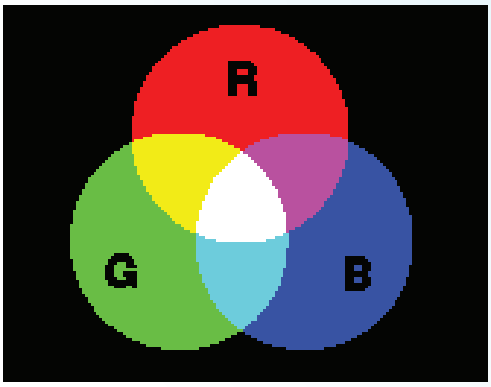
Of course, what you are looking at is an RGB simulation of CMY colors. Note that the screened colors are lighter, but still shown as solid. In process printing on paper, a 50% screen of any color would be represented as a dot pattern which visually occupies 50% of the paper surface.

When screens of the four colors are combined in a proper pattern on paper, the human eye merges them into one color. The pattern created by the four colors is called a Rosette Pattern. Since LSI prints in CMYK, make sure the color mode used in your digital document is CMYK and not RGB.



RGB

The color space used to create color on a computer monitor is completely different than the color space used to print color on a press. The RGB color space is made up of three luminous, or glowing, colors.



When these colored lights are either projected on top of each other in different intensities, we can see millions of different colors (or thousands, depending on the bit-depth of your monitor).

Understanding the RGB color space is important to printing because it is the native color space of the computers monitor, which create the documents that we print on a press. Yet, RGB is a color space that is totally incompatible with any printing press.

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4.1 What is CMYK and how does working in RGB mode cause color issues? (continued)

Also known as LUMINOUS or ADDITIVE colors, RGB lights behave just the opposite of color inks printed on paper. For example, black is displayed on a TV by REMOVING all three sources of color, and white is displayed by ADDING maximum amounts of all three colors.

Contrast that with the printing process, where (on a white piece of paper) black is displayed by adding color and white by removing color. (In the example above, we ignore the fourth process color, black. It is used to darken hues created by the other three process colors.)

The RGB color space is capable of producing many more colors than the process (CMYK) color space.
That is the danger of creating RGB colors on the computer that will later be reproduced with inks on the press. Many RGB colors you make on the computer simply cannot be reproduced on the press with process colors.

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4.2 Why does blue turn to purple?

The RGB color space is capable of producing many more colors than the process (CMYK) color space.
That is the danger of creating RGB colors on the computer that will later be reproduced with inks on the press. Many RGB colors you make on the computer simply cannot be reproduced on the press with process colors.

For example, let's take RGB "Blue." It is a beautiful, vibrant blue that simply jumps out of your monitor. In order for you to print, on a printing press, the items you made blue on your computer, it must be converted to the CMYK color space. In virtually any program that supports CMYK, on any platform, your beautiful RGB blue, when converted to CMYK, will in fact end up tinted purple.

Your computer will covert RGB blue into a combination of 99.6% Cyan and 95.7 Magenta. This conversion results in a ratio of Cyan to Magenta that will produce a purple hue, and that's how it will print on the press.

The result is this: The gamut, or range of colors we humans can see is huge. The range of colors that an RGB monitor can reproduce is large, and the range of colors that CMYK printing can reproduce is limited.

RGB blue is outside of CMYK's gamut. CMYK simply cannot reproduce that shade of blue. So, the computer substitutes the closest color to it. Technically, that color is purple.

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4.2 Why does blue turn to purple? (Continued)

The designer/publisher will need to make adjustments in the case of blue, when converting from RGB to CMYK to achieve the desired blue color.

If LSI receives a file with RGB blues, those blues will probably be converted to CMYK purple. LSI assumes that the designer is aware of this RGB to CMYK conversion.

Most colors convert reasonably well from RGB to CMYK. These colors are within the overlapping gamuts of each color space. But there are, unfortunately, many colors that do not convert well. Those colors are outside of CMYK's gamut.

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4.3 Why is the color on my monitor or home printer different from the printed book that I received?

The color on your monitor is produced using RGB color fields. Please refer to questions 4.1 and 4.2 on the Homepage.

The professional printing process utilizes four basic colors. Cyan, Magenta, Yellow, and Black. (for more on this topic, please refer to question 4.1 on the Homepage) Most home printers are never calibrated after leaving the factory.

The printing industry color standard for CMYK printing process is the Pantone color matching system. The calibration software that comes with most printers does not comply with the Pantone color system. LSI calibrates the color printers at least once an hour. LSI has worked extensively with the manufacturers of out printing presses to create a calibration profile that complies with the Pantone printing system. Our technicians not only calibrate using proprietary software, but they visually compare the calibration sheet to a control standard to verify color calibration.

Consumer quality printers have a wide margin for variation. The best way to verify the final color output, when submitting a file to a printer, is to purchase a Pantone to Process Swatch booklet from a local professional art supply shop. This book contains Pantone calibrated color swatches that you can compare to the CMYK color percentages of your digital file

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5.1 What is Resolution?

The resolution of your graphics is extremely important. Just because a scan looks good on your screen or on a laser printer does not mean it will look good when it prints. Raster images (scans and images created in Photoshop, etc.) must be of sufficient resolution in order to print with good results.

Resolution refers to the number of pixels per linear unit of measure. Pixels can be thought of as pieces of information (data) per square inch. The higher the resolution, the greater the quality of an image. If an image were to be defined as 300 pixels per inch (ppi), we would find that one inch contained 300 pixels.

A file must be assigned this resolution quality when it is created. A low resolution file can be res'd-up to a higher resolution setting, but the quality will not be improved because the information (data) was not present when the original image was created.

- Lightning Source® requires that all cover images be CMYK color mode at 300 pixels per inch resolution.
- Black and white interior files should have continuous tone photographs and artwork in 8-bit grayscale, at 300dpi. Line art should be 1-bit black and white at 600dpi.
- Color Interior books should be CMYK color mode at 300 pixels per inch resolution.

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