

Report

Competitive set selection and performance testing methodology: HP Color LaserJet Pro M452 series



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 Pro M452 series that was publically introduced on September 10, 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* were selected: Lexmark, Brother, and Samsung.

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.

All product testing was completed in August, 2015.

*Top 3 shipment vendors:

Quarter=2014Q2-2015Q1

Product Detail=Color Laser

Product Category=Printer

Format=A4

Letter Mono Speed=25-31ppm

Source: IDC WW Quarterly HCP Tracker 2015Q2 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) 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.

- **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 July 2015. Actual results may vary. HP testing is based on using the default Sleep Timer setting for all products. Default Sleep Timer setting is 5 minutes for the LaserJet M452 series. Increasing the Sleep Timer setting longer than the default value 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: $TEC \text{ W hrs/page} = TEC(kWhrs) * 1000 / (\text{pages_per_wk})$ – or – $TEC(Whrs) / (\text{pages_per_wk})$.

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

Product comparisons	Black and White Print Performance (First page out time, first page to print from sleep mode)				Color Print Performance (First page out time, first page to print from sleep mode)			
	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	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
HP Color LaserJet Pro M452 series	8.9		11.3		9.5		11.4	
Predecessor Device: HP LaserJet color M451	17	48%	18	37%	17	44%	18	37%
Leading competitors based on IDC market share data								
Brother HL-L8250CDN	10.14	12%	27.96	60%	11.37	16%	28.4	60%
Samsung ProXpress C2620DW	13.08	32%	15.41	27%	15.09	37%	17.71	36%
Lexmark CS310dn	11.32	21%	19.07	41%	12.64	25%	20.32	44%

Product comparisons	Black and White 2-sided (Duplex) printing efficiency		Color 2-sided (Duplex) printing efficiency		TEC (Typical electricity Consumption) Energy Star metric		Energy consumption per page	
	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	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 M452 series	25		25		1.520		0.776	
Predecessor Device: HP LaserJet color M451	10	150%	10	150%			1.286	40%
Leading competitors based on IDC market share data								
Brother HL-L8250CDN	15.3	63%	15.4	62%	2.200	31%	0.978	21%
Samsung ProXpress C2620DW	13.5	85%	13.5	85%	1.700	11%	0.969	20%
Lexmark CS310dn	12.2	105%	12.6	98%	1.700	11%	1.133	32%

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