Print & Copy Quality Comparison

HP Officejet 6500 AiO Printer Series
vs. Brother MFC-5490CN, Canon PIXMA MX860 & Epson STYLUS OFFICE BX600FW Inkjet All-in-Ones

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Overall Print & Copy Quality – Comparative Analysis Scorecard

HP's overall output quality was higher than tested competitive printers

Color Inkjet AiOs	Print – Default			Print – Draft		Copy – Default	
	Color	**Images ***	**B&W**	**Color**	**B&W**	**Color**	**B&W**
HP Officejet 6500	✓✓	✓	✓	✓✓	✓	✓	⊙
Brother MFC-5490CN	⊙	⊙	✗	⊙	✗	✗	✓
Canon PIXMA MX860	✓	✓	✓	✓	⊙	✓	⊙
Epson STYLUS OFFICE BX600FW	⊙	⊙	✗	✗	✗	⊙	⊙

* Color Images on Glossy Media

Comparative Rating: ✓✓ Above   ✓ Average   ⊙ Below   ✗ Poor

Print quality elements of Text, Lines, Tints & Blends analyzed separately for Color and Black & White prints and Copy output.
Independent testing by *SpencerLab* Digital Color Laboratory, commissioned by Hewlett-Packard Company.

Overall Print & Copy Quality Comparative Analysis Summary

HP Officejet 6500

Overall Default Print quality on plain paper was above average
- *Text and Lines were overall smooth; Black Text exhibited minor splatter under magnification*
- *Tints & Blends were overall the smoothest with good saturation*

Color Images on glossy paper were vibrant and smooth, however rendered soft with a slight Yellow cast

Overall Draft quality prints on plain paper were comparatively most acceptable

Color Copy quality on plain paper was average; Black & White was below; overall comparatively acceptable

Brother MFC-5490CN

Overall Default Print quality on plain paper was below average
- *Text and Lines were faded and soft, with visible dropouts*
- *Tints & Blends appeared flat, faded, and exhibited graininess*

Color Images on glossy paper were smooth and sharp; however, flat with an excessive Magenta cast; overall below average

Draft mode prints on plain paper, especially Black & White, were poor quality

Color Copy quality was poor, but Black & White Copy on plain paper was average and comparatively acceptable

Canon PIXMA MX860

Overall Default Print quality on plain paper was average
- *Text and Lines were smooth and crisp, however colored Text and Lines lacked saturation while Black maintained good density*
- *Tints & Blends exhibited distracting screening and colors appeared desaturated; banding was noticeable on prints*

Color Images on glossy paper were smooth, but soft and slightly desaturated with a Magenta cast; average overall

Color Draft mode prints on plain paper were average; Black & White exhibited distracting screening pattern and jaggedness

Color Copy quality on plain paper was average; Black & White Copy quality was low

Epson STYLUS OFFICE BX600FW

Overall Default Print quality on plain paper was below average
- *Text and Lines were rendered jagged and grainy with distractive screening pattern*
- *Tints & Blends were saturated but had an Orange cast and exhibited distractive graininess*

Color Images on glossy paper were sharp but rendered desaturated, grainy, and appeared muddy; below average overall

Draft mode prints on plain paper were poor quality

Overall Copy quality on plain paper was low, with loss of detail

Independent testing by *SpencerLab* Digital Color Laboratory, commissioned by Hewlett-Packard Company.

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Print Output – Color (Default)

HP Officejet 6500

✔
- ° *Color Text and Lines were crisp, smooth, and had excellent saturation; thin curved Lines maintained details well*
- ° *Tints & Blends and Color Images were vibrant and smooth, but slightly soft and grainy*

Brother MFC-5490CN

◉
- ° *Color Text and Lines were faded and soft; fine Line details were lost*
- ° *Tints & Blends and Color Images were smooth, but were grainy and appeared dull and overall flat*

Canon PIXMA MX860

✔
- ° *Color Text and Lines were sharp but lacked saturation; Tertiary color Lines exhibited screening*
- ° *Tints & Blends were slightly desaturated; distractive screening pattern was noticeable in Yellow blends; Color Images had a Magenta cast and appeared soft and flat*

Epson STYLUS OFFICE BX600FW

◉
- ° *Color Text and Lines were rendered grainy with distractive screening; fine Lines were rendered broken*
- ° *Although Tints & Blends and Color Images were saturated, they had an Orange cast with distractive graininess and Images lacked shadow and highlight detail*
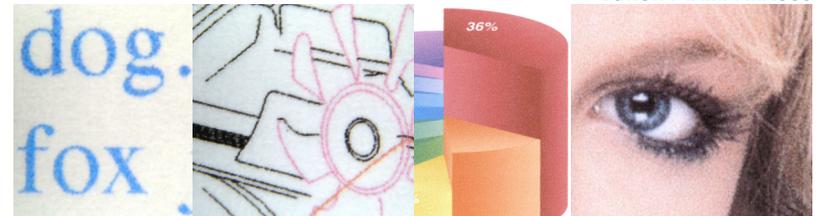
HP Officejet 6500
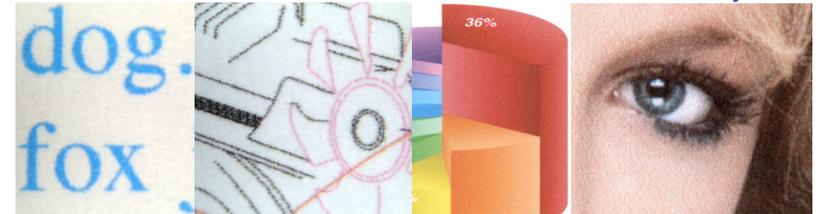
Brother MFC-5490CN

Canon PIXMA MX860

Epson STYLUS OFFICE BX600FW

Comparison in default modes for Plain paper.
Independent testing by *SpencerLab* Digital Color Laboratory, commissioned by Hewlett-Packard Company.

Print Output – Color Images (Default)

HP Officejet 6500

✓
- *Images and Tints & Blends were rendered vibrant and smooth with good saturation, but appeared soft with a slight Yellow cast*
- *Color Text and Lines were smooth, clean, and had excellent saturation; Line details were maintained well*

Brother MFC-5490CN

⊙
- *Images and Tints & Blends were smooth; Images were sharp but appeared overall flat, losing shadow details, and with a Magenta cast*
- *Color Text and Lines were smooth and had good saturation, however Text and Lines were rendered slightly thick*

Canon PIXMA MX860

✓
- *Images and Tints & Blends were smooth, but slightly desaturated; Images were also somewhat soft and had a Magenta cast*
- *Text & Lines were slightly jagged and washed out; Red Text was rendered thick*

Epson STYLUS OFFICE BX600FW

⊙
- *Images were sharp but appeared desaturated, grainy, and muddy; Tints & Blends also appeared muddy and grainy*
- *Text & Lines had unsmooth edges and exhibited a screening pattern; thin Lines were broken and thin curved Black Lines were rendered brownish*
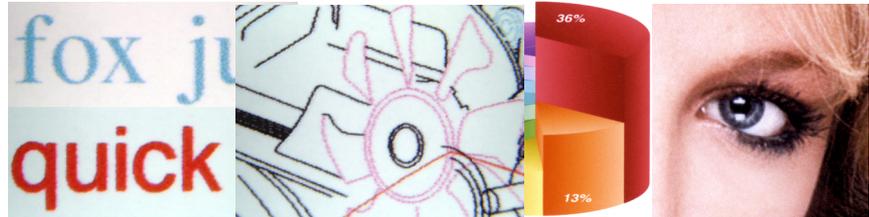

HP Officejet 6500
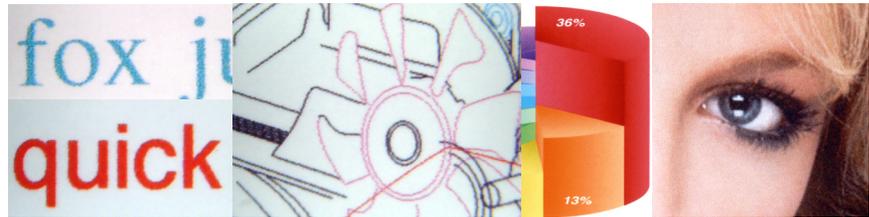
Brother MFC-5490CN

Canon PIXMA MX860

Epson STYLUS OFFICE BX600FW

Comparison in default modes for Glossy media.
Independent testing by *SpencerLab* Digital Color Laboratory, commissioned by Hewlett-Packard Company.

Print Output – Black & White (Default)

HP Officejet 6500

✓

° *Black Text and Lines were smooth; minor ink splatter was noticeable under magnification*

° *Tints & Blends and Images were comparatively the smoothest*

Brother MFC-5490CN

✗

° *Black Text and Lines were soft and grainy with visible dropouts; Fine Lines were rendered broken*

° *Tints & Blends and Images appeared faded and exhibited graininess*

Canon PIXMA MX860

✓

° *Black Text and Lines were smooth and crisp*

° *Tints & Blends displayed distractive screening pattern and Images were grainy with excessive contrast, losing shadow and highlight detail*

° *Banding was noticeable across prints*

Epson STYLUS OFFICE BX600FW

✗

° *Black Text and Lines were jagged and thin curved Lines were rendered thick*

° *Tints & Blends and Images were very grainy; Images were overall dark, losing shadow detail*
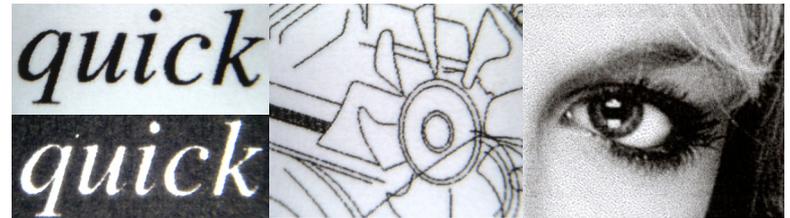

HP Officejet 6500

Brother MFC-5490CN

Canon PIXMA MX860

Epson STYLUS OFFICE BX600FW

Comparison in Grayscale default modes for Plain paper.
Independent testing by *SpencerLab* Digital Color Laboratory, commissioned by Hewlett-Packard Company.

Print Output – Color (Draft)

HP Officejet 6500

✔

° *Color Text and Lines were soft, but exhibited greater smoothness and sharpness than other tested AiO's; acceptable quality for draft prints*

° *Tints & Blends and Color Images were smooth, but lacked saturation and had minor graininess; Color Images had some loss of detail and visible banding*
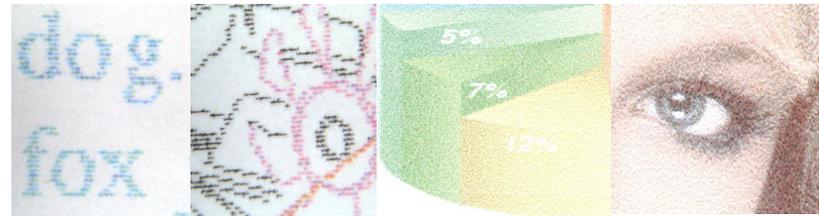
HP Officejet 6500

Brother MFC-5490CN

⊙
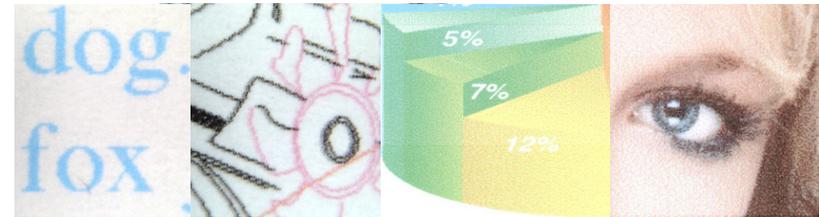
° *Color Text and Lines were desaturated, extremely jagged, and broken; Color Text had non-uniform character rendition*

° *Tints & Blends and Color Images were extremely grainy and desaturated; Images suffered loss of detail rendition*

Brother MFC-5490CN

Canon PIXMA MX860

✔

° *Color Text and Lines exhibited acceptable saturation, but had visible dropouts and were jagged with distractive screening pattern; Color Lines were rendered broken*

° *Tints & Blends exhibited distractive screening pattern; Color Images had a Magenta cast and were flat and grainy, resulting in loss of detail*

Canon PIXMA MX860

Epson STYLUS OFFICE BX600FW

✘
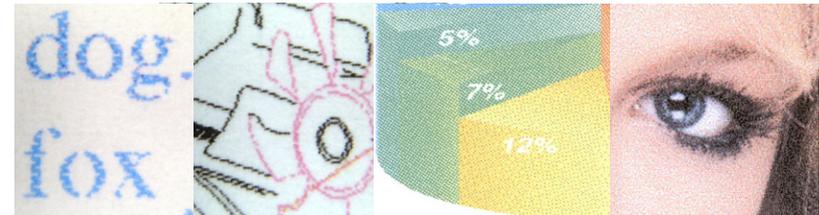
° *Color Text and Lines were rendered broken, jagged, and least saturated; most Color Text was illegible and extremely desaturated*

° *Tints & Blends and Color Images were fully desaturated and grainy, resulting in severe detail loss*

Epson STYLUS OFFICE BX600FW

Comparison in Draft modes for Plain paper.

Print Output – Black & White (Draft)

HP Officejet 6500

✔
- *Black Text and Lines were soft with low edge sharpness and minor jaggedness; acceptable quality for draft output*
- *Tints & Blends and Images were smoothest, with minor graininess and some visible banding*

Brother MFC-5490CN

✘
- *Black Text and Lines were jagged and washed out; Lines were rendered broken causing loss of line thickness differentiation*
- *Tints & Blends and Images were grainy and appeared extremely faded, with very low density, and severe loss of detail*

Canon PIXMA MX860

◉
- *Black Text and Lines were overall comparable to HP 6500 output, but exhibited noticeable jagged edges*
- *Tints & Blends displayed distractive screening pattern and Images were grainy, had excessive contrast, and lacked shadow and highlight detail*
- *Banding was noticeable across prints*

Epson STYLUS OFFICE BX600FW

✘
- *Black Text and Lines were of poor quality, appearing pixelated and rendered broken, thus losing definition*
- *Tints & Blends and Images appeared extremely grainy and with visible banding; Images were soft with severe loss of detail*

HP Officejet 6500

Brother MFC-5490CN

Canon PIXMA MX860

Epson STYLUS OFFICE BX600FW

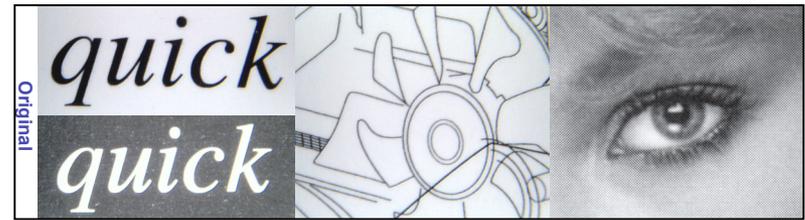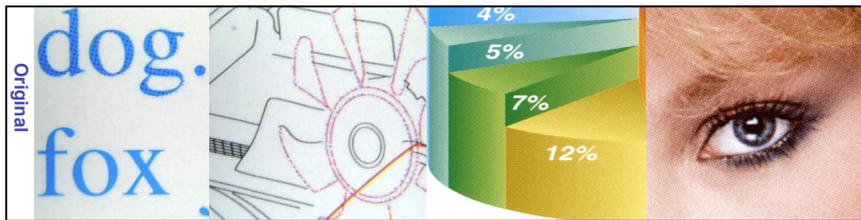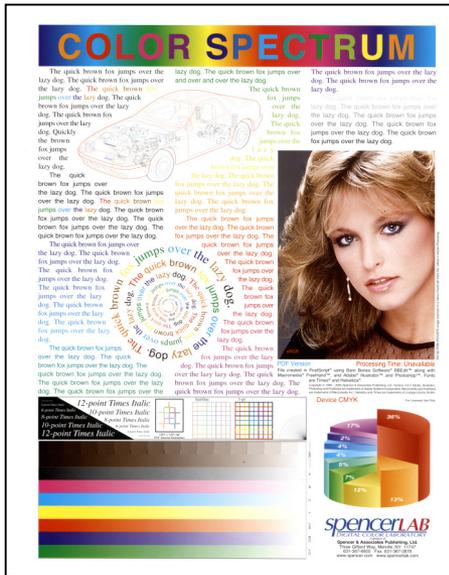Comparison in Grayscale Draft modes for Plain paper.
Independent testing by *SpencerLab* Digital Color Laboratory, commissioned by Hewlett-Packard Company.

Copy Quality Analysis

All Copy output was produced in default mode (Black or Color) on plain paper

Offset press output used as Copy originals

° *Originals from a Heidelberg Speedmaster 74 sheet-fed offset press*

° *Printed using 175-line AM screening*

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Copy Output – Color (Default)

HP Officejet 6500

✔

- ° *Color Text and Line quality was average; some Red and Purple Text and Line colors were misinterpreted and printed with mixed Black; fine Lines were rendered broken and faded;*
- ° *Tints & Blends and Color Images were overall smooth; Images were sharp, with slight Yellow cast*
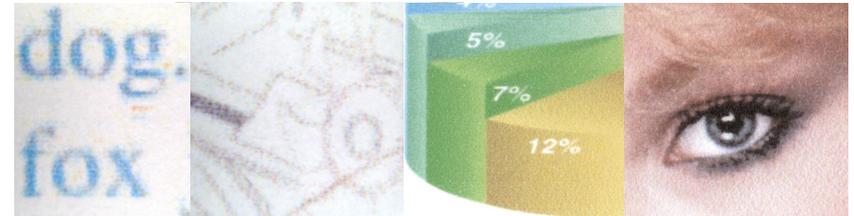

HP Officejet 6500

Brother MFC-5490CN

✘
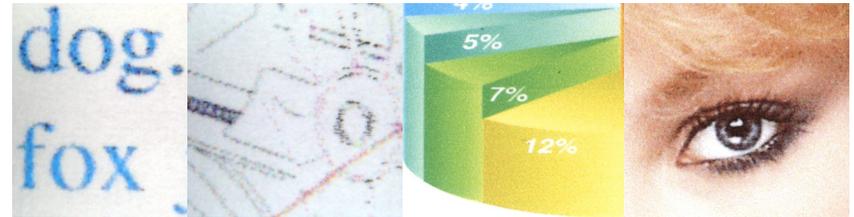
- ° *Color Text and Lines were blurry, with Lines being extremely washed out, resulting in loss of detail*
- ° *Tints & Blends were desaturated and grainy, with a muddy appearance; Color Images appeared dull, lacking sharpness and detail*


Brother MFC-5490CN

Canon PIXMA MX860

✔

- ° *Color Text and Line quality was acceptable; colors were reproduced well, however, slightly desaturated; fine Lines maintained detail, although dropouts were visible*
- ° *Tints & Blends appeared muddy, with some graininess; Color Images were soft and with low sharpness, and displayed a Magenta cast*

Canon PIXMA MX860
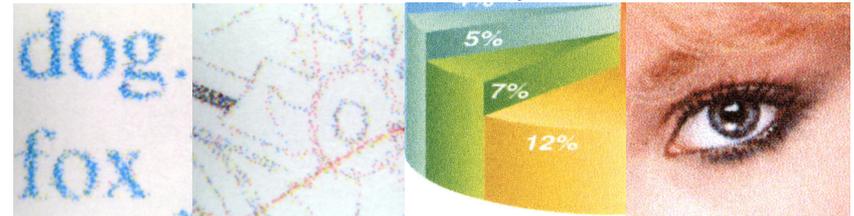
Epson STYLUS OFFICE BX600FW

⊙
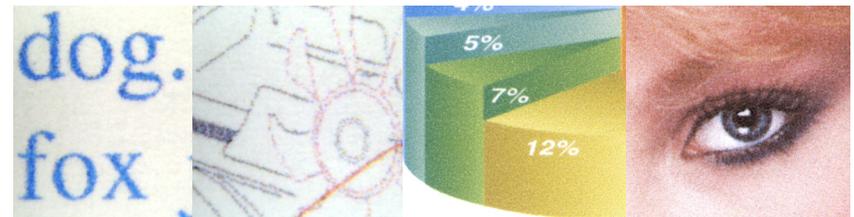
- ° *Color Text and Lines had distracting screening pattern, lacked sharpness, and appeared blurry; Lines were rendered broken and with loss of detail*
- ° *Tints & Blends and Color Images were extremely grainy; Tints & Blends appeared muddy; Images were slightly blurry and had a strong Orange cast*

Epson STYLUS OFFICE BX600FW

Comparison in Color default modes on Plain paper.

Copy Output – Black & White (Default)

HP Officejet 6500

- *Text and Lines were soft, due to ink splatter; Text was thicker than Original; some fine Lines were rendered broken, however, most of the Original content was maintained on the Copy*
- *Tints & Blends and Images lacked smoothness due to distractive streaking; Images were sharp in comparison to other tested AiOs*

Brother MFC-5490CN

- *Text and Lines were rendered slightly thicker than Original and appeared soft; thin curved Lines were broken and jagged, however, most of the Original content was maintained on the Copy*
- *Tints & Blends were grainy and had visible streaking; Images were flat, lacked sharpness, were rendered overall dark, and with loss of detail; distractive contouring was apparent*

Canon PIXMA MX860

- *Text was reproduced well on Copy, but with minor dropouts*
- *Fine Lines were rendered broken and washed out, with some Lines not being reproduced, causing content loss on Copy*
- *Tints & Blends and Images had a distractive streaking pattern; Images had plugged shadows, blown highlights, and visible banding*

Epson STYLUS OFFICE BX600FW

- *Text and Lines lacked edge sharpness; Text was thicker than Original and had jagged edges; Thin Curved Lines were broken and washed out, and some Lines were not reproduced, resulting in content loss on Copy*
- *Tints & Blends and Images were extremely grainy; Images lacked sharpness, but overall tone reproduction was good*

Comparison in Black (B&W) default modes on Plain paper.
Independent testing by *SpencerLab* Digital Color Laboratory, commissioned by Hewlett-Packard Company.

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Print & Copy Quality – Methodology

Competitive Products Tested — Color Inkjet All-in-Ones

HP Officejet 6500 All-in-One Printer

Brother MFC-5490CN, Canon PIXMA MX860, and Epson STYLUS OFFICE BX600FW

Printing test results are anticipated to apply to available printer-only versions of tested AiOs

° *HP Officejet 6000 Printer and Epson STYLUS OFFICE B40W*

Test Parameters

Color Spectrum RGB and *Enhanced Black* PDF test documents from the *SpencerLab* Printer Test Suite

Printer Maintenance *(Print Head Cleaning, Alignment, etc.)* performed prior to testing

Tests utilized a single printer of each manufacturer, assumed to be representative

Printed in default mode for each paper type

° *Draft mode also printed on plain paper*

° *Grayscale default mode used for Enhanced Black file*

° *Printed from Windows XP (SP3) using*
    Adobe Reader 9.1.2 with "Let Printer Determine Colors" box checked

Copied in default mode (Black or Color) on plain paper

° *Offset press output used as Copy originals*

Media

° *Plain Paper: Domtar Multi-System Ultra with ColorLok Technology, 20#, 96 Brightness*

° *Glossy Paper: Office Depot Inkjet Presentation (Premium Brochure/Flyer) Paper, Glossy 43#, 89 Brightness*

Ink

° *All test output was produced using Genuine OEM Ink supplies*

Print and Copy quality analysis

° *Print: Emphasis on Text, Lines, Tints & Blends on Plain paper; Images on Glossy paper*

° *Copy: Plain paper only*

Color Spectrum RGB   *Enhanced Black*

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Office Inkjet Comparison Tests

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