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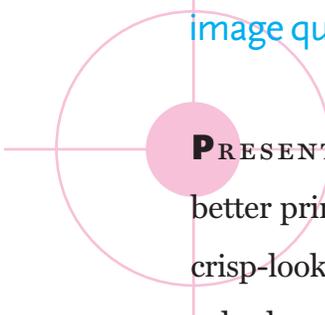
April 5, 2004 ■ ISSUE 14

GET TECHNOLOGY RIGHT

Color Printers: The Full Spectrum



Workgroup printers from Brother, HP, IBM, Konica Minolta, Kyocera, Lexmark, Oki Data, Sharp, and Xerox face off over image quality, print speed, and consumables costs



PRESENTATIONS, REPORTS, WEB PAGES — THEY ALL LOOK better printed in color. Monochrome printers continue to churn out crisp-looking text at a fast clip for the majority of users. Meanwhile, color laser and LED printers are popping up in sales, marketing, art, creative, graphic-design, and in-house publishing departments — not to mention the executive suites, where products and ideas must be

BY MELISSA RIOFRIO

presented in the best light. Small offices that can afford only one printer may also turn to a color model.

In search of the perfect enterprise color printer, we tested 13 models from nine vendors. Entry-level models for small or low-volume offices start at \$2,000. Faster, more expandable models occupy the midrange. At the high end you'll find mega-volume, wide-format, do-it-all powerhouses costing nearly \$7,000, including our highest-rated model, the Xerox Phaser 7750DN.

We ran each printer through a battery of quantitative and hands-on tests, looking at everything from print speed and print quality, to setup, management, and ease of use. Print quality ranged predictably from good to great, but sluggish print speeds surprised us. Even the fastest model in the

roundup averaged a disappointing seven pages per minute, printing graphics samples that included Excel pie charts, presentation slides, and high-resolution grayscale and color photos. Text speeds fared better, ranging from 10ppm to 25.3ppm. Considering seven of the 13 printers carried 128MB or more of main memory, we had expected more speed.

But office printing isn't just about speeds and feeds. We crunched the numbers on consumables such as cartridges to assess long-term costs, which can be exorbitant. We also delved into the printers' management tools to see how easily you could monitor status, configure settings, and analyze usage data (see "No Printer is an Island," page 4). Naturally, no one printer excelled at everything. Read on for the strengths and weaknesses of each contender.

Xerox Phaser 7300DN

Midpriced color printers have a demanding audience: larger, busier

workgroups that need versatility, quality, and speed. Xerox's Phaser 7300DN juggles all these tasks capably, locking horns with the HP Color LaserJet 5500n for best in class. And what of its near-identical twin, Oki Data's C9500dxn? In an *Iron Chef* match-up, Xerox manages to make better printouts with almost the same ingredients.

The Oki Data C9500dxn may bulge with a 10GB hard drive and 320MB of RAM, but the leaner Xerox Phaser 7300DN proves meaner. Both its text and color printing speeds outstripped those of the fuller-featured machine, and the pages the 7300DN produced looked as good. Letters stayed legible down to small font sizes. Color gradations in PowerPoint slides progressed smoothly. Color photos we printed looked overly light, however, and exhibited a little moiré.

Although the Oki Data C9500dxn and the Phaser 7300DN share the same design, the Xerox version is easier to use, thanks to Xerox having placed its own, intuitively designed control panel on the front. And only HP and Lexmark can hold a candle to Xerox's CentreWare management tools.

The Phaser 7300DN's only real competition is the other midpriced color printer in this roundup, the HP Color LaserJet 5500n. The HP rates a shade higher overall. It has an edge in duty cycle and purchase price, but its color performance put it over the top. It handled our most difficult images with greater aplomb, and it printed color images nearly one page per minute faster overall. But at what cost? **Based on our calculations, the Phaser 7300DN will exact about \$1,100 less in consumables over the first 100,000 pages than the Color LaserJet 5500n.**

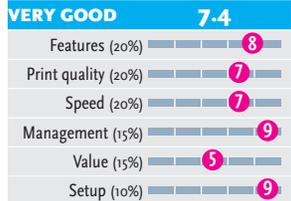
Xerox Phaser 7750DN

No other printer in our roundup excels in as many areas as Xerox's



Xerox Phaser 7300DN

Xerox xerox.com



COST: Printer: \$4,199. Consumables: black cartridges, \$150; color cartridges, \$280; drum, \$520; fuser, \$180; transfer mechanism, \$210

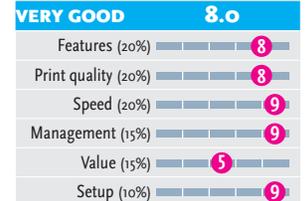
PLATFORMS: Windows, Mac OS, NetWare, Linux, Unix

BOTTOM LINE: The Phaser 7300DN would fit well into a busy office. It prints good-looking output at a fast clip, and it has the paper capacity and features to meet heavy demands. HP's Color LaserJet 5500n offers better speed and quality, but it also costs more over time.



Xerox Phaser 7750DN

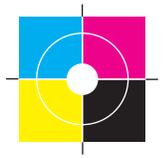
Xerox xerox.com



COST: Printer: \$6,799. Consumables: black cartridges, \$150; color cartridges, \$280; drum, \$330; fuser, \$190; transfer mechanism, \$140

PLATFORMS: Windows, Mac OS, NetWare, Linux, Unix

BOTTOM LINE: This printer has it all: speed, great print quality, and tons of features. Even its high price is mitigated by its cheap consumables. But it would be overkill for offices with basic color needs. If that's you, consider one of the other Xerox printers or HP's 5500n.



Color Worth Waiting For

If you need color, forget about speed. Even the fastest printer we tested, the Xerox Phaser 7750DN, could crank out only seven pages of color graphics per minute. Text speeds ranged from 10ppm to 25ppm.

Phaser 7750DN. This machine is full-featured and fast, with great-looking output and economical consumables. Targeted at graphics professionals, it would be overkill for a low-volume workgroup, or an office whose color needs consist primarily of presentation slides. But if you want the state of the art in office printing, this is it.

The Phaser 7750DN prints quickly — it's the fastest color printer we tested — and capably. The text quality of the Phaser 7750DN looked a hair crisper and more refined than any other printer's in the roundup. Although it struggled with a challenging gray-scale photo, presentation slides and a full-color photo looked smooth and realistic. Only HP's two printers rated higher in print quality.

This printer may be big and heavy, but it also bristles with features. Its main input tray accommodates U.S. paper sizes up to tabloid (11 by 17 inches) as well as custom sizes. Duplexing is standard. The Phaser 7750DN's maximum paper capacity is this highest among the printers we tested. It also has a whopping 384MB of RAM.

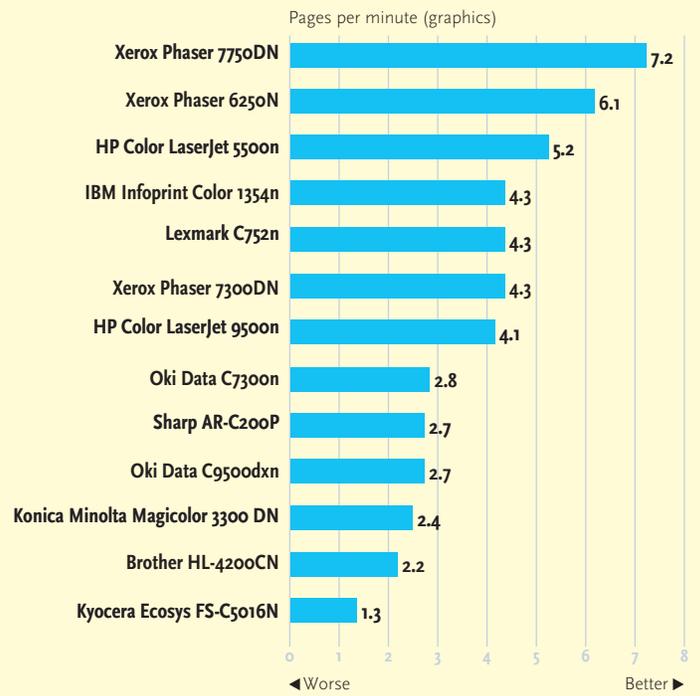
Everyone knows it's cheaper to buy in bulk, and the Phaser 7750DN's high-yield consumables are a case in point. Over time, you'll spend thousands of dollars less for toner and other supplies compared to most other printers we tested, save for the superfrugal Kyocera FS-C5016N.

The Phaser 7750DN also excels in ease of use. The printed and CD-based documentation were thorough, well written, and supplemented with instructional videos. Plain-English status messages displayed on the printer's control panel and in the software. The software — Xerox's suite of CentreWare applications — offers a multitude of ways to monitor and manage the machine.

You get what you pay for with the Phaser 7750DN: the best color laser we've seen. It outshines the same-priced HP Color LaserJet 9500n in nearly every respect. HP's Color LaserJet 5500n is your next-best bet for all-around high quality at a much cheaper price, but beware its high cost of consumables.

Xerox Phaser 6250N

Xerox's Phaser 6250N offers the best version of an unremarkable, entry-level color laser similar to the Konica Minolta Magicolor 3300 DN and Brother HL-4200CN. It manages slightly better print quality than its Konica and Brother competitors, but text still looks fuzzy, while color photos look nice.



NOTE: Our performance test consisted of printing a wide variety of graphics documents, ranging from pie charts to presentation slides to high-resolution photos, on plain paper using the printer's default settings. We recorded the time from sending the print command to seeing the last page in the output tray, averaging the results of three passes to derive page-per-minute times.

It can't stop itself from printing when the output tray/toner cartridge cover is removed — an odd oversight — but at least its multipurpose tray design is easier to open.

On the other hand, the Phaser 6250N scores big points for ease of use. Copious labels guide the user around the printer's interior. The control panel's messages speak English instead of error-code pidgin. Documentation includes a pictorial setup guide, a printed quick-reference guide, and a well-organized, CD-based manual including instructional videos. Xerox's CentreWare applications offer an impressive depth and breadth of printer management tools.

Despite its compact design, the Phaser 6250N is ready for action. It offers a high, 100,000-page monthly duty cycle and a hefty 256MB of memory. **Thanks to its comparatively fast color speed, the Phaser 6250N rated above fuller-featured printers in the same price range.** Only the significantly bigger and pricier Xerox Phaser 7750DN outpaced it.



Consumables remain a sticking point. Xerox's costs are among the highest. The toner cartridges that come with the printer last a mere 4,000 pages, forcing a quicker replacement. If you're on a budget, the Oki Data C7300n is a more economical, if slightly inferior, alternative.

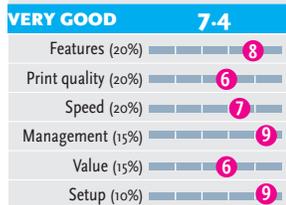
The Options Spectrum

Our highest-rated printer turned out to be among the biggest and most expensive, but don't despair. Whatever the size or needs of your office, there's a color printer to fit it. Pick your next color printer with an eye on these criteria: How many people are going to use it, and how much do they need to print? An entry-level model with moderate duty-cycle and paper-handling specs (and ideally, room to grow) will do for smaller or low-volume offices. But don't skimp if the printer will handle heavy traffic or a wide variety of media. Presentation slides can tolerate quality limitations such as banding or limited gray-scale ranges, but any department with graphics pros or color-matching needs will require a more sophisticated printer. To control costs, look for a printer with high-yield consumables and software to control access and analyze usage trends. ↻



Xerox Phaser 6250N

Xerox xerox.com



COST: Printer, \$2,299. Consumables: black cartridges, \$60; color cartridges, \$200; drum, \$270; fuser, \$200; transfer mechanism, \$42

PLATFORMS: Windows, Mac OS, NetWare, Linux, Unix

BOTTOM LINE: The Xerox Phaser 6250N's competitive color speed might help you forget the printer's dark side: middling print quality, an odd output tray design, and costly consumables. Among entry-level color printers, Oki Data's C7300n is more economical.

No Printer Is an Island

EVERY PRINTER IS MISSION-CRITICAL TO SOMEONE, MAKING it yet another potential emergency for IT administrators. Multiply that by dozens or hundreds of printers across an enterprise, and it's a wonder that IT groups have time left for anything besides empty paper trays, toner refills, and blinking error messages on control panels. That's where management software comes in, offering desktop and Web-based apps to monitor and configure machines, set e-mail alerts for maintenance, and collect data on print jobs for accounting, analysis, or consumables tracking, all from the comfort of a workstation.

Each vendor's software offers a different look and feel, but all cover much the same ground. For example, Brother's BRAdmin Professional is a desktop application that runs on PCs, communicating with all SNMP-compliant devices on the network using the TCP/IP or IPX/SPX protocols. Despite a Windows 98-era interface, it offers a good range of features such as the capabilities to configure port settings among printers, collect printer logs, and update firmware.

Kyocera's KM-Netviewer comes in both desktop and Web form. The desktop version's copious graphics make it easy to assess printer status at a glance. And Oki Data's PrintSuperVision offers reporting and mapping functions. The Oki Job Accounting software lets you set access and usage limits for individual users and log copious details on each print job. On the high end, you have HP's WebJetAdmin and Lexmark's MarkVision. Both are full-featured, sophisticated, and well-designed apps.

But the mother of them all is Xerox's CentreWare, which could probably be programmed to cook a meal on your printer's fuser if you found the right plug-in. CentreWare IS acts as the interface to your printer's Web server. You access that and a bevy of other features through the full-blown CentreWare Web or through CentreWare Web Console, an abridged version for use with Microsoft Management Console. Troubleshooting? Fire up PhaserSmart, an online diagnostics tool, or try one of CentreWare Web's CentreWare Wizards, which can (among other capabilities) help you diagnose multiple malfunctioning printers.

One caveat about CentreWare Web, however, is that it requires setting up a Microsoft SQL Server 2000 database, which brings up administrative access issues that some companies would rather avoid. Xerox says it plans to build more functionality into CentreWare Web Console so it can be a viable alternative to CentreWare Web. But this issue brings up a good closing point: Check the management software's system requirements for database dependencies, storage needs, and other potential surprises.

— M.R.

