



## Small and mighty

HP Color LaserJet Enterprise M455dn  
HP Color LaserJet Enterprise MFP M480f



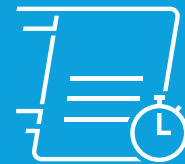
This printer uses dynamic security, which may be updated periodically by firmware updates. The printer is intended to be used solely with cartridges using an original HP chip. Cartridges using a non-HP chip may not function or may cease to function. See [hp.com/learn/ds](https://www.hp.com/learn/ds) for more information.



Easy to use,  
simple to manage



The world's  
most secure printing<sup>1</sup>



Enhanced productivity  
to empower work teams

# Easy to use, simple to manage



Set up work teams for success without adding more to your plate. Help people handle business wherever it happens while giving IT the fleet-wide control it needs, using a compact printer or MFP built for simple use and management.



## Investment protection

Work with the future in mind. HP FutureSmart firmware can be updated with the latest features to help protect and optimize your investment in print infrastructure for years to come.<sup>2</sup>

Get consistent, intuitive user controls across devices, seamlessly incorporate paper and digital content to improve workflows, and easily install updates on your schedule.



## Streamlined fleet management

Centralize control of your print environment with HP Web Jetadmin.<sup>3</sup> Easily add new devices and solutions, update features, and apply corporate policies to help build business efficiency. Set up new printers quickly, manage device settings easily, and start printing the pages you need right away.



## Consistent experiences and results

Enable workflows across your fleet with a consistent experience and intuitive tablet-like icons IT admins and end-users recognize—so finishing tasks feels familiar fleet-wide. Media-sensing technology automatically adjusts print settings across a wide variety of paper types, including plain, glossy, and thick media, so you get consistent, high-quality results.

# The world's most secure printing<sup>1</sup>



HP printers have the industry's strongest security because they're always on guard, continually stopping threats while adapting to new ones.<sup>1</sup> And only HP printers can automatically self-heal from attacks, so IT doesn't need to intervene.



## Always on guard

HP Enterprise printers offer built-in security features that are always on guard.<sup>1</sup>

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



## Opt for tighter security

Help protect this printer with more than 100 embedded security features.<sup>4</sup>

Safeguard information in transit over the network and stored on the device—keys, passwords, certificates, and more—using the embedded HP Trusted Platform Module.<sup>5</sup>

Thwart potential attacks by receiving instant notification of possible security issues, so immediate action can be taken.<sup>6</sup> Works with leading SIEM tools like Splunk, ArcSight, and McAfee.

Help ensure the security of confidential information with PIN/pull printing to retrieve print jobs.



## Your whole fleet, at your control

Centralize control of your printing environment with HP Web Jetadmin—and help build business efficiency.<sup>3</sup> Optional HP JetAdvantage Security Manager offers an effective, policy-based approach to help secure HP printing and imaging devices.<sup>7</sup> Easily set security configuration policies and automatically validate settings for every enabled HP printer and MFP in your fleet.

HP JetAdvantage Secure Print and HP Access Control (HPAC) help secure documents by requiring authentication to release print jobs.<sup>8</sup> In addition, extend capabilities and easily customize with HPAC—integrate job accounting, manage rights, and establish quotas for things such as color use.<sup>9</sup> Save IT time and make printing easy for the entire enterprise by using a single driver for all HP devices.<sup>10</sup>

### ▶ For more information

#### Fleet management

HP Web Jetadmin: [hp.com/go/wja](http://hp.com/go/wja)

Solution brief: <http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA5-2718ENW.pdf>

Video: <http://hp.brightcovegallery.com/solutions/detail/video/4271055504001/>

HP Universal Print Driver: [hp.com/go/upd](http://hp.com/go/upd)

Solution brief: <http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-4781ENW.pdf>

#### Security

HP JetAdvantage Security Solutions: [hp.com/go/printsecurity](http://hp.com/go/printsecurity)

Solution overview: <http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-1295ENW.pdf>

Video: <http://hp.brightcovegallery.com/products/detail/video/4270905124001/>

HP JetAdvantage Security Manager: [hp.com/go/securitymanager](http://hp.com/go/securitymanager)

Brochure: <http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-9275ENW.pdf>

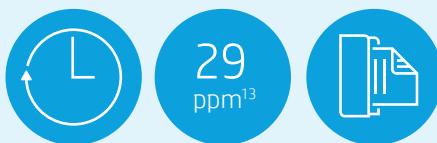
Video: <http://hp.brightcovegallery.com/products/detail/video/427083770001/>

# Enhanced productivity keeps business moving

Easy-to-use features, fast print speeds, and simple mobile printing options help you keep up with the speed of business.

## Take waiting out of your workday

Don't wait for documents. Receive your first page in as few as 9.3 seconds from ready mode and 10.9 seconds from energy-efficient sleep mode.<sup>11,12</sup> Print up to 29 pages per minute (ppm) simplex or 25 ipm duplex.<sup>13</sup>



These compact printers and MFPs are designed to integrate neatly into home offices, small workcenters, and remote workgroups, providing ready access to Enterprise-class printing that accelerates performance and productivity.



## Optimize your workflows

Improve business agility by integrating paper into digital workflows. Optional MFP apps can optimize workflows, reduce steps and errors, and meet other specific business needs. Help save time and money by driving process efficiency and support a mobile workforce that needs access to content.

Accelerate workflows with single-pass, two-sided scanning up to 49 images per minute (ipm) on the MFP M480f.<sup>14</sup> Scan files directly to Microsoft Office 365 and SharePoint®, plus email, USB, and network folders.<sup>15</sup>

## Loaded for productivity

Let high-volume jobs handle themselves. The M455dn and MFP M480f have an 850-sheet maximum capacity with an optional third input tray, so you can spend less time loading and reloading paper.



Easily develop, deploy, and integrate HP and third-party solutions with the HP Open Extensibility Platform. Support card readers and the ability for users to walk up, swipe their badge, and use personalized settings to print from their own queue.

# Sustainability is smart business



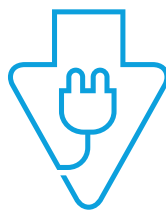
Business is all about resource management, and finding efficiencies is everyone's responsibility. HP LaserJet printers and MFPs are designed for low energy use, to help people complete tasks quickly while conserving wherever possible.



## Designed to conserve

Help save paper right out of the box. Two-sided (duplex) printing is the default setting for automatic savings.<sup>16</sup>

Help save energy with HP Auto-On/ Auto-Off Technology and HP Instant-On Technology—intelligence that can turn your printer on when you need it and off when you don't.<sup>17,18</sup>



## Enhanced energy efficiency

Save energy without sacrificing performance—the HP Color LaserJet Enterprise M455dn and MFP M480f are ENERGY STAR® certified.



## Reduce your environmental impact

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

Recycle your Original HP cartridges easily and at no additional charge with HP Planet Partners.<sup>19</sup>



# Powerful printing. Energy smart.<sup>20</sup>



Count on Original HP Toner cartridges with JetIntelligence to deliver high-quality color pages at fast speeds, plus high-yield options<sup>21</sup> and innovative anti-fraud technology to enable the consistent HP quality you need. Designed with the environment,<sup>22</sup> indoor air quality,<sup>23</sup> and cartridge chip security in mind.<sup>24</sup>



## Get high-quality printing

Count on the advantages of Original HP Toner cartridges—performance, high quality, and dependability. Original HP Toner cartridges with JetIntelligence deliver high-quality color pages, help reduce costs with high-yield options and page maximizer technology, and intelligently track toner levels with print gauge technology, so you can be confident you're getting value from every cartridge you buy.



## Get more from your printer

Original HP Toner cartridges with JetIntelligence are specially engineered to match your printer's high-speed performance without sacrificing the quality you depend on to look professional. Produce top-quality documents at speeds your printer was built to achieve with HP ColorSphere 3 toner.



## Get peace of mind with anti-fraud protection

Original HP Toner cartridges help protect against counterfeits. Anti-fraud technology authenticates that a genuine Original HP cartridge is installed and allows you to enable fleet-wide printing policies that support Original HP-only cartridges. HP design, production, and supply chain processes help keep your printing system secure,<sup>25</sup> and tamper-resistant chips help ensure customers get the Original HP quality they paid for.<sup>24</sup>



**Original HP 414X High Yield LaserJet Toner Cartridges**  
(~7,500 pages black, or ~6,000 pages color)<sup>26</sup>

# Stay connected with secure mobile printing



Improve work team agility while also protecting the company network. Ethernet and optional wireless networking help users stay connected and work securely—throughout the office.<sup>27</sup> Add wireless direct and NFC touch-to-print to print directly from your mobile device.<sup>28,29</sup>



## Print from a variety of mobile devices

Print documents, email, PDFs, and more from smartphones and tablets running iOS, Android™, Windows, and Google Chrome™ operating systems—generally no setup or apps required.<sup>30</sup>

Add the option to print with just a touch of your NFC-enabled smartphone or tablet to the print device.<sup>29</sup>



## Print from virtually anywhere

Let your mobile users print how they work, without complexity that slows them down or bogs down IT resources. HP Roam for Business lets you avoid complex infrastructure, ongoing maintenance, and lost time spent helping individual users with printing issues, so you can focus on more important work.<sup>31</sup>

Mobile users can submit print jobs to the cloud from any device while on the go, then retrieve them from any HP Roam for Business-enabled device simply and securely. There's no need to worry about device-to-printer compatibility or connectivity.

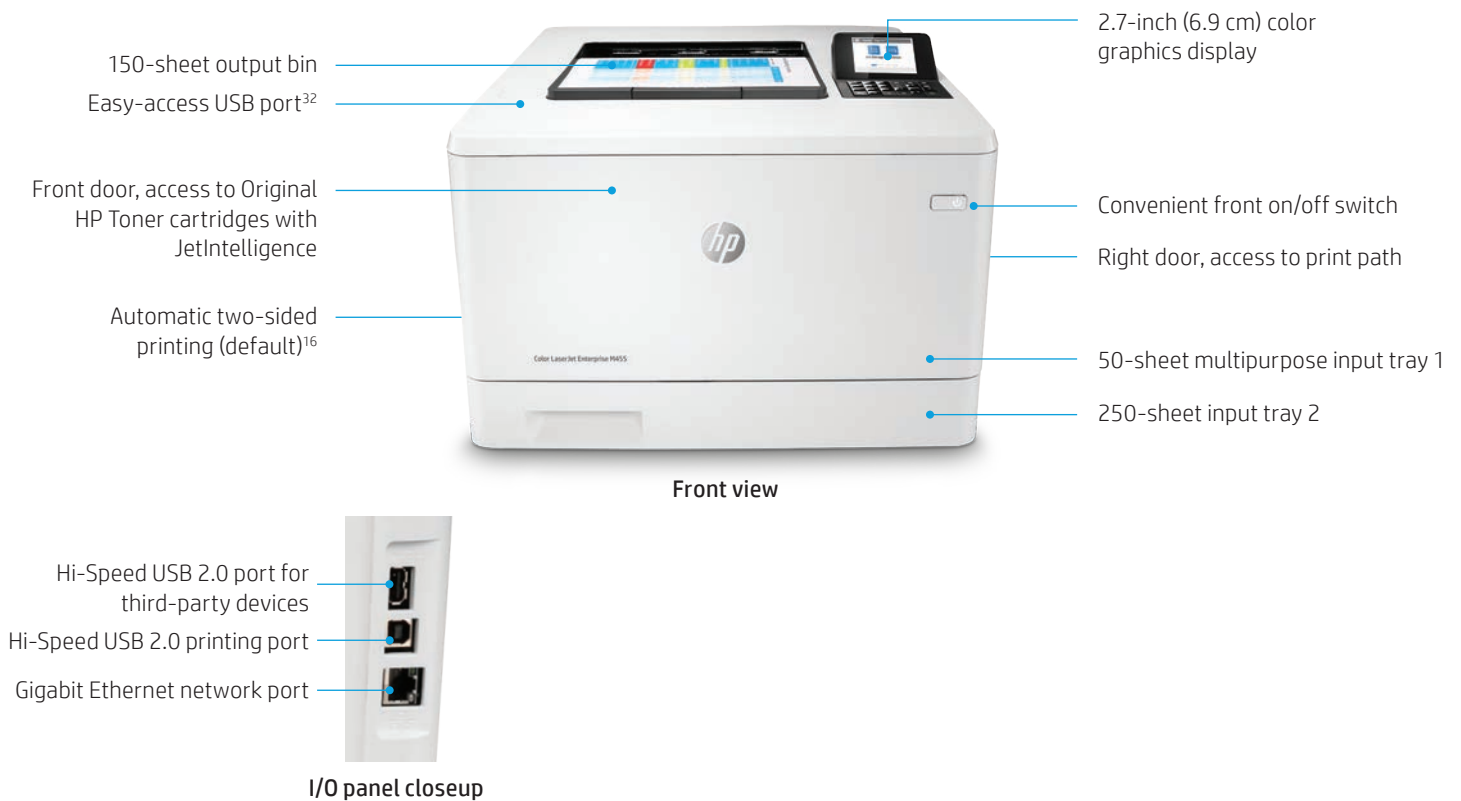


## Extend your printing reach

Keep your office connected with an optional accessory for wireless,<sup>27</sup> Bluetooth® Low Energy, and NFC touch-to-print.<sup>29</sup>

Optional 128-bit encrypted wireless direct printing helps secure data in transit and at rest—without accessing the company network—when using smartphones, tablets, and notebook PCs.<sup>28</sup>

# Get to know the HP Color LaserJet Enterprise M455dn



## At a glance



Model	M455dn
Product number	3PZ95A
Print speed (letter/A4) <sup>13</sup>	Up to 29/27 ppm
First page out (letter/A4) <sup>11</sup>	As fast as 9.3/9.5 seconds mono, 10.9/11.0 seconds color
Control panel	2.7-inch (6.9 cm) color graphics display
Memory	1.25 GB
Storage	4 GB eMMC
Automatic two-sided printing (default) <sup>16</sup>	✓
Input capacity (standard/maximum)	Up to 300/850 sheets
50-sheet input tray 1	✓
250-sheet input tray 2	✓
550-sheet input tray 3	Optional
Recommended monthly page volume (RMPV) <sup>33</sup>	900 to 4,800 pages
Duty cycle	Up to 55,000 pages
Cartridge yields (black/color)	2,400/2,100 pages (A) or 7,500/6,000 pages (X)
Dual-band Wi-Fi with Bluetooth® Low Energy, Wi-Fi Direct <sup>34</sup>	Optional
ENERGY STAR® qualified	✓



# Get to know the HP Color LaserJet Enterprise MFP M480f



## At a glance



Model	M480f
Product number	3QA55A
Print speed (letter/A4) <sup>13</sup>	Up to 29/27 ppm
First page out (letter/A4) <sup>11</sup>	As fast as 9.3/9.5 seconds mono, 10.9/11.0 seconds color
First copy out (letter/A4)	As fast as 9.5/9.6 seconds mono, 11.2/11.3 seconds color
Control panel	4.3-inch (10.9 cm) color touchscreen
Memory	2 GB
Storage	16 GB eMMC
Automatic two-sided printing (default) <sup>16</sup>	✓
Input capacity (standard/maximum)	Up to 300/850 sheets
50-sheet input tray 1	✓
250-sheet input tray 2	✓
550-sheet input tray 3	Optional
Recommended monthly page volume (RMPV) <sup>33</sup>	900 to 4,800 pages
Duty cycle	Up to 55,000 pages
Cartridge yields (black/color)	2,400/2,100 pages (A) or 7,500/6,000 pages (X)
Dual-band Wi-Fi with Bluetooth® Low Energy, Wi-Fi Direct <sup>34</sup>	Optional
ENERGY STAR® qualified	✓

# HP Color LaserJet Enterprise M455dn and MFP M480f— configuration

## Choose your accessory



### HP LaserJet 550-Sheet Feeder Tray (CF404A)

- Add up to one tray
- Media size up to 8.5 x 14 inches (216 x 356 mm)
- Media weight up to 43 lb (163 g/m<sup>2</sup>)



### Standard on the M455dn

- 50-sheet multipurpose tray 1
  - Media size up to 8.5 x 14 inches (216 x 356 mm)
  - Media weight up to 47 lb (176 g/m<sup>2</sup>)
- 250-sheet tray 2
  - Media size up to 8.5 x 14 inches (216 x 356 mm)
  - Media weight up to 43 lb (163 g/m<sup>2</sup>)



### Standard on the MFP M480f

- 50-sheet multipurpose tray 1
  - Media size up to 8.5 x 14 inches (216 x 356 mm)
  - Media weight up to 47 lb (176 g/m<sup>2</sup>)
- 250-sheet tray 2
  - Media size up to 8.5 x 14 inches (216 x 356 mm)
  - Media weight up to 43 lb (163 g/m<sup>2</sup>)

# HP Color LaserJet Enterprise M455dn technical specifications

## HP Color LaserJet Enterprise M455dn

<b>Product number</b>	3PZ95A
<b>Control panel</b>	2.7-inch (6.9 cm) color non-touch control panel with 24 keypad
<b>Print speed<sup>13</sup></b>	Up to 29/27 ppm (letter/A4) simplex, black and color Up to 25/24 ppm (letter/A4) duplex, black and color
<b>First page out<sup>11,12</sup></b>	From ready (letter/A4): As fast as 9.3/9.5 seconds, black, and 10.9/11.0 seconds, color From sleep (letter/A4): As fast as 10.9/11.0 seconds, black, and 12.0/12.1 seconds, color
<b>Print resolution</b>	Up to 600 x 600 dpi (normal), up to 1200 x 1200 dpi (fine lines)
<b>Printer advanced features</b>	Print preview, duplex printing, print multiple pages per sheet (2, 4, 6, 9, 16), collation, watermarks, store print jobs, easy-access USB
<b>Processor</b>	800 MHz
<b>Memory</b>	1.25 GB
<b>Storage</b>	4 GB eMMC
<b>Durability ratings</b>	
RMPV <sup>33</sup>	900 to 4,800 pages
Duty cycle	Up to 55,000 pages
<b>Media specifications</b>	
Input capacity	Up to 300 sheets standard (50-sheet multipurpose tray, 250-sheet input tray) Up to 850 sheets maximum (with optional 550-sheet tray)
Output capacity	Up to 150 sheets
Two-sided printing	Automatic (default)
Media sizes	<ul style="list-style-type: none"> <li>Tray 1: letter, legal, oficio, executive, statement, 4 x 6, 3 x 5, 5 x 7, 5 x 8, postcard (JIS), double postcard (JIS), 8.5 x 13, envelope (commercial No. 9, No. 10, Monarch); A4, RA4, A5, B5 (JIS), B6 (JIS), 10 x 15 cm, A6, 16K, envelopes (B5, C5 ISO, C6, DL ISO); custom: 3 x 5 to 8.5 x 14 in (76 x 127 to 216 x 356 mm)</li> <li>Tray 2 and (optional) Tray 3: letter, executive, statement, 4 x 6, 5 x 7, 5 x 8, double postcard (JIS); A4, RA4, A5, B5 (JIS), B6 (JIS), 10x15 cm, A6, 16K; custom: 3.9 x 5.8 to 8.5 x 14 in (98 x 148 to 216 x 356 mm)</li> </ul>
Media weights	<ul style="list-style-type: none"> <li>Tray 1: 16 to 47 lb (60 to 176 g/m<sup>2</sup>) plain paper; up to 52 lb (200 g/m<sup>2</sup>) glossy photo papers</li> <li>Tray 2: 16 to 43 lb (60 to 163 g/m<sup>2</sup>) plain paper; up to 52 lb (200 g/m<sup>2</sup>) glossy photo papers</li> <li>Tray 3 (optional): 16 to 43 lb (60 to 163 g/m<sup>2</sup>) plain paper; up to 40 lb (150 g/m<sup>2</sup>) glossy photo papers</li> <li>Automatic duplexer: 16 to 43 lb (60 to 163 g/m<sup>2</sup>)</li> </ul>
Media types	Paper (bond, brochure, colored, glossy, letterhead, photo, plain, preprinted, prepunched, recycled, rough), postcards, labels, envelopes
<b>Print languages</b>	HP PCL 6, HP PCL 5, HP PostScript level 3 emulation, native PDF printing (v 1.7), Apple AirPrint™
<b>Fonts</b>	105 internal TrueType fonts scalable in HP PCL, 92 internal scalable fonts in HP PostScript Level 3 emulation (Euro symbol built-in); 1 internal Unicode Font (Andale Mono World Type); 2 Internal Windows Vista 8 fonts (Calibri, Cambria); additional font solutions available via third-party flash memory cards; HP LaserJet fonts and IPDS Emulation available at <a href="http://hp.com/go/laserjetfonts">hp.com/go/laserjetfonts</a>
<b>Connectivity</b>	2 Hi-Speed USB 2.0 Host; 1 Hi-Speed USB 2.0 Device; 1 Gigabyte Ethernet 10/100/1000T network; 1 Fax
<b>Mobile printing</b>	HP ePrint; Apple AirPrint™; Mopria™ Certified; NFC Touch-to-Print (optional); Wi-Fi Direct® printing; HP Roam for Business capable for easy printing; <sup>31</sup> PrinterOn Print
<b>Network capabilities</b>	Yes, via HP Jetdirect Ethernet embedded print server (standard) which supports: 10Base-T, 100Base-Tx, 1000Base-T; 802.3az (EEE) support on Fast Ethernet and Gig Links; IPsec (standard); 802.11a/b/g/n wireless networking (optional); second Ethernet port (optional)

# HP Color LaserJet Enterprise M455dn technical specifications

## HP Color LaserJet Enterprise M455dn

<b>Network protocols</b>	Via built-in networking solution: TCP/IP, IPv4, IPv6; Print: TCP-IP port 9100 Direct Mode, LPD, Web Services Printing, IPP 2.0, Apple AirPrint™, HP ePrint; Discovery: SLP, Bonjour, Web Services Discovery; IP Config: IPv4 (BootP, DHCP, AutoIP, Manual), IPv6 (Stateless Link-Local and via Router, Statefull via DHCPv6); Management: SNMPv2/v3, HTTP/HTTPS, Syslog; Security: SNMPv3, SSL Cert Management, IPSec (IKEv1 and IKEv2), Firewall, 802.1x.
<b>Security management</b>	<p>Identity management: Kerberos authentication, LDAP authentication, 1000 user PIN codes, optional HP and third-party advanced authentication solutions (e.g., badge readers)</p> <p>Network: IPsec/firewall with certificate, pre-shared key, Kerberos authentication, supports WJA-10 IPsec configuration plug-in, 802.1x authentication (EAP-PEAP; EAP-TLS), SNMPv3, HTTPS, certificates, access control list</p> <p>Data: Storage encryption, encrypted PDF and email (uses FIPS 140 validated cryptographic libraries from Microsoft), SSL/TLS (HTTPS), encrypted credentials</p> <p>Device: HP Sure Start Secure Boot (BIOS Integrity Checking with self-healing capability), intrusion detection (constant in-device monitoring for attacks), whitelisting (loads only known good code), embedded trusted platform module, HP Connection Inspector, security lock slot, USB port disablement</p> <p>Security management: Compatible with HP JetAdvantage Security Manager, device security syslog messages processed and accessible in ArcSight and Splunk SIEMs</p>
<b>Printer management</b>	HP Printer Assistant, HP Web Jetadmin Software, HP JetAdvantage Security Manager, HP SNMP Proxy Agent (part of HP Web Jetadmin), HP WS Pro Proxy Agent (part of HP Web Jetadmin), Printer Administrator Resource Kit for HP Universal Print Driver (Driver Configuration Utility – Driver Deployment Utility – Managed Printing Administrator)
<b>Compatible operating systems</b>	<p>Windows Client OS (32/64 bit): Windows 10, Windows 8.1, Windows 7 Ultimate</p> <p>Mobile OS: iOS, Android</p> <p>Mac: Apple® MacOS High Sierra v10.13, Apple® MacOS Mojave v10.14, Apple® MacOS Catalina v10.15</p> <p>For more information on supported operating systems, see <a href="http://support.hp.com">support.hp.com</a></p>
<b>Compatible network operating systems</b>	<p>Windows Server 2008 R2 64-bit, Windows Server 2008 R2 64-bit (SP1), Windows Server 2012 64-bit, Windows Server 2012 R2 64-bit, Windows Server 2016 64-bit, Windows Server 2019 64-bit, Citrix Server 6.5, Citrix XenApp &amp; XenDesktop 7.6, Novell iPrint server, Citrix Ready Kit Certification up to Citrix Server 7.18</p> <p>Citrix: for more information, see <a href="http://citrixready.citrix.com">citrixready.citrix.com</a></p> <p>Linux: for more information, see <a href="http://developers.hp.com/hp-linux-imaging-and-printing">developers.hp.com/hp-linux-imaging-and-printing</a></p> <p>Unix: for more information, see <a href="http://hp.com/go/unixmodelscripts">hp.com/go/unixmodelscripts</a></p>
<b>System requirements, PC</b>	2 GB available hard disk space, Internet connection or USB port, and Internet browser; for additional OS hardware requirements, see <a href="http://microsoft.com">microsoft.com</a>
<b>System requirements, Mac</b>	2 GB available hard drive space, Internet connection or USB port, and Internet browser; for additional OS hardware requirements, see <a href="http://apple.com">apple.com</a>
<b>Dimensions (W x D x H)</b>	<p>Minimum (all trays closed): 16.3 x 18.6 x 12 in (413.6 x 472 x 304.4 mm)</p> <p>Maximum (printer fully opened): 16.3 x 40.9 x 13 in (413.6 x 1038 x 330 mm)</p>
<b>Weight (with cartridges)</b>	41.7 lb (18.9 kg)
<b>What's in the box</b>	HP Color LaserJet Enterprise M455dn printer; Original HP Black LaserJet Toner Cartridge (~2,400 pages); <sup>26</sup> Original HP Cyan, Magenta, Yellow LaserJet Toner Cartridges (~2,100 pages each); <sup>26</sup> fixed-size paper tray guides; getting started guide; power cord
<b>Software included</b>	No software solutions are included in the box; see <a href="http://hp.com">hp.com</a> or <a href="http://123.hp.com">123.hp.com</a>
<b>Downloadable software</b>	<p>From <a href="http://123.hp.com">123.hp.com</a>: HP Easy Start (Guided Software Install for Windows and Mac)</p> <p>From <a href="http://hp.com">hp.com</a> for Windows OS: Full-solution software and drivers, basic-solution software and drivers, HP PCL6 XPS discrete print driver, product documentation and support</p> <p>From <a href="http://hp.com">hp.com</a> for Mac OS: HP Mac OS Print Driver, HP Easy Admin</p> <p>For Mobile OS (iOS, Android): See <a href="http://hp.com/go/businessmobileprinting">hp.com/go/businessmobileprinting</a></p> <p>From <a href="http://hp.com">hp.com</a> for printer administrators: Printer Administrator Resource Kit (Driver Configuration Utility – Driver Deployment Utility – Managed Printing Administrator), HP Universal Print Drivers PCL6 GDI &amp; PS GDI for Windows, SAP Print Drivers, HP Web Jetadmin, HP JetAdvantage Security Manager, HP Roam for Business, HPLIP Linux Printer Driver, Unix Model Script Printer Driver, UPD PCL6 / PS Printer Drivers</p>
<b>Warranty</b>	One-year, on-site repair, 24-hour / 7-days-a-week phone support

# HP Color LaserJet Enterprise M455dn environmental specifications

## HP Color LaserJet Enterprise M455dn

<b>Environmental ranges</b>	
Temperatures	Recommended: 59 to 80.6°F (15 to 27°C) Operating: 59 to 90.5°F (15 to 32.5°C) Storage: -4 to 104°F (-20 to 40°C)
Relative humidity (RH)	Recommended: 30 to 70% RH Operating: 10 to 90% RH
<b>Acoustic power emissions<sup>35</sup></b>	Ready mode: 4.5 B(A) Active printing: 5.9 B(A) @ 27 ipm
<b>Acoustic pressure emissions</b>	Ready mode: 33 dB(A) Active printing: 48 dB(A) @ 27 ipm
<b>Power specifications<sup>36</sup></b>	Blue Angel RAL-UZ 205; CECP; ENERGY STAR <sup>®</sup> certified; EPEAT <sup>®</sup> Silver <sup>37</sup>
Power supply required	110-volt input voltage: 110 to 127 VAC (±10%), 60 Hz (±3 Hz) 220-volt input voltage: 220 to 240 VAC (±10%), 50/60Hz (±3 Hz) (Not dual voltage; power supply varies by part number with # Option code identifier.)
Power consumption <sup>38</sup>	574 watts (active printing), 16.7 watts (ready), 1.1 watts (sleep), 0.08 watts (auto-off/manual-on), 0.08 watts (manual off)
Typical Electricity Consumption (TEC) <sup>39</sup>	0.437 kWh/week (ENERGY STAR <sup>®</sup> 3.0); 1.105 kWh/week (Blue Angel)
Energy-saving features	HP Auto-On/Auto-Off Technology; Instant-On Technology; Instant-On Copy
<b>Environmental specifications</b>	Mercury-free
<b>Safety approvals and requirements</b>	IEC 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; Low Voltage Directive 2014/35/EU with CE Mark (Europe); GS Certificate (Germany, Europe); UL/cUL Listed and UC CoC (US/Canada); CAN/CSA C22.2 No. 60950-1-07 2nd Ed. 2011-12; compliance with laser safety standards 21 CFR 1040.10 and 1040.11 except for deviations pursuant to laser notice No. 50, dated June 24, 2007; other safety approvals as required by individual countries
<b>Electromagnetic emission standard</b>	CISPR 22:2008 (International) Class A, CISPR 32:2012 (International)/ EN 55032:2012, CISPR 35:2016 (International)/ EN 55035:2017, EN 55024:2010 +A1:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, FCC CFR 47 Part 15 Class A, ICES-003, Issue 6 Class A. Other EMC approvals as required by individual countries

# HP Color LaserJet Enterprise MFP M480f technical specifications

## HP Color LaserJet Enterprise MFP M480f

<b>Product number</b>	3QA55A
<b>Control panel</b>	4.3-inch (10.9 cm) color touchscreen
<b>Print speed<sup>13</sup></b>	Simplex (letter/A4): Up to 29/27 ppm, black and color Duplex (letter/A4): Up to 25/24 ipm, black and color
<b>Copy speed</b>	Simplex (letter/A4): Up to 28/27 cpm, black and color Duplex (letter/A4): Up to 25/24 cpm, black and color
<b>Scan speed<sup>14</sup></b>	Simplex (letter/A4): Up to 31/29 ppm, black; up to 21/20 ppm, color Duplex (letter/A4): Up to 49/46 ipm, black; up to 37/35 ipm, color
<b>First page out<sup>11,12</sup></b>	From ready mode (letter/A4): As fast as 9.3/9.5 seconds, black; 10.9/11.0 seconds, color From sleep mode (letter/A4): As fast as 10.9/11.0 seconds, black; 12.0/12.1 seconds, color
<b>First copy out</b>	From ready mode (letter/A4): As fast as 9.5/9.6 seconds, black; 11.2/11.3 seconds, color From sleep mode (letter/A4): As fast as 11.1/11.2 seconds, black; 12.6/12.7 seconds, color
<b>Print resolution</b>	Up to 600 x 600 dpi (normal), up to 1200 x 1200 dpi (fine lines)
<b>Features</b>	
Printing	Print preview, duplex printing, print multiple pages per sheet (2, 4, 6, 9, 16), collation, watermarks, store print jobs, easy-access USB
Scanning	Flatbed scanner up to 8.5 x 11.7 in (216 x 297 mm); optimize text/picture; image adjustments; job build; output quality setting; selectable scan resolution 75 to 600 dpi; auto detect color; edge erase; job notification; blank page suppression; HP Quick Sets; scan resolution up to 600 x 600 dpi
Digital sending	Standard: Scan to Email; Save-to-Network Folder; Save-to-USB Drive; Send to FTP; Send to Internet Fax; Local Address Book; SMTP over SSL; Blank Page Removal; Edge Erase; Auto Color Sense; Auto Crop to Content; Compact PDF Optional: Authentication; HP Digital Sending Software (Optional); Digital Fax (send to LAN, Internet); Local Address Book; OCR
Copying	Auto scale; reduce/enlarge from scanner glass (25 to 400 percent) or ADF (25 to 200 percent); collate; auto color detection; two-sided copying; image adjustments (darkness, background cleanup, sharpness); job build; copy resolution up to 600 x 600 dpi
Faxing	Fax speed up to 33.6 kbps; stored faxes; fax archiving; fax forwarding; scale to fit; fax address book; LAN/Internet fax; fax number confirmation; holiday fax schedule; fax resolution up to 203 x 98 dpi (standard); 203 x 196 dpi (fine); 300 x 300 dpi (best)
<b>Processor</b>	800 MHz
<b>Memory</b>	2 GB
<b>Storage</b>	16 GB eMMC
<b>Durability ratings</b>	
RMPV <sup>33</sup>	900 to 4,800 pages
RMSV	900 to 4,800 pages
Duty cycle	Up to 55,000 pages
<b>Media specifications</b>	
Input capacity	Up to 300 sheets standard (50-sheet multipurpose tray, 250-sheet input tray) Up to 850 sheets maximum (with optional 550-sheet tray)
Output capacity	Up to 150 sheets
Two-sided printing	Automatic (default)
Media sizes	<ul style="list-style-type: none"> <li>Tray 1: letter, legal, oficio, executive, statement, 4 x 6, 3 x 5, 5 x 7, 5 x 8, postcard (JIS), double postcard (JIS), 8.5 x 13, envelope (commercial No. 9, No. 10, Monarch); A4, RA4, A5, B5 (JIS), B6 (JIS), 10 x 15 cm, A6, 16K, envelopes (B5, C5 ISO, C6, DL ISO); custom: 3 x 5 to 8.5 x 14 in (76 x 127 to 216 x 356 mm)</li> <li>Tray 2 and (optional) Tray 3: letter, executive, statement, 4 x 6, 5 x 7, 5 x 8, double postcard (JIS); A4, RA4, A5, B5 (JIS), B6 (JIS), 10x15 cm, A6, 16K; custom: 3.9 x 5.8 to 8.5 x 14 in (98 x 148 to 216 x 356 mm)</li> </ul>
Media weights	<ul style="list-style-type: none"> <li>Tray 1: 16 to 47 lb (60 to 176 g/m<sup>2</sup>) plain paper, up to 52 lb (200 g/m<sup>2</sup>) glossy photo papers</li> <li>Tray 2: 16 to 43 lb (60 to 163 g/m<sup>2</sup>) plain paper, up to 52 lb (200 g/m<sup>2</sup>) glossy photo papers</li> <li>Tray 3 (optional): 16 to 43 lb (60 to 163 g/m<sup>2</sup>) plain paper, up to 40 lb (150 g/m<sup>2</sup>) glossy photo papers</li> <li>Automatic duplexer: 16 to 43 lb (60 to 163 g/m<sup>2</sup>)</li> </ul>
Media types	Paper (bond, brochure, colored, glossy, letterhead, photo, plain, preprinted, prepunched, recycled, rough), postcards, labels, envelopes
<b>Print languages</b>	HP PCL 6, HP PCL 5, HP PostScript level 3 emulation, native PDF printing (v 1.7), Apple AirPrint™

# HP Color LaserJet Enterprise MFP M480f technical specifications

## HP Color LaserJet Enterprise MFP M480f

<b>Fonts</b>	105 internal TrueType fonts scalable in HP PCL, 92 internal scalable fonts in HP PostScript Level 3 emulation (Euro symbol built-in); 1 internal Unicode Font (Andale Mono World Type); 2 Internal Windows Vista 8 fonts (Calibri, Cambria); additional font solutions available via third-party flash memory cards; HP LaserJet fonts and IPDS Emulation available at <a href="http://hp.com/go/laserjetfonts">hp.com/go/laserjetfonts</a>
<b>Connectivity</b>	2 Hi-Speed USB 2.0 Host; 1 Hi-Speed USB 2.0 Device; 1 Gigabit Ethernet 10/100/1000T network; 1 Fax
<b>Mobile printing</b>	HP ePrint; Apple AirPrint™; Mopria™ Certified; Wi-Fi Direct® Printing; NFC Touch-to-Print (optional); HP Roam for Business capable for easy printing; <sup>31</sup> PrinterOn Print
<b>Network capabilities</b>	Yes, via HP Jetdirect Ethernet embedded print server (standard), which supports: 10Base-T, 100Base-Tx, 1000Base-T; 802.3az (EEE) support on Fast Ethernet and Gig Links; IPsec (standard); 802.11a/b/g/n wireless networking (optional); second Ethernet port (optional)
<b>Network protocols</b>	Via built-in networking solution: TCP/IP, IPv4, IPv6; Print: TCP-IP port 9100 Direct Mode, LPD, Web Services Printing, IPP 2.0, Apple AirPrint™, HP ePrint; Discovery: SLP, Bonjour, Web Services Discovery; IP Config: IPv4 (BootP, DHCP, AutoIP, Manual), IPv6 (Stateless Link-Local and via Router, Statefull via DHCPv6); Management: SNMPv2/v3, HTTP/HTTPS, Syslog; Security: SNMPv3, SSL Cert Management, IPsec (IKEv1 and IKEv2), Firewall, 802.1x
<b>Security management</b>	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, 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 and email (uses FIPS 140 validated cryptographic libraries from Microsoft), SSL/TLS (HTTPS), encrypted credentials  Device: HP Sure Start Secure Boot (BIOS integrity checking with self-healing capability), intrusion detection (constant in-device monitoring for attacks), whitelisting (loads only known good code), embedded trusted platform module, HP Connection Inspector, security lock slot, USB port disablement  Security management: Compatible with HP JetAdvantage Security Manager, Device Security Syslog Messages processed and accessible in ArcSight and Splunk SIEMs
<b>Printer management</b>	HP Printer Assistant, HP Web Jetadmin Software, HP JetAdvantage Security Manager, HP SNMP Proxy Agent (part of HP Web Jetadmin), HP WS Pro Proxy Agent (part of HP Web Jetadmin), Printer Administrator Resource Kit for HP Universal Print Driver (Driver Configuration Utility – Driver Deployment Utility – Managed Printing Administrator)
<b>Compatible operating systems</b>	Windows Client OS (32/64 bit): Windows 10, Windows 8.1, Windows 7 Ultimate  Mobile OS: iOS, Android  Mac: Apple® MacOS High Sierra v10.13, Apple® MacOS Mojave v10.14, Apple® MacOS Catalina v10.15  For more information on supported operating systems, see <a href="http://support.hp.com">support.hp.com</a>
<b>Compatible network operating systems</b>	Windows Server 2008 R2 64-bit, Windows Server 2008 R2 64-bit (SP1), Windows Server 2012 64-bit, Windows Server 2012 R2 64-bit, Windows Server 2016 64-bit, Windows Server 2019 64-bit, Citrix Server 6.5, Citrix XenApp & XenDesktop 7.6, Novell iPrint server, Citrix Ready Kit Certification up to Citrix Server 7.18 Citrix: for more information, see <a href="http://citrixready.citrix.com">citrixready.citrix.com</a> Linux: for more information, see <a href="http://developers.hp.com/hp-linux-imaging-and-printing">developers.hp.com/hp-linux-imaging-and-printing</a> Unix: for more information, see <a href="http://hp.com/go/unixmodelscripts">hp.com/go/unixmodelscripts</a>
<b>System requirements, PC</b>	2 GB available hard disk space, Internet connection or USB port, and Internet browser; for additional OS hardware requirements, see <a href="http://microsoft.com">microsoft.com</a>
<b>System requirements, Mac</b>	2 GB available hard drive space, Internet connection or USB port, and Internet browser; for additional OS hardware requirements, see <a href="http://apple.com">apple.com</a>
<b>Dimensions (W x D x H)</b>	Minimum (all trays closed): 16.4 x 18.6 x 15.7 in (415.4 x 472 x 399.8 mm) Maximum (printer fully opened): 16.4 x 44.3 x 25.8 in (415.4 x 1124.4 x 656 mm)
<b>Weight (with cartridges)</b>	51.2 lb (23.2 kg)
<b>What's in the box</b>	HP Color LaserJet Enterprise MFP M480f printer; Original HP Black LaserJet Toner Cartridge (~2,400 pages); <sup>26</sup> Original HP Cyan, Magenta, Yellow LaserJet Toner Cartridges (~2,100 pages each); <sup>26</sup> fixed-size paper tray guides; getting started guide; power cord
<b>Software included</b>	No software solutions are included in the box; see <a href="http://hp.com">hp.com</a> or <a href="http://123.hp.com">123.hp.com</a>
<b>Downloadable software</b>	From <a href="http://123.hp.com">123.hp.com</a> : HP Easy Start (Guided Software Install for Windows and Mac)  From <a href="http://hp.com">hp.com</a> for Windows OS: Full-solution software and drivers, basic-solution software and drivers, HP PCL6 XPS discrete print driver, product documentation and support  From <a href="http://hp.com">hp.com</a> for Mac OS: HP Mac OS Print Driver, HP Easy Admin  For Mobile OS (iOS, Android): See <a href="http://hp.com/go/businessmobileprinting">hp.com/go/businessmobileprinting</a>  From <a href="http://hp.com">hp.com</a> for printer administrators: Printer Administrator Resource Kit (Driver Configuration Utility – Driver Deployment Utility – Managed Printing Administrator), HP Universal Print Drivers PCL6 GDI & PS GDI for Windows, SAP Print Drivers, HP Web Jetadmin, HP JetAdvantage Security Manager, HP Roam for Business, HPLIP Linux Printer Driver, Unix Model Script Printer Driver, UPD PCL6 / PS Printer Drivers
<b>Warranty</b>	One-year, on-site repair, 24-hour / 7-days-a-week phone support

# HP Color LaserJet Enterprise MFP M480f environmental specifications

## HP Color LaserJet Enterprise MFP M480f

<b>Environmental ranges</b>	
Temperatures	Recommended: 59 to 80.6°F (15 to 27°C) Operating: 59 to 90.5°F (15 to 32.5°C) Storage: -4 to 104°F (-20 to 40°C)
Relative humidity (RH)	Recommended: 30 to 70% RH Operating: 10 to 90% RH
<b>Acoustic power emissions</b>	Ready mode: 3.6 B(A) Active printing: 6.1 B(A) printing at 27 ipm Active scanning: 6.0 B(A) scanning at 24 ipm
<b>Acoustic pressure emissions<sup>35</sup></b>	Ready mode: 20 dB(A) Active printing: 49 dB(A) printing at 27 ipm Active scanning: 46 dB(A) scanning at 24 ipm
<b>Power specifications<sup>36</sup></b>	Blue Angel DE-UZ 205; CECP; ENERGY STAR® certified; EPEAT® Silver <sup>37</sup>
Power supply required	110-volt input voltage: 110 to 127 VAC (±10%), 60 Hz (±3 Hz) 220-volt input voltage: 220 to 240 VAC (±10%), 50/60Hz (±3 Hz) (Not dual voltage; power supply varies by part number with # Option code identifier.)
Power consumption <sup>38</sup>	581 watts (active printing), 21.9 watts (ready), 1.0 watts (sleep), 0.08 watts (auto-off/manual-on), 0.08 watts (manual off)
Typical Electricity Consumption (TEC) <sup>39</sup>	0.425 kWh/week (ENERGY STAR® 3.0); 1.051 kWh/week (Blue Angel)
Energy-saving features	HP Auto-On/Auto-Off Technology; Instant-On Technology; Instant-On Copy
<b>Environmental specifications</b>	Mercury free
<b>Safety approvals and requirements</b>	IEC 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; EN 62471:2008/IEC 62471:2006; Low Voltage Directive 2014/35/EU with CE Mark (Europe); GS Certificate (Germany, Europe); UL/cUL Listed and UC CoC (US/Canada); CAN/CSA C22.2 No. 60950-1-07 2nd Ed. 2011-12; compliance with laser safety standards 21 CFR 1040.10 and 1040.11 except for deviations pursuant to laser notice No. 50, dated June 24, 2007; other safety approvals as required by individual countries
<b>Electromagnetic emission standard</b>	CISPR 22:2008 (International) Class A, CISPR 32:2012 (International)/ EN 55032:2012, CISPR 35:2016 (International)/ EN 55035:2017, EN 55024:2010 +A1:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, FCC CFR 47 Part 15 Class A, ICES-003, Issue 6 Class A. Other EMC approvals as required by individual countries
<b>Telecom compliance certifications</b>	Telecom Wired: FCC Rules and Regulations 47 CFR Part 68. ES 203 021-1 v2.1.1; ES 203 021-2 v2.1.2; ES 203 021-3 v2.1.2. Other Telecom approvals as required by individual countries



# Ordering information

<b>Products</b>	HP Color LaserJet Enterprise M455dn	3PZ95A
	HP Color LaserJet Enterprise MFP M480f	3QA55A
<b>Supplies</b>	Original HP 414A Black LaserJet Toner Cartridge (~2,400 pages) <sup>26</sup>	W2020A
	Original HP 414A Cyan LaserJet Toner Cartridge (~2,100 pages) <sup>26</sup>	W2021A
	Original HP 414A Yellow LaserJet Toner Cartridge (~2,100 pages) <sup>26</sup>	W2022A
	Original HP 414A Magenta LaserJet Toner Cartridge (~2,100 pages) <sup>26</sup>	W2023A
	Original HP 414X High Yield Black LaserJet Toner Cartridge (~7,500 pages) <sup>26</sup>	W2020X
	Original HP 414X High Yield Cyan LaserJet Toner Cartridge (~6,000 pages) <sup>26</sup>	W2021X
	Original HP 414X High Yield Yellow LaserJet Toner Cartridge (~6,000 pages) <sup>26</sup>	W2022X
	Original HP 414X High Yield Magenta LaserJet Toner Cartridge (~6,000 pages) <sup>26</sup>	W2023X
<b>Accessories</b>	HP LaserJet 550-Sheet Feeder Tray	CF404A
	HP Jetdirect 3100w BLE/NFC/Wireless Accessory	3JN69A
	HP Jetdirect LAN Accessory	8FP31A
	HP Accessibility Assistant	2MU47A
	HP Accessibility Kit	2TD64A
	HP Foreign Interface Harness	B5L31A
	HP Legic Reader	4QL32A
	HP USB Universal Card Reader	X3D03A
	HP HIP2 Keystroke Reader	Y7C05A
	HP SmartCard NIPRNet Solution for U.S. Government	CC543B
<b>Solutions</b>	HP Web Jetadmin: <a href="http://hp.com/go/wja">hp.com/go/wja</a>	
	HP Universal Print Driver: <a href="http://hp.com/go/upd">hp.com/go/upd</a>	
	HP JetAdvantage Security Manager: <a href="http://hp.com/go/securitymanager">hp.com/go/securitymanager</a>	
	HP LaserJet fonts, barcodes, and IPDS Emulation available at <a href="http://hp.com/go/laserjetfonts">hp.com/go/laserjetfonts</a>	
	To learn more about available infrastructure, management, and workflow solutions, visit <a href="http://hp.com/go/printingsolutions">hp.com/go/printingsolutions</a>	

# Appendix A: Control panel features

## Upgrade to a modern interface

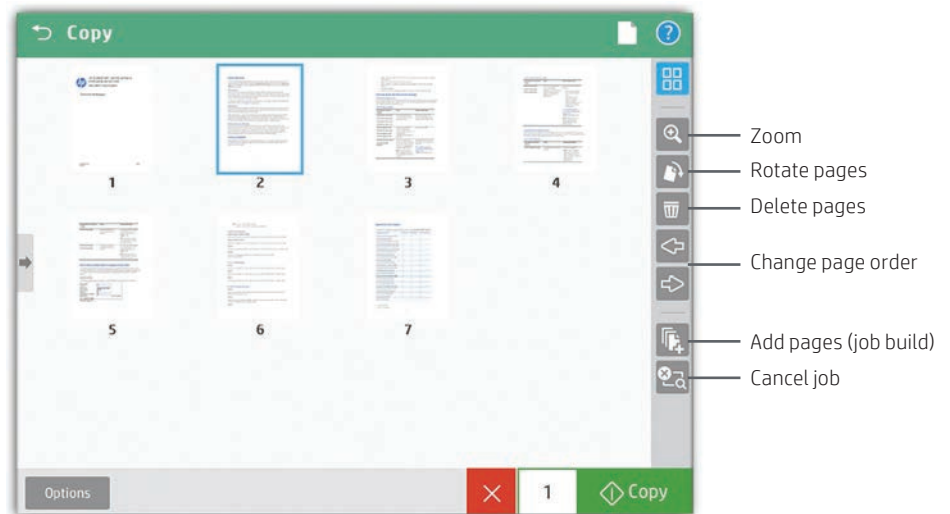
The HP LaserJet Enterprise M455dn and MFP M480f are powered by HP FutureSmart 5 firmware. The modern 2.7-inch (6.9 cm) color graphics display on the M455dn and 4.3-inch (10.9 cm) color touchscreen on the MFP M480f keep things simple and intuitive across your fleet of Enterprise devices. A scalable control panel interface improves future extensibility and allows for customization, along with a robust set of apps and usability features. You can even customize with your own wallpaper image and company logo. The new HP 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. Additional apps are easily accessed on the MFP M480f by swiping right to left, like with a smartphone or tablet.

## Edit jobs right at the MFP

The control panel on the MFP M480f features an enhanced image preview—now for both copies and scans. You can preview and edit scans before sending them, right from the MFP's 4.3-inch (10.9 cm) color touchscreen. You can apply changes (like rotating) to a single page, or to multiple pages at once. Batch separation allows users to create separate PDF or PDF/A files from scanned pages.



The new MFP user interface enables swipe, rotate, and drag-and-drop capabilities



You can start a **preview** prior to committing to the copy job

1. HP's most advanced embedded security features are available on HP Managed and Enterprise devices with HP FutureSmart firmware 4.5 or above. Claim based on HP review of 2019 published features of competitive in-class printers. Only HP offers a combination of security features to automatically detect, stop, and recover from attacks with a self-healing reboot, in alignment with NIST SP 800-193 guidelines for device cyber resiliency. For a list of compatible products, visit [hp.com/go/PrintersThatProtect](http://hp.com/go/PrintersThatProtect). For more information, visit [hp.com/go/PrinterSecurityClaims](http://hp.com/go/PrinterSecurityClaims).
2. Some features enabled by future HP FutureSmart firmware upgrades may not be available on older devices, if for example, physical product characteristics limit the functionality of the new feature.
3. HP Web Jetadmin is free and available for download at [hp.com/go/webjetadmin](http://hp.com/go/webjetadmin).
4. Some features require additional purchase. A FutureSmart service pack update may be required to activate security features. Learn more at [hp.com/go/printsecurity](http://hp.com/go/printsecurity).
5. Use of the HP Trusted Platform Module may require a firmware upgrade.
6. Instant threat notifications can appear on the device control panel when a potential threat occurs from malicious intent or there is a bug or vulnerability in the firmware code of the device.
7. HP JetAdvantage Security Manager must be purchased separately. To learn more, please visit [hp.com/go/securitymanager](http://hp.com/go/securitymanager).
8. HP JetAdvantage Secure Print works with any network-connected printer or MFP. On-device authentication is available for many HP LaserJet, PageWide, and OfficeJet Pro devices and selected non-HP devices. Some devices may require a firmware upgrade. Internet connection required for cloud storage and retrieval of print jobs. Print job release from a mobile device requires a network connection and QR code. For more information and a list of supported printers and MFPs, see [hp.com/go/JetAdvantageSecurePrint](http://hp.com/go/JetAdvantageSecurePrint).
9. Color access control capabilities vary from device to device.
10. The HP Universal Print Driver is available for download at no additional charge at [hp.com/go/upd](http://hp.com/go/upd).
11. First page out in ready mode measured using ISO/IEC 17629. For more information, see [hp.com/go/printerclaims](http://hp.com/go/printerclaims). Exact speed varies depending on the system configuration, software application, driver, and document complexity.
12. First page out in sleep mode measured after 15 minutes in sleep. Exact speed varies depending on the system configuration, software application, driver, document complexity, and time in sleep.
13. Print speed measured using ISO/IEC 24734 Feature Performance Test, excludes first set of test documents. For more information, see [hp.com/go/printerclaims](http://hp.com/go/printerclaims). Exact speed varies depending on the system configuration, software application, driver, and document complexity.
14. Scan speeds measured from ADF. Actual processing speeds may vary depending on scan resolution, network conditions, computer performance, and application software.
15. Requires an Internet connection to the printer. Services may require registration. App availability varies by country, language, and agreements. For details, see [hpconnected.com](http://hpconnected.com).
16. Default duplex printing dependent upon country setup specifications.
17. HP Auto-On/Auto-Off Technology capabilities subject to printer and settings. Firmware upgrade required.
18. HP LaserJet products with Instant-On Technology use an innovative, quick-heating fuser system that warms rapidly and cools quickly, helping you conserve energy compared with products that use traditional fusing.
19. HP Planet Partners program availability varies. For more information, visit [hp.com/recycle](http://hp.com/recycle).
20. Based on the reduced energy use of HP LaserJet printers and cartridges with JetIntelligence introduced since 2015 compared to previous HP toner versions without JetIntelligence, using ENERGY STAR methodology.
21. High-yield cartridges are not included in printer purchase; purchase separately.
22. 100% of Original HP toner cartridges contain between 5% and 45% post-consumer or post-industrial recycled content. Does not include toner bottles. See [hp.com/go/recycledcontent](http://hp.com/go/recycledcontent) for list.
23. An HP printing system consists of HP printer, HP paper, and Original HP supply. Blue Angel DE-UZ 205 emissions criteria or earlier versions applicable when printing system launched.
24. HP Office-class printing systems include Enterprise-class devices with FutureSmart firmware 4.5 or above, Pro-class devices, and their respective Original HP toner, PageWide, and ink cartridges. Does not include HP integrated printhead ink cartridges. See [h20195.www2.hp.com/v2/GetDocument.aspx?docname=4AA6-8438ENW](http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=4AA6-8438ENW) and [hp.com/go/SuppliesSecurityClaims](http://hp.com/go/SuppliesSecurityClaims).
25. Digital supply-chain tracking, hardware, and packaging security features vary locally by SKU.
26. Average declared yields based on ISO/IEC 19798 and continuous printing. Actual yields vary considerably based on images printed and other factors. For details, see [hp.com/go/toneryield](http://hp.com/go/toneryield).
27. Wireless performance is dependent on physical environment and distance from access point and may be limited during active VPN connections.
28. Wireless direct printing can be added with purchase of the HP Jetdirect 3100w BLE/NFC/Wireless Accessory (3JN69A). For details, see [hp.com/go/businessmobileprinting](http://hp.com/go/businessmobileprinting).
29. NFC touch-to-print is optional and can be added with purchase of the HP Jetdirect 3100w BLE/NFC/Wireless Accessory (3JN69A). Mobile device must support Near Field Communication (NFC)-enabled printing. For more information, see [hp.com/go/businessmobileprinting](http://hp.com/go/businessmobileprinting).
30. Wireless operations are compatible with 2.4GHz operations only. App or software and HP ePrint account registration may also be required. Some features require purchase of an optional accessory. Learn more at [hp.com/go/mobileprinting](http://hp.com/go/mobileprinting).
31. To enable HP Roam for Business, some devices may require firmware to be upgraded and an optional accessory to add Bluetooth Low Energy (BLE) beaconing capabilities. Subscription may be required. For more information, visit [hp.com](http://hp.com).
32. An administrator must enable the easy-access USB port before use.
33. HP recommends that the number of pages per month of imaged output be within the stated range for optimum device performance, based on factors including supplies replacement intervals and device life over an extended warranty period.
34. 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](http://hp.com/go/mobileprinting).
35. Configuration tested: base model, simplex printing, A4 paper at an average of 27 ipm (M455dn) or 24 ipm (M480f).

36. 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. ENERGY STAR value typically based on measurement of 115V device and 230V for Blue Angel.
37. EPEAT registered where applicable. EPEAT registration varies by country. See [epeat.net](http://epeat.net) for registration status by country.
38. 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.
39. Typical Electricity Consumption (TEC) rating represents the typical electricity consumed by a product during one week, measured in kilowatt-hours (kWh).

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