



Competitive set selection and performance testing methodology: HP Color LaserJet Pro MFP M377dw

HP LaserJet Spring 2016 New Product Claims

This document describes HP test methodology as well as definitions of the competitive sets for the HP Color LaserJet Pro MFP M377dw that was publicly introduced on March 8, 2016.

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 October 2012. The top 3 shipment vendors* besides HP were selected: Kyocera, Dell and Brother.

HP further refined the products within the top 3 shipment vendors: For each of the top 3 the highest volume product 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.

Note – the Dell C2665 is one of the top 3 shipment vendors. The Dell Color MFP H625CDW appears to be a new/replacement product for that device so specs for both devices have been included in this summary.

All product testing was completed in January, 2016.

*Top 3 shipment vendors:
Quarter=2014Q4-2015Q3
Product Detail=Color Laser
Product Category=MFP Format=A4
Letter Mono Speed=22-28 ppm
Source: IDC WW Quarterly HCP Tracker 2015Q4 Final Historical Release

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

- **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

- **Print PPM (Pages Per Minute) and Duplex IPM (Images Per Minute)**

- Measured using ISO/IEC 24734-2009: “Method for measuring digital printing 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 January, 2016. Actual results may vary. HP testing is based on using the default Sleep Timer setting for all products.

- **TEC Watt hours per page (Normalized TEC)**

- 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 - $TEC(Whrs)/(pages_per_wk)$

- **Volume (size)**

- The volume of the product is measured using a bounding rectangular cuboid in a typical operating condition

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

Product comparisons	Black and White Print Performance (First page to print from sleep mode)		Color Print Performance (First page to print from sleep mode)	
	Sleep FPOT (First Page Out time from sleep in seconds)	Sleep 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
HP Color LaserJet Pro MFP M377dw	11		11.2	
Closest predecessor Device: HP Color LaserJet MFP M476	17.5	37%	17.5	36%
Leading competitors based on IDC market share data				
Brother MFC-9330	32.16	66%	32.63	66%
Samsung SL-C2670	15.9	31%	18.52	40%
Dell C2665	20.4	46%	21.14	47%
Dell Color MFP H625CDW	22.33	51%	24.09	54%
Kyocera ECOSYS M6526cidn	25.96	58%	31.93	65%

Product comparisons	Black and White 2-sided (Duplex) efficiency		Color 2-sided (Duplex) printing efficiency	
	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
HP Color LaserJet Pro MFP M377dw	20		20	
Closest predecessor Device: HP Color LaserJet MFP M476	10	100%	10	100%
Leading competitors based on IDC market share data				
Brother MFC-9330	8	150%	8	150%
Samsung SL-C2670	13.5	48%	13.5	48%
Dell C2665	18.6	8%	18.6	8%
Dell Color MFP H625CDW	16.6	20%	15	33%
Kyocera ECOSYS M6526cidn	13.9	52%	31.93	65%

Product comparisons	Volume (Size)		TEC (Typical electricity Consumption) Energy Star metric		Energy consumption per page	
	Volume (Size)	Percentage smaller new HP device vs. predecessor and leading competitors	Energy Star TEC rating	Percentage of energy saved 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
HP Color LaserJet Pro MFP M377dw	78.5		1.363		0.909	
Closest predecessor Device: HP Color LaserJet MFP M476	101.5	23%			1.091	17%
Leading competitors based on IDC market share data						
Brother MFC-9330	81.2	3%	2.1	35%	1.660	45%
Samsung SL-C2670	106.9	27%	1.8	24%	1.026	11%
Dell C2665	129.7	39%	2.7	26%	1.378	34%
Dell Color MFP H625CDW	108.0	27%	1.5	9%	1.000	9%
Kyocera ECOSYS M6526cidn	170.2	100%	2.6	48%	1.327	32%

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