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## Color LaserWriter 12/600 PS: 4-Pass and 1-Pass Printing (7/95)

Article Created: 17 July 1995

TOPIC -----

When I print a grayscale picture on the Color LaserWriter 12/600 PS, I notice that the printer still uses the four-pass printing mode. Why is this, and is there any way around this? Also, what does the printer look for when determining if it is going to use the single-pass or four-pass mode?

DISCUSSION -----

Four-pass printing (which uses all the cartridges, CMYK) is not automatic when Color/Grayscale is selected in the Print dialog of the LaserWriter 8.3 driver. On the Color LaserWriter 12/600 PS, the printer controller primarily determines whether to switch between single-pass and four-pass printing modes. It does this by parsing the PostScript input stream for any "color information". If found, the printer is placed into four-pass mode by the controller. The following should help in characterizing the manner in which the Color LaserWriter 12/600 PS is placed into four-pass mode:

The Color LaserWriter 12/600 PS WILL be placed into four-pass mode IF:

- The document to be printed contains a bitmapped image, black and white or color (in other words, if the PostScript "image" operator is used).

It would take an enormous amount of "processing" time in the printer to look at the bitmapped data to check for any color information.

- The document to be printed contains one or more non-black pixels.

If the entire page has only black and white data, but there is one color pixel in the page, then the printer will go to four-pass mode.

- An EPS file being printed contains any references to color usage.

If the EPS file uses PostScript "color operators" such as "setcmyk", the printer will go into four-pass mode even if "Black and White" is selected in the driver.

- The document to be printed is a Legal-sized page, and there is only 12 MB of RAM in the printer.

An exception to this occurs if only black and white text is being printed. In that case, the printer will use single-pass mode. Otherwise, the reasoning for going into four-pass mode is strictly for less memory usage.

- An application uses anything other than the PostScript "setgray" operator.

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Keywords:  suptd

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19960215 11:05:19.00

**Tech Info Library Article Number: 18190**