

HP Color LaserJet Enterprise M652, M653 series

The pinnacle of performance and security

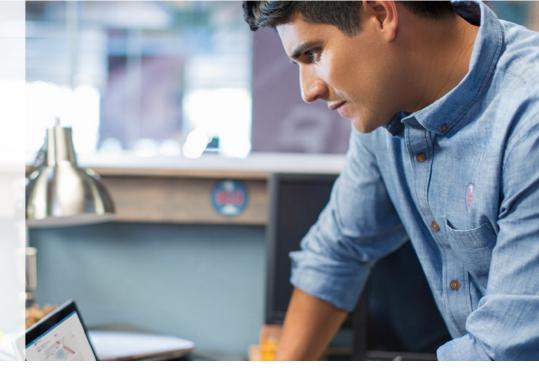












Only HP enterprise printers repair themselves from attacks in real time while offering outstanding manageability. Automatically monitor threats, detect intrusions, and validate operating software while centrally managing your fleet with ease.



Always on guard

Only HP Enterprise printers offer built-in security features that are always on guard. 1

- With HP Sure Start, each device regularly checks its operating code and repairs itself from attempted hacks.
- Whitelisting checks firmware during startup to help ensure it's authentic, good code—digitally signed by HP.
- Run-time intrusion detection continually monitors activity to detect and stop attacks, then automatically reboots.

Get instant notification of potential security issues so immediate action can be taken to prevent potential attacks. This printer works with leading Security Information and Event Management (SIEM) tools like Splunk and ArcSight.



Take security to the next level

Help protect your printer with more than 100 embedded security features.² Protect information on the printer and in transit over the network. Store data on the optional 256-bit encrypted HP High-Performance Secure Hard Disk.

Add features such as card readers and more through the Hardware Integration Pocket.³ Equip your printer to store and protect larger files with the optional 1 GB memory upgrade. Further safeguard data stored on the device—keys, passwords, certificates, and more—using the optional HP Trusted Platform Module.⁴

Easily develop, deploy, and integrate HP and third-party solutions with the HP Open Extensibility Platform. Optional HP Access Control solutions can help you reinforce security, while helping to reduce costs.



Centralise control to help build business efficiency

Centralise control of your printing environment with HP Web Jetadmin.⁵ Optional HP JetAdvantage Security Manager offers an effective, policy-based approach to help secure HP devices.⁶ Easily set security configuration policies and automatically validate settings across the fleet. For more information about security, please see Appendix A, page 13; for details about fleet management, please see Appendix B, page 16.

Simplify business printing with the industry's first SaaS (Software as a Service) portal⁷ for managing both apps and users—
HP JetAdvantage On Demand boosts productivity and eliminates server and software investments from one convenient website.⁸ Protect confidential print jobs with HP JetAdvantage Secure Print.⁹ or HP JetAdvantage Private Print.¹⁰

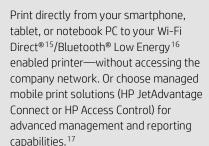
High-speed performance

Get brilliant colour prints with a printer equipped for high-speed performance and designed for energy efficiency. Be confident that your employees can speed through their tasks without interruption.

Keep business moving

Breeze through tasks—the M653 series prints your first page from ready as fast as 5.8 seconds, black and colour, A4.¹¹ Print two-sided documents as quickly as one-sided documents¹²—up to 56 pages per minute (ppm), A4 (M653 series).¹³ Print A5 documents quickly too, up to 74 ppm (landscape mode).¹⁴







Spend less time loading paper with a 3,200-sheet maximum capacity. ¹⁸ Paperhandling options for this series include a 1x550-sheet/2,000-sheet HCl feeder and stand, 3x550-sheet feeder with stand, 550-sheet feeder with stand and cabinet, and 550-sheet feeder. ¹⁹ The 550-sheet input trays fit a whole ream of paper and support paper sizes from A6 to 216 x 356 mm.



Equip employees to breeze through tasks using the new, intuitive interface on the 10.9 cm colour touchscreen (M653 series). For more information, see Appendix C on page 17.

And with the easy-access USB port, you can walk up and print from a memory device.²⁰

Designed to conserve

Help keep productivity up and energy use down. This efficient printer is designed for exceptionally low energy consumption—thanks to its innovative design and specially formulated toner.²¹







Help cut costs with HP Auto-On/Auto-Off Technology²² and HP Instant-on Technology²³—intelligence that readies your printer right when you need it and turns it off when you don't. Support for thin media allows users to print on papers as light as 60 g/m.²

More. Pages, Performance, and Protection.



Get more pages and help protect your printer, using Original HP Toner cartridges with JetIntelligence.^{24,25}



More quality pages than ever before

Get the most prints for your money. Original HP Toner cartridges with JetIntelligence deliver up to 46% more colour pages and 31% more black pages per cartridge than the predecessor.²⁵ JetIntelligence ColorSphere 3 toner and an automated media sensor help you make a great first impression with leading colour quality.



Help protect your investment

Don't put your printer—and print quality—at risk. Help retain the consistent Original HP quality you paid for with innovative, anti-fraud technology. Enable office-wide adherence to printing policies with cartridge authentication technology.



Ready to work, right away

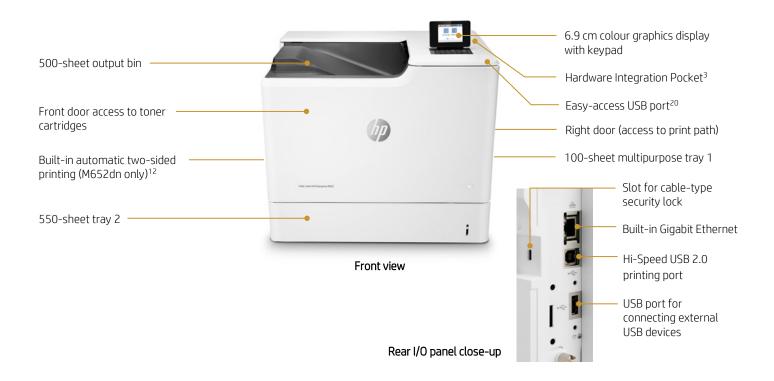
Speed through print jobs right out of the box. This printer is shipped with preinstalled, specially designed Original HP LaserJet toner cartridges with JetIntelligence. Auto seal removal enables simple and seamless cartridge replacement, so you can get back to business fast—without costly delays or frustrating messes.



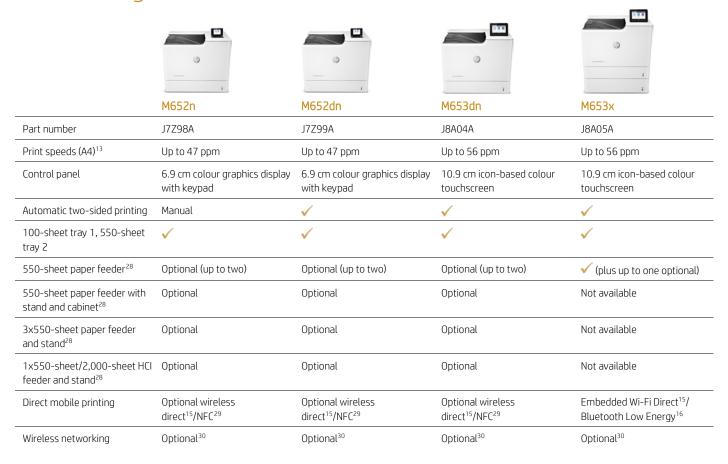
Print uninterrupted and get more pages^{24,25} with optional high-yield cartridges.²⁶ (Black/colour: 27,000/22,000 pages²⁷)

Get to know the HP Color LaserJet Enterprise M652 series

HP Color LaserJet Enterprise M652dn shown



Series at a glance



Get to know the HP Color LaserJet Enterprise M653 series

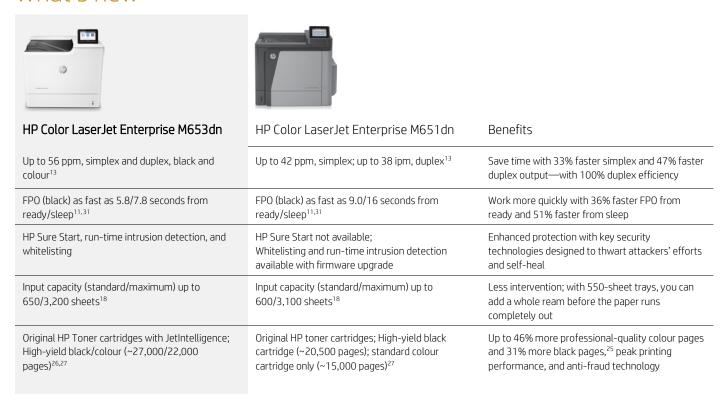
HP Color LaserJet Enterprise M653x shown



Paper-handling accessories



What's new



Technical specifications

	HP Color LaserJet Enterprise M652n	HP Color LaserJet Enterprise M652dn	HP Color LaserJet Enterprise M653dn	HP Color LaserJet Enterprise M653x
Product number	J7Z98A	J7Z99A	J8A04A	J8A05A
Control panel/data entry	6.9 cm (2.7-inch) display with keypad; Easy-access USB; ²⁰ Hardware Integration Pocket ³		10.9 cm (4.3-inch) colour touchscreen; Easy-access USB; ²⁰ Hardware Integration Pocket ³	
Print speed (black and colour) ¹³	Simplex: up to 47/50 ppm (A4/letter)		Simplex: up to 56/60 ppm (A4/letter)	
	A5: up to 74/4 ppm (landscape/portrait) ¹⁴		A5: up to 74/4 ppm (landscape/portrait) ¹⁴	
		Duplex: up to 47/50 ppm (A4/letter)	Duplex: up to 56/60 ppm (A4/	(letter)
First page out (black and colour)	From ready:11 as fast as 6.5/6.	.4 seconds (A4/letter)	From ready: ¹¹ as fast as 5.8/5.7 seconds (A4/letter)	
	From sleep: ³¹ as fast as 8.5/8.4 seconds (A4/letter) From sleep: ³¹ as fast as 7		From sleep: ³¹ as fast as 7.8/7.	.7 seconds (A4/letter)
Print resolution	Up to 600 x 600 dpi; up to 120	600 x 600 dpi; up to 1200 x 1200 dpi (Fine lines); HP ImageREt 3600, PANTONE® calibrated		
Printer Smart Advanced features	Print preview, print multiple pa	ages per sheet (2, 4, 6, 9, 16), col	lation, watermarks, store print jo	bbs
Processor	1.2 GHz (all models)			
Memory	1 GB upgradeable to 2 GB (all	models); Expandable to 2 GB DDF	R3 Synch Dram	
Storage	Standard: 8 GB eMMC (all mod	dels)		
	, ,	ecure Hard Disk (AES 256 hardwa ecure Erase-Job Data, Secure ATA		erase capabilities: Secure File
Durability ratings				
Recommended Monthly Page Volume ³²	2,000 pages to as high as 14,0	000 pages	3,000 pages to as high as 17,000 pages	
Duty cycle ³³	Up to 100,000 pages		Up to 120,000 pages	
Media specifications			•	
Input capacity	Up to 650 sheets (up to 3,200 sheets maximum) Tray 1: up to 100 sheets Tray 2: up to 550 sheets			Up to 1,200 sheets (up to 1,750 sheets maximum) Tray 1: up to 100 sheets Trays 2, 3: up to 550 sheet each
Output capacity	Up to 500 sheets (all models)			- L
Two-sided printing	Manual	Automatic		
Media sizes	Tray 1: A4, A5, A6, RA4, B5, B6, 16K, 10×15 cm, Oficio, postcards (JIS single and double), envelopes (DL, C5, C6, B5); letter, legal, executive, statement, Oficio, 3×5 in, 4×6 in, 5×7 in, 5×8 in, envelopes (No. 9, No. 10, Monarch); Custom media sizes: 76×127 to 216×356 mm (3×5 to 8.5×14 in)			
	Tray 2 and optional trays 3, 4, and 5: A4, A5, A6, RA4, B5, B6, 10×15 cm, Oficio, 16K, Dpostcard; letter, legal, executive, statement, Oficio, 4×6 in, 5×7 in, 5×8 in; Custom media sizes: 102×148 to 216×356 mm (4×5.8 to 8.5×14 in)			
	Optional 2,000-sheet HCl: A4; Letter, legal; Custom sizes not supported in this tray			
	Duplex: A4, A5, RA4, B5, Oficio, 16K; Letter, legal, executive, Oficio			
Media weights	Tray 1: 60 to 220 g/m² (16 to 58 lb) (plain); 120 to 220 g/m² (32 to 58 lb) (glossy)			
	Tray 2 and optional trays 3, 4, and 5: 60 to 163 g/m² (16 to 90 lb) (plain); 120 to 220 g/m² (32 to 58 lb) (glossy)			
	Optional 2,000-sheet HCI: 60 to 220 g/m² (16 to 58 lb) (plain)			
	Duplex: 60 to 163 g/m² (16 to 90 lb) (plain); 120 to 220 g/m² (32 to 58 lb) (glossy)			
Media types	Paper (plain, light, bond, recycled, mid-weight, heavy, mid-weight glossy, heavy glossy, extra heavy, extra heavy glossy, cardstock, card glossy), colour transparency, labels, letterhead, envelope, preprinted, prepunched, coloured, rough, opaque film, user-defined			
Print languages	HP PCL 6; HP PCL 5c; HP posts	script level 3 emulation, native PC	OF printing (v 1.7)	
Fonts	built-in); 1 internal Unicode Fo	calable in HP PCL, 92 internal sca nts (Andale Mono WorldType); 2 rd-party flash memory cards; HP	Internal Windows Vista® 8 Fonts	(Calibri, Cambria); additional

	HP Color LaserJet Enterprise M652n	HP Color LaserJet Enterprise M652dn	HP Color LaserJet Enterprise M653dn	HP Color LaserJet Enterprise M653x	
Connectivity	1 Hi-Speed Device USB 2.0; 2 Hi-Speed USB 2.0 Host (1 walk-up and 1 external accessible); 1 Gigabit/Fast Ethernet 10/100/1000Base-TX network; 1 Hardware Integration Pocket ³				
Mobile printing	HP ePrint, 34 Apple AirPrint, 35 N	Mopria-certified (all models)			
	3000w NFC/Wireless Accessory) 80			Plus: Wi-Fi Direct 802.11b/g/n ¹⁵ and Bluetooth Low Energy ¹⁶	
Network capabilities	Standard: via HP Jetdirect Ethernet embedded print server supports: 10Base-T, 100Base-Tx, 1000Base-T; 802.3az (EEE) support on Fast Ethernet and Gigabit Ethernet; IPsec Optional: 802.11a/b/g/n wireless networking enabled with purchase of accessory ³⁰				
National and a sale	<u> </u>		liase of accessory		
Network protocols	Via built-in networking solution: TCP/IP, IPv4, IPv6 Print: TCP-IP port 9100 Direct Mode, LPD (raw queue support only), Web Services Printing, IPP 2.0, Apple AirPrint, HP ePrint, FTP Print, Google Cloud Print™				
	Discovery: SLP, Bonjour, Web 9	Services Discovery			
	IP Config: IPv4 (BootP, DHCP, AutoIP, Manual, TFTP Config, ARP-Ping), IPv6 (Stateless Link-Local and via Router, Statefull via DHCPv6)				
	· ,	TP/HTTPs, Telnet, TFTP Config, F anagement, Firewall, ACL, 802.1x	TP FW Download, Syslog		
Security	Identity Management: Kerberos authentication, LDAP authentication, 1000 user PIN codes, optional HP and third-party advanced authentication solutions (e.g., badge readers)				
	Network: IPsec/firewall with Certificate, Pre-Shared Key, and Kerberos authentication, Supports WJA-10 IPsec configuration Plug in, 802.1X authentication (EAP-PEAP, EAP-TLS), SNMPv3, HTTPS, Certificates, Access Control List				
	Data: Storage Encryption, Encrypted PDF & Email (uses FIPS 140 validated cryptographic libraries from Microsoft), Secure Erase, SSL/TLS (HTTPS), Encrypted Credentials				
	Device: Security lock slot, USB port disablement, Hardware Integration Pocket for security solutions, ³ Intrusion Detection with Red Balloon Security Technology (Constant in-device monitoring for attacks), HP Sure Start Secure Boot (BIOS integrity checking with self-healing capability), Whitelisting (loads only known good code (DLLs, EXEs, etc.)				
	Security Management: Compatible with HP JetAdvantage Security Manager, Device Security Syslog Messages processed and accessible in ArcSight and Splunk SIEMs				
Compatible operating systems ³⁶	Windows® OS: Windows 10 all 32- and 64-bit editions (excluding RT OS for Tablets), Windows 7 all 32- and 64-bit editions, Windows 8/8.1 all 32- and 64-bit editions (excluding RT OS for Tablets), Windows Vista all 32-bit editions (Home Basic, Premium, Professional, etc.), Windows XP SP3 32-bit editions (XP Home, XP Pro, etc.)				
	Mac OS: 10.12 Sierra, OS X 10.10 Yosemite, OS X 10.11 El Capitan				
	Mobile OS: Android™				
	Linux Boss (5.0), Linux Debian (7.0, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 8.0, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6), Linux Fedora (22, 23, 24), Linux Mint (17, 17.1, 17.2, 17.3, 18), Linux Red Hat Enterprise (6.0, 7.0), Linux SUSE (13.2, 42.1), Linux Ubuntu (12.04, 14.04, 15.10, 16.04, 16.10)				
	Other OS: UNIX				
Compatible network operating systems	Citrix MetaFrame Presentation Server 3.0, Citrix MetaFrame XP Presentation Server (Feature Release 1, 2, and 3), Citrix on Windows Server 2003/2003R2, Citrix on Windows Server 2008/2008R2/2008 R2 SP1, Citrix on Windows Server 2012/2012R2 Citrix Presentation Server 4.0/4.5, Citrix XenApp 5.0 (Plus Feature Pack 2 & 3) for Windows Server 2008 Terminal Services 32- and 64-bit, Citrix XenApp 6.0/6.5 [for Windows Server 2008 R2 Terminal Services, 32- and 64-bit], Citrix XenApp 6.0/6.5/7.5 [for Windows Server 2008 R2 SP1 Terminal Services, 32- and 64-bit], Citrix XenApp 7.5 [for Windows Server 2012 and 2012 R2 Terminal Services, 64-bit], Citrix XenDesktop 5.6 [for Windows Server 2008 R2 Terminal Services, 32- and 64-bit], Citrix XenDesktop 7.0/7.5 [for Windows Server 2012 and 2012 R2 Terminal Services, 64-bit]				
	Novell NetWare 6.5/SP8 Novell Clients <u>novell.com/iprint</u> , Novell iPrint Appliance v1.0, Novell Open Enterprise Server 11/SP1, Novell Open Enterprise Server 2 for Linux, Novell Servers <u>novell.com/iprint</u>)				
	Windows Server 2003/2003 R2 32-/64-bit (SP1/SP2) Standard/Enterprise/Datacenter (+ Cluster & Terminal Services), Windows Server 2003/2003 R2 32-bit (SP1/SP2) Standard/Enterprise (+ Cluster & Terminal Services), Windows Server 2008 32-/64-bit (SP2) Standard/Enterprise (+ Cluster & Terminal Services), Windows Server 2008 R2 64-bit (SP1) Standard/Enterprise (+ Cluster & Terminal Services), Windows Server 2008/2008 R2 32-/64-bit (SP1/SP2) Standard/Enterprise/Datacenter (+ Cluster & Terminal Services), Windows Server 2012/2012 R2 64-bit Standard/Foundation/Essentials/Datacenter (+ Cluster & Terminal Services), Windows Server 2016/ 64-bit Standard/Essential/Datacenter (+ Cluster & Terminal Services)				
System requirements, Windows	A compatible operating system (see above); 2 GB available hard disk space; 0S hardware requirements (see microsoft.com)				
System requirements, Macintosh	A compatible operating syster apple.com)	n (see above); Internet; 1.3 GB av	ailable hard disk space; OS har	dware requirements (see	

	HP Color LaserJet Enterprise M652n	HP Color LaserJet Enterprise M652dn	HP Color LaserJet Enterprise M653dn	HP Color LaserJet Enterprise M653x
Dimensions (width x depth x height)	Operating: 510 x 458 x 482 mm (20.08 x 18.03 x 18.98 in) Maximum: 37 963 x 770 x 482 mm (37.91 x 30.31 x 18.98 in)		Operating: 510 x 458 x 510 mm (20.08 x 18.03 x 20.08 in)	Operating: 510 x 458 x 640 mm (20.08 x 18.03 x 25.20 in)
			Maximum: ³⁷ 963 x 770 x 510 mm (37.91 x 30.31 x 20.08 in)	Maximum: ³⁷ 963 x 770 x 640 mm (37.91 x 30.31 x 25.20 in)
Weight (with print cartridges)	31.2 kg (68.8 lb)		31.3 kg (68.9 lb)	37.5 kg (82.7 lb)
What's in the box	HP Color LaserJet Printer; HP Black Original LaserJet Toner Cartridge (~12,500 yield), ²⁷ HP Cyan, Magenta and Yellow Orig LaserJet Toner Cartridges (~10,500 yield each) ²⁷ (toner cartridges installed); CD with software drivers and documentation Documentation (Hardware Install Guide); Power cord			
				Plus: 550-sheet paper tray
Software included	HP Connected, HP Device Experience (DXP), HP PCL 6 (XPS) Printer Driver, HP Software Installer/Uninstaller, Mac OS Welcome Screen (directs users to 123.HP.com or OS App Source for printer software), Online user manuals			
Downloadable software	HP Easy Start (Guided Software Install for Windows OS and Mac); HP ePrint Software (ePrint Mobile Driver for Windows); HP ePrint Software (for Windows); HP JetAdvantage Security Manager; HP Mobile Printing hp.com/us/en/ads/mobility/overview.html ; HP PCL6 (XPS) print driver only (No installer for "Add Printer" installs); HP PCL6 (XPS) print driver with installer, Product Documentation and Support; HP Proxy Agent Software; HP Universal Print Drivers (PCL6 and PS for Windows); Linux/Unix Print Drivers; Mac Software Solution; Printer Administrator Resource Kit; SAP (PS Print Drivers); HP Web Jetadmin; Windows driver only solution; Windows Full Software Solution			
Warranty	One-year, next-business day, onsite warranty			
	Warranty and support options vary by product, country, and local legal requirements. Go to https://example.com/support to learn about HP award-winning service and support options in your region.			

Environmental and power specifications

	HP Color LaserJet Enterprise M652n	HP Color LaserJet Enterprise M652dn	HP Color LaserJet Enterprise M653dn	HP Color LaserJet Enterprise M653x
Environmental ranges			1	
Temperatures	Recommended operating: 17.5 to 25° C (63.5 to 77° F); Operating: 15 to 30° C (59 to 86° F); Storage: -20 to 40° C (-4 to 104° F)			
Relative Humidity	Recommended operating: 30 to 70% RH; Operating range: 10 to 80% RH			
Acoustic pressure emissions	Ready mode: 31 dB(A); Active print: 53 dB(A)		Ready mode: 31 dB(A); Active print: 54 dB(A)	Ready mode: 31 dB(A); Active print: 53 dB(A)
Acoustic power emissions ³⁹	Ready mode: 4.6 B(A); Active print: 6.8 B(A)		Ready mode: 4.6 B(A); Active print: 6.9 B(A)	Ready mode: 4.6 B(A); Active print: 6.8 B(A)
Power specifications ⁴⁰				
Power supply	Built-in 110 or 240 VAC; Input	voltage: 100 -127 VAC 50/60 Hz	or 220 - 240 VAC 50/60 Hz	
Power consumption	Printing: 690 watts; Ready: 31 watts; Sleep: 0.7 watts, Auto-off/Manual On: 0.7 watts; Manual Off: 0.1 watts Printing: 780 watts; Ready: 31 Auto-off/Manual On: 0.7 watts; Manual Off: 0.1 watts			
Typical Electricity	1.93 kWh/week (Blue Angel)		2.27 kWh/week (Blue Angel)	
Consumption (TEC)	1.96 kWh/week (ENERGY STAR®)		2.49 kWh/week (ENERGY STAR®)	
Energy-saving features	HP Auto-On/Auto-Off Technology; ²² Instant-on Technology			
Environmental specifications	Blue Angel compliant; ENERGY	STAR® certified; CECP; EPEAT® S	ilver ⁴¹	
		Plus: EPEAT® Gold ⁴¹ (Options AAZ, 201)	Plus: EPEAT® Gold ⁴¹ (Options AAZ, 201)	
Safety and regulatory compliance	EC 60950-1:2005 +A1:2009 +A2:2013 (International); EN60950-1:2006 +A11:2009 +A1:2010 +A12:2011 +A2:2013 (EU); EN 60825-1:2014 / IEC 60825-1:2014 (Class 1 Laser Product); EN 62479:2010 / IEC 62479:2010; GS Certificate (Germany, Europe); UL/cUL Listed and UC CoC (US/Canada); CAN/CSA C22.2 No. 60950-1-07 Amendment 2:2014; Other safety approvals as required by individual countries			
	Plus: Low Voltage Directive 2014/35/EU with CE Mark (Europe)		Plus: EN 62311:2008 / IEC 62311:2007 Low Voltage Directive 2014/35/EU with CE Mark (Europe)	
Electromagnetic emission standard	CISPR 22:2008 (International) - Class A, CISPR 32:2012 (International) - Class A, EN 55032: 2012 (EU) - Class A, EN 61000-3-2 2014, EN 61000-3-3: 2013, EN 55024: 2010, EMC Directive 2014/30/EU, FCC CFR 47 Part 15 Class A / ICES-003, Issue 6 Class A, Other EMC approvals as required by individual countries			
				Plus: EN 301 489-1 V1.9.2; EN 301 489-17 V2.2.1; EN 301 489-3 V1.6.1
Telecom compliance	FCC CFR 47 Part 15 Class A / ICES-003, Issue 6 Class A		EN 300 328 V1.9.1; EN 300 330-2 V1.6.1; EN 301 893 V1.8.1; R&TTE 1999/5/EC; Other Telecom approvals as required by individual countries	

Ordering information

Use accessories and supplies specifically designed for the printer to help provide efficient performance. To order the accessories and supplies listed here, go to <u>hp.com</u>. To contact HP by country, please visit <u>hp.com/qo/contact</u>. If you don't have access to the Internet, contact your qualified HP dealer.

LaserJet	HP Color LaserJet Enterprise M652n HP Color LaserJet Enterprise M652dn HP Color LaserJet Enterprise M653dn HP Color LaserJet Enterprise M653x	J7Z98A J7Z99A J8A04A J8A05A
Supplies ²⁷	HP 655A Black Original LaserJet Toner Cartridge (~12,500 pages) HP 656X High Yield Black Original LaserJet Toner Cartridge (~27,000 pages) HP 655A Cyan Original LaserJet Toner Cartridge (~10,500 pages) HP 656X High Yield Cyan Original LaserJet Toner Cartridge (~22,000 pages) HP 655A Yellow Original LaserJet Toner Cartridge (~10,500 pages) HP 656X High Yield Yellow Original LaserJet Toner Cartridge (~22,000 pages) HP 655A Magenta Original LaserJet Toner Cartridge (~10,500 pages) HP 656X High Yield Magenta Original LaserJet Toner Cartridge (~22,000 pages) HP LaserJet 220V Maintenance Kit (~150,000 pages) HP LaserJet Image Transfer Belt Kit (~150,000 pages) HP LaserJet Toner Collection Unit (~100,000 pages)	CF450A CF460X CF451A CF461X CF452A CF452A CF462X CF453A CF463X P1B92A P1B93A P1B94A
Accessories	HP Color LaserJet 550-sheet Paper Feeder HP Color LaserJet 550-sheet Paper Feeder with Stand and Cabinet HP Color LaserJet 3x550-sheet Paper Feeder with Stand HP Color LaserJet 1x550-sheet/2,000-sheet HCI Feeder and Stand HP 1GB DDR3 x32 144-Pin 800MHz SODIMM HP Trusted Platform Module Accessory HP Jetdirect 2900nw Print Server HP Jetdirect 3000w NFC/Wireless Accessory HP Internal USB ports HP Secure High-Performance Hard Disk Drive	P1B09A P1B10A P1B11A P1B12A E5K48A F5S62A J8031A J8030A B5L28A B5L29A
Make sure your imaging and printing investments are protected with Care Pack, part services to keep your printer running and your business moving. Now your office car shooting and more time getting things done. For details, visit https://doi.org/10.1001/journal.org/https://doi.org/10.1001/journal.org/https://doi.org/10.1001/journal.org/https://doi.org/https://doi.org/https://doi.org/<a hp.com="" href="https://doi.o</td><td></td></tr><tr><td>Solutions</td><td>HP Web Jetadmin: hp.com/qo/wia HP Universal Print Driver: hp.com/qo/securitymanaqer HP JetAdvantage Security Manager: hp.com/qo/jetadvantageondemand HP LaserJet Fonts, Barcodes, and IPDS Emulation available at hp.com/qo/laserjetfonts To learn more about available infrastructure, management, and workflow solutions, visit hp.com/solutions		go/printing

Appendix A: Security features



The HP Color LaserJet Enterprise M652/M653 series is designed to work together with security solutions to help reduce risk, improve compliance, and protect your network from end to end. Protect your device, data, and documents with built-in and optional security features.²

Protect your device

As capabilities expand and devices become more integrated into your work, device security becomes increasingly important. These features help protect the M652/M653 series:

- **Embedded protection:** Multi-level, built-in features help protect your printer against complex security threats from boot up to shut down. For details, see hp.com/go/PrintersThatProtect.
 - HP Sure Start helps the device BIOS to boot up properly every time with unaltered HP genuine code and without corruption. If an anomaly is detected, the device can repair itself by rebooting.
 - Whitelisting helps the device firmware to load properly with HP genuine code—without corruption—every time.
 - Run-time intrusion detection guards against malware, by continually monitoring activity to detect and stop attacks. If an anomaly is detected, the device automatically reboots.
- Encrypted storage with secure erase: The printer comes with built-in encryption to protect data. When stored data is no longer needed, use built-in device capabilities to securely overwrite data and safely remove sensitive information. HP offers multiple mechanisms to erase stored data, including functionality that is designed to conform to U.S. National Institute of Science and Technology (NIST) Special Publication 800-88.
- Ports and protocols: FTP and Telnet are closed by default to help prevent unsecure protocols from being used. Unused physical ports (such as host USB ports or network ports) can be disabled to prevent unauthorised use.
- Administrator access control for device: You can set administrator passwords so only IT staff or other authorised personnel can set up and configure device settings.
- Common Criteria Certification: HP Enterprise devices are certified as compliant with internationally recognised security standards, such as Common Criteria Certification (CCC) and FIPS 140.



Protect your data

Your printer harbours sensitive information—make sure it's not at risk.

- **Network protection:** 802.1x or IPsec encrypted network standards can help protect data travelling over the network between the device and management tools such as HP Web Jetadmin⁵ or the Embedded Web Server.
- Encrypt data in transit:
 - Protect print jobs travelling to the device with encryption such as Internet Print Protocol over TLS (IPPS). Or, Secure Encrypted Print with HP Universal Print Driver³⁸ provides true symmetric AES256 print job encryption and decryption from the client to the page based on a user-defined password using FIPS 140 validated cryptographic libraries from Microsoft.
 - Use CipherSuite Encryption Strength to select encryption strength to prevent the use of legacy or insecure protocols for data in transit.

· Encrypt data at rest:

- The optional HP High-Performance Secure Hard Disk provides full 256-bit AES hardware encryption to protect sensitive business information, such as print jobs or passwords.
- Add the optional HP Trusted Platform Module (TPM) accessory to strengthen protection of encrypted credentials and data by automatically sealing device encryption keys to the TPM. It provides secure device identity by generating and protecting certificate private keys.⁴
- **Firewall:** Prevent malware and viruses from entering your network by limiting printer access to computing devices in network.

Resources

HP JetAdvantage Security Solutions:

- Web site: <u>hp.com/qo/printsecurity</u>
- Solution brief: http://h20195.www2.hp.com/V2/GetPDF.a spx/4AA3-1295EEW.pdf
- Video: <u>http://hp.brightcovegallery.com/products/</u> detail/video/4270905124001/

HP JetAdvantage Security Manager:6

- Web site: hp.com/go/securitymanager
- Brochure: http://h20195.www2.hp.com/V2/GetPDF.a

 spx/4AA3-9275EEW.pdf
- Video: <u>http://hp.brightcovegallery.com/products/detail/video/4270837770001/</u>

- Authentication and authorisation: Manage user access using native features or optional solutions.
 - With native user authentication, you can require users to sign in with PIN/PIC, LDAP, or Windows/Kerberos authentication. You can also integrate these with Active Directory.
 - With optional authentication solutions like HP Access Control, you can enable advanced
 authentication using proximity cards or NFC-enabled mobile devices. To learn more, visit
 https://doi.org/10/2016/bpac. The Hardware Integration Pocket enables integration of select card readers.³
- **Role-based access controls:** Restrict access to management utilities, avoid unwanted device configurations, and help reduce costs and security risks through printer feature restrictions.
 - With HP FutureSmart 4, you have more control than ever before over device security and permission settings. IT administrators can decide who can interact with certain device capabilities.
 - Optional HP Access Control Rights Management allows you to give different capabilities to
 different users, or even entire departments, depending on their needs. For example, you can
 give users access to specific imaging and printing devices to promote a more responsible use
 of company assets.
- Mobile printing: Wi-Fi Direct,¹⁵ Bluetooth Low Energy,¹⁶ and NFC touch-to-print²⁹ allow mobile users to connect to the printer without accessing the company network. HP also offers server-based mobile print solutions that provide secure pull printing, as well as advanced management and reporting capabilities. For more information about HP JetAdvantage Connect and HP Access Control, please visit https://doi.org/10/10/9/9/businessmobileprinting.
- CA and Device Identity Certificates: This printer supports identity certificates signed by a
 corporate certificate authority, which provides verification of identity and authenticity. This device
 also supports CA certificates for validation of identity certificates. Certificates can enable secure
 end-to-end communications with the device when used with features like IPsec, Secure-IPP,
 HP ePrint, and more. Additional certificates can be stored for validating S/MIME email servers and
 802.1x authentication. Save time by using HP JetAdvantage Security Manager to automatically
 install and renew certificates.⁶



Safeguard your physical documents

HP offers several solutions to help keep documents from falling into the wrong hands and help prevent fraud.

- **PIN/Pull printing:** Have documents held and released only to the person who printed them. Pull printing solutions help protect sensitive data by requiring authentication at the device, and give users the flexibility of pulling the documents from any device that is enabled with the solution.
 - Built-in PIN printing: When users send confidential print jobs, they assign a PIN which they
 must enter at the device to release the job.
 - HP JetAdvantage Secure Print: With this affordable solution designed for SMB, jobs can be stored in the cloud or on the user's desktop. It's easy to set up and use, allows users to release jobs from a mobile device, and supports multi-vendor devices. For more information, visit <u>hp.com/qo/JetAdvantageSecurePrint</u>.⁹
 - HP JetAdvantage Private Print: With HP's free cloud-based solution you get the advantages of pull printing, without the complexity. It is simple to set up and does not require a server, installation, or maintenance. To learn more, visit <a href="https://doi.org/10.1001/jpc.2007
 - HP Access Control Secure Pull Printing: This optional robust server-based solution offers
 multiple forms of authentication including badge release, as well as enterprise level security,
 management, and scalability. To learn more, visit hp.com/qo/hpac.



HP JetAdvantage Security Manager

Secure your HP printing fleet with the solution Buyers Laboratory (BLI) calls trailblazing.⁶

Easily manage security across the fleet

HP JetAdvantage Security Manager

Easily set security configuration policies and automatically validate settings for every HP printer in your fleet. Optional HP JetAdvantage Security Manager offers an effective, policy-based approach.⁶

- Automate many tedious tasks so you can free up time for your IT staff and protect the data and documents that matter most to your business.
- Streamline the process to securely deploy and monitor devices by applying a single security policy across the fleet.
- Easily create a print security policy for your environment by leveraging the HP Security Manager Base Policy template.
- Secure new HP devices as soon as they are added to your network, or after a reboot, with HP Instant-on Security. The software automatically configures settings to comply with your corporate security policy.
- Improve the security of your infrastructure and device communications by deploying unique identity certificates and monitoring to ensure they remain valid. With HP Security Manager's efficient fleet management of certificates, the administrative overhead to install certificates across your fleet is now less than manually installing on a single device.
- Actively maintain and verify compliance with your defined security policies by using HP Security Manager automated monitoring and risk-based reporting.



To learn more about HP JetAdvantage Security Manager, please visit hp.com/qo/securitymanager.

Works with SIEM tools

Get instant notification of potential security issues so immediate action can be taken to prevent potential attacks. Event data from HP Enterprise devices can be sent to Security Information and Event Management (SIEM) tools such as ArcSight, Splunk, or SIEMonster for real-time monitoring. IT security can easily view printer endpoints as part of the broader IT ecosystem to detect and resolve printer security alerts.



HP security best practices

Since 2005, HP has published security best practice checklists for networked environments common to enterprises and small to medium businesses. For more information on HP security solutions and checklists, please visit hp.com/qo/printsecurity.

Appendix B: Fleet management features

Simple one-to-one device management

The printer can also be managed using the HP Embedded Web Server. Use a web browser to monitor status, configure network parameters, or access device features.

Control colour access

Use HP Web Jetadmin⁵ and the HP Universal Print Driver³⁸ to assign colour access by user, time of day, or application, or disallow colour output completely until it's needed for special projects. People who truly need to leverage the power of colour—such as your sales team and marketing department—can, while others automatically default to black-and-white output. ⁴³

Resources

HP Web Jetadmin:

- Web site: <u>hp.com/qo/wja</u>
- Solution brief: http://h20195.www2.hp.com/V2/GetPDF.a

 spx/4AA5-2719EEW.pdf
- Video: http://hp.briqhtcoveqallery.com/solutions/ detail/video/4271055504001/

HP Universal Print Driver:

- Web site: <u>hp.com/qo/upd</u>

Efficiently manage from a central location

The HP Color Laser Jet Enterprise M652/M653 series is supported by HP Web Jetadmin, ⁵ an HP JetAdvantage Management Solution. This single solution allows you to efficiently manage a wide variety of networked and PC-connected devices, including printers, multifunction products, and scanners. Remotely install, configure, troubleshoot, safeguard, and manage your devices—ultimately increasing business productivity by helping you save time, control costs, protect your assets, and provide a better return on your investment. Easily integrate new HP LaserJet Pro and Enterprise devices without having to upgrade HP Web Jetadmin. A universal plug-in lets you support most features of new devices and apply corporate policies in one step—helping to save time and simplify device management.⁵

HP Web Jetadmin enables you to:

- Gain a clear picture of how many and what kinds of devices you have.
- Get visibility into your supplies usage, so you can make smarter purchasing decisions, reduce spending, and even track and allocate printing costs to individual departments or users.
- Simplify, and, in many cases, automate routine tasks. For example, you can apply fleet-wide policies to automatically configure new devices with the right printing and security settings when they're added to your network.
- Give your help desk staff the tools they need—such as automatic alerts—to resolve problems quickly, and often proactively, before a call is even received.
- Verify that your devices are up-to-date with the latest firmware and are properly configured (especially important for organisations that need to meet regulatory requirements).
- Use robust tracking and reporting tools to help you make better decisions about how your devices are deployed across your organisation, so you can make the most of your IT investments.
- Take advantage of additional options, like the HP Database Connectivity Module which works together with Web Jetadmin to help you establish and help achieve environmental goals.
- Get the ultimate in investment protection with HP Web Jetadmin Premium Support. This expanded service option gives your staff access to HP's dedicated software support engineers, who provide advice, usage recommendations, problem diagnosis, and more.

HP Web Jetadmin can benefit IT-managed print environments of all sizes, from large enterprises managing thousands of devices to small businesses with just a handful. For more information—or to download this software tool at no additional charge—visit hp.com/go/wia.

Make it easy for all to print with one common driver

The HP Universal Print Driver enables both mobile Microsoft device users and traditional desktop users to access the full features of nearly every HP device in your managed printing environment without the need for assistance.³⁸

Eliminate the clutter on your computer by replacing multiple print drivers with one versatile solution. Empower IT by dramatically reducing the number of drivers they have to manage—and by giving them the tools they need to improve efficiency. With the HP UPD, your IT team can easily adjust device settings to help reduce printing costs, improve security, and help meet environmental goals. For example, it's simple to push two-sided printing or quicker sleep times across the fleet. Plus, the valuable tools in the HP UPD Printer Administrator's Resource Kit help you save time and money by streamlining IT tasks, implementing printing policies, and monitoring usage across the enterprise. You can also use the HP UPD in tandem with HP Web Jetadmin to create fleet-wide managed printer lists, reports, and more.

You can download this valuable fleet driver solution and the tools in the Printer Administrator's Resource Kit for no additional charge. For more information about how the HP Universal Print Driver can help you protect your imaging and printing investment, simplify management, and boost productivity, visit https://doi.org/10.1007/journal.org/

Appendix C: Control panel features

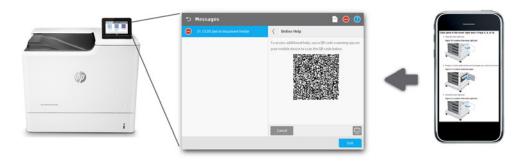
Upgrade to a modern interface

The HP Color LaserJet Enterprise M652/M653 series is powered by HP FutureSmart 4.0 firmware. Its modern, tablet-like interface keeps things simple and intuitive across your fleet of Enterprise devices. A scalable control panel interface improves future extensibility and provides a robust set of new apps and usability features. The new Message Center, with more detailed information and helpful animations, makes it easy to address device events. The simplified home screen displays just a few core apps by default. The 4.3-inch (10.9 cm) touchscreen (M653 series) is shown below. Additional apps are easily accessed by swiping right to left, like with a smartphone or tablet.



Troubleshoot with ease

The HP Color LaserJet Enterprise M652/M653 series can help save your IT department valuable time when it comes to troubleshooting problems. The Remote Control Panel allows users to operate the user interface remotely, so IT can troubleshoot problems without running to the printer. ⁴⁴ Users can also quickly troubleshoot technical issues with HP's innovative, cloud-based Online Help services that are relevant and up to date. Easily solve problems from your PC or mobile device. A Quick Response (QR) code on the touchscreen links to Online Help using smart phones and tablets. ⁴⁵ You can also find these links in the HP Embedded Web Server event log.



- ¹ Based on HP review of 2016 published security features of competitive in-class printers. Only HP offers a combination of security features that can monitor to detect and automatically stop an attack then self-validate software integrity in a reboot. For a list of printers, visit hp.com/qo/PrintersThatProtect. For more information: hp.com/qo/printersecurityclaims.
- ³ Solutions deployed through the Hardware Integration Pocket (HIP) may require additional purchase.
- 4 Use of the optional HP Trusted Platform Module accessory may require a firmware upgrade.
- ⁵ HP Web Jetadmin is available for download at no additional charge at <u>hp.com/qo/wja</u>.
- ⁶ HP JetAdvantage Security Manager must be purchased separately. For details, see hp.com/go/securitymanager. Competitive claim based on HP internal research on competitor offerings (Device Security Comparison, January 2015) and Solutions Report on HP JetAdvantage Security Manager 2.1 from Buyers Laboratory LLC, February 2015.
- ⁷ Based on an HP assessment of print manufacturers SaaS offerings as of September 1, 2016, no other print manufacturer offers a single cloud portal for user and app management.
- ⁸ Requires Internet access. Supported browsers include Microsoft® Internet Explorer® 9-11, Google Chrome™ 9 and newer, Mozilla® Firefox® 4 and newer, and Safari® 5 and newer. Compatible with select HP LaserJet, PageWide, OfficeJet Pro, and Digital Sender Flow devices that can connect to the Internet. Some apps support multi-vendor environments. May require a firmware upgrade. Learn more at hp.com/go/jetadvantageondemand.
- ¹⁰ Available only in North America and select European countries. Card reader is available for separate purchase for selected HP printers and MFPs with touchscreens. Learn more at https://hp.com/qo/JetAdvantagePrivatePrint.
- ¹¹ Measured using ISO/IEC 17629. For more information, see <u>hp.com/go/printerclaims</u>. Exact speed varies depending on the system configuration, software application, driver, and document complexity.
- ¹² Built-in automatic two-sided printing is not supported on the M652n model.
- ¹³ Measured using ISO/IEC 24734; excludes first set of test documents. For more information, see hp.com/qo/printerclaims. Exact speed varies depending on the system configuration, software application, driver, and document complexity.
- ¹⁴ Measured using ISO 24734 Feature Test, A5 Landscape Feed. Speed may vary based on content, PC, media orientation, and media type. A5 landscape printing cannot be duplexed.
- ¹⁵ Wi-Fi Direct printing is embedded in the HP Color LaserJet Enterprise M653x model. All other models can add wireless direct by purchasing the optional HP Jetdirect 3000w NFC/Wireless Direct Accessory. Mobile device needs to be connected directly to the signal of a Wi-Fi Direct® supported MFP or printer prior to printing. Depending on mobile device, an app or driver may also be required. For details, see hp.com/go/mobileprinting. Wi-Fi Direct is a registered trademark of Wi-Fi Alliance®.
- 16 Bluetooth® Low Energy is standard only on the HP Color LaserJet Enterprise M653x, and it cannot be added to other models.
- ¹⁷ Requires purchase of server software such as HP JetAdvantage Connect or HP Access Control Secure Pull Printing. Learn more at https://hp.com/qo/businessmobileprinting.
- ¹⁸ Purchase of optional paper trays required to reach maximum input capacity.
- ¹⁹ Standard and optional paper-handling accessories vary by model. See Series at a glance, page 5, for details.
- ²⁰ An administrator must enable the easy-access USB port before use.
- ²¹ Energy claim based on TEC data reported on <u>energystar.gov</u> as of January 2017. Data normalised to determine energy efficiency of in-class laser printers with published speed of 50 to 60 ppm (letter). Subject to device settings. Actual results may vary.
- ²² HP Auto-On/Auto-Off Technology capabilities are subject to printer and settings.
- ²³ Compared with products that use traditional fusing.
- ²⁴ For the M652 series: More pages versus predecessor cartridges claim based on page-yield comparison of HP 647A/648A Color Original LaserJet Toner Cartridges with HP 656X High Yield Color Original LaserJet Toner Cartridges. For more information, see <a href="https://px.ncbi.nlm.
- ²⁵ For the M653 series: More pages versus predecessor cartridges claim based on page-yield comparison of HP 654X High Yield Color Original LaserJet Toner Cartridge with HP 656X High Yield Color Original LaserJet Toner Cartridges. For more information, see https://example.com/go/learnaboutsupplies.
- ²⁶ HP 656X High Yield Original LaserJet Toner cartridges are not included in printer purchase; purchase separately. Learn more at hp.com/qo/learnaboutsupplies.
- ²⁷ Toner cartridge yields established using ISO/IEC test standards. Actual yields and costs vary considerably depending on images printed, number of colour pages printed, and other factors.
- ²⁸ All models come with 100-sheet multipurpose tray 1 and 550-sheet tray 2. In addition, the M652n, M652dn, and M653dn models can add up to two additional 550-sheet paper feeders; or, they can add one of the other accessories (550-sheet paper feeder with stand and cabinet, 3x550-sheet paper feeder and stand, or 1x550-sheet/2,000-sheet HCI feeder and stand). The M653x model comes standard with one 550-sheet paper feeder (tray 3) and it can add one additional 550-sheet paper feeder; it does not support any other paper-handling accessories.
- ²⁹ Touch-to-print capability is optional for all models (except the M653x) with the purchase of the optional HP Jetdirect 3000w NFC/Wireless Direct Accessory. Mobile device must support Near Field Communication (NFC)-enabled printing. For more information, see <a href="https://px.ncbi.nlm
- ³⁰ All models can add wireless networking with the purchase of the optional HP Jetdirect 2900nw Print Server. Wireless performance is dependent on physical environment and distance from access point, and may be limited during active VPN connections.
- ³¹ Measured after 15 minutes in sleep. Exact speed varies depending on the system configuration, software application, driver, document complexity, and time in sleep.
- ³² HP recommends that the number of printed pages per month be within the stated range for optimum device performance, based on factors including supplies replacement intervals and device life over an extended warranty period.
- ³³ Duty cycle is defined as the maximum number of pages per month of imaged output. This value provides a comparison of product robustness in relation to other HP LaserJet or HP Color LaserJet devices, and enables appropriate deployment of printers and MFPs to satisfy the demands of connected individuals or groups.

- ³⁴ Printer requires ePrint account registration. App or software may be required. Wireless operations are compatible with 2.4 GHz operations only. Learn more at https://hpp.com/go/mobileprinting.
- ³⁵ Supports the following devices running iOS 4.2 or later: iPad, iPad 2, iPhone (3GS or later), iPod touch (3rd generation or later). Works with HP's AirPrint-enabled printers and requires the printer be connected to the same network as your iOS device. Wireless performance is dependent on physical environment and distance from the access point.
- ³⁶ Full solution software available only for Windows 7 and newer, UPD software available only for Windows 7 and newer, HP Software for Mac and Windows is no longer included on the CD, but can be downloaded from <u>123.hp.com</u>, Legacy Windows Operating Systems (XP, Vista, and equivalent servers) get print and scan drivers only with a reduced feature set, Windows RT OS for Tablets (32- and 64-bit) uses a simplified HP print driver built into the RT OS.
- ³⁷ Maximum dimensions of the device are measured with all paper trays folded out and standard accessories installed.
- ³⁸ The HP Universal Print Driver is available for download at no additional charge at <u>hp.com/go/upd</u>.
- ³⁹ Printing colour simplex A4 at 48 ppm (M652 series) and 57 ppm (M653 series). Acoustic values are subject to change. For current information, see hp.com/support.
- ⁴⁰ Power requirements are based on the country/region where the printer is sold. Do not convert operating voltages. This will damage the printer and void the product warranty.
- ⁴¹ EPEAT® registered where applicable. EPEAT registration varies by country. See <u>epeat.net</u> for registration status by country.
- ⁴² Service levels and response times may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit <u>hp.com/qo/cpc</u>.
- ⁴³ Colour access control capabilities vary from device to device.
- ⁴⁴ Availability dependent on firmware or software updates or upgrades.
- ⁴⁵ Online Help must be enabled on the printer or MFP. Mobile device must have an Internet connection to access online services.

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