

Report of Test on

Toner Performance

Competitive Evaluation

for

Media Sciences, Inc.

Date: April 3, 2002

Prepared By: _____

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Director of Custom Testing



*BUYERS LABORATORY INC.
CUSTOM TESTING DIVISION
108 JOHN ST.
HACKENSACK, NJ 07601*

ADMINISTRATIVE DATA

- PURPOSE: To subject the submitted toners to a series of evaluations for the purpose of competitive analysis.
- COMPANY: Media Sciences, Inc.
40 Boroline Road
Allendale, NJ 07401
- TEST UNIT IDENTIFICATION: Phaser 740 Color Printer Laser Cartridges
(see General Section)
- SPECIFICATION: Buyers Laboratory Inc. Quotation Number
Q2319. Amendment I
- QUANTITY OF ITEMS TESTED: Sixteen (16) consisting of:
Eight (8) OEM
Eight (8) Media Sciences
- DATE TEST COMPLETED: February 11, 2002
- TEST CONDUCTED BY: BUYERS LABORATORY INC.
Custom Testing Division
108 John Street
Hackensack, NJ 07601
- DISPOSITION OF TEST ITEMS: Returned to Media Sciences
- ABSTRACT: The two brands of color toner cartridges were subjected to a series of evaluations for the purpose of competitive analysis. All test data, observations, and test results may be seen in the applicable sections of this test report.

LIST OF APPARATUS

Equipment	Manufacturer	Model	Calibration	
			Date	Due Date
Scale, Digital	Sartorius	BA6100	11/03/01 02/01/02	02/03/02 05/01/02
Densitometer	X-Rite	428	8/00	2/02
Printer	Tektronix	740	Not Required	

GENERAL SECTION

Sixteen (16) color toner cartridges were submitted by Media Sciences, Inc. for testing. The color toner cartridges were identified as follows:

Quantity	Order Number	Description	Company
2	016-1657-00	Hi-Cap Cyan cartridge	Tektronix
2	016-1658-00	Hi-Cap Magenta cartridge	Tektronix
2	016-1659-00	Hi-Cap Yellow cartridge	Tektronix
2	016-1656-00	Hi-Cap Black cartridge	Tektronix
2	740-560C	Hi-Cap Cyan cartridge	Media Sciences
2	740-560M	Hi-Cap Magenta cartridge	Media Sciences
2	740-560Y	Hi-Cap Yellow cartridge	Media Sciences
2	740-560K	Hi-Cap Black cartridge	Media Sciences

PAGE YIELD EVALUATIONTEST PROCEDURE:

The Page Yield Evaluation was conducted in accordance with Buyers Laboratory Inc. Quotation Number 2319, Amendment I which references Buyers Laboratory Inc. Test Method Number TM-0001 Rev. 0 dated September 11, 1996. A 20% RGB test target was utilized in the evaluation for the color cartridges. A 20% black test target was utilized for the black cartridges. A color calibration was performed prior to running the page yield test on the Media Sciences cartridges. All printer settings were set to the printer manufacturer's default settings for the OEM cartridges.

TEST DATA:

S/N Color	Cartridge Start Weight (grams)	Cartridge End Weight (grams)	Change in Weight (grams)	Page Yield (pages)	Toner Usage (pgs./gram)
OEMCyan	1,186.2	1,004.1	182.1	1,485	8.2
OEMYellow	1,183.1	991.5	191.6	1,764	9.2
OEMMagenta	1,185.6	1,002.8	182.8	1,460	8.0
OEMBlack	1,206.2	993.5	212.7	2,501	11.8
Total (CYMK)				7,210	
TestCyan*	1,225.9	1,002.3	223.6	1,552	6.9
TestYellow*	1,216.2	999.5	216.7	1,708	7.9
TestMagenta*	1,225.7	998.1	227.6	1,421	6.3
TestBlack*	1,245.1	993.5	228.8	2,719	11.9
Total (CYMK)				7,400	

* The printer was calibrated prior to running the test using the printer manufacturer's procedure and color density samples from the printer user guide. Prior to calibration, the CMYK setting were set to factory default (0,0,0,0). And after calibration, the CMYK settings were (-7, -3, -5, -8). A negative number indicates a lighter color density setting which will result in a higher page yield. A positive number indicates a darker density setting which will result in a lower page yield.

TEST RESULTS:

The total page yield of the Media Sciences (CMYK) color toner cartridges exceeded the total page yield of the OEM color toner cartridges by an average of 190 pages in the tests.

IMAGING PROPERTIES EVALUATION
(Print Contrast)

TEST PROCEDURE:

The Imaging Properties Evaluation (Print Contrast) was conducted in accordance with Buyers Laboratory Inc. Quotation Number 2319, Amendment I.

TEST DATA:

S/N	Color	Average Print Contrast
OEM	Cyan	1.12
OEM	Magenta	1.12
OEM	Yellow	0.68
OEM	Black	1.69
TEST*	Cyan	1.47
TEST*	Magenta	1.27
TEST*	Yellow	0.71
TEST*	Black	1.51

* The printer was calibrated prior to running the test using the printer manufacturer's procedure and color density samples from the printer user guide. Prior to calibration, the CMYK settings were set to factory default (0,0,0,0). And after calibration, the CMYK settings were (-7, -3, -5, -8). A negative number indicates a lighter color density setting which will result in a higher page yield. A positive number indicates a darker density setting which will result in a lower page yield.

TEST RESULTS:

The average print density of the output produced by the Media Sciences (CMY) color laser toner cartridges was higher than that of the OEM (CMY) cartridges. The black Media Sciences cartridge (at 1.51) was slightly less than the Black OEM cartridge (at 1.69). Based on the analysis of the output, there was no noticeable difference in the occurrence of print quality problems and/or print defects between the OEM and the Media Sciences cartridges.

IMAGING PROPERTIES EVALUATION
(Color Space)

TEST PROCEDURE:

The Imaging Properties Evaluation (Color Space) was conducted in accordance with Buyers Laboratory Inc. Quotation Number 2319, Amendment I.

TEST RESULTS:

A comparison between the color gamut produced by the Media Sciences and Tektronix color laser cartridges indicates the area is approximately the same; however, the Media Sciences gamut is shifted slightly towards the green region causing a reduction in the red and blue regions. A graphical representation of the comparison gamut may be seen in Figure 1.

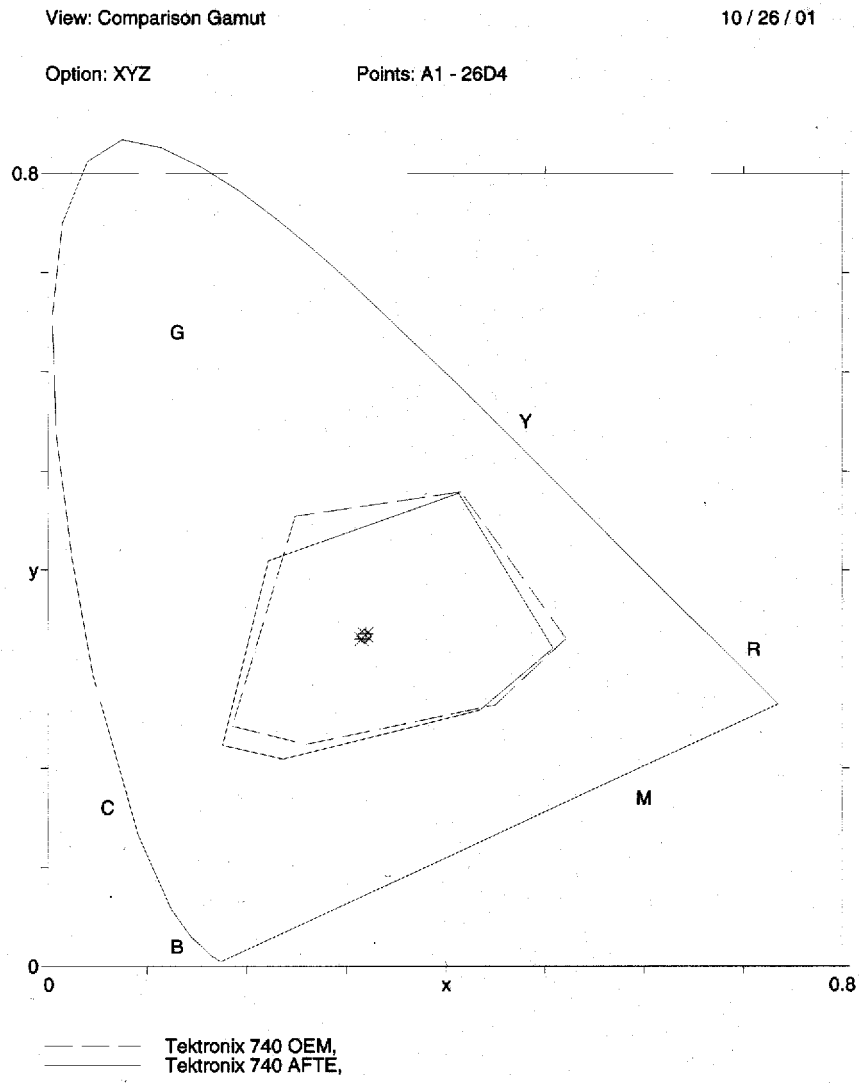


Figure #1
Comparison Gamut
OEM vs. Media Sciences

CONCLUSION

The total page yield of the Media Sciences (CMYK) color toner cartridges exceeded the total page yield of the OEM color toner cartridges by an average of 190 pages in the tests. In addition, the average print density of the output produced by the Media Sciences (CMY) color laser toner cartridges was higher than that of the OEM (CMY) cartridges. The black Media Sciences cartridge (at 1.51) was slightly less than the Black OEM cartridge (at 1.69). Based on the analysis of the output, there was no noticeable difference in the occurrence of print quality problems and/or print defects between the OEM and the Media Sciences cartridges. Moreover, the comparison gamut indicated the area is approximately the same; however, the Media Sciences gamut is shifted slightly towards the green region causing a slight reduction in the red and blue regions. Consequently, based on the performance of the Media Sciences (CMYK) cartridges in the tests, BLI feels that the Media Sciences (CMYK) Phaser 740 color toner laser cartridges meet or exceed the performance of the OEM cartridge.