

**Industry Analysts, Inc.
Technical Services Division**

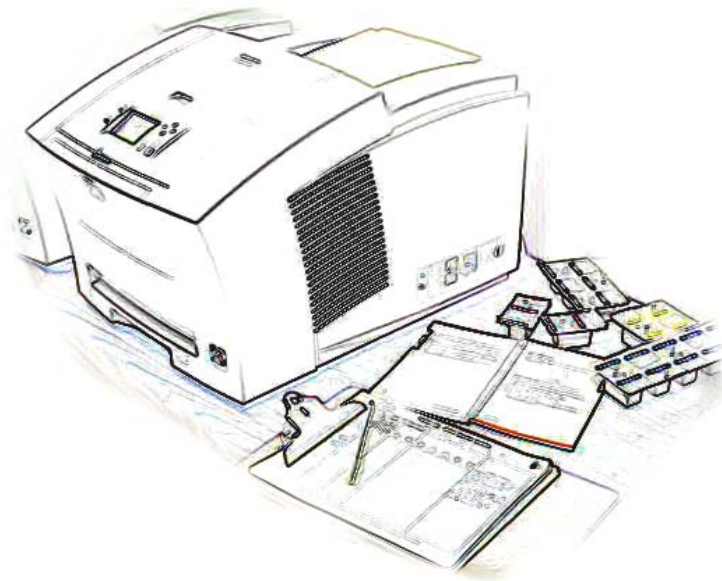


Client Report

Media Sciences

Accelerated Test

Xerox Phaser 8200 Ink Sticks



**PERFORMANCE
TESTED**



April 2004

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March 2004

Client Report

Media Sciences Phaser 8200 Ink

BACKGROUND

Media Sciences is a manufacturer of ink sticks designed for use with the Xerox Phaser 8200 solid-ink color printer. Since Media Sciences is not the OEM solid ink-stick manufacturer, it must demonstrate that use of its ink sticks will not affect the printer's reliability. Consequently, Media Sciences contracted Industry Analysts, Inc.'s Technical Services Division (IATSD) to perform an independent test to verify that the Phaser 8200's reliability is not affected by the use of Media Sciences ink sticks.

Scope

Perform confidential testing that demonstrates that Media Sciences' solid ink sticks are reliable for use with the Xerox Phaser 8200 solid-ink printer. The purpose of the test was to determine the reliability of the Media Sciences ink sticks for use with the Xerox printer. Reliability is one part of overall performance, which can include other factors, such as image quality and image permanence. Reliability is defined by the Media Sciences RFP as "reliable to the point that it will not cause the print head to fail in the consumption of 180 sticks of each color ink." Media Sciences has estimated that the average user is one who consumes three (3) sticks of each color solid ink sticks per month, or 180 color sticks per color over the estimated 5 year life of the printer. The results of the test are the exclusive property of Media Sciences.

METHODOLOGY

Conditioning: Using guidelines set for in ASTM [F1174-01, Standard Practice for Using a Personal Computer Printer as a Test Instrument](#), two Phaser 8200 units were conditioned for use in the test.

Supplies: Throughout the test, IATSD exclusively used solid-ink sticks manufactured and supplied by Media Sciences.

Run Scenario: IATSD ran each Phaser 8200 printer continuously (stopping only in order to replace the units' ink and paper) for six hours per day, five days per week, until 180 sticks of each ink color were consumed.

Energy Save/Standby Modes: "Intelligent Ready" energy-save mode was used throughout the tests. Additionally, IATSD set energy-save mode to 120 minutes to prevent the printers from entering standby mode during testing.

Test Original: A test original that contains 25 percent area coverage for each color (CYMK) was continuously printed in transparency mode in order to maximize ink usage.

Image Quality: Each time the device requested ink-sticks or paper, IATSD filled supplies to maximum capacity and analyzed image-quality for any possible print defects.

End of Test: IATSD technicians visually examined each printed sheet as it emerged from the printer. If print defects were noted (banding in the print area voids, extraneous spots or lines outside the printed area on the edges or back of the sheet), IATSD technicians consulted the Xerox user manual contained on the *Software and Documentation* CD-ROM in the event of a problem with the print head in order to determine the method for rectifying of failure. According to the test plan, if IATSD did not observe any permanent print defects, it would end the test after 180 sticks of each ink color had been consumed.

Logistics:

Set-Up and Installation: The devices were installed at Industry Analysts' facility on a dedicated NEMA-type power circuit and 10/100BaseT Ethernet local area network running Novell NetWare 4.X and/or Windows 2000. The installation site was fully confidential, with access limited to authorized employees of Media Sciences and Industry Analysts, Inc. only.

Data Collection: During the course of the test, technicians recorded the date and page count for the following:

- Any service and parts replacement required.
- Changes in ink-stick lots.
- Details on any service required.
- Page count, temperature and relative humidity (R.H.) each time an image-quality sample was produced.
- Details on any image-quality defects.

TEST RESULTS AND OBSERVATIONS

Installation and Setup: The two Phaser 8200 printers were removed from their shipping cartons and installed by Industry Analysts technicians per the enclosed instructions. The Phaser 8200's were installed on a 10/100BaseT Ethernet network and NEMA 620-Type dedicated power lines.

Sample Designation	Phaser #1	Phaser #2
Serial Number	LTH134424	LTH136118
Install Date	1/8/2004	1/8/2004
Install Page Count	4	4
Maintenance Kit (% remaining)	100%	100%



Figure 1 – Media Sciences Test Suite

Substrate: Allied 20-lb. bright-white bond was used exclusively in the test.

Conditioning: To ensure optimum performance, the Allied substrate, Media Sciences Ink Sticks and the two Phaser 8200 printers were conditioned in the test environment for 48 hours before testing commenced.

Setup: The two Phaser 8200 units arrived with Xerox ink sticks already installed. Before testing commenced, a CYMK color sampler was printed. Then, as many Xerox ink sticks as possible were removed from each test unit and replaced with Media Sciences ink sticks.

	Phaser #1	Phaser #2
Starting Page Count	22	22



Figure 2 –The photos above show how many Xerox ink sticks remained in the Phaser #1 (left) and Phaser #2 (right).

Maintenance Kits: One of the purposes of the test was to prove that sustained use of Media Sciences’ ink sticks did not accelerate wear of the Phaser 8200 printer. Consequently, the status of the Maintenance Kit was monitored during testing.

	Phaser #1	Phaser #2
Starting Maintenance Kit (% remaining)	100%	100%
Extended Life Maintenance Kits Installed	2	2
Ending Maintenance Kit (% remaining)	87%	89%
End of Test	840.5 ink sticks	840.5 ink sticks

Test Chart: The test chart supplied by Media Sciences (consult Figure 3 below) was in an Adobe Acrobat file format and used exclusively in the test. According to Media Sciences, it is designed to output 100% area coverage with the Phaser 8200.

Print Settings: In order to further increase ink consumption and accelerate testing, Media Sciences specified that the Phaser 8200 should print in transparency mode.



Figure 3 - This 8-1/2" x 11" CMKY Test Chart was exclusively used in the test.

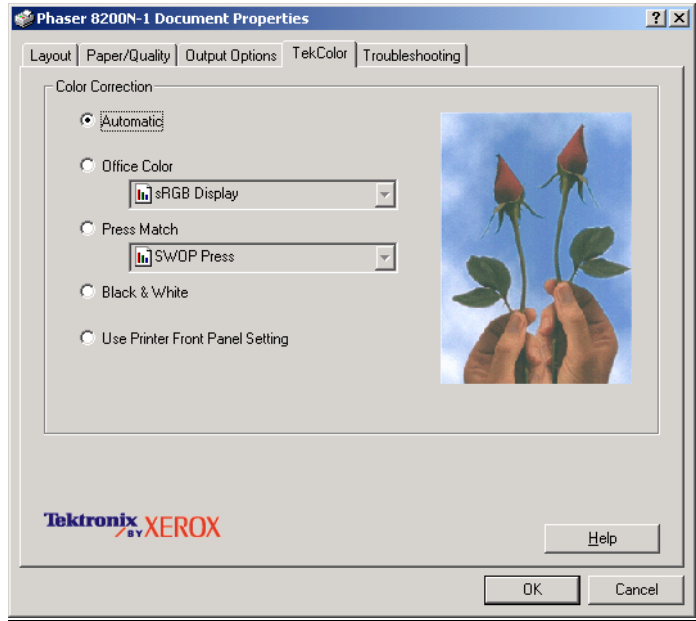


Figure 4 - PostScript image-quality settings used in the test.

Malfunctions Encountered: IATSD technicians noted that one of the Phaser 8200's display panels was blank. The printer was shut down and Media Sciences was contacted; however when the technician arrived the display panel had been restored.

Cleaning and Maintenance: IATSD's testing of the Phaser 8200 required technicians to perform several cleaning procedures on both units. If any weak or missing jets were noted on the output IATSD technicians followed the Xerox users manual and performed end-user cleaning procedures, which resolved the issue.

TEST REPORT SUMMARY

Sample ID	Phaser #1	Phaser #2
Make and Model	Xerox Phaser 8200	Xerox Phaser 8200
Serial Number	LTH134424	LTH13618
Starting Date	1/8/2004	1/8/2004
End Date	3/12/2004	3/11/2004

Ink-Stick Consumption	Total Used	Used Per Printer
Cyan	397	198
Magenta	414	207
Yellow	378	189
Black	492	246

	Phaser #1	Phaser #2
Test Duration	45 working days	44 working days
Ink Sticks Used Per Day	18.7	19.1
Maintenance Kits Used	2	2
Malfunctions Encountered	0	1*

*IATSD technicians noted that one of the Phaser 8200's display panels was blank. The printer was shut down and Media Sciences was contacted; however when the technician arrived the display panel had been restored.

Conclusion: Image quality at the end of the test was equal to that evaluated at the start of the test using Xerox ink. Consequently, the accelerated test conclusively showed that the use of Media Sciences' ink sticks did not affect the reliability of the Xerox Phaser 8200 solid-ink printer