

ISO/IEC 24734 Printing Productivity Report: Office Category

Full Detailed Test Report - LETTER
HP LaserJet MFP M28w

Printing device and settings	
Test Start Date and Time	12/7/2018 13:13
Tester	Susan
Machine name/model	HP LaserJet MFP M28w
Colour or B&W	B&W
FW Version	20171101
Temperature and Humidity	75 degF / 24 degC 25.0 %rH
Voltage	220V
Test End Date and Time	12/12/2018 9:12

Item	Value	
Mode and Setting	Driver Version	46.1.2614
	Media/Quality Setting	Default / Default
	Simplex B&W Settings	default
	Duplex B&W Settings	default
	Setting N set count	Application
Paper Path	Collating function	Activated (application)
	Paper Sending Direction	Default
	Paper Size Setting	Default
	Paper Feeding	Tray 2
	Paper Exit	Standard Exit Tray
	Output Orientation	Default (face down)
Paper	Duplexing Unit (Yes/No)	No
	Paper Manufacturer	HP / Xerox
	Paper Weight	20lb / 75 g/m2
	Paper Size	Letter / A4
	Paper type/name	HP Multipurpose Ultra White / HP Office

Summary Report: Letter			
Office Category Test for B&W Device		FSOT (seconds)	ESAT (ipm)
B&W	Simplex	17.24	19.18
	Duplex	N/A	N/A

Notes

- 1) All printing device and driver settings were default mode.
- 2) For the B/W results, the print driver was set to "print in B/W".
- 3) For more information see <http://www.hp.com/go/printerclaims>.
- 4) Port monitor not configured to follow device if the IP address changes.

Detailed Report: LETTER						
Office Category Test	FSOT (secs)	EFTP (ipm)			ESAT (ipm)	
		1 set only (1 set)	1 set + 30sec (# of sets)	1 set + 4min (# of sets)		
Color Mode	Simplex - Adobe Reader		(1 set)			
	Simplex - Word		(1 set)			
	Simplex - Excel		(1 set)			
	Simplex - Average					
	Duplex - Adobe Reader	N/A	N/A	N/A	N/A	
	Duplex - Word	N/A	N/A	N/A	N/A	
	Duplex - Excel	N/A	N/A	N/A	N/A	
	Duplex - Average	N/A	N/A	N/A	N/A	
B&W mode (optional for color device)	Simplex - Adobe Reader	17.69	13.56 (1 set)	17.45 (4 sets)	18.76 (21 sets)	19.18
	Simplex - Word	16.91	14.20 (1 set)	17.64 (4 sets)		19.20
	Simplex - Excel	17.11	14.02 (1 set)	17.57 (4 sets)		19.18
	Simplex - Average	17.24	13.92	17.55	18.8	19.18
	Duplex - Adobe Reader	N/A	N/A	N/A		N/A
	Duplex - Word	N/A	N/A	N/A		N/A
	Duplex - Excel	N/A	N/A	N/A		N/A
	Duplex - Average	N/A	N/A	N/A		N/A

Notes

- 1) All printing device and driver settings were default mode.
- 2) For the B/W results, the print driver was set to "print in B/W".
- 3) For more information see <http://www.hp.com/go/printerclaims>.
- 4) Port monitor not configured to follow device if the IP address changes.

Test System Parameters	
Item	Value
Computer	HP Compaq Elite 8300 Small Form Factor
Processor	Intel Core i7 -3770, 3.4 GHz
System Chip Set	Intel C216 Chipset Family SMBus Host Controller
System Board	system devices, default system BIOS
System Memory	4 GB
Hard Drive Subsystem	Standard disk drive (Seagate)
Video Subsystem	AMD Radeon HD 6350
Optical Drive	HP DVD A Dh16aCSHR ATA
I/O Subsystem	Builtin
USB Subsystem	USB 2.0/3.0
TCP/IP	USB 2.0
Operating System	Windows 7 64 Bit
Printing Applications	Microsoft Office 2010
Microsoft Office	Office 2010
Adobe Reader	10
Test files and location	Office category files, hard drive

ISO/IEC 24734 Printing Productivity Report: Office Category

Full Detailed Test Report - A4
HP LaserJet MFP M28w

Printing device and settings	
Test Start Date and Time	12/7/2018 13:13
Tester	Susan
Machine name/model	HP LaserJet MFP M28w
Colour or B&W	B&W
FW Version	20171101
Temperature and Humidity	75 degF / 24 degC 25.0 %rH
Voltage	220V
Test End Date and Time	12/12/2018 9:12

Item	Value	
Mode and Setting	Driver Version	46.1.2614
	Media/Quality Setting	Default / Default
	Simplex B&W Settings	default
	Duplex B&W Settings	default
	Setting N set count	Application
Paper Path	Collating function	Activated (application)
	Paper Sending Direction	Default
	Paper Size Setting	Default
	Paper Feeding	Tray 2
	Paper Exit	Standard Exit Tray
	Output Orientation	Default (face down)
Paper	Duplexing Unit (Yes/No)	No
	Paper Manufacturer	HP / Xerox
	Paper Weight	20lb / 75 g/m2
	Paper Size	Letter / A4
	Paper type/name	HP Multipurpose Ultra White / HP Office

Summary Report: A4			
Office Category Test for B&W Device		FSOT (seconds)	ESAT (ipm)
B&W	Simplex	17.86	18.33
	Duplex	N/A	N/A

Notes

- 1) All printing device and driver settings were default mode.
- 2) For the B/W results, the print driver was set to "print in B/W".
- 3) For more information see <http://www.hp.com/go/printerclaims>.
- 4) Port monitor not configured to follow device if the IP address changes.

Detailed Report: A4						
Office Category Test	FSOT (secs)	EFTP (ipm)			ESAT (ipm)	
		1 set only (1 set)	1 set + 30sec (# of sets)	1 set + 4min (# of sets)		
Colour Mode	Simplex - Adobe Reader		(1 set)			
	Simplex - Word		(1 set)			
	Simplex - Excel		(1 set)			
	Simplex - Average					
	Duplex - Adobe Reader	N/A	N/A	N/A	N/A	
	Duplex - Word	N/A	N/A	N/A	N/A	
	Duplex - Excel	N/A	N/A	N/A	N/A	
	Duplex - Average	N/A	N/A	N/A	N/A	
B&W mode (optional for color device)	Simplex - Adobe Reader	18.28	13.13 (1 set)	16.66 (4 sets)	17.99 (21 sets)	18.33
	Simplex - Word	17.60	13.63 (1 set)	16.88 (4 sets)		18.35
	Simplex - Excel	17.70	13.55 (1 set)	16.82 (4 sets)		18.32
	Simplex - Average	17.9	13.43	16.78	18.0	18.33
	Duplex - Adobe Reader	N/A	N/A	N/A		N/A
	Duplex - Word	N/A	N/A	N/A		N/A
	Duplex - Excel	N/A	N/A	N/A		N/A
	Duplex - Average	N/A	N/A	N/A		N/A

Notes

- 1) All printing device and driver settings were default mode.
- 2) For the B/W results, the print driver was set to "print in B/W".
- 3) For more information see <http://www.hp.com/go/printerclaims>.
- 4) Port monitor not configured to follow device if the IP address changes.

Test System Parameters	
Item	Value
Computer	HP Compaq Elite 8300 Small Form Factor
Processor	Intel Core i7 -3770, 3.4 GHz
System Chip Set	Intel C216 Chipset Family SMBus Host Controller
System Board	system devices, default system BIOS
System Memory	4 GB
Hard Drive Subsystem	Standard disk drive (Seagate)
Video Subsystem	AMD Radeon HD 6350
Optical Drive	HP DVD A Dh16aCSHR ATA
I/O Subsystem	Builtin
USB Subsystem	USB 2.0/3.0
TCP/IP	USB 2.0
Operating System	Windows 7 64 Bit
Printing Applications	Microsoft Office 2010
Microsoft Office	Office 2010
Adobe Reader	10
Test files and location	Office category files, hard drive

ISO/IEC 24734 Printing Productivity Report: Office Category

Feature Performance Full Report - Office Feature Performance Test
HP LaserJet MFP M28w

Printing device and settings	
Test Start Date and Time	12/7/2018 13:13
Tester	Susan
Machine name/model	HP LaserJet MFP M28w
Colour or B&W	B&W
FW Version	20171101
Temperature and Humidity	75 degF / 24 degC 25.0 %rH
Voltage	220V
Test End Date and Time	12/12/2018 9:12

Item	Value	
Mode and Setting	Driver Version	46.1.2614
	Media/Quality Setting	Default / Default
	Simplex B&W Settings	default
	Duplex B&W Settings	default
	Setting N set count	Application
	Collating function	Activated (application)
Paper Path	Paper Sending Direction	Default
	Paper Size Setting	Default
	Paper Feeding	Tray 2
	Paper Exit	Standard Exit Tray
	Output Orientation	Default (face down)
Paper	Duplexing Unit (Yes/No)	No
	Paper Manufacturer	HP / Xerox
	Paper Weight	20lb / 75 g/m2
	Paper Size	Letter / A4
	Paper type/name	HP Multipurpose Ultra White / HP Office

ISO Print Productivity Report: Feature Performance Test Summary			
Printing Modes (Feature Adobe Reader - Office test file)		Feature Performance Ratio	
		FSOT (base) FSOT (feature)	ESAT (feature) ESAT (base)
A5, Landscape Feed, Simplex, Colour	Simplex		
A5, Portrait Feed, Simplex, Colour	Simplex		
Legal, Simplex, Colour	Simplex		
Legal, Duplex, Colour	Duplex		
A4, 1200 dpi, Simplex, Colour	Simplex		
Letter, 1200 dpi, Simplex, Colour	Simplex		
A4, General Office, Simplex, Colour	Simplex		
Letter, General Office, Simplex, Colour	Simplex		
A5, Landscape Feed, Simplex, B/W	Simplex		
A5, Portrait Feed, Simplex, B/W	Simplex	43%	39%
Legal, Simplex, B/W	Simplex		
Legal, Duplex, B/W	Duplex		
A4, 1200 dpi, Simplex, B/W	Simplex		
Letter, 1200 dpi, Simplex, B/W	Simplex		
A4, General Office, Simplex, B/W	Simplex		
Letter, General Office, Simplex, B/W	Simplex		

Notes
1) All printing device and driver settings were default mode.
2) Test conducted with 8-paper Office Feature Performance file.
3) For more information see <http://www.hp.com/go/printerclaims>.
4) Port monitor not configured to follow device if the IP address changes.

Feature Performance Full Report - Feature Printing Mode: 'Office' Feature Performance Test						
Printing Modes Feature Adobe Reader - Office test file (8-page)	Base Printing Mode		Feature Performance			
	FSOT Base	ESAT Base	1 set FSOT (secs)	1 set + 30 sec c ESAT (ipm)	FSOT (base) FSOT (feature)	ESAT (feature) ESAT (base)
A5, Landscape Feed, Simplex, Colour						
A5, Portrait Feed, Simplex, Colour						
Legal, Simplex, Colour						
Legal, Duplex, Colour						
A4, 1200 dpi, Simplex, Colour						
Letter, 1200 dpi, Simplex, Colour						
A4, General Office, Simplex, Colour						
Letter, General Office, Simplex, Colour						
A5, Landscape Feed, Simplex, B/W	31.82	18.15				
A5, Portrait Feed, Simplex, B/W	31.82	18.15	74.5	7.1	43%	39%
Legal, Simplex, B/W						
Legal, Duplex, B/W						
A4, 1200 dpi, Simplex, B/W	31.82	18.15				
Letter, 1200 dpi, Simplex, B/W						
A4, General Office, Simplex, B/W	31.82	18.15				
Letter, General Office, Simplex, B/W						

Notes
1) All printing device and driver settings were default mode.
2) Test conducted with 8-paper Office Feature Performance file.
3) For more information see <http://www.hp.com/go/printerclaims>.
4) Port monitor not configured to follow device if the IP address changes.

Test System Parameters		
Item	Value	
Test System	Computer	HP Compaq Elite 8300 Small Form Factor
	Processor	Intel Core i7 -3770, 3.4 GHz
	System Chip Set	Intel C216 Chipset Family SMBus Host Controller
	System Board	system devices, default system BIOS
	System Memory	4 GB
	Hard Drive Subsystem	Standard disk drive (Seagate)
	Video Subsystem	AMD Radeon HD 6350
	Optical Drive	HP DVD A DH16aCSHR ATA
	I/O Subsystem	Built-in
	USB Subsystem	USB 2.0/3.0
I/O	TCP/IP	USB 2.0
Software	Operating System	Windows 7 64 Bit
	Printing Applications	Microsoft Office 2010
	Microsoft Office	Office 2010
	Adobe Reader	10
	Test files and location	Office category files, hard drive

ISO/IEC 17629 First Print Out Time Report: Office Category

Full Detailed Test Report - LETTER

HP LaserJet MFP M28w

Printing device and settings	
Test Start Date and Time	11/5/2017 21:29
Tester	NIFeng
Machine name/model	HP LaserJet MFP M28w
Colour or B&W	B&W
FW Version	20171101
Configuration (options)	Default
Controller	11800
Printing device page count	Not Specified
Printing supplies page count	Not Specified
Temperature and Humidity	75 degF / 24 degC 25.0 %rH
Voltage	220V
Test End Date and Time	12/6/2018 2:43

Item	Value	
Mode and Setting	PDL and driver version	46.1.2614
	Print Quality mode	default
	B&W settings	default
Paper	Paper feed orientation	Short Edge
	Paper type setting	default
	Paper feeding	Standard cassette
Paper Path	Paper exit	Standard exit tray
	Output orientation	default (face up or face down)

ISO First Page Out Time Summary Report: Office Category

Summary Report: Letter

FPOT from Ready (seconds)	
B&W	7.93
Simplex	
Duplex	

Notes
 1) All printing device and driver settings were default mode.
 2) For the B/W results, the print driver was set to "print in B/W".
 3) For more information see <http://www.hp.com/go/printerclaims>.
 4) Port monitor not configured to follow device if the IP address changes.
 5) Page counts were collected after completion of the tests.

ISO First Page Out Time Report: Office Category

Detailed Report: LETTER

		Word (seconds)	Excel (seconds)	Adobe Reader (seconds)	Average (seconds)	Delay Time
Color Mode	FPOT from Ready - Simplex					
	FPOT from Ready - Duplex					
	FPOT from Sleep - Simplex			N/A		
	Recovery Time					
	FPOT from Off - Simplex					
	Warm-up Time					
B&W Mode	FPOT from Ready - Simplex	8.26	7.78	7.73	7.93	49 Seconds
	FPOT from Ready - Duplex					
	FPOT from Sleep - Simplex			7.93		61 Minutes
	Recovery Time			0.2		
	FPOT from Off - Simplex			23.59		
	Warm-up Time			15.86		

Notes
 1) All printing device and driver settings were default mode.
 2) For the B/W results, the print driver was set to "print in B/W".
 3) For more information see <http://www.hp.com/go/printerclaims>.
 4) Port monitor not configured to follow device if the IP address changes.
 5) Page counts were collected after completion of the tests.
 6) Details for FPOT from Sleep are shown below.

HP Data Table

Detailed Report: LETTER

		FPOT Avg (secs)	FPOT (secs) Iteration 1	FPOT (secs) Iteration 2	FPOT (secs) Iteration 3	Application	Delay Time
Color Mode	FPOT from Sleep	N/A	N/A	N/A	N/A	Adobe Reader	
	FPOT from Sleep (15 minutes) HP/Non ISO Test	N/A	N/A	N/A	N/A	Adobe Reader	
B&W Mode	FPOT from Sleep	7.93	7.91	7.94	N/A	Adobe Reader	61 Minutes
	FPOT from Sleep (15 minutes) HP/Non ISO Test	7.92	7.90	7.93	N/A	Adobe Reader	16 Minutes

Notes
 1) All printing device and driver settings were default mode.
 2) For the B/W results, the print driver was set to "print in B/W".
 3) DLP includes detailed iterations as data measurements may vary run to run.

Test System Parameters

Item	Value	
Test System	Computer	HP Z240 SFF Workstation
	Processor	Intel Core i7-6770, 3.4 GHz
	System Chip Set	Intel SKL/KBL Mobile/Desktop
	System Board	system devices, default system BIOS
	System Memory	8 GB
	Hard Drive Subsystem	Turbo Drive G2 256GB PCIe SSD
	Video Subsystem	Microsoft Basic Display Adaptor
	Optical Drive	HP HLDS DVDRW GUD1N
	I/O Subsystem	Builtin
	USB Subsystem	USB 2.0/3.0
Printing Device Connection	TCP/IP	USB 2.0
Software	Operating System	Windows 10 Enterprise 64 Bit (10240)
	Printing Applications	Microsoft Office 2016 Office 2016
	Print Driver	Reader DC

ISO/IEC 17629 First Print Out Time Report: Office Category

Full Detailed Test Report - A4

HP LaserJet MFP M28w

Printing device and settings		
Test Start Date and Time	11/5/2017 21:29	
Tester	NIFeng	
Machine name/model	HP LaserJet MFP M28w	
Colour or B&W	B&W	
FW Version	20171101	
Configuration (options)	Default	
Controller	11800	
Printing device page count	Not Specified	
Printing supplies page count	Not Specified	
Temperature and Humidity	75 degF / 24 degC 25.0 %rH	
Voltage	220V	
Test End Date and Time	12/6/2018 2:43	

Item	Value	
Mode and Setting	PDL and driver version	46.1.2614
	Print Quality mode	default
	B&W settings	default
	Paper feed orientation	Short Edge
Paper	Paper type setting	default
	Paper feeding	Standard cassette
Paper Path	Paper exit	Standard exit tray
	Output orientation	default (face up or face down)

ISO First Page Out Time Summary Report: Office Category

Summary Report: A4

FPOT from Ready (seconds)		
B&W	Simplex	8.21
	Duplex	

Notes

- 1) All printing device and driver settings were default mode.
- 2) For the B/W results, the print driver was set to "print in B/W".
- 3) For more information see <http://www.hp.com/go/printerclaims>.
- 4) Port monitor not configured to follow device if the IP address changes.
- 5) Page counts were collected after completion of the tests.

ISO First Page Out Time Report: Office Category

Detailed Report: A4						
		Word (seconds)	Excel (seconds)	Adobe Reader (seconds)	Average (seconds)	Delay Time
Color Mode	FPOT from Ready - Simplex					
	FPOT from Ready - Duplex					
	FPOT from Sleep - Simplex			N/A		
	Recovery Time					
	FPOT from Off - Simplex					
	Warm-up Time					
B&W Mode	FPOT from Ready - Simplex	8.73	7.98	7.90	8.21	49 Seconds
	FPOT from Ready - Duplex					
	FPOT from Sleep - Simplex			8.16		61 Minutes
	Recovery Time			0.3		
	FPOT from Off - Simplex			23.78		
	Warm-up Time			15.89		

Notes

- 1) All printing device and driver settings were default mode.
- 2) For the B/W results, the print driver was set to "print in B/W".
- 3) For more information see <http://www.hp.com/go/printerclaims>.
- 4) Port monitor not configured to follow device if the IP address changes.
- 5) Page counts were collected after completion of the tests.
- 6) Details for FPOT from Sleep are shown below.

HP Data Table

Detailed Report: A4

		FPOT Avg (secs)	FPOT (secs) Iteration 1	FPOT (secs) Iteration 2	FPOT (secs) Iteration 3	Application	Delay Time
Color Mode	FPOT from Sleep	N/A	N/A	N/A	N/A	Adobe Reader	
	FPOT from Sleep (15 minutes) HP/Non ISO Test	N/A	N/A	N/A	N/A	Adobe Reader	
B&W Mode	FPOT from Sleep	8.16	8.20	8.11	N/A	Adobe Reader	61 Minutes
	FPOT from Sleep (15 minutes) HP/Non ISO Test	8.15	8.14	8.15	N/A	Adobe Reader	16 Minutes

Notes

- 1) All printing device and driver settings were default mode.
- 2) For the B/W results, the print driver was set to "print in B/W".
- 3) DLP includes detailed iterations as data measurements may vary run to run.

Test System Parameters		
Item	Value	
Test System	Computer	HP Z240 SFF Workstation
	Processor	Intel Core i7 -6770, 3.4 GHz
	System Chip Set	Intel SKL/KBL Mobile/Desktop
	System Board	system devices, default system BIOS
	System Memory	8 GB
	Hard Drive Subsystem	Turbo Drive G2 256GB PCIe SSD
	Video Subsystem	Microsoft Basic Display Adaptor
	Optical Drive	HP HLDS DVDRW GUD1N
	I/O Subsystem	Builtin
	USB Subsystem	USB 2.0/3.0
Printing Device Connection	TCP/IP	USB 2.0
Software	Operating System	Windows 10 Enterprise 64 Bit (10240)
	Printing Applications	Microsoft Office 2016 Office 2016
	Print Driver	Reader DC