

ISO/IEC 24734 Printing Productivity Report: Office Category

Full Detailed Test Report - LETTER
HP LaserJet Pro M304a

Printing device and settings	
Test Start Date and Time	5/13/2019 13:50
Tester	Wing
Machine name/model	HP LaserJet Pro M304a
Colour or B&W	B&W
FW Version	002.1916A
Temperature and Humidity	77 degF / 25 degC 88.0 %rH
Voltage	220V
Test End Date and Time	5/23/2019 10:31

Item	Value	
Mode and Setting	Driver Version	48.2.4515
	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)
	Duplexing Unit (Yes/No)	No
Paper	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	11.64	37.38
	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)	1 set + 30sec	
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	11.30	21.23 (1 set) 33.57 (7 sets)	36.61 (39 sets)	37.39	
	Simplex - Word	12.10	19.84 (1 set) 33.12 (7 sets)		37.39	
	Simplex - Excel	11.52	20.83 (1 set) 33.52 (7 sets)		37.37	
	Simplex - Average	11.64	20.63 (1 set) 33.40 (7 sets)	36.6	37.38	
	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 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 DVD-RW GUD1N
I/O Subsystem	Builtin
USB Subsystem	USB 2.0/3.0
TCP/IP	USB 2.0
Operating System	Win 10 Enterprise 64 Bit (10240)
Printing Applications	Microsoft Office Word 2016
	Acrobat Reader DC
	Microsoft Office Excel 2016
Print Driver	Not Specified
Test files and location	Office category files, hard drive

ISO/IEC 24734 Printing Productivity Report: Office Category

Full Detailed Test Report - A4
HP LaserJet Pro M304a

Printing device and settings	
Test Start Date and Time	5/13/2019 13:50
Tester	Wing
Machine name/model	HP LaserJet Pro M304a
Colour or B&W	B&W
FW Version	002.1916A
Temperature and Humidity	77 degF / 25 degC 88.0 %rH
Voltage	220V
Test End Date and Time	5/23/2019 10:31

Item	Value	
Mode and Setting	Driver Version	48.2.4515
	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)
	Duplexing Unit (Yes/No)	No
Paper	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	12.10	35.63
	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	11.59	20.70 (1 set)	32.21 (7 sets)	34.94 (37 sets)	35.61
	Simplex - Word	12.63	18.99 (1 set)	31.61 (7 sets)		35.63
	Simplex - Excel	12.07	19.88 (1 set)	31.97 (7 sets)		35.67
	Simplex - Average	12.1	19.85	31.93	34.9	35.63
	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 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 DVD+RW GUD1N
I/O Subsystem	Builtin
USB Subsystem	USB 2.0/3.0
TCF/IP	USB 2.0
Operating System	Win 10 Enterprise 64 Bit (10240)
Printing Applications	Microsoft Office Word 2016
	Acrobat Reader DC
	Microsoft Office Excel 2016
Print Driver	Not Specified
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 Pro M304a

Printing device and settings	
Test Start Date and Time	5/13/2019 13:50
Tester	Wing
Machine name/model	HP LaserJet Pro M304a
Colour or B&W	B&W
FW Version	002.1916A
Temperature and Humidity	77 degF / 25 degC 88.0 %rH
Voltage	220V
Test End Date and Time	5/23/2019 10:31

Item	Value	
Mode and Setting	Driver Version	48.2.4515
	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

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	138%	166%
A5, Portrait Feed, Simplex, B/W	Simplex	61%	56%
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://w.w.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 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	18.42	35.63	13.36	59.2	138%	166%
A5, Portrait Feed, Simplex, B/W	18.42	35.63	30.23	20.2	61%	56%
Legal, Simplex, B/W	17.87	37.38				
Legal, Duplex, B/W	17.87	37.38				
A4, 1200 dpi, Simplex, B/W	18.42	35.63				
Letter, 1200 dpi, Simplex, B/W	17.87	37.38				
A4, General Office, Simplex, B/W	18.42	35.63				
Letter, General Office, Simplex, B/W	17.87	37.38				

- 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://w.w.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 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
	IO Subsystem	Builtin
	USB Subsystem	USB 2.0/3.0
I/O	TCP/IP	USB 2.0
	Operating System	Win 10 Enterprise 64 Bit (10240)
Software	Printing Applications	Microsoft Office Word 2016 Acrobat Reader DC
	Print Driver	Microsoft Office Excel 2016 Not Specified
	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 Pro M304a

Printing device and settings		
Test Start Date and Time	5/10/2019 16:39	
Tester	Wing	
Machine name/model	HP LaserJet Pro M304a	
Colour or B&W	B&W	
FW Version	002.1916A	
Configuration (options)	Default	
Controller	11700	
Printing device page count	Not Specified	
Printing supplies page count	Not Specified	
Temperature and Humidity	77 degF / 25 degC 88.0 %rH	
Voltage	220V	
Test End Date and Time	5/13/2019 14:27	

Item	Value
Mode and Setting	
PDL and driver version	48.2.4515
Print Quality mode	default
B&W settings	default
Paper feed orientation	Short Edge
Paper	
Paper type setting	default
Paper feeding	Standard cassette
Paper exit	Standard exit tray
Paper Path	
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	Simplex	6.61
	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	6.98	6.70	6.12	6.61	48 Seconds
	FPOT from Ready - Duplex					
	FPOT from Sleep - Simplex			8.27		61 Minutes
	Recovery Time			2.2		
	FPOT from Off - Simplex			34.26		
	Warm-up Time			28.14		

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	8.27	8.09	8.45	N/A	Adobe Reader	61 Minutes
	FPOT from Sleep (15 minutes) HP/Non ISO Test	7.63	7.68	7.58	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	10/1000
Software	
Operating System	Win 10 Enterprise 64 Bit (10240)
Printing Applications	Microsoft Word 2016 Microsoft Excel 2016 Adobe Reader DC

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

Full Detailed Test Report - A4

HP LaserJet Pro M304a

Printing device and settings		
Test Start Date and Time	5/10/2019 16:39	
Tester	Wing	
Machine name/model	HP LaserJet Pro M304a	
Colour or B&W	B&W	
FW Version	002.1916A	
Configuration (options)	Default	
Controller	11700	
Printing device page count	Not Specified	
Printing supplies page count	Not Specified	
Temperature and Humidity	77 degF / 25 degC 88.0 %rH	
Voltage	220V	
Test End Date and Time	5/13/2019 14:27	

Item	Value
Mode and Setting	
PDL and driver version	48.2.4515
Print Quality mode	default
B&W settings	default
Paper feed orientation	Short Edge
Paper	
Paper type setting	default
Paper feeding	Standard cassette
Paper exit	Standard exit tray
Paper Path	
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	6.78
	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	7.58	6.60	6.14	6.78	48 Seconds
	FPOT from Ready - Duplex					
	FPOT from Sleep - Simplex			8.25		61 Minutes
	Recovery Time			2.1		
	FPOT from Off - Simplex			34.15		
	Warm-up Time			28.01		

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	
	FPOT from Sleep	8.25	8.18	8.32	N/A	Adobe Reader	61 Minutes
B&W Mode	FPOT from Sleep (15 minutes) HP/Non ISO Test	7.73	7.75	7.71	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
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	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	10/1000
Software	Operating System	Win 10 Enterprise 64 Bit (10240)
	Printing Applications	Microsoft Word 2016
		Microsoft Excel 2016
		Adobe Reader DC