

technology **TODAY**

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Color Printers: The Next Generation

Computer printers have become a marketing tool that inkjet manufacturers use to sell their inks. If you check the price on some inkjet printers, you'll find that manufacturers are giving them away, once you subtract from the selling price the store's instant rebate and the manufacturer's mail-in rebate.

Gillette originally introduced this marketing approach to sell safety razors. The company sold razor handles below manufacturing cost, then made huge profits on the sale of replacement razor blades. Printer manufacturers have added a new twist to the Gillette sales model: They package the printers with half filled ink cartridges and/or tricolor

ink cartridges for black and color printing. Your first ink purchase comes when the cartridge should only be half empty or when just one of the tricolor inks color runs out.

Most people currently use a two-printer solution to keep printing costs down. They use a monochrome (black toner) laser, in addition to a four-color inkjet printer, to meet all of their printing needs. But the time has come to replace that inkjet with a laser color printer.

The newest reasonably priced color lasers create fantastic color prints, have very high number of dots per inch (dpi), print around 16 pages per minute (ppm) in monochrome, print around 4 ppm in color, and are packaged with USB, and parallel port computer connections. Slightly more expensive machines such as the Magicolor 2300DL give you all of the above plus 2400 x 600 dots per inch and an Ethernet port that you can easily turn into a Wi-Fi connection.

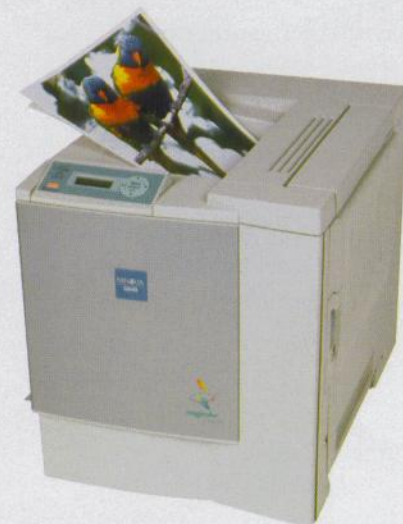
The Magicolor 2300DL creates its images using a photosensitive process. In this process, a laser and optical photo conductor drum act like photographic film. Your color document goes to the printer as color separations, which means that four separate color toners combine to create a print that can contain every color of the rainbow.

During the transfer process, each toner cartridge rotates into position to deposit its color toner on the drum at the exact location where the toner is needed. This transfer takes place in a thousandth of a second as the toner is drawn to the correct location by an electrical charge. The transfer takes place four times to collect the four color toners and to transfer each of the four colors to the transfer belt. With the image complete on the transfer belt, the

printer uses an electrical charge to transfer the toner from the transfer belt to the paper.

A heat-and-pressure fusing system then melts the toner into the paper. An electrical charge cleans the conductor drum of any extra toner, removing it to a waste bottle and leaving the conductor drum ready to receive its next printing job.


The Magicolor 2300DL measures approximately 14 inches wide, 15 inches high, and 20 inches deep, which, for a color laser printer, is a



Magicolor 2300DL

very small footprint. The machine has separate black, yellow, magenta, and cyan toner cartridges. Straight monochrome printing should yield approximately 1,500 prints from a single cartridge. Minolta QMS also sells high capacity toner cartridges that offer a 4,500-print yield. Of course, the color toner cartridges will last indefinitely if most of your printing is monochrome black.

Recalling the Facts

1. What determines if color laser printing is actually cheaper than color inkjet printing?
2. Describe how this small laser printer can print every color of the rainbow on an ordinary sheet of all-purpose laser paper. 

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