

Buyers Lab Performance Evaluation:

FEBRUARY 2018

COMPARISON OF INKJET STARTER CARTRIDGE YIELDS USING THE CANON PIXMA G4500 AND DEVICE A PRINTERS

Test Objective

Keypoint Intelligence - Buyers Lab was commissioned by Canon Europe Ltd to conduct comparative starter cartridge yield testing using the Canon PIXMA G4500 and a rival ink-tank printer referred to as Device A. Each printer was subjected to two tests that simulated business workflows, with one test printing in a stop-start fashion and the other printing semi-continuously. All testing was conducted at Buyers Lab's European test facility in Wokingham, UK.

Executive Summary

The Canon PIXMA G4500 and Device A, both of which are designed to allow users to refill ink cartridges themselves, are evenly matched competitors, and this is borne out in the results of Buyers Lab's ink yield testing. The PIXMA G4500 produced higher page yields when output was printed semi-continuously, but Device A produced higher page yields when output was printed in a stop-start manner.

In the semi-continuous test, the PIXMA G4500's average CMY yield was 82 pages higher than that of Device A, which gave it a slight 1% advantage. However, its average CMYK yield was 7% higher, thanks to the extra 383 pages it produced.

Roles were reversed in the stop-start test, with Device A having higher average CMY and CMYK page yields, and producing 361 and 148 more pages, respectively. This makes Device A's average CMY and CMYK yields 6% and 3% higher, respectively.

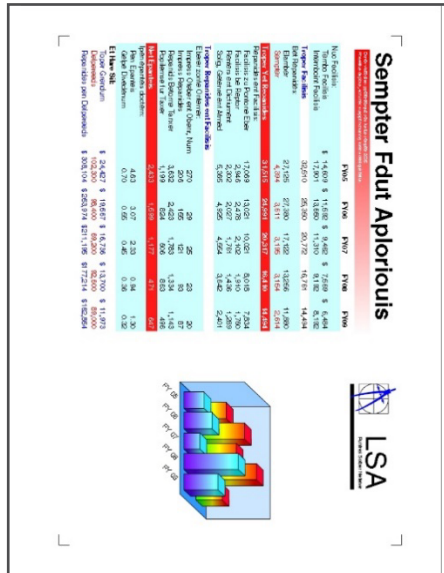
Both devices performed well in Buyers Lab's tests, and both provided impressive yields from their bundled starter cartridge sets.

Test Files

Buyers Lab used the ISO 24712 test documents to test page yield in the business semi-continuous and stop-start tests. The individual test targets are shown below.



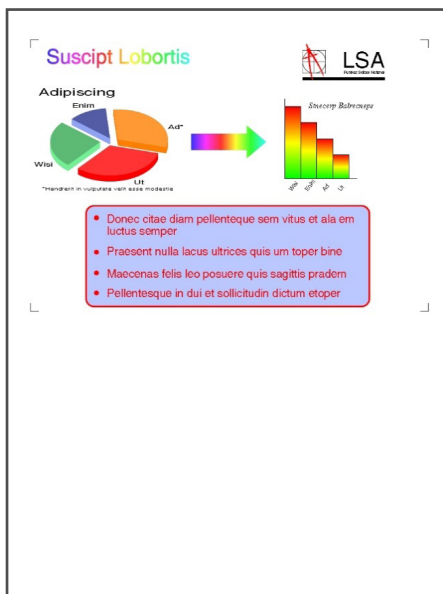
Page One



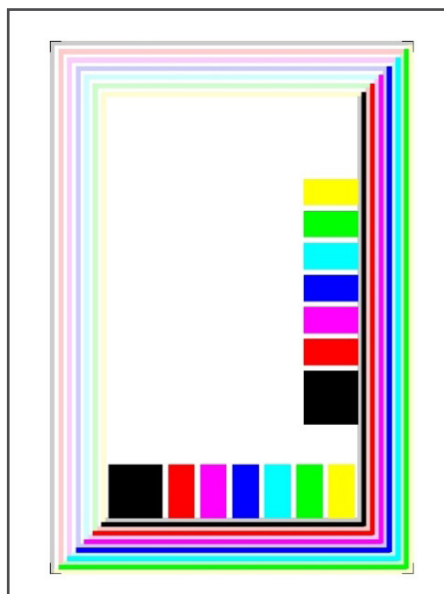
Page Two



Page Three



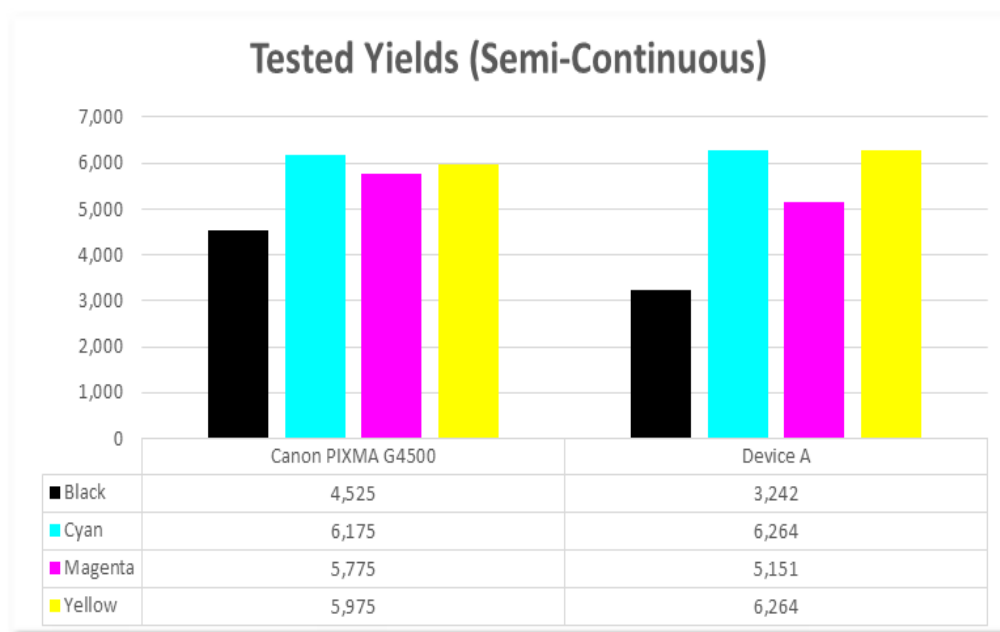
Page Four



Page Five

Comparative Page Yields

Overall, the results were mixed. The Canon PIXMA G4500 had the advantage when output was printed semi-continuously, but the opposite was true when output was printed in a stop-start fashion. In the semi-continuous test, the PIXMA G4500 had a very slight advantage for average CMY yield of just 1%, but a higher 7% advantage for average CMYK yield. In the stop-start test, Device A had a 6% advantage over the PIXMA G4500 for average CMY yield, and a 3% advantage for average CMYK yield.

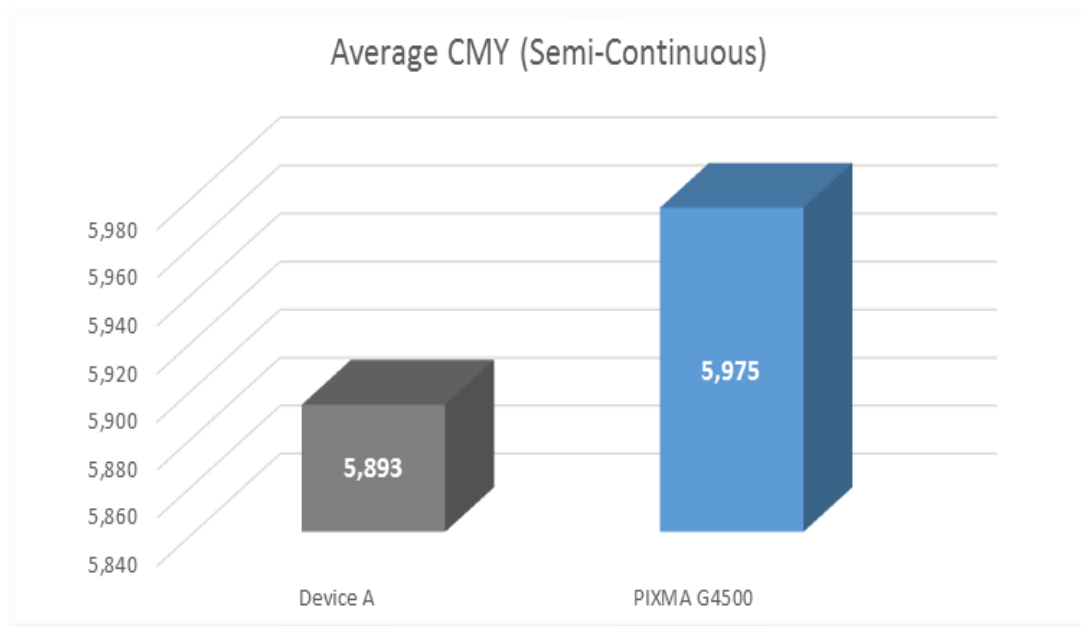


Page Yields (Semi-Continuous)						
	Cyan	Magenta	Yellow	Black	CMY	CMYK
Canon PIXMA G4500	6,175	5,775	5,975	4,525	5,975	5,613
Device A	6,264	5,151	6,264	3,242	5,893	5,230

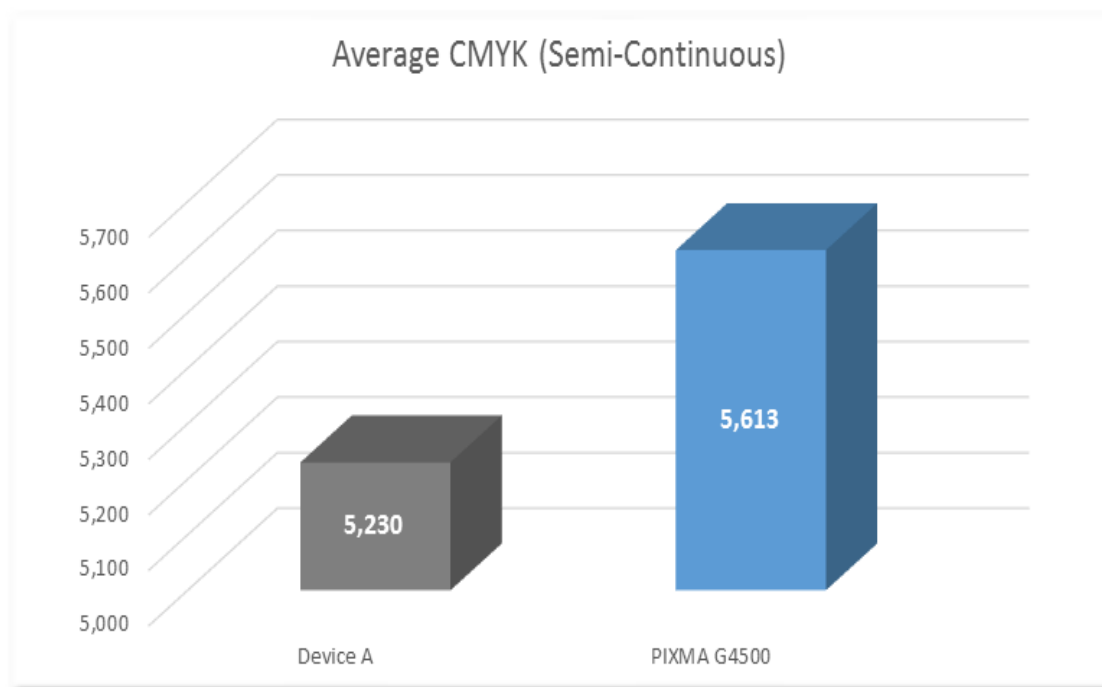
This table shows the individual colour, black and average CMY and CMYK page yields for each printer device.

Yield Comparisons (Semi-Continuous)				
	% Below Canon PIXMA G4500's Tested Yield		% By Which Canon PIXMA G4500's Tested Yield is Higher	
	CMY	CMYK	CMY	CMYK
Device A	-1%	-7%	1%	7%

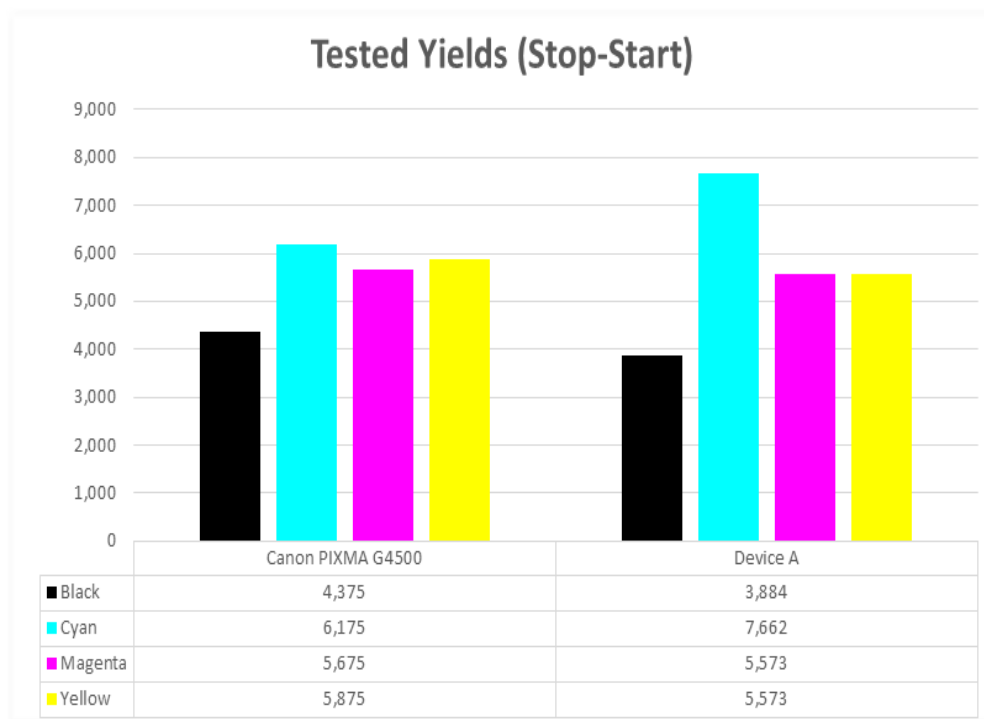
This table compares the non-Canon device's average tested yield against the genuine Canon device's average tested yield as a percentage.



When printing in a semi-continuous manner, the average CMY page yield for the PIXMA G4500 was higher than that of Device A.



When printing in a semi-continuous manner, the average CMYK page yield for the PIXMA G4500 was, again, higher than that of Device A.

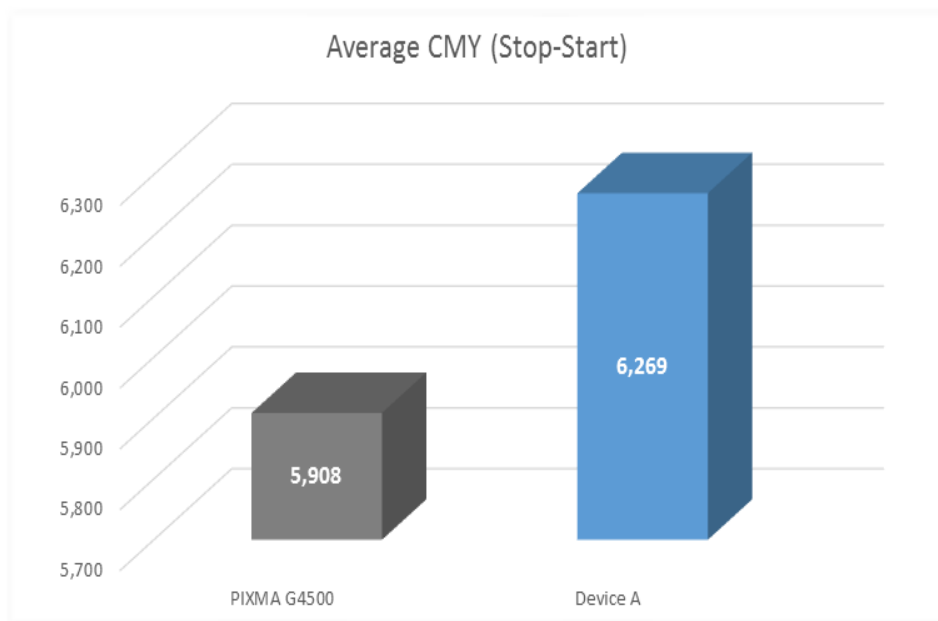


Page Yields (Stop-Start)						
	Cyan	Magenta	Yellow	Black	CMY	CMYK
Canon PIXMA G4500	6,175	5,675	5,875	4,375	5,908	5,525
Device A	7,662	5,573	5,573	3,884	6,269	5,673

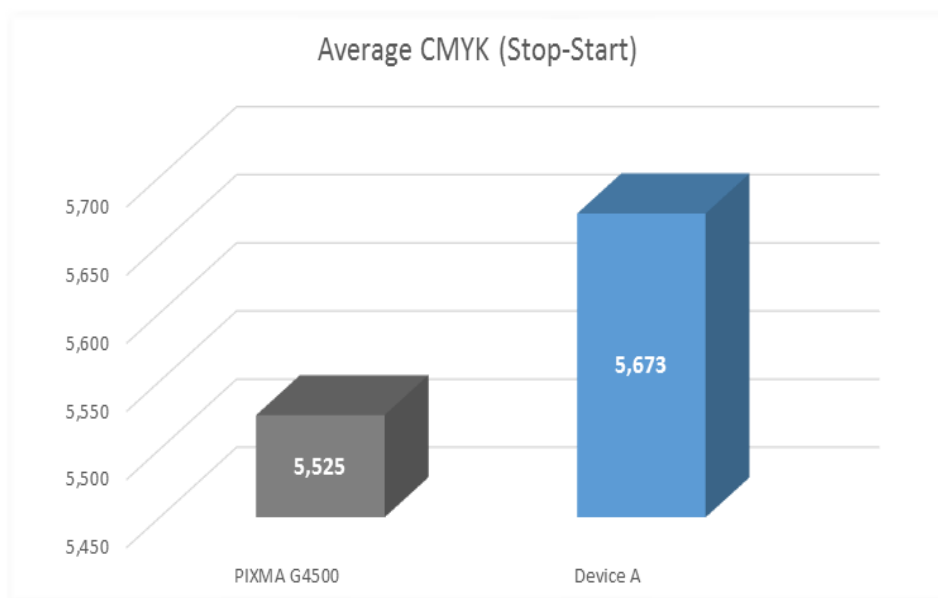
This table shows the average individual colour, black, CMY, and CMYK page yields for each printer device.

Yield Comparisons (Stop-Start)				
	% By Which Device A's Tested Yield is Higher		% By Which Canon PIXMA G4500's Tested Yield is Lower	
	CMY	CMYK	CMY	CMYK
Device A	6%	3%	-6%	-3%

This table compares the rival device's average tested yield against the genuine Canon device's average tested yield as a percentage.



When printers were run using an intermittent start/stop method, the average CMY yield for Device A was higher than that of the Canon model.



When printers were run using an intermittent start/stop method, the average CMYK yield for Device A was also higher than that of the Canon model.

Supporting Test Data

Semi-Continuous					
CYAN					
Device	Full Weight (grams)	Empty Weight (grams)	Net Weight (grams)	Total Counter at Start	Total Counter at End
Canon PIXMA G4500	96.8	23.7	73.0	0	6,175
Device A	91.8	17.3	74.4	0	6,264

MAGENTA					
Device	Full Weight (grams)	Empty Weight (grams)	Net Weight (grams)	Total Counter at Start	Total Counter at End
Canon PIXMA G4500	96.9	23.8	73.1	0	5,775
Device A	93.99	18.3	75.7	0	5,151

YELLOW					
Device	Full Weight (grams)	Empty Weight (grams)	Net Weight (grams)	Total Counter at Start	Total Counter at End
Canon PIXMA G4500	97.1	23.9	73.2	0	5,975
Device A	91.1	17.6	73.5	0	6,264

BLACK					
Device	Full Weight (grams)	Empty Weight (grams)	Net Weight (grams)	Total Counter at Start	Total Counter at End
Canon PIXMA G4500	169.1	29.3	139.8	0	4,525
Device A	93.9	17.5	76.4	0	3,242

Stop-Start					
	CYAN				
Device	Full Weight (grams)	Empty Weight (grams)	Net Weight (grams)	Total Counter at Start	Total Counter at End
Canon PIXMA G4500	96.8	23.8	73.0	0	6,175
Device A	92.0	17.3	74.7	0	7,662

	MAGENTA				
Device	Full Weight (grams)	Empty Weight (grams)	Net Weight (grams)	Total Counter at Start	Total Counter at End
Canon PIXMA G4500	96.7	23.7	73.0	0	5,675
Device A	94.0	18.0	76.0	0	5,573

	YELLOW				
Device	Full Weight (grams)	Empty Weight (grams)	Net Weight (grams)	Total Counter at Start	Total Counter at End
Canon PIXMA G4500	97.0	24.1	72.9	0	5,875
Device A	91.6	17.5	74.1	0	5,573

	BLACK				
Device	Full Weight (grams)	Empty Weight (grams)	Net Weight (grams)	Total Counter at Start	Total Counter at End
Canon PIXMA G4500	168.4	28.8	139.6	0	4,375
Device A	94.1	17.6	76.5	0	3,884

Test Methodology

Buyers Lab used the starter ink set included in a device's box to test the page yield of each printer device. Each ink bottle was weighed at the start of testing, emptied into the printer and then weighed again. Page yield was evaluated per the following:

A. Ink Yield: The ink bottle set included with the devices in the box was run to exhaustion using the ISO 24712 test document suite. Two devices of each model type were used to test the yields—one for the semi-continuous test and one for the stop-start test.

Test Environment/Conditions

All testing was conducted in a controlled environment at Buyers Lab's test facility located at Wokingham, UK, per the following conditions:

Temperature was maintained at 22°C, +/-2.7°C with daily conditions monitored and logged 24/7 by a seven-day temperature/humidity chart recorder. Relative humidity was maintained within 45% +/- 10% with daily conditions monitored and logged 24/7 by a seven-day temperature/humidity chart recorder. Materials conditioning: printers, paper, and cartridges were acclimatized to the above conditions for a minimum of 24 hours prior to testing. Prior to acclimatization, packaging and shipping materials were removed from the printer and cartridges. Paper was acclimatized in a ream wrapper.

Total number of ink bottles tested:

8 x Canon PIXMA G4500 starter ink bottles (2 x four-ink cartridge set)

8 x Device A starter ink bottles (2 x four-ink cartridge set)

Total number of printers required:

2 x Canon PIXMA G4500

2 x Device A

Test devices were purchased by Buyers Lab on the open market.

About Keypoint Intelligence - Buyers Lab

Keypoint Intelligence is a one-stop shop for the digital imaging industry. With our unparalleled tools and unmatched depth of knowledge, we cut through the noise of data to offer clients the unbiased insights and responsive tools they need in those mission-critical moments that define their products and empower their sales.

For over 50 years, Buyers Lab has been the global document imaging industry's resource for unbiased and reliable information, test data, and competitive selling tools. What started out as a consumer-based publication about office equipment has become an all-encompassing industry resource. Buyers Lab evolves in tandem with the ever-changing landscape of document imaging solutions, constantly updating our methods, expanding our offerings, and tracking cutting-edge developments.

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