HP Officejet Pro 8000 vs. Samsung CLP-315

HP Officejet Pro 8000

Samsung CLP-315

Specifications	HP Officejet Pro 8000	Samsung CLP-315
Price (US $)	$149	$194
Technology	Inkjet printer (4 individual ink tanks)	Four-pass color laser printer
Color Speed	11 ppm	4 ppm
Black Speed	15 ppm	16 ppm
Input Capacity	250 sheets	150 sheets
Duty Cycle	15,000 pages per month	20,000 pages per month

Executive Summary

In BLI's testing of the two entry-level color models—the inkjet HP Officejet Pro 8000 and the Samsung CLP-315 laser model— the HP model had a definite advantage in the electricity consumption evaluation, consuming about 65 percent less electricity than the Samsung model. The HP also had the advantage in speed testing, providing better overall first-page-out times and better speed in color than the laser Samsung model.

TEC Energy Consumption

BLI conducted a comparative energy-consumption evaluation using the Energy Star Typical Electricity Consumption (TEC) method, with energy consumed recorded as watt-hours (Wh). The test is designed to replicate real world usage and measures energy consumed over a specified period, during which each device is in sleep mode, warm-up mode, ready mode and printing multiple single-sided sets of a 12-page black document. In this procedure, measurements are taken using a Yokogawa WT210 watt meter. For this competitive group, typical usage is assumed as being 288 pages per day, and the numbers reported are based on an average of two tests

- In BLI's electricity consumption testing, the HP Officejet Pro 8000 proved to be the more energy efficient device, while the Samsung CLP-315 used more than twice the electricity in testing.
- Based on this testing, BLI projects that the HP Officejet Pro 8000 would consume an average of 514.5 Wh during a week of typical usage. It is also estimated that the Samsung CLP-315 would consume an average of 1,522 Wh in a week of typical usage.

TYPICAL WEEKLY ELECTRICITY CONSUMPTION

MODEL	TOTAL TEC
HP Officejet Pro 8000	514.5 Wh
Samsung CLP-315	1,522 Wh

TYPICAL ELECTRICITY CONSUMPTION

Average Watt Hours per Week
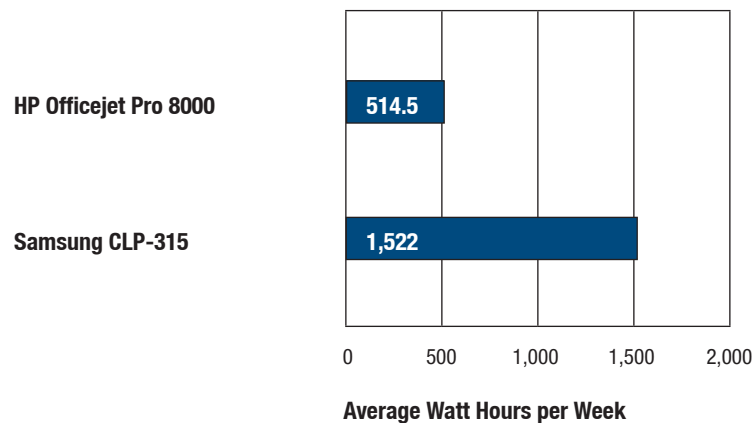
Typical Electricity Consumption is calculated based on each device printing 288 pages per day, with the device spending the remainder of the time in sleep mode after printing is completed. A watt meter is used to determine power used during printing and in sleep mode for each device.

Speed Testing (Color Mode)

BLI subjected each device to comparative print speed testing, using the ISO 24734 test suite with the devices in default mode, using the PCL driver. Each four-page file (PDF, Word and Excel) is printed three times and the time to completion indicates the time it takes to print the second and third sets (for a total of eight pages). Times for each of the three tests were added together to get a total time to print 24 pages, which is reported in the chart below.

- When combining the time to print all three color documents, the HP Officejet Pro 8000 was much faster, with the Samsung CLP-315 taking more than twice as long to print the files.
- When printing two sets of a three-page PDF document in color mode, the Officejet Pro 8000 was again the fastest, completing the test in 54.33 seconds. The Samsung CLP-315 was again slower, taking just over two minutes to complete the test.
- When printing two sets of a three-page Word document in color mode, the Officejet Pro 8000 was faster, at 30.53 seconds, while the Samsung CLP-315 took just under two minutes to complete the test.
- When printing two sets of a three-page Excel document in color mode, the Officejet Pro 8000 was faster, completing the test in 51.54 seconds. The Samsung CLP-315 was far slower, taking just over two minutes to complete the test.

TIME TO PRINT ISO 24734 TEST SUITE (IN SECONDS)

	Color PDF Document (8 Pages)	Color Word Document (8 Pages)	Color Excel Document (8 Pages)	Total Time to Print All Three Files (24 Pages)
HP Officejet Pro 8000	54.33	30.53	51.54	136.40
Samsung CLP-315	120.21	119.99	120.26	360.45

In this test, three sets of each four-page document is printed. Timing begins when the last page of the first set exits the device and ends when the last page of the third document set completely exits the device. This methods eliminates the time required for job processing and for the device to get up to speed, effectively demonstrating the time to print eight pages (two sets of the document).

Note: Numbers in red indicate the fastest results.

Seconds
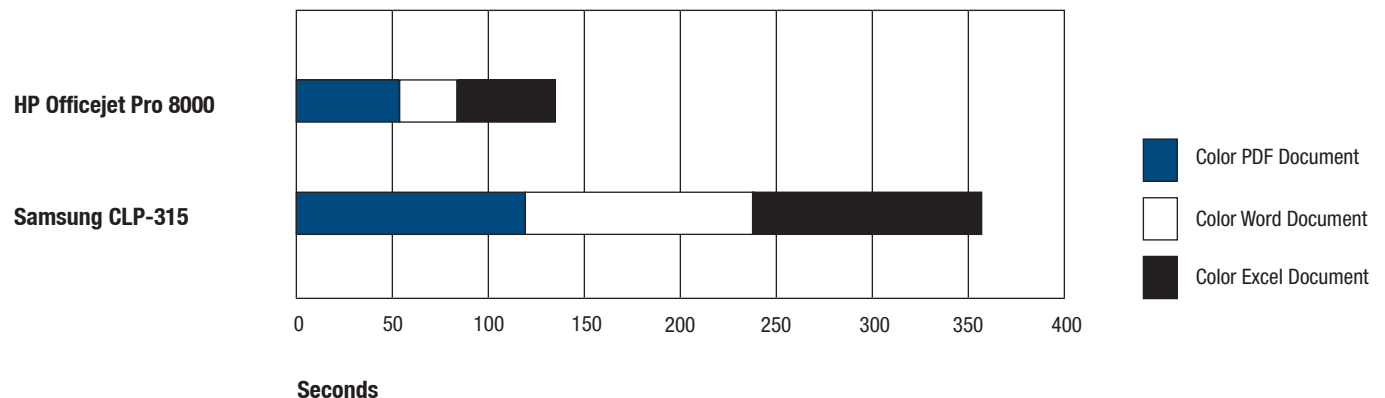
Results above indicate time to print two sets of three four-page documents, for a total of 24 pages. Three sets of each four-page document are printed and the time to print the first set of each document is eliminated. Timing begins when the last page of the first set exits the device and ends when the last page of the third document set completely exits the device.

First-Page-Out Times (Color Mode)

BLI subjected each device to comparative raster testing to determine which device had the fastest first-page-out times in color, using the ISO 24734 test suite with the devices in default mode, using the PCL driver.
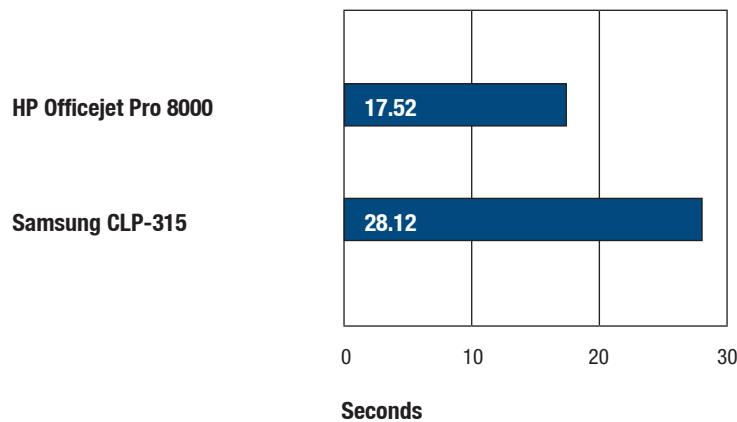
- Based on an average of three documents tested, the HP Officejet Pro 8000 provided the faster first-page time in color mode.
- When printing the ISO 24734 PDF document in color mode, the Officejet Pro 8000 was faster, printing the first page in 22.43 seconds. The Samsung CLP-315 was the slower, taking 28.93 seconds to print the first page.
- When printing the ISO 24734 Word document in color mode, the Officejet Pro 8000 had the faster first-page-out time, at 14.38 seconds, while the the Samsung CLP-315 was the slower, taking 27.61 seconds to print the first page.
- When printing the ISO 24734 Excel document in color mode, the Officejet Pro 8000 had the fastest first-page-out time, at 15.76 seconds, while the Samsung CLP-315 was the slower, taking 27.82 seconds to print the first page.

FIRST-PAGE TIMES (COLOR MODE; IN SECONDS)

	PDF	Word	Excel	Average First-Page Time
HP Officejet Pro 8000	22.43	14.38	15.76	17.52
Samsung CLP-315	28.93	27.61	27.82	28.12

First-page time indicates the time it took to process the file and deliver the first page of the test document set to the output tray.

Note: Fastest times are indicated in red.

HP Officejet Pro 8000 — 17.52

Samsung CLP-315 — 28.12

0   10   20   30

Seconds

Average first-page time is based on an average of three file types tested (PDF, Word and Excel). Each file is printed twice to get an average first-page time for each file type; the average first-page time is determined by averaging the results for each of the three file types.

SUPPORTING TEST DATA

Test Objective

Buyers Laboratory Inc. (BLI) was commissioned by Hewlett-Packard to conduct an independent comparative performance evaluation of the HP Officejet Pro 8000 versus the Samsung CLP-315. Tests performed include ISO speed testing, first-page-out testing and TEC energy consumption testing.

Test Environment

This test was conducted in BLI's 10,000-square-foot U.S. test lab, in an environment monitored by an Extech RH S20 RH/Temp recorder and a Honeywell Temp/RH chart recorder, which replicates typical office conditions.

Test Equipment

BLI's dedicated test network, consisting of Windows NT 4.0, 2000 and Microsoft Exchange servers, Windows 2000 and XP workstations, 10BaseT/100BaseTX network switches and CAT5 cabling.

Test Duration

Products were tested for 2,500 impressions.

Tested Models

Four devices, two of each model (HP Officejet Pro 8000 and Samsung CLP-315).

Test Procedures

The test methods and procedures employed by BLI in its lab testing include a range of BLI and industry-standard test targets. For speed testing, the ISO 24734 test suite is used. For electricity consumption testing, the Energy Star Typical Electricity Consumption (TEC) for laser printers was used to determine typical weekly electricity consumption.

Buyers Laboratory Inc.

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