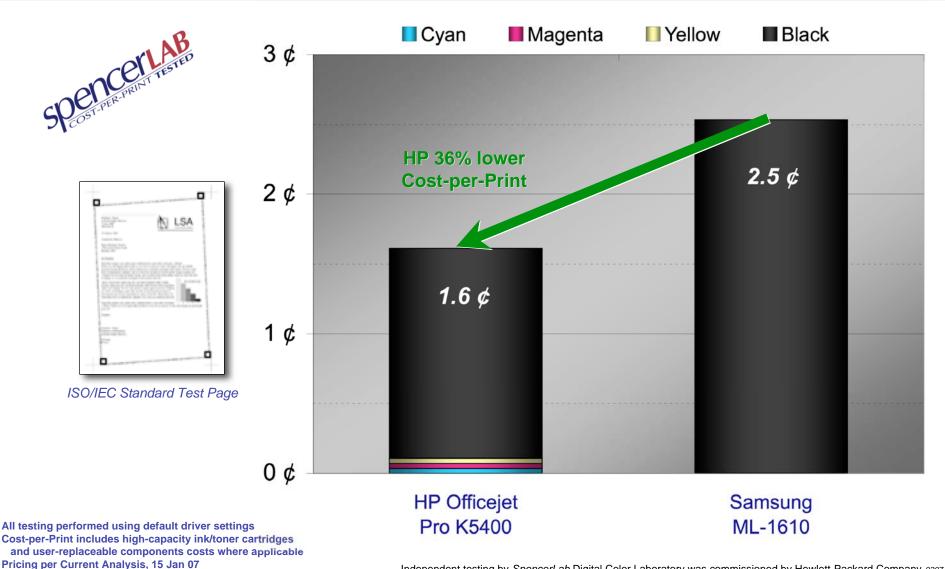# Cost-per-Print: *U.S. cents –* HP Officejet Pro K5400 Color Inkjet and Samsung ML-1610 Monochrome Laser Printer

ISO/IEC Standard Test Page

Legend: ■ Cyan   ■ Magenta   ■ Yellow   ■ Black

HP 36% lower Cost-per-Print

Samsung ML-1610: 2.5 ¢

HP Officejet Pro K5400: 1.6 ¢

Chart axis: 0 ¢, 1 ¢, 2 ¢, 3 ¢

www.spencerlab.com

spencerLAB DIGITAL COLOR LABORATORY

Cost-per-Print *Methodology*: HP Officejet Pro K5400 Color Inkjet and Samsung ML-1610 Monochrome Laser Printer

° *Determine Ink Cartridge Yields –*
   the average number of prints-per-cartridge for each cartridge

- Test document from ISO/IEC 19752 International Standard for determining monochrome toner yield
  - *Standard Test Page version 4.0.1.,* printed semi-continuously with stops for paper replenishment, overnight, etc.
- Print Modes: plain paper default via Adobe Reader 7.0.8
- Test High Capacity OEM inks/toner where available
  - *HP #88 Large Black, Cyan, Magenta and Yellow ink cartridges*
  - *Samsung* (ML-1610D2) *toner cartridge*
- Cartridges judged to be at "end-of-life" when an out of ink/toner signal is displayed on printer control panel/driver; otherwise when test prints show visible defects (*fade*) attributable to toner supply
- Testing is repeated over multiple cartridges to assure consistency

° *Calculate ink component cost-per-print*

- Divide each cartridge cost by the corresponding cartridge yield (average prints-per-cartridge)

° *Calculate other user-replaceable component pro-rata costs*

- Samsung ML-1610 contains no user-replaceable components
- The HP Officejet Pro K5400 printheads are designed for the life of the printer; therefore, although user-replaceable, it is not included in the total Cost-per-Print

° *Ink/Toner Cartridge Prices*

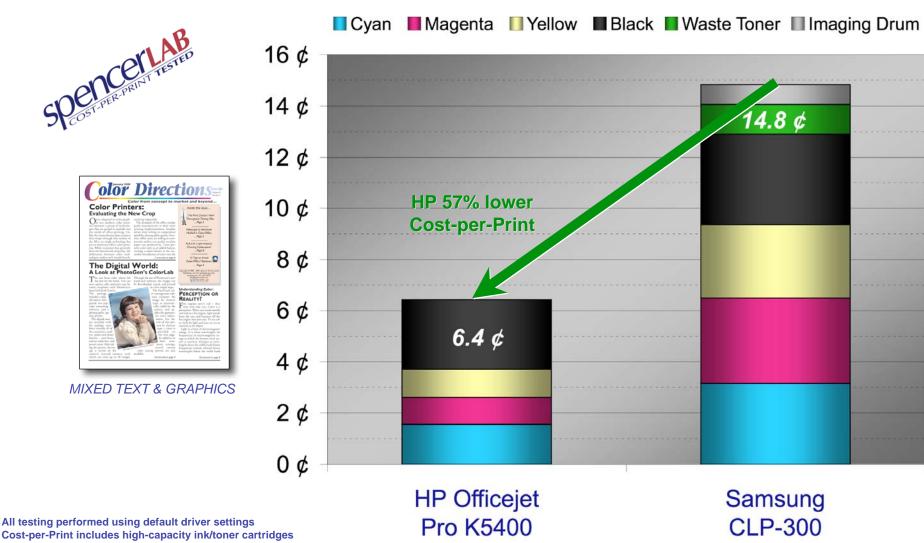| COMPONENTS COST	CYAN	MAGENTA	YELLOW	BLACK
HP Officejet Pro K5400	$ 26.37	$ 26.62	$ 26.65	$ 34.74
Samsung ML-1610	—	—	—	$ 58.04

Pricing per Current Analysis 15Jan07

° *Sum per-print component costs to obtain total Cost-per-Print for the test document*

Cost-per-Print: *U.S. cents –* HP Officejet Pro K5400 Color Inkjet and Samsung CLP-300 Color Laser Printer

Cyan ■ **Magenta** ■ **Yellow** ■ **Black** ■ **Waste Toner** ■ **Imaging Drum**

HP 57% lower
Cost-per-Print

14.8 ¢

6.4 ¢

16 ¢
14 ¢
12 ¢
10 ¢
8 ¢
6 ¢
4 ¢
2 ¢
0 ¢

HP Officejet Pro K5400

Samsung CLP-300

MIXED TEXT & GRAPHICS

All testing performed using default driver settings
Cost-per-Print includes high-capacity ink/toner cartridges
   and user-replaceable components costs where applicable
Pricing per Current Analysis, 15 Jan 07

www.spencerlab.com

SpencerLAB
DIGITAL COLOR LABORATORY

° *Determine Ink Cartridge Yields –*
  the average number of prints-per-cartridge for each cartridge
  - Test document from the *SpencerLab* Printer Test Suite
    - *Mixed Text & Graphics,* Color Newsletter, *printed semi-continuously with stops for paper replenishment, overnight, etc.*
  - Print Modes: plain paper default via Adobe Reader 7.0.8
  - Test High Capacity OEM inks/toner where available
    - *HP #88 Large Black, Cyan, Magenta and Yellow ink cartridges*
    - *Samsung Black* (CLP-K300A)*, Cyan* (CLP-C300A)*, Magenta* (CLP-M300A)*, and Yellow* (CLP-Y300A) *toner cartridges*
  - Cartridges judged to be at "end-of-life" when an out of ink/toner signal is displayed on printer control panel/driver
  - Testing is repeated over multiple cartridges to assure consistency

° *Calculate ink component cost-per-print*
  - Divide each cartridge cost by the corresponding cartridge yield (average prints-per-cartridge)

° *Calculate other user-replaceable component pro-rata costs*
  - Samsung CLP-300 contains user-replaceable OPC Drum Cartridge (CLP-R300A) and Waste Toner Container (CLP-W300A); therefore, include these component costs in total Cost-per-Print based upon manufacturer rated yield
  - The HP Officejet Pro K5400 printheads are designed for the life of the printer; therefore, although user-replaceable, it is not included in the total Cost-per-Print

° *Ink/Toner and User-replaceable Component Prices*

COMPONENTS COST		CYAN	MAGENTA	YELLOW	BLACK
HP Officejet Pro K5400		$ 26.37	$ 26.62	$ 26.65	$ 34.74
Samsung CLP-300	*Toner*	$ 51.86	$ 51.86	$ 51.86	$ 60.90
	OPC	$ 96.18			
	Waste Toner	$ 14.49			

Pricing per Current Analysis 15Jan07

° *Sum per-print component costs to obtain total Cost-per-Print for the test document*

Independent testing by *SpencerLab* Digital Color Laboratory was commissioned by Hewlett-Packard Company *0307*

www.spencerlab.com

spencerLAB DIGITAL COLOR LABORATORY