

Best in Class

Office 40+ PPM A4 Color MFPs

Lexmark X792de

This latest Head2Head Comparison includes *A4 40+ PPM Color MFPs* from the office-product dealer channel from Hewlett-Packard, InfoPrint, Lexmark, Ricoh, and Sharp. In a particularly tight finish, Lexmark's X792de stood out from this tough crowd much in the same manner as its C792de printer counterpart did, also earning it *Best In Class*.

The competitors in this comparison provide enterprise-level feature sets that include open-development platforms, available document finishing, customizable touch screens, several layers of security, and a host of other optional security, workflow and management solutions. The X792de includes standard Lexmark Solutions that include the ability to set up print-on-demand and network scan-and-route *workflows* right out of the box.

However, what really sets the X792de apart is that its combination of moderate acquisition price and the lowest overall Cost per Page results in a Total Cost of Ownership that is the lowest overall in this group across all volumes and color usage scenarios. Ultimately, the X792de's price advantage and other strengths represent a better value for a majority of users looking for an A4 color MFP in this range. Consequently, the Lexmark X792de earns our highest endorsement and is *Best In Class*.



A handwritten signature in blue ink, appearing to read "Terry Wirth".

Terry Wirth, President

Awarded: February 15, 2011

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Make	Hewlett-Packard	Imaging	Laser
Model	Color LaserJet CM4540	Functions	Print/Copy/Scan/Fax
Base Price	\$4,098.99		
Max Mo. Duty Cycle (pages)	175,000		
BW/Color Print Speed (ppm)	42/42		
Max Media Width (inches)	8.50		
Classification	Office 40+ PPM A4 Color MFPs		



Product Overview

The Color LaserJet CM4540 offers a solid feature set that is strong in management and security capabilities such as: standard hard drive with encryption; user authentication; IPsec; IPv6; encrypted PDFs; and HP Color Access Controls; full Web Jetadmin compatibility; and a range of optional HP Jetdirect print servers. HP's Open Extensibility Platform facilitates the integration of HP and third-party workflow, management and security solutions. Also of note is HP ePrint mobile printing from smart phones, notebooks and mobile devices; print from BlackBerry phones with ePrint Enterprise. Note that fax is optional (\$299.99).



Total Ratings Score	Black Consumables Cost Per Page	Color Consumables Cost Per Page
30.0	\$0.02968	\$0.08968

Total Cost of Ownership*	Black	Color	Mixed
1,000 pages per month	\$5,879.84	\$9,479.69	\$7,008.99
2,000 pages per month	\$7,660.68	\$14,860.40	\$9,959.98
3,000 pages per month	\$9,441.53	\$20,241.10	\$12,910.97
4,000 pages per month	\$11,222.38	\$25,621.80	\$15,861.96
5,000 pages per month	\$13,003.23	\$31,002.51	\$18,812.96

*Base Price

Strengths	Limitations
<ul style="list-style-type: none"> •PCL 6, PCL 5c, PostScript 3 print drivers; native Adobe PDF printing (v 1.4). •Scan to e-mail, network folders; FTP, and USB memory drives (scan to/print from USB memory drives). •Optional analog fax with LAN and Internet Fax. •Standard Gigabit Ethernet 10/100/1000Base-TX; optional HP Jetdirect Wireless Print Servers. •Standard hard drive for document storage with standard document encryption; IPsec, IPv6; create encrypted e-mails and PDFs; secure print; access port for optional Kensington-style lock •Simple setup wizards for creating save-to-folder and scan-to-email workflows at the touch screen. •Integrate HP and third-party security, job accenting, document management, and workflow solutions via HP's Open Extensibility Platform open development platform. •Web Jetadmin for managing the device and third-party devices on the network; restrict the device's color output with HP Color Access Controls. •50-sheet duplexing automatic document feeder. •Mobile printing from smart phones, notebooks and mobile devices with HP's ePrint; print from BlackBerry phones with ePrint Enterprise. •Instant-on and Instant-on Copy for faster First Page Out Time from sleep mode. •8.07" color touch screen; preview scanned images on touch screen; Energy Star-qualified. 	<ul style="list-style-type: none"> •Highest black CPP in this group. •Note that fax is optional (\$299.00).
Notes	Notes
<ul style="list-style-type: none"> •780 watts printing, 850 watts copying. •Optional 900-sheet 3-bin stapling mailbox (\$599.00). •500-sheet paper drawer (\$319.00), 500-sheet paper drawer/cabinet (\$529.00), 3x500-sheet paper drawers and stand (\$1,269.00); analog fax (\$299.00); Network Installation (\$349.00). •Optional Jetdirect: 690n IPv6/IPsec 802.11g (\$489.00), 802.11b/g (\$269.00). 	<ul style="list-style-type: none"> •Highest color CPP in this group. •No open-development platform for incorporating applications for document routing and workflow, etc..

Best Use

In most ways, the HP Color LaserJet CM4540 is the prototypical LaserJet--solid image quality, reliability, ease of use, security, compatibility, modularity and most of all, manageability. However, this LaserJet is markedly different from others that we have analyzed to date: it has a competitive TCO at lower monthly volumes via its combination of comparatively low acquisition price, high black CPP and low color CPP. This means that "HP shops" can now enjoy their LaserJet without having to justify paying a premium. On the other hand, as noted, black CPP and TCO is highest in this group.

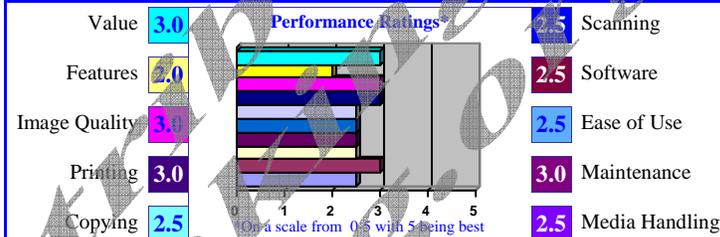
Wirth Consulting - Office ©Head2Head Comparison

Make	InfoPrint	Imaging	Laser
Model	Color 1764 MFP	Functions	Print/Copy/Scan/Fax
Base Price	\$5,339.00		
Max Mo. Duty Cycle (pages)	150,000		
BW/Color Print Speed (ppm)	40/35		
Max Media Width (inches)	8.50		
Classification	Office 40+ PPM A4 Color MFPs		



Product Overview

InfoPrint's Color 1764 MFP is driven by an 800 MHz CPU; has 768 MB of memory, and is rated at up 40 (black)/35 (color) ppm. There's full color capability in print, copy and scan modes; standard fax is monochrome black only. Notably, the Color 1764 provides broad operating system support, including Microsoft Windows, Apple Mac, Linux, UNIX, etc. Standard gigabit networking and hard drive, and a generous toner (15,000 pages) and media capacity (1,600 sheets) facilitate higher-volume output. Highly modular with a wide range of options, including document finishing.



Total Ratings Score	Black Consumables Cost Per Page	Color Consumables Cost Per Page
32.0	\$0.02060	\$0.10480

Total Cost of Ownership*	Black	Color	Mixed
1,000 pages per month	\$6,375.00	\$11,283.00	\$7,930.89
2,000 pages per month	\$7,811.00	\$17,915.00	\$11,067.21
3,000 pages per month	\$9,047.00	\$24,203.00	\$13,958.01
4,000 pages per month	\$10,283.00	\$30,491.00	\$16,848.81
5,000 pages per month	\$11,519.00	\$36,779.00	\$19,739.61

*Base Price

Strengths	Limitations
<ul style="list-style-type: none"> •Standard Ethernet 10/100Base-TX; optional Ethernet 10/100BaseTX, 10/100/1000BaseT, and 802.11g wireless. •Software for limiting and controlling color costs. •Security includes secure printing, authentication, hard-drive erasing. •MarkVision for managing the device and third-party devices on the network. •Standard 40-GB hard drive. •Scan to e-mail, FTP, LDSS, PC; network TWAIN scanning. •Scan to and print from USB memory drives. •Print on 8.27"x36" banner sheets with optional Banner Tray. •Broad operating support (Windows, Citrix MetaFrame; UNIX; Linux; Apple Mac; Novell). •Options include: 500-sheet paper drawer (\$372), 500-sheet paper tray (\$108), 2,000-sheet paper feeder (\$1,332), envelope drawer (\$425), output expander (\$241), 5-Bin Mailbox (\$469), Banner Tray (\$532), StapleSmart Finisher (\$804), IPDS and SCS/TNE card (\$959), Bar Code Card (\$383), 128/256/512 MB Memory DIMM (\$927/\$1,327/\$1,599), 32/64 MB Flash Memory (\$231/\$439), 10/100BaseTX Ethernet (1 USB port; \$265), 1000BaseTX Ethernet (4 USB ports; \$372), 10/100BaseTX Ethernet (1 parallel port; \$265), 802.11g Wireless to USB (\$159). •Energy Star-qualified. 	<ul style="list-style-type: none"> •Highest color CPP in this group. •No open-development platform for incorporating applications for document routing and workflow, etc..
Notes	Notes
<ul style="list-style-type: none"> •Other consumables include Fuser (yields 120,000 pages), ITU maintenance kit (yields 120,000 pages) and toner waste bottle (yields 200,000 pages). 	

Best Use

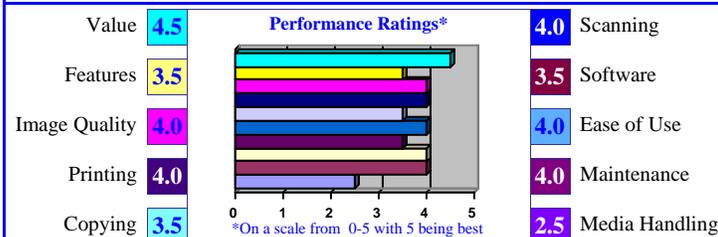
This is a highly competent, compatible, and competitive MFP. But it also has the highest color CPP in this group, which contributes to a higher TCO in certain scenarios--something that may be overcome via an MPS or fixed CPP plan. While it offers solid multifunctionality, its lack of an open platform inhibits its ability to integrate with management, workflow and security applications. It's Worth Consideration for small/mid-size businesses, workgroups and enterprises that require a full-color MFP for higher volumes of primarily black general A4 office applications and if other InfoPrint products are already installed on the network.

Wirth Consulting - Office ©Head2Head Comparison

Make Lexmark	Imaging Laser
Model X792de	Functions Print/Copy/Scan/Fax
Base Price \$4,299.00	 
Max Mo. Duty Cycle (pages) 150,000	
BW/Color Print Speed (ppm) 50/50	
Max Media Width (inches) 8.50	
Classification Office 40+ PPM A4 Color MFPs	

Product Overview

Lexmark's X792de MFP is based on the highly regarded C792 print engine and offers full-color in all modes. Standard hard drive and customizable 10.2" color touch screen facilitate advanced workflow features. Pre-installed Solutions enable users to access and print stored print jobs, as well as files stored in network folders. With the pre-installed Scan to Network application, users can route scans to one of up to 30 personal or network folders. With the Embedded Solutions Framework open-development platform, customers may also incorporate other applications such as document-capture and routing, security, etc. Choice of three optional document finishers (plus mailbox).



Total Ratings Score	Black Consumables Cost Per Page	Color Consumables Cost Per Page
37.5	\$0.01198	\$0.07108

Total Cost of Ownership*	Black	Color	Mixed
1,000 pages per month	\$5,017.63	\$8,563.54	\$6,137.61
2,000 pages per month	\$5,736.27	\$12,828.09	\$8,019.20
3,000 pages per month	\$6,454.90	\$17,092.63	\$9,900.80
4,000 pages per month	\$7,173.53	\$21,357.17	\$11,782.40
5,000 pages per month	\$7,892.17	\$25,621.72	\$13,664.00

*Base Price

Strengths

- Lowest overall CPP and TCO; 10.2" color touch screen provides audible and tactile feedback. Preview files and jobs at touch screen.
- Three optional document finishers (Offset Stacker, Staple Finisher, Staple Punch Finisher), as well as optional 5-bin mailbox; print on banner sheets, card stock, labels, outdoor media.
- MarkVision Enterprise 1.0 for remotely managing the printer and third-party devices on the network. Web-based Remote Front Panel utility enables administrators to remotely view and operate the touch screen so that they can remotely diagnose and correct problems.
- Named Color Replacement spot-color replacement utility that enables users to substitute a color for spot colors in print jobs. Pantone-approved color matching; administrators can control color output.
- Pre-installed Lexmark Solutions enable users to access and print stored print jobs, as well files stored in network folders. With pre-installed Scan to Network application, scan a hardcopy document and route the image to one of up to 30 pre-defined personal or network folders. Also quickly change the language displayed on the touch screen. With Embedded Solutions Framework, incorporate additional workflow and security solutions.
- Network color scanning--scan to e-mail, FTP, fax, and network.
- User authentication (including LDAP), hard-drive encryption, automatic or scheduled hard-drive erase, card reader option, IPsec, SNMPv3, 802.1x, audit logging. Broad operating support (Windows, Citrix MetaFrame, UNIX, Linux, Mac; Novell); Energy Star-qualified.

Limitations

Wirth Consulting has determined that this device does not have any notable limitations and should provide good functionality.

Notes

- Optional 5-Bin Mailbox (\$699), 500-sheet paper drawer (\$349), 2,000-sheet high-capacity feeder (\$899.00), 500-sheet Offset Stacker (\$549.00), 500-Sheet Staple Finisher (\$699), 500-Sheet Staple Punch Finisher (\$999.00), MarkNet Gigabit Ethernet (\$149.00), MarkNet Fiber Fast Ethernet (\$499.00), MarkNet 802.11b/g/n Wireless (\$449.00), Scan to Network software.

Best Use

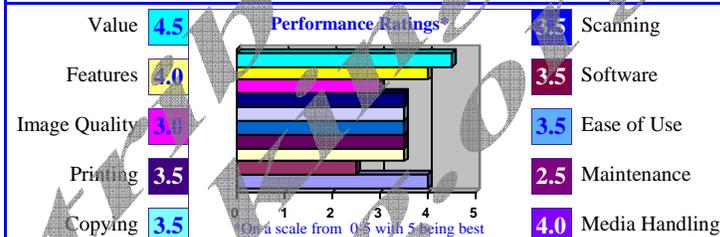
With its open-development platform, standard print-from-network folder and scan-and-route-to-network folder workflows, available Solutions, very good manageability, large customizable touch screen, ample security measures, hardware and software modularity, three document-finishing choices, low acquisition price and the lowest overall CPP and TCO in this group, the X792de has it all. Consequently, the X792de is Best in Class and is an outstanding choice for any office, workgroup or enterprise looking for a high-performance, state-of-the-art and economical color MFP for low to high print volumes at any ratio of mixed color/black output.

Wirth Consulting - Office ©Head2Head Comparison

Make Ricoh	Imaging Laser
Model Aficio MP C400	Functions Print/Copy/Scan/Fax
Base Price \$6,700.00	 
Max Mo. Duty Cycle (pages) NA	
BW/Color Print Speed (ppm) 42/42	
Max Media Width (inches) 8.50	
Classification Office 40+ PPM A4 Color MFPs	

Product Overview

Ricoh positions the Aficio MP C400 as a "hybrid MFP" that provides robust office-level construction at a more competitive A4 price, and represents Ricoh's latest A4 color line for the office. Standard features include document storage via a 160-GB hard drive with hard-drive overwrite and document encryption, and HotSpot MFP mobile printing. Of note is the Ricoh Embedded Software Architecture (ESA) open-development platform for incorporating document workflow, accounting, etc. applications. The 100-sheet multi-purpose tray can be used to print on up to 140 lb. index stock and banner sheets up to 49.6" long. Note that fax is optional.



Total Ratings Score	Black Consumables Cost Per Page	Color Consumables Cost Per Page
35.5	\$0.00536	\$0.08703

Total Cost of Ownership*	Black	Color	Mixed
1,000 pages per month	\$7,021.69	\$11,921.69	\$8,568.47
2,000 pages per month	\$7,343.37	\$17,143.37	\$10,503.94
3,000 pages per month	\$7,665.06	\$22,365.06	\$12,439.41
4,000 pages per month	\$7,986.75	\$27,586.75	\$14,374.88
5,000 pages per month	\$8,308.43	\$32,808.43	\$16,310.35

*Base Price

Strengths

- Low black and color CPP.
- Document Server (hard-drive memory) can be used to store up to 3,000 documents.
- 100-sheet bypass tray feeds up to 140 lb. index stock, feeds banner sheets up to 49.6" long.
- Optional GlobalScan NX for advanced scanning workflows and document distribution.
- Ricoh Embedded Software Architecture (ESA) open-development platform for incorporating document workflow, accounting, etc. applications.
- Optional HotSpot MFP for mobile printing from handheld devices and smart phones.
- Scan to/print from USB memory drives and SD cards.
- Network management via SmartDeviceMonitor for Admin and Client, Web SmartDeviceMonitor, Web Image Monitor; @Remote for automated meter reading.
- Scan to e-mail (with LDAP), folder (SMB/FTP/NCP), and URL; Network TWAIN driver.
- Standard DataOverwriteSecurity System (DOSS) overwrites the hard drive after every job, and standard Hard Disk Drive Encryption of documents stored in hard-drive memory. Also includes encrypted PDF transmission to e-mail and folders; user authentication, user account limits for volume and color usage; user authentication (multiple levels).
- Direct printing from PictBridge-compatible cameras; scan to Webmail and to Google Docs.
- Optional fax includes Internet Fax (T.37), IP Fax (T.38), LAN Fax, forward received faxes to e-mail and folders, LDAP support.
- Standard 10/100Base-TX Ethernet; optional 1000Base-T

Limitations

•Note that fax is optional, not standard.

Notes

- Toner cartridge and drum prices are estimates based on Ricoh's stated supply cost per page of 1.3-1.5 cents (black) and 8.5-9.0 cents (color).
- Optional fax, 500-sheet paper drawer; 2x500-sheet drawers, 250-sheet internal finisher with stapling, 100-sheet output bin, side output tray, Counter Interface Unit, File Format Converter, Gigabit Ethernet, Handset Type, 802.11 a/g Wireless, 32 MB memory.

Best Use

The Aficio MP C400 has a state-of-the-art feature set, but a comparatively high acquisition price, which is balanced by a more economic CPP, which makes it most economic for higher print volumes. It is a serious effort in the design of an A4 color MFP with "office-grade" features, and Well Worth Consideration for offices, workgroups, and enterprises with high volumes of mixed color and black output.

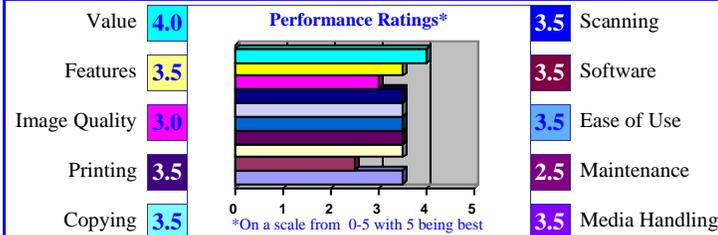
Wirth Consulting - Office ©Head2Head Comparison

Make	Sharp	Imaging	Laser
Model	DX-C401/MX-C401	Functions	Print/Copy/Scan/Fax
Base Price	\$7,995.00		
Max Mo. Duty Cycle (pages)	150,000		
BW/Color Print Speed (ppm)	40/40		
Max Media Width (inches)	8.50		
Classification	Office 40+ PPM A4 Color MFPs		



Product Overview

The DX-C401 and MX-C401 are essentially the same, but are marketed through slightly different channels, and are part of Sharp's Frontier Series of A4 color MFPs. They feature a 1 GHz CPU, and 8.5" color touch screen that can be used to preview scanned images. With color network scanning, users can scan and send to a mixed group of destinations (USB, network folders, e-mail, etc.) in a single procedure. Optional document finishing is available, and the system is well-suited for integration with advanced management, security and workflow solutions via Sharp's OSS open-development platform. Note that fax is optional.



Total Ratings Score	Black Consumables Cost Per Page	Color Consumables Cost Per Page
34.0	\$0.01400	\$0.07000

Total Cost of Ownership*	Black	Color	Mixed
1,000 pages per month	\$8,725.33	\$13,236.67	\$10,126.82
2,000 pages per month	\$9,675.33	\$16,395.33	\$11,796.18
3,000 pages per month	\$10,515.50	\$20,595.50	\$13,736.75
4,000 pages per month	\$11,355.67	\$24,795.67	\$15,677.31
5,000 pages per month	\$12,195.83	\$28,995.83	\$17,617.87

*Base Price

Strengths	Limitations
<ul style="list-style-type: none"> •Low black and color CPP. •Security provisions include IP/MAC filtering, protocol filtering, port management, user authentication, e-mail server user authentication for LDAP and Active Directory. •Network management solution for managing the system on the network. •Preview scanned images on touch screen. •PCL 6/5c, PostScript 3 print drivers, optional XPS driver. •ImageSEND enables users to scan and send to a mixed group of destinations in a single procedure. •Send-to-Group function allows users to send a mixed group broadcast to e-mail, fax, and Internet fax in a single procedure. •Scan to and print from USB memory drives; USB port can also be used for attaching a wireless keyboard so that data can be entered more easily. •Options include: fax (\$625), Inner Finisher for stapling, sorting, stacking; and data security kit that encrypts data using AES, and erases temporary memory on hard drive by overwriting the encrypted data up to seven times. •Sharpdesk document management software (1 user license). •Standard 80-GB hard drive for collation, secure print, etc. •Sharp OSA open platform development for access to network applications, such as Enterprise Resource Planning software, workflow applications, etc., from the touch screen control panel. •Energy Star-qualified. 	<ul style="list-style-type: none"> •Note that fax is optional, not standard.
	Notes
	<ul style="list-style-type: none"> •All pricing (including device, options and consumables) is Suggested Retail Pricing (SRP). Expect discounted pricing from dealers. •In the "Consumables Pricing and Yields" chart, "Maintenance Kit" refers to the fusing unit.

Best Use

The first serious effort at an A4 MFP with "office-grade" features, the DX-C401/MX-C401 is also a top performer in this group. In spite of its comparatively high cost of acquisition, its economic black and color CPP in this class results in a low TCO as print volumes increase beyond 5,000 pages per month--clearly within the capability of this MFP. Overall, it is Well Worth Consideration for any office, workgroup, or enterprise with very high volumes with higher ratios of color versus black output.