

## Report

# Competitive set selection and performance testing methodology: HP Color LaserJet Enterprise MFP M577dn



## HP LaserJet Fall 2015 New Product Claims

This document describes HP test methodology as well as definitions of the competitive sets for the HP Color LaserJet Enterprise MFP M577dn that was publically introduced on September 22, 2015

### Competitive Set Definition

Performance data shown is based on leading competitors as well as the HP predecessor product. Leading competitors for each category of products were defined based on the top unit shipment data for products currently in the market that started shipping WW on or after April 2012. The top 3 shipment vendors\* besides HP were selected: Xerox, Canon, and Dell.

HP further refined the products within the top 3 shipment vendors: For each of the top 3 the highest volume product brand that ships WW\*\* from the most recent quarter was selected. If there was a faster product from that vendor within 25% of the highest volume product it was selected instead. If there was a replacement product for the top selected product it was selected instead.

All product testing was completed in August, 2015.

\*Top 3 shipment vendors:

Quarter=2014Q2-2015Q1

Product Detail=Color Laser

Product Category=MFP

Format=A4

Letter Mono Speed=36-44ppm

Product Brand

Country

Source: IDC WW Quarterly HCP Tracker 2015Q2 Final Historical Release

\*\*Product brand must ship in at least one county in HP sales region to be considered a WW competitor. [HP Regional Definitions](#) document for details.

### Performance test methodology

The exact speed varies depending on the system configuration, software applications, driver and document complexity. Performance was tested on identical system configurations on dedicated network 1000Base-T EEE (energy efficient Ethernet) switches connected to a low traffic network uplink. Identical software applications and revisions were used with the driver installed on a clean system image, using the test files defined by the test standards to ensure consistent complexity across all devices. Testing was done using letter size paper (8.5"x11").

## The following defines the method used to test each performance metric

### • Ready mode FPOT (First Page Out Time)

– Measured using ISO/IEC 17629-2014 : “Method for measuring first page out time of a digital printing device”

### • Sleep mode FPOT (First Page Out Time)

– Measured using pdf file from ISO/IEC 17629-2014 : “Method for measuring first page out time of a digital printing device” at 60 minutes from entering sleep.

### • Ready mode FCOT (First Copy Out Time) & Copy ppm (pages per minute)

– Measured using ISO/IEC 29183-2010 : “Method for measuring digital copying productivity of a single one-sided original”

### • Sleep mode FCOT (First Copy Out Time)

– Because there is no standard for measurement of FCOT from sleep mode, results are based on HP internal testing modeled after the ISO/IEC 17629 process for testing sleep FPOT.

## Test Procedure

1. Determine time required to enter sleep.
2. Place original on the flatbed.
3. Set the default color mode as Mono or Color.
4. Wait for the time required for the device to enter sleep plus 60 minutes.
5. Wake the device by touching the control panel or button.
6. If there is a start button on the home screen or physical key, press it as soon as it is enabled. Otherwise enter the copy app and start the job.
7. Measure time from waking device until page in bin.
8. Repeat the measurement a second time.
9. Check consistency to make sure it is within 5%. If not, run a third measurement and average all 3 results.
10. Average all measurements taken and report as Sleep FCOT.

### • Print PPM (Pages Per Minute) and Duplex IPM (Images Per Minute)

– Measured using ISO/IEC 24734-2009 : “Method for measuring digital printing productivity”

### • Copy Duplex IPM

– Measured using ISO/IEC 24375-2009 : “Method for measuring digital copying productivity”

### • Typical Electricity Consumption (TEC)

– Based on HP testing using the ENERGY STAR® program’s Typical Electricity Consumption (TEC) method or as reported in energystar.gov as of July 2015. Actual results may vary. HP testing is based on using the default Sleep Timer setting for all products and using Wake/ Auto on Events: Network port. Default Sleep Timer setting is 0 minutes, Default Wake/Auto on Events is All Events for the LaserJet M577 series. Increasing the Sleep Timer setting longer than the default value, or changing Default Wake/Auto on Events can increase TEC.

### • TEC Watt hours per page

– TEC W hrs/week divided by the number of pages per week printed in the TEC test. The number of pages printed is determined by the TEC test standard for the device speed.

– Formula:  $TEC\ W\ hrs/page = TEC(kWhrs) * 1000 / (pages\_per\_wk)$  or  
–  $TEC(Whrs) / (pages\_per\_wk)$

### • Sound level (acoustics)

– Based on HP testing and measured using ISO 9296 and ISO 7779 using a simplex (single- sided) print. Actual results may vary.

## Test results based on competitive set selection and testing methodology described above:

<b>Black and White Print Performance</b> (First page out time, first page to print from sleep mode)				
Product comparisons	Ready FPOT (First Page Out Time in seconds)	FPOT improvement of new HP device vs. predecessor and leading competitors	Sleep FPOT (First Page Out Time from sleep in seconds)	Sleep FPOT improvement of new HP device vs. predecessor and leading competitors
<b>HP Color LaserJet Enterprise MFP M577 series</b>	<b>5.5</b>		<b>8.6</b>	
Predecessor Device: HP Color LaserJet Enterprise MFP M575	<b>10.5</b>	48%	<b>22</b>	61%
Leading competitors based on IDC market share data				
Xerox WorkCenter 6605 DN	9.01	37%	22.75	62%
Canon imageRUNNER ADVANCE C350iF	8.48	33%	23.64	64%
Dell C3765dnf Color MFP	8.67	34%	22.28	61%

<b>Color Print Performance</b> (First page out time, first page to print from sleep mode)				
Product comparisons	Ready FPOT (First Page Out Time in seconds)	FPOT improvement of new HP device vs. predecessor and leading competitors	Sleep FPOT (First Page Out Time from sleep in seconds)	Sleep FPOT improvement of new HP device vs. predecessor and leading competitors
<b>HP Color LaserJet Enterprise MFP M577 series</b>	<b>6.8</b>		<b>8.8</b>	
Predecessor Device: HP Color LaserJet Enterprise MFP M575	<b>10.5</b>	35%	<b>22</b>	60%
Leading competitors based on IDC market share data				
Xerox WorkCenter 6605 DN	9.93	32%	23.17	62%
Canon imageRUNNER ADVANCE C350iF	10.46	35%	23.9	63%
Dell C3765dnf Color MFP	9.48	28%	23.43	62%

<b>Black and White 2-sided (Duplex) printing efficiency</b>		<b>Color 2-sided (Duplex) printing efficiency</b>		
Product comparisons	Printing duplex efficiency measured by IPM (Images per minute)	Duplex improvement of new HP device vs. predecessor and leading competitors	Printing duplex efficiency measured by IPM (Images per minute)	Duplex improvement of new HP device vs. predecessor and leading competitors
<b>HP Color LaserJet Enterprise MFP M577 series</b>	<b>40</b>		<b>40</b>	
Predecessor Device: HP Color LaserJet Enterprise MFP M575	<b>28</b>	43%	<b>28</b>	43%
Leading competitors based on IDC market share data				
Xerox WorkCenter 6605 DN	24.2	65%	24.2	65%
Canon imageRUNNER ADVANCE C350iF	36.4	10%	36.9	8%
Dell C3765dnf Color MFP	24.2	65%	24.2	65%

<b>Black and White Copy Performance</b> (first page to print from sleep mode)			<b>Color Copy Performance</b> (first page to print from sleep mode)	
Product comparisons	Sleep FCOT (First Copy Out Time from sleep in seconds)	Sleep FCOT improvement of new HP device vs. predecessor and leading competitors	Sleep FCOT (First Copy Out Time from sleep in seconds)	Sleep FCOT improvement of new HP device vs. predecessor and leading competitors
<b>HP Color LaserJet Enterprise MFP M577 series</b>	<b>9.4</b>		<b>12.9</b>	
Predecessor Device: HP Color LaserJet Enterprise MFP M575	<b>41.5</b>	77%	<b>41.5</b>	69%
Leading competitors based on IDC market share data				
Xerox WorkCenter 6605 DN	25.21	63%	28.11	54%
Canon imageRUNNER ADVANCE C350iF	22.4	58%	22.69	43%
Dell C3765dnf Color MFP	24.41	61%	28.28	54%

## Test results based on competitive set selection and testing methodology described above:

Product comparisons	Black and White 2-sided (Duplex) copying efficiency		Color 2-sided (Duplex) copying efficiency	
	Copying duplex efficiency measured by IPM (Images per minute)	Duplex improvement of new HP device vs. predecessor and leading competitors	Copying duplex efficiency measured by IPM (Images per minute)	Duplex improvement of new HP device vs. predecessor and leading competitors
<b>HP Color LaserJet Enterprise MFP M577 series</b>	<b>40</b>		<b>40</b>	
Predecessor Device: HP Color LaserJet Enterprise MFP M575	<b>28</b>	43%	<b>28</b>	43%
Leading competitors based on IDC market share data				
Xerox WorkCenter 6605 DN	22.10	81%	22.04	81%
Canon imageRUNNER ADVANCE C350iF	35.84	12%	37.42	7%
Dell C3765dnf Color MFP	21.48	n/a	21.34	n/a
Product comparisons	Acoustics (sound)		Energy consumption per page	
	Noise level (LWAd -Simplex)	Percentage quieter of new HP device vs. predecessor and leading competitors	TEC Watt hours per page	Percentage of energy saved of new HP device vs. predecessor and leading competitors
<b>HP Color LaserJet Enterprise MFP M577 series</b>	<b>6.5</b>		<b>0.390</b>	
Predecessor Device: HP Color LaserJet Enterprise MFP M575			<b>1.978</b>	80%
Leading competitors based on IDC market share data				
Xerox WorkCenter 6605 DN	6.7	5%	1.125	65%
Canon imageRUNNER ADVANCE C350iF	6.8	7%	0.40625	3%
Dell C3765dnf Color MFP	6.8	7%	0.9375	58%

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