

**ISO/IEC 24734 Printing Productivity Report: Office Category**

Full Detailed Test Report - LETTER

HP Color LaserJet M452 Series

Printing device and settings		
Test Start Date and Time	5/12/2015 14:59	
Tester	AH	
Machine name/model	HP Color LaserJet M452 Series	
Colour or B&W	Colour	
FW Version	20150506	
Temperature and Humidity	73 degF / 23 degC, 35 %rH	
Voltage	110V	
Test End Date and Time	7/8/2015 10:36	

Item	Value	
Mode and Setting	Driver Version	Fusion16_0_Release15111_497-229 (8.10.1320.2782)
	Media/Quality Setting	Default / Default
	Simplex B&W Settings	Grayscale
	Duplex B&W Settings	Grayscale
	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)	Yes
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 Color Device		FSOT (seconds)	ESAT (ipm)
Color	Simplex	16.2	28.7
	Duplex	22.6	26.0
B&W	Simplex	15.4	28.7
	Duplex	22.3	26.0

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 only (1 set)	1 set + 30sec (# of sets)	1 set + 4min (# of sets)	1 set + 30sec
Color Mode	Simplex - Adobe Reader	16.63	14.42 ( 1 set )	23.94 ( 5 sets )	27.36 ( 32 sets )	28.76
	Simplex - Word	15.74	15.24 ( 1 set )	24.41 ( 5 sets )		28.74
	Simplex - Excel	16.12	14.88 ( 1 set )	24.24 ( 5 sets )		28.75
	Simplex - Average	16.2	14.8	24.1	27.3	28.7
	Duplex - Adobe Reader	22.91	10.46 ( 1 set )	20.00 ( 5 sets )		26.08
	Duplex - Word	22.15	10.82 ( 1 set )	20.24 ( 5 sets )		26.06
	Duplex - Excel	22.74	10.54 ( 1 set )	20.06 ( 5 sets )		26.06
	Duplex - Average	22.6	10.6	20.1		26.0
B&W mode (optional for color device)	Simplex - Adobe Reader	15.60	15.37 ( 1 set )	24.48 ( 5 sets )	27.02 ( 32 sets )	28.74
	Simplex - Word	14.97	16.02 ( 1 set )	24.79 ( 5 sets )		28.75
	Simplex - Excel	15.34	15.64 ( 1 set )	24.62 ( 5 sets )		28.75
	Simplex - Average	15.4	15.6	24.6	27.0	28.7
	Duplex - Adobe Reader	22.53	10.64 ( 1 set )	20.08 ( 5 sets )		26.08
	Duplex - Word	21.83	10.98 ( 1 set )	20.36 ( 5 sets )		26.08
	Duplex - Excel	22.46	10.68 ( 1 set )	20.16 ( 5 sets )		26.08
	Duplex - Average	22.3	10.7	20.2		26.0

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	Builton
USB Subsystem	USB 2.0/3.0
TCP/IP	TCP/IP 10/1000
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 Color LaserJet M452 Series

Printing device and settings		
Test Start Date and Time	5/12/2015 14:59	
Tester	AH	
Machine name/model	HP Color LaserJet M452 Series	
Colour or B&W	Colour	
FW Version	20150506	
Temperature and Humidity	73 degF / 23 degC, 35 %rH	
Voltage	110V	
Test End Date and Time	7/8/2015 10:36	

Item	Value	
Mode and Setting	Driver Version	Fusion16_0_Release15111_497-229 (8.10.1320.2782)
	Media/Quality Setting	Default / Default
	Simplex B&W Settings	Grayscale
	Duplex B&W Settings	Grayscale
	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)	Yes
	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 Color Device		FSOT (seconds)	ESAT (ipm)
Colour	Simplex	16.7	27.1
	Duplex	23.3	24.7
B&W	Simplex	15.8	27.1
	Duplex	23.0	24.7

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 only (1 set)	1 set + 30sec (# of sets)	
Colour Mode	Simplex - Adobe Reader	17.05	14.07 ( 1 set )	22.88 ( 5 sets )	25.75 ( 30 sets )	27.20
	Simplex - Word	16.22	14.78 ( 1 set )	23.25 ( 5 sets )		27.20
	Simplex - Excel	16.61	14.44 ( 1 set )	23.12 ( 5 sets )		27.19
	Simplex - Average	16.7	14.4	23.0	25.7	27.1
	Duplex - Adobe Reader	23.39	10.24 ( 1 set )	19.18 ( 5 sets )		24.78
	Duplex - Word	22.86	10.48 ( 1 set )	19.40 ( 5 sets )		24.78
	Duplex - Excel	23.39	10.24 ( 1 set )	19.24 ( 5 sets )		24.78
	Duplex - Average	23.3	10.3	19.2		24.7
B&W mode (optional for color device)	Simplex - Adobe Reader	16.04	14.96 ( 1 set )	23.35 ( 5 sets )	25.57 ( 30 sets )	27.19
	Simplex - Word	15.41	15.57 ( 1 set )	23.65 ( 5 sets )		27.19
	Simplex - Excel	15.84	15.14 ( 1 set )	23.47 ( 5 sets )		27.20
	Simplex - Average	15.8	15.2	23.4	25.5	27.1
	Duplex - Adobe Reader	23.19	10.34 ( 1 set )	19.24 ( 5 sets )		24.80
	Duplex - Word	22.51	10.64 ( 1 set )	19.50 ( 5 sets )		24.80
	Duplex - Excel	23.12	10.38 ( 1 set )	19.32 ( 5 sets )		24.78
	Duplex - Average	23.0	10.4	19.3		24.7

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 DH16aC5HR ATA
I/O Subsystem	Built-in
USB Subsystem	USB 2.0/3.0
TCP/IP	TCP/IP 10/1000
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 - A5**

HP Color LaserJet M452 Series

Printing device and settings		
Test Start Date and Time	5/12/2015 14:59	
Tester	AH	
Machine name/model	HP Color LaserJet M452 Series	
Colour or B&W	Colour	
FW Version	20150506	
Temperature and Humidity	73 degF / 23 degC, 35 %rH	
Voltage	110V	
Test End Date and Time	7/8/2015 10:36	

	Item	Value
Mode and Setting	Driver Version	Fusion16_0_Release15111_497-229 (8.10.1320.2782)
	Media/Quality Setting	Default / Default
	Simplex B&W Settings	Grayscale
	Duplex B&W Settings	Grayscale
	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)	Yes
Paper	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	
		A5	
		FSOT (base)	ESAT (feature)
		FSOT (feature)	ESAT (base)
A5 Landscape Feed - Colour	Simplex	104%	183%
A5 Portrait Feed - Colour	Simplex	127%	26%
A5 Landscape Feed - B/W	Simplex	137%	191%
A5 Portrait Feed - B/W	Simplex	104%	35%

- 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			
			A5			
	FSOT Base	ESAT Base	1 set FSOT (secs)	1 set + 30 sec ESAT (ipm)	FSOT (base) FSOT (feature)	ESAT (feature) ESAT (base)
Simplex A5 Landscape Feed - Colour	36.9	27.21	35.33	50.0	104%	183%
Simplex A5 Portrait Feed - Colour	36.9	27.21	29.02	7.3	127%	26%
Simplex A5 Landscape Feed - B/W	25.27	26.05	18.4	50.0	137%	191%
Simplex A5 Portrait Feed - B/W	25.27	26.05	24.09	9.1	104%	35%

- 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 DH16aC5HR ATA
	I/O Subsystem	BuiltIn
	USB Subsystem	USB 2.0/3.0
I/O	TCP/IP	TCP/IP 10/100
	Operating System	Windows 7 64 Bit
Software	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 Color LaserJet M452 Series	
Printing device and settings	
Test Start Date and Time	5/12/2015 14:59
Tester	AH
Machine name/model	HP Color LaserJet M452 Series
Colour or B&W	Colour
FW Version	20150506
Configuration (options)	Default
Controller	13102
Printing device page count	Not Specified
Printing supplies page count	Not Specified
Temperature and Humidity	73 degF / 23 degC, 45 %RH
Voltage	110V
Test End Date and Time	6/12/2015 18:08

	Item	Value
Mode and Setting	PDL and driver version	Fusion16 0 Release15111 497-229 (8.10.1320.2782)
	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 ext 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)
Color	Simplex	9.47
	Duplex	17.67
B&W	Simplex	8.83
	Duplex	17.41

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	9.28	9.57	9.54	9.47	21 Seconds
	FPOt from Ready - Duplex	17.34	17.79	17.86	17.67	21 Seconds
	FPOt from Sleep - Simplex			11.39		65 Minutes
	Recovery Time			1.9		
	FPOt from Off - Simplex			40.82		
	Warm-up Time			31.28		
B&W Mode	FPOt from Ready - Simplex	8.61	8.86	9.00	8.83	21 Seconds
	FPOt from Ready - Duplex	17.07	17.51	17.65	17.41	21 Seconds
	FPOt from Sleep - Simplex			11.26		65 Minutes
	Recovery Time			2.3		
	FPOt from Off - Simplex			40.27		
	Warm-up Time			31.27		

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.

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 DH16aC5HR ATA
	I/O Subsystem	Builtin
	USB Subsystem	USB 2.0/3.0
	Printing Device Connection	TCP/IP
Software	Operating System	Windows 7 Business/Ultimate, 64 bit, Build 7601, SP 1
	Printing Applications	Microsoft Office 2010 SP2
		Adobe Reader 10.1.4
	Print Driver	Fusion16 0 Release15111 497-229 (8.10.1320.2782)

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

Full Detailed Test Report - A4

HP Color LaserJet M452 Series

Printing device and settings	
Test Start Date and Time	5/12/2015 14:59
Tester	AH
Machine name/model	HP Color LaserJet M452 Series
Colour or B&W	Colour
FW Version	20150506
Configuration (options)	Default
Controller	13102
Printing device page count	Not Specified
Printing supplies page count	Not Specified
Temperature and Humidity	73 degF / 23 degC, 45 %rH
Voltage	110V
Test End Date and Time	6/12/2015 18:08

Item	Value	
Mode and Setting	PDL and driver version	Fusion16_0_Release15111_497-229 (8.10.1320.2782)
	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)
Colour	Simplex	9.81
	Duplex	17.86
B&W	Simplex	8.97
	Duplex	17.61

- 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
Colour Mode	FPOT from Ready - Simplex	9.54	9.75	10.14	9.81	21 Seconds
	FPOT from Ready - Duplex	17.55	18.00	18.03	17.86	21 Seconds
	FPOT from Sleep - Simplex			11.48		65 Minutes
	Recovery Time			1.3		
	FPOT from Off - Simplex			40.49		
	Warm-up Time			30.35		
B&W Mode	FPOT from Ready - Simplex	8.76	8.98	9.14	8.97	21 Seconds
	FPOT from Ready - Duplex	17.29	17.70	17.82	17.61	21 Seconds
	FPOT from Sleep - Simplex			11.38		65 Minutes
	Recovery Time			2.2		
	FPOT from Off - Simplex			40.44		
	Warm-up Time			31.30		

- 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.

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 DH16aC5HR ATA
	I/O Subsystem	Builtin
	USB Subsystem	USB 2.0/3.0
Printing Device Connection	TCP/IP	10/1000
Software	Operating System	Windows 7 Business/Ultimate, 64 bit, Build 7601, SP 1
	Printing Applications	Microsoft Office 2010 SP2
	Print Driver	Adobe Reader 10.1.4
		Fusion16_0_Release15111_497-229 (8.10.1320.2782)